ARCHLine.XP® 2008

Windows

News

Manual

First Edition

This manual was produced using Microsoft Word and ARCHLine.XP®.

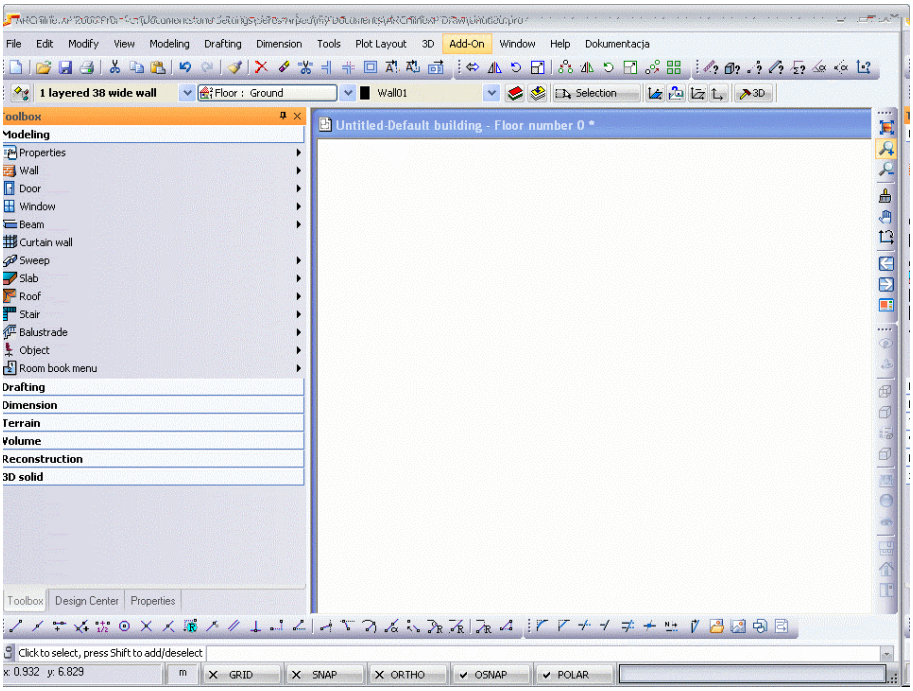
Contents

1. Interface

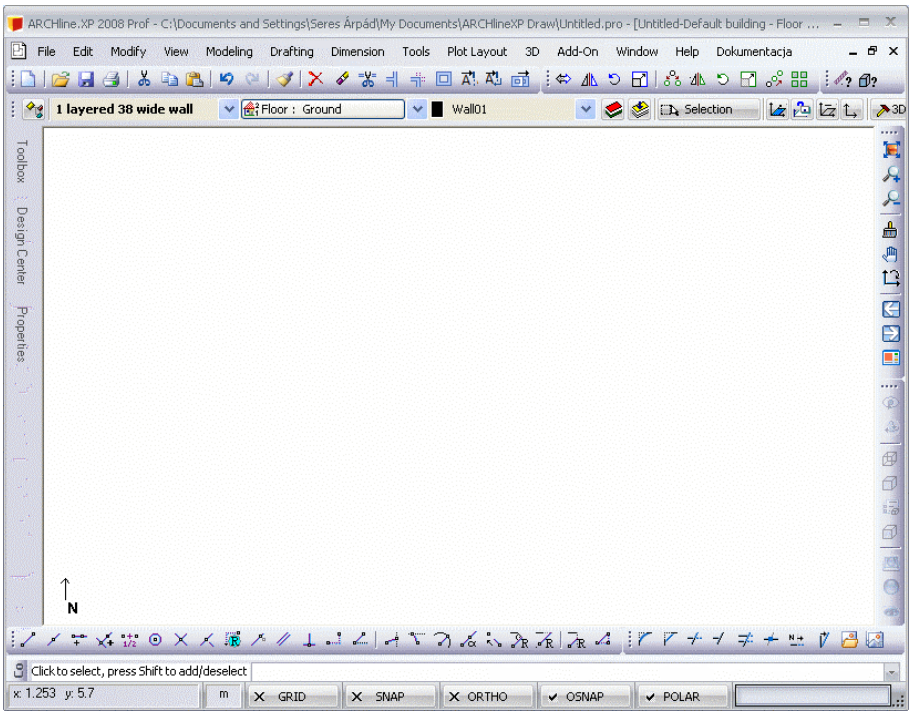
The most evident changes of the graphical interface of ARCHLine.XP® can be seen on the Toolbars.
The followings are grouped together:

- Toolbox
- Design Center
- The new Property manager.

So those take less room from the drawing area. Clicking on the tabs on the bottom you can switch from one to another.



As a new possibility, these 3 units can be represented only by their names, while their content is hidden but can have those shown up at any time.

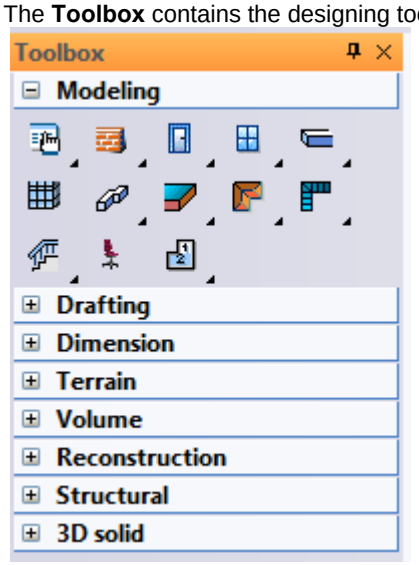


The new Properties manager can handle the properties of elements from a single integrated interface. Each modification appears on the drawing immediately. With the application of multiple selections and filtering the design work can be speed up substantially.

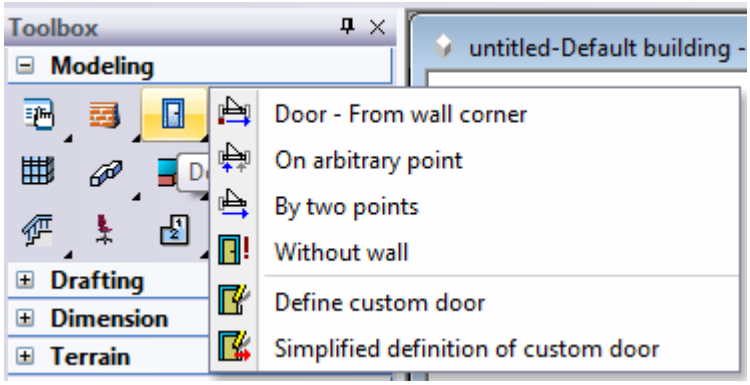
The graphical interface is customizable. You can assign your own keyboard shortcuts to commands, custom toolbar can be created with your own icons.

1.1. Toolbox

The **Toolbox** contains the designing tools, Modeling, Drafting, Dimension folders up to the 3D solid modeler commands.



In the toolbox you find the icons of all element types (line, wall, slab, …).
When the icon bottom right corner is filled with a small rectangle, it means you can activate the related submenu. The icons are available by short or long mouse click.



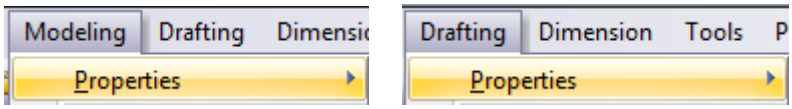
1.1.1. Short click, Long click

The Toolbox can be managed by short and long mouse clicks:

- Short Click with the mouse left button on an icon. The related command is executed.
- Long Click with the mouse left button on an icon. The related submenu of the selected tool element appears.
- Short Click with the mouse right button on an icon. The Properties dialog appears where you can define the initial properties of the selected element type. The elements that are going to be drawn later will have these properties.
- CTRL + Click with the mouse left button on an icon. The command selects all elements on the drawing from the given element class. Example: The elements that are selected can be modified together with the Properties.

- Click with the mouse left button on an icon in the submenu. The related command is executed.
- Click with the mouse right button on an icon in the submenu. The Edit keyboard shortcuts and toolbars dialog appears. Here you can easily assign a shortcut to the command.

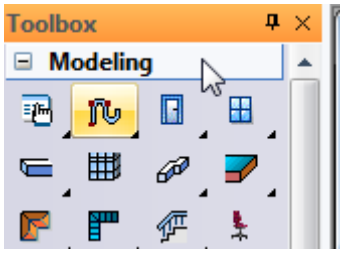
The Properties dialogs are available from the *Properties menu* as well.

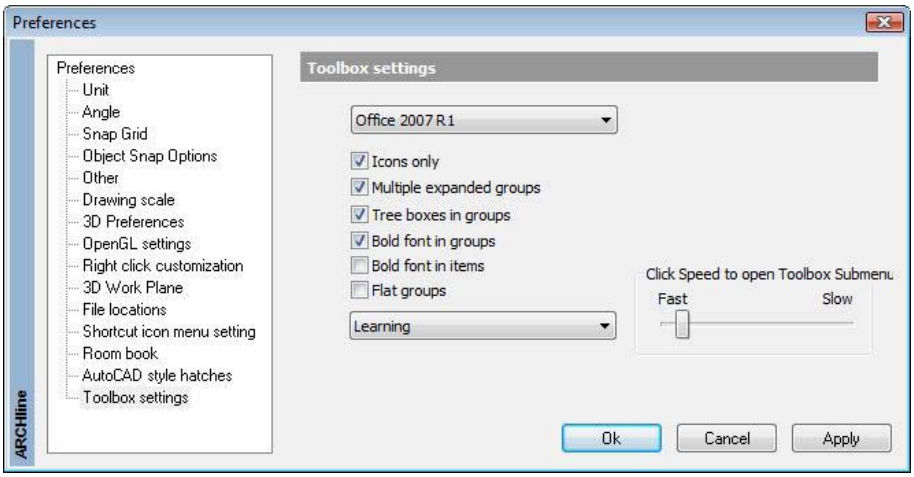


1.1.2. Toolbox setup

You find it on the **File menu – Preferences – General** command.

Short way to call the toolbox setup: Click with the mouse right button on one of the Toolbox group header (e.g. Modeling).





Long click speed

Here you can customize the long click delay time to display the related submenu. Move the slider to define the optimal delay time for your working style.

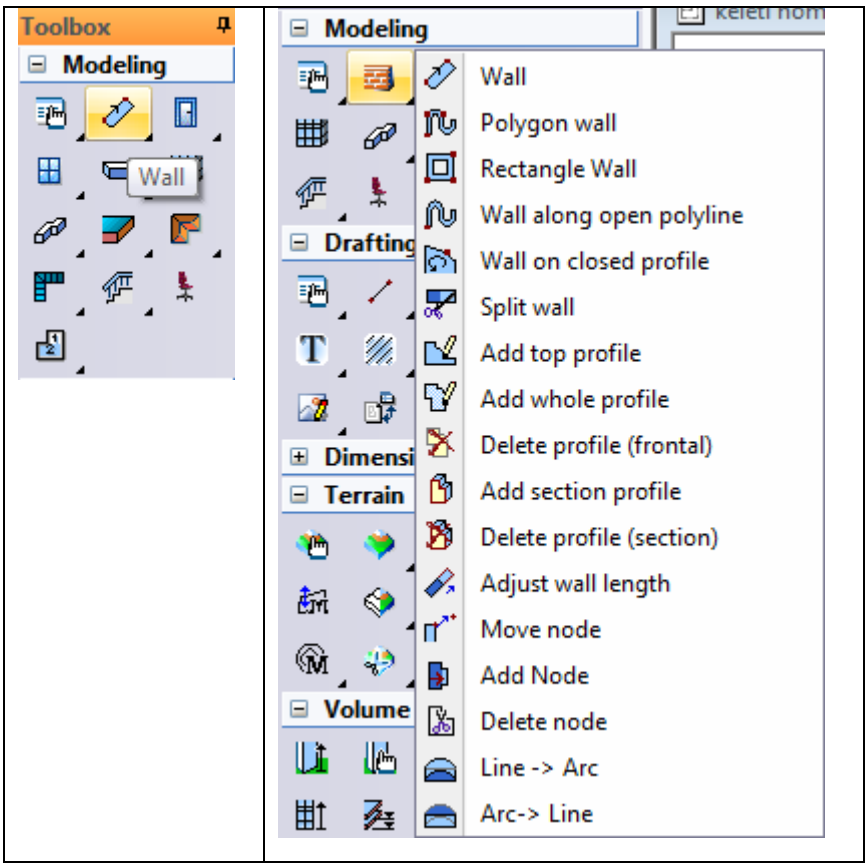
1.1.3. Toolbox working modes

- **Standard mode**
- **Learning mode**

Choose the required working mode: *Standard* or *Learning*.

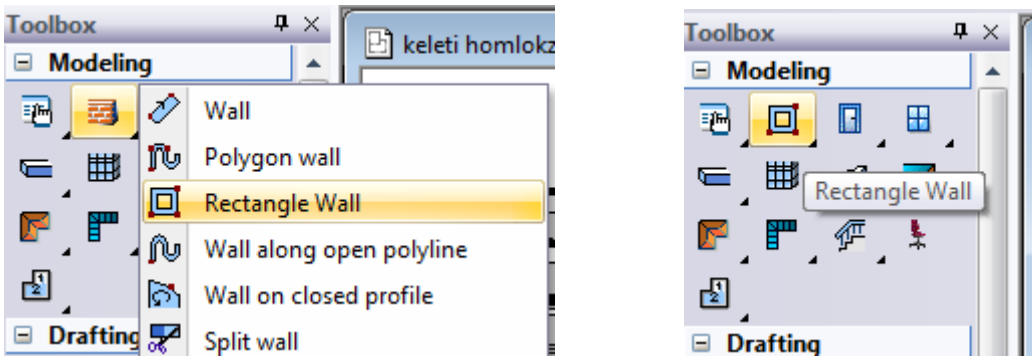
Standard

The Main icon is fixed. The short click on the main icon will execute the related command. The long click on the main icon displays the subdialog and you can choose a command firm this dialog with the next click.



Learning mode

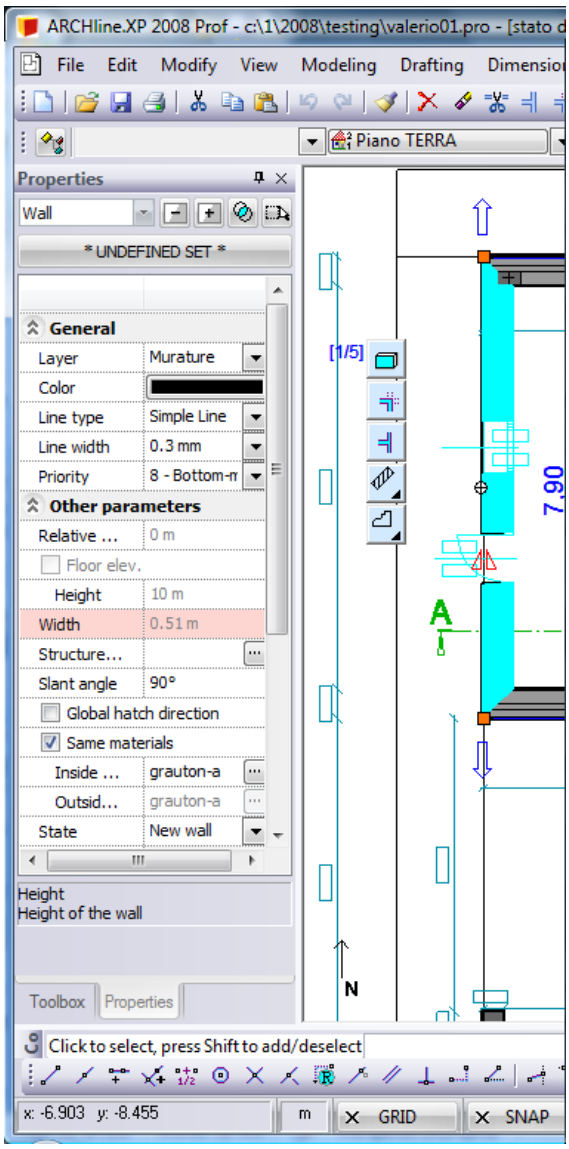
The Main icon is replaced by the submenu last selected command's icon, so it 'learns' the last used icon and put it in the Main icon position. The next short click on the main icon will execute the last selected command.



The learning mode is recommended to advanced users.

1.2. Property manager

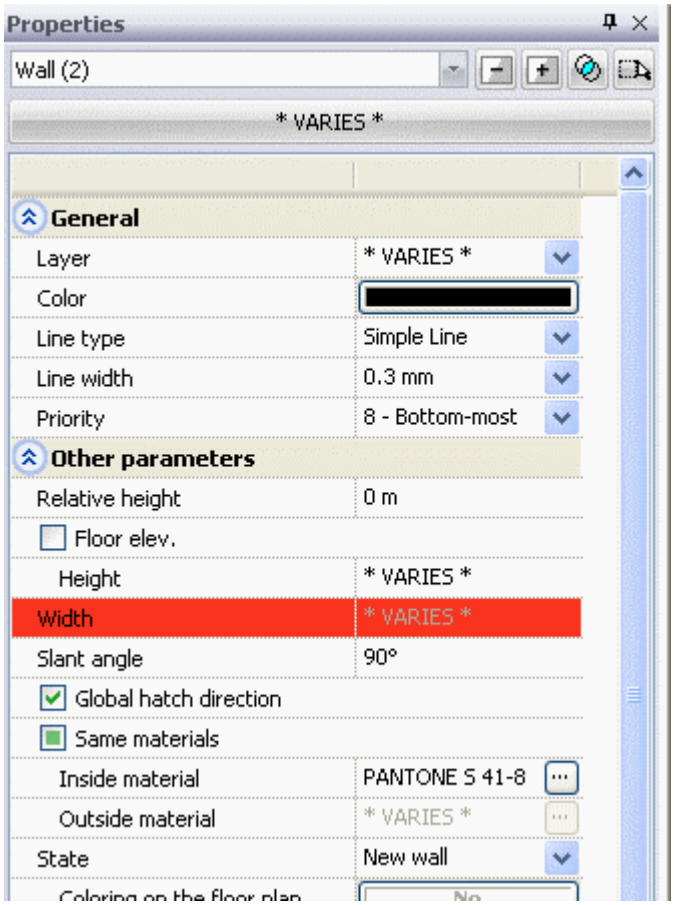
The Property Manager is a user interface tool to visualize the properties of the selected objects and display and modify its values.

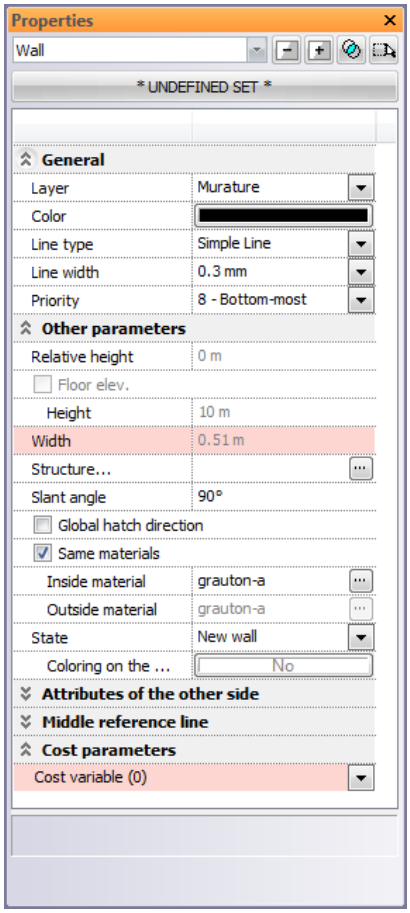


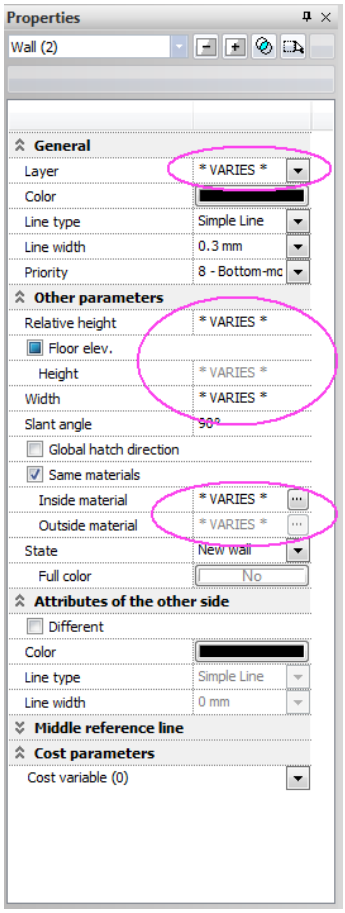
The program denotes with light red background color all the properties that cause the loosing of the assigned set name if you change any of those. This applies only to the elements that came from a set, of course. For example, in case of wall the WIDTH is such a property.

Multiple selections

In case of multiple selections the Property grid displays the common values of the selected objects.
The not common property fields are filled with the VARIES indicator.

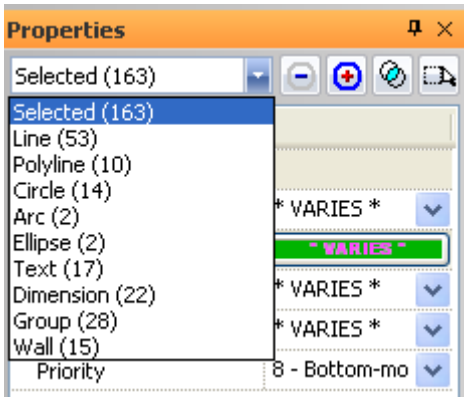

Properties
Wall (2)
* VARIES *
General
Layer
* VARIES *
Color
Line type
Simple Line
Line width
0.3 mm
Priority
8 - Bottom-most
Other parameters
Relative height
0 m
Floor elev.
Height
* VARIES *
Width
* VARIES *
Slant angle
90°
Global hatch direction
Same materials
Inside material
PANTONE S 41-8
Outside material
* VARIES *
State
New wall


Properties
Wall
* UNDEFINED SET *
General
Layer
Murature
Color
Line type
Simple Line
Line width
0.3 mm
Priority
8 - Bottom-most
Other parameters
Relative height
0 m
Floor elev.
Height
10 m
Width
0.51 m
Structure...
Slant angle
90°
Global hatch direction
Same materials
Inside material
grauton-a
Outside material
grauton-a
State
New wall
Coloring on the ...
No
Attributes of the other side
Middle reference line
Cost parameters
Cost variable (0)


Properties
Wall (2)
General
Layer
* VARIES *
Color
Line type
Simple Line
Line width
0.3 mm
Priority
8 - Bottom-mc
Other parameters
Relative height
* VARIES *
Floor elev.
Height
* VARIES *
Width
* VARIES *
Slant angle
90°
Global hatch direction
Same materials
Inside material
* VARIES *
Outside material
* VARIES *
State
New wall
Full color
No
Attributes of the other side
Different
Color
Line type
Simple Line
Line width
0 mm
Middle reference line
Cost parameters
Cost variable (0)

1.2.1. Sub-Selection with Property Manager

The Properties Manager offers new interface for selecting objects. You can access selections or sub-selections within this command to limit the objects that you want to modify. When you make a selection within the properties manager and that selection is made up of different types of objects, the selection dropdown will indicate the word "Selected (n)". This is an indicator that your selected objects are not all the same type (for example: you may have a selection made up of lines, walls, slabs and columns). By clicking the down button at the right of the dropdown list, you can access a subset of this total selection.



An example of where this can be very useful is changing the properties of an object type with a common property, e.g. select all the walls on a complex floor plan. Simply make a selection of the entire drawing drop down the list and choose Wall (n). Now you can change the properties common to all walls.

1.2.2. Intersection of two-or more selections

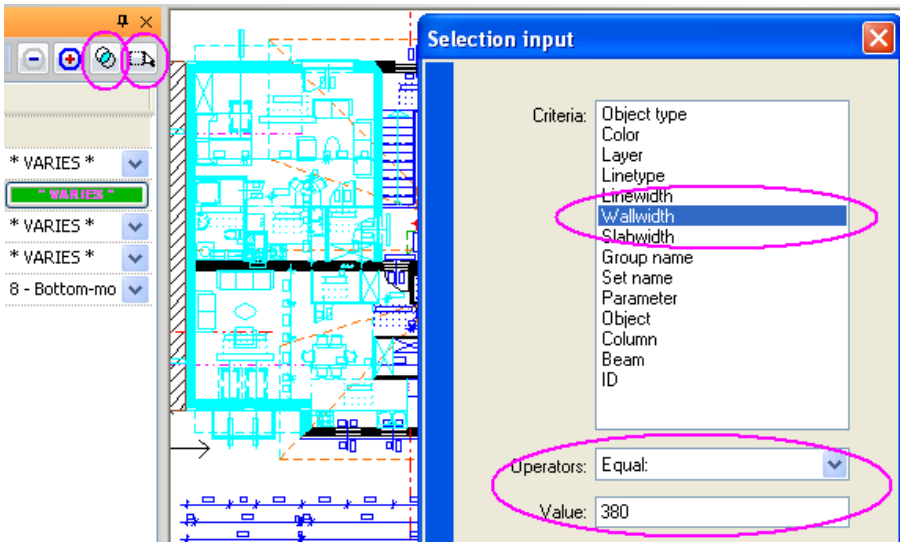
The Properties Manager enables of intersection of two or more selections. You can access common part of two selections with this command to limit the objects that you want to modify for example to select all walls with the same wall width.

Example:

Supposing that we have a floor plan that contains walls and some of them have the property of wall width with the value of 380 mm. We want to modify the height of these walls to 3000 mm.

- Zoom all objects on the screen and click on the upper left corner on an empty area and next on the bottom right corner on an empty area. In This way you have selected all visible objects on the floor plan.
- Now press the INTERSECTION icon and click on QUICK SELECT icon and choose the Wall width criteria. Type a value as 380 mm in the current measurement unit and press Ok. Press ENTER to close the current command.

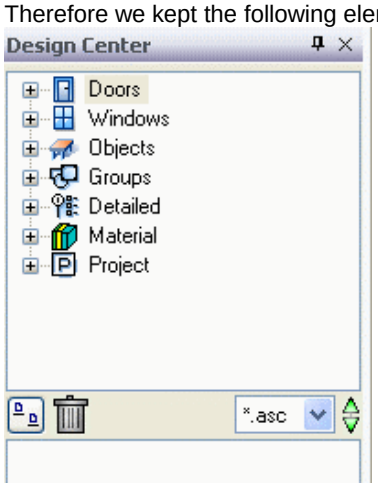
The program displays the common part of the two selections.
Now you can modify easily all the walls that have the property of the same wall width. E.g.: height = 3000 mm
Their width can be modified at once only if none of them is derived from a set. The **VARIES** indicator with the red background reminds you to this.



1.3. Design center

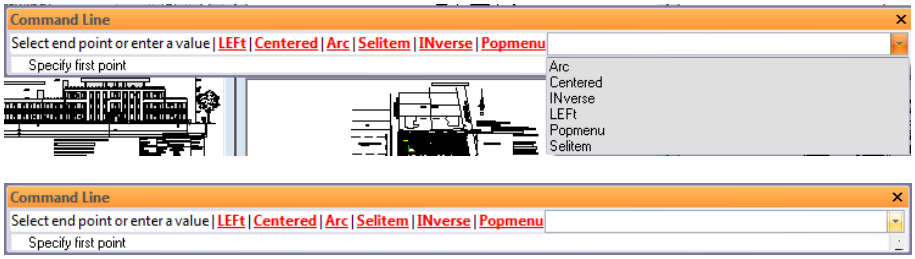
The structure of the design center has been simplified. Its basic function is to make easy the finding of elements found in the libraries and then placing them quickly on the drawing by drag and drop.

Therefore we kept the following element types:



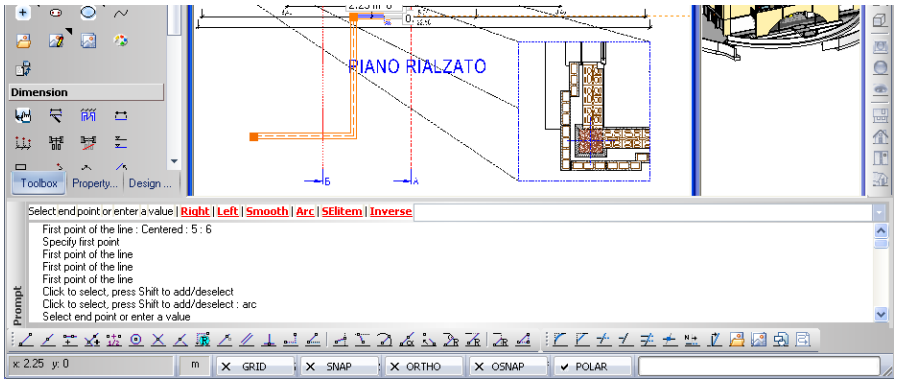
1.4. Command line

The *Command line* suggests the most appropriate step at all times and displays errors or other messages. In this line you can often see commands with capital letters as a possible next step of the current command. We call them sensitive keywords. To issue a command, simply click on it with the mouse. The sensitive keywords can be found in the input list as well or enough to type the first character sequence indicated with capital letter(s) to activate it.



Command history

The executed commands and prompts are saved in the command line history and listed below.



Input field

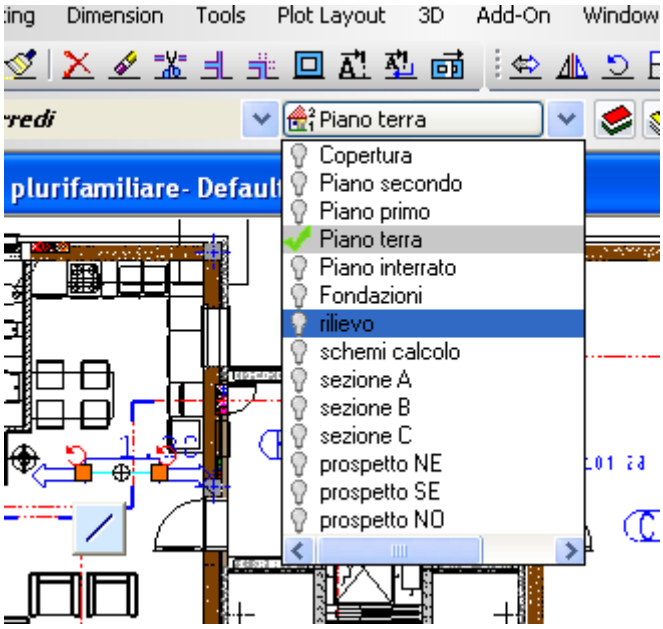
If you switch off in the *File menu – Preferences – General – Shortcut icon menu setting* dialog window the *Enable dynamic input* option, then you can use the Input field to take in the values.

The *Input field* is activated automatically when an action is made on the keyboard. Simply pressing a numerical or alphabetical key, the Input window is activated in which you can type values, texts, expressions or commands.

You can activate your input with the **OK** button.

1.5. Floor listbox

Direct and fast new control for selecting new active floor.

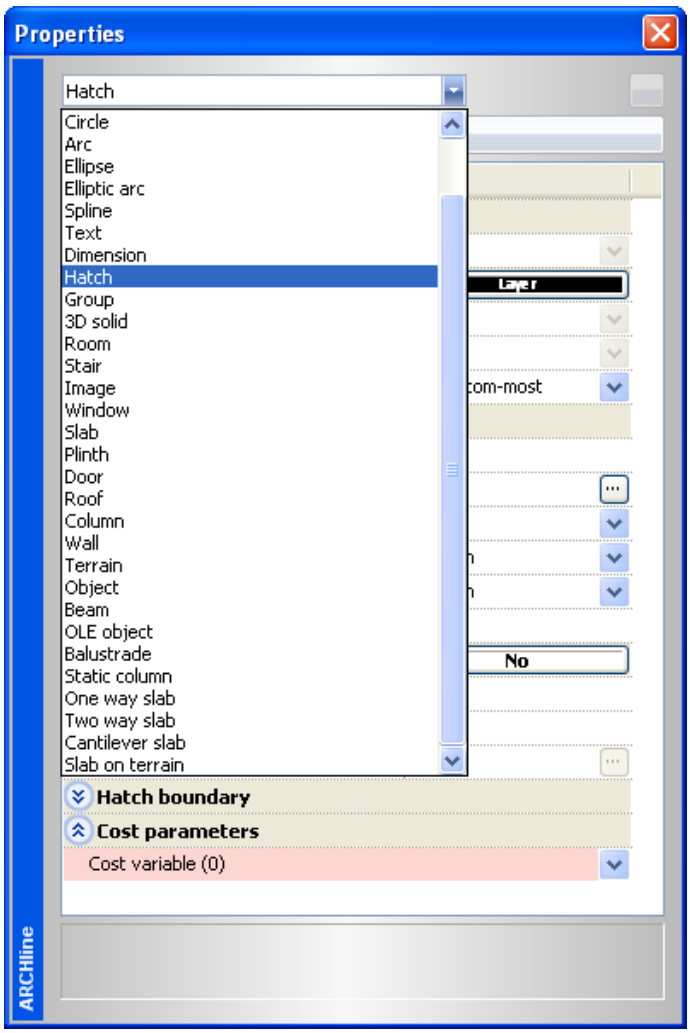


1.6. New general property manager

This is the new interface of the central definition dialog of general properties. The dialog can be activated by clicking the  icon.

The general property manager is aimed to specify the initial property values of the selected element type. Elements created later will take their properties from here.

! Do not mix the general property manager dialog up with the property dialog aimed to modify the actual properties of an element!


Properties
Hatch
Circle
Arc
Ellipse
Elliptic arc
Spline
Text
Dimension
Hatch
Group
3D solid
Room
Stair
Image
Window
Slab
Plinth
Door
Roof
Column
Wall
Terrain
Object
Beam
OLE object
Balustrade
Static column
One way slab
Two way slab
Cantilever slab
Slab on terrain
Layer
com-most
No
Hatch boundary
Cost parameters
Cost variable (0)
ARCHline

2. Object Linking and Embedding - OLE

Overview

OLE (Object Linking and Embedding) is a Microsoft specific technology for inserting an object into a document. The object can be later opened and edited with its parent application, in the destination document you can only change the outfit of the displaying (size, position etc.).

You can create compound documents in ARCHLine.XP® by linking or embedding objects from other applications. For example, you can insert a table from a spreadsheet application, a set of notes from a word processing application, and a graphic image from a paint program. By inserting the desired objects into your ARCHLine.XP® drawing, you create a compound document.
ARCHLine.XP® provides the general tools for editing an OLE object but do not affect OLE objects itself. You can select OLE object and erase it with the ERASE command, or can you resize or rotate it using the SCALE or ROTATION command.

ARCHLine.XP® provides several options for linking and embedding objects in drawings.
There are two possible ways to insert an OLE object:

- Embedding
  Embedding of an object means that a copy of the source document will be placed in the destination. No changes of the source document will be applied on the inserted object. It's very similar to 'copy and paste' the only difference is that the object can be edited with its creator application.

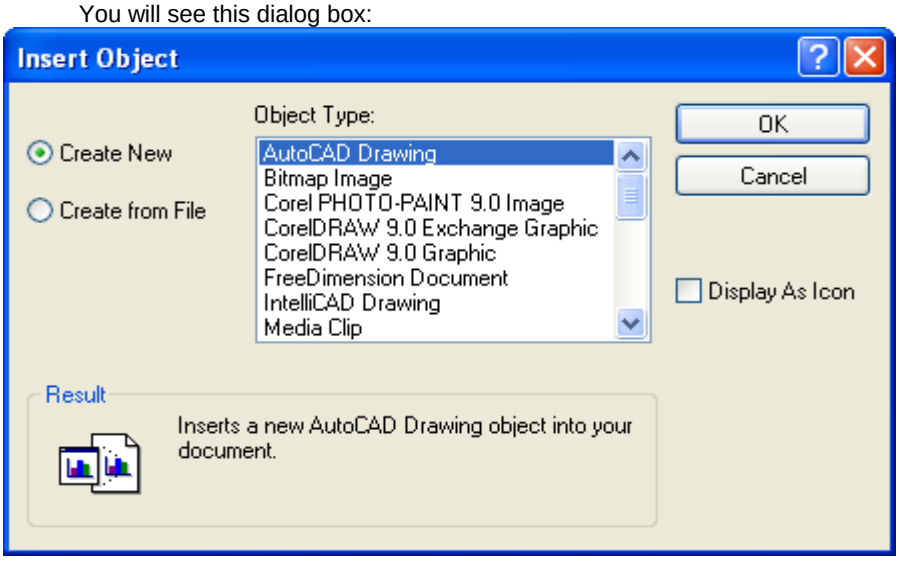
- Linking
  When inserting an object by using the method 'Linking' only a reference will be placed in the destination document. This means when the source document is modified, the changes appear in the destination document, too.

  You can use OLE with any two application, where both support it.

2.1. Inserting an OLE Object

To insert an OLE object into a drawing you have to do the following steps:

- Select *Tools* menu
- Select *Insert OLE*
  You will see this dialog box:



The listed object types can be different depending on the file types registered in your operation system.

Creating the object newly

This option lets you create the object 'on the fly'. It means no source document will be stored on your hard disk. Of course this method only supports Embedding.

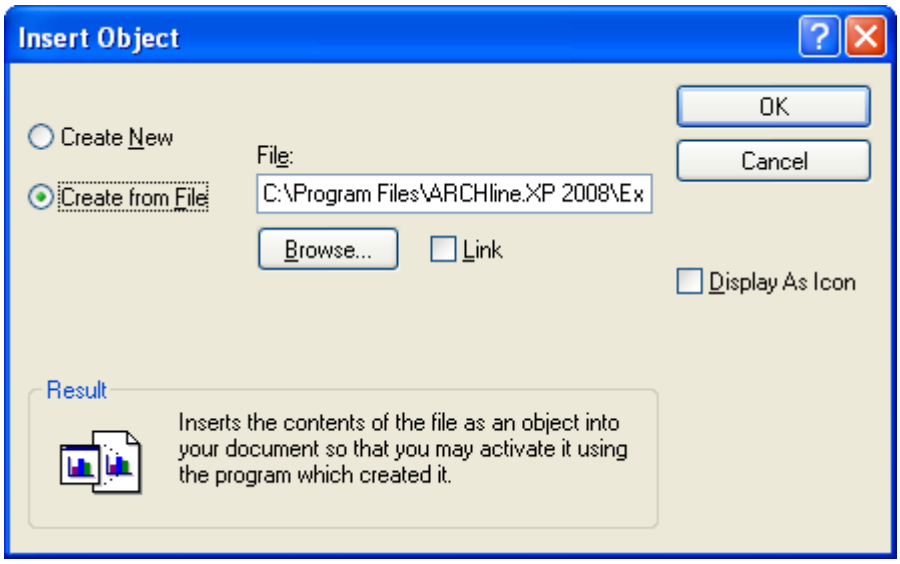
- Select Create new
- Choose the desired object type and push OK
- The associated application will start and you can create the object to be inserted.

- When finished select File menu in the source application and then Update.
- Return to the window of ARCHLine.XP
- Place the object into the drawing as explained in the chapter ***Placing the object***

Inserting an existing object

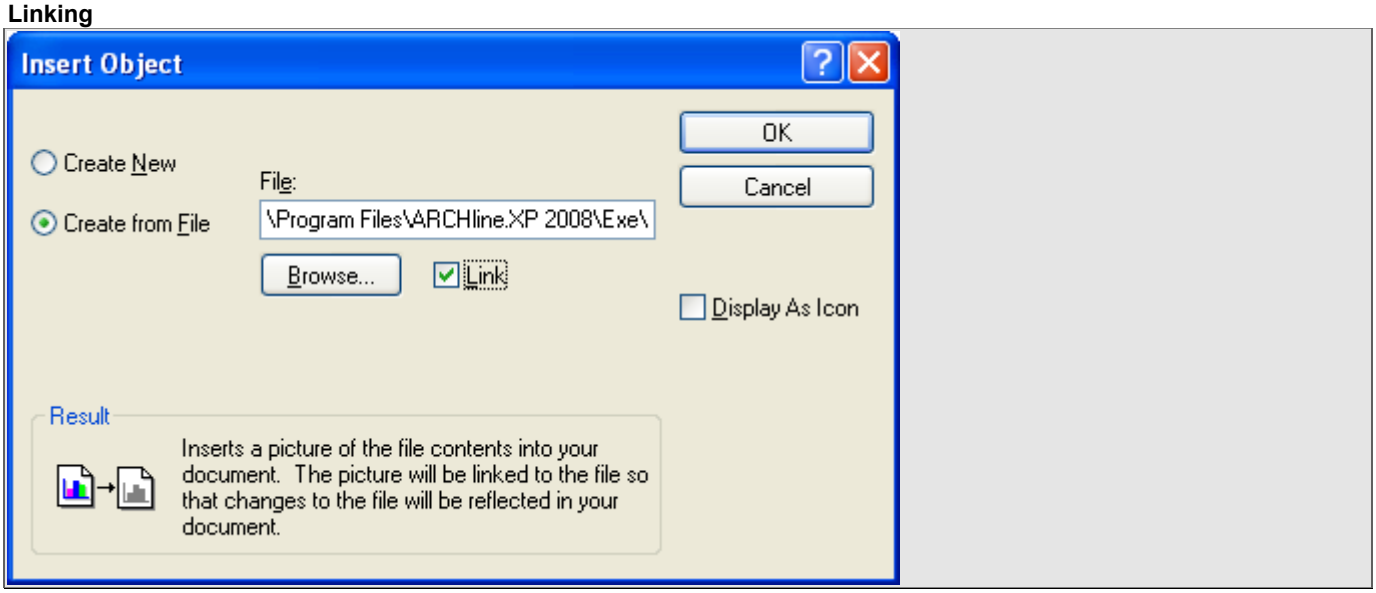
You can insert an object created previously. In this case it's possible to use both methods of inserting.

Embedding



- Select Create from File
- Select the file by entering its path or with the *Browse* button
- Leave the checkbox *Link* empty
- After pushing *OK* place the object as explained in the chapter ***Placing the object***

Linking



- Select Create from File
- Select the file by entering its path or with the *Browse* button
- Check the checkbox *Link*
- After pushing *OK* place the object as explained in the chapter **1.3 Placing the object**

OLE objects can contain much more information than which can be displayed in a drawing. If you leave the checkbox *Display as Icon* empty a file type depending part of the document will be displayed. If you check it, only an icon will be placed on the drawing.

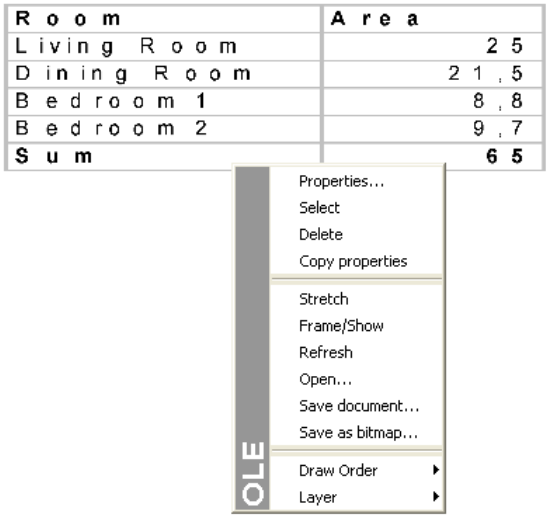
Placing the object

After selecting the insertion method and picking the object you have to place it on the drawing.

News

- The first way is clicking at two locations. The object will be placed in the rectangle of which opposite corners are the two selected points. The size of the object will be the maximum considering that the width-height rate won't be changed. The object won't be rotated.
- If you want to rotate the object before placing it, you can use either the option *XANGLE* or *GRAPHIC.* These can be selected by clicking on them in the Command Prompt. The first is used for entering the rotation angle with a number, the second is used for entering it on the drawing manually. After defining the angle you have to draw the rectangle in which the object will placed with the same conditions as in the first case.

2.2. Modifying the object



Although the OLE objects can be edited with their parent application a few modifications can be applied with ARCHLine.XP after they are placed. These can be reached by right clicking on the object:
The special items and their meaning are the following:

Frame/Show

This switch is used for changing if the object is displayed (with the restriction mentioned at the end of the chapter **1.2 Inserting an OLE object**) or only the frame of it.

Refresh

This menu item is used for refreshing the object. It means that it is updated with the changes made on the source document.

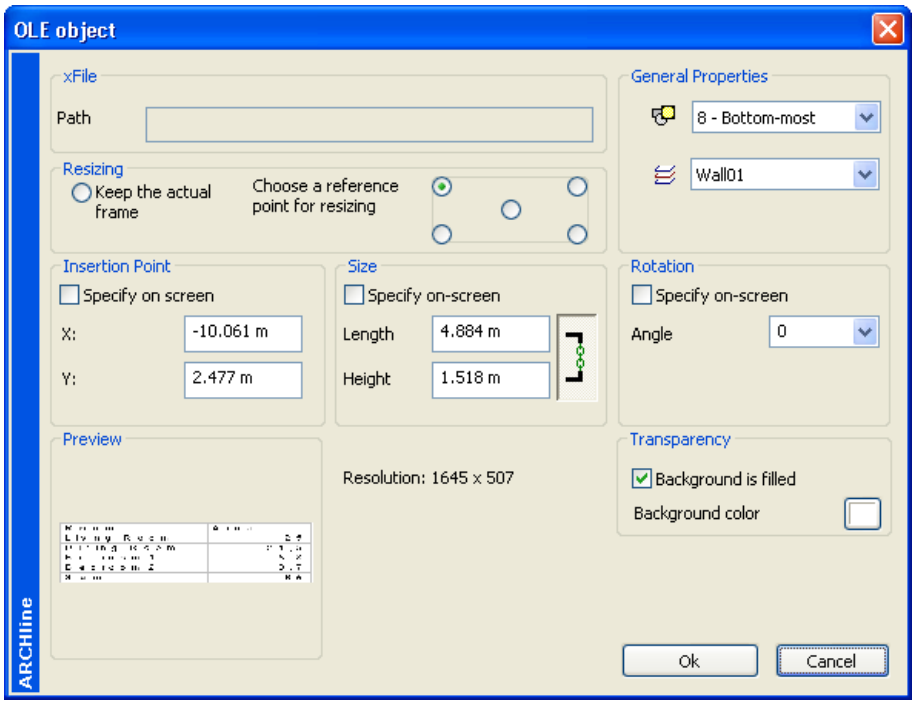
Open

It opens the object in its parent application for editing.

Save Document

This item saves the object in a file. This can be useful if you created the object with the *Create New* option and later you have to use it in another document.

Properties



This can be used for modifying some appearance setting of the object. This can be done via the following dialog window: The meaning of the blocks are the following:

Resizing

You can choose the reference point of resizing when the object is opened for editing and its size is changed. This point keeps its location. Keep the actual frame means that the object will be resized while inserting.

Insertion Point

You can define the location of the left bottom corner of the frame. You can do it by entering the coordinates (leave the checkbox empty) or by clicking somewhere on the drawing (check the box).

Size

It's used for resizing the object. It can be done with the length of the sides or by clicking on the screen (use the checkbox *Specify on-screen)*. The small figure shows if the scale is fixed (green) or variable (red). It can be changed by clicking on it. The reference point will be the left bottom corner.

Rotation

This is used for rotating the object. The reference point will be the left bottom corner and the opportunities are the same as in the previous two blocks.

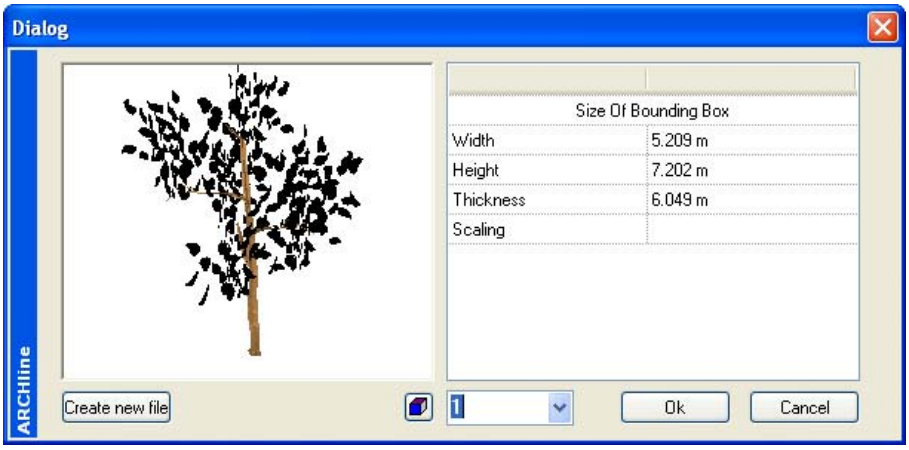
Transparency

The default transparency of OLE objects is opaque. In this block you can change the background color (the area of the frame rectangle where the source document has no data) or make the object transparent by emptying the checkbox *Background is filled*.

3. File management

3.1. New general import dialog

New general import dialog for 3DS, SKP, OBJ, formats.



3.2. File compatibility : SketchUp files

Importing SketchUp Files

ARCHLine.XP® can open and import SketchUp file directly.
ARCHLine.XP® comes with the reader for SketchUp (.skp) file format.
You will find it in the FILE, Import…, SketchUp menu point.
By default, SketchUp models are imported as polyfaces.
You can change the size of the SketchUp files are imported by using the New general import dialog Scale option before you place the SketchUp object into the 3D window. See 1.2.

Export to ArtLantis (.atl)

ARCHLine.XP® model can be exported to the ArtLantis (.atl).

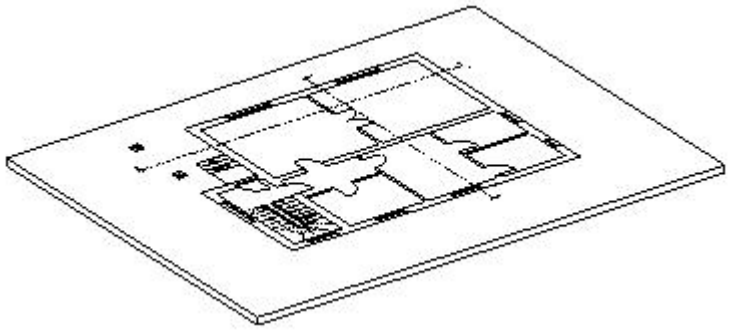
3.3. Import 2D DWG -> 3D

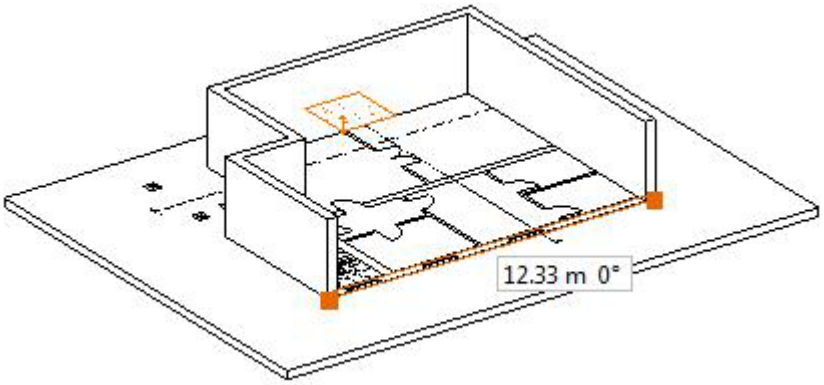
It is possible to place an imported 2D drawing (DWG, DXF or ASC) onto a selected plane in a 3D window.
In the 3D drawing window, based on this drawing, the model can be created by the recognized special points.

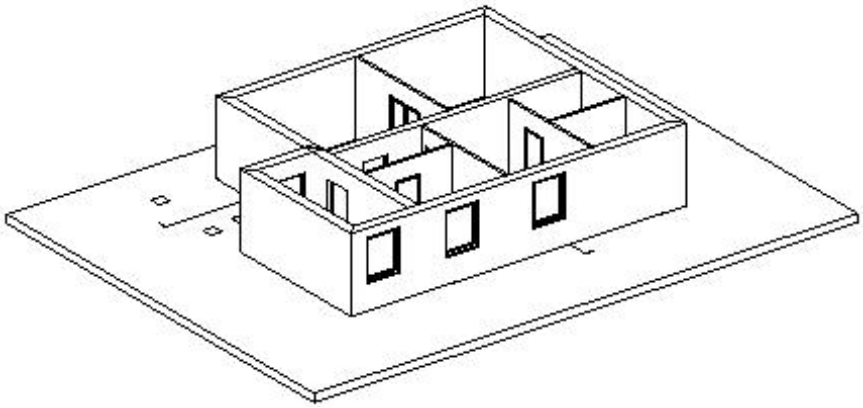
- Activate the 3D drawing window where a solid, for example a slab, exists already.
- Use the *File menu – Import – Import* command.
- Select the desired 2D drawing.
- Select the *Place in 3D plane* option.
- Select the plane where you want to place the drawing.
- Enter Accepts the selected plane.
- Place the drawing onto the plane.

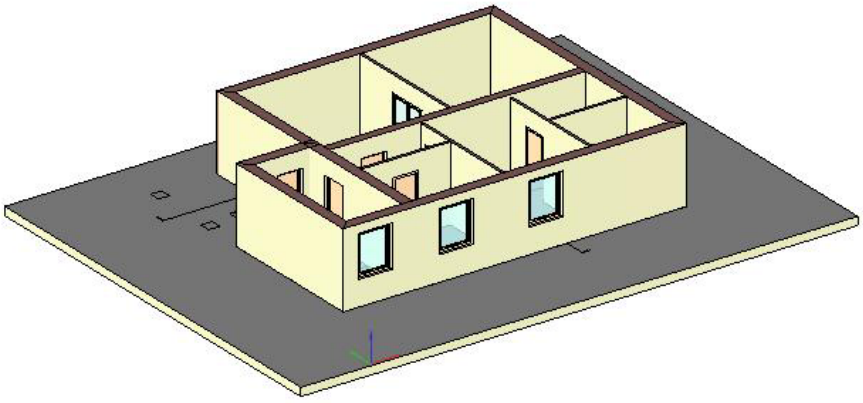
Using the special points of the drawing, from the architectural elements you can create the model in 3D. That time the floor-plan will be created as well, of course.
Switching the 3D drawing window into 3D image window, the model can be easily rotated.

! The 2D drawing remains on the 3D plane until the regeneration of the solid where the drawing is placed. With the reopening of the project you will also lose the drawing.
The 3D image window can be used only for representation in that case, the special points of the imported 2D drawing cannot be used here.




12.33 m 0°





4. Section

Overview - Dynamic sectional drawing

Section view is one of the most important features of computer aided architectural designing.
The section view is derived from the model of the building and appears as a new drawing in accordance with the model.
The program generates the section view in a new 3D window, perpendicular to the cutting plane.
You can create as many section views of a building as you like. The section view dynamically follows the changes made in the model.

In the section view you can select each element and you have access to the architectural objects. You can change objects in the section view as well as on the floor plan.
Section view can be combined with vectorial shadowing and with vectorial hatching but it requires longer generation time.
Vectorial shadows can be calculated from the sun or from an arbitrary angle.

The representation of the section line is defined by a standard that is acknowledged in the field of technical drawing. The section line is a dotted-dashed line with letters (the section's letter symbol) and with arrows at the ends, which show the direction of the section view.

Moving, rotating or mirroring of the section line with the use of section line markers on the floor plan refreshes the section view automatically.
The section line is visible on the view where it was created.
There section view enables the visualization of objects crossing the section plane with or without material hatches and with thin or thick contour lines.

In the ARCHLine.XP® out of the dynamic sectional drawings the following opportunities are available to create different kind of sections:

Static section

If you did not work out the model in detail, the section provides a good basis for further editing.
With the help of the program's clipboard, you can copy any 3D *views* or *sectional views* to the floor plan window. The copied drawing loses its connection with the 3D model, therefore it can be freely edited, the view or section can be "dressed up". For instance, you can specify the order of layers, which you have to indicate on the plan, but it was not represented on the model. With this option the program provides considerable freedom to the designer.

Stepped section in a 3D section window

Section line can be created in a 3D façade view (vectorial drawing) window, too, even in a stepped form. In that case the newly created section window will include a stepped section.

Cutting a 3D model

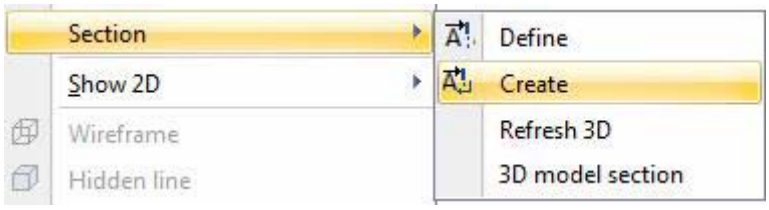
You have the possibility to cut a model with a stepped section line and display the result on a rendered image. This command really cut the 3D model.

Dynamic cutting plane

Applying the dynamic cutting plane in an OpenGL image window, you can represent the dynamic section in real time. This representation is very useful, not just for aiding the architectural design work, but for a spectacular representation of the building to the customers, too.

4.1. Dynamic section

You can generate the section of the model with the commands in the *View menu – Section* submenu.



Follow the steps below to create a dynamic section:

- First you have to set the properties of the section line, including the lower and upper height limits of the section.
- Then you have to define the path of the section line and set the view direction.
- The program then generates the sectional view of the model in accordance with the section line in a new section window.

In the section window the program refreshes the sectional view when changes are made to the model. This can be automatic or optional.
Any changes made to the model in the section window, e.g. deletion of a wall, will appear on the floor plan.
The section window follows the section line: Moving, rotating or mirroring the section line on the plan view by any markers, the section view will be updated immediately
The quality of the sectional view depends on how detailed the model is, i.e. if there are multi-layered walls, slabs, whether you specified how layers are joined.

The following rules are applied when you create a section:

- When creating a 3D sectional view, the name of the window will be generated automatically (Section1, Section 2 etc.). In the *File menu – Project properties* dialog you can rename the name of the section window (the original name of the file that represents the section window will not change).
- One 3D section window belongs to each section line. This way the connection of one section line to more 3D section window, which makes the section unidentifiable after some time, can be avoided.
- If a 3D section window that belongs to a section line is in invisible state (you can check it in the *File menu – Project properties* dialog) then the create section command will pop up a warning message and no new 3D section window will be created.
- If a visible 3D section window belongs to an existing section line then the section window will be refreshed by the *Create* command.
- The identification of sections that have been already created in older projects (created by versions prior to ARCHLine.XP® 2007 Release2) is not working.

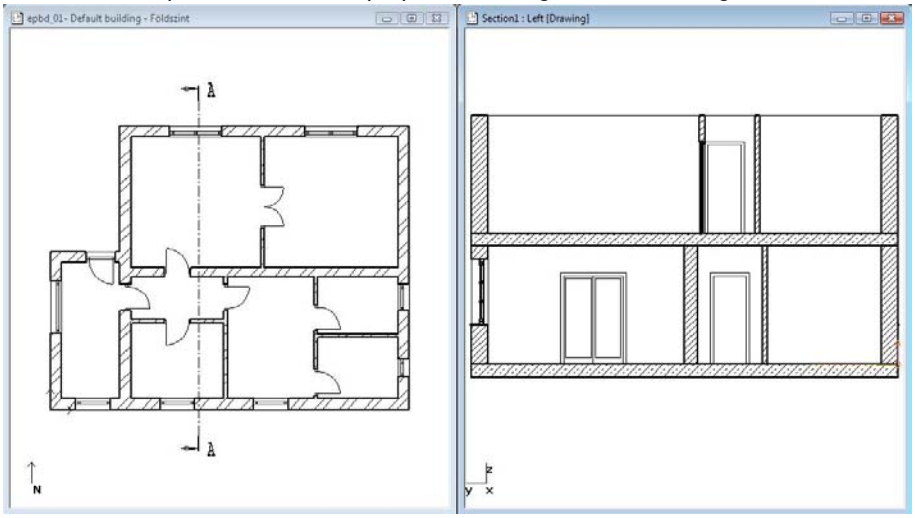
4.1.1. Defining a section

Activate the floor plan. To create a section, follow the steps below:

- Click View menu – Section – Define or Edit toolbar - Define section icon.
- The Section properties dialog appears. Specify the properties of the section.
- Give the start end the end point of the section line on the floor plan.
- Click on the side of section line where the sectional model is viewed from. The program places the arrows on that side of the section line.
- In the appearing message window confirm the creation of the section view.

A dynamic section view is created then in a new section window.

See chapter *4.1.2. Section properties settings, 4.1.3. Defining the section line, 4.1.4. Creating sections* for the details.

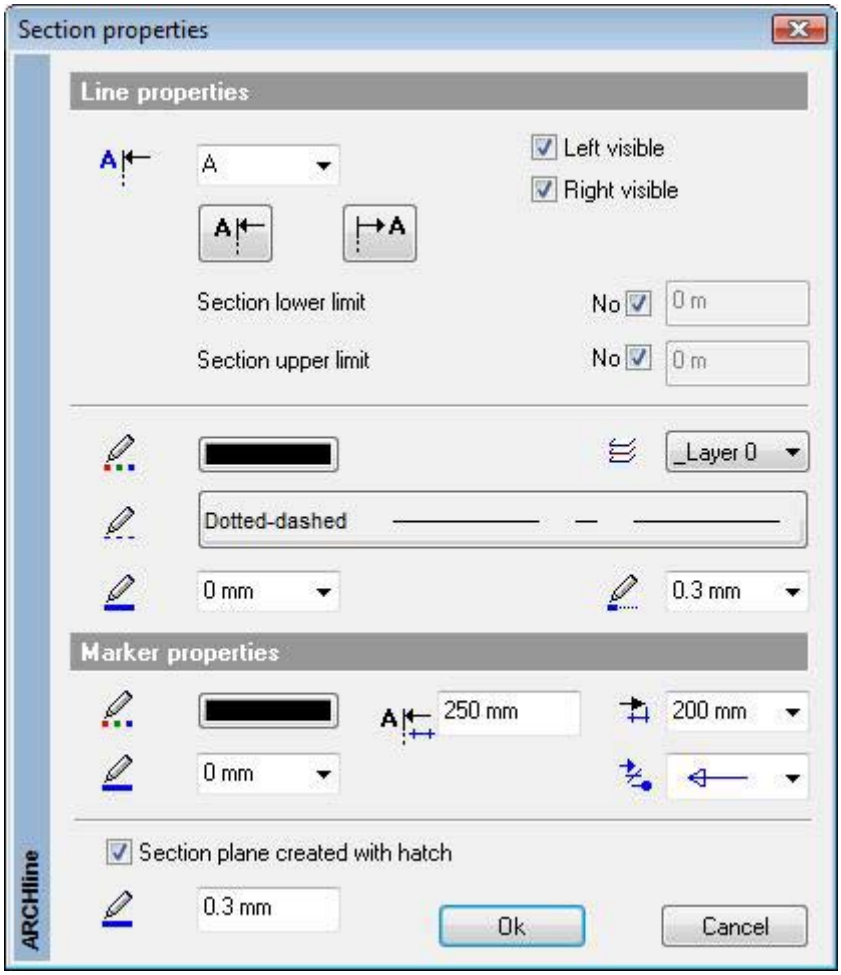


Besides the appropriate setting of view properties in the 3D window (right view, front view etc.), the section view is also capable of creating façade view. In that case place the section line outside of the building and set the proper view direction.

4.1.2. Section properties settings

The indication of the section line is defined by a standard that is acknowledged in the field of technical drawing. The section line is a dotted-dashed line, with letters (the section's letter symbol), and with arrows at the ends, which show the direction of the sectional view.

You can define the section properties in the dialog:



Line properties

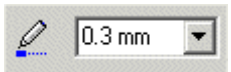
Set line properties:

- **the section's letter symbol:**

- **position of letter symbol:**

- **visibility of letter symbol:**

- **the lower/upper limit of section**: you can disable this option, or you can set a value
- **color of section line**
- **type of section line**
- **width of section line**
- **width of marker line:**



Marker properties

Set marker properties:

- **color**
- **line width**
- **length of marker line**
- **size of marker**
- **type of marker**

Hatching section plane

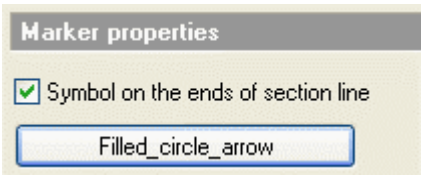
When you generate a sectional view, the program does not apply hatch automatically to the cutting planes, because in the case of big models it would take too long. If you want to apply hatching to the cross-sectional cutting plane, activate **Hatch section plane option.**
You can also set the line width of the contour line applied to cross-sectional cutting planes.

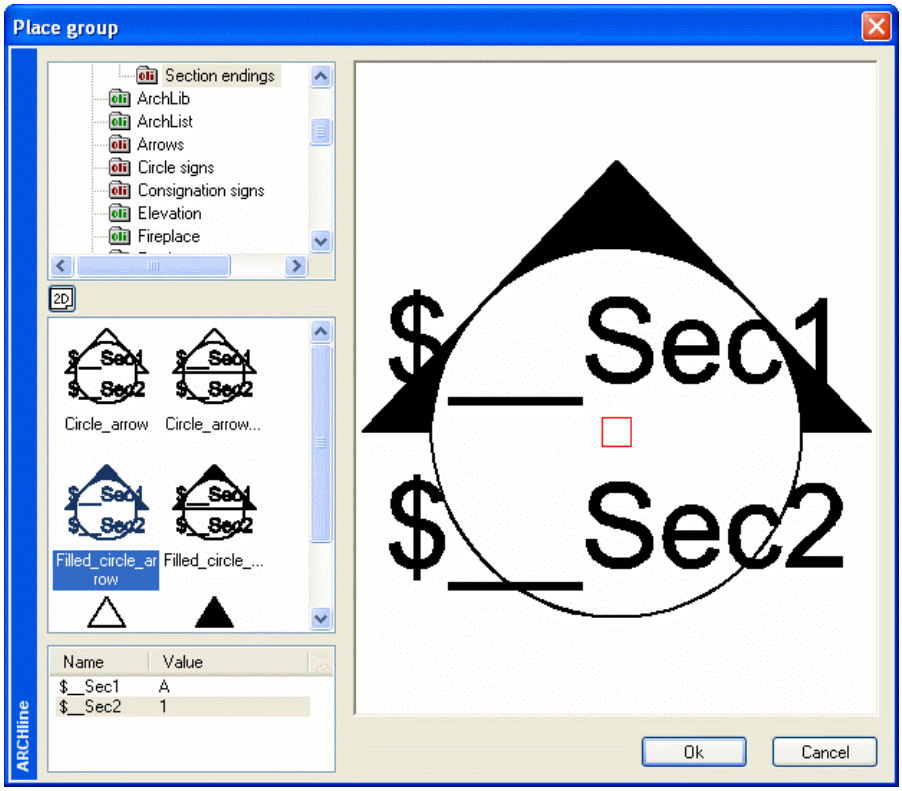
The ***Hatch section plane*** option and the hatch line thickness can be reached in the *File – Preferences – General – 3D preferences* dialog box.

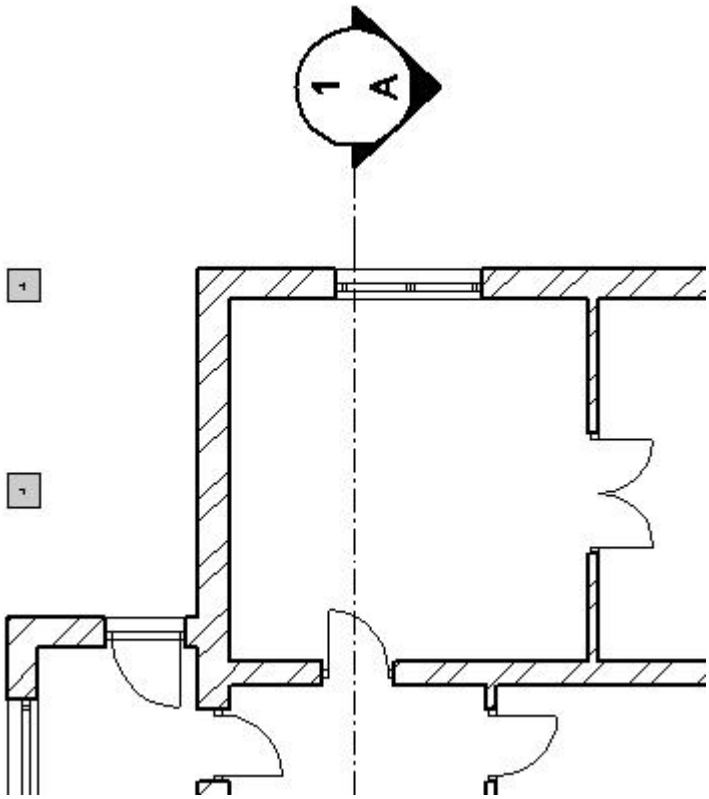
Section symbols

On the ends of section line you can apply different symbols instead of arrows.

- In the Section properties dialog select the *Symbol on the ends of section line* option.
- Click the belonging button and select the appropriate symbol from the Section endings library.
- Enter the value of the variables. For example A 1







OK Close the dialog box.

4.1.3. Defining the section line

After closing the *Section properties* dialog:
The path of the section line which will be used for creating the section of the model can be defined as line or chain of lines and arcs.

Line

- Specify the two end points of the section line.

Chain of line and arcs

- Choose the **PLINE** keyword in the prompt line.
- Define sectioning line with a chain of lines and arcs. You can break the sectioning line.
- **Enter** close the section line.

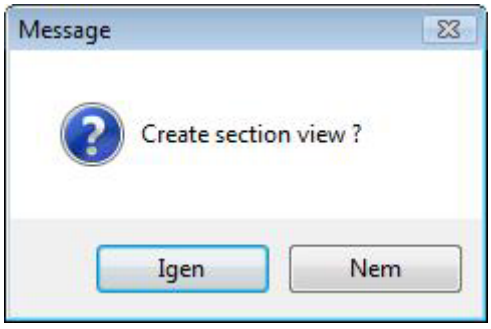
- To define the direction of the sectional view, click on the side of the sectioning line from which you observe the model. The program places the markers on this side of the sectioning line.

  The program places the marker at the selected place.

  After the definition of the section line, the program offers the creation of it. See 4.1.4.chapter Creating sections.

4.1.4. Creating sections

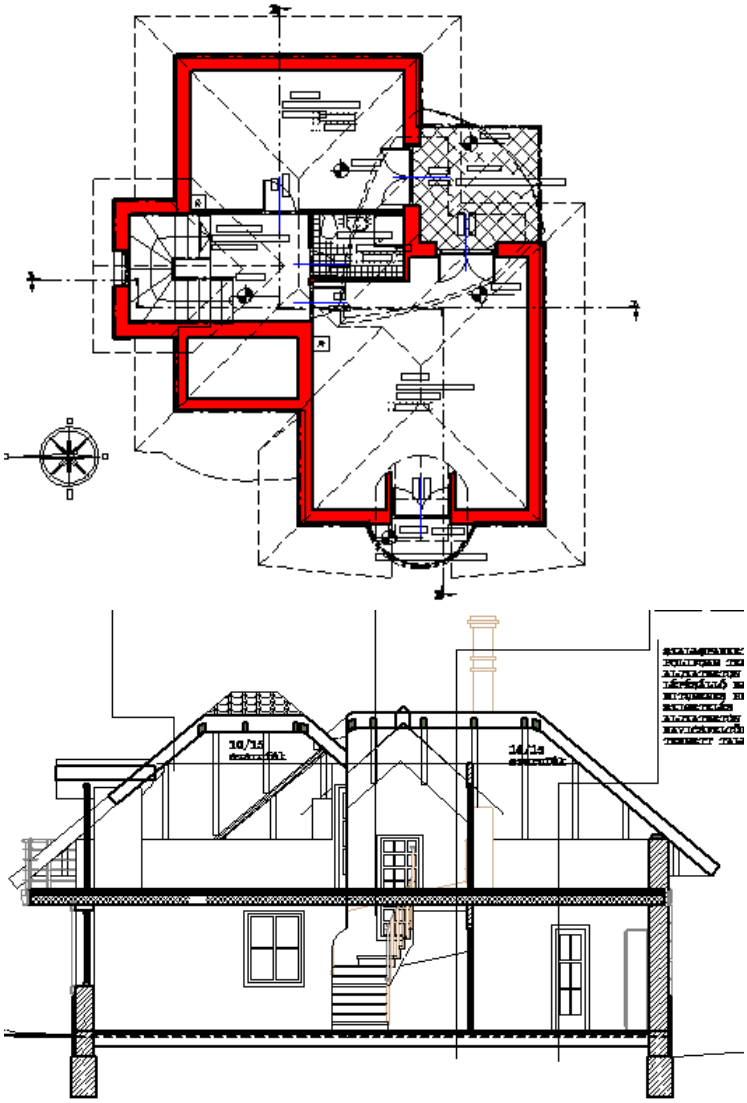
After the definition of the section line, the program offers the creation of it.



❖ Clicking on **Yes** will create the section.

❖ Clicking on **No** will leave the possibility to create the section later by the *View menu – Section – Create* command. The program creates the sectional view of the model according to the selected section line

The section appears in a new window (section window), which you can save as part of the project. The program rotates the model according to the direction of the sectioning view.



The program applies hatch to the cross-sectional cutting planes depending on the status of the *Hatch section plane* option in the *Section properties* dialog box.

You can also activate the Creating sections command with the **Edit toolbar – Create section** icon, or the **Section shortcut menu – Create** command.

4.1.5. Refreshing the section view

Refresh 3D

This command is a switch to turn on/off the refreshing of the section.
If you **disable** the refreshing of section in 3D, it becomes faster to display the 3D model. This is the default setting. To apply this setting, you can use *View toolbar – Hidden lines* or the *Section – Create* command to update the model.

If you add new elements to the plan, and the View menu - *Refresh 3D* option and the *Section – Refresh 3D* option are enabled, the program automatically creates a sectional view of these objects, too. When the *Refresh 3D* option is switched off, the newly generated element will appear without hatch.

If a 3D section view window belongs to a section line already, the *Section – Create* command will refresh that section view.

4.1.6. Modifying section line

Existing section line properties can be modified.

Modify properties

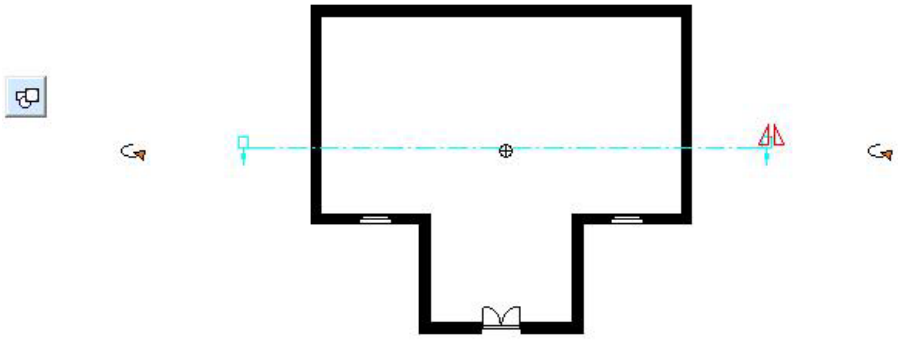
- Double-click on the section line.
  The *Section properties* dialog appears.
- Make the desired modifications.
- Refresh the section view.

Changing the position

The section window follows the section line: Moving, rotating or mirroring the section line on the plan view by any markers, the section view will be updated immediately

- Click the section line on the floor plan:

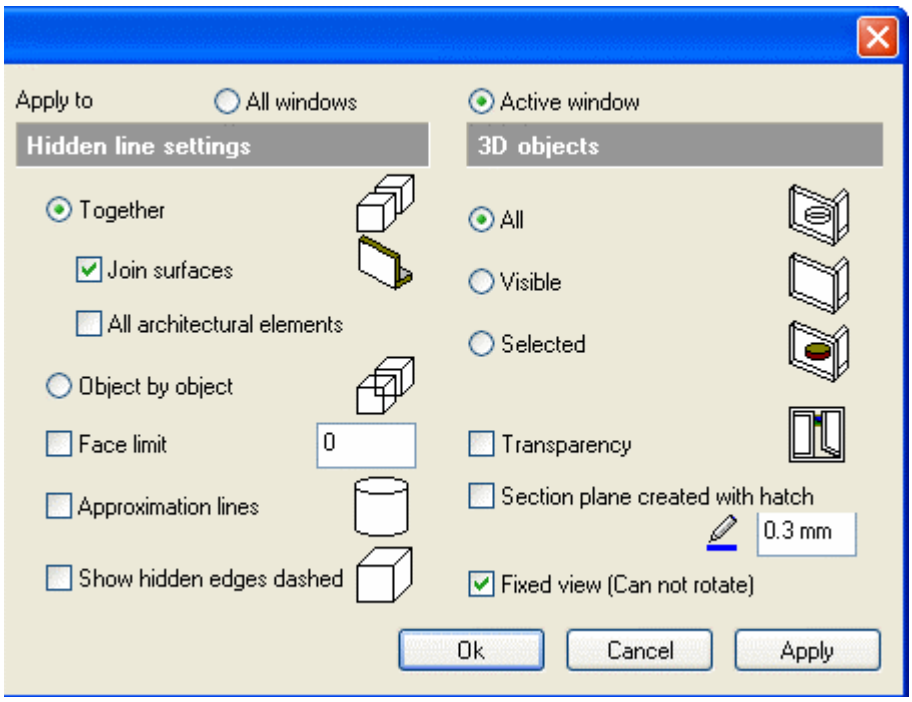
  Grips appear on the section line. With the help of these grips the section line can be moved, rotated or mirrored. Mirroring means the changing of the viewing direction.



4.1.7. Fixed view of a section window

The view in a 3D section window can be fixed, so you can avoid the rotation of the sectional view.

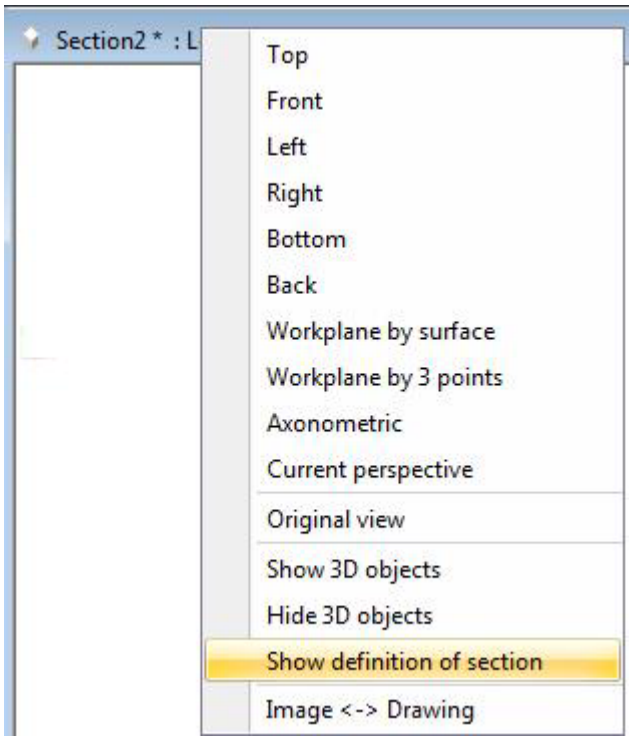
- Activate the 3D section window.
- Click the Active window button in the *File menu – Preferences – General – 3D Preferences* dialog.
- Switch on the *Fixed view (Can not rotate)* option.



4.1.8. Show definition of section

For the 3D section window you can search back the belonging section line on the floor-plan.

- Click with your mouse right button on the header of the *3D section window*.
- Select the *Show definition of section* command.



4.2. Static section- Copy section view content into a 2D window

During the design work the 3D model, the 3D dynamic section and different views are generated. Even if the model is prepared in details, the 3D sections and views are not capable of using them as approval drawings (because of missing texts, dimensioning etc.).

For this reason there is an opportunity to "unlink" the section view from the 3D model and finishing the section drawing on approval drawing level.

News

We recommend the followings:

As soon as you finished your work with the model, copy each section views into separate 2D floor plan window (for example 2D Sections) on different floors. For example Section A-A floor, Section B-B floor etc. You can easily activate the requested section view by switching between floors.

It is not recommended to create as many 2D floor plan windows as the number of section views!

We recommend you to work out (”dress up”) the section views in these 2D windows.

Copying the content of section view into a 2D window

- Create a new window with the *Window menu – New window 2D* command: for example 2D Sections.
- Make the appropriate 3D section view active.
- Use the *Edit menu – Copy to clipboard (Ctrl+C)* command.
- Select all elements in the window. Enter – close the selection.
- Specify a reference point on the drawing.
- Make the newly created floor plan window (2D Sections) active.
- Use the *Edit menu – Paste from clipboard (Ctrl+V)* command.
- Place the drawing in the window. Enter.
- In the *Edit floor levels* dialog rename floor 0 to Section A-A, for example. Add new floors and then rename those accordingly.
- Repeat the previous steps and copy each section view on the appropriate floor.

- After this, work out (”dress up”) the sections. You can add text and dimensions and additional lines, groups or hatches to finish up your drawing.

There are major differences between 2D section 3D section view windows:

- The 3D section window follows the changes in the model automatically; it is connected to the floor plan.
- The connection between the 2D section window and the 3D model is lost; changes on the floor plan are not followed. It includes only 2D drawing elements (line, arch, hatch…); therefore you can edit it freely.

The same method is recommended when you work on *facades*. Pay attention to the setting of the correct view in the 3D (drawing) window, and then start the copying to the 2D floor plan window.

Recommendation:

The number of 2D floor plan windows is not limited but it is recommended to work with a maximum of 3 or 4 2D floor plan windows, ensuring a clear structure of your project.

- 1 floor plan window for the *real floor plan;* there are floor plans on different floors
- 1 floor plan window for the *2D sections*; there are different sections on different floors
- 1 floor plan window for the *2D facades*; there are different facades on different floors
- 1 floor plan window for the *site plan*; floors are not used in that case.

4.3. Stepped section in a 3D section window

With the *Section – Create* command you can create not only floor plan sections, but also you can generate a stepped sectional view of a 3D model. You can do it as follows:

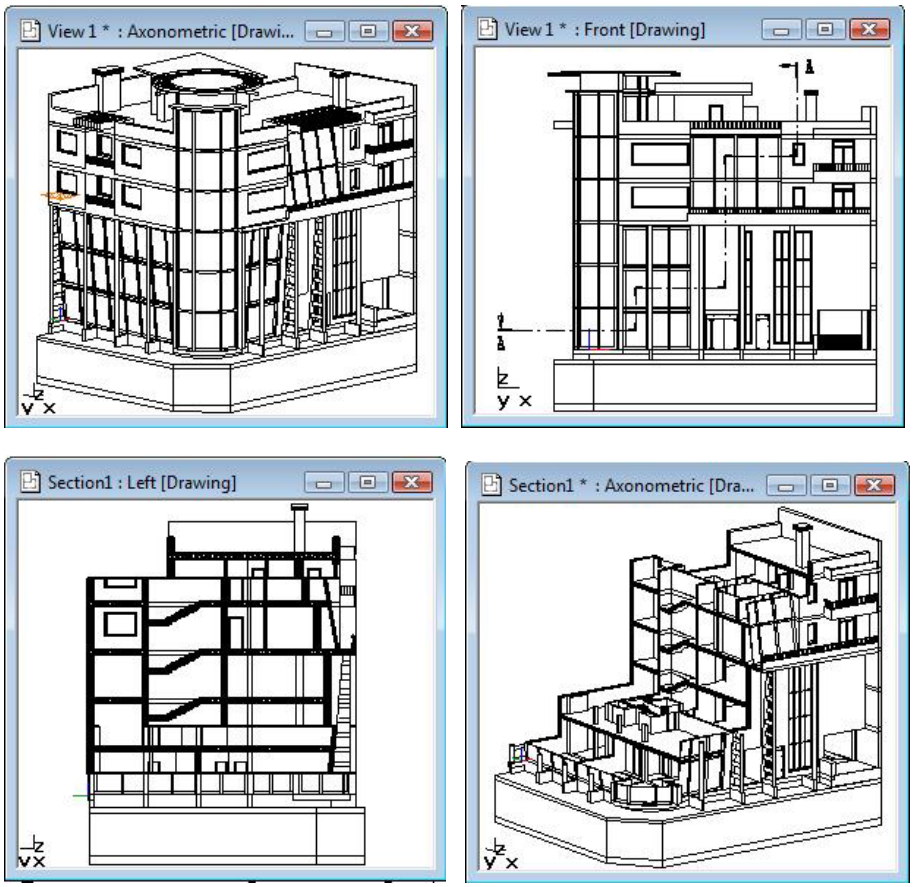
- Create a section view of the model, e.g. front view in a 3D view (drawing) window.
- Click *Define section*.
- Draw a section line in the 3D view window and define the direction of the sectional view.
- Allow the program to create the section or create it later by selecting the section line.

Then a new section window is generated similarly to the sections defined on the floor plan. Create the stepped section by rotating the model properly, then refresh the window by clicking *View toolbar* – *Hidden lines* icon.
The section view is created in a new window then, but the model is not cut. OpenGL view and rendering displays the whole model.

! When defining the section line, do not forget to use the **Pline** keyword in the prompt line! This is the way of defining stepped section line.

Advantage:

The program also preserves the stepped section of 3D model in the section window after you generate the model again.



4.4. Cutting a 3D model

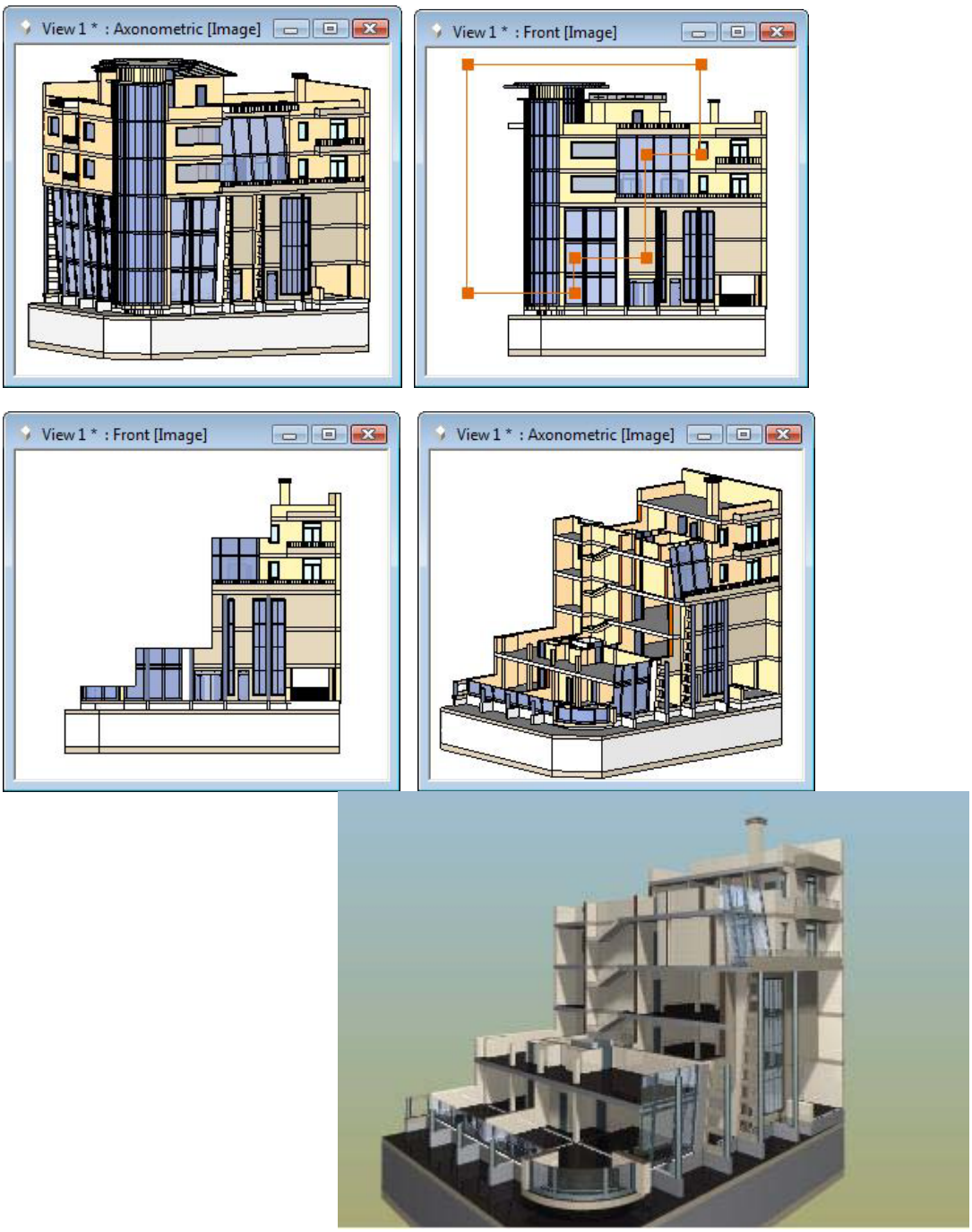
You also have the possibility to cut the model in the 3D view window with a stepped section line, and then you can show the result in a 3D OpenGL (image) window on a rendered image.

For this you have to use the following commands:

- Create a 3D view of the model in a 3D view (Image) window, for example.
- Select *View menu – Section - 3D model section* command.
- Select the **POLYGON and POPMENU keyword** from the prompt line.
- Choose an option from the appearing menus; the Polygon command is recommended.
- Draw the stepped section line with the polygon. Close the profile.
- Click on the part of the solid, which you will keep after cutting.
- Rotating the model in the window, the stepped section will appear.

The program cuts the model in the 3D view window. OpenGL and rendering displays only this part of the model. The cut model remains in the 3D window until you give instructions for generating the whole 3D view of the model.

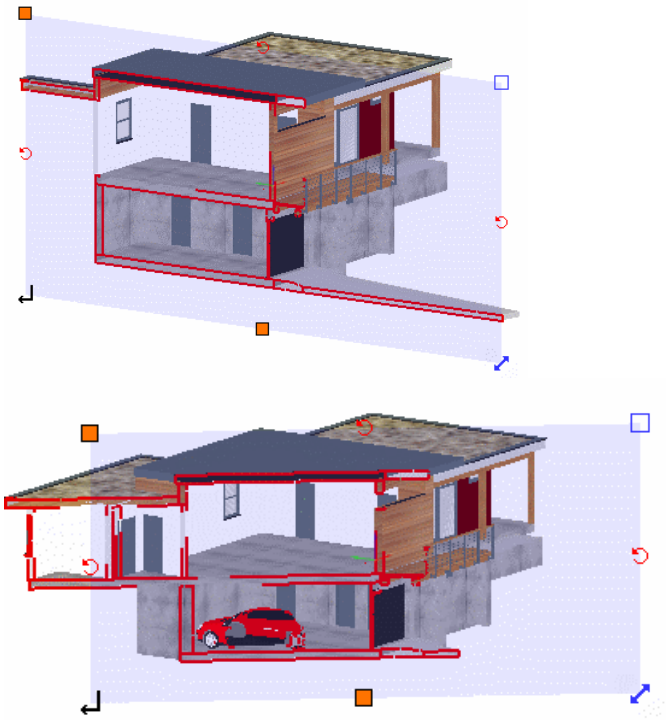
Advantage:
As you cut the real 3Dmodel, you can also create photorealistic picture from the stepped 3D section of the model.



4.5. Dynamic section plan

This function combines the definition and creation method of dynamic sections. For this you have to work in an OpenGL 3D window (image). You can use this function both in axonometric and perspective views.

The advantage of this function is that you can create a dynamic section defined by a section plane in real time. Therefore it is not just a working tool for the architects but a spectacular representation of the building.



Defining a section

Create your 3D model in an OpenGL 3D window and give focus to this window. Click *Define section* on the Edit toolbar.

You will get a section like it is shown on the pictures above.

Different markers appear on the edges and in the corners of the dynamic section plane. Using these markers you can do the followings:

Align view: This marker is found in the top-left corner of the section plane. With this marker you can create a new view where the section plane is parallel to the view plane.

Rotation: Rotation markers are found in the middle of the top and side edges of the section plane. With these markers the section plane can be rotated around horizontal and vertical axes.

Resize: This marker is found in the top-right corner of the section plane. With this marker you can resize the section plane.

Shift: This marker is found in the bottom-left corner of the section plane. With this marker you can shift the section plane to a direction defined by a normal vector perpendicular to the section plane.

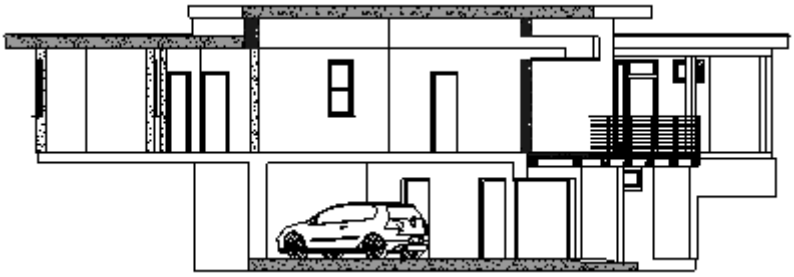
Restore default position: This marker is found in the middle of the bottom edge of the section plane. With this marker you can restore the default position of the section plane. By default the section plane will be resized according to the size of your 3D model.

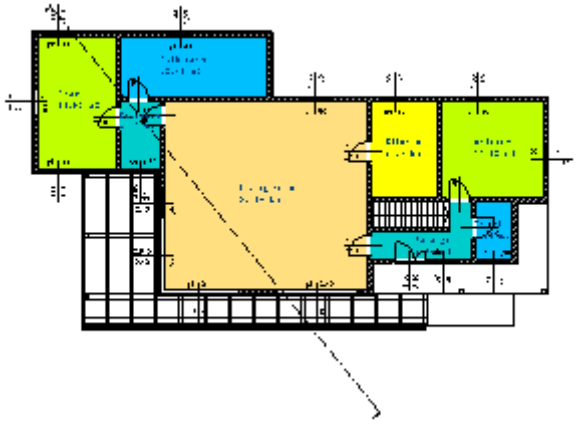
Create section: This marker is found in the bottom-left corner of the section plane. With the help of this marker you create a dynamic architectural section.

Rules

Be aware of the following rules when you work with dynamic 3D section:

- Size of the generated section**:** the size of the generated section is independent from the section plane you work with. You will see the whole section in every case.
- The angle of section: in every case a vertical architectural section will be created, independently from the tilt angle of the section plane.
- Section line created on the floor plan: along with the section a section line will be created on the floor plan. The length of this section line is equal with the width of the dynamic section plane. The position of the section line is defined as the horizontal centerline of the section plane projected on the floor plan.

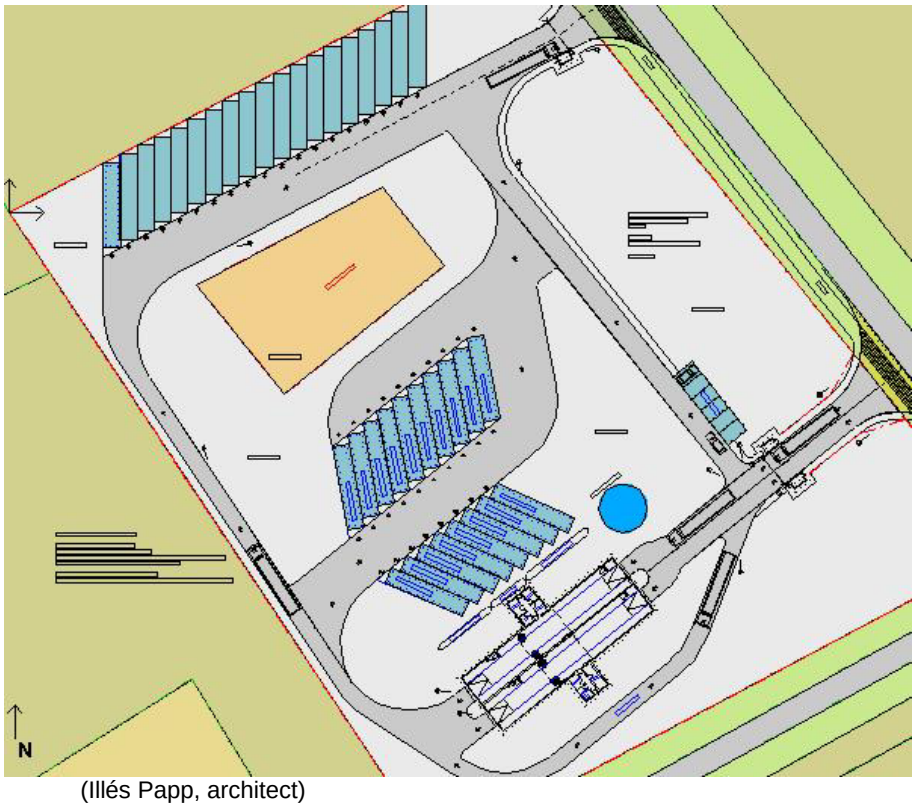




5. Parking

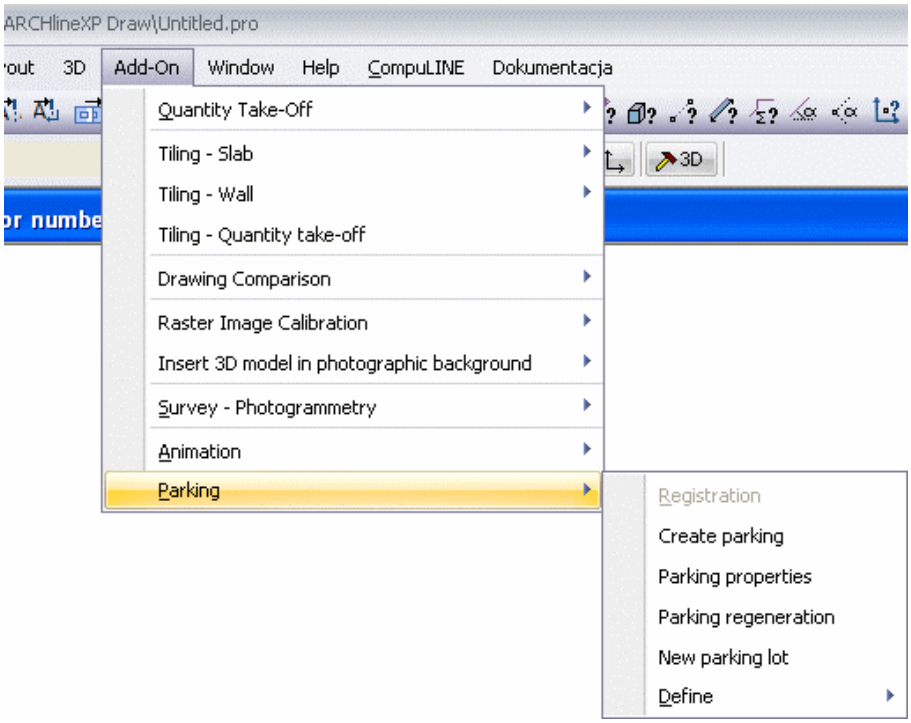
General

Creating of parking area is one of the news in ARCHLine.XP®.
The program can create parking lots, rows and aisle ways inside the contour of a polygon, taking the standard vehicle size and aisle width into consideration.



(Illés Papp, architect)

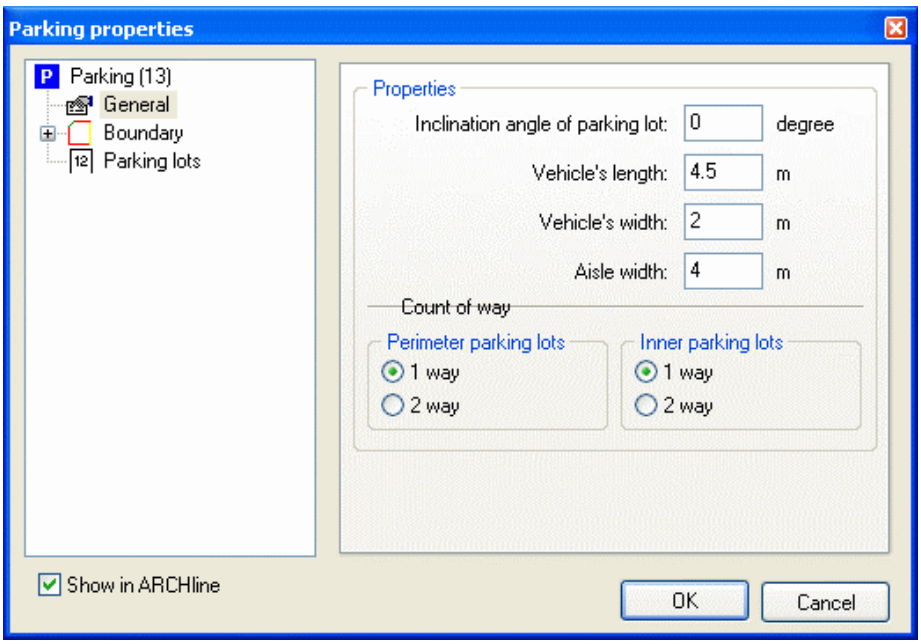
The commands are available in *Add-On* menu – *Parking*.



5.1. Create parking

Select the command from the menu. The well-known *Profile definitions* toolbar appears then.

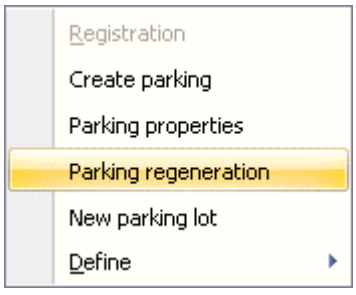
With the help of this you can draw the polygon contour of the parking area or you can specify a group of closed straight lines as a contour. After specifying the boundary lines, the *Parking properties* dialog appears.



5.2. Properties

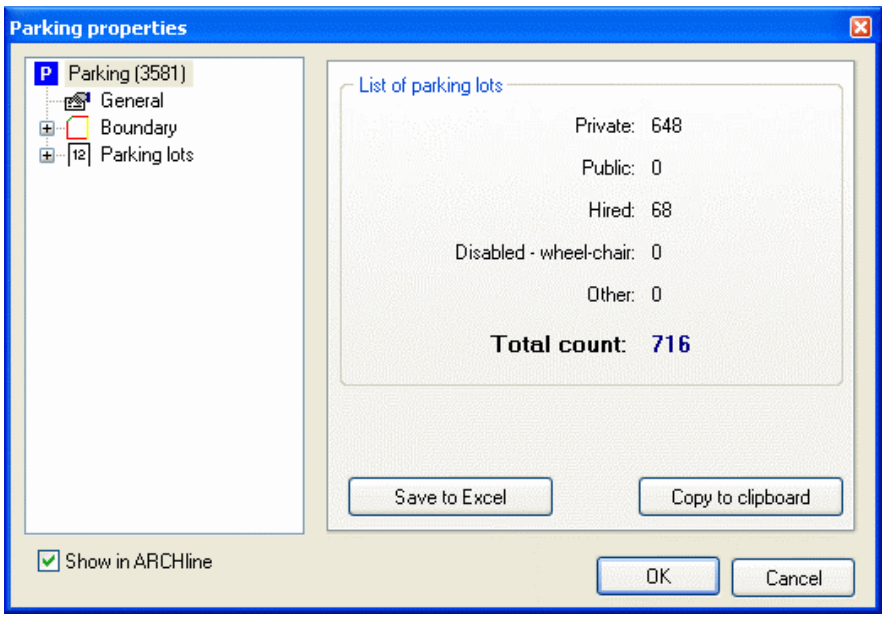
You can specify the standard vehicle sizes, the aisle width and the inclination angle of parking lots. For the aisle ways neighboring with the perimeter parking lots and the inner parking lots you can specify if those should be one-way or two-way (one aisle width or double aisle width).

By pressing the *OK* button the program accepts the settings but nothing will change on the drawing yet. Select *Parking regeneration* from the menu and then select the parking area you want to regenerate with your cursor.



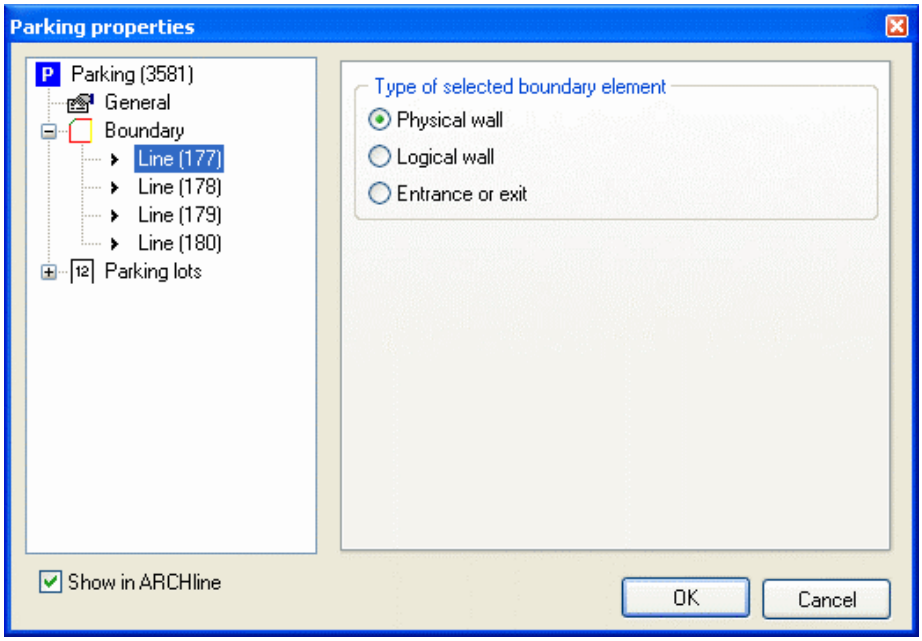
5.3. List of parking lots

This is a statistics about the different types of parking lots. Available parking lot types are: *Private, Public, Hired, Disabled – wheel-chair, other*. You have the possibility to export this list into an *.xls* document with the *Save to Excel* button. In this file you can find the same data; the summary and the path to the actual project that includes the parking area. With the *Copy to clipboard* button the **ARCHLine.XP®** copies these data to the clipboard so later you can insert those into a document.



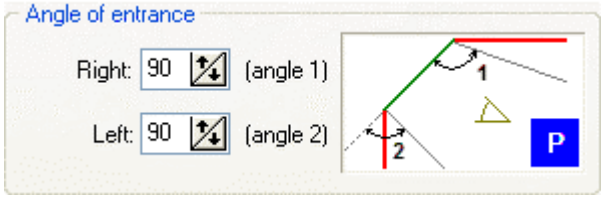
5.4. Boundary

This is for the setting of contour lines by their functions. For each boundary line you can choose among 3 functions: *Physical wall*, *Logical wall*, *Entrance or exit.* By default all boundary lines are set to *Physical wall*.



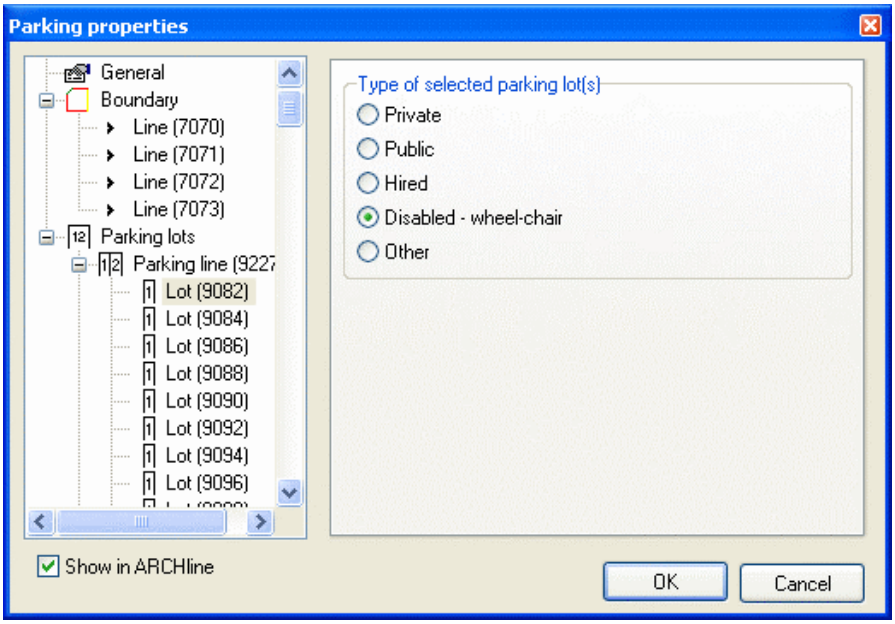
- In case of *Physical wall* a row of parking lots will be generated along the line.
- In case of *Logical wall* parking lots will not be generated along the line but inner parking lots can start from here, the line will be the border of the inner zone.
- In case of *Entrance or exit* an aisle way is created along the line and there are no parking lots placed. Here you can set the angle of entrance on both sides according to the direction of the connected road and the geometry of the parking area, respectively. A figure helps you to find out the position of angles.

Using the *Show in ARCHLine.XP* option, the boundary line, the row of parking lots and the parking lot you select in the menu will be also selected on the floor plan.



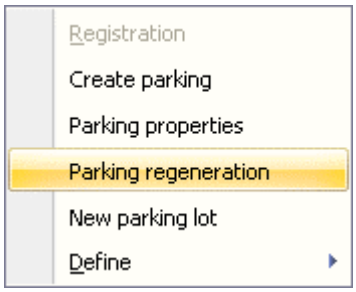
5.5. Parking lots

Each parking lot is numbered. The numbering starts from one. In this option you can set the type of the selected row of parking lots or the selected parking lot. The different types are: *Private*, *Public*, *Hired*, *Disabled – wheel-chair*, *Other.*



5.6. Parking regeneration

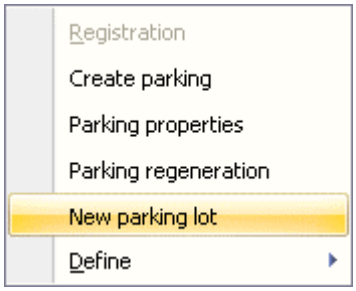
ARCHLine.XP® regenerates the layout of parking lots according to the latest property settings. After selecting the command from the menu please click on the parking area you would like to regenerate.



Any change you made in the parking properties will appear on the drawing of the parking area when you regenerate it. Even when you create a new parking area, the parking lots will appear after parking regeneration.

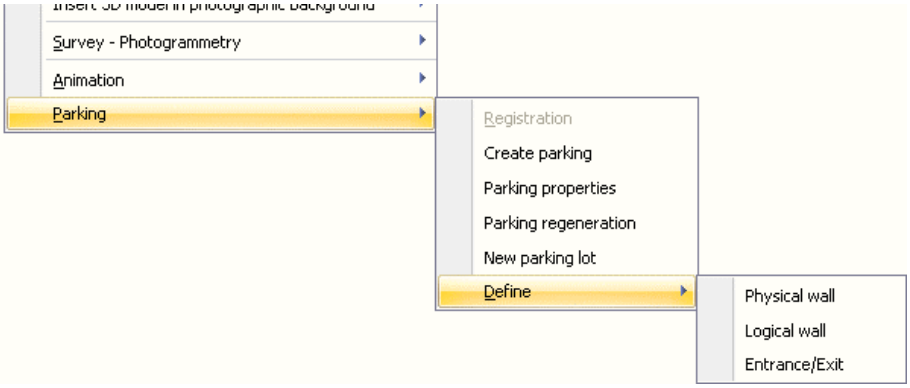
5.7. New parking lot

With this command you can place additional parking lots which are not generated automatically but your plan include them, one by one. Select the parking area where you want to place new parking lots. Specify the width, length and angle of the parking lot and then place it by one click.



5.8. Define

You can specify the type of boundary lines of the parking area on the same way as you can do it in the dialog. Here you can select from three commands: *Physical wall*, *Logical wall*, *Entrance/Exit*. After selecting the desired command please click on the boundary line for which you want to change the type. After regeneration the change will be seen.



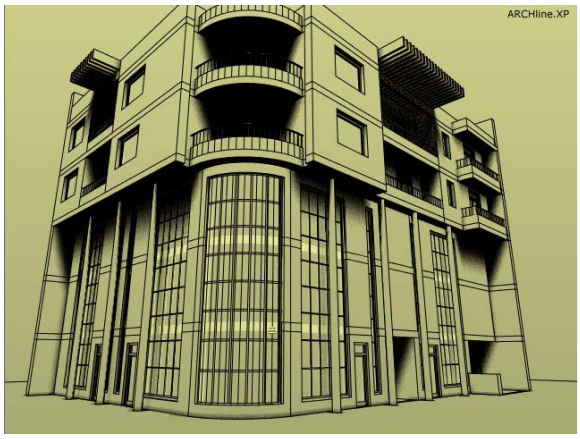
6. Artistic rendering - Sketch

6.1. General

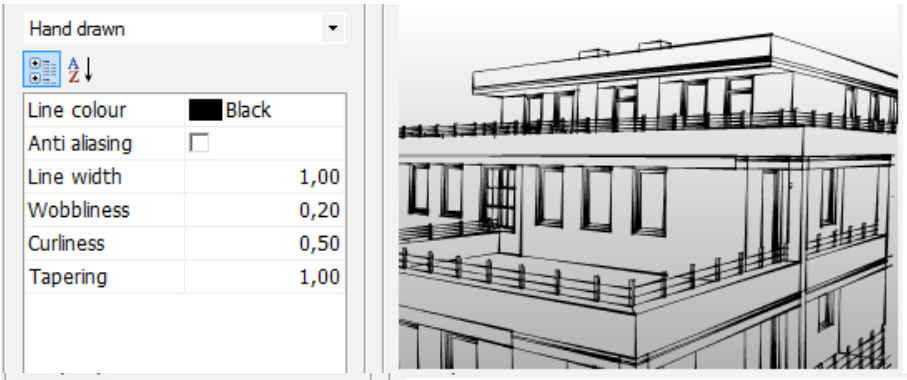
A unique technology that supports rendering at the conceptual design stage and also allows the easy creation of impressionistic and stylized presentations at any point during the design process.
Sketch works directly from the 3D model to give users the ability to instantly generate non-photorealistic and hand-drawn images that can very quickly be re-rendered from any viewpoint. A wide selection of sketch styles is available, including cartoon, pencil, ink, and various paint effects, so that users can create many different design impressions for presentation purposes.
Images that show the 'concept' of a design are being increasingly used at the initial design stages of a project to enable open discussions with the designer's clients, as opposed to photorealistic images that may appear too 'finished' and thereby stifle constructive discussions.

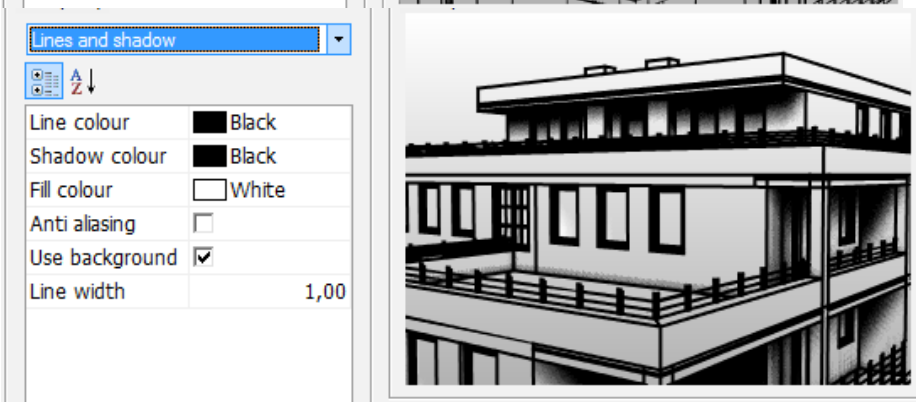
Supports the output of EPix format to Piranesi.

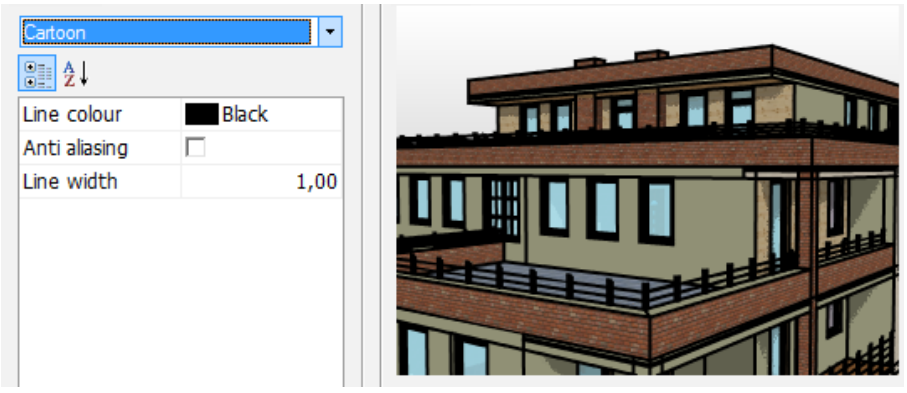
Allows image parameters to be changed to create many other stylized effects, dramatically increasing the total number of styles possible, and allowing a style to be chosen which suits the user.

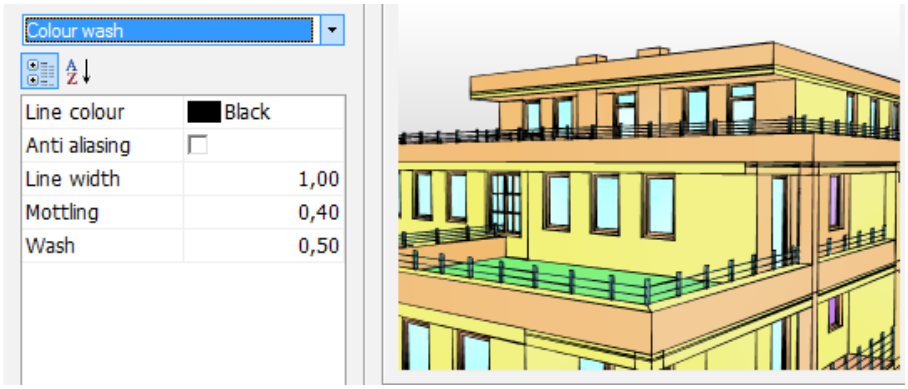


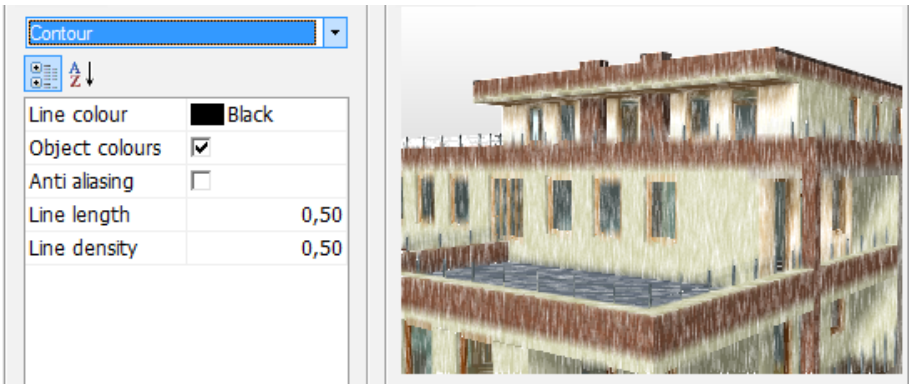
6.2. Sketch styles

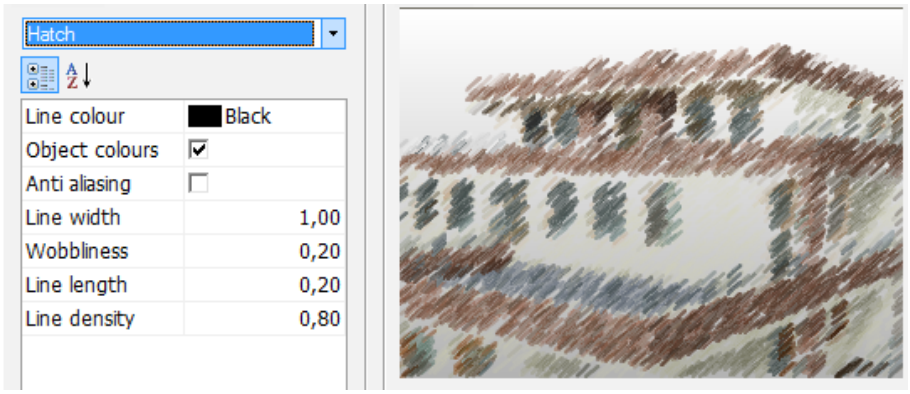


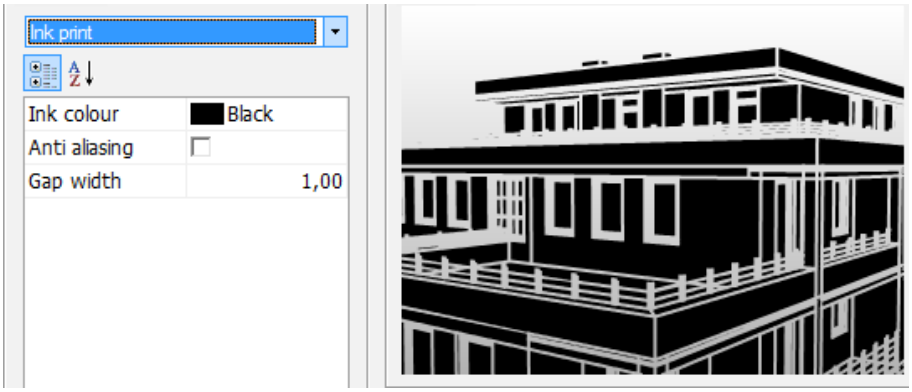


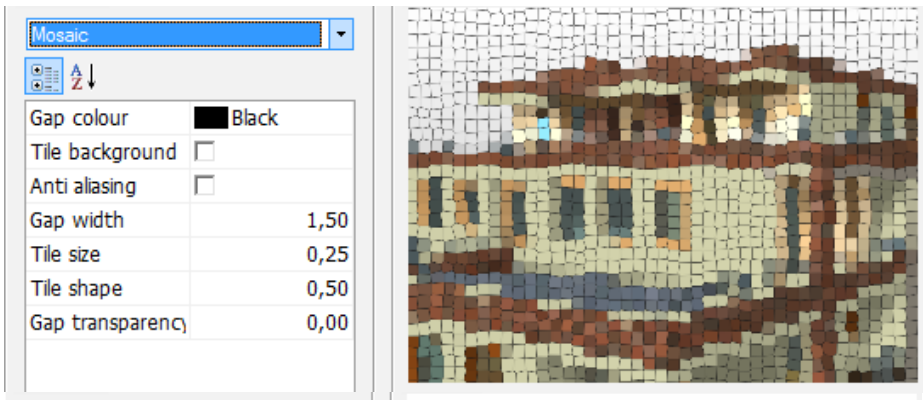


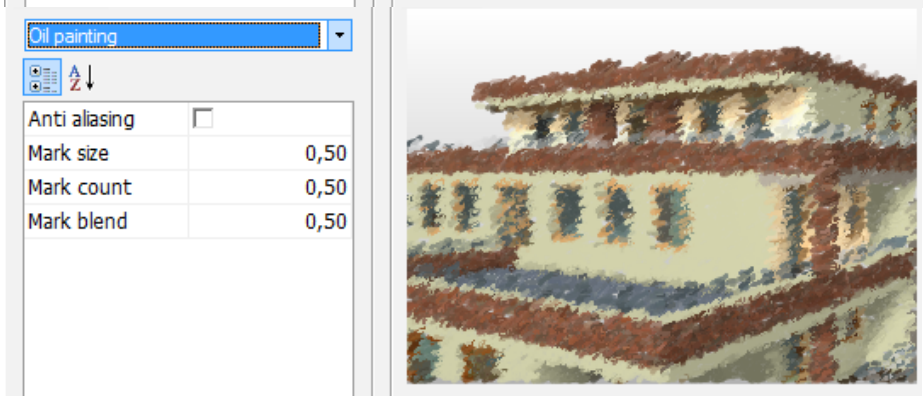

Colour wash
Line colour
Black
Anti aliasing
Line width
1,00
Mottling
0,40
Wash
0,50

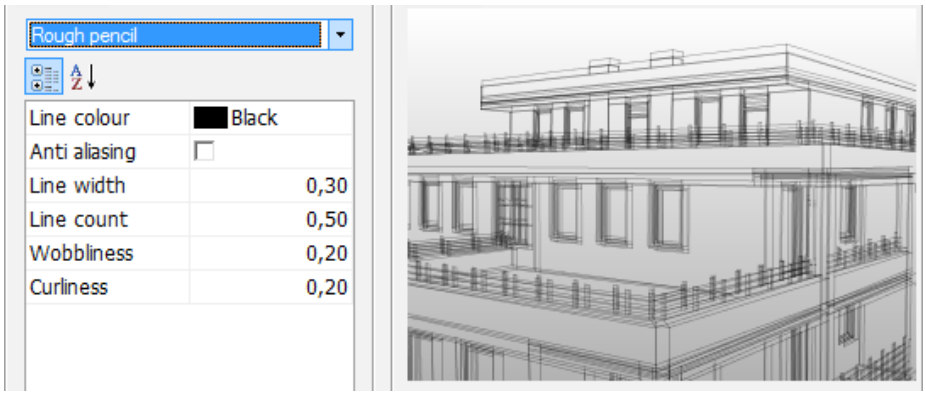

Contour
Line colour
Black
Object colours
Anti aliasing
Line length
0,50
Line density
0,50

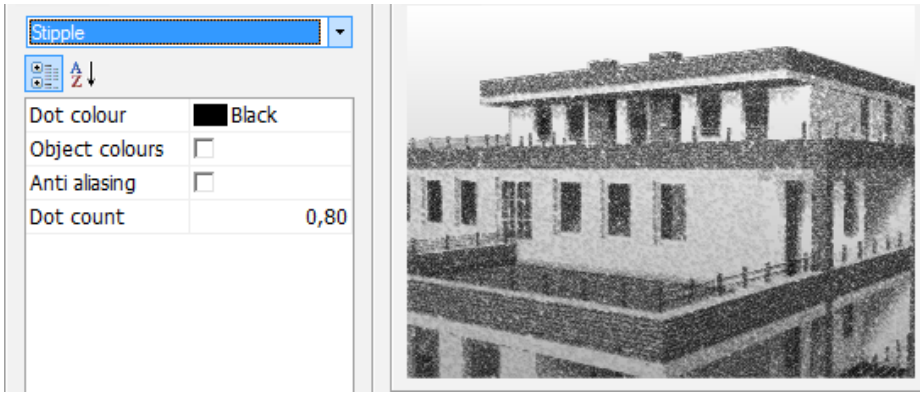

Hatch
Line colour
Black
Object colours
Anti aliasing
Line width
1,00
Wobbliness
0,20
Line length
0,20
Line density
0,80

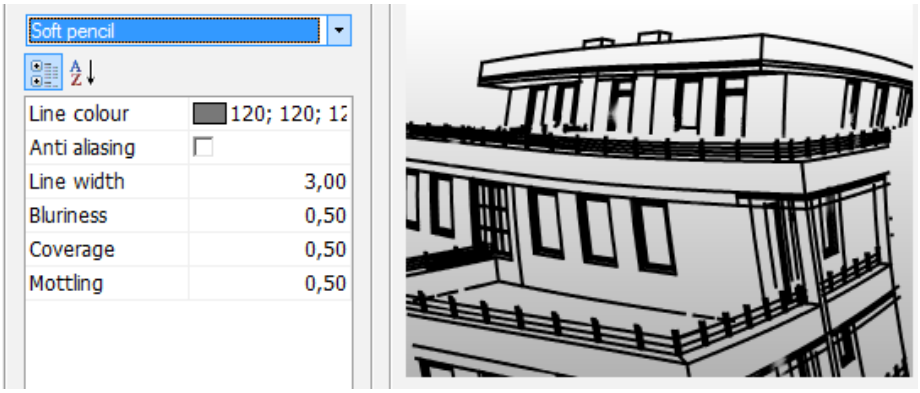

Ink print
Ink colour
Black
Anti aliasing
Gap width
1,00


Mosaic
Gap colour
Black
Tile background
Anti aliasing
Gap width
1,50
Tile size
0,25
Tile shape
0,50
Gap transparency
0,00


Oil painting
Anti aliasing
Mark size
0,50
Mark count
0,50
Mark blend
0,50


Rough pencil
Line colour
Black
Anti aliasing
Line width
0,30
Line count
0,50
Wobbliness
0,20
Curliness
0,20


Stipple
Dot colour
Black
Object colours
Anti aliasing
Dot count
0,80

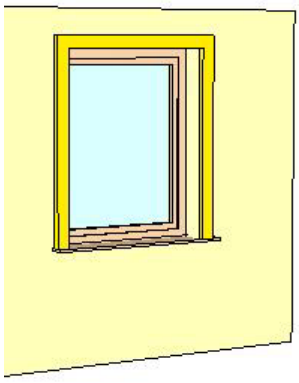

Soft pencil
Line colour
120; 120; 12
Anti aliasing
Line width
3,00
Bluriness
0,50
Coverage
0,50
Mottling
0,50

7. Door / Window Frame around - Architrave

You can assign frame to the inside or the outside of the doors or windows, and specify cross section.

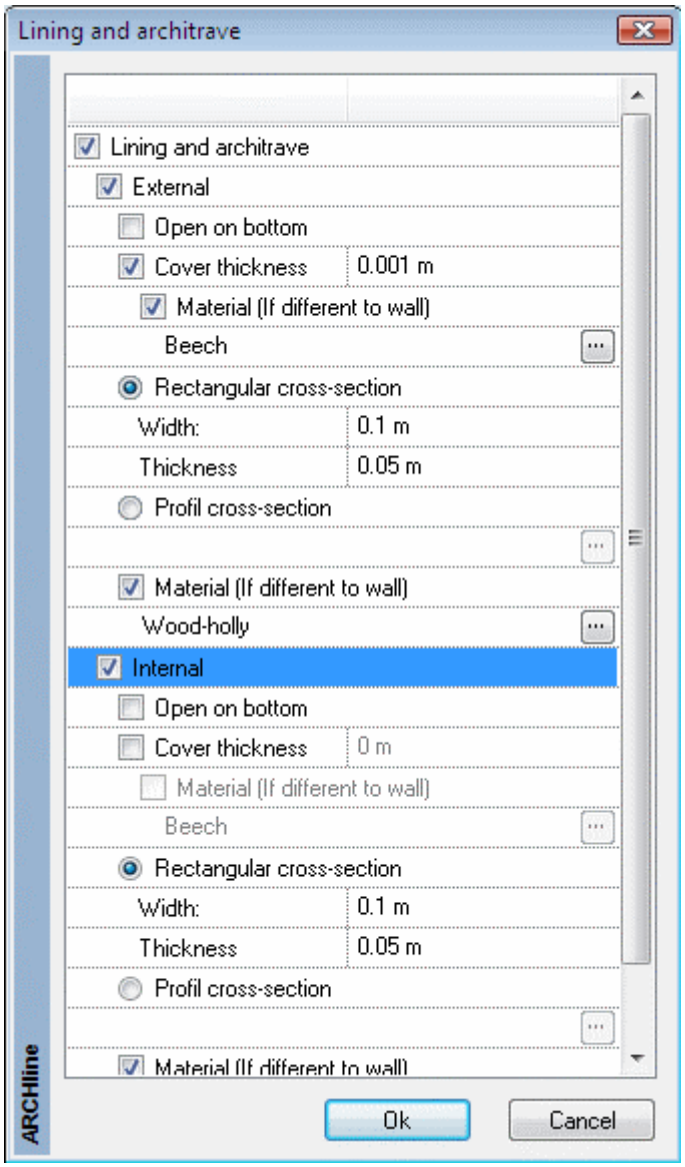
The frame is the property of the door or window, so it stays, when you copy it.

You have to specify separately the inside and the outside properties of the frame.

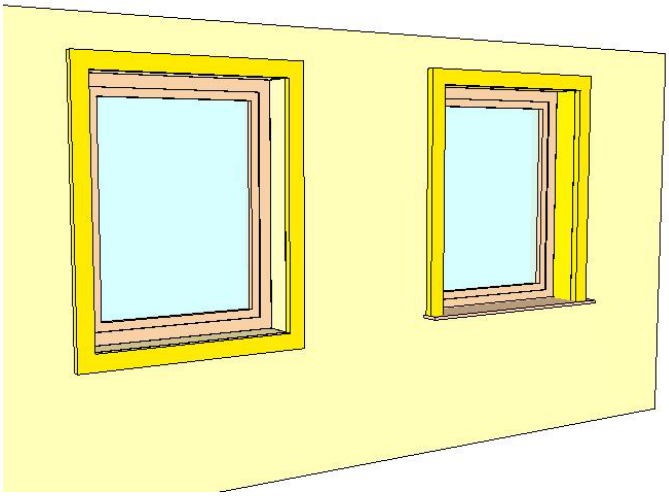


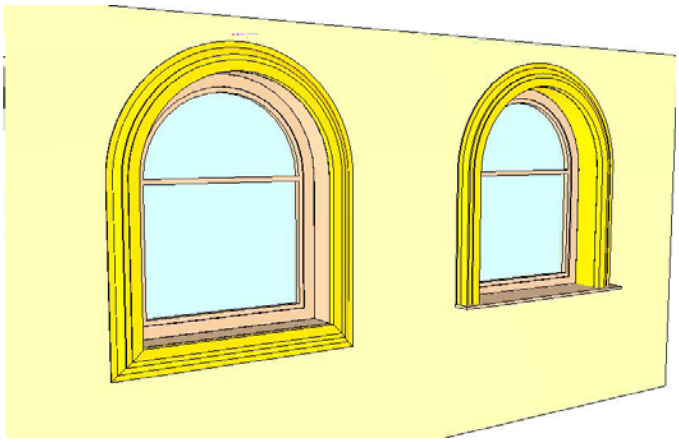
Frame properties:

You can assign full frame or down opened frame.
The cross section can be rectangular or profile selected from the library.
You can put covering between the frame and reveal, and you can assign thickness and material to it.
If you don't assign any material to the frame or covering, then it copies its material from the wall.
Click on the *Door / Window Properties – Lining and architrave* button to define the frame properties.



The following pictures show the different possibilities:





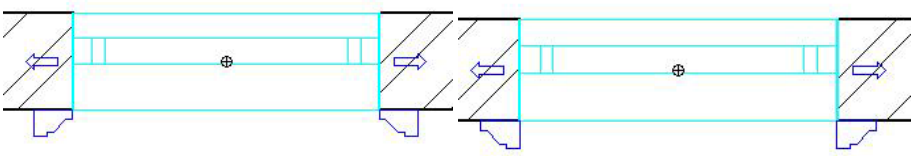
Changing the position of the cross section

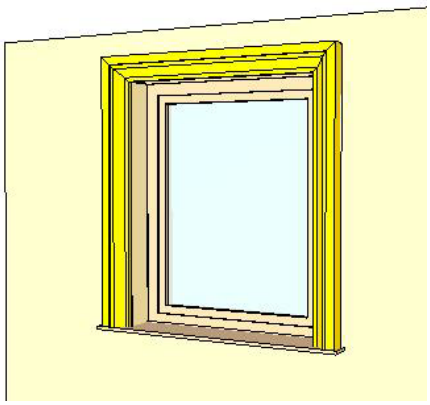
- After clicking on the door / window on the floor plan the profile of the assigned frame is displayed.
- You can mirror or rotate the profile by clicking on the profile and choosing **Mirroring** or **Rotate** keywords in the prompt line.

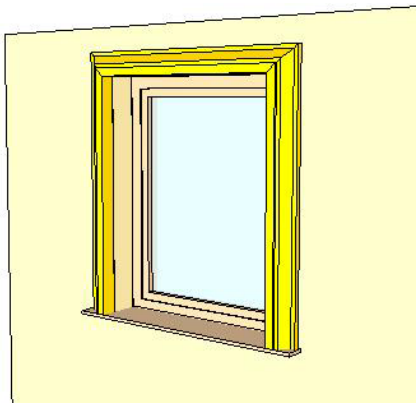
Enter finishes the command.

The advantage of the method is (contrary to changing Position profile window in the Property window) the result of the changing is viewable on the floor plan as compared to the door or window, so it is evident.

Expanding frame *Tapering frame*







8. Roof structure developing

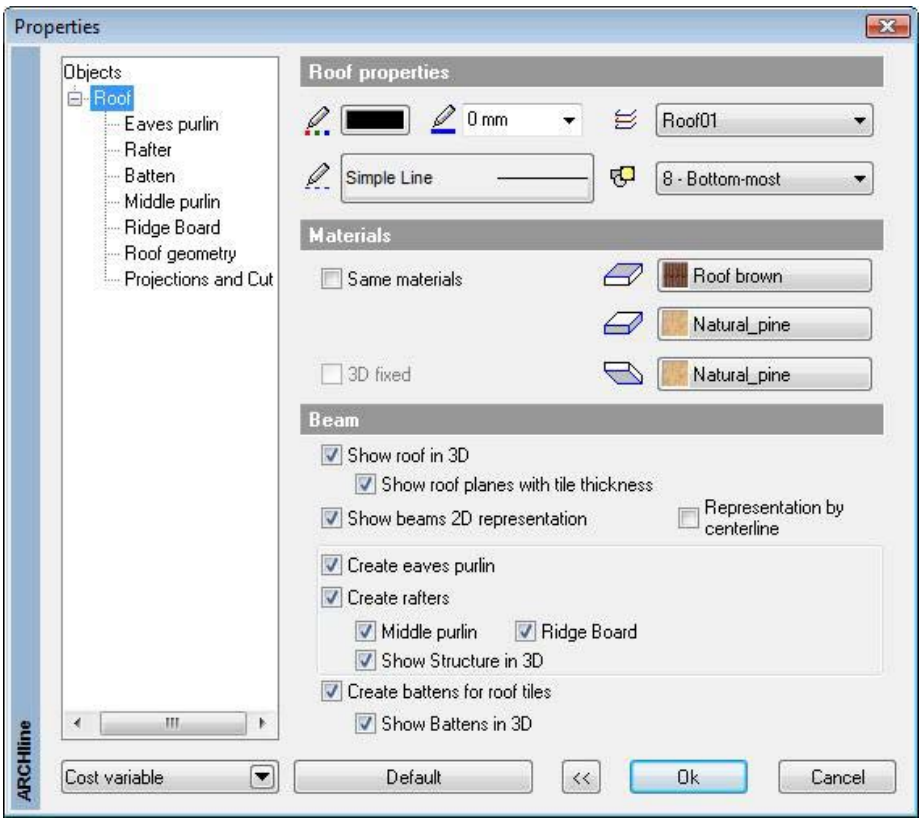
Improved roof structure with more detailed roof construction that includes the independent Middle purlin, Ridge Board, enhanced ending Profile definition, Collar beam/tie.
The program lists the sizes of the applied new structural elements, which makes it simple to carry out a cost calculation.

Roof properties

Before creating a roof, You can specify its properties. To do so, right-click on the **Roof** icon in the toolbox or select the *Modeling menu/toolbox - Properties* – *Roof* command.

When You define an automatic roof, the command activates the *Roof properties* dialog.

The **Roof properties** dialog comes up where You can set the roof properties.



You can set the following properties:

- Roof general and material properties, beam representation
- Eaves purlin
- Rafter
- Batten
- Middle purlin
- Ridge board
- Roof geometry
- Projections, cut

8.1. Roof properties main dialog

In the roof properties main dialog You can set the Roof general properties, Materials and Beams. To set other properties, select the sub-dialogs.

Roof general properties

Roof properties include color, layer, line type, line width and priority properties, as it is the case with all other elements in ARCHLine.XP® .

See:

- the description of General properties in Chapter *4.2.2. Specifying general* properties,
- the description of Sets in Chapter *4.2.4. Using sets of properties*, and
- the description of Cost variables in *Chapter 4.2.5. Assigning variables*.

Materials

To assign materials to the roof body and sides use the following buttons:

- top surface material
- roof body material
- bottom surface material

Select these buttons to display ***Material*** dialog box, where You can assign a material type to the roof.
Use the *Same materials* option to assign the selected material to all sides.

Beams

The program generates the following parts of the roof structure automatically:

Eaves purlin, middle purlin, ridge purlin, rafter, batten and collar beams

The program creates the beams on both the 2D and the 3D model with the parameters set in the appropriate dialogs.

After specifying the general properties of the roof, You can select the elements of the roof structure by switching the options.

! Later You can specify the properties only for the selected elements of the roof structure.
If the *Create eaves purlin* option is switched off, for example, the *Eaves purlin* sub dialog will not include the cross section input fields and therefore You cannot specify those parameters.

Show roof in 3D

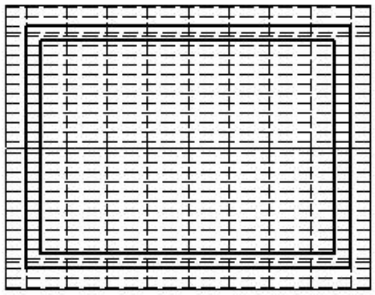
If You only want to display only the beams in 3D, disable the *Show roof in 3D* option. If You do so, the roof planes will not be visible, only the roof structure. Switch on the *Show roof planes with tile thickness* option to represent the roof tiles with their thickness.

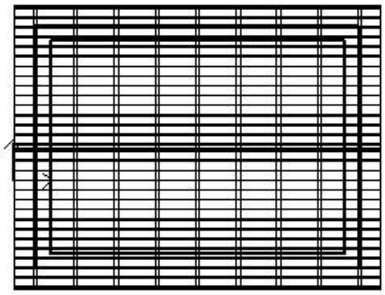
Show beams 2D representation

If You do not want to display the roof structure on the floor plan, disable the *Show beams 2D representation* option.

Representation by centerline

You can decide whether the beams should be appeared with their center line or projection on the floor plan.
Of course, You can specify the line type of the beam representation in the appropriate dialogs.





Create eaves purlin

Switch on the option to create the eaves purlins. In this case You can set its parameters in the *Eaves purlin* sub-dialog. Otherwise You can set only the height of the eaves purlin in the sub-dialog. (It defines the height of the roof.)

Create rafter

Switch on the option to create the rafters. In this case You can set their parameters in the *Rafter* sub-dialog. Otherwise the sub-dialog does not show the parameters.

Middle purlin - Ridge board

Switch on the options to create middle purlin and ridge board. The options are connected to the *Create rafter* option. It means You can create middle purlin or ridge board only when rafters are created as well.
In this case You can set their parameters in the *Middle purlin* and *Ridge board* sub-dialogs. Otherwise the sub-dialogs don't show the parameters.

Show structure in 3D

Switch on the option if You want to display the rafters, middle purlins and ridge board in a 3D model either.
The representation of eaves purlins is also connected to the representation of rafters.

Create battens for roof tiles

Switch on the option to create the battens. In this case You can set their parameters in the *Battens* sub-dialog. Otherwise the sub-dialog does not show the parameters.

Show battens in 3D

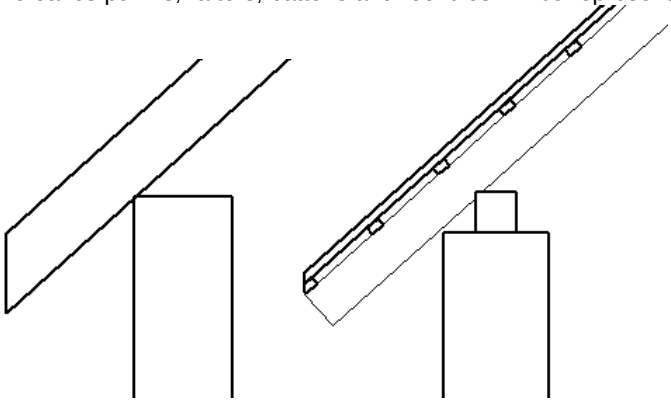
Switch on the options if You want to battens for roof tiles.

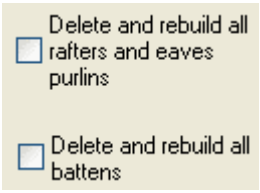
The Show in 2D and 3D options affect only the display. Turning them off has no effect on the beams – the modifications You made remain unchanged.

> **!** Do not turn off **create beams** options instead of turning **show in 2D and 3D** options! If You do so, You delete the whole beam structure and loose all modifications.

Example

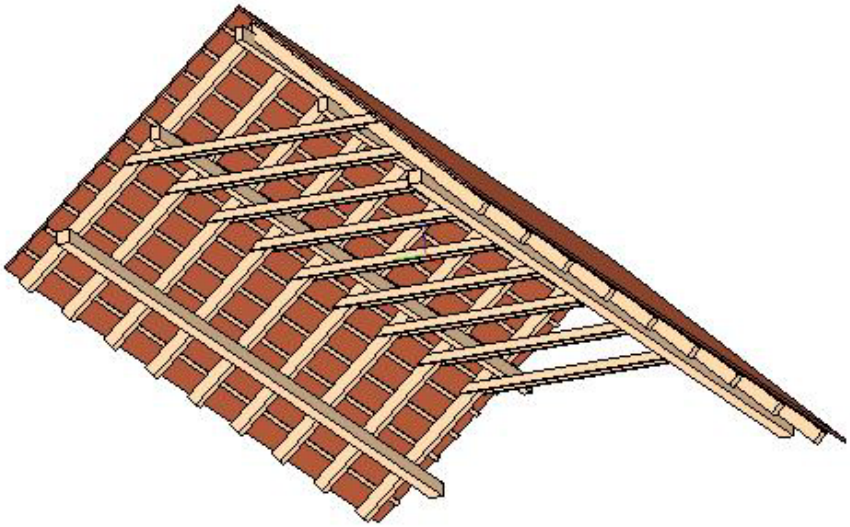
If You switch on all options on the left side of the dialog, You will see the real roof structure of the roof on the section view, i.e. the eaves purlins, rafters, battens and roof tiles will be represented with their thickness.





The **Delete and rebuild all rafters and eaves purlins / battens** commands can only be used for individual modifications. If You previously carried out modifications on elements of the roof structure with the *Shortcut menu – Roof framing* command, You can disable the individual settings in one step, which is by turning on the options, and this way the properties set in the dialog box can be restored.

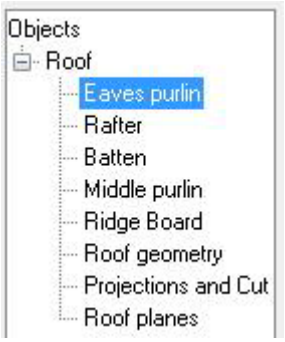
See Chapter *1.1.1.2. Eaves purlin dialog, 1.1.1.3. Rafters dialog, 1.1.1.4. Battens for roof tiles dialog, 1.1.1.5. Middle purlin dialog, 1.1.1.6. Ridge board dialog*.
You can edit the beams thus created one by one or by roof planes with the *Roof framing* command in the **Shortcut menu**.



8.2. Eaves purlin dialog

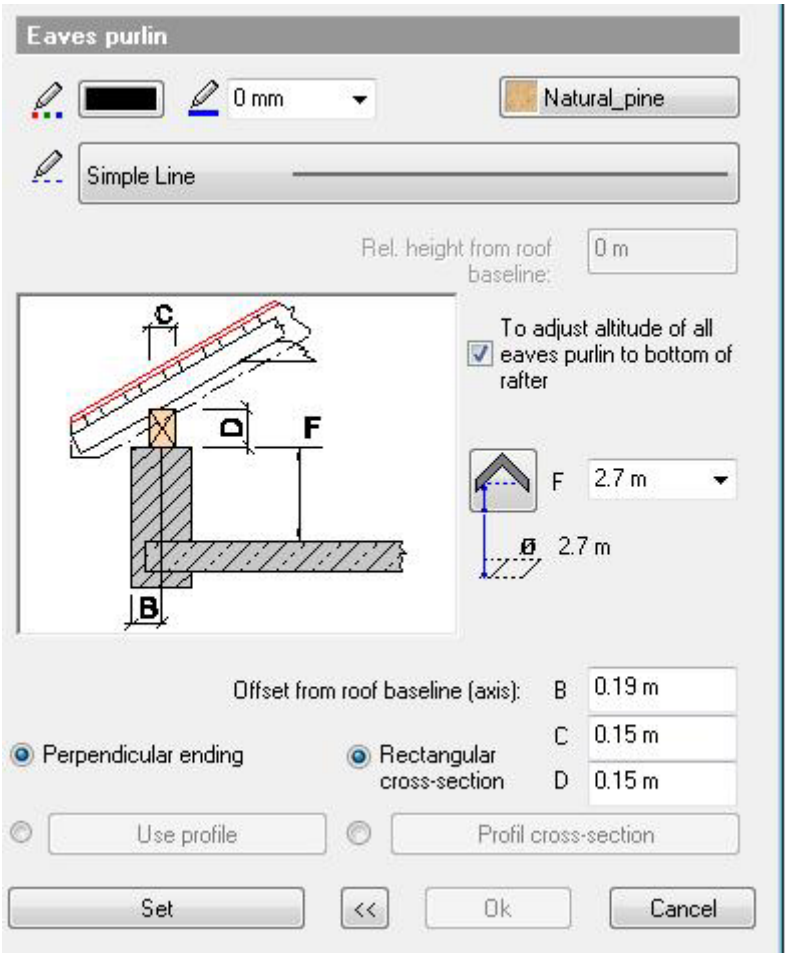
The height of the bottom of eaves purlin determines the height of the roof.

! This parameter must be specified even when there is no eaves purlin representation! In that case this parameter means the height of the reference line of the roof.



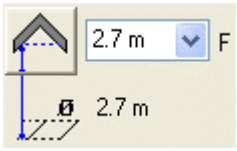
Select ***Eaves purlin*** option on the left side of Properties dialog box to define the properties and position of eaves purlin.

The general properties of eaves purlin are the same as in the case of other elements: color, line width, line type and material properties.



Relative height in relation to the current level - F

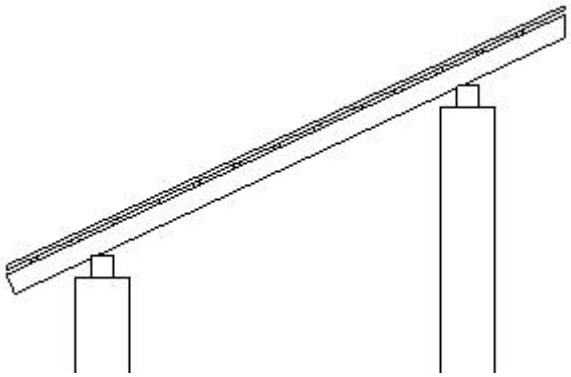
You can define the height of the reference line (contour line) of the roof relative to the current level by the height of the eaves purlin. Also, this is the case when You don't want to represent the joists in detail.
You can specify not only the default height of the roof, but also the height of the rooftop. To do so, click on the icon.



You can set the next parameters in the Eaves purlin sub-dialog, when the Create eaves purlin option is switched on in the Property dialog:

To adjust altitude of all eaves purlin to bottom of rafter

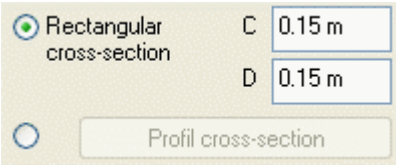
With this option it is possible to represent those eaves purlins which do not match on the reference line. This is the case when the roof plane is defined by a reference line. By switching the option on, the eaves purlin on the opposite site of the reference line will be represented with the appropriate height, too. See the figure.



Offset from roof baseline (axis) – B

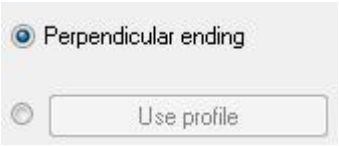
You can define how far the centerline of the eaves purlin indicated in the figure should be horizontally from the roof baseline.

Rectangular cross-section – C, D



By default the cross-section profile of the eaves purlin is rectangular. You can enter the width and length of the rectangular profile in the appropriate fields.
If You wish to define other profiles, press the **Profile cross-section** button to display the **Position profile** dialog box. You must define a closed profile.

Eaves purlin ends

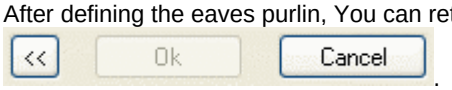


By default the end of Eaves purlin is perpendicular. You can modify the profile of the ends. To do so, click **Use profile** button, then select the appropriate end-profile from **Position profile** dialog box.

Relative height from the roof base line

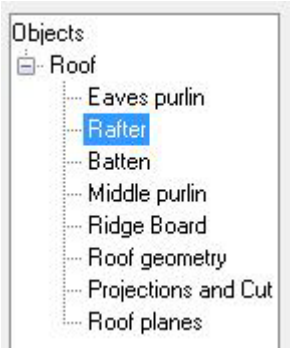
This field is active when You specify the eaves purlin properties individually. (Shortcuts menu – Roof framing – Properties... command). This way You can specify the height of the selected eaves purlin relative to the reference line so it can be different from the height of other eaves purlins.

After defining the eaves purlin, You can return to the *Properties* dialog box by using the **Arrow** button



.

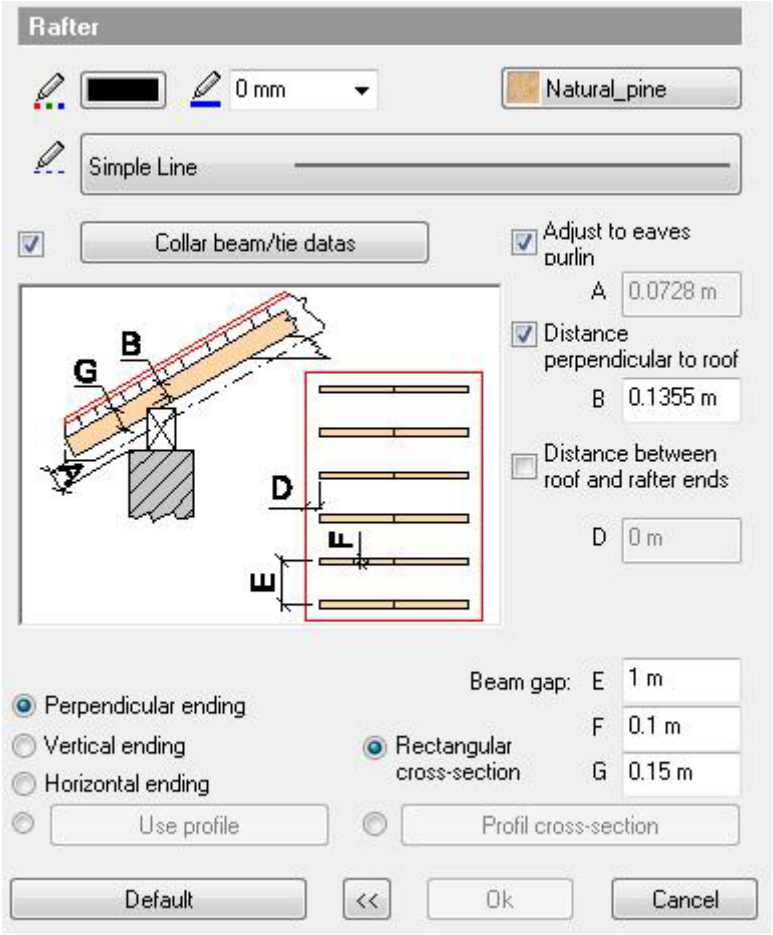
8.3. Rafters dialog



Select the ***Rafters*** option on the left of the Properties dialog box to create the rafters for the building:

To be able to create rafters, first You have to set rafter properties. The general properties of the elements of the roof structure are the same as in the case of all other elements: color, line width, line type and material properties.
The individual rafter properties affect the relationship between roof structure elements and between roof structure elements and the roof. You can define the cross-section profile and end-profile of rafters, and the collar beams can be put into place.

You can set the next parameters in the Rafter sub-dialog, when the Create Rafter option is switched on in the Property dialog:



Relative height from roof baseline– A

Of the individual properties, first specify the **relative height** of rafters from the roof baseline. By specifying a negative value, You can display rafters in inner space.
With **Distance perpendicular to roof** option You can instruct the program whether to set the relative height of rafters vertically or perpendicularly relative to the reference line. In this case the relative position of the eaves purlin and the rafter (value B) is given, so cannot be modified.

Adjust to eaves purlin – B

If You do not want to specify the position of the rafter in relation to the roof baseline, choose **Adjust to eaves purlin** option. In this case You can precisely define how deep the eaves purlin should cut into the rafter.

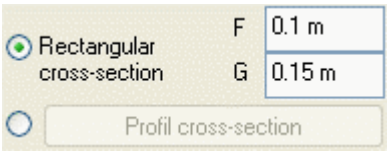
Distance between roof and rafter ends – D

If this option is disabled, rafters reach to the edge of the roof. Enable the option to specify distance between roof and rafter ends.

Beam gap – E

To put rafters into place specify the distance between the axes of the beams.

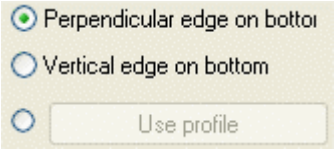
Rectangular cross-section – F, G



By default the cross-section profile of the rafters is rectangular. You can enter the width and length of this rectangular profile in the appropriate fields. If You wish to define other profiles, press **Profile cross-section** button to display **Position profile** dialog box. You must define a closed profile.

See the description of **Position profile** dialog in Chapter *7.5. Specifying profile – Select from list.*

Rafter ends



By default the end of rafters is perpendicular. You can set it vertical by enabling Vertical edge on bottom option.

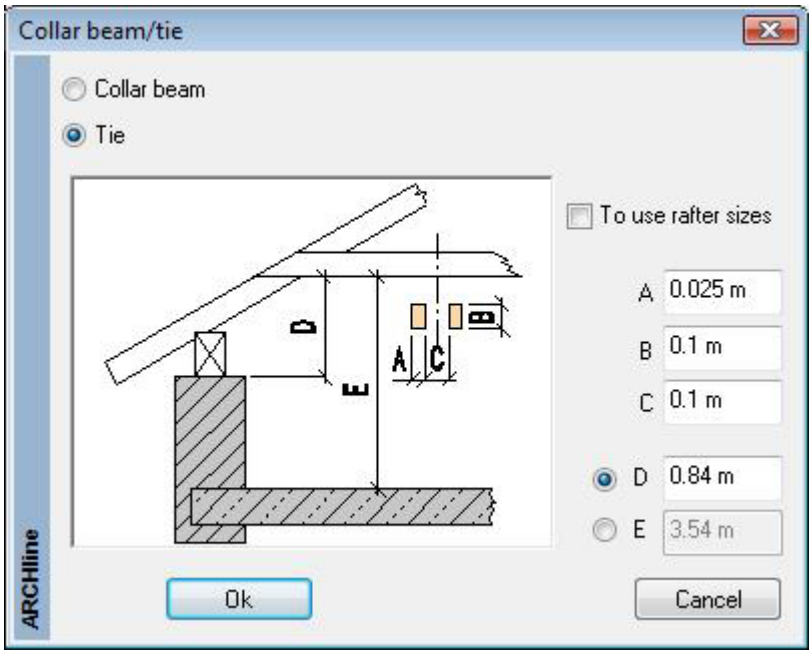
You can modify the profile of the rafter-ends. To do so, click **Use profile** button, then select the appropriate end-profile from **Position profile** dialog box. You can choose from various default profiles, and You can create individual profiles, too. You can save these in the Profile directory. In case of traditional Hungarian peasant houses it is common to use rafters whose ends have been decorated, so we recommend that You use this method.

You can save a completed profile in the profile directory by **Object library** – **Open profile** or **Closed profile** commands.

Build with collar beam –

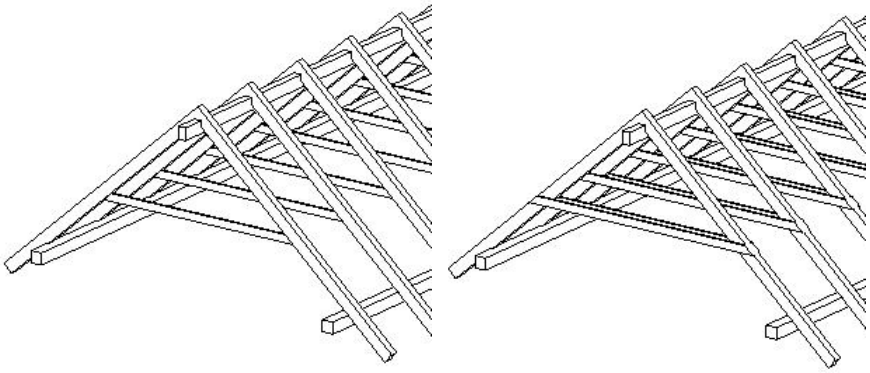
Enable this option to display the collar beam /tie. Clicking the button, the dialog appears:

Select the option: Collar beam of Tie



You can specify the cross section of the beam: ***A, B*** and the distance between the beams: ***C***, in case of tie.
You can use these parameters from the rafter, if You switch on the *To use rafter size* option.

You can specify the height of the collar beam: **D** relative to the roof reference line or relative to the actual floor: **E**.



Collar beam **Tie**

The program only displays the collar beams /ties if the opposite rafters are precisely joined.

News

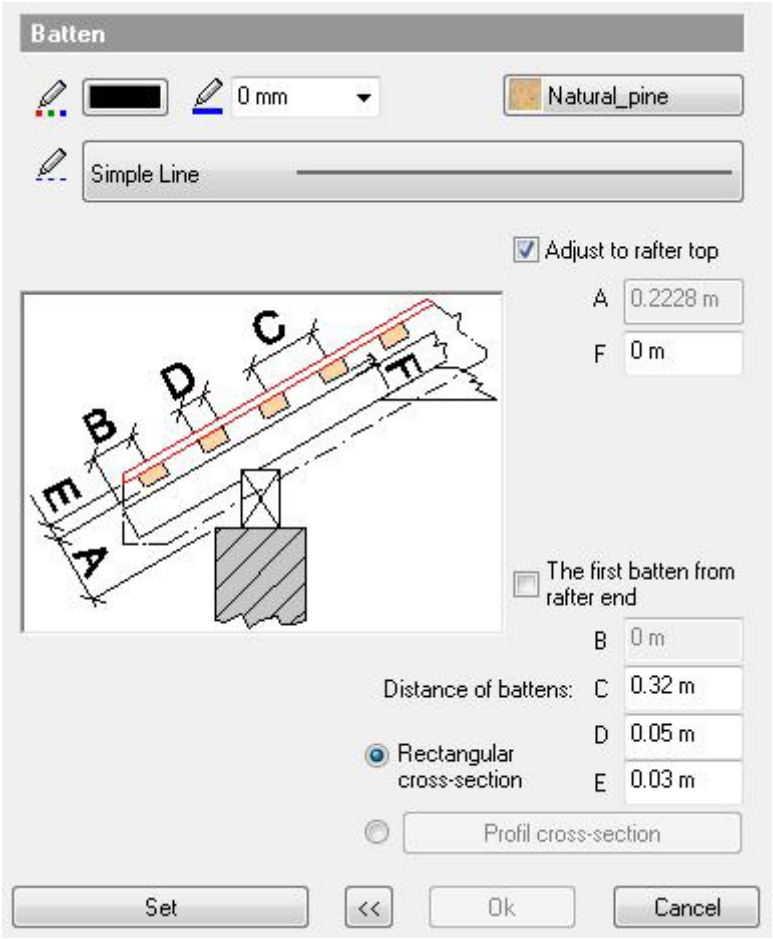
If the program did not join the rafters of opposite joining roof planes, You can do so with *Shortcut menu – Roof framing – Move* command. With this command You can move together the rafters belonging to one roof plane. Following this You can edit the collar beam.

After defining the rafters, You can return to the *Properties* dialog box by using the **Arrow** button

8.4. Battens

Select ***Batten*** option on the left of the *Property* dialog to set the general and the special properties of battens.
You have to define the distance from the roof reference line, distance between the axis of beams and the cross-section, distance of the first batten from the rafter end.
Instead of defining the distance from the roof reference line You can adjust battens to the top of the rafters.

You can set the next parameters in the Battens sub-dialog, when the Create battens for roof tiles option is switched on in the Property dialog:



Relative height from roof baseline– A

Of the individual properties, first specify the **relative height** of batten from the roof baseline.

Adjust to rafter – F

If You want to specify the position of the batten in relation to the rafter, choose **Adjust to rafter** option. In this case You can define the **relative height** of batten from the rafter.

First rafter from rafter ends – B

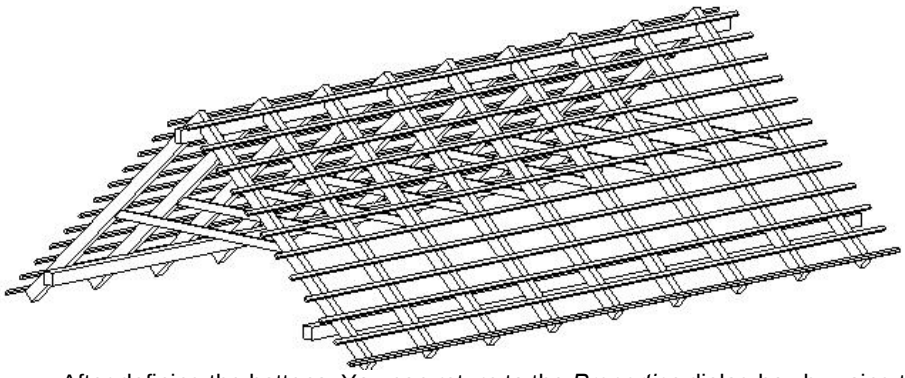
If this option is disabled, batten reach to the rafter end. Enable the option to specify distance between the first batten and rafter end.

Distance of battens – C

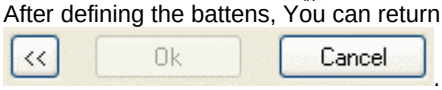
To put battens into place specify the distance between the axes of the beams.

Rectangular cross-section – D, E

By default the cross-section profile of the rafters is rectangular. You can enter the width and length of this rectangular profile in the appropriate fields. If You wish to define other profiles, press **Profile cross-section** button to display **Position profile** dialog box. You must define a closed profile.



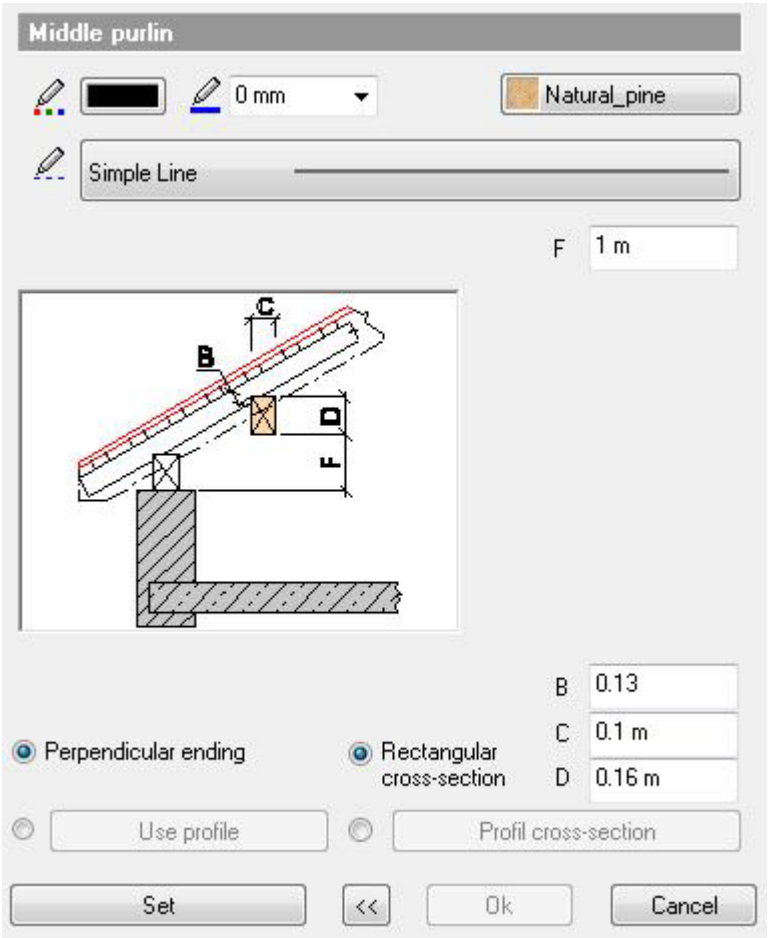
After defining the battens, You can return to the *Properties* dialog box by using the **Arrow** button



8.5. Middle purlin

Select ***Middle purlin*** option on the left of the *Property* dialog to set the general and the special properties of middle purlin.

You can set the next parameters in the Middle purlin sub-dialog, when the Middle purlin option is switched on in the Property dialog:



Relative height from roof baseline– F

Of the individual properties, first specify the **relative height** of middle purlin from the roof baseline.

Deep in rafter – B

After specify the deep the middle purlin should cut into the rafter.
The parameters *F* and *B* define preciously the place of the middle purlin.

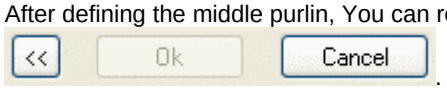
Rectangular cross-section – C, D

By default the cross-section profile of the middle purlin is rectangular. You can enter the width and length of this rectangular profile in the appropriate fields. If You wish to define other profiles, press **Profile cross-section** button to display **Position profile** dialog box. You must define a closed profile.

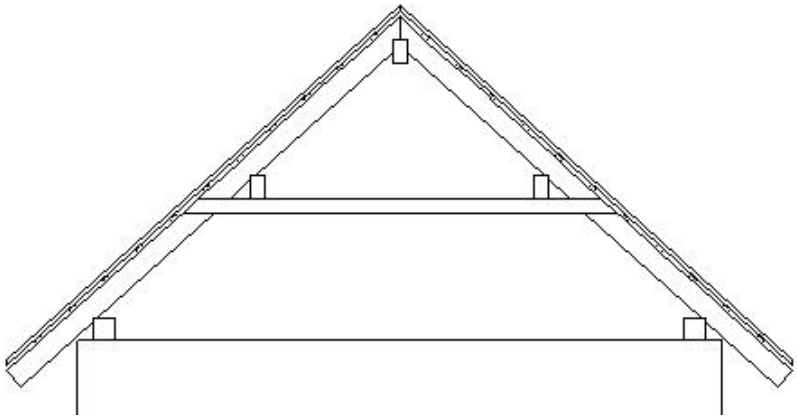
Rafter ends

By default the end of rafters is perpendicular. You can modify the profile of the middle purlin ends. To do so, click **Use profile** button, then select the appropriate end-profile from **Position profile** dialog box.

After defining the middle purlin, You can return to the *Properties* dialog box by using the **Arrow** button



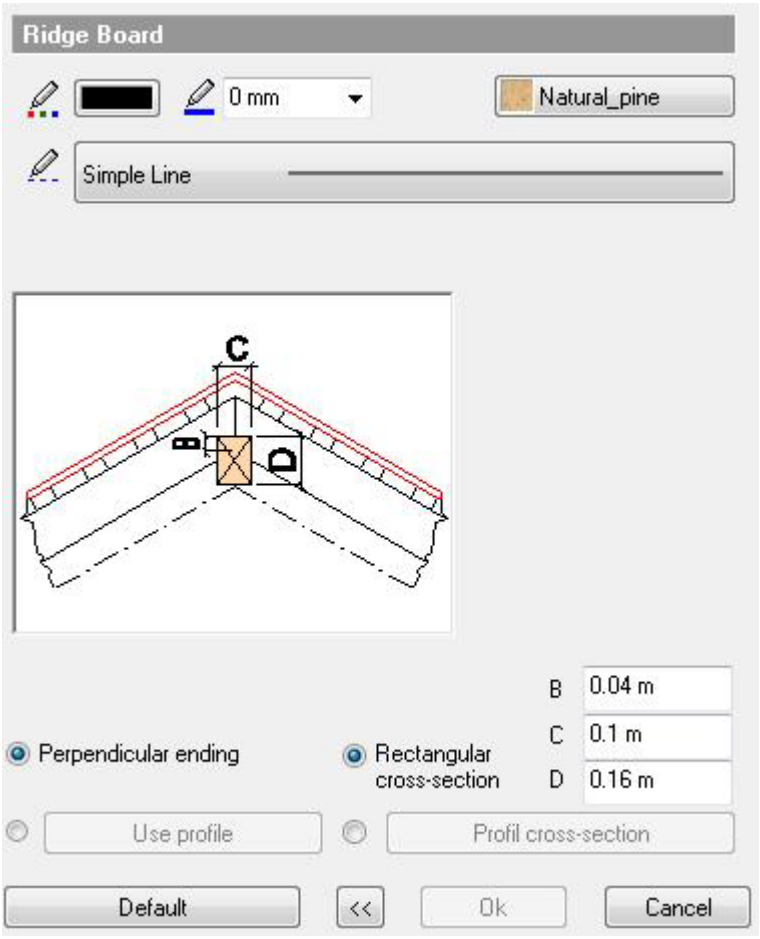
.



8.6. Ridge board

Select *Ridge board* option on the left of the Property dialog to set the general and the special properties of ridge board.

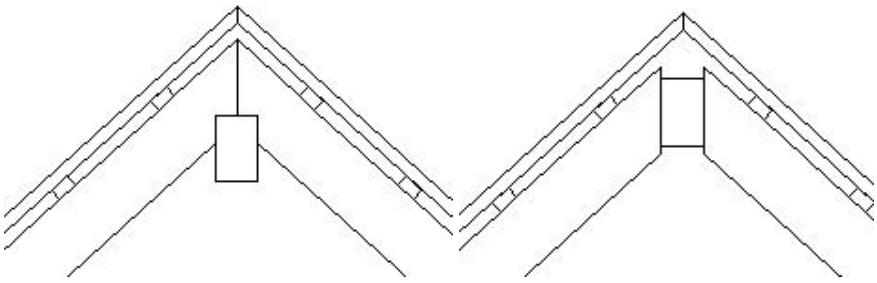
You can set the next parameters in the Ridge board sub-dialog, when the Ridge board option is switched on in the Property dialog:



Relative height from rafter intersection – B

You can specify the **relative height** of ridge board from the rafter intersection.

! If a ***B < D/3,*** then rafters ends are met at the top. Otherwise the rafter ends on the top are adjusted to the ridge board.



B= 1 cm, D=16 cm B= 13 cm, D=16 cm

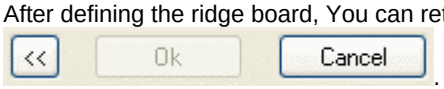
Rectangular cross-section – C, D

By default the cross-section profile of the ridge board is rectangular. You can enter the width and length of this rectangular profile. If You wish to define other profiles, press **Profile cross-section** button to display **Position profile** dialog box. You must define a closed profile.

Rafter ends

By default the end of ridge board is perpendicular. You can modify the profile of the ridge board ends. To do so, click **Use profile** button, then select the appropriate end-profile from **Position profile** dialog box.

After defining the ridge board, You can return to the *Properties* dialog box by using the **Arrow** button

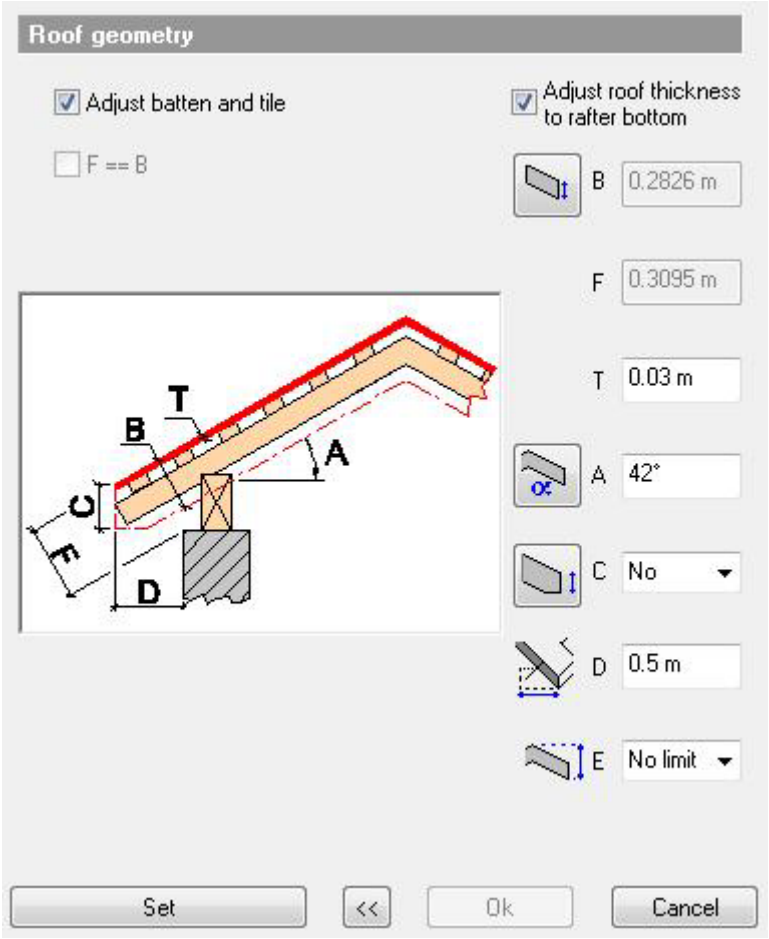


8.7. Roof geometry

Select ***Roof geometry*** option on the left of the *Property* dialog to set the special properties of roof.

By the roof structure setting there are two different opportunities in the roof geometry window:

- the program adjusts the tiles to the tiles batten
- the program doesn't adjust the tiles to the tiles batten

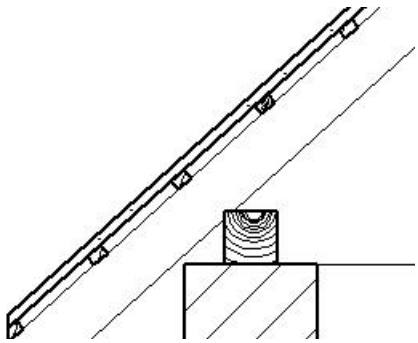


I) Tiles adjusting to the batten – using the eaves purlin

In this situation the program supports to create a classical roof structure:

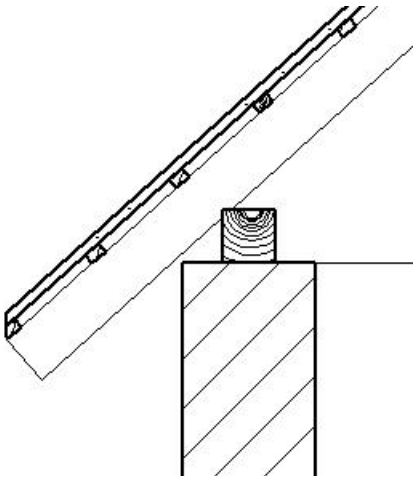
- *In the eaves purlin window:*
  define the height of the reference line with the bottom of eaves purlin.
- *In the rafter window:*
  set the height of the rafter considering, how much it cuts to the eaves purlin. Maybe set the rafter on the eaves purlin.
- *In the tiles batten window*:
  define the height of the batten. You can ask to set it on the rafter.
- *In the roof geometry window:*
  Switch on the *Adjust batten and tile*. Define the whole thickness of roof, within tile thickness.

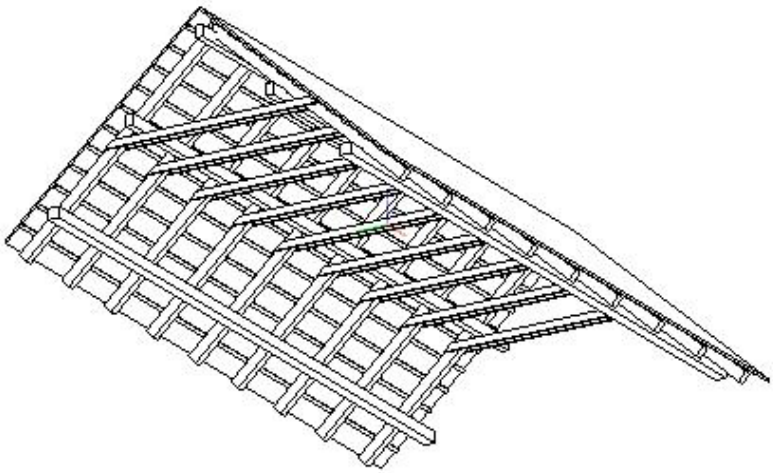
We can get the roof thickness automatically, if we adjust the thickness to the bottom of the rafter. (This way the thickness of roof is equivalent with the sum thickness of rafter, tiles batten and tile. In this situation the F parameter usually isn't equal with B parameter, that is, the distance from the top of the roof and the reference line isn't equal with the thickness of roof.)



- *In the roof property window:*

We get the following type of roof structure, if we switch on the appearance of eaves purlin, rafter, batten and tile:



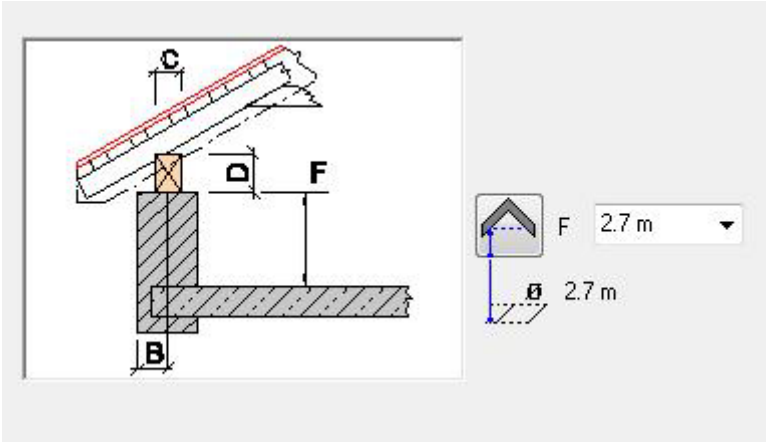


(János Varga, architect)

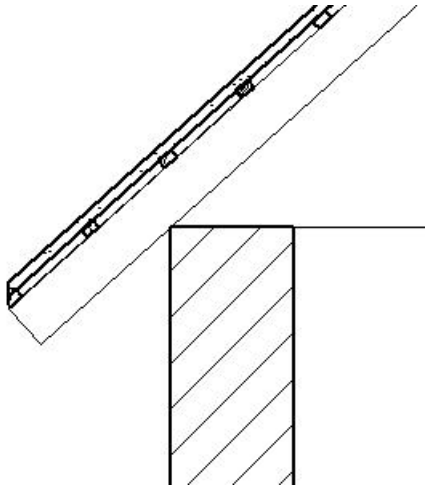
II) Tiles adjusting to the batten – no eaves purlin

The adjusting are the same as in point I), except with the use of eaves purlin:

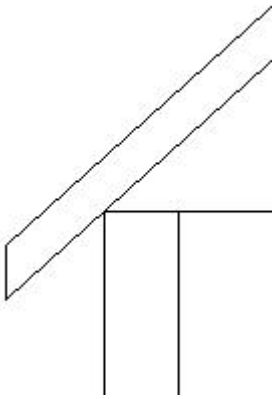
- This time You also define the height of the roof in the *Eaves Purlin* window, but of course, in this case the F parameter means the distance of roof reference line from the bottom of actual floor.



- *In the rafter window:*
  by adjusting the height of rafter: *A = 0.0 m.*
- *In the tiles batten window*:
  You can adjust the tiles batten to the rafter top: *F=0.0 m.*
- *In the roof geometry window:*
  Switch on the *Adjust batten and tile.* As we adjusted the rafter to the reference line of the roof, it can here realize that F parameter can be equal with B parameter.
- *In the roof property window:*
  We get the following type of roof structure, if we switch off the eaves purlin option:



- *In the roof property window:*
  We get the following type of roof structure, if we switch off all options regarding to roof structure.



If You switch on the *Adjust rafter to eaves purlin* option, the software counts the adjust with the eaves purlin's height, if there isn't eaves purlin at all. It's also true for the *Adjust batten to rafter top*, and the *Adjust roof thickness to rafter bottom* options.

III) Don't adjust the tiles batten to the tile

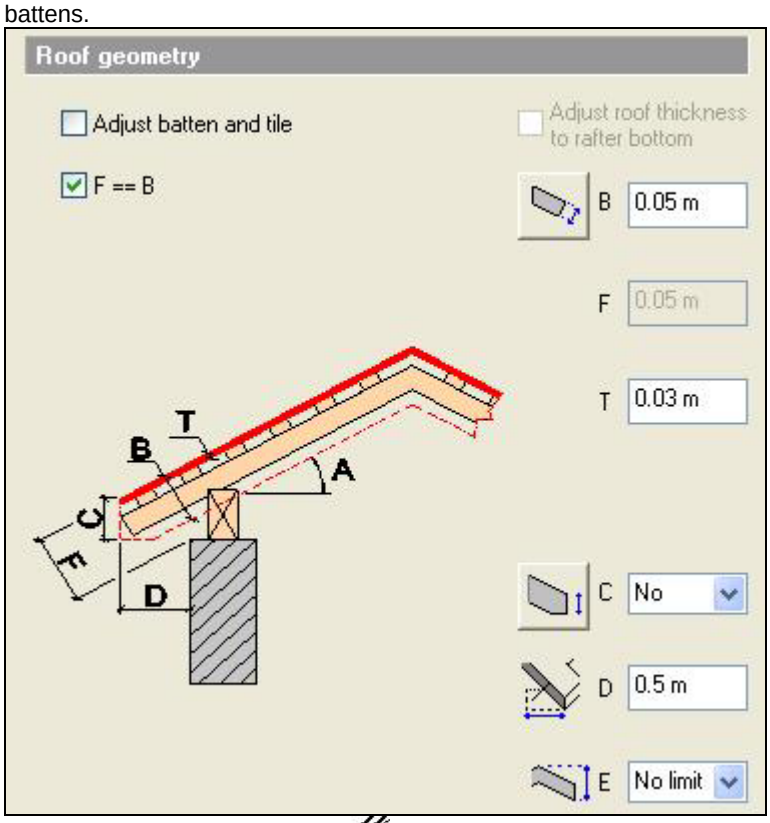
In this case we can apply the regular method, as in earlier versions of ARCHLine.XP:

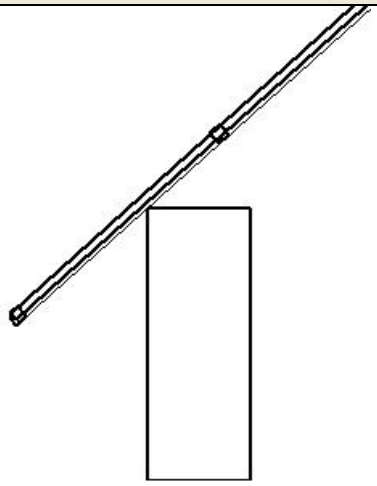
- ❖ This means, that we can define the height of different roof structure elements independent and free of each other. The result of the large freedom, that You can create with the roof tool not just roof element (we offer this just for skillful users).
- ❖ You can visualize the original state by loading earlier plan.

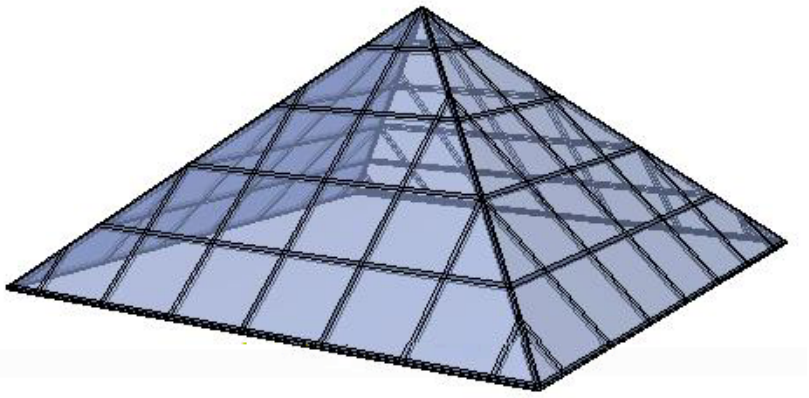
Make the following adjustment:

- *In the roof geometry window:*
  Switch off the Adjust batten and tile. Switch on the F=B to reach, that the distance from the top of the roof and the reference line be equal with the thickness of roof.

For example with this method You can create metal construction glass-roof. Form the metal structure from rafters and tiles battens.





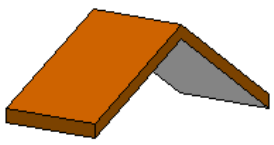


❖ **Other parameters**

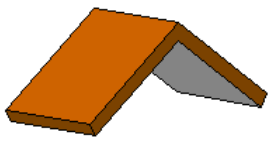
Roof thickness - B

You can define roof thickness vertically or perpendicular to the roof plane.

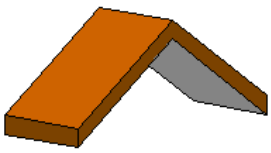
Relative to the vertical projection, while the end of the roof is vertical.



Roof thickness is perpendicular to the roof plane; the roof ending is also perpendicular.



Roof thickness is perpendicular to the roof plane; the roof ending is vertical to the roof plane.



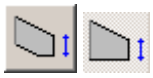
❖ **Adjust roof thickness to rafter bottom**
With this option You can define the thickness of the roof by the distance between the top of the roof tile and the bottom of the rafter.

Total roof thickness is represented in 3D only in the case when *Show roof in 3D* option is turned on and *Show roof planes with tile thickness* option is turned off in the *Roof properties* dialog box.

❖ **Total distance – F**
Total distance, i.e. the distance between the reference line of the roof and the top of the tile, is also displayed. You can use also this value as total roof thickness.

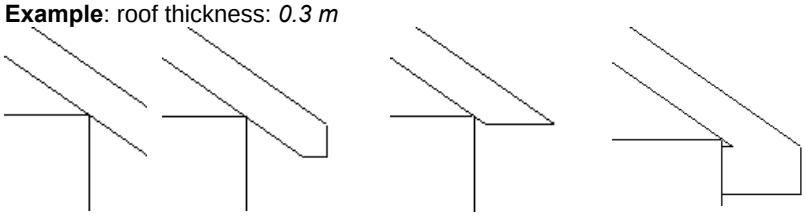
❖ **Tile thickness – T**
Here You can define the thickness of the tile. If the *Show roof planes with tile thickness* option is turned on in the *Roof properties* dialog box, tile will be represented on section view.

❖  **Roof slope - A**
Define roof slope in degrees or as the percentage of its deviation from horizontal direction. (Click on the appropriate icon to select degrees or percentages.)

❖  **Roof thickness at end - C**
You can apply this method with the different eaves types (see the examples). You can cut the end of the roof by using a value smaller than the one applied to the vertical projection.
The **No** option means that there is no horizontal cut.

- Click on the icon to create the desired roof, which connects to the wall, and then specify thickness.

Example: roof thickness: *0.3 m*

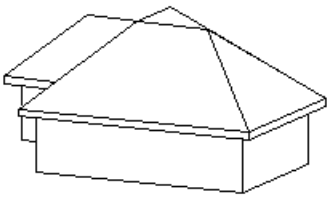


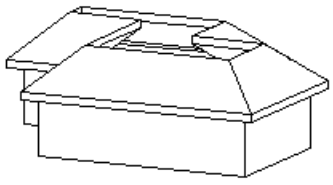
Roof thickness at end:

 **No**  **0.2 m**  **0 m**  **0.3 m**

❖  **Roof overhang - D**
This is used with automatic or simple roofs. The actual contour of the roof will overhang the contour of the walls with the specified value.

❖  **Ridge height - E**
In case of the **No limit** option the program calculates ridge height on the basis of the roof slope and the roof thickness. You can use a value smaller than the maximum value. If You do so, the result is the form illustrated by the second image. When You specify a value, it is measured from the reference line of the roof.

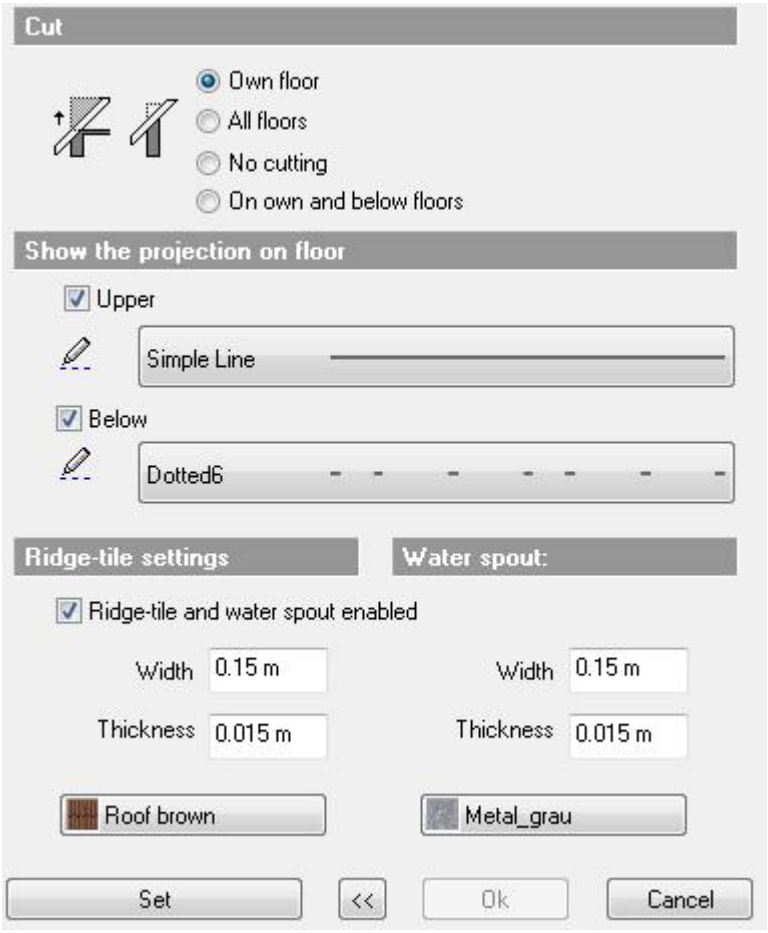




The program does not accept higher values than the default value.

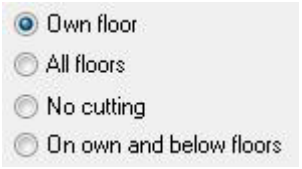
8.8. Projections and cut

Select *Projections and cut* option on the left of Properties dialog to display the following dialog box:



Cut

You can choose from the automatic wall-roof cut options:



- Cuts the walls on the current floor.
  Switch on this option in case of attic rooms.
- Cuts the walls of all floors.
  This option is useful in case of alpine houses.
- Does not cut walls automatically.
- Cuts the walls on the current floor and on the floor below.
  This option is useful in case of walls under a so called “dog’s house roof”.

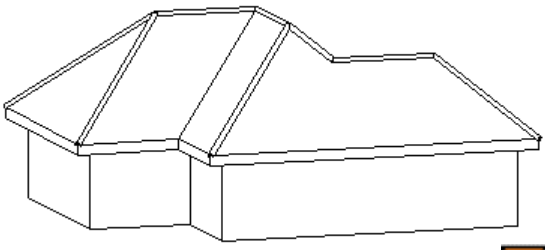
To see the result achieved by applying the cut options, enable *Wall-slab-roof cut* option in *Build 3D model* 3D dialog.

Projection

You can display the roof in 2D on its own floor, one floor above or one floor below. You can define which line type You wish to apply to the roof structure on each floor.

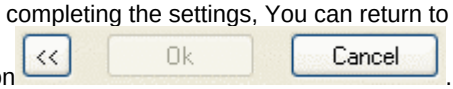
Ridge-tile and Water spout

You can specify whether to tile the intersection of the roof planes with ridge-tiles and water spout. If You enable the option You have to define their width, thickness and material.



This is a global setting, which applies to all roofs on the floor plan, even the ones previously drawn.
After this You can only modify ridge-tiles in Properties dialog box,

which You can activate by clicking on the  icon, or by the **Properties – Roof** command.

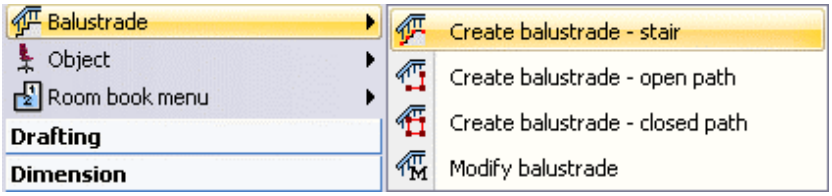
After completing the settings, You can return to the *Properties* dialog box by using the **Arrow** button 

.

9. Balustrade developing

With the new *Balustrade wizard* you can create sophisticated individual balustrades. There are new balustrade sets for quick balustrade definition with or without stair.

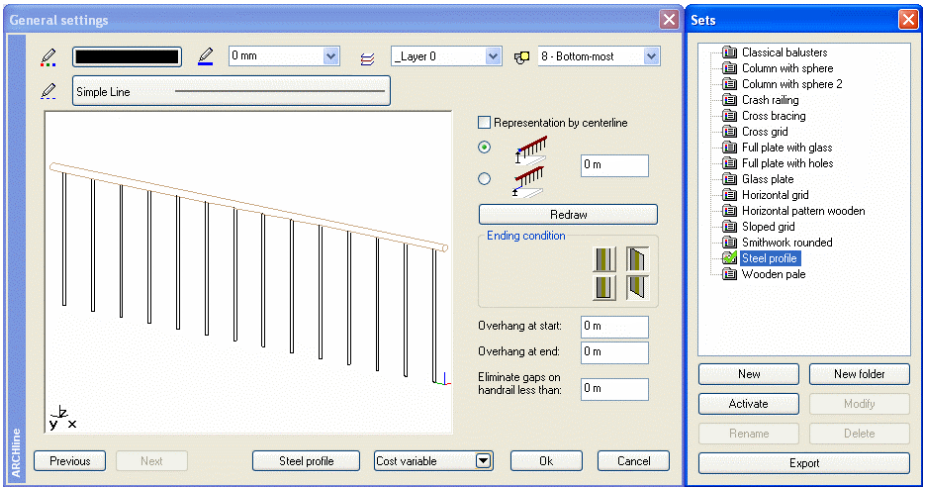
- Balustrade became an independent element type



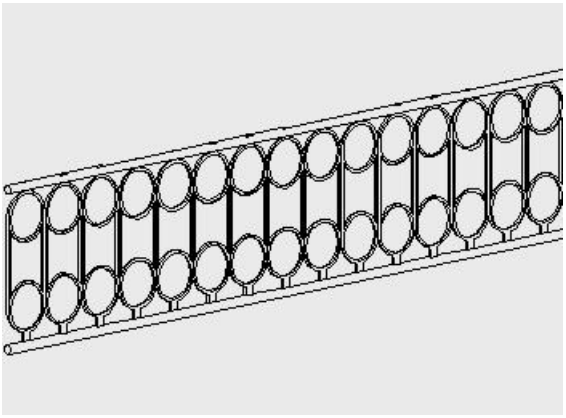
- Balustrade properties can be stored in sets. There are new balustrade sets.
- When you place a stair, it is represented together with the selected balustrade.

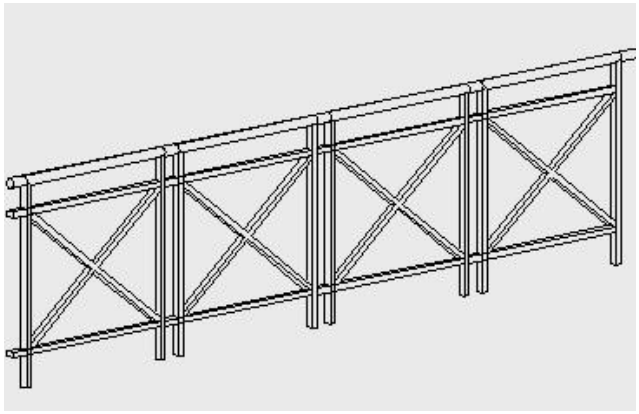
9.1. Balustrade arranged in sets

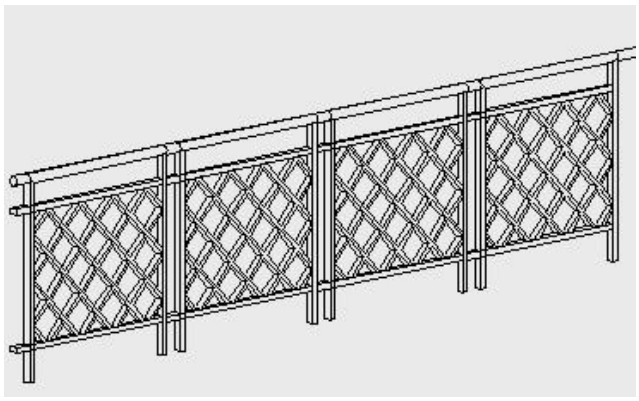
Balustrade properties can be saved into sets. The program includes pre-defined basic sets from which you can choose. If you select a set, the balustrade will be created along the specified path without showing up the balustrade wizard, thus making the design process faster.

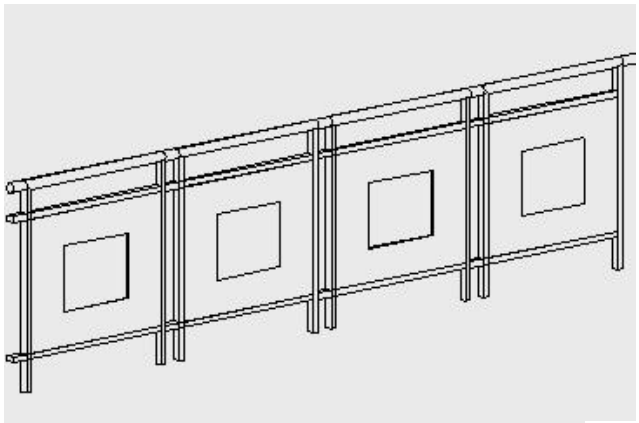


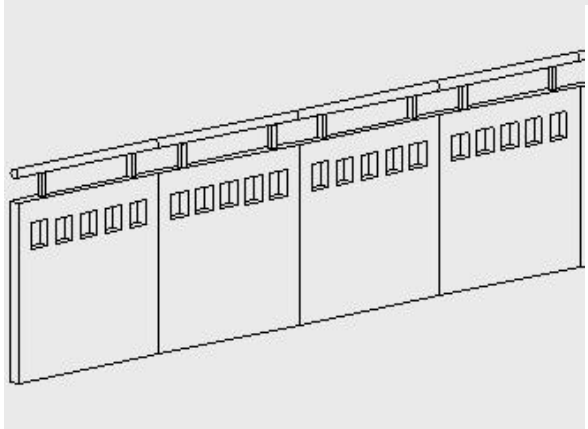
Some of the new balustrade sets:

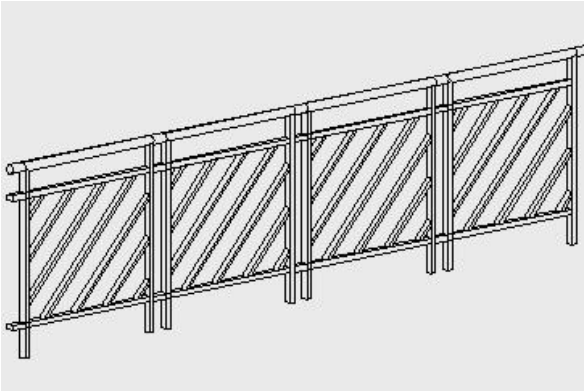






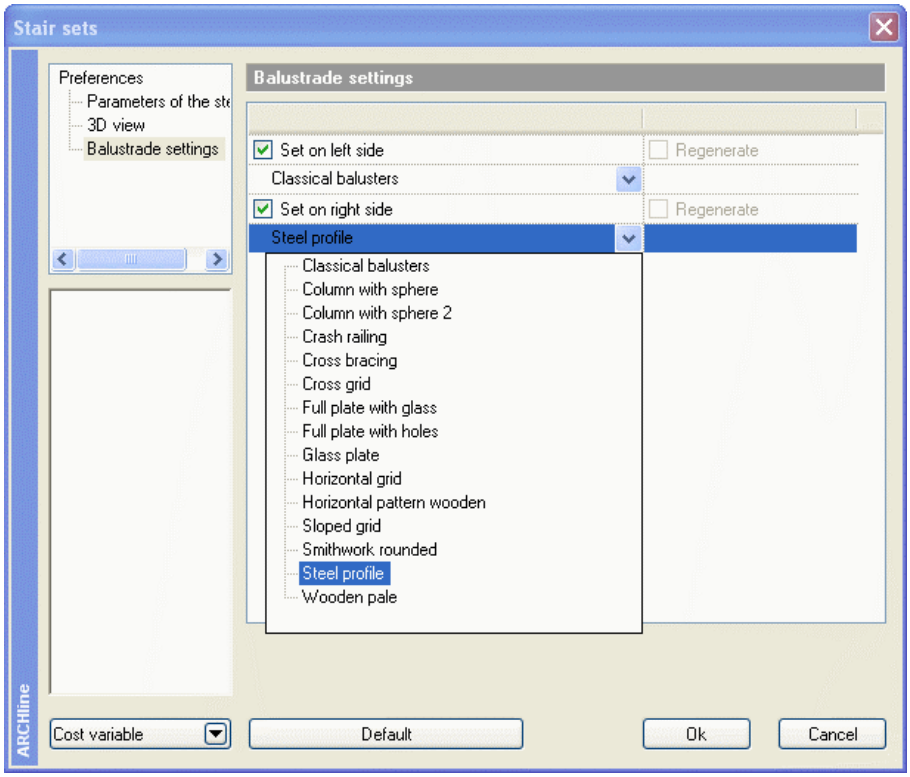


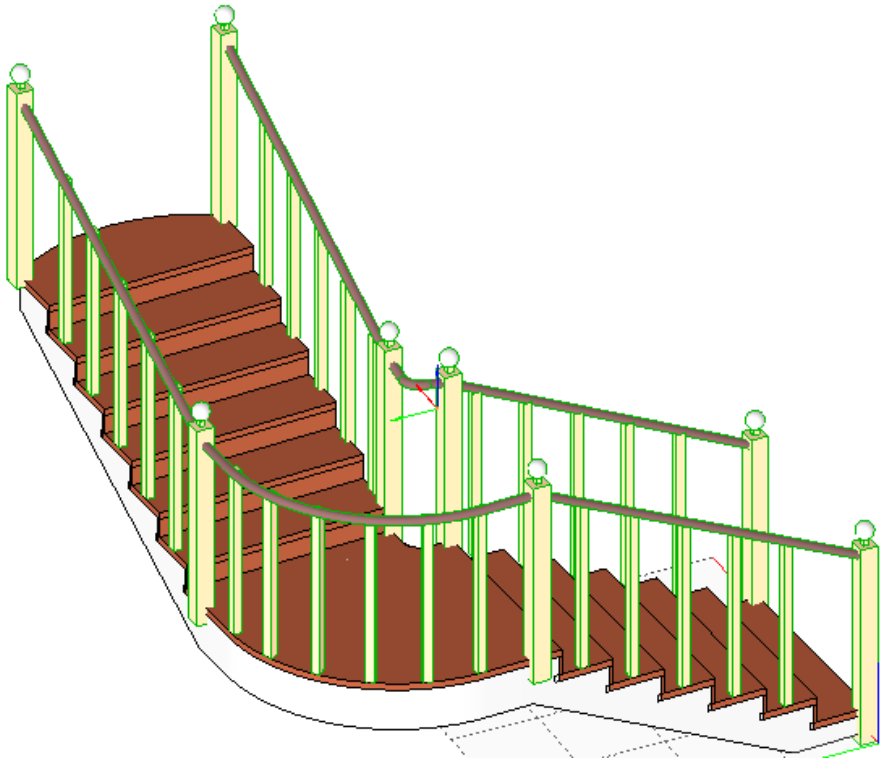




9.2. Stair with balustrade

In the stair properties dialog you can select balustrade sets to the left and the right side. When you place a stair, it will be represented together with the balustrade.



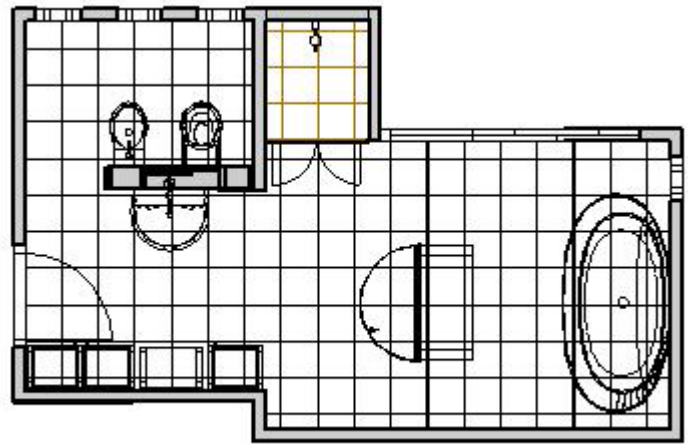


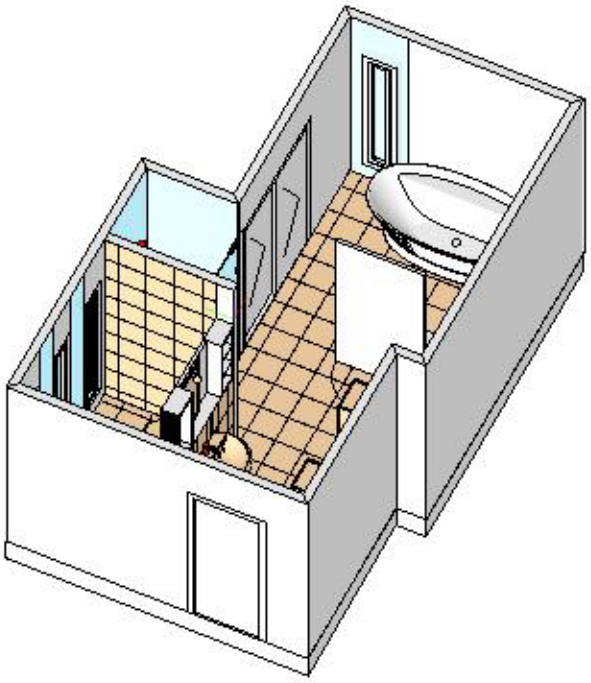
10. Creating of detailed view

Design offices often use pre-defined modules (drawing parts, detailed views) for their work.
They use pre-defined bathroom modules in different flats, for example.

The *Tools menu – Detailed view – Export to library* command satisfies this requirement.
With the help of this you can create a detailed view from the floor-plan on the active floor and put it into the selected library.
The detailed view keeps the architectural elements and the 3D model, too (if those are included). A 2D drawing can be also saved as detailed drawing, of course.
Later you can place the detailed view as a module from the library onto the floor-plan.
The detailed view placed in that way is a group; by entering into the group you can modify its elements, and so the architecture elements as well.

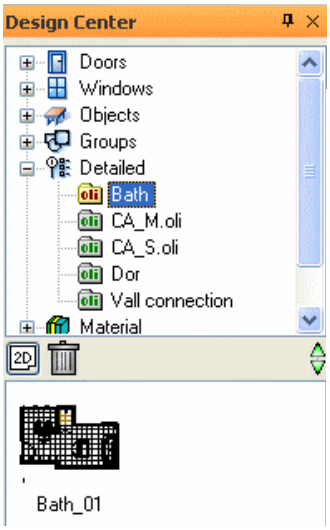
- Activate the window that includes the floor-plan, and then go to the desired floor.
- Select the *Tools menu – Detailed view – Export to library* command.
- In the appearing *Choose Oli* dialog create a new library or select an existing user-defined one in the *Detailed* folder, for example Bath.oli.
- Specify the name of the detailed view.

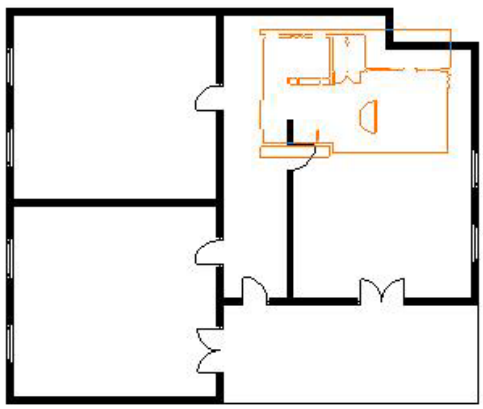


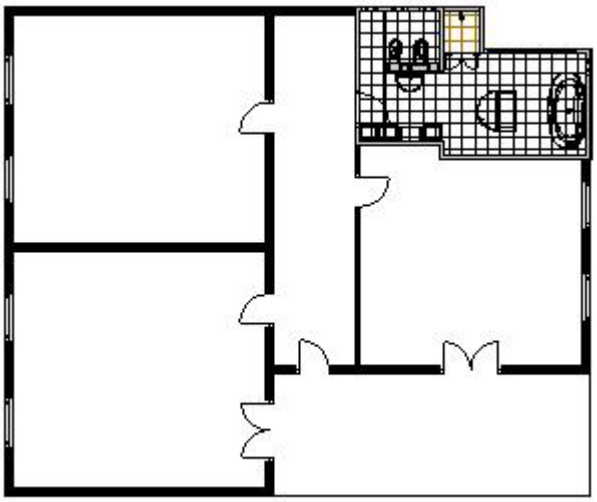


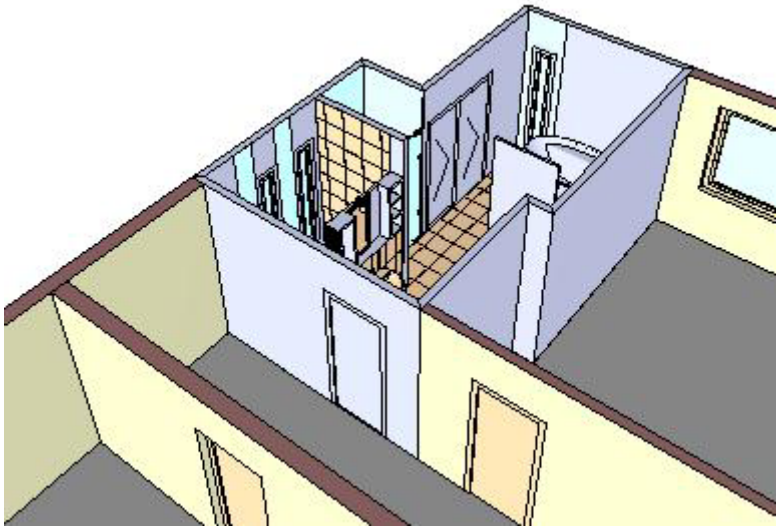
- Open the desired project.
- Drag and drop the detailed view from the Design Center to the floor-plan.
- If necessary, enter into the group and modify its elements.

- Close the group.









11. Revision Cloud

Revision cloud is commonly used on drawings to illustrate a design change. The revision cloud is made up of polyline arcs.

Revision cloud can be used in two ways:

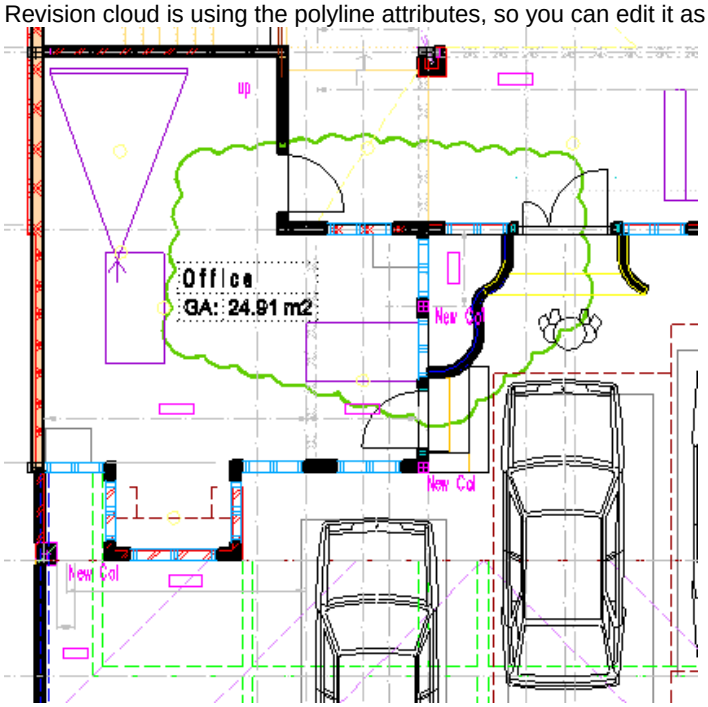
- As a polygon to outline a drawing part, for example,
- As a text frame.

Revision cloud as a polygon

Availability: *Drafting tool – Polygon -*  *Revision cloud*

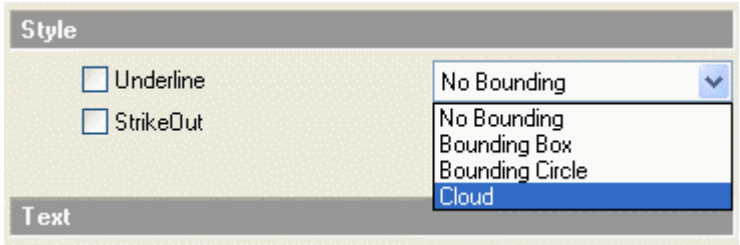
Revision cloud works like polygon command, define the start point and the next points of a polygon to create the cloudlike effect. Complete the command by pressing mouse right click or Enter.

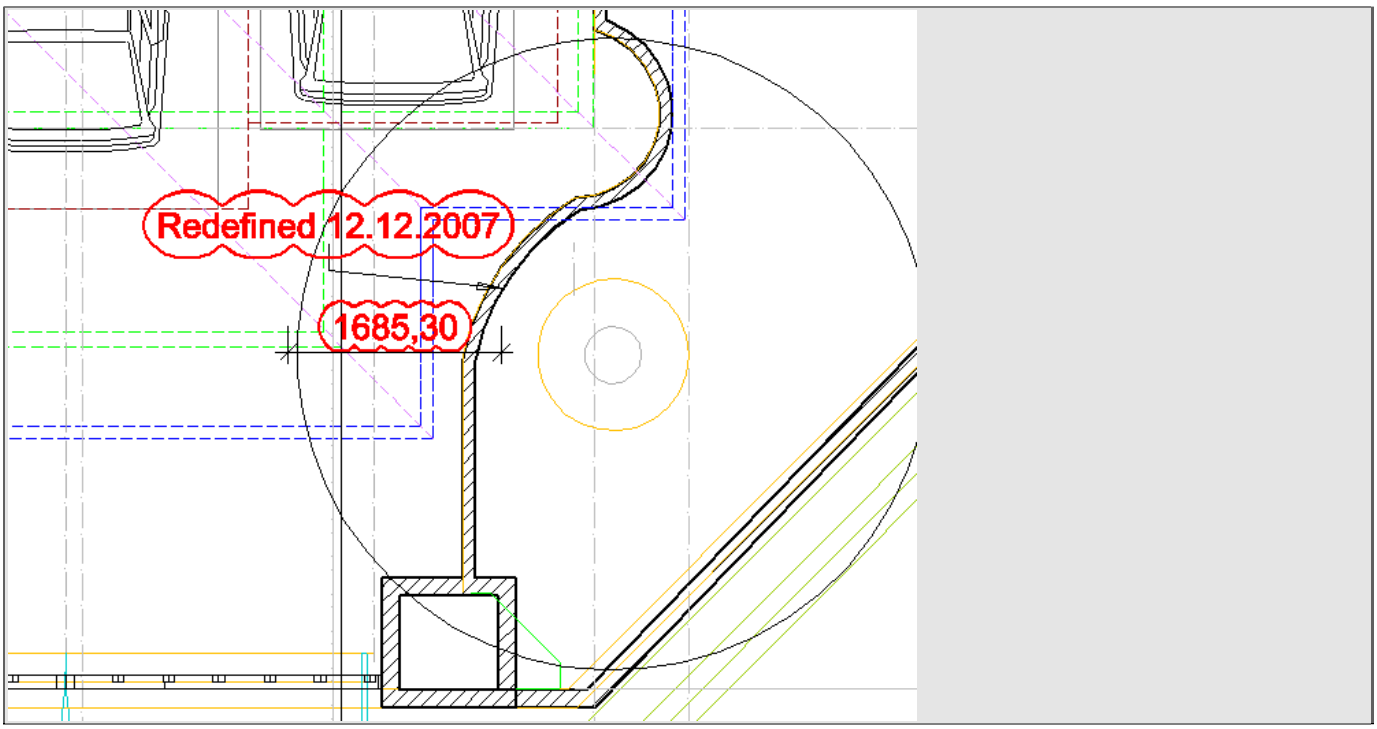
Revision cloud is using the polyline attributes, so you can edit it as a polyline.



Revision cloud as text frame

Revision cloud is usable for text and dimension as well. It is a new text frame around attribute selectable from the list of the "No bounding", "Bounding box" "Bounding Circle" and “Cloud” frame attributes.




Redefined 12.12.2007
1685,30

12. Others

12.1. Room book

Automatic refreshment of the summary table of all room books.

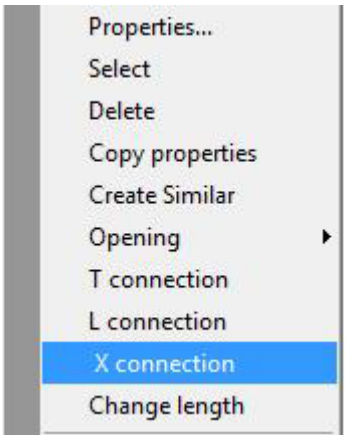
The  *Refresh all* command refreshes all the room books on the drawing and the related summary table of all room books.
The automatic refreshment will be executed on the first placed summary table on the drawing. The automatic refreshment is only an option. You can cancel the refreshment. In that case the table will be deleted.

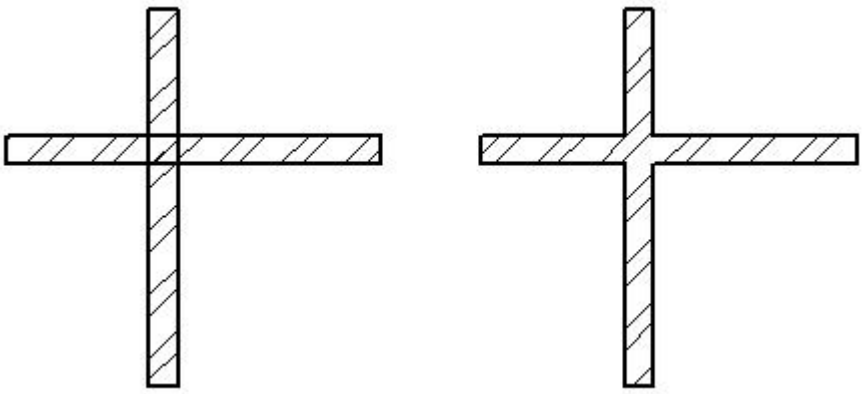
12.2. Wall

Wall X connection - connect walls automatically

Creating wall connection with X crossing is also automatic.

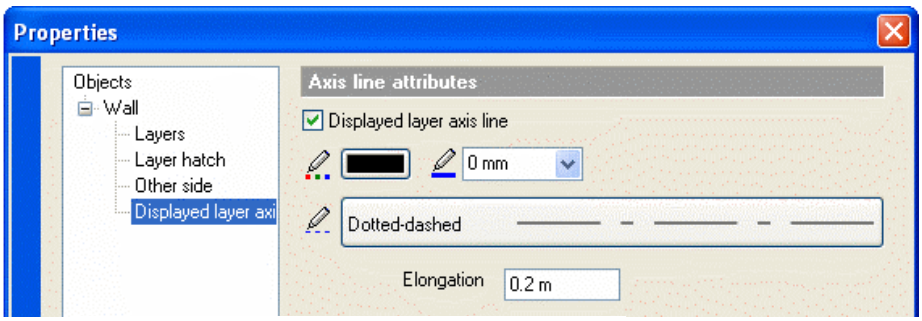
The *X connection* command in the wall local menu cuts the selected wall in the intersection of the nearest wall, and then it connects the created walls to the cutting wall with T connection.

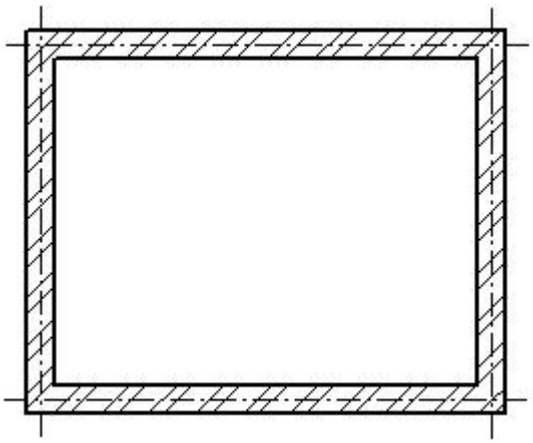




Axis line of wall

The axis line of wall can be represented. In case of layered wall, the axis line fits to the center line of the displayed layer. The properties of the axis line can be specified: color, line type, line thickness. The elongation of the axis line can be specified.



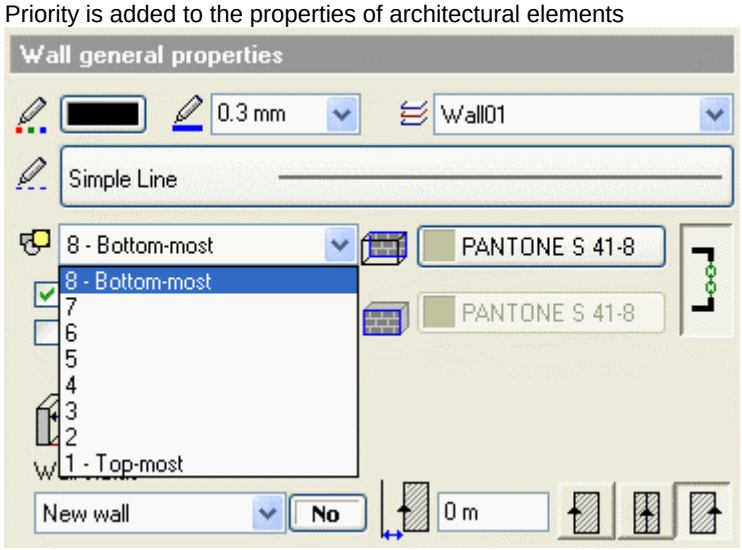


Full color hatch

Full color hatch can be also applied for hatching a wall.

12.3. Priority of architectural elements

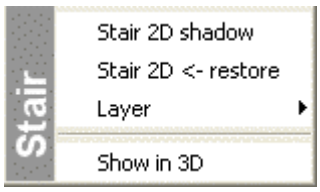
Priority is added to the properties of architectural elements



12.4. Stair

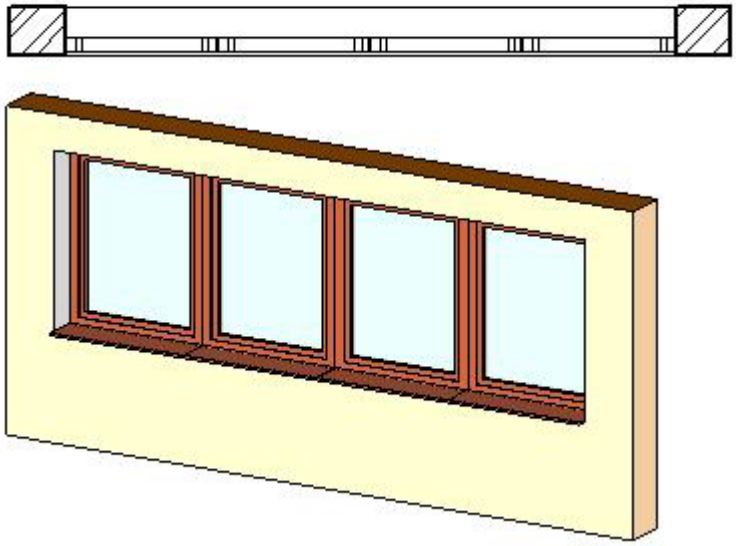
The use of *Stair 2D <- restore* command became easier. In the appearing dialog the program shows the list of identifiers of those stairs which have been converted to 2D shadow. This way it is easy to select the required identifier and enter it into the command line. You do not have to remember to it.

If there is no real stair on the floor-plan and you cannot start the restoring command from the local menu, it is worth to place a temporary stair to use its local menu.



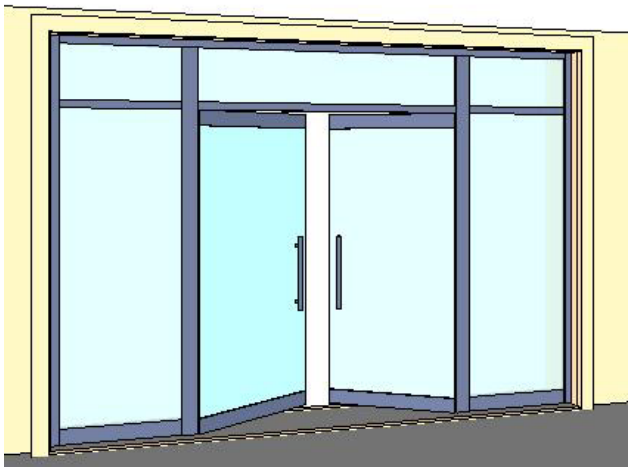
12.5. Doors/windows

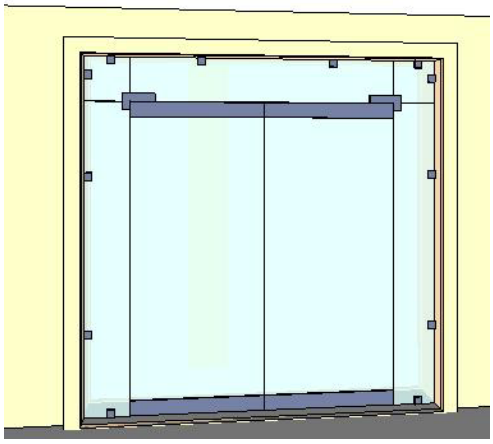
Wall representation between doors/windows placed next to each other is eliminated.



12.6. New door/window libraries

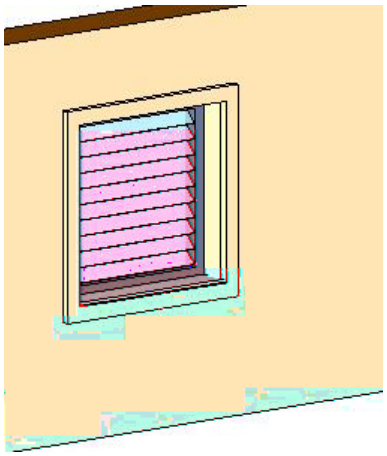
Glass doors:





Shuttered windows

Louver window



12.7. Curtain wall

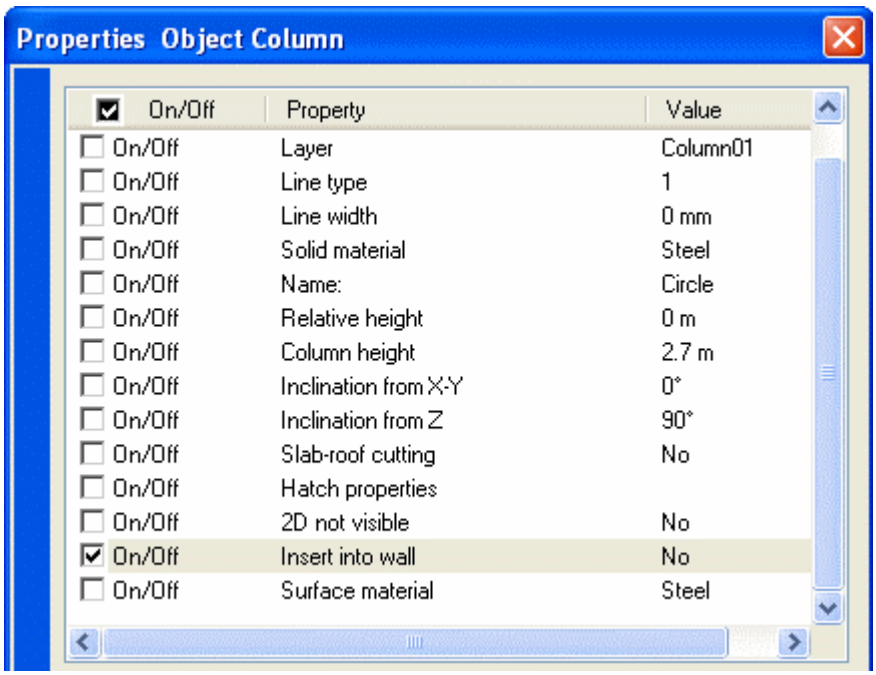
Divider has two parameters: width in X and width in Y

12.8. Balustrade

In case of balustrade cost parameters the *Length* parameter means the length of balustrade.

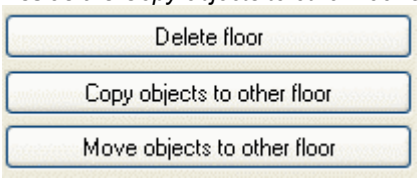
12.9. Column, beam: Copy properties

In case of columns, beams and objects the *Insert into wall* property can be copied by the *Copy properties command.*



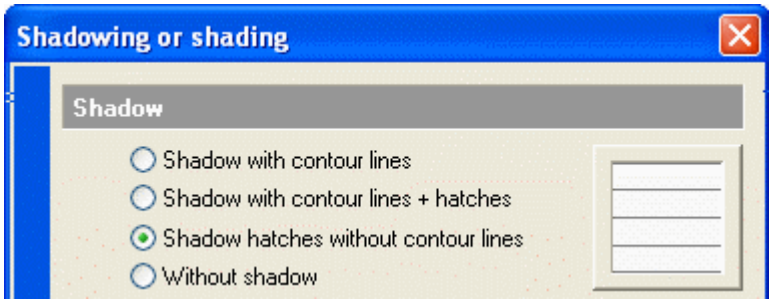
12.10. Edit floor levels dialog – Move objects to other floor

Beside the *Copy objects to other floor* command you can also move objects to other floor.



12.11. Representation - Shadow

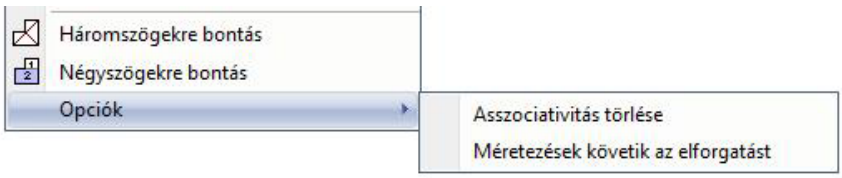
In the 3D drawing window the representation of shadow hatches without contour lines is available.



12.12. Dimension - Remove associativity

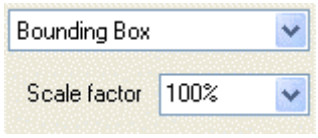
With the help of this command the length and distance dimensioning can be converted to non-associative dimensioning.
The command does not change the non-convertible dimensioning like radius, diameter etc.
The command is available in the *Dimension menu – Options submenu*.
With this command it is possible to copy wall dimensioning (created and converted to non-associative on a floor) to another floor if the walls are identical on both floors. So it is not necessary to create the same dimensioning again.

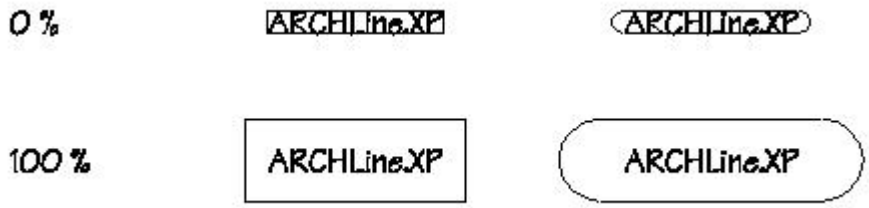
The tooltip includes the associativity information.



12.13. Text

The distance between bounding box and the text can be specified as a percent value relative to the character height.





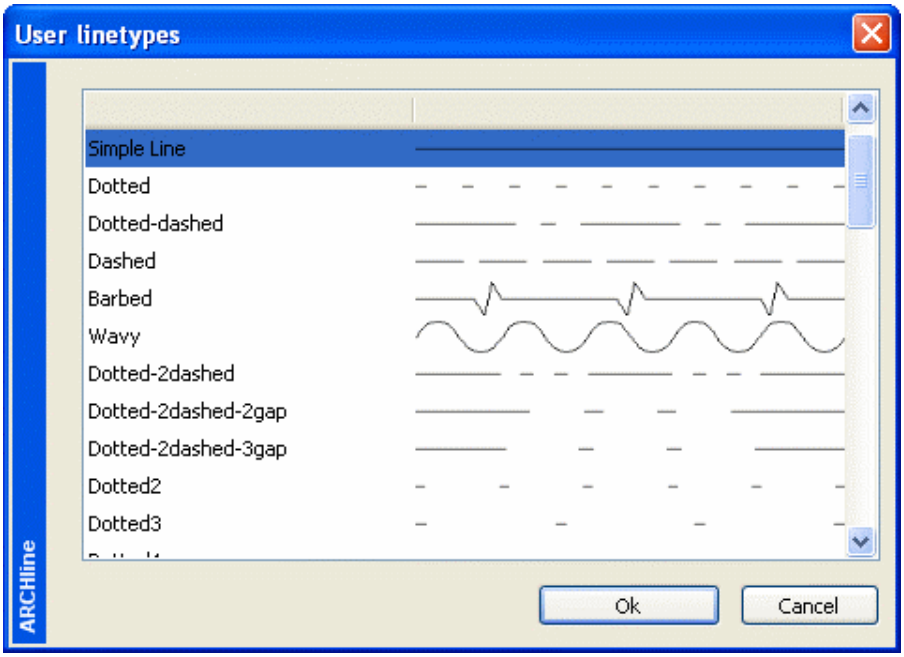
12.14. New group libraries

More group libraries are added to the program. These are as follows:

- **Single circle signs**
- **Single square signs**
- **Vertical simple circle legend signs**
- **Vertical simple square legend signs**
- **Consignation signs**
- **Circle signs**
- **Arrows**
- **Square signs**
- **Horizontal simple circle legend signs**
- **Horizontal simple square legend signs**

New line types dialog

In the line types dialog the desired line type can be accessed easily by the slide bar.



13. Installation files and folders

ARCHLine.XP® 2008 has complete Setup support to Microsoft Windows Vista.

13.1. Using ARCHLine.XP® as a limited user

In releases prior to ARCHLine.XP® 2008, you were required to have computer administrator rights to run ARCHLine.XP®. CadLine removed the computer administrator requirement and you can now run ARCHLine.XP® as a limited user. As a result, your customizable files had to be moved to a location where you have access to them. The previous location of those files (*Program Files\Archline.XP 2007*, for example) is Read Only (for example you cannot update files in this location as a standard user on Windows Vista). The new location of your project and drawing files, the *ARCHlineXP Draw* subfolder in your own documents folder, allows you to create and modify own files.

To install ARCHLine.XP®, you must still either have administrator permissions or be granted elevated permissions by your system administrator. See your system administrator for information about administrator and elevated permissions.

! If you are not the user who installed ARCHLine.XP®, you must run ARCHLine.XP® from the Start menu or from the desktop shortcut icon. As a different user who installed ARCHLine.XP®, you cannot run ARCHLine.XP® at first time from the folder where it is installed (for example, c:\Program Files\ARCHLine.XP 2008\Exe\ARCHLineXP2008.exe).

13.2. Locate files

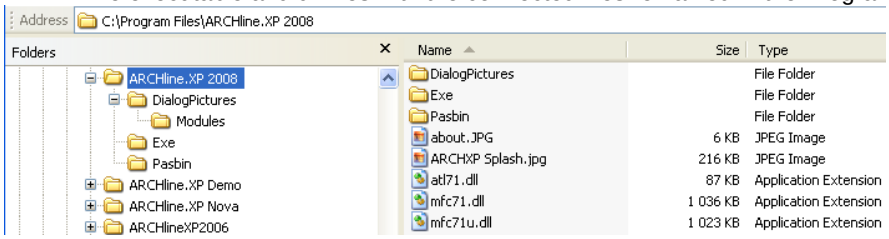
In ARCHLine.XP® 2008, the location of some of your installation files has changed. The reasons for the file location changes include the followings:

- Limited user rights on a workstation. You can run ARCHLine.XP® as a limited user. This means that you no longer need power user or Administrator permissions to run ARCHLine.XP® once it is installed. The ability to run ARCHLine.XP® as a limited user was introduced in ARCHLine.XP® 2008.
- Vista compatibility. Because of the User Account Control applied in Windows Vista, the read only program files have to be separated from other customizable files and folders that can be written or overwritten by standard users.

In some operating systems, the folders that are located under your profile are hidden by default. To view these files, you may need to turn on the *Show hidden files and folders* option in the folder options dialog.

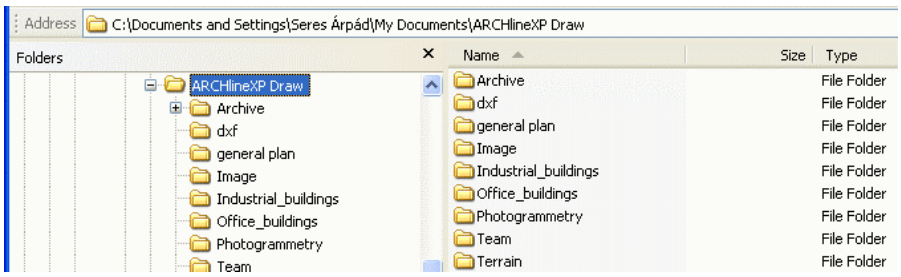
13.3. Read only program files location

The executable and dll files with the connected files remained in the Program Files directory:



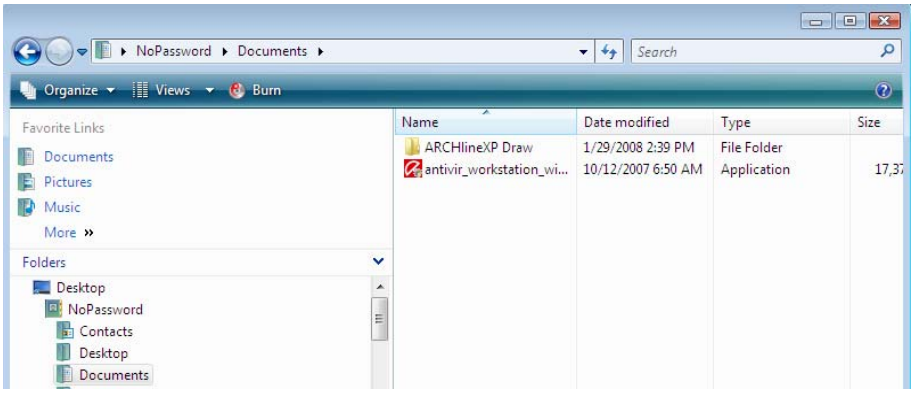
13.4. Project directory

In ARCHLine.XP® 2008, the default location of your drawing and project files has changed to *My Documents\ARCHlineXP Draw* (in Windows XP operating system):



Also, in this folder you can find the default *Archive* directory for automatic archiving.

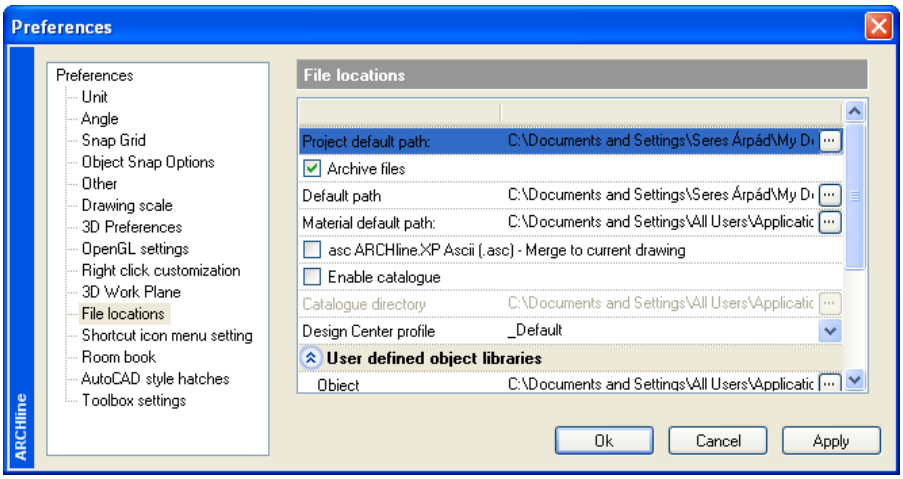
In Windows Vista, you can find this folder in your Documents folder:



13.4.1. Locate project directory

To locate your default project directory:

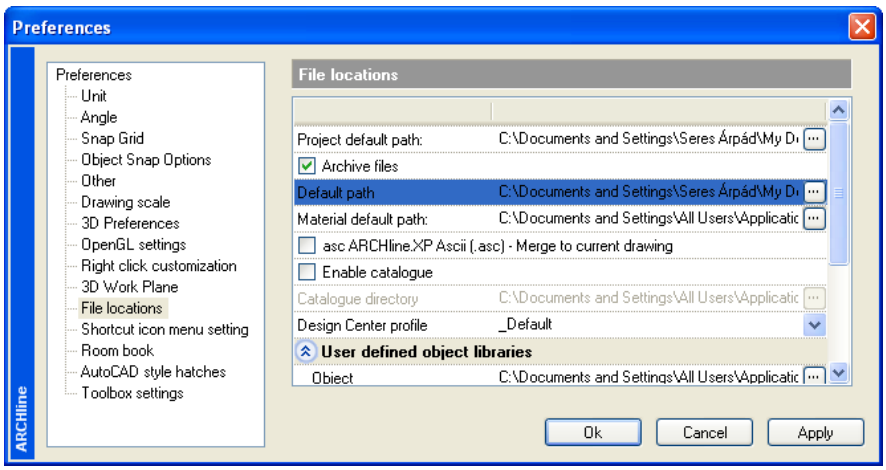
- Start ARCHLine.XP®.
- In the *File menu – Preferences – General* dialog select *File locations.*
- As you click the *Project default path* ellipsis button, a window will popup allowing you to locate and modify your default project directory.



13.4.2. Locate archive files

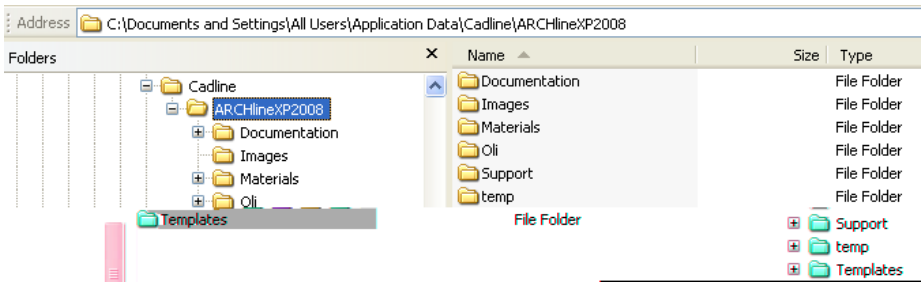
To locate your default path of your archive files:

- Start ARCHLine.XP®.
- In the *File menu – Preferences – General* dialog select *File locations.*
- Make sure that the *Archive files* option is switched on.
- As you click the *Default path* ellipsis button under *Archive files* option, a window will popup allowing you to locate and modify your default archive files directory.



13.5. Common application data directory

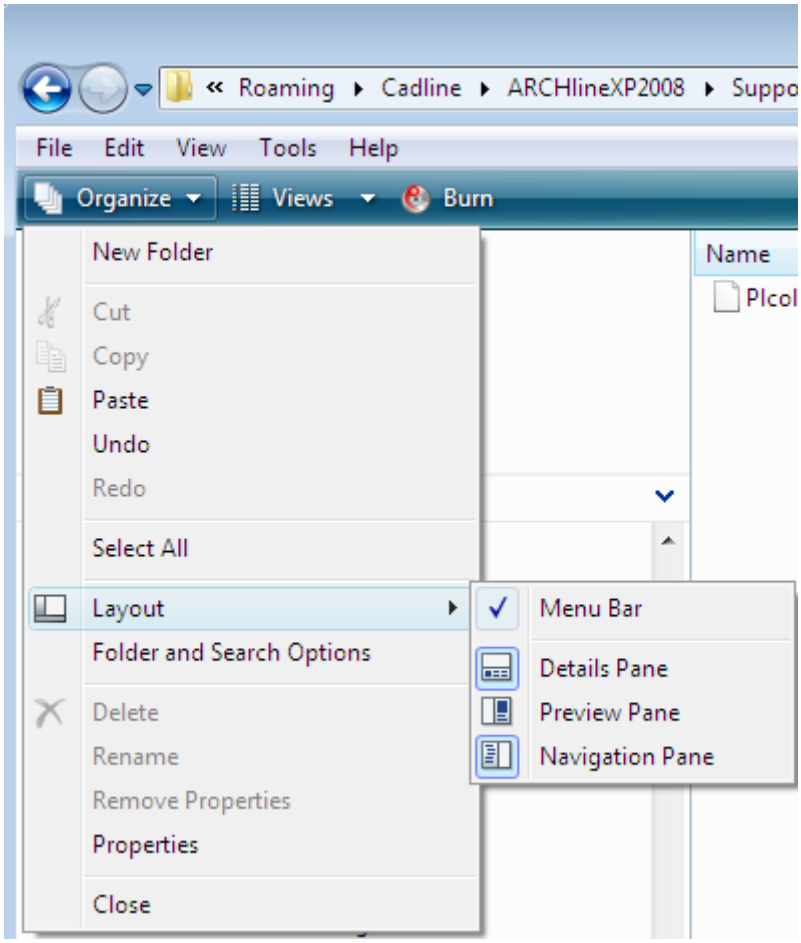
Most of the customizable installation files have been moved to the *common application data file*s folder:



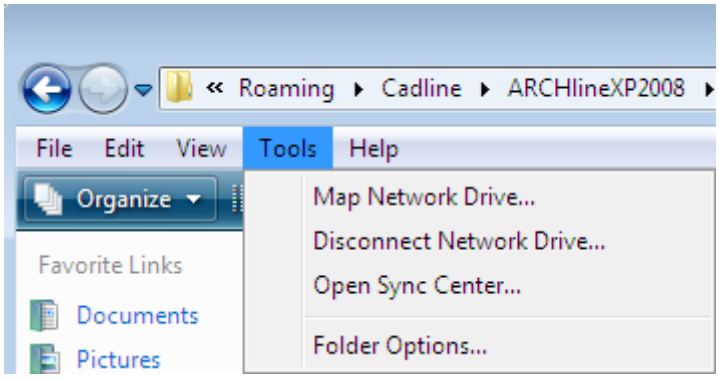
In some operating systems, the folders that are located under all users profile are hidden by default. To view these files, you may need to turn on the *Show hidden files and folder* option in the folder options dialog.

On Windows Vista:

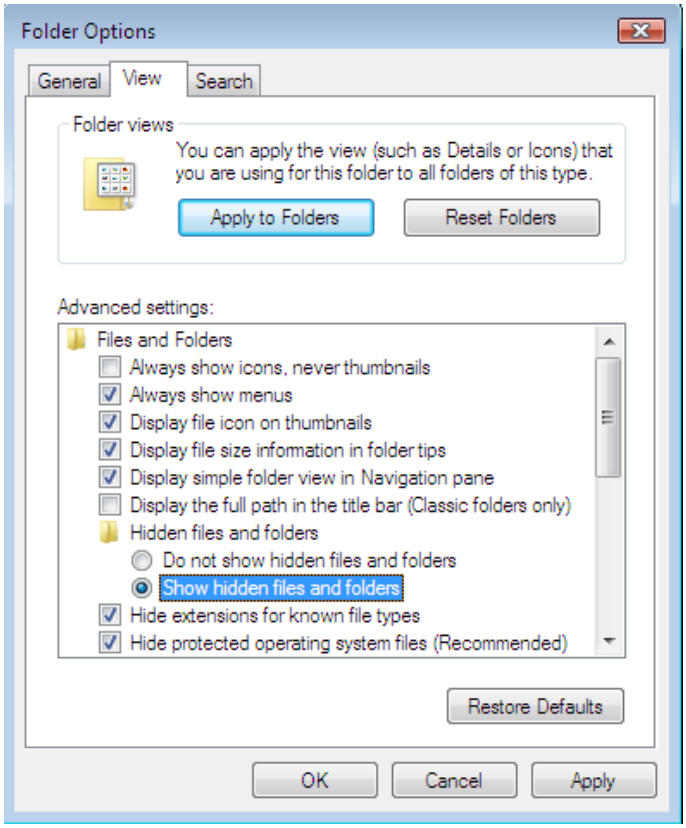
- The Organize menu -> Layout -> Menu Bar option must be switched on.



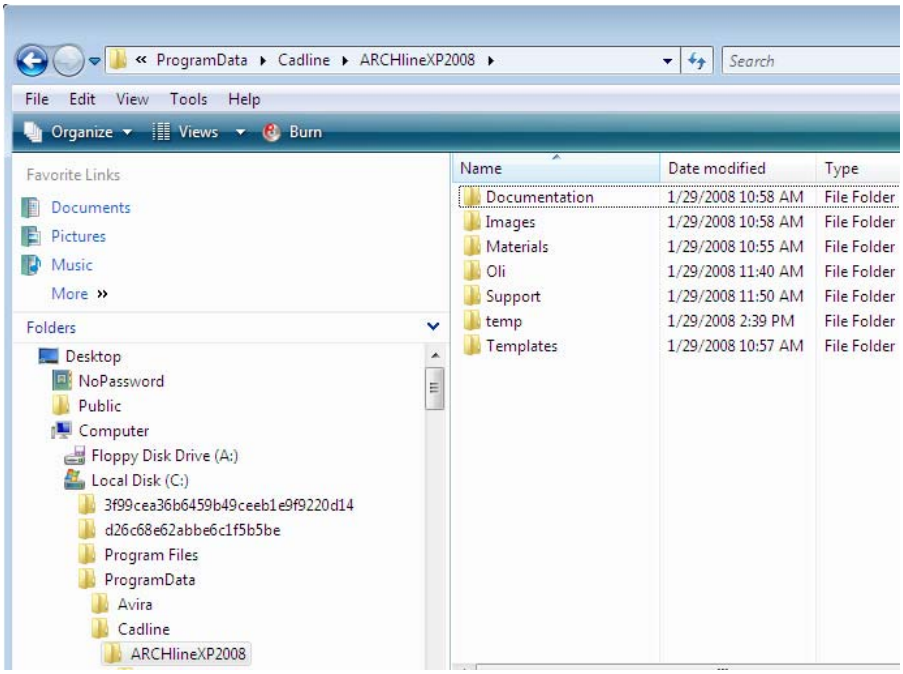
- Open the Tools -> Folder Options.. dialog.



- In the View tab select the **Show hidden files and folders** option:



In the c:\ProgramData\Cadline folder you can find the ARCHlineXP2008 directory:



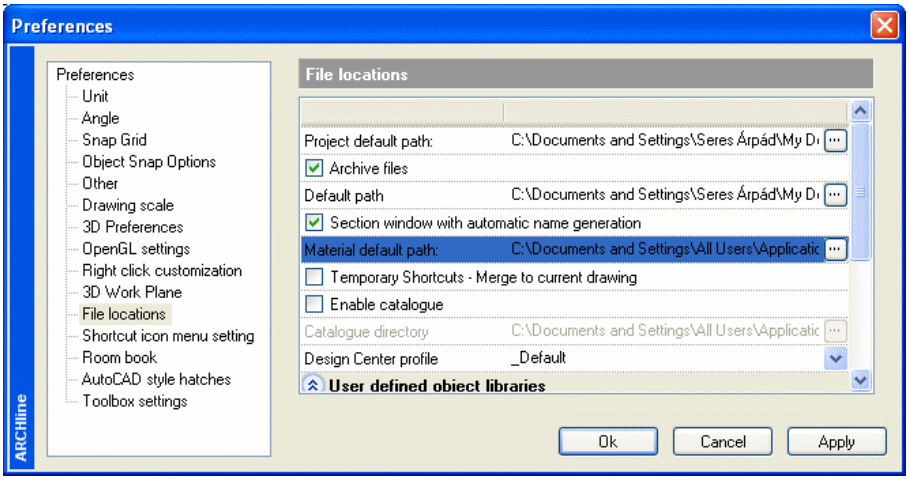
By default:

- Documentation directory is used for documentation files.
- Images directory is used for images used in the *Sun position* dialog.
- Materials directory is used for texture and material files used by ARCHLine.XP®.
- Oli directory is used for object libraries of different element types and auxiliary Pascal macro files.
- Support directory is used for the templates files, design center elements, translation files etc.
- Temp directory is used for the current project temporary management and all files that belong to the current project.
- Templates directory is mainly used for files that necessary for the creation of Word and Excel lists.

13.5.1. Locate material directory

To locate your default material directory:

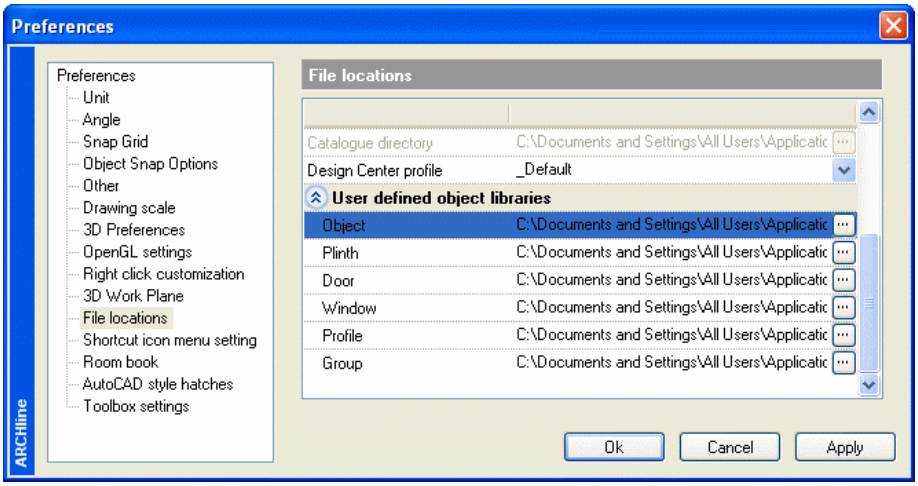
- Start ARCHLine.XP®.
- In the *File menu – Preferences – General* dialog select *File locations.*
- As you click the *Material default path* ellipsis button, a window will popup allowing you to locate and modify your default material directory.



13.5.2. Locate user defined object libraries

To locate your default paths used for user defined object libraries of objects, plinths, doors, windows, profiles or groups:

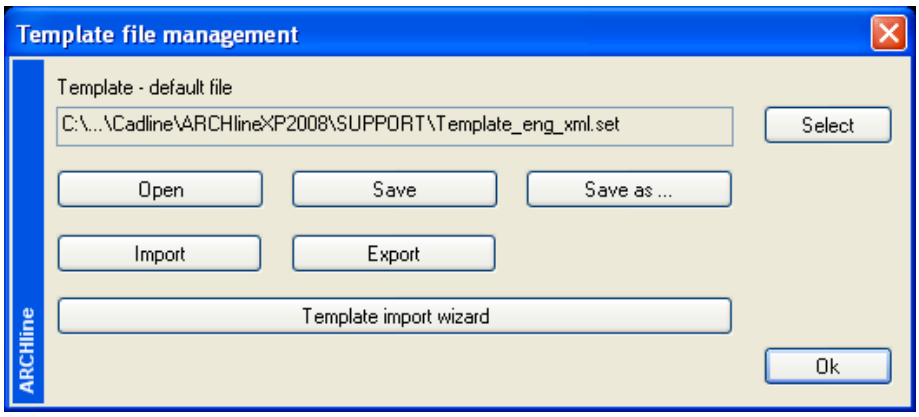
- Start ARCHLine.XP®.
- In the *File menu – Preferences – General* dialog select *File locations.*
- Under *User defined object libraries* you can find the path information of user defined objects, plinths, doors, windows, profiles and groups. As you click the Object/Plinth/Door/Window/Profile/Group ellipsis button, a window will popup allowing you to locate your user defined .oli files used for objects/plinths/doors/windows/profiles/groups.



13.5.3. Locate template file

To locate your template file used for default sets and other settings:

- Start ARCHLine.XP®.
- In the *File menu – Preferences – Template management* dialog you can locate and modify your template file:


Template file management
Template - default file
C:\...\Cadline\ARCHlineXP2008\SUPPORT\Template_eng_xml.set
Select
Open
Save
Save as ...
Import
Export
Template import wizard
Ok
ARCHline