

II. Getting Started

3. Settings

In this chapter we carry on with the preparations of design. As you have been introduced to display settings in the previous chapter, you are ready to learn about architectural settings, floor management, layer management and the definition of element properties.

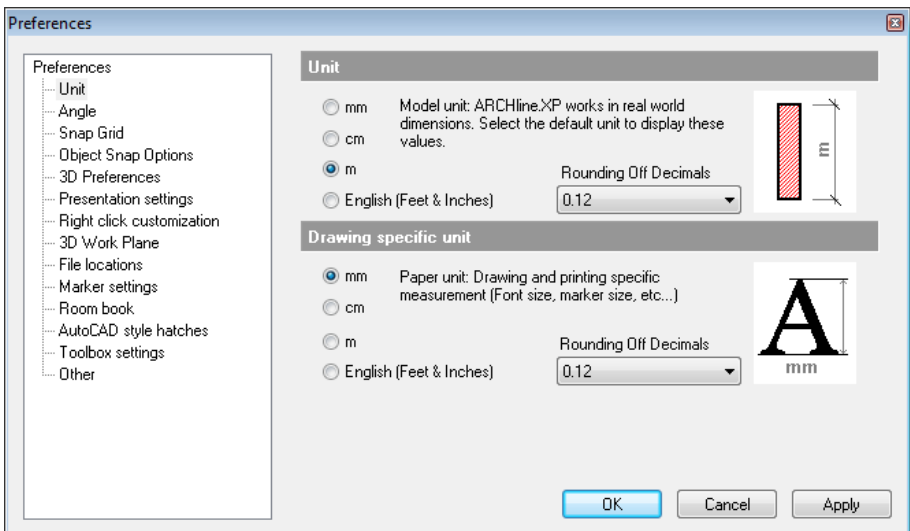
3.1. Architectural settings

You can set the options necessary for architectural design in the Preferences Submenu within the File menu:

- ❖ General: units of measurement angle and scale.
- ❖ Construction Grid
- ❖ Stair standard

3.1.1. Units of measurement

Choose *File - Preferences - General* panel.

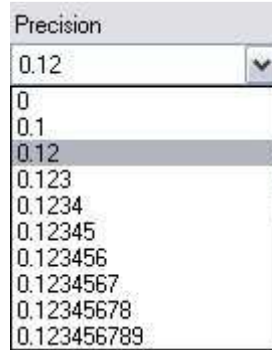


Unit

Specifies the measurement unit and the precision of drawing. The program offers the following units: mm, cm, m and inch.

You can define the desired unit either by choosing the option or by clicking on the icon on the right.

To specify precision click the pull-down list and choose the appropriate element: E.g.: choosing *0.12* means two decimal points of precision.



Drawing-specific measurement units

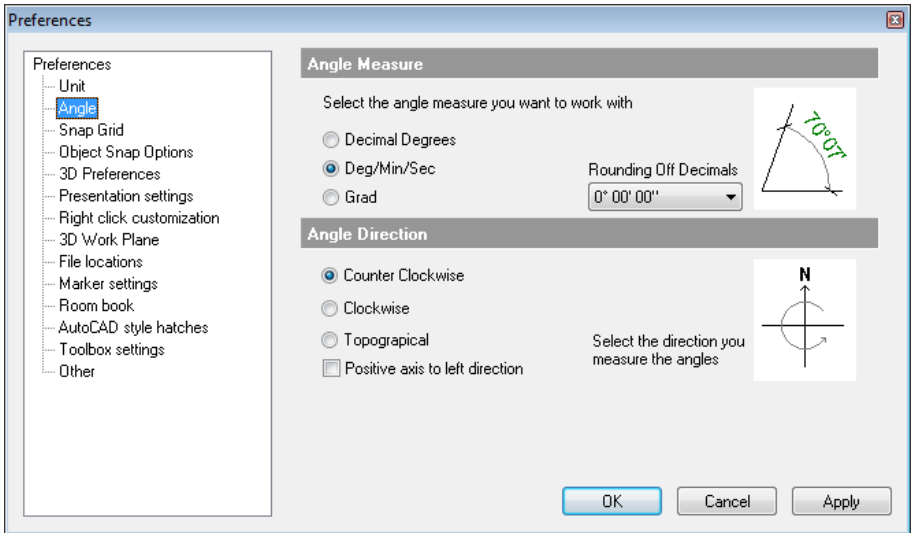
It defines the drawing-specific measurement unit and its precision. It includes marker properties, text properties, dimension properties and hatch dimension.



Precision does not refer to the dimensional precision required (that can be set in Dimension general properties); it refers to the precision of the query. This is shown by the **Cursor position tooltip** and by the **Cursor info tooltip**. For further references, see Chapter 2.10.3. –*Screen Properties* and Chapter 10.1.1.3. *Dimensioning - Format parameters*.

3.1.2. Angle

You can set what angle measure to use and the direction of angles.



Angle

The program offers the following angle measures:

Decimal Degrees	Displays angles in decimal units (e.g.: 30,5°)
Deg/Min/Sec	Degrees, minutes and seconds (e.g.: 30°30'00")
Grads	An engineering unit with 400 grads

To choose the unit of angle click on the corresponding option or the icon on the right.



The result of angle definition is not displayed when setting the dimensions of the element (that can be set in Dimension general properties), only when querying. This is shown for example by the **Cursor position tooltip** and by the **Cursor info tooltip**. For further references, see Chapter 2.10.3. – *Screen Properties* and Chapter 10.1.1.3. *Dimensioning - Format parameters*.

Direction

You can measure angles clockwise and counter clockwise or topographically. Clockwise and counter clockwise directions are defined from the compass direction East, while topographical directions are defined counter clockwise

from the compass direction North.

To specify a direction, click on Direction options or the icon on the right.

Positive to left

You can specify the direction of the X axis. By default, the X axis points to the right, so the program measures positive values on the right. Enable this option to measure positive values on the left.

3.1.3. Scale factor

You can assign a scale factor to the drawing.

The Scale option enables you to work with a proportionally reduced drawing, which has all the advantages of drawing with real dimensions. With this command you can work with any (1: X) scale you like, while keeping the original dimensions of the drawing. If you change scale factor, the effect is displayed on line width (except True Type fonts, for which line width does not apply.)



The current scale is displayed in the Drawing status line.

1:1

It is preferable to use a scale of 1:1. The appropriate drawing scale can be defined at printing, e.g.: 1:100.

3.1.4. Construction Grid

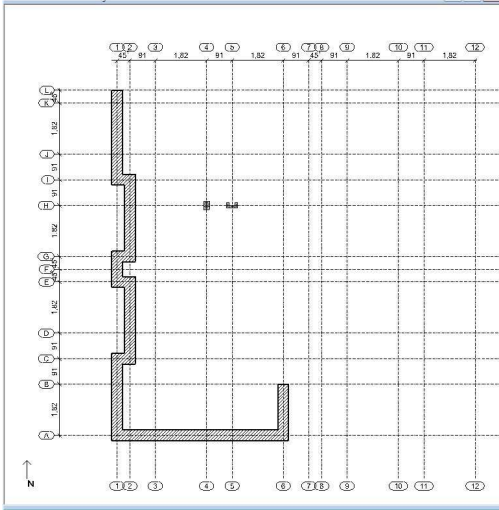
There are numerous places in an architecture where you might want to use predefined grid structure to help the regular design. With this command (in *Building - Construction Grid*) you can place construction grid on drawing of framed buildings.

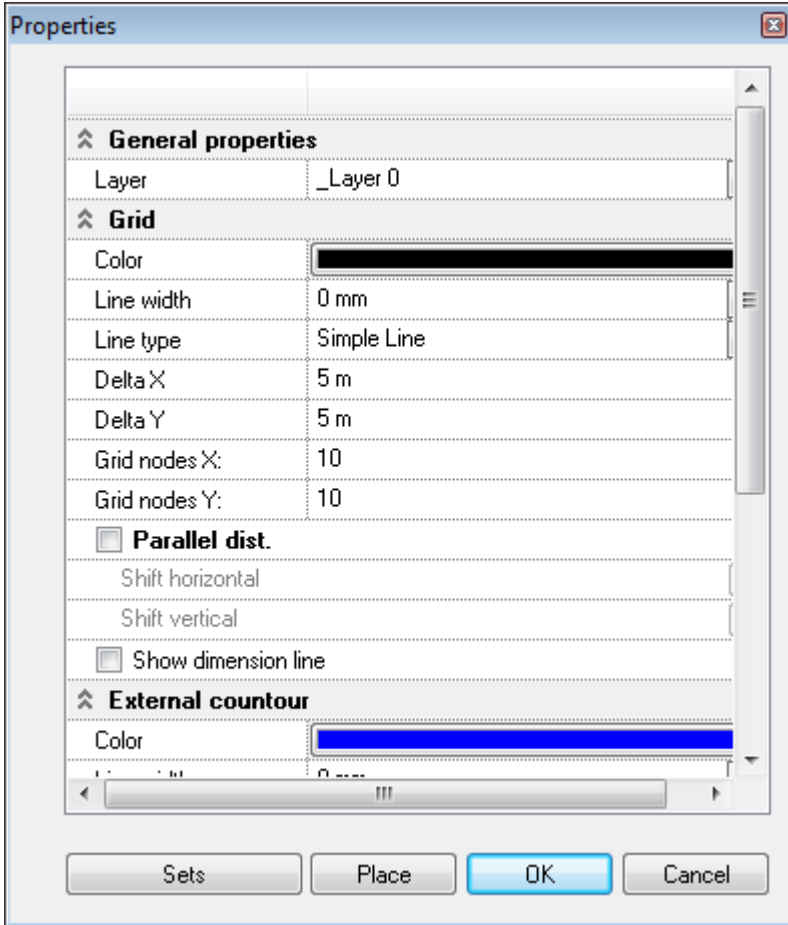
You can define the distance of grid nodes both in X and Y directions, the number of vertical and horizontal lines and the value for overhanging. Horizontal lines are marked with letters; vertical lines are marked with numbers.

Options:

1. You can make visible the dimension lines between grid nodes in X and Y directions.
2. Definition of different distances in X and Y directions (Click on the Parallel dist. option to open the distance input dialog)
3. In the upcoming Horizontal and Vertical shift dialog the whole pattern can be duplicated by the Copy all button

Later when you already placed the grid on the drawing it is possible to move the grid nodes separately.





3.1.5. Setting stair standards

If you monitor continuously the ergonomic requirements defined by standards in case of stairs selected from the stair sets, it can help you in the drawing of stairs. You can find it in the *File menu - Preferences - Stair standard* dialog box.

During the planning the program monitors continuously that part of the values, which represented according to the standard, the other part you can select optional. The program signs the exceeded limits in red colour, but it doesn't forbid the creating of the stair, if it doesn't come up to ergonomics requirements.

You can pick your **Stair categories** and **Rise and going** from a pull-down menu. Their combination defines the limits that must be met according to the relevant standard.

Stair categories

Private

Rise and going

Practical limits (rise: 155-220mm, going: 245-260mm)

Practical limits (rise: 155-220mm, going: 245-260mm)

Practical limits (rise: 165-200mm, going: 223-300mm)

Stair categories

Institutional or assembly

Rise and going

(rise: 135-180mm, going: 280-340mm)

Stair categories

Other

Rise and going

(rise: 150-190mm, going: 250-320mm)

These are the following: **2R +G** (two times riser plus going), **stair width**, **Rise** and **Going**. When drawing the stairs from the stair library, the program monitors the compliance with these limits; if you exceed them, it is indicated by red colour.

Stair standards

Stair categories
Private

Rise and going
Practical limits (rise: 155-220mm, going: 245-260mm)

	min	max
2R + G	0.55 m	0.7 m

Stair width
1 m

Rise	0.155 m	0.22 m
Going	0.245 m	0.26 m

Headroom
2.1 m

Set walking line between 1/2 and 2/3 of the width

The stair dialog uses the unit of measurement

OK Cancel

You can enable the monitoring of the following parameters:

- ❖ headroom height above stair: it is relevant when allowing stairs through the ceiling slab.
- ❖ set the walking line between 1/2 and 2/3 of the width of the stairs
- ❖ Use the measurement set in the dialog window. If you switch off the option, the values of stair parameters will appear in **cm** in the proper dialog windows.

3.2. Specifying properties

Before you use any architectural element or the geometric drawing tool of the program, specify the properties of objects first. Use the commands in the Building menu, Drafting menu, and Dimension menu - **Properties** command to set the properties. You can also access these properties by right-clicking the icons in the **Toolbox**.

Introduction

Properties are the graphical and structural features of objects and elements.

All element types have:

- ❖ *general properties*, such as colour, line width, line type, layer; and
- ❖ *special properties* (e.g. in the case of walls height, thickness, hatching, layer properties, etc.).



For a detailed description of the special properties of element types see the Chapter on the Detailed description of the special properties of element types.

You can save the edited set of properties of each element type in *Sets* and store the sets in the template assigned to the project.



For detailed information on the use of the template see Chapter 4.6 on *Managing templates*.

3.2.1. General properties

In the **Properties** dialog box you can first set the general properties of each element, such as colour, line width, layer, line type, and priority.

You can set the colour, line type, and line width:

- ❖ **Directly**, by specifying the property explicitly (e.g. the colour is red).
- ❖ **Indirectly**, so that the element acquires its general properties from the layer assigned to the element.
 1. If the *Layer control mode* in the *Modify menu* is **turned off**, to specify the colour, line type, and line width you must turn on each *Layer* property separately. E.g. for colour activate the *Layer* option.
 2. If the *Layer control mode* in the *Modify menu* is **turned on**, among the fields of general properties colour, line type, and line width are greyed out and are non-editable. In this case the program acquires these properties from the

layer assigned to the element.



See Chapters 3.3.4. on *Managing layers and using properties*



Colour

- Choose a colour from the colour palette by clicking the box of the desired colour. You can choose from the 256 colours of the colour palette, or any other colour from additional colour palettes.
- If you do not want to change the colour, click *Cancel*.
- If you want to use the colour of the layer assigned to the element, activate the Layer option.



Layer

This specifies the current layer. By using this mode, you can assign different layers to each element type. You can turn layers of a drawing on and off when drawing. (For the sake of an unobstructed view, it is recommended that you store dimensions on a separate layer as it is not necessary to display it as you work.)

- Choose the layer to be assigned to the element from the pull-down menu. You can select the layers in the *Properties* dialog box only if you have already created them in the *Layer* dialog box.



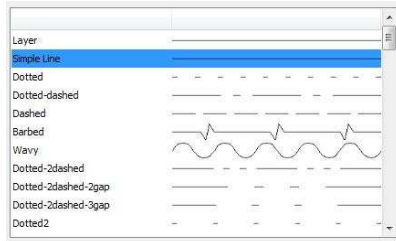
See Chapter 3.3. on *Managing layers* for a detailed description on layer handling.



Line type

ARCHLine.XP[®] allows you to choose from predefined line types, or you can create your own custom line type.

- Choose a line type from the list.



- If you want to use the line type of the layer assigned to the element, select 'Layer' in the pull-down menu.



It is not possible to set the line type in the *Text general properties* dialog box.

To set a custom line type, use the **Tools menu - 2D group - Create new line type** command.



Line width

This specifies the current line width.

The line width can be set even at a minimum of **0.01 mm**, there is no upper limit.

A line width of 0 defines the thinnest line of the output device (plotter, printer, monitor, etc.).

- Enter the line width or select one of the predefined values.
- If you want to use the line width of the layer assigned to the element, choose 'Layer' in the pull-down menu.

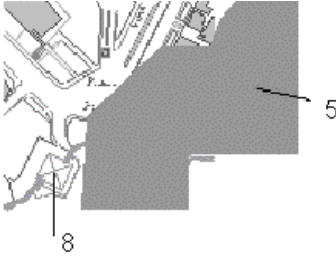


Priority

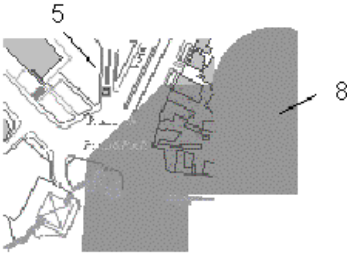
This defines the priority of elements in printing.

ARCHLine.XP[®] can manage 8 levels of priority (from 1 to 8). The top-most (1) level comes in front of all other layers in printing, while the bottom-most (8) level will be at the back of all other layers.

- Select a priority number (1-8) from the list.



The hatched area has a level 5 priority, while the polygons representing houses have a level 8 priority, so the hatched area overlays the polygons.



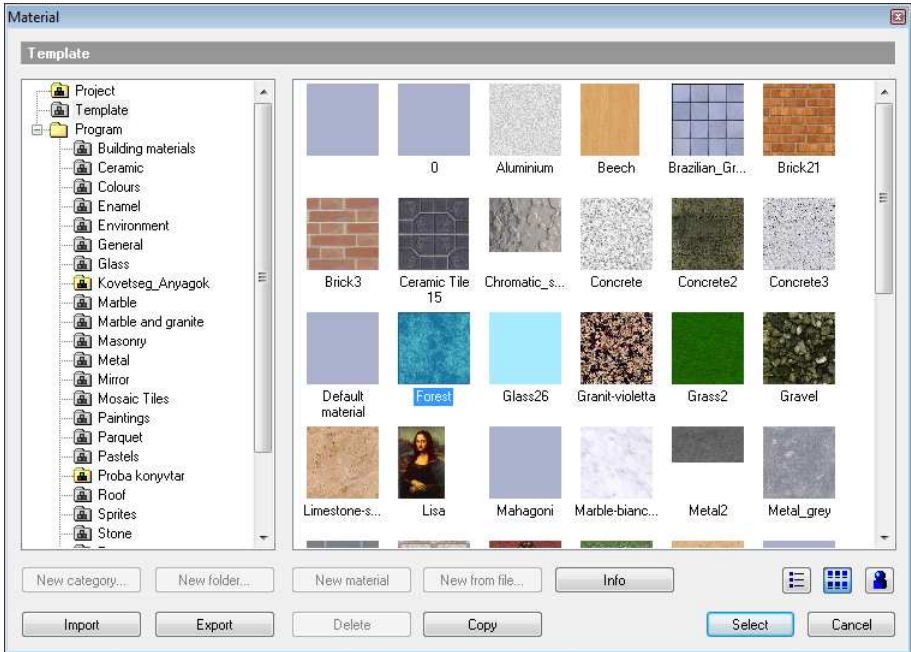
The hatched area has a level 8 priority; the polygons' priority is higher (5), so the polygons are visible in the hatched area.

3.2.2. Material properties



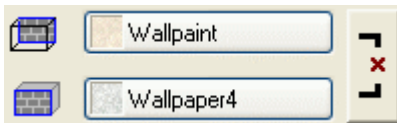
For the representation of architectural drawings and for a realistic display it is necessary to define materials. The program applies material properties to all architectural elements and 3D objects. You can specify material properties in the **Material properties** dialog box. To access these properties open the **Material** dialog box first where you can handle the materials.

3.2.2.1. Managing materials in the Material dialog box



You can access the **Material** dialog box and the **Material properties** dialog box within in several ways; you may select it from the **Tools** menu, or in the architectural elements properties dialog, 3D objects, or the Design center:

- ❖ The **Material** dialog box appears instantly when you select **Accessories - Material manager** in the **Tools** menu. The **dialog** shows the previews and properties of the available **materials**.
- ❖ **For access via architectural** elements, click the box of the material in the properties of the selected architectural element.



- ❖ For access via 3D objects, double click the material in the **Object properties** dialog box.

Material	Value
1	Wood-afromosia
2	Textil-wicker
3	Stucco2

- ❖ For access via the Design center, first choose **Material** in the Design center and select one of the available material classes. Materials then appear in the content window of the Design center, where by clicking one of them the **Material properties** dialog box pops up.

3.2.2.2. Managing material classes

You find the material classes, subclasses, and categories in the left window of the **Material properties** dialog box arranged in a directory format.

Materials are grouped into three classes:

- ❖ Project
- ❖ Template
- ❖ Program



Program class

The **Program** class contains the official materials supplied by the program. You may create new folders (subclasses) in this directory and also new

categories within these folders. Once you start the program, these materials are always available. Official categories supplied by the program are displayed in *grey*, meaning that the material properties of these categories are non-editable. Obviously the properties of user-created materials placed here are editable.

Project class

The **Project** class contains those materials that the user applies in a given project or places here. Therefore these materials vary every project. For example, if you render a material to an architectural element from the *Program* directory, the program automatically creates a copy of this material in the *Project* directory and will subsequently use this copy. You cannot create any subclasses and categories in this directory. When saving the project, you also save the materials of the Project class.

Template class

The **Template** class contains those materials that the program stores

- 1) as a **set** of properties of various elements and
- 2) when **saving sets in the template**.

For example, if you create a new set of walls and assign its material from the *Project* or the *Program* class, when next saving the project this material will be saved as part of the project and you will be able to use it subsequently in the said project. If you want to use it in other projects, save the sets in the default template file using *Save in File menu - Preferences - Template*.




When you start a new project the program will load the default template file and the Template class will contain the materials saved in the template file. The content of this class then is determined by the template file you currently use. You cannot create any subclasses and categories in this directory and cannot modify the materials.

As a consequence of the above, when opening a project file the same material may have similar or different properties in the *Program*, the *Project* and the Template class, moreover also in any subclasses or categories of the *Program* class.

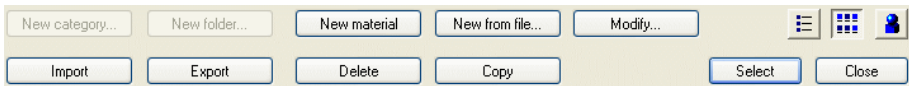
3.2.2.3. Managing materials

On the right side of the **Material properties** dialog you find those materials that belong to the material class or category you select on the left side. You can copy or move these materials from one class or category to another by dragging and dropping. Copying and moving are in conformity with *Windows* standards, meaning that in addition to the mouse you can use the Ctrl and Shift buttons in selecting and moving. Materials are displayed in different

ways depending on which button is active of the three views at the bottom of the dialog box:

- ❖ When you click , materials are listed by their names.
- ❖ When you click , materials are listed by their names and their texture images.
- ❖ When you click , materials are listed by their names and the rendered (photorealistic) pictures.

You find additional commands at the bottom of the dialog box:



New category

You can create a new material category with the ***New category...*** command button. The command is active only in the **Program** class.

New folder

You can create a new material folder with the ***New folder...*** command button. The command is active only in the **Program** class.

Delete

With the ***Delete*** command you can delete the selected materials, categories and classes. The command is not active in the **Template** class and in those categories of the **Program** class that are displayed in grey.

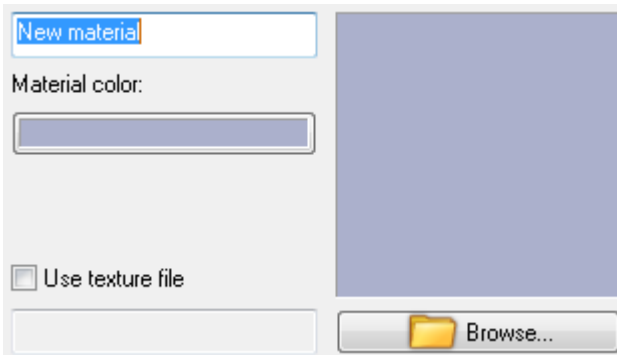
New material

You can create a new material in the ***Material properties*** dialog box with the ***New material*** command button (the command is not active in the **Template** class and in those categories of the **Program** class that are displayed in grey).

You can create new material with texture or with colour.

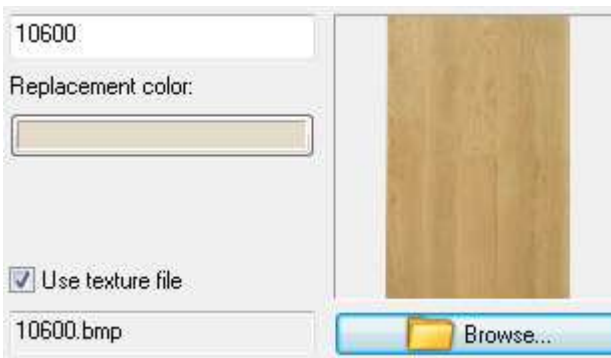
To create new materials with texture do as follows:

- Enter the name of the material to be created in the *New name* box (basically it is *New material* indicated in the box).
- Assign a texture to the material. You can do so by clicking the grey box and selecting the desired *.bmp* or *.jpg* file in the *Open picture* dialog box then displayed.



To create new materials with colour do as follows:

- Enter the name of the material to be created in the *New name* box (basically it is *New material* indicated in the box).
- Switch off the Use texture file box.



Click on the Replacement colour button to assign a colour to the material for the shaded visualization.

- Close the dialog box by clicking **Ok**.

Modify

You can modify the properties of a selected material with the **Modify...** button (see description of the **Material properties** dialog box). The command button is not active in the **Template** class and in those categories of the **Program** class that are displayed in grey.

Copy

You can copy an existing material with the **Copy** command. Here you only have to specify the name of the material. The new copy will be placed to its own category or the *project* class, depending on whether the material to be copied is editable or not. Instead of using the command button, you can create copies by dragging and dropping. When you copy from one category to another, the program will ask you to confirm copying.

3.2.2.4. Import / Export materials

Import from other user



If you wish to import materials created in ARCHLine.XP format from other users you should copy the description file (e.g. ceramic.mtr) and the associated folder (e.g. ceramic.tex) contain the textures to the current Materials folder.

Import

In the **Material properties** dialog you can load materials from the same or the previous program versions with the **Import** command button.

Before importing, the program sends a warning that the imported materials will be displayed only until the material manager dialog box is open. Click **Ok**. Now the program imports the materials corresponding to the material file to a fourth class, the temporarily displayed **Import** class. You may move or copy imported materials by dragging and dropping or using the **Copy** command button until you close the dialog box.

Export

You can export materials of the selected material category by using the **Export** command button. You may only export one category at a time. As a result of exporting, a directory containing ARCHLine.XP[®] type material file (.mtr) and the associated texture files (.bmp or .jpg picture files) is created. With the **Export** function it is possible to transfer material categories from one computer to another or from one program version to another. To do so, follow the steps below:

- Choose the material category you wish to export. You may only select one category at a time.
- Click *Export*.

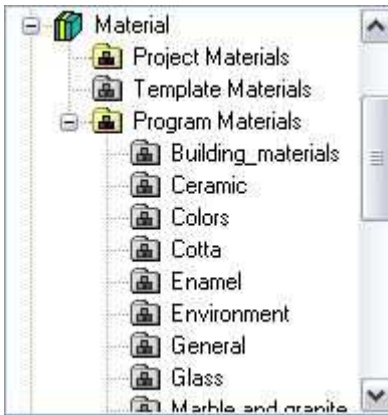
Close and Select

With the **Close** and **Select** buttons you can close the dialog box. The **Select** button appears only if you access the **Material** dialog box via the architectural

elements or objects, since the selected material is assigned to the architectural elements or objects with this command button.

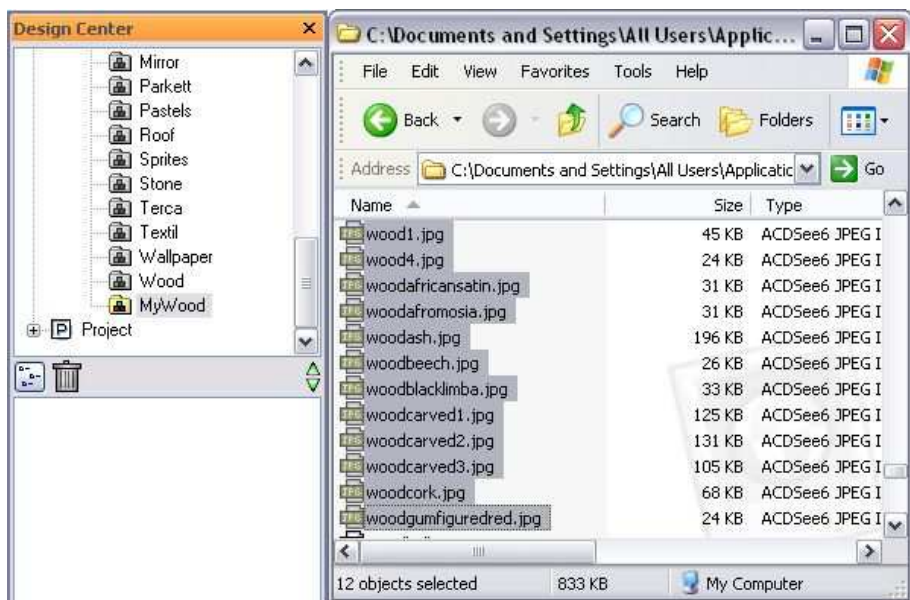
3.2.2.5. Creating materials in the Design center by dragging

The structure presented in the **Material** dialog box can be also displayed in the Design center. You can see the arrangement structure of materials (classes, subclasses, categories) in the Tree window of the Design center, whereas the textures that can be displayed in three different views appear in the Content window. The illustration below shows the Content window of the Design center:



Once you created a category in the **Material** dialog box, you may 'drag' several texture images (.bmp or .jpg) in one step to the selected category with the drag and drop method. Do as follows:

- Set the window of the Design center in such a way that the category in which you wish to place the new textures can be seen. For example: MyWood
- Select the textures in the window of *Windows explorer*.

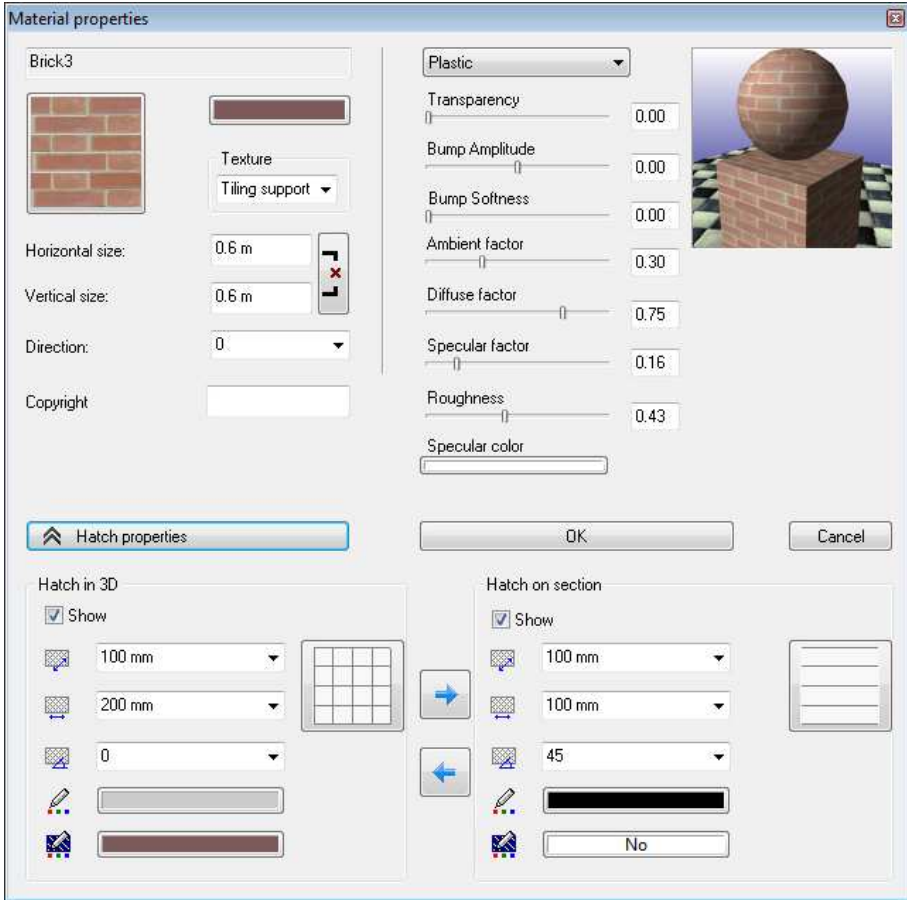


- *Drag and drop* the selected files to the category. Depending on the number and size of the selected files and the data transfer rate, the time of file transfer may vary.
- After dragging the *Material properties* dialog box appears, where except for the texture, you may assign similar properties to the materials thus created. (It is advisable that you create materials that have the same properties at a time.) In the dialog box the texture image box is now empty.



3.2.2.6. The Material properties dialog box

Choose a material in the **Tools menu – Accessories - Material manager** dialog box, then click *Modify* or *Copy*. The **Material properties** dialog box then appears.



General

For a photorealistic image it is necessary to define the texture. In ARCHLine.XP® in the general properties you can specify with what texture, colour, and physical features the program shall display the material. These will play an important role in rendering.

Material colour

You can see the current texture in the left box. If you do not want to assign a texture, click the **No texture** button. In the photorealistic view colour will be displayed instead of texture, which you may set by clicking the colour icon next to the texture image.

If you clicked the **No texture** button and lost the formerly assigned texture, you can recover it by clicking again.

Colour icon

This setting has two functions:

- ❖ As referred to above, this colour will be displayed in the photorealistic view when there is no texture.
- ❖ The *3D view toolbar - Shade with material colour* command uses this colour in the vector graphics drawing.



For a description of colour settings see Chapter 3.2.2.7. on RGB colour management.

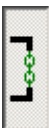
Material texture

If you wish to assign a different texture, click the box displaying the texture and select the desired texture by opening the corresponding *.bmp* or *.jpg* file in the **Open picture** dialog box. The name of the material will automatically be that of the name of the opened file without the file name extension.

Below the texture image you can set the **size** that is the horizontal and vertical size, and the **direction**. Depending on the status of the button next to the horizontal and vertical size entry fields, you may maintain aspect ratio:



This state of the button indicates that horizontal and vertical sizes can be specified separately.



This state of the button indicates to keep relative horizontal and vertical sizes. Most of cases it is important to maintain the aspect ratio to avoid stretching the graphic out of proportion.

Stretch material

It is possible to create material without horizontal and vertical sizes. In that case the texture is stretched to fill the destination area.

Select the *Stretch* option from the list. The size fields will be grey.



Physical features

You can choose the rendering mode in a pull-down menu. Depending on the rendering mode you select, you can set different physical features that affect rendering. The physical features you can specify and their definitions are the following:

Transparency

Determines the extent of the transparency of the material.

Bump altitude

Bump Mapping simulates the impression of a detailed 3D surface with shading as if the surface had lots of small angles, rather than being completely flat. The height of the bumps can be adjusted using the *Amplitude* control.

This control is use to set the amount of blur that is applied to the 'bump map' image.

Bump softness

Shows how the material reacts to ambient light.

Ambient factor

Diffuse factor

Shows how the material reacts to diffuse light. Lights, Sun, camera light.

Specular factor

The *specular factor* controls the reflection of light from a "shiny" object

Exponent

Determines the sharpness of the distribution.

Roughness

Light is more radiant on a smooth surface. If roughness is set to a low level, radiance is concentrated on a small surface; if it is set high, radiance is distributed on the surface.

Specular colour

You can specify the specular colour in the colour

Transmission factor	palette. Has the same effect as transparency in the case of glass.
Mirror factor	Shows how the material reflects light from the surrounding objects.
Refraction	This setting concerns the physical characteristics of glass.

The rendering modes you can set are the following:

Matte

This reflection model ensures a dull and dim appearance. The extent of reflection from objects is determined by the *ambient factor* and the *diffuse factor* together. This model is suitable for displaying dull materials such as brick or textile.

Metal

This reflection model ensures a metallic appearance. The extent of reflection from objects is determined by the *ambient factor* and the *specular factor* together. The distribution of radiance is determined by *roughness*. At a low level of roughness the reflection of shine is sharper, and it affects a smaller area of the object. This model is suitable for displaying most metallic materials such as steel or copper.

Phong

This reflection model corresponds to the well-known Phong model, where reflection is highest in the direction opposite to the viewpoint direction. The extent of reflection is determined by the *ambient factor*, the *diffuse factor*, and the *specular factor* together. The sharpness of the shiny surface is determined by the level of the specular factor. If this level is low, transition from the shiny surface is smoother, but radiance is concentrated in a smaller area. The colour of the shiny surface can be determined by setting the *specular colour*. This model is suitable for displaying glittering or delicately polished materials such as ceramic or glass.

Plastic

This reflection model has the same shiny effect as the Phong model. The extent of reflection is determined by the *ambient factor*, the *diffuse factor*, and the *specular factor* together. The sharpness of the shiny surface is determined by *roughness*. At a low level of roughness the reflection of shine is higher and affects a smaller area of the object. The colour of the shiny surface can be determined by setting the *specular colour*. This model is suitable for displaying glittering or delicately polished materials such as plastic or varnished surface.

Glass

This reflection model is suitable for displaying glass-like materials that are characterized by both reflectivity and transparency. Secondary reflection and

light transmission is displayed by ray tracing. The extent of reflection is determined by the *specular factor*, the *transmission factor*, and additional lights defined by the *mirror factor* together. The distribution of radiance is determined by *roughness*. At a low level of roughness the reflection of shine is sharper, and it affects a smaller area of the object. The program applies the same *refraction* factor to lights of all wavelengths. The default value equals the value in the case of glass. This model best imitates glass surface.

Mirror

This reflection model realizes secondary reflection by means of ray tracing. The extent of reflection is determined by the *ambient factor*, the *diffuse factor*, the *specular factor*, and additional lights defined by the *mirror factor* together. The distribution of radiance is determined by *roughness*. At a low level of roughness the reflection of shine is sharper, and it affects a smaller area of the object. This model best imitates glass surface.

Tips:

- ❖ If you want to use specular tile lining, use the *Mirror* mode.
- ❖ Use the *Glass* mode in the case of lamp globes: here you have to set transparency to a low level whereas the transmission factor should be high.
- ❖ If the transparency level is not zero, the object in question will cast no shadow. If you want a glass surface to cast shadow, e.g. a lamp globe, you have to set transparency to zero (that is you must bring the slide to the left).

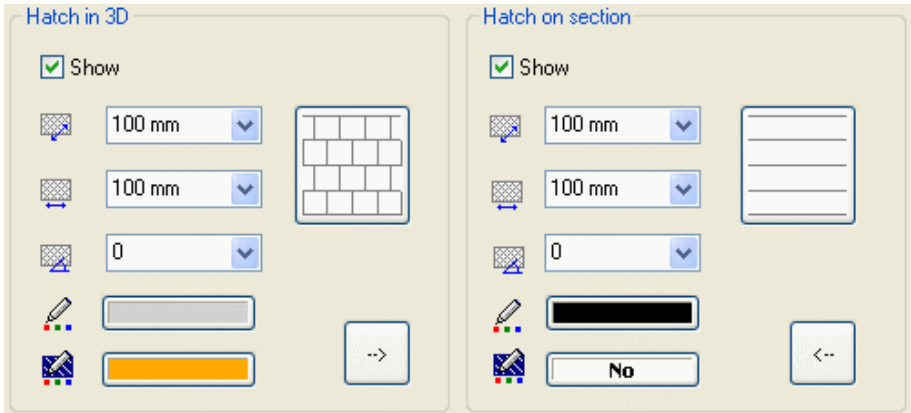
Hatches

A material has 2 different hatches, depending how the material is displayed.

For example in the case of a brick material:

- ❖ You have to specify the hatch on section. In the case of a brick wall we use 45-degree lines on the section.
- ❖ If this brick can be used for outer walls, hatching is also important in the 3D view.

In the case of a brick wall, we use the standard hatch on the floor plan that is 45-degree lines. This hatch is not the property of the material, but that of the wall; therefore you have to specify it in the Wall properties dialog.



Hatch in 3D

When setting material properties you must also specify 3D hatching, which enables you to display textures in the 3D model. For this option you must activate the *Display* button. The hatch you specify here appears in the 3D model when you activate the *Material pattern and background colour* in the

3D view toolbar -  *Shadowing and shading* command.

If the *Display* option is deactivated, the material appears with the assigned colour.

Hatch on section

Here you can specify what hatch you would like to represent the material on the section. To use this option, you must activate the *Display* button.

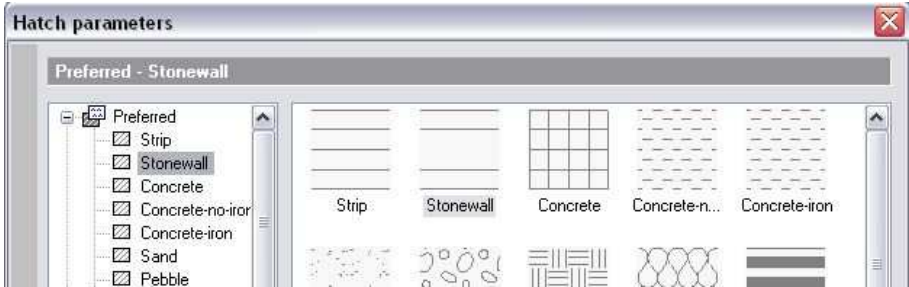
This hatch appears only on the architectural section and on the condition that the **File menu - Preferences - General - 3D Preferences - 3D Objects - Section plane created with hatch** is activated. You can switch on the option in the Section properties dialog window too.

To activate hatch on section, use the hidden line mode.

You can specify texture pattern colour and the texture background colour at the bottom of layer settings.

When the *Display* is on, you can select the hatch pattern of the element and set its properties: horizontal and vertical density of the pattern and line direction defined in degree.

- Click the pattern icon if you want to display and select hatch pattern types.



You can choose from various pattern types in the dialog box by clicking either the pattern name or the pattern image. You can move hatch patterns to new categories; this way you can arrange patterns in a structure that best suits you.

Copying hatch settings




When clicking this button you have the option to copy hatch settings. You can copy the settings of *Hatch on section* to *Hatch in 3D*, and conversely.

3.2.2.7. RGB colour management

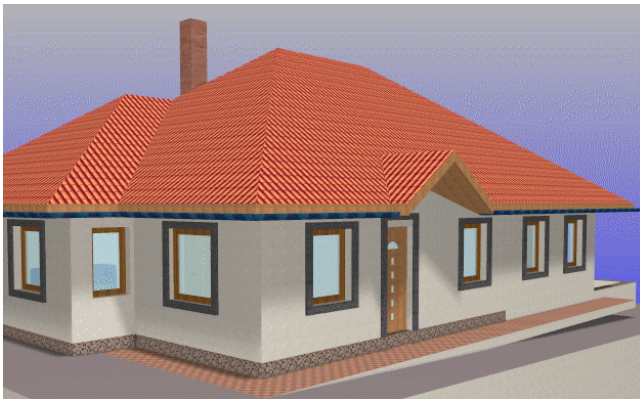
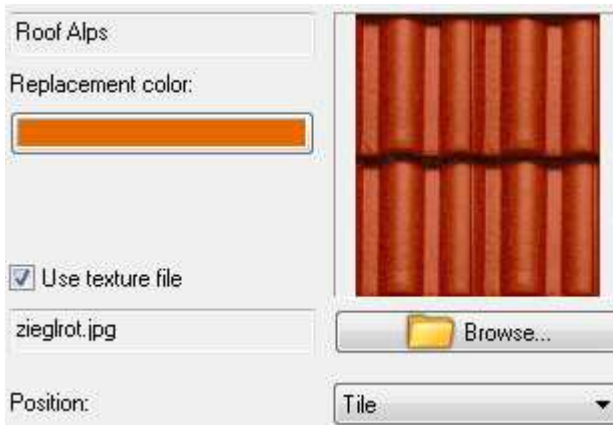
Colour is among the properties of each ARCHLine.XP element. Elements are represented with their colours on the screen or on the printed documents. Besides the colour properties of elements, colours have important role at materials when you represent materials with colours. In both cases the program uses *RGB* colours.

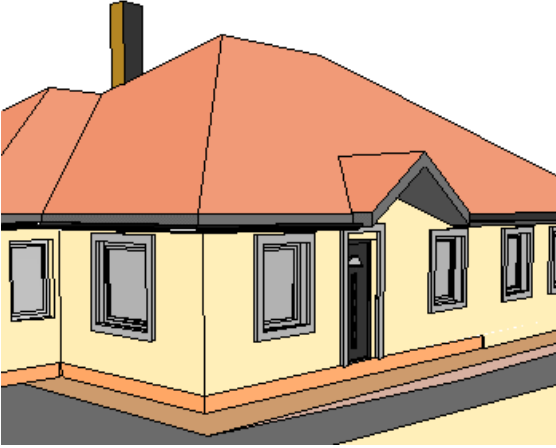
Displaying various colours is not only important in presenting a photorealistic image of wall paints and facades, but also in the case of a coloured 3D view. The option of RGB colour use therefore is significant as it enables you to illustrate or print vector graphics drawings of various facades in true colours that are in realistic Ral, Sikkens or Pantone colours.

Colour settings thus have two functions:

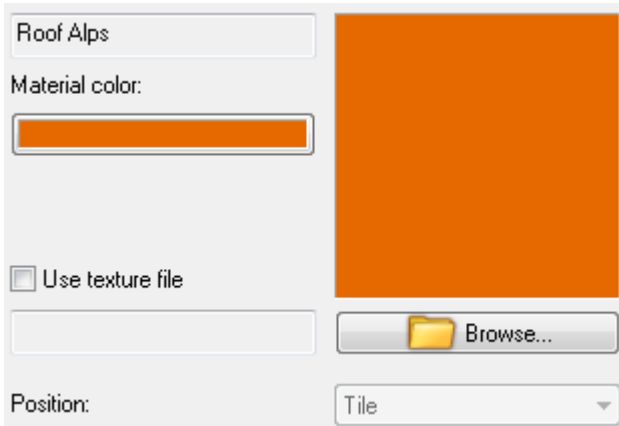
- ❖ Click **No texture** in the *Material properties* dialog box to define the colour for the material. Now instead of the texture the colour appears in the photorealistic view, which you can set by clicking the colour icon next to the texture image.
- ❖ The *3D view toolbar* -  *Shadowing and shading* command uses this colour on the vector graphics drawing regardless of whether you defined the colour or texture for the material.

In the following example we use wall paint texture in the photorealistic view and yellow on the vector graphics drawing.





As we mentioned before, by clicking off the *Use texture file* button the given element will be displayed in the selected colour both in the coloured 3D view and on the photorealistic picture:

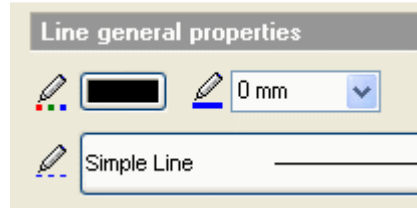


Standard handling of colour tables

Colours can be chosen from different colour tables. The handling of these colours became standard in ARCHLine.XP.

Click on the colour icon in the properties dialog of any element (e.g. line) to access the *Colour tables*:

The browser of the appearing *Colour table* dialog shows the name of the selected colour table.



- Select the appropriate colour table.

ARCHLine.XP® colour table

The ARCHLine.XP colour table appears with 256 primary colours, from which you can choose a colour. In the name field only names of the first 16 colours appear. You cannot specify names for other colours.

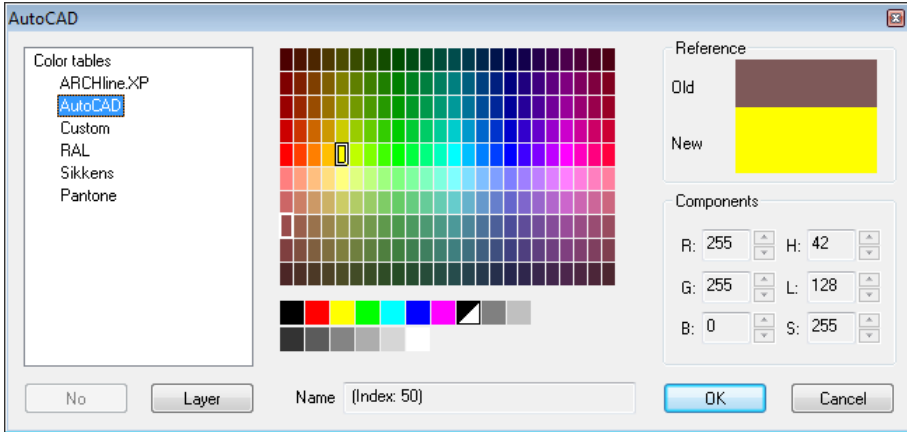


AutoCAD® Colour table

The AutoCAD® colour table appears with 256 primary colours, from which you can choose a colour. You cannot specify names here.

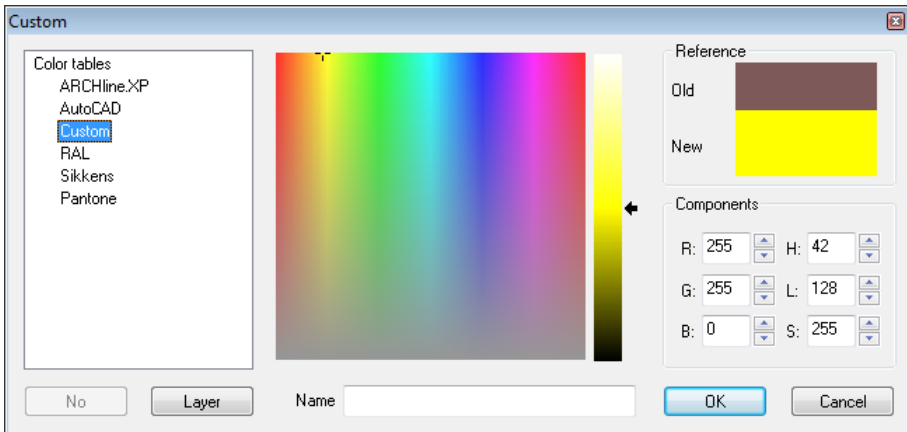
If you import a drawing created in AutoCAD, the drawing elements will keep their AutoCAD colour table settings. Here you can modify the colour of an element.

If all the drawing elements have colours from AutoCAD® colour table, you don't need to convert colours at file export. The exported drawing will appear with the same colours in AutoCAD®.



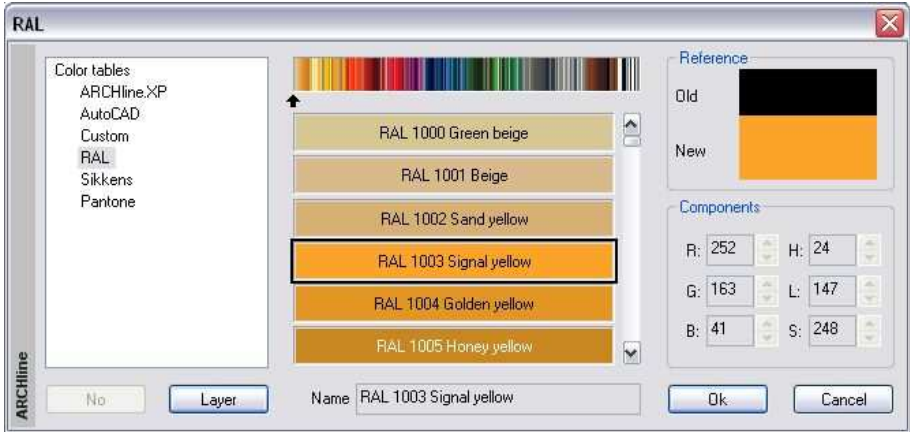
Custom colour table

The standard Windows colour spectrum appears here. After selecting a colour you can specify its shading with a sliding arrow. In the name field you can specify a colour name.



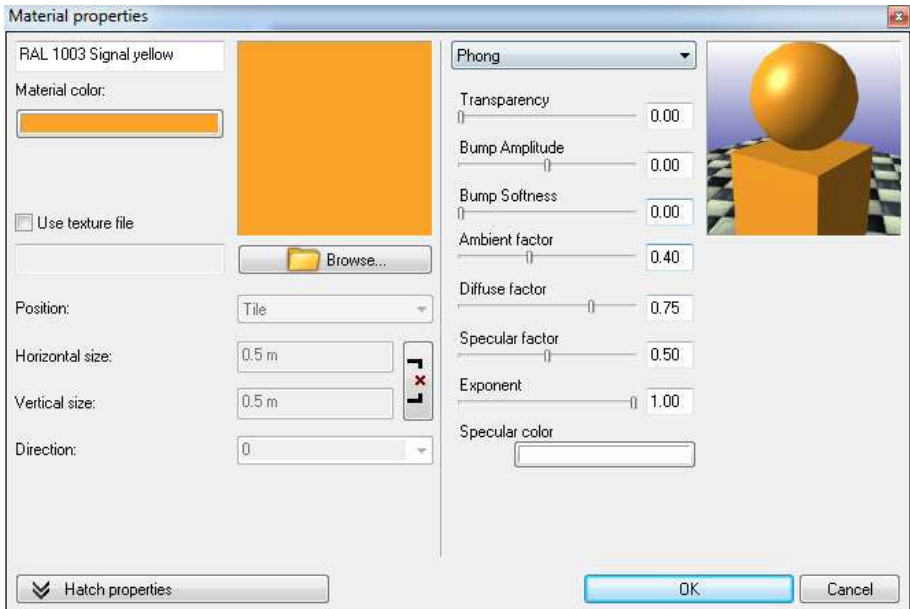
Ral, Sikvens, Pantone colour tables

Use the horizontal sliding arrow or the vertical sliding bar to browse for the appropriate colour group. Select the desired colour by clicking on it. The name of the colour appears in the *Name* field.



New material with colour

If you create a new material by a Ral, Sikkens or Pantone colour, the name of the colour will automatically specify the name of the material, too. You can modify this material name as well.





Dye producers on the market use to specify colours in RAL table.

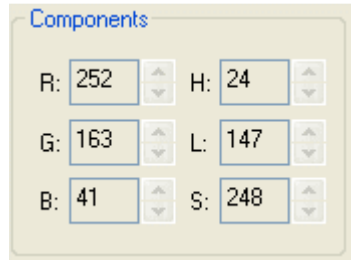
Reference

After selecting a new colour from a colour table, the selected new colour is displayed below the old colour.



Components

The RGB code and the *Hue*, *Luminosity*, and *Saturation* values appear here.



Layer

Click the *Layer* button if you want to specify the colour of an element by a colour of a layer. The element picks up the colour property of the layer where the element belongs to. The colour property of the element follows the changes made later on the colour of its layer.

No

The *No colour* button becomes active only in the case when you wish to specify the background colour of a hatch. Clicking this button the hatch can be specified without background colour.

New colour tables

Different CAD applications can use numerous colour tables. Some of these colour tables are downloadable from the web.

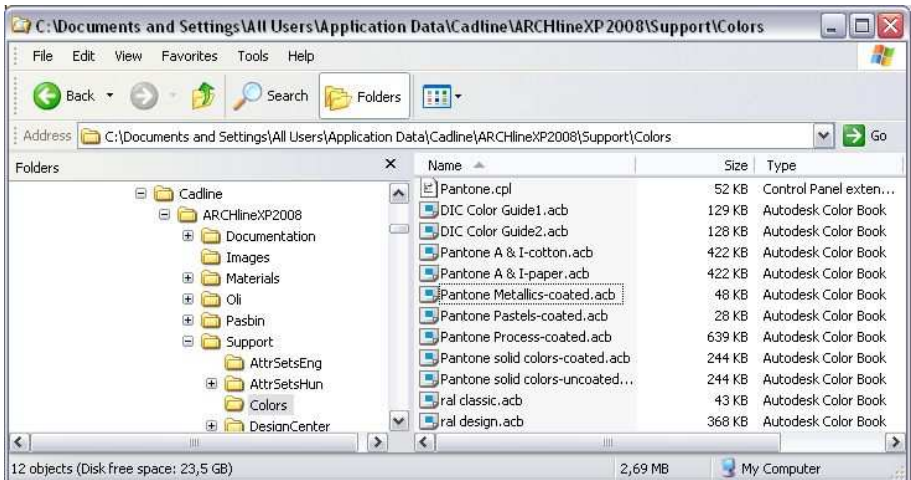
In ARCHLine.XP it is possible to load colour tables that follow the format of Adobe or AutoCAD® ColourBook.

These files can have .acb extension in binary (Adobe) or XML (AutoCAD) file format.



It is not possible to load protected colour tables!

- Copy or move the downloaded colour table in the ...Support\Colours subdirectory inside your program installation directory:



- Restart ARCHLine.XP.
- Open the *Colour tables* dialog. The program automatically loads the inserted colour tables.



Query the colour of an element

Any colour you have specified can be queried later on.

After you have specified a colour to an element, open the properties dialog of the element and click the colour button.

The *Colour table* dialog appears with the appropriate colour table, showing the previously specified colour selected in that colour table.

Under *Components* you can read the *RGB* codes and the *Hue*, *Luminosity*, and *Saturation* values.

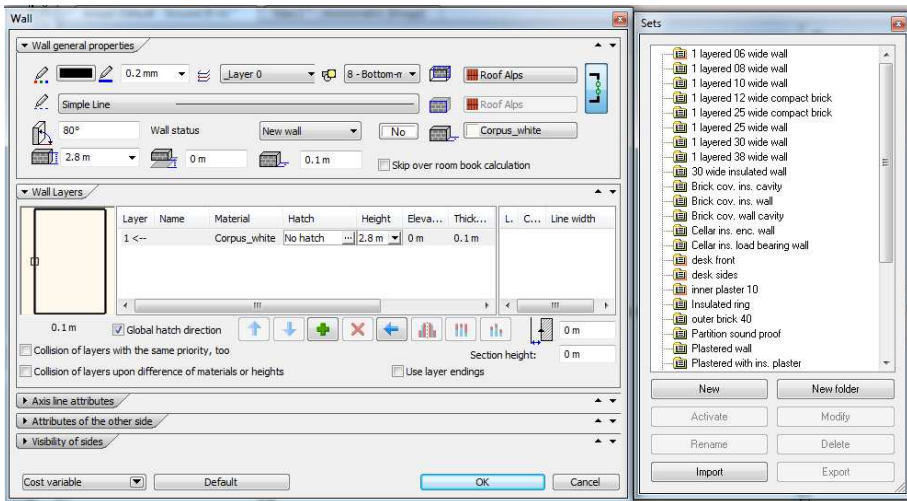
Here you can modify the colour, of course.

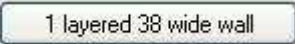
3.2.3. Using sets of properties

You can save a range of properties specified for element types in sets. In the course of the architectural design you need several often-used elements (generally used layered walls, slabs, etc.). Sets serve their development.

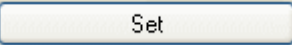
You may save the properties set for an element under a given name and use these sets of properties anytime subsequently, thus accelerating and facilitating the work process.

ARCHLine.XP[®] is capable of managing an infinite number of sets. When you start the program elements are displayed with their basic properties as set in the default template. The program contains predefined wall and slab sets. These are industrially default sets, represented with grey icon. The sets created by the user, represented with yellow icon.



Select an element type from the properties dialog box (e.g. wall) and click the set button displaying the current set name: 



When no set is loaded, the word  is displayed.

A new dialog box appears on the right where the program lists predefined sets.

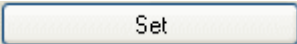
You can do the following operations with sets:

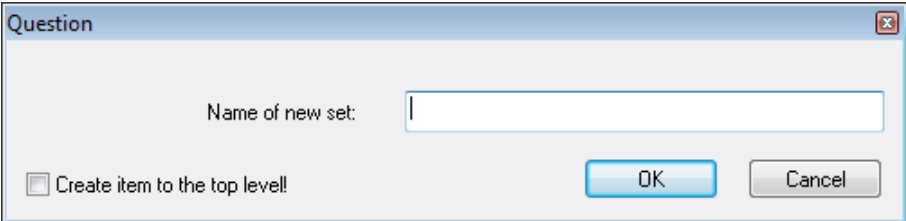
- ❖ Create set
- ❖ Activate set
- ❖ Modify, delete, rename set
- ❖ Export

- ❖ Activate set and create new element with the active set
- ❖ Copy properties with set

3.2.3.1. Create new set, new folder

Once you have specified all properties of a given element in the **Properties** dialog box:

- Click the  button.
- Click **New**, and
- Enter the name of the new set.




The created set is just saved to the project file, and just when, if the element created by the set occurs in the draw.

Creating new folder

You can group the sets to folders. Use the New folder button for this.



We suggest grouping the new sets to folders!

3.2.3.2. Export sets

The created set is just saved to the project file, and just when, if the element created by the set occurs in the draw. During the planning is needed that you can use the created sets in other projects. For this you have to save the set to the Template file. You can make this:

- ❖ with set export, then import to the template file, or
- ❖ save directly to the template file.

The main difference between the two methods is that just the selected sets are saved in the first case, which later can be given to the actual template file. In the second case every set and preferences are saved to the template file.

Export

After created the new sets quit from the dialog window with OK. When you open the Properties window again you can export the selected sets separately to the given .set extended set file.

In that case, if you grouped the new sets to a given folder, it's enough to select the folder, and click to the Export button. Then the whole contain of the folder is saved.

Determine the name and access path of the set file in the appearing dialog window.

You can add the saved set file to the actual template file with the **File menu - Preferences - Template management - Import command**.

Save template file

You can also save set, if you save in one step all the sets and preferences to the template file.

To do so, use the Save option in the **File menu - Preferences - Template management** dialog box. This command saves all sets and all draw settings in the project to the default template file. After saving you may use the saved sets and settings in a new project.



See Chapter 4.6. on Template file for further details.

3.2.3.3. Activate set

You need to activate a set if when defining basic settings you do not wish to specify the properties of each element one by one, but in sets. You may also modify element properties by activating the corresponding set.

You can activate a set In the **Properties** dialog box

Properties dialog box

- Open the **Properties** dialog box
- Click **Set** to display the list of sets, then
- Select the desired set from the list and click **Activate**
or
- Double click the set name
OK Close the dialog box.



You may use this method in setting properties or modifying elements as you work.

3.2.3.4. Modify, rename, delete set

You can modify the properties of the current set, and rename or delete the set.

Modify properties

- Open the **Properties** dialog box and click **Set**.
- Activate the set you wish to modify.
- Change the properties you want to modify, then
- Click **Modify**.
- In the message box then displayed, click **Yes** to overwrite the selected set.

Rename set

- Open the **Properties** dialog box and click **Set**.
- Choose the desired sets from the list.
- Click **Rename**.
- Enter the new name of the set.
OK Close the dialog box.

Delete set

- Open the **Properties** dialog box and click **Set**.
- Choose the desired sets from the list.
- Click **Delete**.
- In the message box thus displayed click **Yes** to delete the selected set.

3.2.4. Assigning cost variables

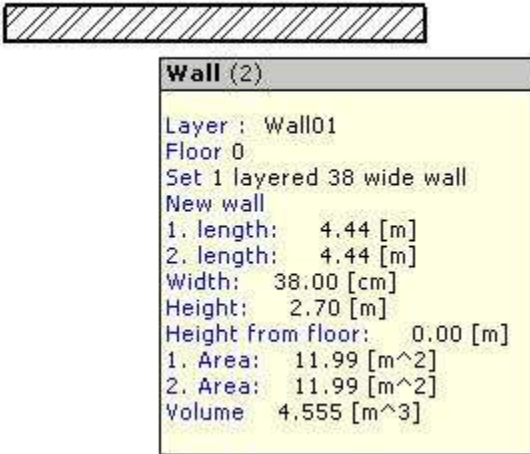
You can freely assign data to all ARCHLine.XP® element types. By this method you can simply create your own 'database':

- ❖ You can enter the required data, or
- ❖ You can export data from the **Excel** database.

Budget calculation using the Excel spread sheet

This function provides support for the calculation of the budget of certain building projects or other calculations. Essentially, in the case of floor plan elements you can assign the cost, unit, and factor to parameters such as area or volume, whereby you can obtain a combined costing spread sheet in Excel format.

Suppose you want to calculate the material cost of wall building and you know the volume. In this simplified example a wall section has the following parameters:



In an Excel spread sheet where you have an itemized list of all costs, it is easy to assign these data to ARCHLine.XP® elements. In the present example one line of the spread sheet indicates the material cost of the wall:

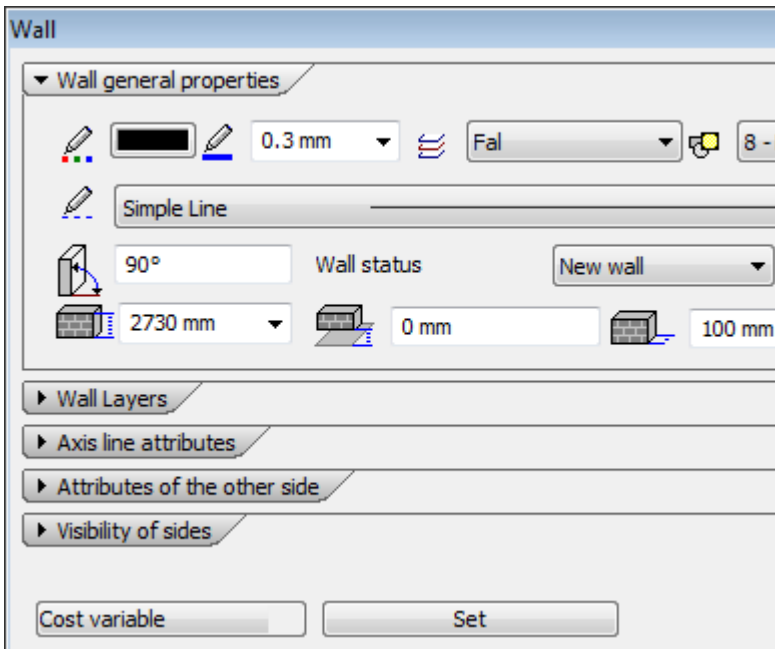
	A	B	C	D	E
1	1.2.4.A	Wall material costs m ³		\$300,00	
2					

You have two options to start assigning:

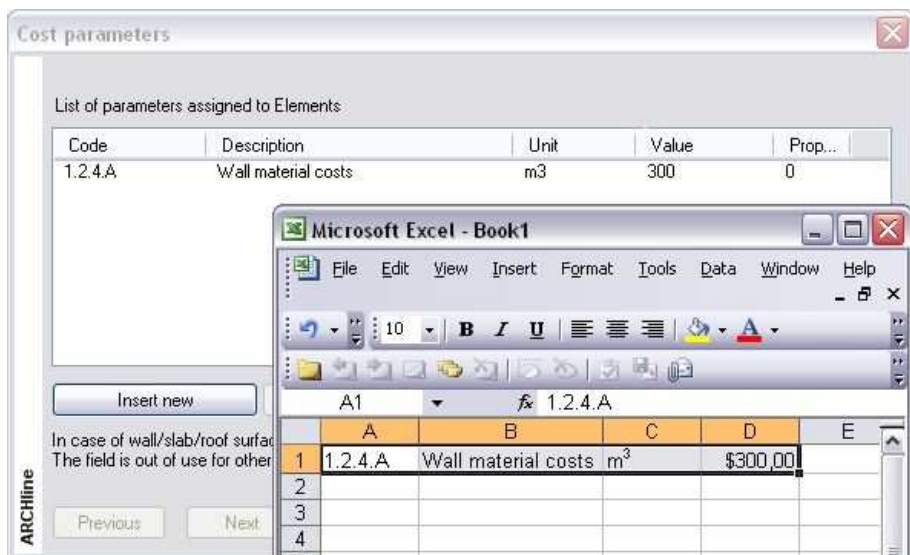
- ❖ In the **Properties dialog box** and
- ❖ In the **Excel spread sheet by dragging**

I. Properties dialog box

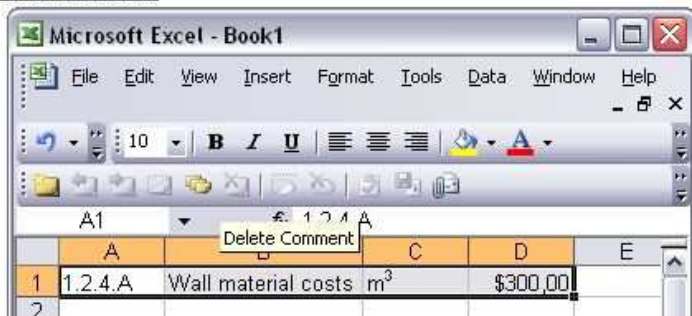
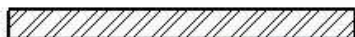
Double click the selected element (e.g. wall) on the floor plan. The **Properties** dialog box then appears.



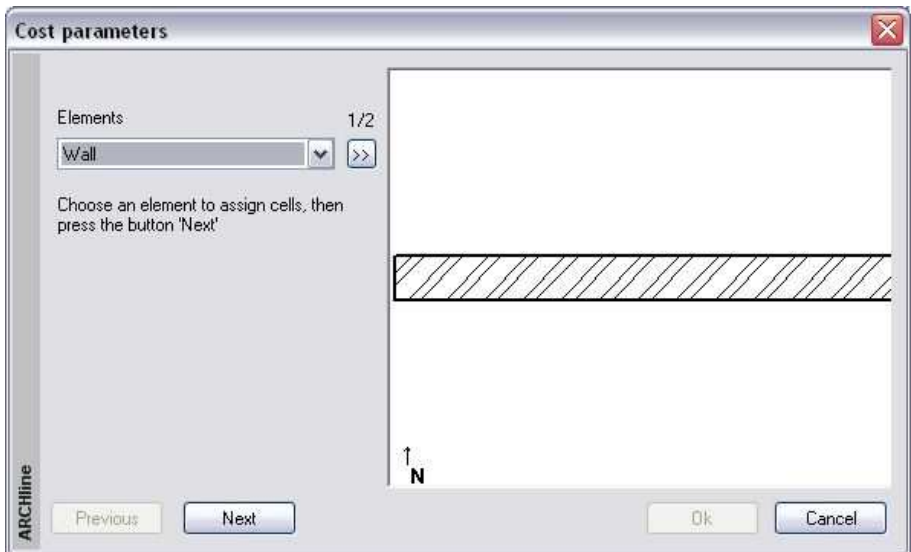
- Click the **Cost variable** button. The *Cost Parameters* dialog box pops up.
- Open the Excel spread sheet.
- Select the desired line.
- By clicking the lower edge of the line, move the cells to the dialog box with the drag and drop method. Now the values are entered in the cells.



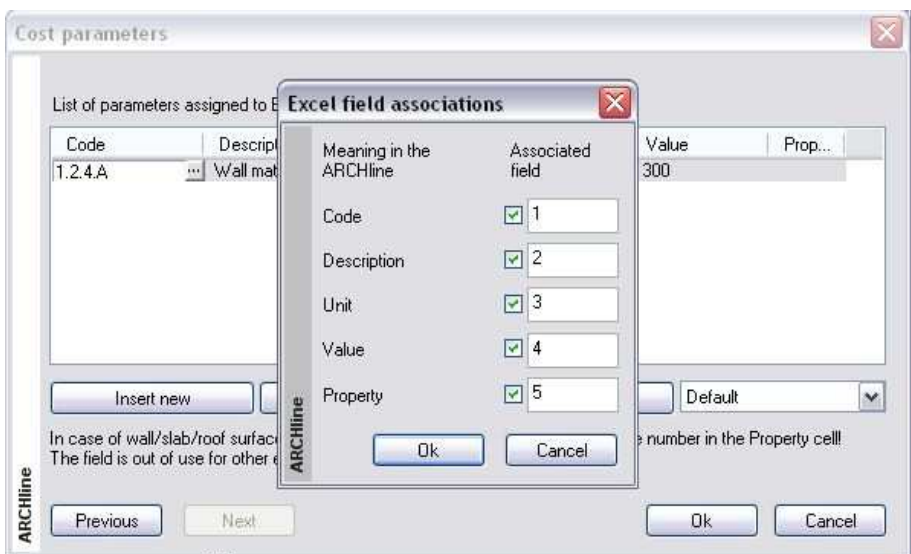
II. From the Excel spreadsheet by dragging



- Select the desired line in the Excel spreadsheet.
- Having selected the line click the lower edge of the line and move it to the wall in the drawing with the drag and drop method. Now the *Import cell* dialog box appears and the values are entered in the cells.
- When two or more elements overlap and therefore selection by dragging is ambiguous, select the element to which you actually wish to assign the imported data in the dialog box displayed. Click *Next*.

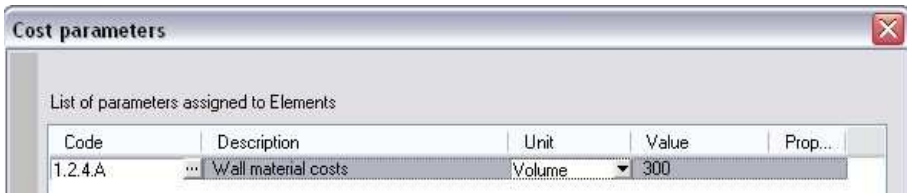


From this point on the two methods are similar:



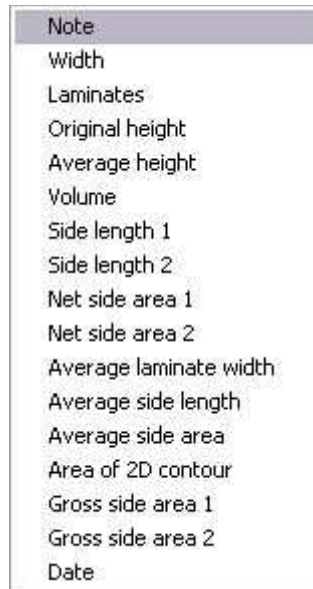
Here you have to assign the cell values to the variables. At first variables might not be assigned to the cells you want them to be associated with, as in the line of the Excel spread sheet the order of variables may be different. In this case, with the **Field associations** button you can specify for each variable from which cell the program should load its value. In our example the program obtained the code from the first cell, description from the second cell, and value from the fourth cell.

The fields are editable after loading, so for example for unit you can specify the *volume*:



Unit


You can specify any text for the unit, e.g. m3, or you can choose a code from the list. The Excel list will use this code for calculating the budget.




Factor

It only makes sense to set factors in the case of walls, slabs, roof surfaces and roof edge where the factor specifies the layer. Factors should be round numbers.

Manual

If you do not wish to assign the value of variables from the Excel spread sheet, you can enter them by inserting a new line 

You can also indicate several variables (line) to an element.

You can delete unnecessary lines with the  button.

As from now on the wall has these attributes:



Wall (2)

```

Layer : Wall01
Floor 0
Set 1 layered 38 wide wall
New wall
1. length:  4.44 [m]
2. length:  4.44 [m]
Width:    38.00 [cm]
Height:   2.70 [m]
Height from floor:  0.00 [m]
1. Area:   11.99 [m^2]
2. Area:   11.99 [m^2]
Volume    4.555 [m^3]

Assigned parameters (1):
Code      Description      Unit      Value Property
1.2.4.A  Wall material costs  Volume   300

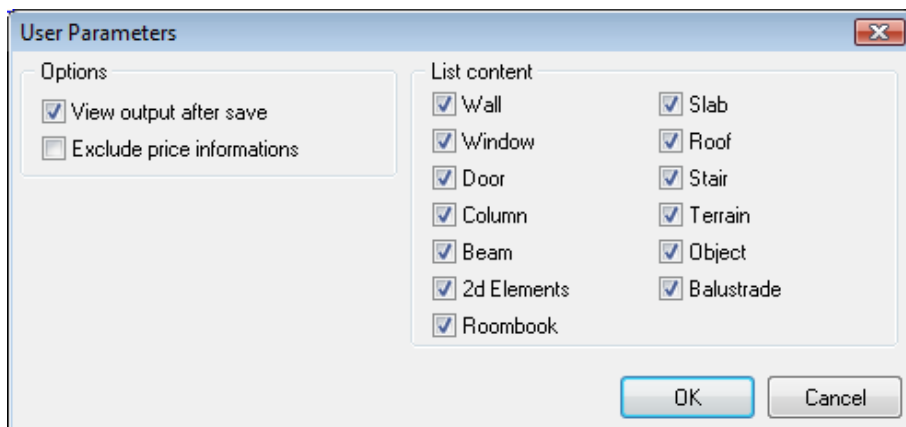
```

Similarly to the above, you can assign variables to other floor plan elements. By copying properties you also have the option to transfer only those variables of an element to another that have been assigned.

Listing

When you finish a plan, you can view the budget data in a separate Excel spread sheet. You can access this list with the **Add-On – Quantity Take-Off - Cost estimation - Building** command.

You can define for which floor plan elements you wish the program to list calculations:



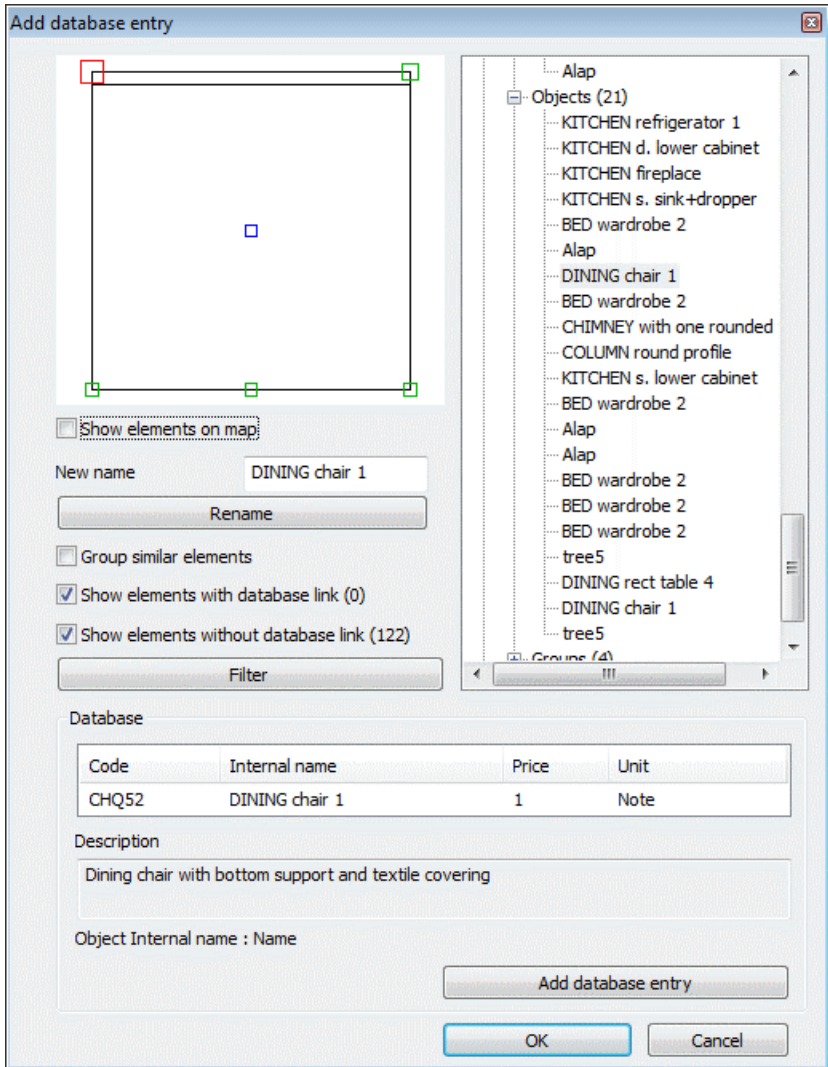
The result of the list in this simplified example where we also added another wall:

	A	B	C	D	E	F	G
1	Name	Description	Unit	Value	Factor	Data	Product
2							
3	1.2.4.A	Wall material costs	Volume	300	1,2	9,6	3456
4	1.3	Wall material costs	Side area 1	10	1,2	24	240
5	1.2.4.A	Wall material costs	Volume	300	1,2	19,2	6912
6	1.3	Wall material costs	Side area 1	10	1,2	48	480
7							11088
8							

3.2.5. Cost estimation – assigning cost parameters

With the *Add-on menu – Quantity take-off – Assign cost parameter* command it is possible to assign cost parameters to architecture elements on the floor-plan indirectly. Indirect cost parameters are connected to the elements only as references, opposed to the directly assigned and stored cost parameters in the element properties dialog.

The advantage of indirect cost parameters is the possibility of adding those in a large amount to a complete floor-plan without any further work on the drawing.



By clicking the **Add database entry** button, the following data can be assigned to the selected item in the appearing dialog:

- ❖ **Code**
- ❖ **Internal name** (this parameter is the reference to the selected item; for example the name of the elements in case of object, door,

window or group, or the set name of the elements in case of wall, slab or stair, or the name of the layer if there is no set)

- ❖ **Description**
- ❖ **Material (repr)**
- ❖ **Price**
- ❖ **Unit:** pcs, m, m2, m3

CHQ52 DINING chair 1 Dining chair with b... Carpet-persi... 12000 pcs

Parameters

Description

Dining chair with bottom support and textile covering

Code CHQ52

Price 12000

Material (repr) Carpet-persian1

Unit pcs

Add

OK Cancel

With the commands (e.g. **Object**) under *Add-on menu – Quantity take-off – Cost estimation* the assigned cost parameters can be represented in the created RTF files.

3.2.6. Cost estimation – placing cost parameters

With the *Add-on menu – Quantity take-off – Place cost parameter* command it is possible to place the description and code fields from the assigned cost parameters on the drawing.

DINING chair 1	(1)	
CHQ52		Dining chair with bottom support and textile covering

3.3. Managing layers

Getting started

Layers are a method of managing the visual layout of a drawing. The program makes it possible to apply several layers at a time. With the use of layers you can group or separate the elements of the current project according to various aspects.

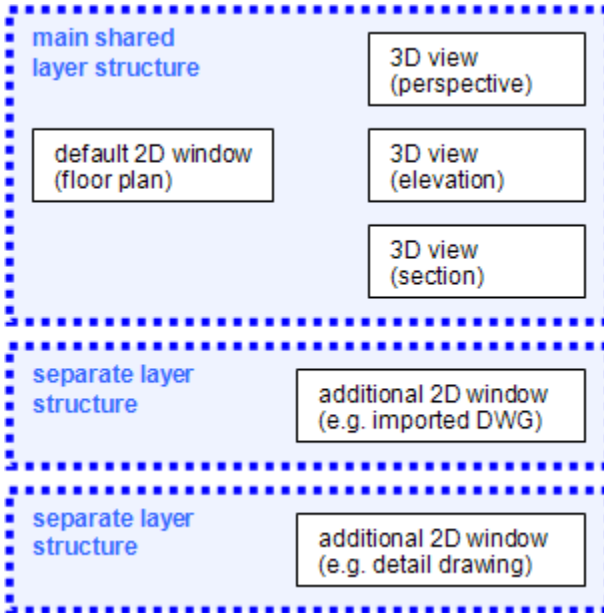
The program sets the *Layer 0* layer as default, but you have the possibility to create additional layers. On the whole the program is able to manage 1024 layers (indexed from 0 to 1023).

In ARCHLine.XP® layers have the following properties:

- ❖ **Visibility:** on and off status
- ❖ **Background:** unlock and lock
- ❖ **Colour**
- ❖ **Line type**
- ❖ **Line width**

Layers can be turned on and off, and can be unlocked and locked. With the help of these commands you can easily group the elements of the different layers.

3D views and the floor plan share a single layer structure:




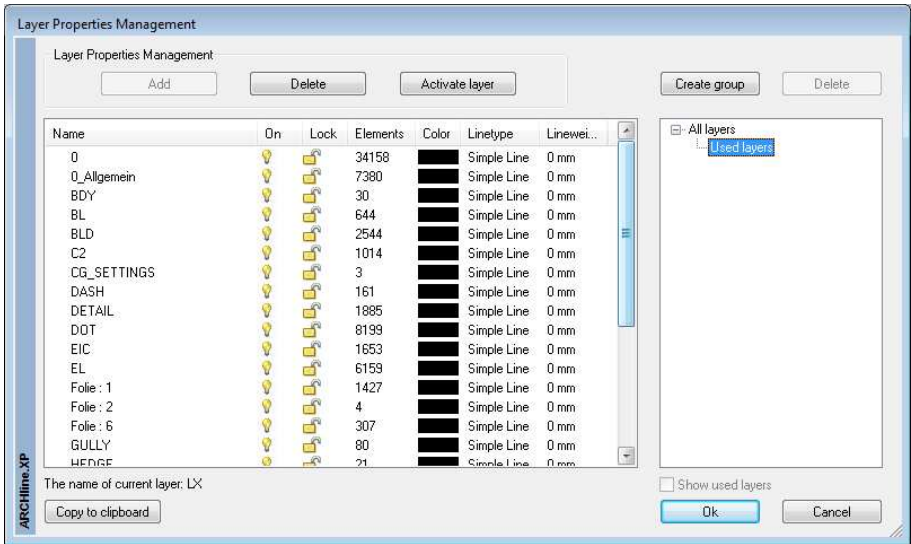
If you create, rename or delete a layer in the default 2D window, you can view the changes in the 3D window, and vice versa.

When specifying the general properties of element types, you can define on which layer you wish to place the elements of an element type. You can place objects with different properties (different colour, line type, line width, even different type, etc.) on the same layer, which due to other aspects, you want to handle together.

If you **activate** the **Layer control mode** in the **Modify menu**, when creating new elements the program can automatically assign the colour, line type, and line width of the layer on which you place the element to the general properties of the element.

3.3.1. Working with layers from the dialog

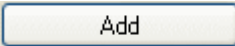
- Click the  **Layer** button in the Layer bar. In doing so, you activate the **Layer management** dialog box where you can specify layer properties.



We suggest that you use a layer distribution and assign the elements to different layers. In this case you can group elements on the basis of layers. You can turn certain layers of, or use them as background.

In the following we describe the use of the *Layer* dialog box in details:

Add layers

- To create additional layers, click the  button.

Name	On	Lock	Elements	Color	Linetype	Lineweight
Dimension			0		Simple Line	0 mm
Layer 0			0		Simple Line	0 mm
Layer : 1			0		Simple Line	0 mm

You can modify the properties of the new layer subsequently.

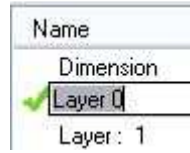


The pipe in front of the name of layer signs the active layer: Layer 0
See: 3.3.3. *Activate layers* chapter.

Name layers

The program automatically names layers you create *Layer1*, *Layer2*, etc.

- Double click *Name*, and enter the desired name of the layer.
- Repeat the command in the case of other layers.




When clicking *Name* you can arrange the names in ascending or descending order.



The program maintains layer names even when you use the copy/paste command between different drawings. The name of the layer can contain maximum 48 characters; in case of longer name the program cuts the remaining characters.

Delete layers

To delete a layer:

- Click the layer you wish to delete.
- Click the  button.

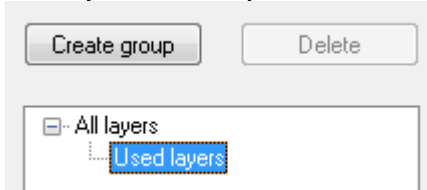


You cannot delete the active layer!

Filter layer list

With the layer filter you can list:

- ❖ *All layers*, or only
- ❖ *Used layers* that are layers that contain elements.



Note:

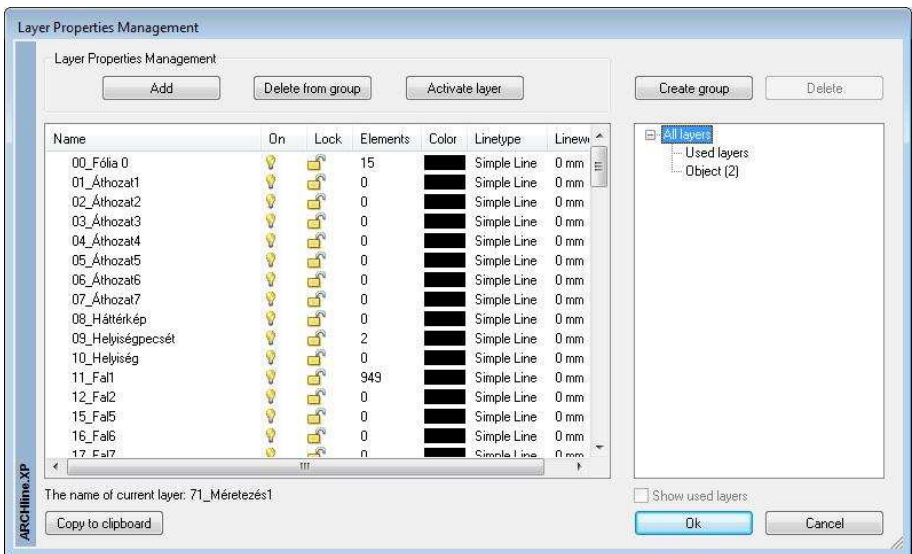
✘ My project-Default - Floor 0 (0 mm) *


If you create a project in version 2011, the first 2D window becomes “default”; this caption appears in the header of the window.

IMPORTANT: The new layer management is available only with projects created in version 2011.

3.3.2. Layer groups

There is a possibility to arrange layers to groups and handle together the layers belonging to the same group.



Click on the  **Layer settings** button in the status line. Then you activate the *Layer Properties Management* dialog window. You can find on the right side of the dialog panel the layer groups buttons and settings possibilities.

Creating layer groups

Click on the *Create group* button, then a new group is instituted with a default name. If you click with right mouse button on the name and select the *Rename* menu, you can give a unique name to the group.

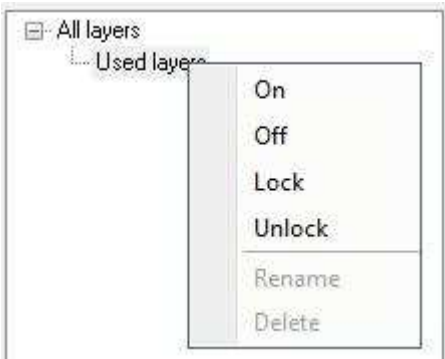
Add layers to a group

Select one or more layers, then hold down the left mouse button draw them above a layer group, and then release the mouse button. Behind the name of the layer group the number of layers that are in the same group appears between brackets.

Display Layer groups

Select a layer group from the list of *All layers*, then on the left side of the dialog window only the layers belonging to the selected group appear. You can qualify the appearing list if you switch on the *Show used layers* button. The list of layers group contains two built in layer groups: if you select the *All layers* group, all the layers of the given window appear, if you select the *Used layers* group then that layers will be visible from the all layers, which contain elements unrelated to the position of *Show used layers* button.

Transactions with Layer groups



If you click with right mouse button on the name of a layer group, with help of the appearing shortcut menu you can modify the preferences of all layers at once: you can represent (On), or hide (Off), lock or unlock all layers in the given group at once.

Delete from group

Select a layer group from the list of Layer groups, then on the left side of the dialog window only the layers belonging to the same group appear. Select one or more layers then click on the *Delete from group* button. The given layers are deleted only from the layer group, and they are available if you select the *All layers* group.

If you select layers from *All layers* and *Used layers* group, instead of *Delete from group* button you find the *Delete* button, which deletes the layers definitely.

Delete layers group

Select a layer group then click on the **Delete** button on the upper right corner of the dialog window. Then only the layer group will be deleted, the layers in it are available further if you select the **All layers** group.



The layers groups have to be determined according to windows similarly to the layers.

Example:

In the following example it is a really great help using the layers group:

Start a new project.

Load in a DWG file, which contains more than 30 layers.

Create a new layer group: *DWG layers*.

Click on the right side on the *Used layers* group. Then on the left side only the layers imported from DWG drawing and the used layers can be found.

Move all layers from here to the DWG layers group.

Start design.

If the imported elements from DWG drawing are not needed, you can switch off or lock them in one step.

3.3.3. Activate layers

Always has to be an activate layer on the plan. The active layer is always turned on and unlocked, with the pipe displayed in front of its name:



You can activate the layers:

- ❖ automatically
- ❖ *in the Layer Properties Management*
- ❖ *in the Layer list box*

The program always places the elements on the current layer.

The method is different according to the *Modify menu- Layer control mode* turn on/off status:

Layer control mode turned off:

The program activates *automatically* the layer assigned to the element in the element properties window. It places the new element on this layer. Except if you activate a layer during the command, for example: creating line, from the *Layer list box*.

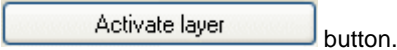
Then the program set the elements on this layer till you close the command.

Layer control mode turned on:

The program set the elements, that layer, which is activated in the *Layer Properties Management* dialog window or in *Layer list box*. In this case the program disregards the layer assigned to the element type.

Activate in the Layer Properties Management:

- To activate the layer click the selected layer then the



button.

Activate in Layer list box:

In the *Status* next to the *Layer settings* button you can find a list box, in which there are the layers with them actual status. The selected layer become active, this appears on the main line of the list box.




The automatic activate, the Layer Properties Management and the Layer list box are synchronized to each other.

3.3.4. Layer properties

In ARCHLine.XP® layers have the following properties:

- ❖ **Visibility:** on and off status
- ❖ **Background:** unlock and lock
- ❖ **Colour**
- ❖ **Line type**
- ❖ **Line width**

**Layers on and off (Visibility)**

By turning layers on and off you can select the layers the elements of which you display in the drawing windows. The elements of turned-on layers  are visible and you can make reference to them.

Any time you can turn the layers on which have been turned off, then they become visible again.

- To turn layers on and off click the desired layer in the list, then
- Click the icon indicating the status of the layer next to Name field.



You can turn off layers easily by using the *Layer off command* in the shortcut menu of the drawing elements. Only the inactive layers can be turned off.



Locking and unlocking layers (Background)

By locking and unlocking layers you can define which layers shall be editable and selectable. You can lock layers containing elements that are not to be edited in a given planning process, these layers become background layers. The elements of locked layers are visible, you can make reference to them, but you cannot select or edit them.

- To unlock or lock a layer click the desired layer in the list, then
- Click the icon indicating the status of the layer next to Name field.

You can change the status of several layers at a time:

- With the Ctrl or Shift buttons select the desired layers from the list.
- Click the appropriate button in the list.

Name	On	Lock	Elements	Color	Linetype	Lineweight
Beam05			0		Simple Line	0 mm
Beam06			0		Simple Line	0 mm
Beam07			0		Simple Line	0 mm
Beam08			0		Simple Line	0 mm
Beam09			0		Simple Line	0 mm
Beam10			0		Simple Line	0 mm
CarryOver			0		Simple Line	0 mm
CarryOver01			0		Simple Line	0 mm
CarryOver02			0		Simple Line	0 mm
CarryOver03			0		Simple Line	0 mm
CarryOver04			0		Simple Line	0 mm



The active layer is always turned on and unlocked.



When the layer is turned on and unlocked:

- ❖ its elements are **visible**
- ❖ you can make **reference** to its elements

- ❖ its elements are **editable and selectable**



When the layer is turned on and locked:

- ❖ its elements are **visible**
- ❖ you can make **reference** to its elements, but
- ❖ its elements are **not editable or selectable**




When the layer is turned off:

- ❖ its elements are **not visible**, therefore
- ❖ consequently you **cannot make reference** to its elements, and
- ❖ its elements are **not editable or selectable**


Colour



- Click the  button next to the layer you wish to modify, and then select the colour of the elements on the layer from the colour palette.


Line type



- Click the  command next to the layer you wish to modify, then
- Click the arrow next to the line type.
- Select the line type of the elements on the layer in the pull-down menu.

Line width



- Click the  command next to the layer you wish to modify, then
- Type in the desired line width, or
- Click the arrow next to the line width and
- Select the line width of the elements on the layer in the pull-down menu.



See Chapter 3.3.4.on Managing layers and using properties for the use of layer colour, line type, and line width properties.

3.3.5. Layer control mode

In the ARCHLine.XP® program the **Modify menu - Layer control mode option is turned off** as default.

When setting the general properties of element types you must specify to which layer you want to assign the elements of the element type in question.

You can place elements with different properties (different colour, line type, line width, even different type, etc.) on the same layer, which due to other aspects, you want to handle together.

For example:

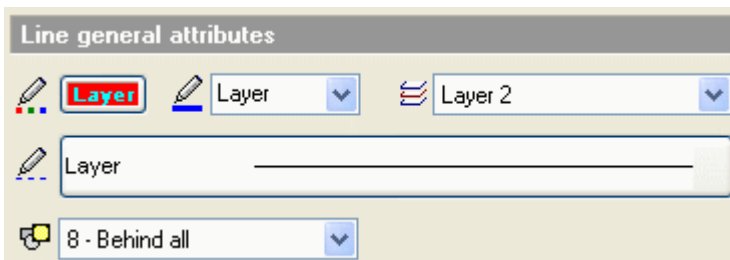
When you select Layer1 in the *Wall properties* dialog box, it means that the program will place all walls created after setting with the given properties on Layer1. By turning a layer on or off or locking it, you can display, turn off, or use as background these walls together, where in the latter case you can only make reference to them but they are non-editable.

Let's see detailed, what's the different between the **turned on/off** option of the **Layer control mode**:

Layer control mode - turned off

*Let's have the **Layer control mode** in the **Modify menu** turned off:*

- ❖ The program set the elements to the element type assigned layer in the Properties dialog window. Except if during the creating command activate another layer from the State - Layer list box.
- ❖ When setting the general properties of the element you can specify the colour, line type, and line width directly by defining the property (e.g. the colour is red).
- ❖ You can specify these properties indirectly in such a way, that the element acquires its properties from the layer assigned to the element. In this case for colour, line type, and line width you must set each *Layer* property separately in the Properties dialog box. E.g. for colour activate the Layer option.



Modify object properties:

You can modify the properties of elements already existing on a layer similarly to the method described above. In the Modify object properties dialog box you can assign colour, line type, and line width separately to the layer or if these are already assigned, you can change them by directly specifying the properties.

Layer control mode - turned on

Let's have the **Layer control mode** in the **Modify menu** turned on:

In case of *Layer control mode*:

- ❖ the program set the new elements to the active layer and not to the element type assigned layer
- ❖ the elements to be placed on the layer automatically acquire the layer properties



To choose fast the active layers use the *Status - Layer list box*.

So when the *Layer control mode* is activated, the colour, line type, and line width of the element will be 'layer type'.

- Click *Layer* in the Status bar and specify the required layers in the *Layer management* dialog box then displayed, and assign the different *colour*, *line type*, and *line width* properties to the layers.

Name	On	Lock	Elements	Color	Linetype	Lineweight
Dimension			0		Simple Line	0 mm
Layer 0			0		Simple Line	0 mm
Layer : 1			0		Dotted	0 mm
Layer : 2			0		Simple Line	0 mm
Layer : 4			1		Wavy	0 mm

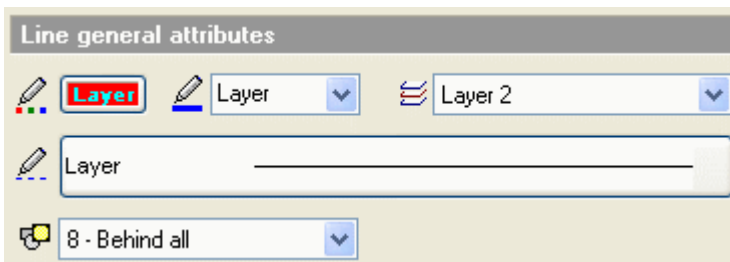
- Be the Layer2 the active layer.

Since the elements placed on a layer acquire these properties from the layer, the program ignores the general properties set in the *Properties* dialog box. While the *Layer control mode* is active, you cannot set the general properties upon the global specification of element properties, these fields included the layer field are greyed out:

In the following example you see the *Line general properties* dialog box.



By double clicking the element (line) used with these properties, you can see in the *Modify properties* dialog box in that the properties of the elements are defined by the active layer (Layer 2) and the element is set to this layer. The colour, line type, and line width of the element are also 'layer marked'.



Modify properties

When modifying the properties assigned to the layer, the elements in the drawing which belong to the given layer and whose properties are layer associated, will automatically be updated.

You can also modify layer associated properties subsequently:

If, for example, the program constructs each element of Layer1 with green lines, but you subsequently change the line colour of one element to blue, the element in question, although it is placed on a green-line layer, will be blue in accordance with the modification.

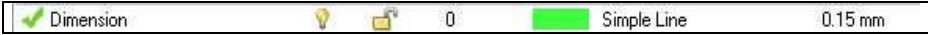


The difference between the on and off status of the layer control mode is that if turned on, the program set the new elements to the active layer and not to the element type assigned layer and the elements to be placed on the layer automatically acquire the layer properties (colour, line type, line width) at once. At the same time you can assign layer properties even if the layer control mode is off, but only one at a time.

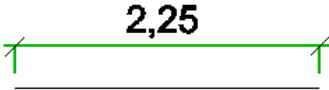
There is no difference between the on and off status when modifying element properties.

Example 1:

- Make the Layer control mode turned on.
- In the Layer management dialog box assign to the *Dimension* layer the colour green and a line width of 0.15. Make the layer active.



- Draw a line and specify its size.



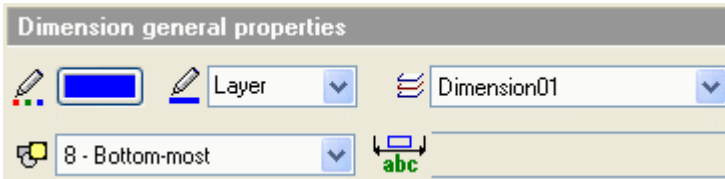
You see that the dimension has acquired the properties assigned to the layer. Let's see it in the *Dimension general properties* dialog box:

- Double click dimension.



The word *Layer* appears in the colour box in the general properties.

- Click colour. Next to the colour palette then displayed, the **Layer** option is activated indicating that the dimension has acquired the colour assigned to the layer. Next to the colour you see that line width is also assigned to the layer.
- By clicking and modifying the colour box, the colour properties of the element are not layer associated anymore.

**3.3.6. Modify layer**

You can move certain elements from one layer to another with the **Modify menu - Modify layer** command.

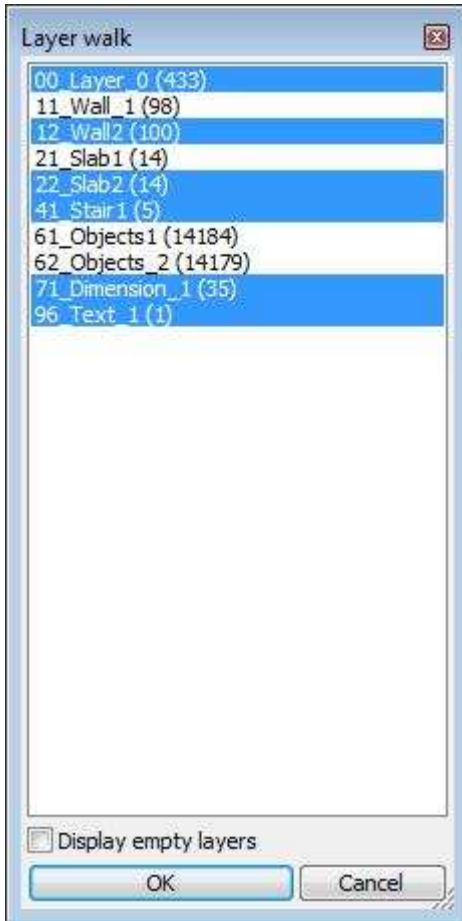
- In the dialog box displayed, choose the number of the new layer to which you want to assign the elements, and then click **OK**.
- Select those elements you wish to move to the new layer (you may also use the commands in the **Selection menu**).
- **Enter** Finish selection and close the command.



As soon as the selected element is moved to a given layer, the Visibility and Background properties of the layer also apply to the element. Additional layer properties, such as colour, line type, and line width modify only those properties of the moved element that are layer-associated.

3.3.7. Layer Walk tool

Layer walk tool helps you navigating through your existing layers of one drawing. The key point of using Layer walk is that it makes easy to switch on and off visibility of layers and visualize the effect at the same time on the drawing itself. The layer walk list shows the names of layers and the numbers of elements of one layer between brackets “()”.



Layer Walk tool can be found on Layer toolbar and also in the main menu in Modify / Layer walk.


Display empty layers

This option enables the visibility of empty layers in the layer walk list. By default all empty layers are invisible.

Using layer walk

Select a layer

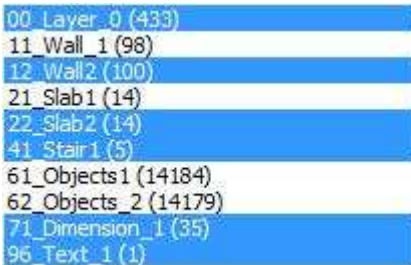
When the layer walk list is opened you can select a layer, by clicking on its name. The selected layer will be highlighted and its content will be automatically visible in the active window.



00_Layer_0 (433)
11_Wall_1 (98)
12_Wall2 (100)
21_Slab1 (14)
22_Slab2 (14)
41_Stair1 (5)
61_Objects1 (14184)
62_Objects_2 (14179)
71_Dimension_1 (35)
96_Text_1 (1)

Select multiple layers

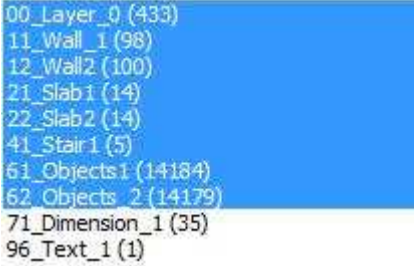
To add a layer to your selection please hold down Ctrl button and click on the layer name. The selected layers will be highlighted and their content will be visible in the active window.



00_Layer_0 (433)
11_Wall_1 (98)
12_Wall2 (100)
21_Slab1 (14)
22_Slab2 (14)
41_Stair1 (5)
61_Objects1 (14184)
62_Objects_2 (14179)
71_Dimension_1 (35)
96_Text_1 (1)

Select layers between first and last selection

You can select every layer in the layer walk list between two selected list elements. Click on the first one, hold down the SHIFT button on your keyboard and click on the last element. Every layer between the selected ones will be selected, including the first and last.

A screenshot of a list of CAD layers. The list is displayed on a blue background. The layers are: 00_Layer_0 (433), 11_Wall_1 (98), 12_Wall2 (100), 21_Slab1 (14), 22_Slab2 (14), 41_Stair1 (5), 61_Objects1 (14184), 62_Objects_2 (14179), 71_Dimension_1 (35), and 96_Text_1 (1). The first three layers (00_Layer_0, 11_Wall_1, and 12_Wall2) are highlighted in a darker blue, indicating they are selected.

```
00_Layer_0 (433)
11_Wall_1 (98)
12_Wall2 (100)
21_Slab1 (14)
22_Slab2 (14)
41_Stair1 (5)
61_Objects1 (14184)
62_Objects_2 (14179)
71_Dimension_1 (35)
96_Text_1 (1)
```

The same selection is also available by mouse only. Move over the first element, and hold down the left mouse button. While holding the left button move the mouse towards the end of the list and when you are satisfied with the selection release the mouse button. All elements will be selected between the first selections until the list element where the left mouse button was released.

3.4. Floor and building management

In ARCHLine.XP® floors allow architects to tie the construction elements to a specific storey, regardless of the element's physical location. So, you design your building as if you were building it in reality. When you start a new project, a first floor is created automatically. Other floors have to be created by the architect. You can speed up drawing if you copy the objects of an existing floor to another floor. This is very useful when creating main walls on a number of floors, as their floor plans usually correspond to each other.

Floors in ARCHLine.XP® are not physical boundaries but comprise a single logical unit. An object located on a certain floor belongs to that floor; however, floor properties (i.e. headroom and height) do not influence its geometry. This means that any object placed on the floor does not have to be physically within the floor boundaries but may overhang. This is necessary for split-level buildings.

In ARCHLine.XP® one drawing may comprise *a number of buildings*. These buildings can be created:

- ❖ as separate projects, which are imported to a single drawing by *Import and Merge to current drawing*, or
- ❖ within one drawing, where you can create several buildings.

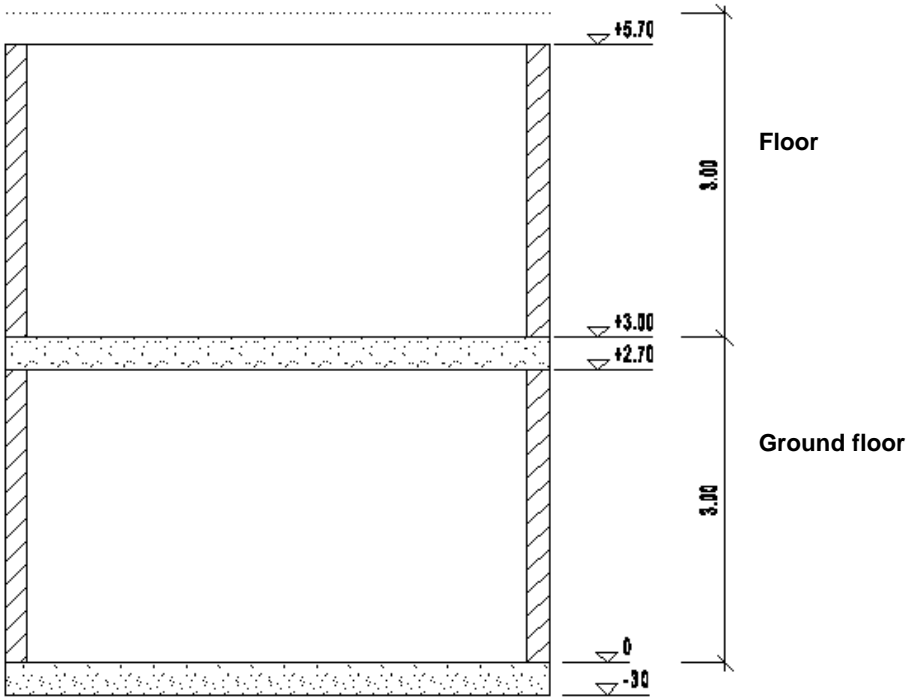
Depending on the terrain, you can assign different heights above sea level to buildings. There is only one active building at a time; others are displayed with a lower colour tone.

Floor properties are: number, name, height above sea level and own height. You can modify these at later stages.

Example

Let's see an example of wall and slab arrangement in the case of two floors:

- ❖ ground floor starts at 0 m, with a height of 3 m,
- ❖ wall starts at 0.0, with a height of 2.7 m,
- ❖ slab starts at 0.0 m, with a width of -0.3 m,
- ❖ floor starts at 3 m, with a height of 3 m,
- ❖ ceiling slab starts at a relative 0.0 m, with a width of -0.3 m.

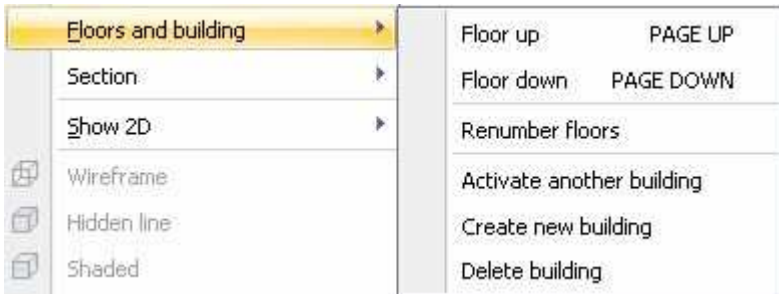


This means that the slab (floor slab) is situated under the wall and overhangs the height of ground floor. The 0.3 m space between the top of the wall and the height of the floor is occupied by a slab of the same position and of 0.3 m width.

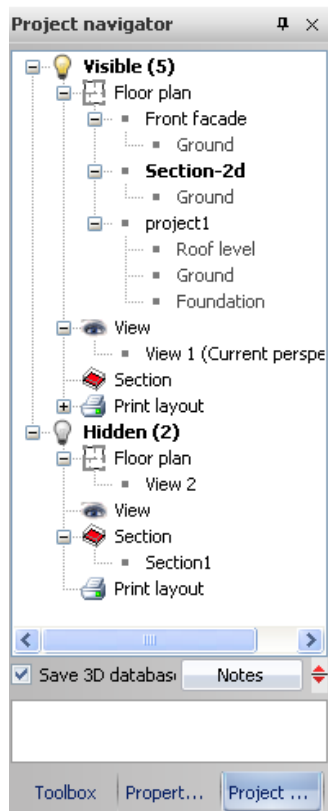
Floor management

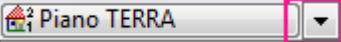
You can manage floors from different parts of the program:

- ❖ in **View** with the command **Floors and building**:



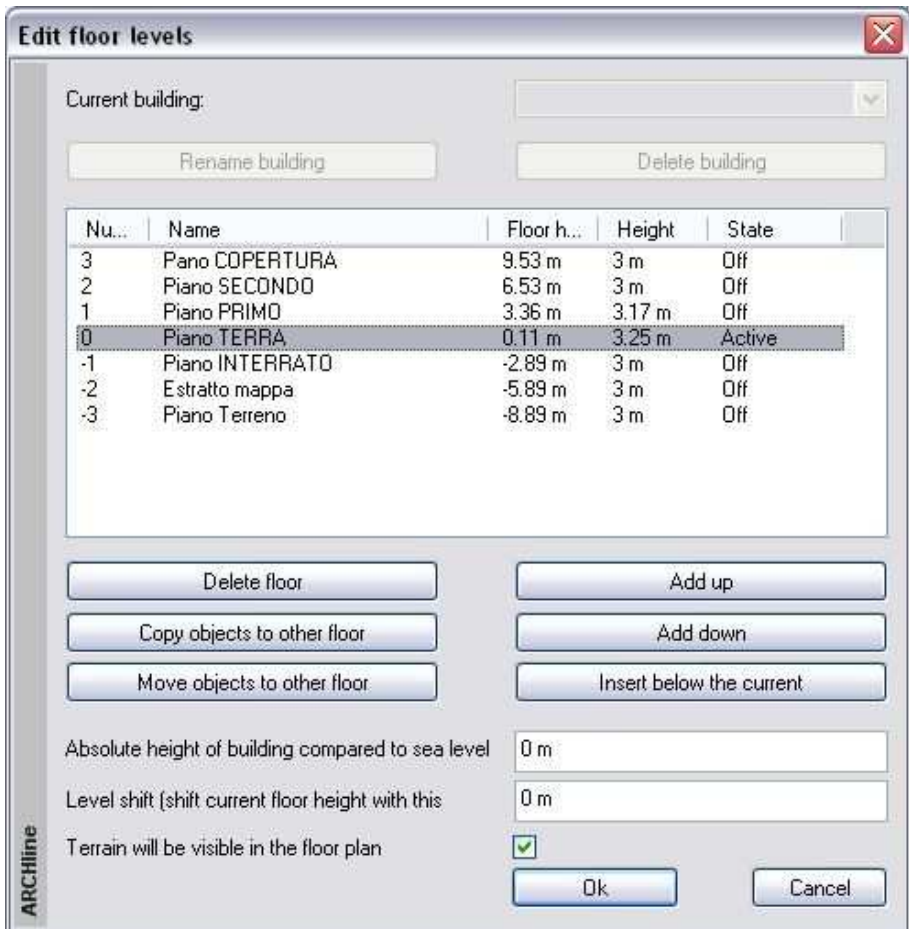
- ❖ In *Project Navigator*:
Choose the appropriate drawing to display buildings and floors in Project Navigator.
You can double click to activate the desired floor of the selected building.



- ❖ In the *Status bar*,  with the **Floor** icon:
Click on the arrow to open the current floor list and select the new active floor.



Click on the button to display **Edit floor levels** dialog box, where you can create and edit individual floors. The properties in the dialog box always refer to the current building.



Let us see the options in this dialog box:

3.4.1. Creating floors

If you start a new project, a 0th floor is created automatically. By default, floor height is 0 m and the full height is 3 m.



You can create new floors in several different ways, depending on the actual situation:

Add up	New floor above the top-most floor
Add down	New floor under the top-most floor,
Insert new floor	New floor between two floors, under the active one

By default, any new floor will have the properties of the floor under or above which it has been inserted.



When you *Insert a new floor* make sure that the active floor is the one under which you want to insert a new floor. The other two options will create a new floor under or over the top-most floor automatically.



When clicking *Insert new floor*, a message box informs you that you cannot use Undo here.



3.4.2. Activating floors

Floors have three states: active, off and visible.

You can define the state of the desired floor by clicking the appropriate element in the pull-down menu of *Floors* dialog box:

Nu...	Name	Floor h...	Height	State
1	Roof	3 m	3 m	Off
0	Ground	0 m	3 m	Active
-1	Cellar	-3 m	3 m	Visible
				Off

Active

The program places the objects on the **active** floor. By default, you can only see the objects of the active floor in the floor plan window, but by clicking *Visible* you can make the objects of another floor visible, too.



Besides the *Floors* dialog box, you can activate the desired floor with the **PAGE UP/PAGE DOWN** keys or with **View – Floors and building – Floor up/ Floor down**. In these cases, you can switch between floors one by one.

You can also activate the desired floor in the *Project* class of the *Design Center* by double clicking or by drag and drop,

Off

If you activate a floor, the previously active floor turns off.

Visible

When editing, you may want to refer to some points of an object which is not on the active floor. This option helps you with this.

When a floor is **visible**, the selected floor will also be visible on the floor plan and you can refer to the objects on that level, without editing them. Visible objects will be displayed highlighted in grey.



Only turned off floors can be made visible.

If you do not need to display the visible floor, either choose **Off** or use **PAGE UP/PAGE DOWN** to switch between floors to activate the desired floor.

3.4.3. Floor properties

You can assign the following properties to floors:

- ❖ **Name**
- ❖ **Floor height**
- ❖ **Height**

Nu...	Name	Floor height	Height	State
1	Roof	3 m	3 m	Off
0	Ground	0 m	3 m	Active
-1	Cellar	-3 m	3 m	Off

Name

To change the name of a floor:

- Double click the **Name** field to be changed, and
- Type in the name of the floor and press **Enter**.

Floor height

Floor height refers to the starting height of the floor (floor-to-floor height). When you can place an object on the active floor, its height is specified according to the active floor's height.

To change floor height:

- Double click the **Floor height** field to be changed, and
- Type in the floor height and press **Enter**.

Height

Refers to the full height of the floor. This height defines the floor height of the next floor. Objects belonging to this floor do not need to be within this height.

To change height:

- Double click the **Height** field to be changed, and
- Type in the height and press **Enter**.



You can set 0.0 as floor height. You may need to set this value in some cases — e.g. in the case of pseudo copies, where there is no 3D modelling, so there is no height extension either.

3.4.4. Building properties

Buildings are described by the following properties:

- ❖ **Height above sea level**

- ❖ Environment level visible
- ❖ Split levelling

Height above sea level

Gives the absolute height of the building compared to the sea level. This is important when placing the building in its environment, i.e. on the terrain. Modifies the 0.0 m floor height of the building with the height above sea level.

- Type in a new value and press **Enter**.

Environment level visible

You can only place the terrain on the environment level. If you disable this option, the terrain placed on the drawing will not be visible in the floor plan and the 3D-model. If you enable this option, the terrain will be visible with each level.

Split levels

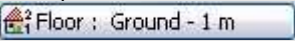
As we have mentioned before, an object placed on the floor belongs to that floor, though its geometry is not affected by floor properties (floor height and height). This means that it is not necessary for an object placed on the floor to be physically within floor boundaries, but it can overhang these boundaries.

Modify floor levels – *Level difference* shifts the floor height of the active floor with the specified value. The program will place the subsequent architectural objects at this height.

- Type in the value of the level difference and press **Enter**.



The value of level difference is displayed on the *Floor* button in the *Status* bar, separated from the name of the floor by a

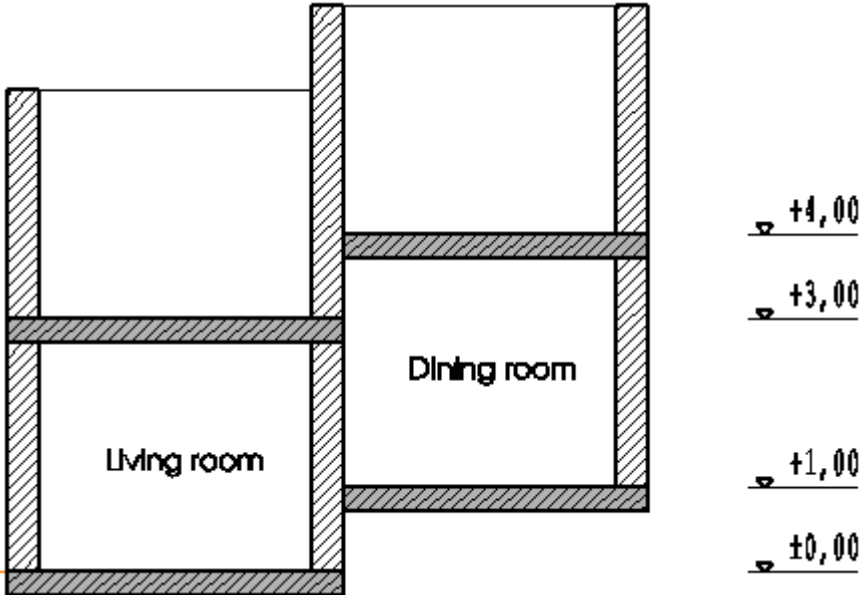
hyphen: . The level difference is valid for all floors.

Example:

The living room and the dining room are on the same floor in the house, on the ground floor. However, there is a 1 m difference between the levels of these two rooms with the dining room located higher.

You should place both rooms on the ground floor on the drawing, because they have to be displayed on the ground floor. The objects of the living room (e.g. walls) are placed on the 0.0 m height of the ground floor. The objects of the dining room are 1 m higher.

- ❖ In the case of the dining room objects, level difference can be defined by setting the height above floors to 1 m in the Properties dialog box for each architectural element.
 - ❖ The other solution is that we set *Level difference* to 1 m in the *Modify floor levels* dialog box. In this case you do not have to set height for each object individually.
- Please note, that if you want to place objects in the living room, you have to reset level difference to 0.0 m.



3.4.5. Floor management

In ARCHLine.XP, you can manage floors with the following commands:

- ❖ Delete floor
- ❖ Copy objects to other floor
- ❖ Move objects to other floor
- ❖ Renummer floors
- ❖ Separate floors

3.4.5.1. Deleting a floor

To delete the selected floor:

- Click the desired floor in the **Edit floor levels** dialog box, and

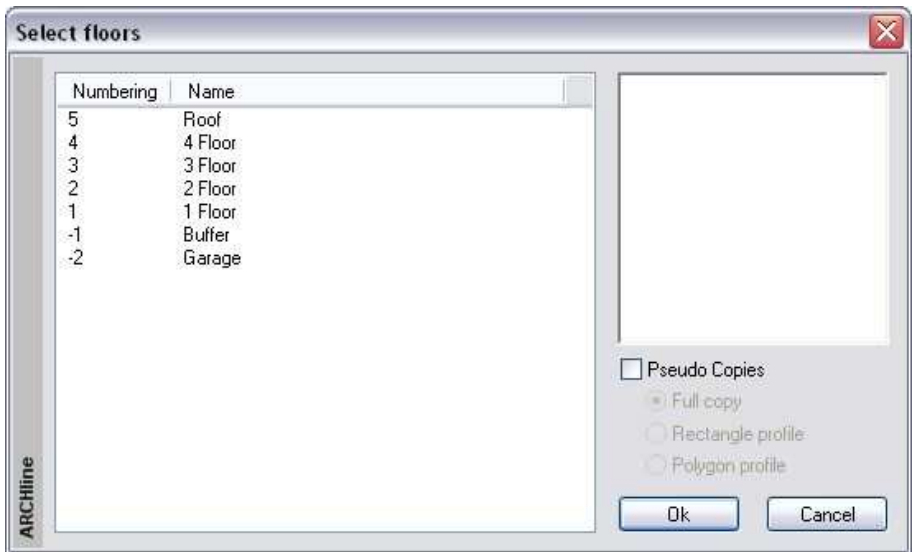
- Click **Delete**.

If you delete a floor, the floor height of the floors above the deleted floor will be reduced by the height of the deleted floor.

3.4.5.2. Copy or move objects to other floors

You can copy or move the selected objects with this command to one or more existing floors. The command can be activated only if you have several floors.

- In the **Edit floor levels** dialog box, click the **Copy objects to other floor** or **Move objects to other floor** button.
- Select the objects to be copied or moved on the drawing and press **Enter**.
- Select the floors you where want to copy or move the selected objects. Hold Ctrl and Shift to select more than one floor. If you click the name of the floor, you can see the current content of the selected floor in the drawing field.



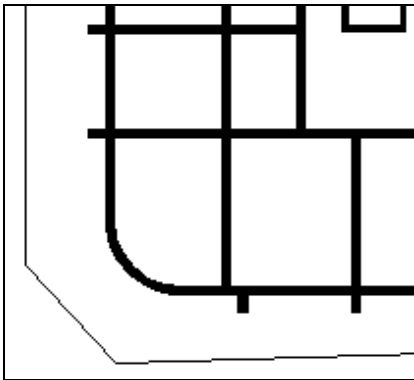
Making pseudo copies

You can copy the floor plan display of objects to another floor, without having a 3D model for these objects. This is what we call a pseudo copy. The copied object is displayed as a 2D group object on the desired floor. This group is still connected to the original object. If you delete the object, the group is also deleted.

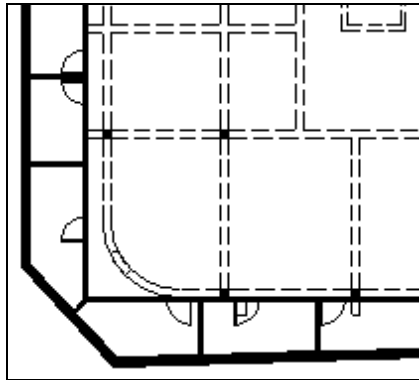
You can place the selected object as a pseudo copy. Going back to the floor plan, you can define the pseudo copied object by a rectangle profile or by a polygon profile. The program cuts the object at the boundaries of the rectangle or the polygon.

- Pseudo Copies
 - Full copy
 - Rectangle profile
 - Polygon profile

You can change the properties of the object created as a pseudo copy. In the group, you can modify the line type of the object. This method is very useful when e.g. you want to mark the location of the framing beams with a dotted line on other floors, too.



Buffer level



Garage level

3.4.5.3. Renumbering floors

In the **View menu** you can renumber floors with the **Floors and building -Renumber floors** command by giving the number of the bottom-most floor.

- Set the new number of the bottom-most floor.

3.4.6. Managing multiple buildings (for experienced users only)

In ARCHLine.XP® one drawing can contain *several buildings*. You can create these buildings:

- ❖ as separate projects, then you can place these on the same drawing by the *Import* command –*Merge to current drawing* option, or

- ❖ as new buildings within the drawing.

Depending on the terrain, you can assign different heights above sea level to each building. There is only one active building at once; others are displayed with lower colour saturation.

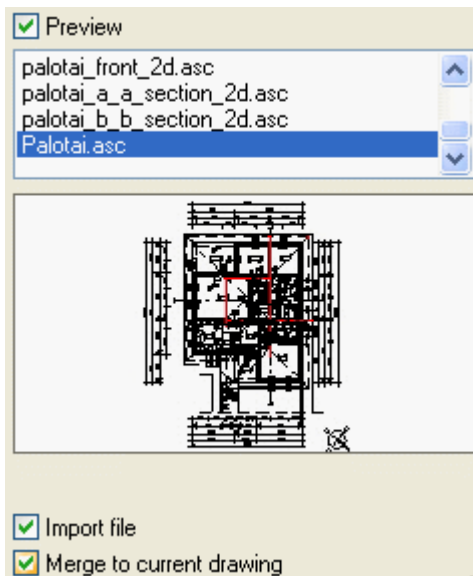


Buildings marked with grey (i.e. inactive buildings) will be printed in real colour.

3.4.6.1. Importing buildings

Having completed building drawings in separate projects:

- Open the project in which you want to place the building. This can be a new project.
Load the floor plan from another project, which is imported into the opened project as a new building. To do this, follow this method:
- Select the project desired in **File menu - Open project** dialog.
- In the *Open project* dialog box, enable **Import file** and **Merge to current drawing** options. Click Ok.

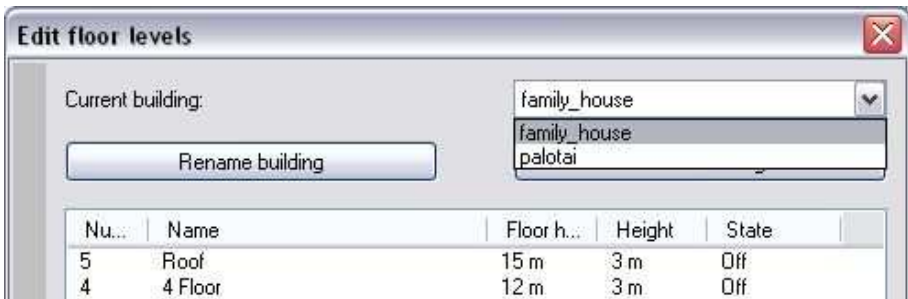


- Enable **Place with new origin** option in the dialog box.
- Enable **Place as new building** option.



If the floors of the building to be loaded differ from that of the building in the project, you cannot enable the **Place as new building** option (greyed) and the program creates a new building automatically.

Then you can find multiple buildings in the drawing.



The *Edit floor levels* dialog box contains the properties of the current building. Height above sea level applies to that current building only.

You can choose the building desired from the **Current building** pull-down list.

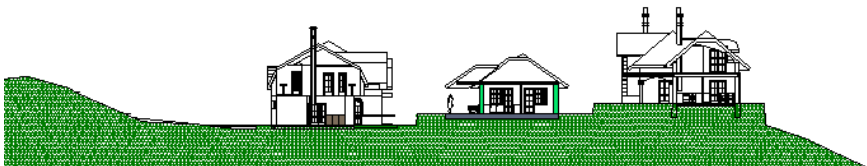
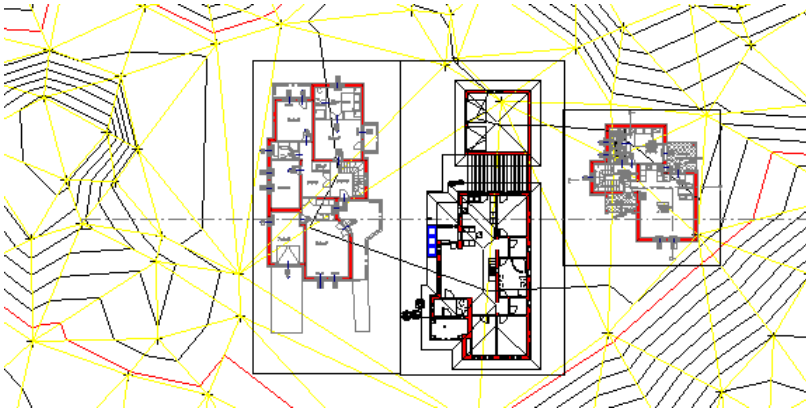
Building names correspond to the original floor plan file names.

To change the name of the current building, click **Rename building**.

Click **Delete building** to delete the current building. Once you accepted this command, you cannot undo it.

To activate the building, select its name. You can go on with the drawing of this building. The other buildings are visible, but you cannot modify them.

In the following example you can see three buildings placed on the terrain at different heights above sea level. The building in the middle is active. The other buildings have lower colour tones.



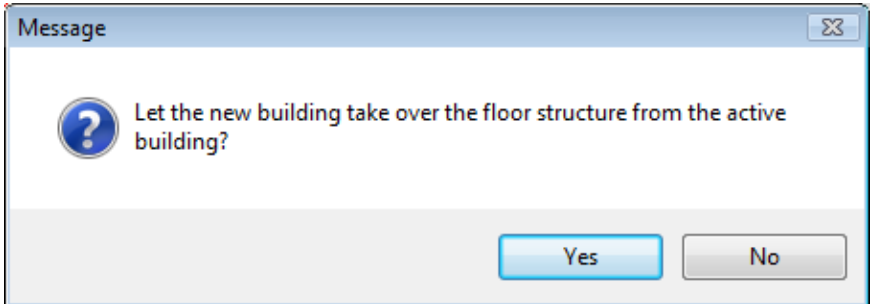
When creating your 3D-model, enable the **Each building** option in the dialog box. The program will create a 3D model for each building.

3.4.6.2. Creating a new building

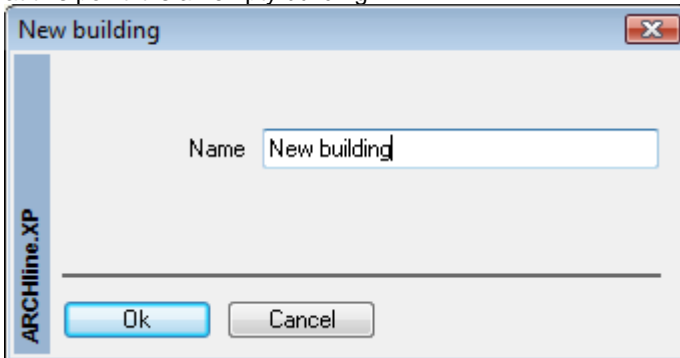
You can also draw multiple buildings in one project. In this case you cannot load the completed building from the project file, but you draw the building within the project.

This happens as follows:

- Create a new project. Draw building as usual.
- Select **View menu - Floors and building - Create new building** command.



-
-
- You can take over the floor structure from the active building or you can define the number of floors independently.
- Give the name of the new building. This building will be active, although at this point it is an empty building.



-
-
- The new building is active from now on; other buildings are deactivated and displayed in lower colour tones.



You can define height above sea level in the *Edit floor levels dialog box*, and you can also modify the number of floors there.

3.4.6.3. Activating other buildings

You can activate another building by:

- ❖ Using the View menu - **Floors and building - Activate another building** command. Click the building desired.

Or

- ❖ by selecting the name of the building desired from the **Current building** pull-down list in the *Edit floor levels* dialog box.

3.4.6.4. Deleting buildings

To delete redundant buildings:

- ❖ Click **View menu - Floors and building - Delete building** and select the building to be deleted, or
- ❖ select the name of the building to be deleted in the *Current building* pull-down list in the *Edit floor levels* dialog box and click **Delete building**.

4. File management

4.1. Introduction

In ARCHLine.XP® you can manage projects and standalone drawings.

4.1.1. Project management

Drawing management in ARCHLine.XP® is based on the project. In ARCHLine.XP®, the project contains the whole description of a building or buildings and all of the information needed to represent it in construction plan and three-dimensional views, sections, and printing layouts. This method simplifies design work, helps clear navigation among the numerous projects of an architect.

All this information is stored together in one file with .pro extension.

ARCHLine.XP® saves all your settings together with the project and allows you to customize them at any phase in the design process.

Moving projects to another computer or giving it to a colleague become a single click.

As you edit the building design in any view, ARCHLine.XP® follows those changes throughout the project. This means that the 3D model, any views of the model, sections, the floor plan, and the printing layouts all automatically update to reflect the changes.

Project access rights

Other users may access your projects without any limitation. This means that any project created by user „A” can be opened, modified, saved and copied by user „B”.

We recommend that you use project management.

Managing drawing files

In this case the drawing is made up of the floor plan. You can make a 3D model with sectional drawings and projections. Each drawing has an ASC file extension.

Disadvantages:

- Different views assigned to a floor plan are not saved when you save floor plans. You have to save each drawing file individually.
- The saved drawings are not connected to each other.
- You cannot restore the floor plan from different views.

- Materials and settings created by the user are not saved in the ASC file, so you cannot transfer them to another computer.

Importing and Exporting

ARCHLine.XP[®] is compatible with other drawing and display programs. You can load drawings made with ARCHLine.XP[®] or earlier versions, AutoCAD[®] DXF, DWG, DWF drawings and 3D Studio or SketchUp model as well.

Besides ARCHLine formats, the program supports AutoCAD[®] DXF, DWG and DWF formats, and file formats of ARCHLine.XP[®] Render Studio, 3D Studio, Cinema4D, Artlantis, programs.

Template file

Creating the drawing template means setting the drawing surface and all the drawing tool properties. You can save personal settings as part of the template to speed up the drawing process. You can save the created templates to a template file with a SET extension.

The **File menu** includes the following:

- ❖ file operations for loading and saving drawings, projects files,
- ❖ settings,
- ❖ print preview and printing commands.



This chapter contains commands for file operations only.

For the description of individual settings, see chapter 2.10. *Display settings* and chapter 3.1. *Architectural settings*. For printing instructions, see chapter 14. *Printing*.



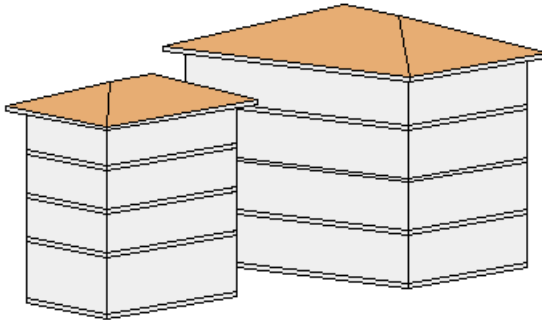
If you double click on *.pro* and *.asc* files in the **Explorer**, ARCHLine.XP[®] starts automatically, and the selected file is loaded. If ARCHLine.XP[®] is running, you can load any *.pro* and *.asc* or image file from the **Explorer** by drag and drop.

4.1.2. Building

In ARCHLine.XP, the building is the highest logical unit.

The building is made up of multiple floors, the architectural elements on the floors, and the layers that help the visualization and grouping of the elements. Architects can design several buildings within one ARCHLine.XP[®] project. The buildings can be drawn separately in different projects or they can be handled in the same project.

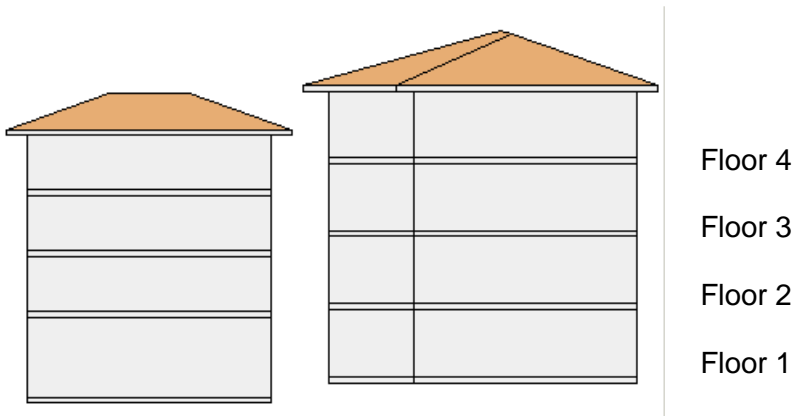
One building is active at a time while the others are visualized with a lighter tone. Different altitudes can be assigned to the buildings.



4.1.3. Floor

In ARCHLine.XP® the building levels are defined as floors. *Structural elements* and *Component elements* are associated to these floors, so that changes to a floor's height automatically generate changes to the linked objects elevation and height.

The floor corresponds to the architectural meaning of floor. Just as in reality a building is built up from floors, the plan is also realized floor by floor, level by level. Opening a new project Floor 0 is automatically created. Any other floors are to be created by the architect according to the needs of the design.



4.2. Project *management*

Running ARCHLine.XP®

We suggest you manage your drawing as a project.

After starting ARCHLine.XP® from the Start menu, select work with a project, i.e. enable the *Project* option.

In this all information will be saved in one file, i.e.: *filename.pro*.

In the first dialog box you can:

- ❖ start a new project,
- ❖ load any of the last 6 projects used,
- ❖ load a project saved before.
- ❖ or browse a project by name and folders.

Select any of the following four options:

Creating a new project

To create a new drawing, click on the first icon in the dialog box.

- Select a folder where you want to save the new project. By default, the program offers the path to the last project used. Project files in that folder are also displayed.
- Give the name of the new project.

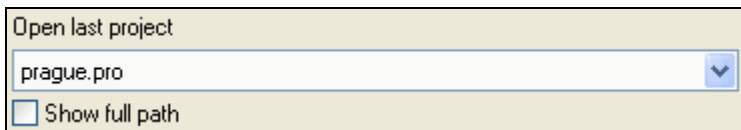
If there is a project with the same name in the selected folder, the program displays a message asking if you want to overwrite the existing project.



If you click Yes, you lose the project under the same name.

Opening the last used project

Here you can select any of the last projects. The program loads the selected project, including all windows, displaying them in the last saved arrangement. You can display the full path name or only the name of the project. The latter is very useful when the path name is too long and you cannot see the name.





When you use the *Show full path* option you can read the full path information from the appearing tool tip.

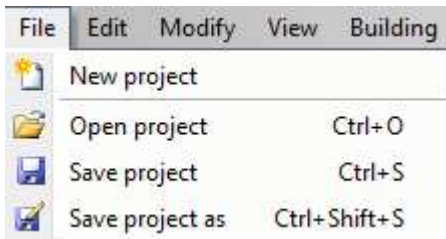
Opening an existing project

Click this button to find **Open project file** dialog box, where you can select the desired project file. By default, the program offers the path of the last used project.



See chapter 4.2.3. *Opening a project* for the description of this command.

Other commands concerning project operations are the following:



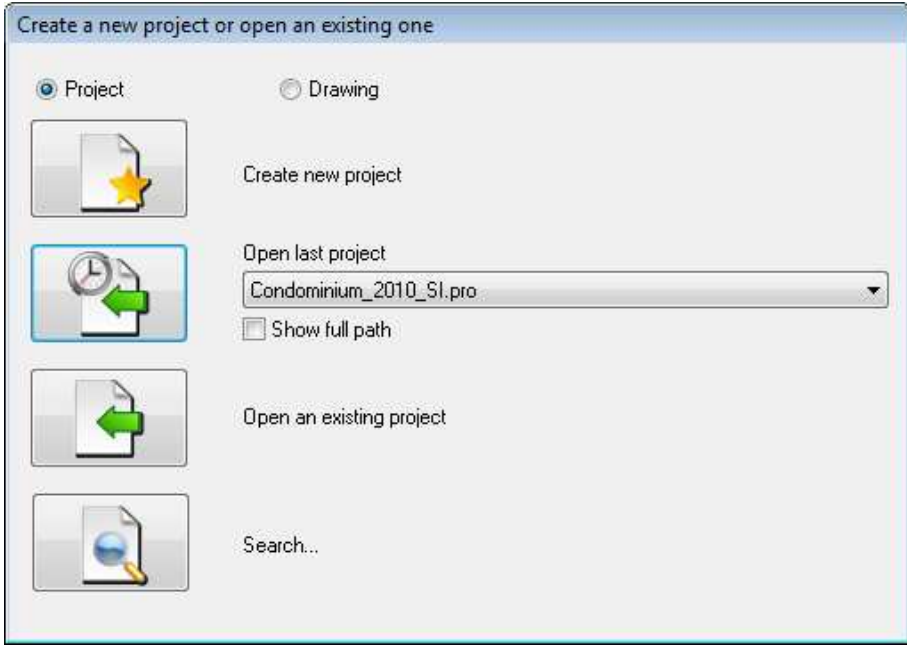
4.2.1. New project

With *File menu - New project* command you can start a new project or load an existing project.

- In the dialog click OK if you want to resave the current project.

If you click *Quit without save*, the message appears: "Are you sure to close the project without save?"

The following dialog box pops up:



The dialog box is similar to that one which comes up when starting the program. The difference is that this dialog box does not contain an *Exit* button, so you cannot shut down the program here.

4.2.2. Search projects

Introduction

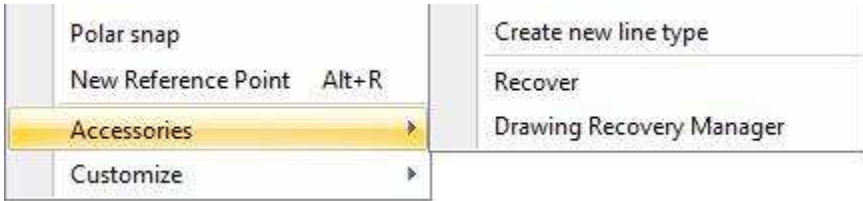
ARCHLine.XP gives an efficient helping hand to search former projects and drawings on the hard disks of the computer.

You can use it simply, just determine the search position and conditions then you just have to select the proper one from the found projects or drawings.

This function can be used excellently for searching former used works or their backup copies.

Use search function

You can start the command from the *Tools menu – Accessories* submenu or using the *File menu – New project – Search* icon.



In the appearing dialog window determine, in which folder you want to search and give the name you are looking for, and the type of the file:

Project / Drawing

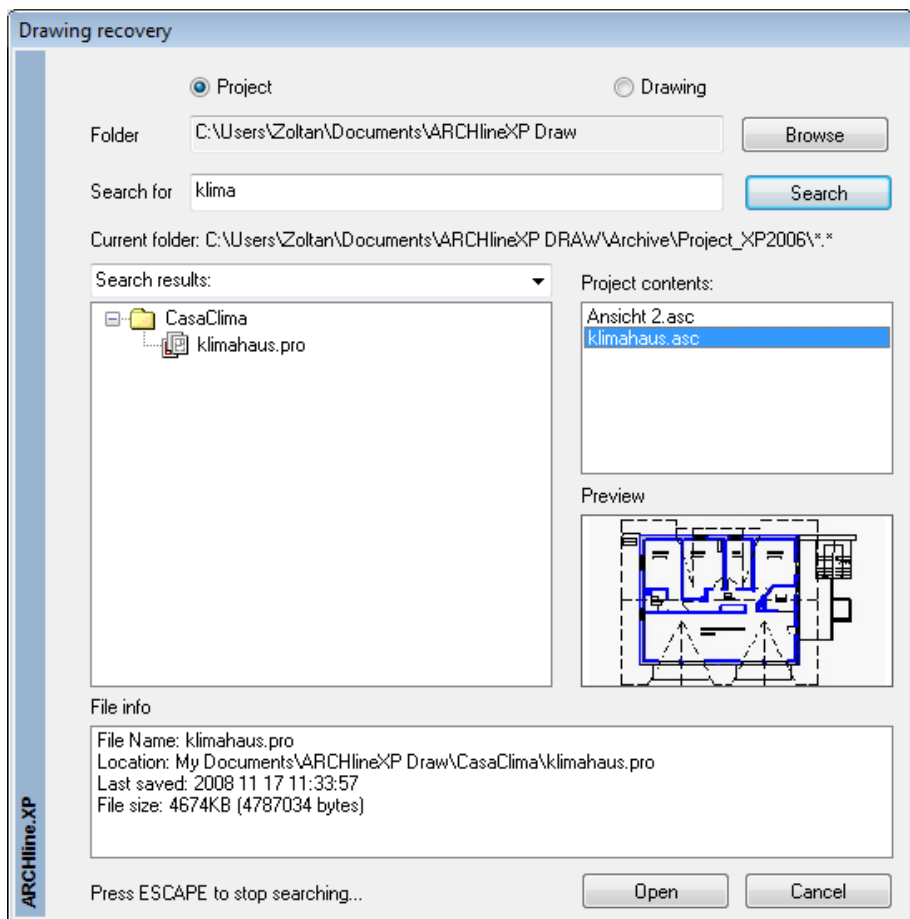
You can set what and where you are looking for. Select the proper option.

Folder

Here can be seen that access path, where the program is searching. Click on the Browse button, you can select another folder or driver. The searching happens in all subfolder too.

Search for

Here you can determine the name of the file or the part of it, which you want to search for. For example, if you look for the original „klimahaus.pro” file, it is enough to write in the „klima” search condition. After clicking on the Search button the program is searching files in the given path that contain the „klima” detail.



The search results appear similarly as above.

Search results

You can fine the search results. In course of searching the ARCHLine.XP® search not only among the saved projects according to the given conditions, but among the backup copies (PR\$ extend files) and the automatically exist archives (Archive folder) as well.

Select the proper option from the drop down list, if it is necessary.

Project contents

In this field you can select one design, which is in the selected project.

Preview

It shows the preview of the selected drawing from project contents list in miniature form.

File info

The program represents essential information from the selected file.

Open

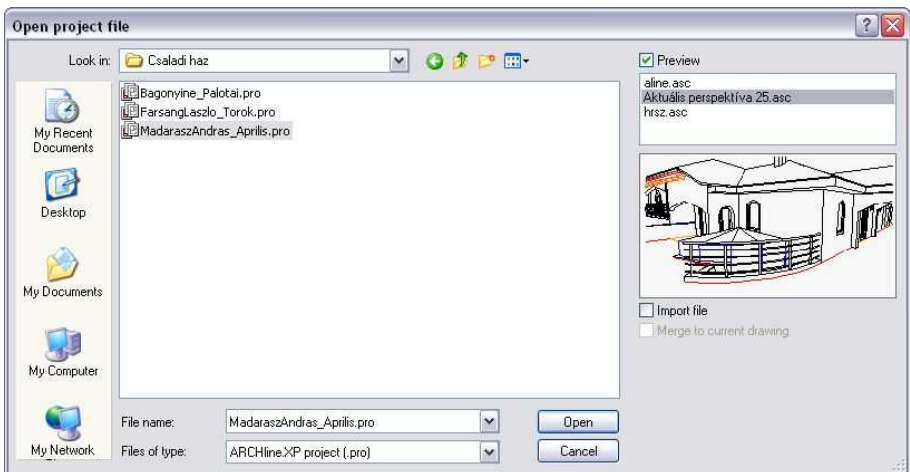
You can open the selected project or drawing, if you click on the Open button.



You can interrupt searching with pressing down the ESC button.

4.2.3. Opening a project

The program loads the desired project with *File menu - Open project* command. After opening the project, each related drawing is displayed in a separate window.



When you activate the *Open project* command, a dialog box appears where you can select which *.pro* file you want to open. By default, the program offers you the path of the last project you worked on.

If you cannot find the desired file in the list, choose another directory.

- Select the project to be opened.

Preview

Enable the *Preview* option to display the name of the drawings related to the selected project in the right hand side of the dialog box.

This helps you to clearly identify the project.

The program displays images only if you click on the name of the drawing.

This way you can scroll the names of the drawings within each project.

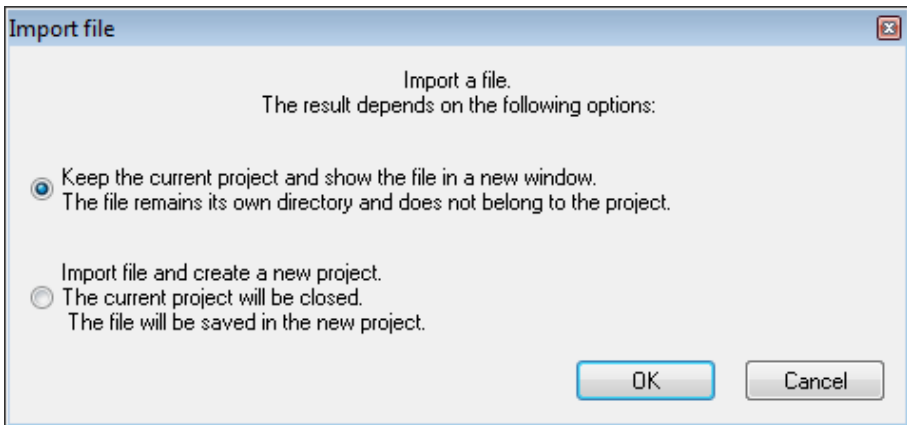
Importing of ASCII file from another project

If you enable this option, the program will load the selected drawing **only**.

- Click **Open**, and the program asks you the following question:
„Are you sure you want to import a file from this project?“

If you click Yes, you can:

- ❖ either merge the imported drawing file into the current project, and then the drawing is created in a new window as a part of the project,
- ❖ or create a new project. In case of a new project, give the name and the path of the project. By default the program offers the path of the last used project.



Merge into current drawing

If the *Import file* option is enabled, you can add the imported drawing file to the active drawing of the current project by enabling *Merge into current drawing option*, so as to make it a part of the project.





Use this option if you want to place a finished drawing saved as a project onto the terrain. If you manage multiple buildings, you should load the buildings with this option. To do so, select the floor plan from project drawings.

If you want to place the reference point of the drawing to a selected point instead of the global coordinate origin, press **Open** and enable the **Place with new origin** option in *Merge files* dialog box. The reference point of the drawing is the (0; 0) point.



You can make full use of this option if you place the first element of the drawing to be merged at the (0, 0) point. Then the starting point of the first object will be the point of reference.



Import file option is similar to **File menu - Import** command; however, you can only import project files here.

After selecting the name of the desired project (the *File import option* is switch off) and pressing *Open*, click OK in the *Save project* dialog box. If you have not saved changes to the current drawing, the program asks you if you want to do so.

If you click *Exit without saving*, the program asks “Are you sure you want to exit without saving?”

Drag and drop files in ARCHLine.XP

To open a project, there are other options than using a dialog box. You can open files by drag and drop that is by dragging and dropping files from Windows Explorer to ARCHLine.XP®, as it is used in Windows. You can use the following files:

Projects, ASC drawings, DXF, DWG, DWF drawings, image files (e.g. BMP and JPG files), 3D Studio objects (3DS).

Double click on filename

If ARCHLine.XP® is not running, double click the project file name (.pro) or the .asc file name in Windows Explorer to start the program; the project and the drawing will be loaded.

Opening last used files

The last used 6 projects appear on the bottom of the *File menu*. You can load any of those by selection:

File name rules

Inside a project the renaming of files is not allowed, thus you can avoid creating name conflicts in a project. Only the changing of the pseudo name is possible in the Project properties dialog box. This new rule makes easier the handling and identifying of drawings on plot layouts, too.

- ❖ The name of the first floor plan window is derived from the name of the project.
- ❖ At the opening of other floor plan windows you have to define the new window name (e.g. 2D sections, 2D facades etc.).
- ❖ At the opening of a 3D view window the new window name is generated automatically (View 1, View 2, etc.).
- ❖ At the creation of a 3D section window the window name is generated automatically (Section1, Section2 etc.),

4.2.4. Import and export files

ARCHLine.XP® is able to import and export data from a wide variety of CAD software.



See the Chapter 4.5. Import/Export.

4.2.5. Import file into a project

Importing of files can be done in three ways:

- ❖ with the *File menu - Import* command,
- ❖ with the drag & drop method: for example dragging from the Windows Explorer.
- ❖ *File menu – Open project - Import file* command

Importing of DXF/DWG file into a project

If we import into an active a 2D floor plan with the *File menu - Import* command, the *Merge to current drawing* option is the default setting. The same applied when you use the *drag & drop* method. This way the unnecessary increasing of the number of 2D floor plan windows can be avoided.

If we import into an active 3D window, the two methods work different: In case of *File menu - Import* command the *Merge to current drawing* option is the default, the drawing will be imported to a given drawing. When you use the *drag & drop* method, the drawing will be loaded into a newly created window.



See the Chapter 4.5.2. DXF/DWG import/export.

Importing of ASC file into a project

If we import into an active a 2D floor plan with the *File menu - Import* command, the *Merge to current drawing* option is switched off by default, therefore a new window will be created. In case of *drag & drop* method the drawing will be imported into a given drawing.

If we import into an active 3D window with the *File menu - Import* command, the *Merge to current drawing* option is switched off by default, therefore a new window will be created. Also, in case of *drag & drop* method, a new window will be created and the drawing will be loaded there.

If name conflict occurs at new window generation, the new window name will be generated by the concatenation of the original file name and the extension of .1.



See the Chapter 4.5.1. ASC Import.

ASC file import from project into project

If the drawing to be loaded is part of project, the *Import* command can't be used. In this case, use the *Open Project* command, and select the *Import file* and *Merge to current drawing* option.



See the Chapter 4.2.3. *Opening project – Import file option*.

4.2.6. Saving project

When you save the project, each drawing (floor plans, facade views, sectional drawings and perspectives) goes into one file, with a **.pro** file extension.

This project file contains all the information including materials created by the User, object properties, architectural settings, display settings, hatch patterns and line types.

Only those sets are saved in the projects that are used within it.

The 3D database is not saved in the project by default, only upon your request.

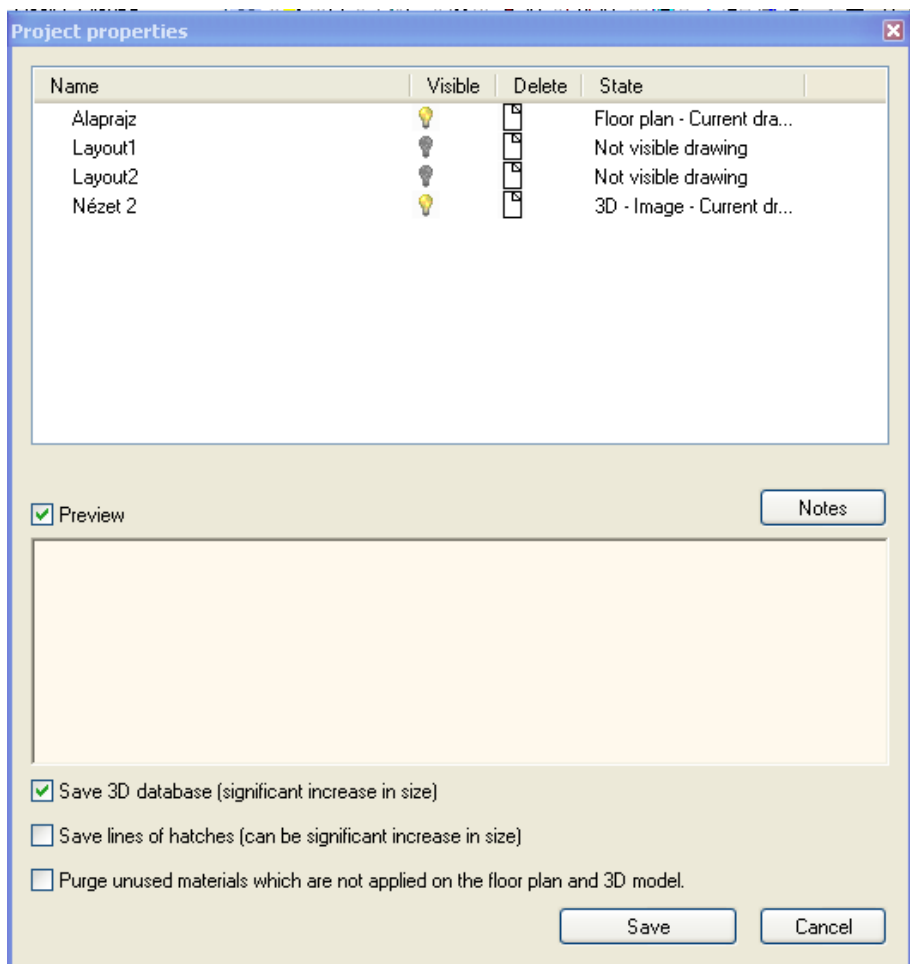


You can save your current projects with their names in the selected directory by *File menu - Save project* command, or with the *Edit toolbar -*



icon.

Drawings that make up the projects are also listed in the dialog box. Floor plans are marked with blue, 3D drawings are marked with black, and plot layouts are marked with green.











Renaming

Double click on the selected File name. You can overwrite the pseudo name of the drawing but the File name of the drawing is not changed with this.

State

You can change the state of any drawing. You can delete any selected drawing in a project or you can turn them off temporarily. Drawing files can have three states: active, not visible and drawings to be deleted from the project.


Name	Visible	Delete	State
view			3D - Image - Current drawing
2d section			Floor plan - Current drawing
2d view			2D - Not visible drawing
office_building			Floor plan - Current drawing

Active drawing:  

An active drawing is displayed on the screen and is part of the project.

Not visible drawing:  

If you turn off the Light bulb icon, the selected drawing will be temporarily invisible, i.e. it will not have a window but it *will remain part* of the project. If you reload the project later on, the last saved state will be displayed, i.e. only the active drawings will appear. Click on the Light bulb icon in the **Save project** or **Project properties** dialog to activate the invisible drawing. You can also make the drawing invisible if you disable the window of the drawing.

Drawing to be deleted: 

Click on the *Sheet* icon of any drawing to delete the drawing from the project; this also means that you delete the drawing from the hard disk and so it will not be accessible any more.

Checkboxes

Purge unused materials:

The materials which are not applied on the floor plan and 3D model will automatically be deleted from the project, if this function is switched on. As a consequence your project size may decrease significantly.

Save the lines of the hatch:

The hatch component lines which are applied on the floor plan and vector line section views will be saved into the project, if this function is switched on. It results faster loading of the project next time when you open it. As a consequence your project size may increase significantly.

! Remember not to delete the floor plan unless you do it for some specific reason.

Save 3D database

❖ *Off:*

It is switched off by default therefore the 3D database is not saved in the project. The 3D model can be created from the floor plan any time. If we use the 3D solid modeller and we do not save the object in the object library, we need to save the 3D model.

In a case like this the program recognizes that the plan contains 3D elements which have not connection to the plan and when the project is saved the program offers the possibility of saving the 3D model as well.

❖ *On:*

If it is switched on the whole 3D database is saved. In this case the project size considerably increases.

Exit the program

When you exit the program or load another project, the program displays the *Project properties* dialog box showing the states of the drawings, and asks for confirmation. At this point you can cancel the deletion of the drawing.

You can select the *Quit without save* option. In this case you are to lose all changes made since the latest save.

Making copies

When the program saves the projects, it also saves the previous status as **filename.pr\$**. This way you can always find a copy of the previous saving. The next saving will overwrite the copies.

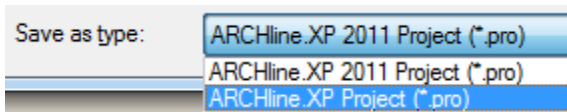
4.2.7. Saving project as...

You can save your project under a new name. The appearing dialog box corresponds to the one popping up for *Save project*.

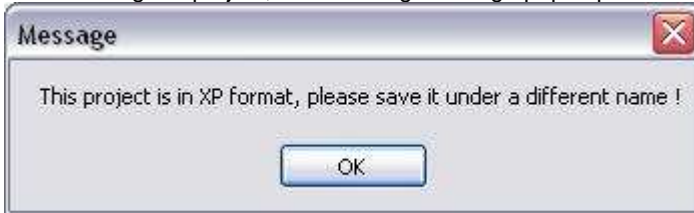
After closing the dialog box, you can define the new name and path for the project in *Save project* dialog box.

❖ If you want to export the project to earlier version of ARCHLine.XP®:

In the *Save project file* dialog select XP project format. You can open the project saved this way with the previous program version.



- ❖ You can load any project created with the previous versions. When saving the project, the following message pops up:



This means that the program will not overwrite the previous file version, and you can save the project with a new name in ARCHLine.XP® format.

4.2.8. Archive

It is possible to archive drawings (.asc floor plans) of projects.

In a pre-defined folder the application creates a subdirectory with the current date. Partial backups of newly created or modified projects are created here in subfolders named according to the project names.

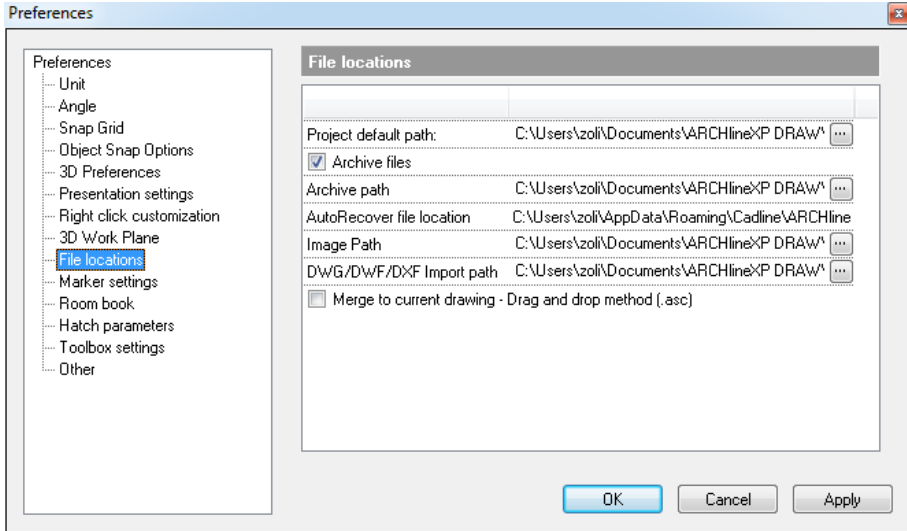
During the archiving procedure the .asc floor plans and plot layouts of projects will be archived here.

This archiving option makes enable for the user to create automatic backups on each day of the working procedure, making easy to search back for a given state of the working procedure by date.

Folders created this way are not deleted automatically. After finishing the work the users should ensure the deleting of unnecessary files themselves.

Switching the archiving option on:

- Switch the *Archive* option on in the *File menu - Preferences - General – File locations* dialog. (The *Preferences* dialog is also available by clicking on the measurement unit in the Command line.)
- Specify the directory where the archived files should be saved into. By default this is the ...\\Draw\\Archive subfolder in the installation directory. You can change this.



! With the archiving option you cannot save projects but drawing (.asc) files!

4.2.9. Auto save

With auto save you can avoid data losses due to black-outs or any other unexpected events.

After a definite number of drawing commands, the program saves the current drawing. When you restart the program after the unexpected events, the last used project will be loaded automatically from that folder.

! This temporary folder will be deleted when you exit the program, so auto save **does not substitute** the saving of the project. If you fail to save your drawing, and then exit the program, your entire work will be lost.

You can enable Auto save under Save in **File menu - Preferences - General - Other** dialog box:





A very frequent auto save will slow down drawing commands because of increased disk usage. For this reason, it is preferable not to set a very low step number.

4.3. Project navigator

When you save the project, each drawing (floor plans, facade views, sectional drawings and perspectives) goes into one file, with a .pro file extension.

This project file contains all the information including materials created by the User, object properties, architectural settings, display settings, hatch patterns and line types.

Only those sets are saved in the projects.

The 3D database is not saved in the project by default, only upon your request.

Drawings that make up the projects are listed in the Project Navigator.




As a consequence of the new Project Navigator feature the previous release Project management dialog is cancelled in the ARCHLine.XP® 2010 release.

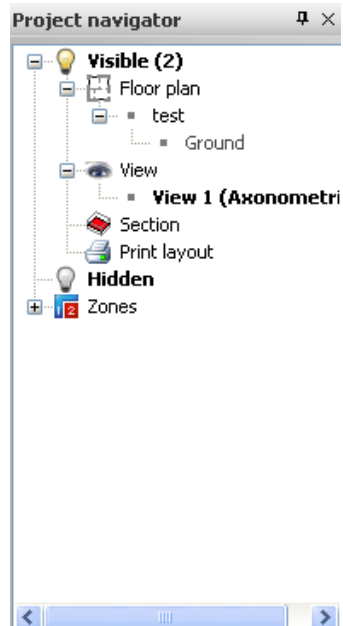
4.3.1. Project navigator in details

The drawings that make up a project are grouped as *visible* and *hidden* drawings. What is the difference? The hidden drawings have no assigned window but remain part of the project when you save it. You can also move a drawing to the hidden drawings group if you click X button of the window as you close it. These *visible* and *hidden* folder contain the following sub groups:

- ❖ 2D drawings (floor plans)
- ❖ View (perspective and axonometric views, wall views)
- ❖ Section (sections)
- ❖ Print layout (list of print layouts)

You can visualize the buildings and floors of the 2D drawings as well with a click on  sign or with a double click on the drawing name.

There is also a section named zones, detailed in 4.3.6.



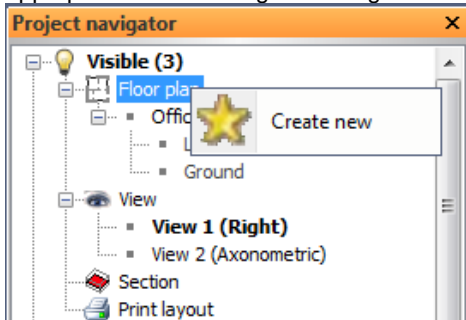
4.3.2. How to use the Project Navigator?

Active drawing

The mouse left double click makes the selected drawing to active drawing. When the selected drawing is in the **Hidden** category it will be displayed on the screen and will be moved to the **Visible** category.

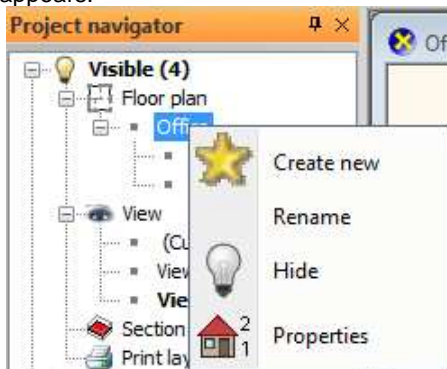
New drawing

The mouse right click makes over the folder name offers to create the appropriate new drawing according to the folder name.



2D drawing management

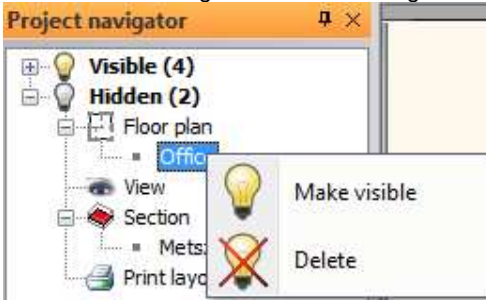
Using the mouse right click over the 2D drawing name the following menu appears:



- ❖ **Create new** enables to create a new 2D drawing.
- ❖ **Rename** command enables to change the pseudo name of the drawing. You can overwrite the pseudo name of the drawing but the real file name of the drawing will not change.

- ❖ **Hide.** The selected drawing will be temporarily invisible, i.e. it will not have a window but it *will remain part* of the project. The drawing moves to the Invisible group.
- ❖ **Properties** command opens the 2D drawing related floor management dialog where you can modify the current floor structure.

When you chose a 2D drawing in the **Hidden** folder with the mouse right click over the 2D drawing name the following menu appears:

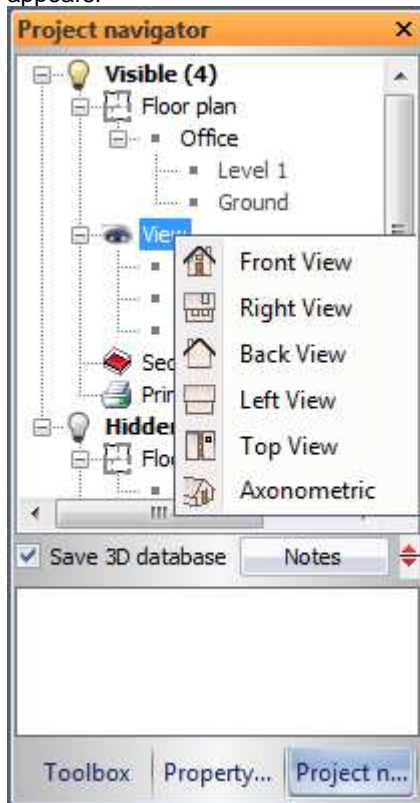


- ❖ Click on the Light bulb icon the **Make visible** command activates the hidden drawing and moves to the **Visible** folder.
- ❖ Click on the **Delete** command to delete the drawing from the project. This means that you delete the drawing from the hard disk and so it will not be accessible any more.

! Remember not to delete the 2D drawing (floor plan) unless you do it for some specific reason.

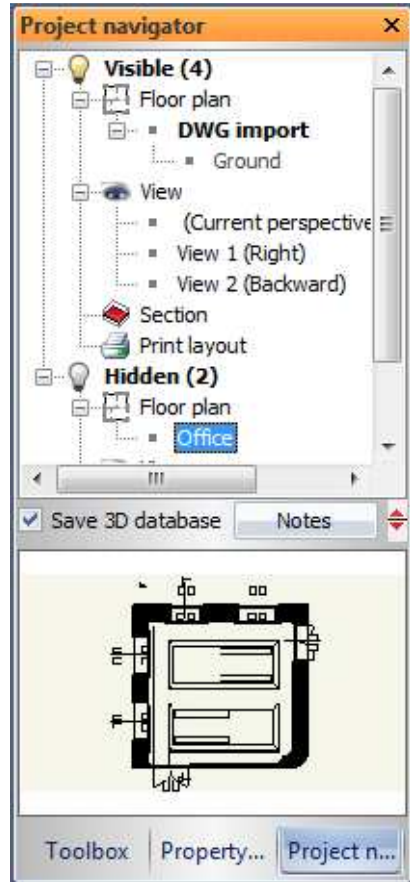
3D view management

Using the mouse right click over the 2D drawing name the following menu appears:



4.3.3. Preview

The Project Navigator encapsulates a preview control that displays the image of the selected drawing in the **Hidden** folder. Use the mouse left click over the file name and the preview displays the image when available.



4.3.4. Save 3D database

Save 3D database (significant increase in size)

This check box controls the saving of 3D database into the project.

❖ **Off**

It is switched off by default therefore the 3D database is not saved into the project. The 3D model can be created from the floor plan any time.

If we use the 3D solid modeller and we do not save the 3D solids in the object library, we need to save the 3D model.

In a case like this the program recognizes that the plan contains 3D elements which have not link to the floor plan and when the project is saved the program offers the possibility.

❖ **On:**

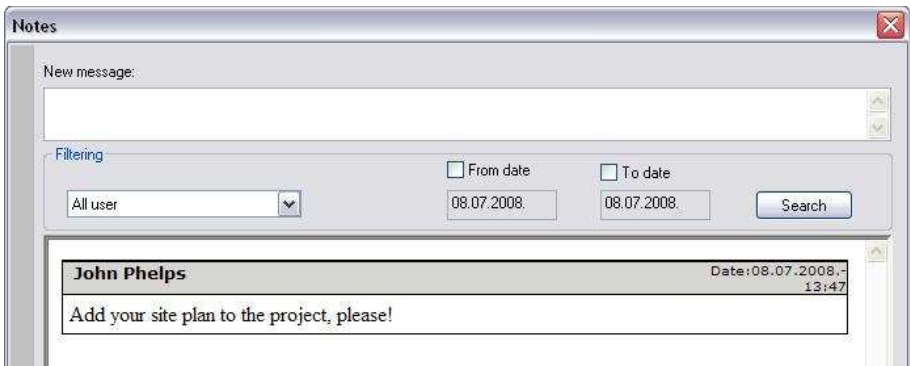
If it is switched on the whole 3D database is saved, and the project size considerably increases. by saving the 3D model.

4.3.5. Notes

You can add notes to the project.



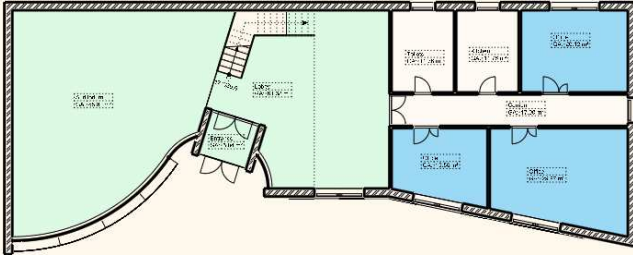
You can submit a note with the *Enter* key. For the case you exit from the dialog by clicking the *Ok* button, the new message will be saved, too. The messages appear in the message list. Click *Cancel* if you want to quit without saving the message.



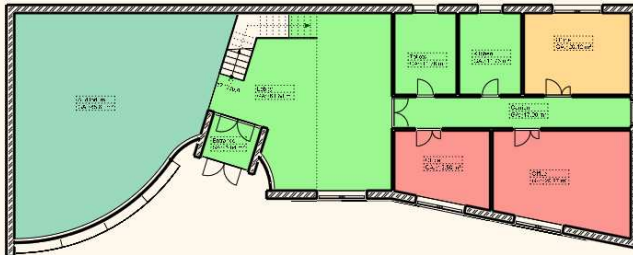
4.3.6. Zones

4.3.6.1. Concept

Zones can be defined in a building. They are groups of several rooms. You can use zones to represent ownership, to design heating or air conditioning systems, to visualise areas with different acoustic requirements, etc.



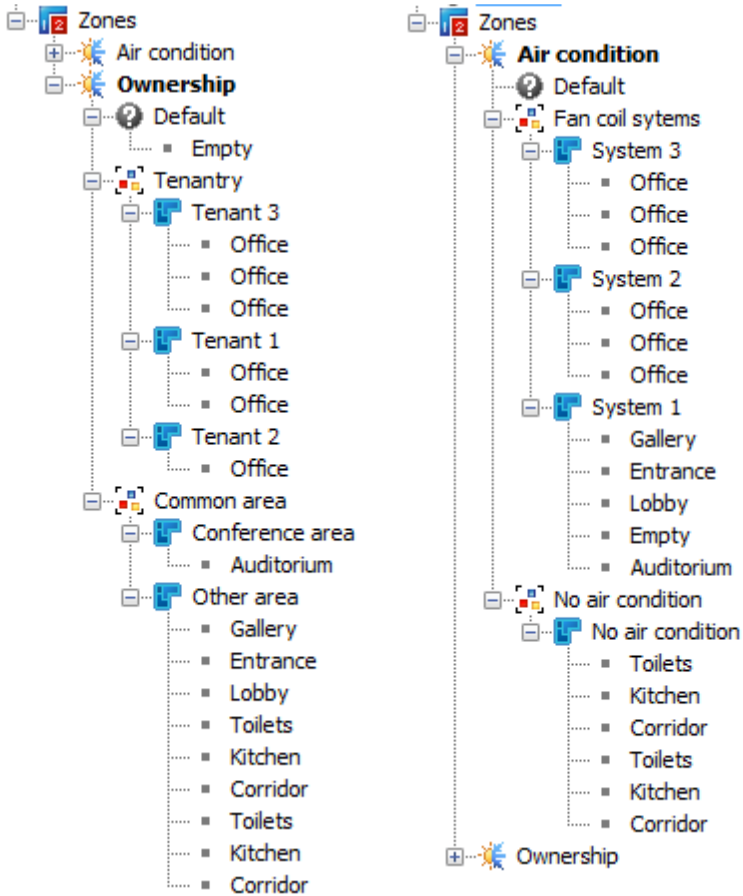
Air conditioning systems



Ownership

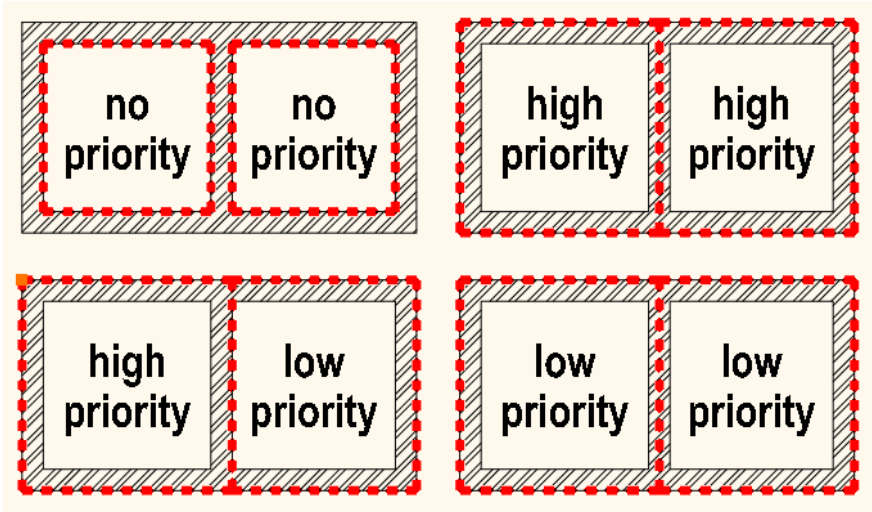
4.3.7. Categories

You classify rooms on a building in many ways. As for the ownership you can differentiate between tenants, if you would like to deal with air condition it is possible to define zones based on the required cooling and heating systems.



Groups and priorities

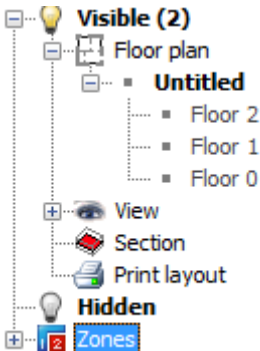
You can sort zones into several groups, if necessary. For zone groups you can define high or low priorities. Priorities are taken into consideration while calculating zone areas and volumes. If you use zone group priorities in a zone category, zone areas are extended by the thickness of the surrounding wall and slab structures according to the following figure:



Colours

Finally you can define zones and add rooms to them. In a zone category every room can be added to one zone. Zones can be visualised by a unique zone colour.

4.3.7.1. Managing zones



Project Navigator's tree structure is extended by a new item: Zones. You can expand or collapse branches by clicking the +/- signs in front of the tree items. By clicking on an item you can rename it.

By clicking on an item with the right mouse button a Local pop menu appears and you can select a command in it. Below you can learn about local pop menus of different tree items.

Zones (main tree item)

Create new category

A new zone category is added to the tree, with a default name. You can rename it by clicking on its name with the left mouse button.

Show zones with colours

Rooms will appear with zone colours of the active zone category.

Hide colours

Rooms will appear as empty polygons.

Zone category

Activate

It activates the current zone category. Area calculation and zone colouring is based always on the active category.

Create new zone group

A new zone group is added to the tree, with a default name. You can rename it by clicking on its name with the left mouse button.

Rename

It renames the current zone category.

Priorities and colours

The Priorities and colours dialog appears, here you can set the colours of the zones and the priorities of the zone groups in the current zone category.

Delete

Deletes the current zone category.

Uncategorized rooms

Add rooms to this zone

Select rooms on the floor plan and then press ENTER. The rooms are moved to the uncategorized zone.

Zone group

Create new zone

A new zone is added to the tree, with a default name. You can rename it by clicking on its name with the left mouse button.

Rename

Renames the current zone group.

Priorities and colours

The Priorities and colours dialog appears, here you can set the colours of the zones and the priorities of the zone groups in the current zone category.

Delete

Deletes the current zone group.

Zone

Add rooms to this zone

Select rooms on the floor plan and then press ENTER. The rooms are moved to the current zone.

Rename

Renames the current zone.

Priorities and colours

The Priorities and colours dialog appears, here you can set the colours of the zones and the priorities of the zone groups in the current zone category.

Delete

Deletes the current zone.

Room

Show on floor plan

Selects the room on the floor plan.

Rename

Renames the current room.

Room properties

Opens the Properties dialog of the current room.

Remove from zone

The room is moved to the uncategorized zone.

4.4. Drawings

As you may see in the Introduction, the program allows you to manage individual drawings. In this case the drawing is made up of the floor plan. You can create a 3D model from the floor plan with several projections and cross sections. Each file has an ASC extension. In this case the different views connected to the floor plan are not saved when saving the floor plan. You have to save each drawing file individually and these files will not be connected to each other. You cannot recover the floor plan from views. Materials and settings created by the user will not be saved in the ASC file, so you cannot transfer them to another computer.

Note:

If you insist on using ASC files, we recommend you the following method, to be able to manage views in the ASC file, too:

When you finish the front view, the cross section and the pre-set perspective etc., by using **Edit menu - Copy** or **Paste** commands, copy e.g. the cross section from the cross section window to the floor plan to any floor not used for floor plan drawing, e.g. to Floor -1. The drawing created this way will lose its connection to the 3D model. If you modify anything on the floor plan that will not be followed by changes on the cross section on Floor 1 i.e. this will be a 2D drawing that you can modify, calibrate and label as you like. This way you can keep different views of different floors and save them into a single ASC file. You can transfer this single ASC file to another computer.



You can also convert views and sectional drawings into 2D drawings in projects.

Commands for managing drawings:



4.4.1. New project or drawing

This command allows you to create a new drawing or to load an existing drawing.


If you have not saved changes of the current drawing, the program will ask you if you want to save the drawing.

- Enable the **Drawing** option in the dialog box. The last specified status will be active.

In the dialog box you can:

- ❖ Create a new drawing, or
- ❖ Open any of the last drawings, or
- ❖ Open an existing drawing.



You can start a new floor plan with the  **New** icon of the **Edit** toolbar, and then you have to give the name of the new floor plan window.



The use of this dialog box corresponds to that of the *New project* dialog box. For a detailed description, see chapter 4.2. *Project management*.

4.4.2. Opening drawings

If you activate the *Open drawing* command, a dialog box appears, where you can select the drawing you want to open. The program automatically offers the path of the last used drawing.

In drawing mode the next rules are applied for opening a drawing:

- ❖ Each file keeps its name and location,
- ❖ Renaming of files are not allowed,
- ❖ A drawing can be loaded only once,
- ❖ File name on the window title bar appears with its short path name.

You can open multiple floor plans at one time. Please note, that the 3D models of different drawings will be displayed in the same 3D window.



The use of this dialog box is similar to that of the *Open project* dialog box; for a detailed description, see chapter 4.2. *Project management*.



You can also open a drawing with *File menu - Import* command. Select .ASC for file type.

4.4.3. Saving drawings

With this command, you can save the current drawing under its name to the selected library.











Exit

When exiting the program or loading a project, the program asks if you want to save drawing files.

If you click No, you will lose all changes made since the last saving.

Creating backup copies

When the program saves the drawing, it also creates a backup of the previous version with the name **filename.as\$**. This way you can always find the copy of the previous saving. Backup copies are always overwritten by the next saving.

	bak_Dwelling_Bourbo..	asc
	bak_Dwelling_London	asc
	bak_Electr_Building	asc
	bak_Farm	asc
	bak_Fifth_Ave_Office	asc
	Dwelling_Bourbon_Str	asc
	Dwelling_London	asc
	Electr_Building	asc
	Farm	asc
	Fifth_Ave_Office	asc

4.4.4. Save drawing as...

With Save as you can save the drawing under a new name. Type in the name of the drawing in the dialog box and give a new path if necessary.

As a file format you can set:

- ❖ ASC: saves the drawing in ARCHLine.XP[®] format, whether or not you have saved the floor plan or the content of the 3D window
- ❖ 3AS: saves the 3D model.

Compatibility with the previous version

ARCHLine.XP[®] 2010 is compatible with ARCHLine.XP[®] 2009, 2008, 2007. This means that you cannot read new drawings with the previous version.

You can save the drawing as the drawing format of the ARCHLine.XP[®] version that is in ASCII mode, which is readable with ARCHLine.XP. You can also save the content of the 3D window as .3as format of the ARCHLine.XP[®] version.

4.5. Import/Export

ARCHLine.XP[®] is compatible with other design and display programs.

Import

The drawings to be loaded can be the next files:

.asc	drawings created with ARCHLine.XP [®] and a previous version
.dxf	AutoCAD [®] DXF format
.dwg	AutoCAD [®] DWG binary format
.dwf	AutoDesk Design Web format
.skp	SketchUp file format
.3ds	3D Studio format
obj	Wavefront format
.hou	drawings created with ARCHLine [®] 4.x versions
.drw	drawings created with ARCHLine [®] 4.x versions

Export

In case of export, the program supports ARCHLine.XP[®] and previous versions and the next formats:

.dwg	AutoCAD [®] binary format
.dwg	AutoCAD [®] 2010 binary format
.dwf	AutoDesk Design Web format
.dxf	AutoCAD [®] DXF format
.skp	SketchUp file format
.3ds	3D Studio format
.dxf	AutoCAD [®] 3D DXF format
.dwg	AutoCAD [®] 3D DWG format
.asc	ARCHLine.XP [®] drawing
.3as	ARCHLine.XP [®] 3D model
.emf	Windows metafile format
.tgf	ARCHLine.XP [®] Render Studio
.c4d	Cinema 4D
.atl	Artlantis rendering
.wrl	Virtual Reality Language

Importing SketchUp Files

ARCHLine.XP comes with the reader for SketchUp (.skp) file format. You will find it in the File menu - Import - , SketchUp menu point.

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.

The program is compatible with AutoCAD® 2010 and SketchUp 8 formats.

4.5.1. ASC Import

Besides allowing file transfer from other applications, the *Import* command is very useful when you want to merge a drawing saved as ASC into an existing drawing. This happens very often when you place a building on a terrain. To do so, enable *Merge to current drawing* option.

If the drawing to be merged is the part of a project, you cannot use *Import*. In this case, you have to use *Open project*, and choose *Import file* and *Merge to current drawing* options.

Importing of files can be done in three ways:

- ❖ with the drag & drop method: for example dragging from the Windows Explorer.
- ❖ with the *File menu –Import* command,
- ❖ with the *File menu – Open project - Import file* command

Importing of ASC file into a project –using drag & drop method

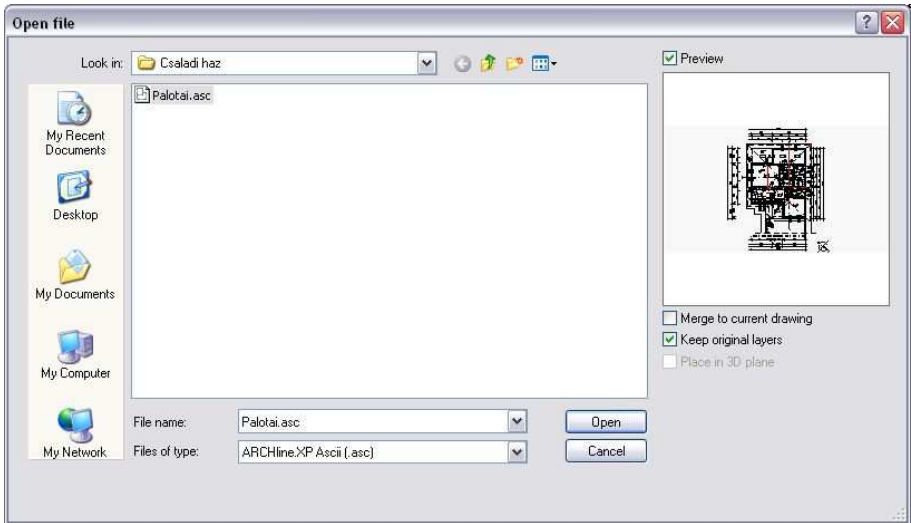
If we import into an active a 2D floor plan using the *drag & drop* method the drawing will be imported into a given drawing.

If we import into an active 3D window with the *drag & drop* method, a new window will be created and the drawing will be loaded there.

Importing of ASC file into a project – using File menu –Import command

Import allows you to merge the imported drawing to the current drawing or place that into a new window.

If we import into an active a 2D floor plan/3D window with the *File menu - Import* command, the *Merge to current drawing* option is switched off by default, therefore a new window will be created. In case of *drag & drop* method the drawing will be imported into a given drawing.



- Select drawing file format: .asc
- Select the drawing you want to open.

Preview

Enable this option to display the selected drawing in the dialog box in an optimized size.

Merging to current drawing

Enable the option to merge the imported drawing file to the current drawing; the imported file will be part of the current drawing.
Disable the option to display the drawing in a separate window.

Keeping original layers

If you enable *Keep original layers*, the program loads the drawing while keeping the layers of the drawing. Disable the option to place each element on the current layer.

ASC file import from project into project

If the drawing to be loaded is part of project, the *Import* command can't be used. In this case, use the *Open Project* command, and select the *Import file* and *Merge to current drawing* option.



See the Chapter 4.2.3. *Opening project – Import file option*.

4.5.2. DXF/DWG import/export

DXF/DWG file format allows you to exchange your drawings with other CAD users. You can export or import even DWF (Design Web Format) files as well. You can quickly select the file format you wish to save your work in.

4.5.2.1. DXF/DWG import

Importing of files can be done in two ways:

- ❖ with the drag & drop method: for example dragging from the Windows Explorer.
- ❖ with the *File menu –Import* command,

Importing using drag & drop method

If we import into an active a *2D floor plan* with the *drag & drop* method, the drawing will be imported to a given drawing. This way the unnecessary increasing of the number of 2D floor plan windows can be avoided.

If we import into an active *3D window*, the drawing will be loaded into a newly created window.

Importing using File menu –Import command

If we import into an active a *2D floor plan / 3D window* with the *File menu – Import* command, the *Merge to current drawing* option is the default setting. This way the unnecessary increasing of the number of 2D floor plan windows can be avoided.

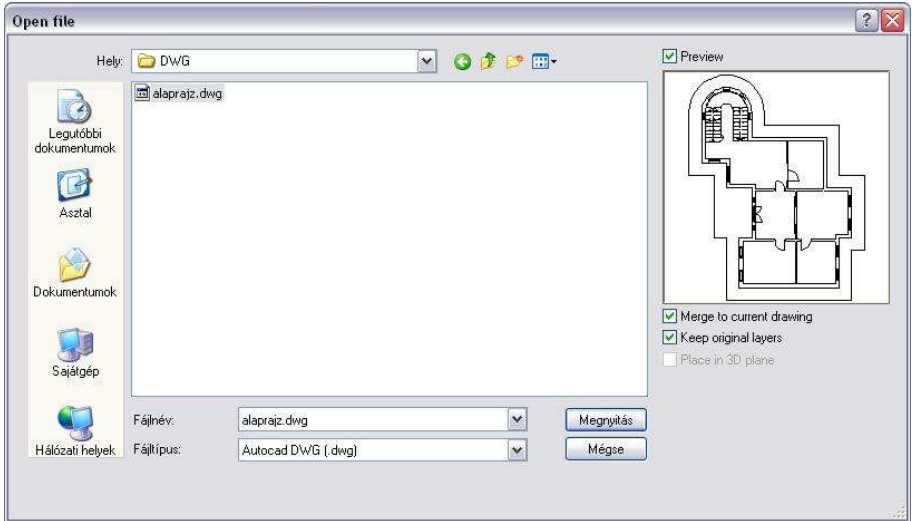
The program is capable to process the latest DXF, DWG and DWF file formats and to load these files into your own project either as part of your project or as external references.



See chapter 11.13. *External Reference*.

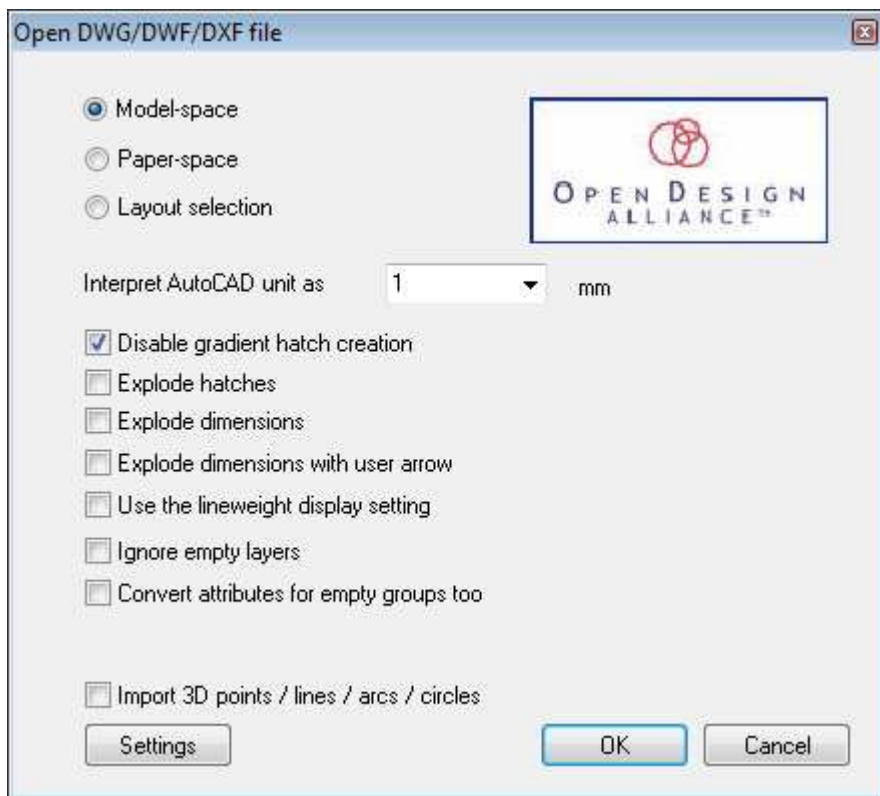
If a DXF/DWG file is imported and the file is placed in a new window, the floors are not available in this window. This way the number of real floor plan windows is not increased when a DXF/DWG file is imported. Architectural elements cannot be placed in this window, of course.

If the goal is to place the DXF/DWG drawing as a base and build the model on it, when the file is imported, switch on the *Merge to current drawing* option. The drawing will be placed in the real floor plan window, the design can be continued.



See the Chapter 4.5.1. *Importing of ASC file into a project – using File menu –Import command.*

At DXF/DWG drawing import you can choose the following settings in the dialog. With these settings you can make the display of the imported drawing correct and fast.

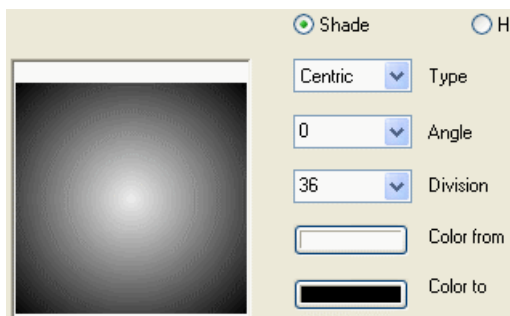


Disable gradient hatch creation

Importing of gradient hatches can slow down the displaying of the imported drawings in ARCHLine.XP®. To avoid this problem, it is possible to have all gradient hatches displayed as solid hatches.



Gradient hatch is analogous to the *Shade* option in ARCHLine.XP®.



Explode dimensions

With this option you can load the dimensioning exploded, so these will be handled as general drawing elements instead of real dimensions. The advantage is that the look will be identical with the AutoCAD® display. The drawback is that you lose the dimensioning properties.

Explode dimensions with user arrow

The look of dimensioning with user-defined arrows in ARCHLine.XP® is not the same as in the original AutoCAD® drawing. That's why you have the possibility to explode these dimensioning. The advantages and drawbacks are the same as it was described above.

Use line weight display setting

In the *File menu - Preferences - General - Other* dialog there is a *Line width ON* switch. By selecting this option, lines will be displayed with their own thickness, otherwise all lines will be displayed with zero (the thinnest) thickness.

In AutoCAD® drawings you can also apply the line weight settings. At file import it is possible to take over this setting. With this setting you will overwrite the *Line width ON* option found in the *File menu - Preferences - General - Other* dialog, and this option will be applied to the whole project. For this you have to select the *Use line weight display setting* option, so the program will use the AutoCAD® setting.



If we have imported several of drawings into the project, the settings applied in the last drawing will be in force in the whole project, of course.

Colour table handling

A higher level of colour table handling is available in the imported drawings, too.

The program is able to recognize the original AutoCAD® colours of the elements in the imported drawings, which can be modified later in the specific colour table. When you export a drawing like this, there is no need to convert the colours because the drawing uses the same AutoCAD® colour table.



See chapter *Colour handling*.

Import 3D points / lines / arcs / circles

By selecting this option, the points / lines / circles / arcs are created in the 3D. In this way the visualization measure up to the AutoCAD®

Extension of DWG import

The AutoCAD® DWG files can contain 3D surfaces, which are created by drawing out lines, arches, and polygons in 3D, by determining the so-called Thickness of the elements.

You can also create such surfaces in the ARCHLine.XP® (see in *3D extension of line nature elements* chapter), and the program can import the AutoCAD® DWG files containing these elements.



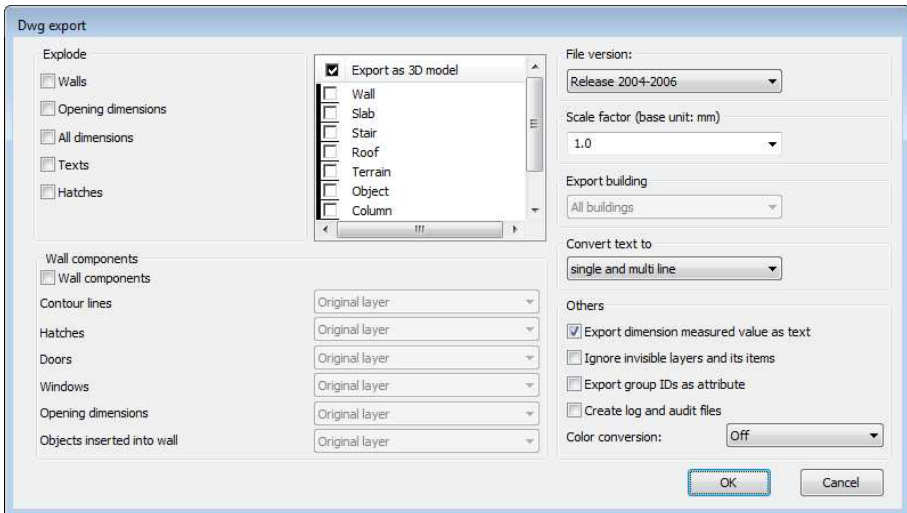
The AutoCAD® creates a surface from the straight lines that it draws out the line into the space perpendicularly to that plane, on which it was designed.

4.5.2.2. Export

If you wish to send your work to your colleagues who use other CAD systems, for example, this is the simplest method you can use.

In *File menu - Export* specify a file name and file type.

If you select any of the dwg or dxf file formats, you can customize the export settings in the appearing dialog.



The following options are available:

Explode

You can export objects to other CAD programs in an exploded format (with lines). Select the objects you want to explode: walls, opening dimensions, all dimensions, texts and hatches.

The aim of this function is the following:

To offer the option to print drawings in AutoCAD® where the printed drawing will correspond 100% to that printed from ARCHLine.XP®. In this case, for example, it will not be a problem if certain fonts are missing from the other computer.

Wall components

You can explode walls in such a way that their main constituents (contour lines, hatches, doors, windows and opening dimensions) are placed on separate layers.

The aim of this function:

You can continue drawings in AutoCAD® using the groupings applied on the layers.

Example: create a Wall contour line layer and use this layer for wall contours.

File version

You can choose from the released AutoCAD® versions. The exported file will be compatible with the selected AutoCAD® version. This way the exported file can be used by users with previous AutoCAD® versions.

Scale

You can rescale your drawing by setting a scale.

The aim of this function:

You can export your units of measurement to AutoCAD®. AutoCAD® will use mm in the exported drawing, so dimensioning will also use mm. You can define your units of measurement in ARCHLine.XP, e.g. if you set m, dimensions defined so far will be displayed in meters. This way dimensions in AutoCAD® will be given in m and mm (the program will display the values set in ARCHLine.XP® multiplied by 1000). To solve this problem, make sure to type 0.001 in the Scale factor field.

Convert multiline texts

AutoCAD® can use one-line and multiple-line texts. When exporting, you can define whether you want to export ARCHLine.XP®'s multiple-line text as multiple one-line texts or as a single multiple-line text.

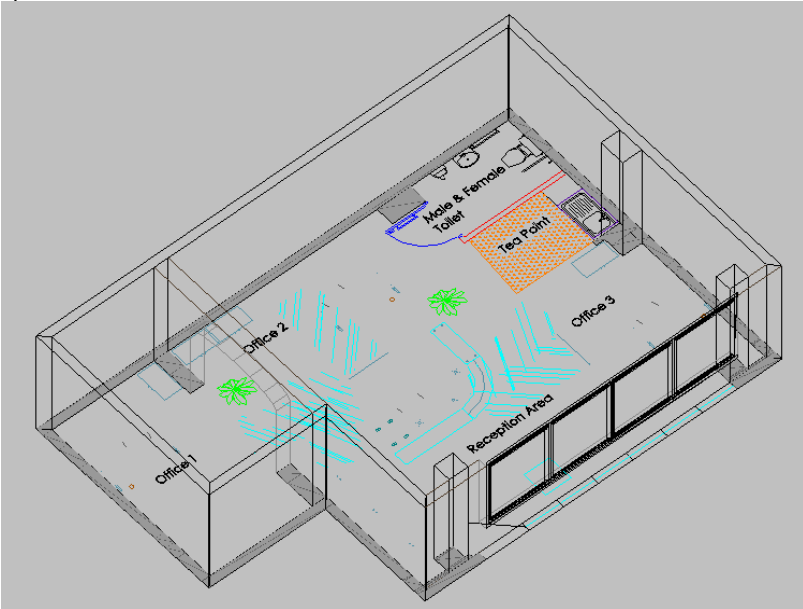
Experience shows that it is advisable to use multiple one-line texts.

Exporting buildings

In the case of multiple buildings, you can define which building to export. With the building to be exported, you can also export the terrain of the plan. If you select the All building option, the terrain will also be exported to the AutoCAD® file.

Export as 3D model

You can specify whether you would like to export the plan view or the 3D model of the selected item. This way you can create plan view what contains special 3D elements



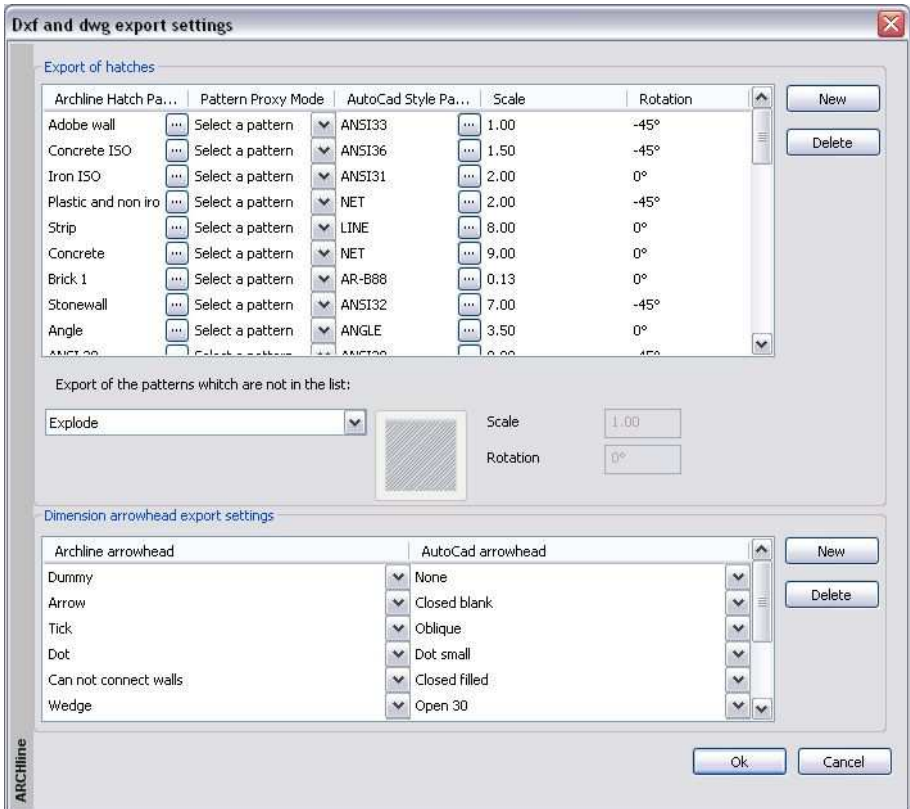
Others

Using these options you can enhance the appearance of your drawing elements in other CAD applications.

- ❖ **Export dimension measured value as text:** the measured values of a dimension will be exported as fix values. This means that the dimension value of an element in AutoCAD® will not change automatically if you modify its size, for example.
- ❖ **Ignore invisible layers and its items:** invisible layers and the elements belonging to these layers will be ignored during the export.
- ❖ **Export group IDs as attribute:** the ID numbers of groups will be exported as block attributes (you can see them among the block attributes).

- ❖ **Create log and audit files:** during the export of a drawing two additional files can be created; a log file with the <filename>.log file name format and an audit file with the <filename>.aud file name format. The both files may include useful information for ARCHLine.XP® developers. Send these files along with the original end exported drawings to your local distributor if you find some errors in the exported file.

Other export settings are available in the *File menu - Preferences - Dxf and dwg export settings* dialog.





The following options are available:

Export of hatches

You can define hatch conversion rules between ARCHLine.XP® and AutoCAD® hatches. You can

- ❖ add new rule by clicking the *New* button,

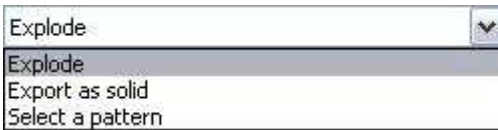
- ❖ delete a selected rule by clicking the *Delete* button,
- ❖ modify a hatch pattern in the by clicking the  button,
- ❖ modify a pattern proxy mode by clicking the  button. You can select either the *Export as solid* or the *Explode* options. Both selections will ignore the hatch conversion and only the ARCHLine hatch patterns will be exported in exploded or solid state. If you export exploded ARCHLine hatch patterns, the size of your exported file may increase substantially.

Export of the patterns which are not in the list


Because of the differences between CAD applications you may not find the proper rule for a hatch conversion or you simply do not want to create rules one by one.

In that case you can export ARCHLine style hatches.

- ❖ as exploded elements (*Explode*)
- ❖ as solids (*Export as solid*)
- ❖ as a hatch with the selected hatch pattern (*Select a pattern*). With this selection you can also specify the scale and rotation of the selected pattern.



Dimension arrowhead export settings:

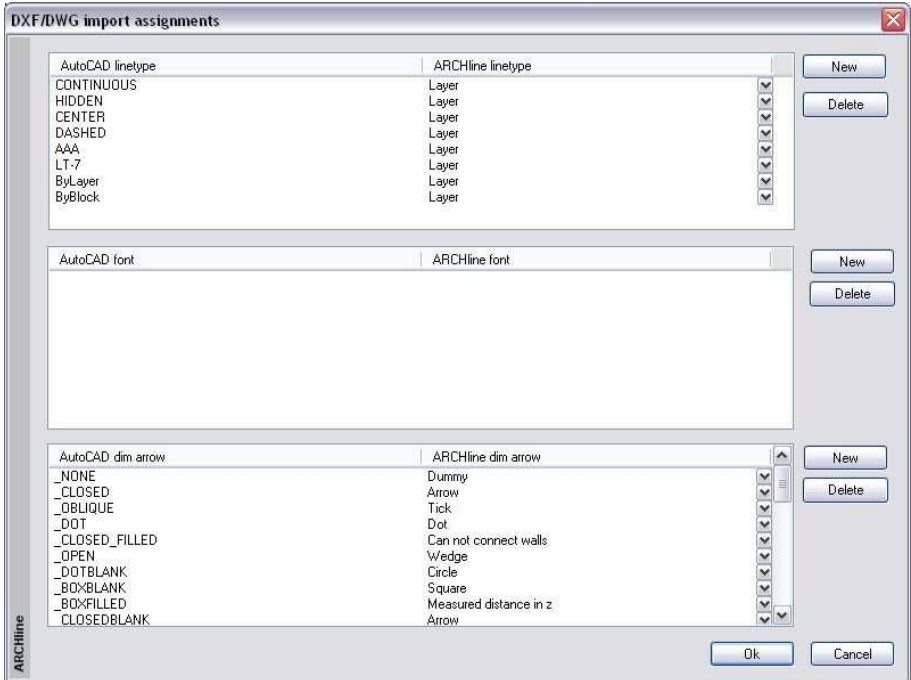
Similar to the hatch conversion rules you can define conversion rules between ARCHLine and AutoCAD[®] arrowheads. You can add new rule to the list by the *New* button, delete a selected rule by the *Delete* button, or change an existing conversion rule by the  buttons.

4.5.2.3. Settings: line type, font and dimensioning arrow assignments

- By clicking on the Settings button you can make assignments between AutoCAD[®] and ARCHLine.XP[®] for special AutoCAD[®] line types, fonts (true type fonts not found in Windows by default) and dimensioning arrows. The assignments are saved and you can use them afterwards.



You can reach these settings through the *File menu - Preferences - DXF and DWG import settings* command.



The user's assignments are stored in the `_dxfass.xml` file in the *Support* subdirectory of the installation folder.

In all the three cases you can find the list of AutoCAD® elements in the column on the left, while the columns on the right side include the assigned ARCHLine.XP® elements.

Modify

- Click the arrow beside the ARCHLine element.
- Select the appropriate element from the list.

New

- Click the *New* button. The program adds a new ARCHLine element to the end of the list. You can modify this element.
- Specify the AutoCAD® element that belongs to the new assignment.

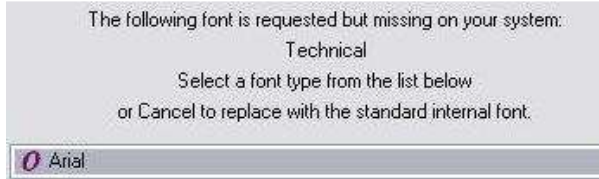
Delete

- Select the row you want to delete, and then click on the *Delete* button.

In the imported file there can be line types, fonts or dimensioning arrows which are not listed in the table. After the file import:

- ❖ These line types will appear as user-defined line types in ARCHLine.

- ❖ The program tries to use the same font type as the original. If it is not found, the program asks for a substitution.



- ❖ After specifying the font substitutions in this dialog you can save it into the font assignment list.



- ❖ To the arrows not listed in the assignments, the program assigns the default dimensioning arrow.



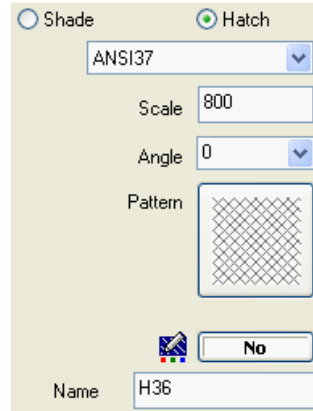
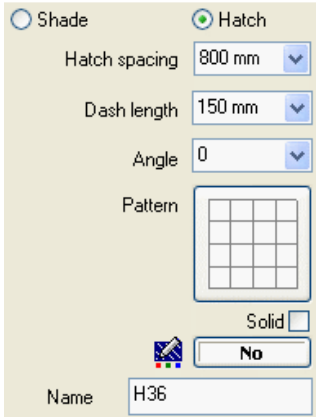
The *Explode dimensions* and the *Explode dimensions with user arrow* settings will override the arrow assignments, of course.

4.5.2.4. AutoCAD® style hatches

In case of importing AutoCAD® drawings, default AutoCAD® style hatches are recognized automatically and handled differently from ARCHLine style hatches. This means that scaling and rotating are the only possibilities for AutoCAD® style hatches, similarly as users can do it in AutoCAD®.

ARCHLine style hatch settings

AutoCAD® style hatch settings

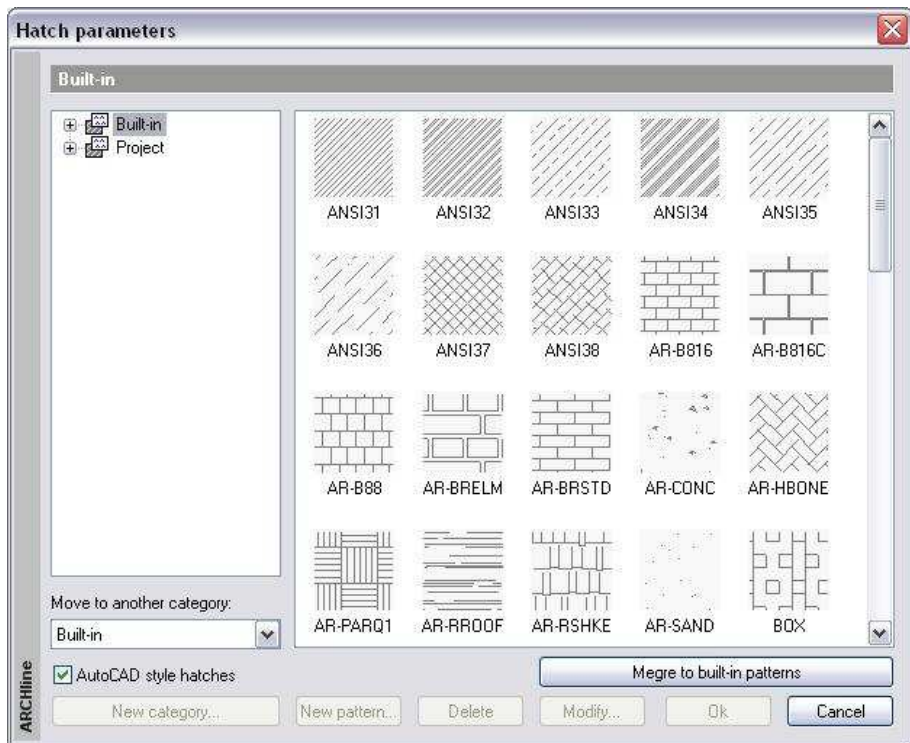


AutoCAD[®] style patterns data are stored in the `acpatterns.xml` file. This file can be found in the *Support* subdirectory of the program installation.

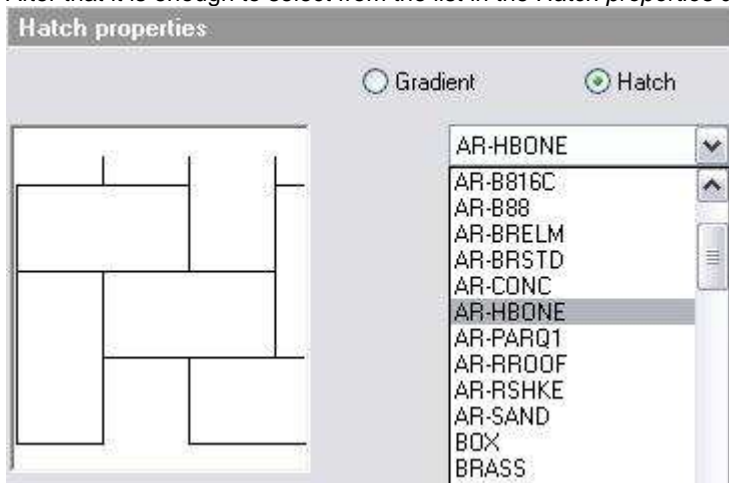
4.5.2.5. AutoCAD[®] style hatch selection

For the selection of an AutoCAD[®] style hatch:

- Click the **Pattern** icon in the *Hatch properties* dialog.
- In the appearing window select the AutoCAD[®] style hatches option.
- Double click on the required hatch.



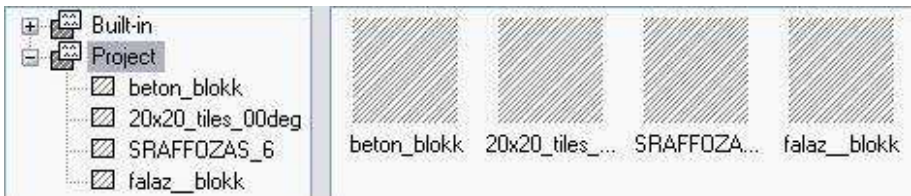
- After that it is enough to select from the list in the *Hatch properties* dialog:



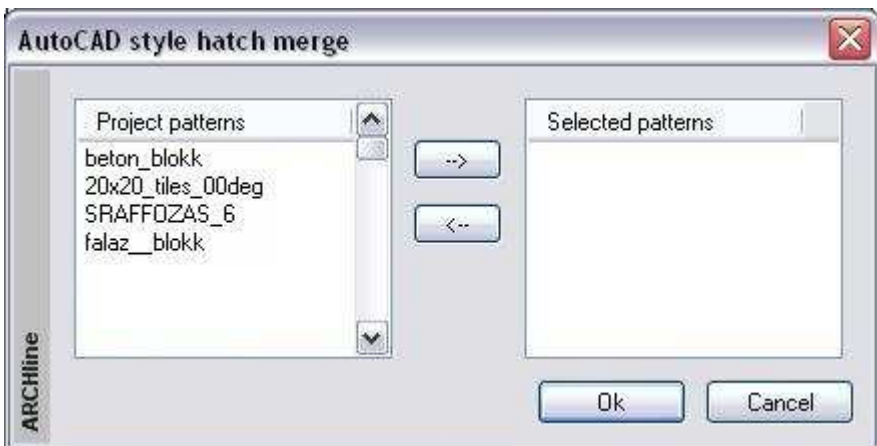
4.5.2.6. Merge to built-in patterns

There are two categories of AutoCAD® style hatches.

- ❖ AutoCAD® style hatches coming from the default program installation files are handled as *Built-in* category.
- ❖ The user-defined AutoCAD® style hatches coming from the DXF/DWG import are put automatically into the *Project* category. In the *Hatch parameters* dialog these hatches are displayed with the same pattern and different names.



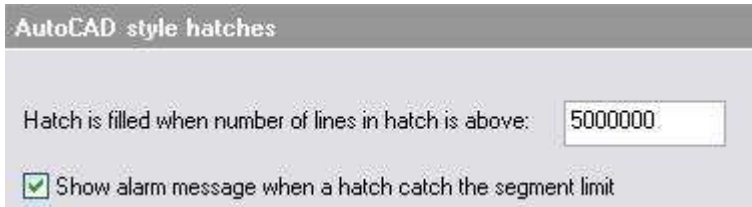
Hatches in the *Project* category can be used only in the actual project (similarly to the new project materials). In a new project those will not appear automatically, therefore you have the possibility to move hatches from the ***Project*** category to the ***Built-in*** category by clicking the ***Merge to built-in patterns*** button.



- Select pattern names from the *Project* category and click the right arrow button.
- Click *Ok* to move the selected *Project* patterns to *Built-in* patterns. Later you can use these hatch patterns in any other project.

4.5.2.7. Limitation – maximum number of lines

In the *File menu - Preferences - General - AutoCAD® style hatches* dialog you can set a limit for the maximum number of segment in a hatch. If any hatch on the drawing requires more segments than this limit, the drawing of hatches will stop when the limit is reached. By this the memory usage can be limited. This is handled analogous to AutoCAD®.



4.5.2.8. Extension of DWG import

The AutoCAD® DWG files can contain 3D surfaces, which are created by drawing out lines, arches, and polygons in 3D, by determining the so-called Thickness of the elements.

You can also create such surfaces in the ARCHLine.XP® 2009 (see in *3D extension of line nature elements* chapter), and the program can import the AutoCAD® DWG files containing these elements.



The AutoCAD® creates a surface from the straight lines that it draws out the line into the space perpendicularly to that plane, on which it was designed.

4.5.3. 3DS Import

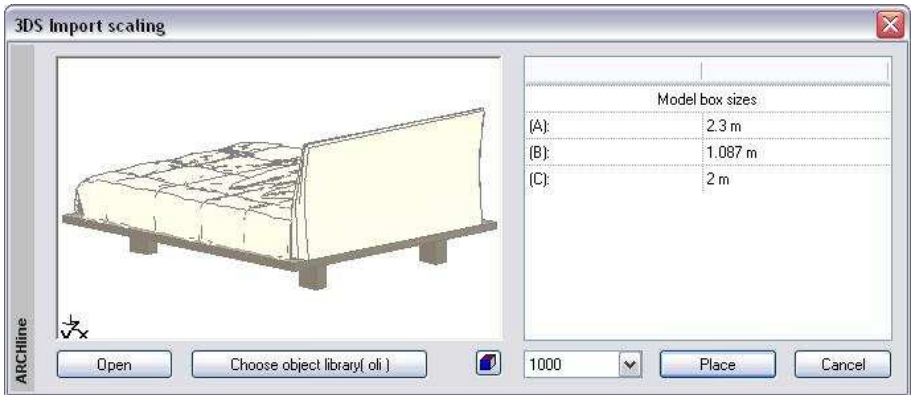
ARCHLine.XP® program supports the using of objects given in 3DS (3D Studio) format.

The objects imported in this way keep the materials assigned originally, too. You can import in three different ways:

- ❖ With *File menu – Import* command
- ❖ Dragging onto the drawing area by drag and drop
- ❖ Dragging into the Design Center by drag and drop

File menu - Import

- Import any .3ds format object with the *File menu - Import* command. After clicking the *Open* button, the following panel pops up:



- Select the scaling and sizes you want to apply when importing the object. Click OK.

Open

If the object is not appropriate, here you can open another one.

Choose object library

In the *Choose library* dialog the program offers to save the object into the appropriate .oli library in the Design Center. After that the object can be used as an architectural element like any ARCHLine.XP® object saved into the library before.

After selecting the library the *3D Model Decimation* dialog box appears, by which you can reduce the number of polygon faces along with the size of the object. The size reduction often goes with the quality decreasing together, therefore we recommend the *No decimation* option and to go on.



See the Chapter 4.5.3.1. *Optimizing 3D models when importing - Decimation*

Place

The element is created as a 3D solid in the 3D window. In this case we recommend saving the 3D solid into the object library with the *Building – Object – Define custom object* command. The element saved in this way can be used as an architectural element thereafter.

Dragging onto the drawing area by drag and drop

You can *drag and drop* the object directly from the file manager. If you drag and drop the object onto the drawing area of the program, the above *3DS Import scaling* dialog box appears.

Dragging into the Design Center by drag and drop

If you drag and drop the object into the Design center, the program offers to save it to the appropriate oli directory displayed in the *Choose library* dialog box.

4.5.3.1. Optimizing 3D models when importing - Decimation

Object management in the program is slow if the face number of detailed 3D objects is so high that it adversely affects the computing and space load of the program. In most cases rendering quality will not decline with the significant decrease of face number. In such cases, it is preferable to work with the optimized object instead of the original one. Optimization is performed by an algorithm rejecting faces least affecting the shape and the program will work with this algorithm speeding its operation.

Optimizing is allowed in the case of importing 3D Studio drawings and dwg/dxf format drawings containing 3D objects.

When importing 3D objects, the **3D Model Decimation** dialog box will appear, where you can decide about the scale, i.e. scale factor (scaling rate), which defines the rate of decrease in the original face number.



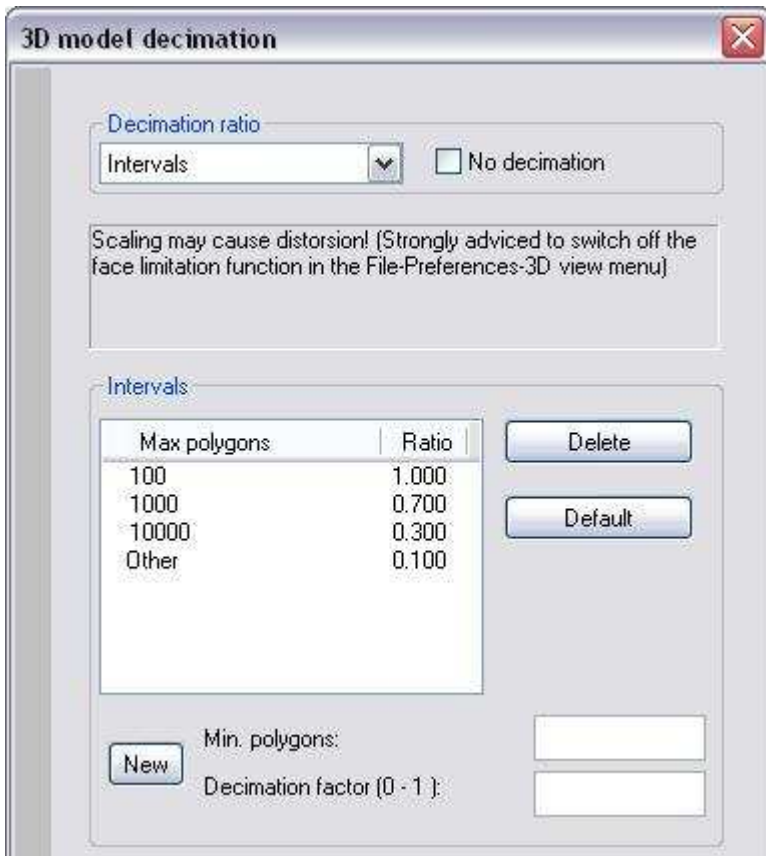
See the Chapter 4.5.3. *3DS Import*.

A significant difference as regards the face limit you can set in Preferences (*File - Preferences - General - 3D preferences menu*) is that in the case of face limitation the amount of information concerning the model will not be reduced, whereas the scaling of the 3D model will cause the shrinking of information about the model.

In the **3D Model Decimation** dialog box you can select any of the following three options:

- ❖ **No decimation:** the program will not optimize the model. You should select this option when working with simple objects, because this option keeps the original information content.
- ❖ **Intervals:** in the case of interval decimation, you can define the decimation rate in accordance with the original face number of the object.
- ❖ **Simple:** in the case of simple decimation, the program decimates the model with one rate, regardless of the original face number of the object.

Decimation with intervals

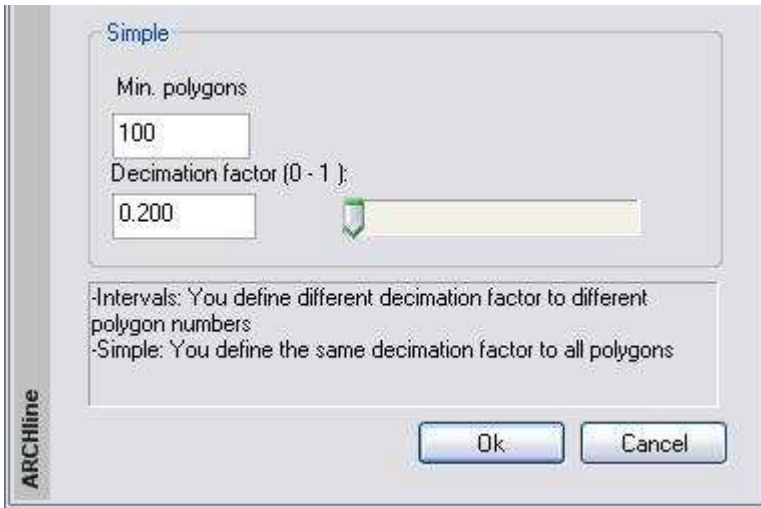


As a default, you can see those *Max polygons*, i.e. polygon number interval limits which the program will use. The program assesses the lowest *Max polygon* value, which exceeds or equals the polygon number of the imported 3D object. Decimation will be performed with the rate associated with this number. If none of the *Max polygons* satisfies this criterion, the program will use the decimation rate defined for *Other*. You can edit intervals as follows:

- If you want to edit an existing interval, double click on the Min polygons or the Ratio value and modify those values.
- If you want to delete an existing interval, click on the line of that interval then click Delete.

- If you want to add a new interval, first type in the polygon number value and decimation value in the corresponding entry fields then click on the New button.
- To reset default intervals, click on the Default button.
- Close the dialog box by clicking Ok to start decimation.

Simple decimation

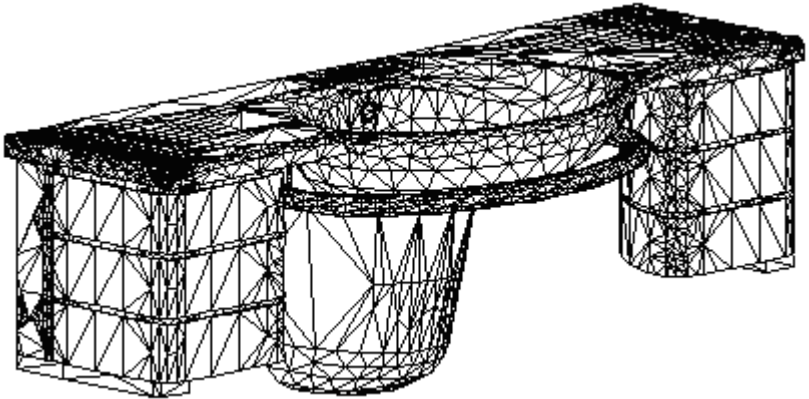


Enter the *Min polygons* data. If the polygon number of the imported object is smaller than or equals this value, the program will not decimate during the import, regardless of the decimation value.

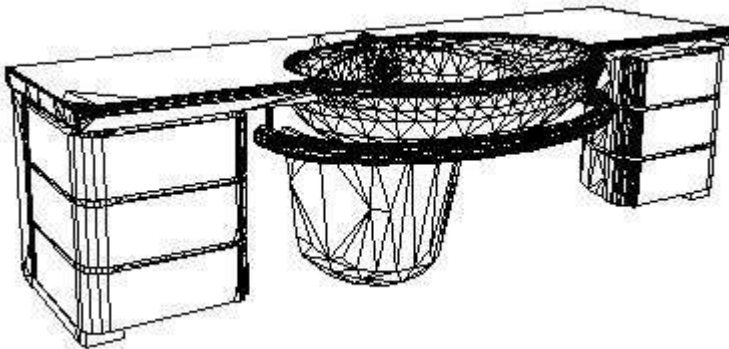
- Set the rate of *Decimation*. You can specify the exact value in the entry field or you can use the slide. In this case the program applies the rate of face number of the imported object estimated in terms of polygons.
- Click the Ok button to close the dialog box and to start decimation.

Example

The following imported model had 47672 faces before decimation:



If we exclude 75% of the faces that is we specify a decimation rate of 0.25, the model in question will be simplified to a great extent, but at the same time computing will be easier and the shape of the model on the rendered picture will be equally visible.



! If you *don't use the decimation*, the program hides the common edge of those neighbouring triangles, which normal vector is the same. So unnecessary lines don't cut up the surface of the object. The result appears in the vector graphics 3D dialog window at hidden lines, or on the rendering picture. The disadvantage of the method is that the object remains large.

4.5.4. Online collection

The Online Collection gives you the possibility to share and download objects or groups, even projects with the ARCHLine.XP community.

4.5.4.1. Export

You can export Objects, Doors, Windows, Groups, Lamps or even projects if you open the File menu / Export / Collection dialog.



- ❖ Click on the icon of proper button to start uploading a certain item
- ❖ In the next step you can browse for an item, depending on your choice.
- ❖ Finally, your selection starts to be uploaded to a temporary storage space and the Collection page will open.



- ❖ Please Log in, and follow the online instructions to finalize your upload.

If you do not have a login access, please register, or contact your distributor.

4.5.4.2. Import

You can import ARCHLine.XP Collection items, uploaded by other users.

To reach this feature, please open File menu / Import / Collection.



- ❖ Please choose an item type to start connecting to ARCHLine.XP Connection website.
- ❖ Depending on your choice a webpage will open, where you can browse in different categories and items, uploaded by other users.

4.6. Managing templates

The program uses templates during creating the plans.

Template is a collection of predefined sets and preferences that can be used during the design work.

When starting the program, the default template is automatically loaded. A part of the used sets are protected, others can be modified by the user and new ones can be created as well.

By saving, new template can be created with .SET extend. You can set the new template as default in the *File menu – Preferences – Template management* dialog box.

So starting new projects, the new sets are always available.

(Some sets of the program are not saved in the template but the system configuration (registry) stores them. These sets are valid with any template, too.)

4.6.1. The drawing template

The management of your drawing template comprises the settings of the drawing surface and the overall properties of your drawing tools. You can save individual settings as part of the drawing template, which can facilitate and speed up the drawing process.

The drawing template comprises the following:

- ❖ display settings (grid, snap, cursor and ... settings),
- ❖ architectural settings concerning the drawing area (units of measurement, angles, ... , scale),
- ❖ general and special properties of each geometric and architectural element, including cross-sectional view,
- ❖ the sets made from elements features. From these sets are just saved to the project, which are used by the project,
- ❖ hatch patterns and line types,
- ❖ textures created by users,
- ❖ shortcut keys.

When saving the project, the drawing template will also be saved to the project; this drawing template will only be valid for that actual project, and the new project will not have the pre-set drawing template. That is why saving templates are necessary.

You can save templates you create to the template file with a SET extension. Template files will be saved in the *ARCHLine.XP2008/Support* directory

under the name *Template_eng_xml.set*. The *Template_eng_xml.set.def* file contains the sets, which are delivered by the program.

4.6.2. Setting your drawing template

You have the choice of drawing in the same template every time you launch ARCHLine.XP®.

- Start your new drawing with the *File menu - New project* command.
- Define your display and architectural settings concerning the drawing area in the *File menu - Preferences - General* dialog box.
- Using the relevant commands of the *Properties menu*, set the properties of the different graphical elements.
- Create sets to facilitate the management of the different element properties.

When the project is saved, the sets used in the project are saved in the project. New projects will not have these sets.



See Chapter 3.2.3. on *Using sets of properties*.

4.6.3. Template file

ARCHLine.XP® stores the template file in two file formats.

- ❖ *.def* extend: this file contains the default preferences. The default sets saved in the Template file appear with grey icon in the elements properties window. You can't modify or delete these sets.
- ❖ *.set* extend: contains the added sets. This contains the default sets and the sets created by user. The sets created by the user are yellow in the dialog window.

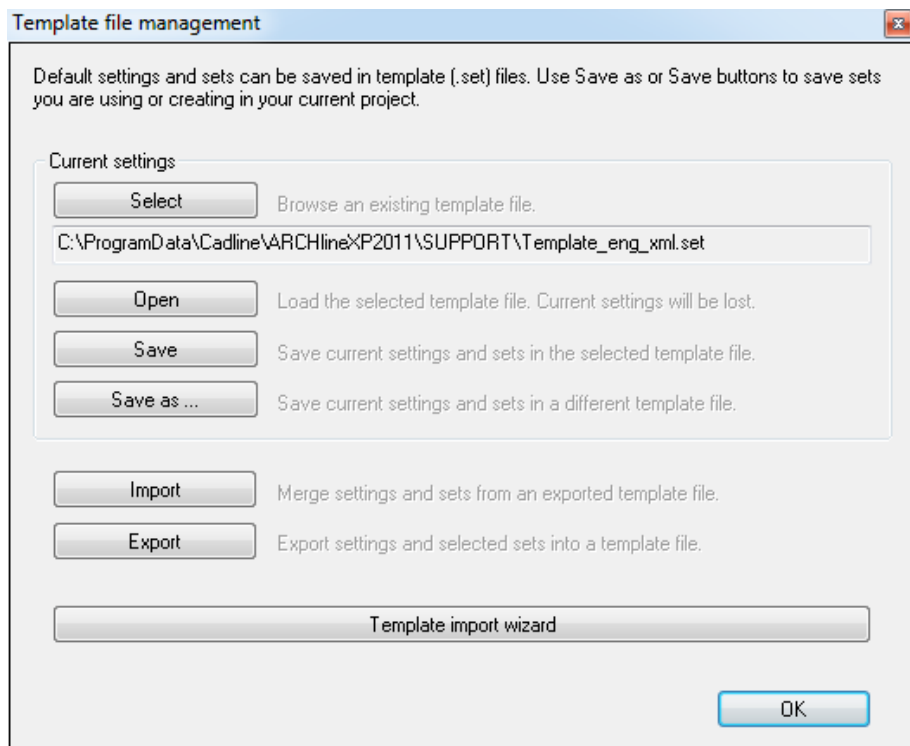
4.6.4. Saving templates

When you have set all properties you need for drawing, save these properties as drawing template in the template file.

You can select which default template file you wish to use in the **File menu - Preferences - Template** dialog box, and save your drawing settings to this file.

When you start a new project, it will contain the drawing template you saved.

- Select the *File menu - Preferences - Template* function:



In the upper field you can see the name of the current template file displayed with grey characters:
Template_eng_xml.set.

Saving the template

- Click on the **Save** button. The program will save the values set to the current template file. When restarting the program or starting a new project, this template file will be loaded with the values saved.

The **Save** command changes just the content of .set file, the content of .def file (with default settings) remains unchanged.

Saving as

Create your own template file.

If you want to store different drawings in different templates, you can save multiple template files.

You can use this method in the following cases: different templates for

reconstructions and new buildings, multiple clients, approval and construction drawings.



It is advisable to save your own drawing template in your own template file instead of the default file!

- Click on the **Save as** button.
- In the dialog box popping up, type in the name of the template file. The program will use these settings at restart or when starting a new project only if you load your template file by clicking the **Open** button.

The save, like command result two new files: .def, .set



The name of the template file cannot be longer than 50 characters.

Selecting

When you have created your template files, you may select any of them. From that moment on, the **Save** and **Open** commands will refer to the selected file.

- Click on the **Select** button.
- Select the desired template file in the dialog box popping up.

Opening

If you used invalid settings and have not saved the template file, you can reload the original template file. The name of the current template file is displayed in the grey field.

You can load any of the saved templates if you want. If you created multiple templates, you have to load the appropriate template before you start drawing; otherwise the program will start with the settings saved in the *Template_eng.set* file.

The opened template file will be the default template, so if you open a new project, this template file will be loaded.

- Click on the **Open** button. The program will load the template file marked with grey.



Only those sets are saved in the project that is used by the project. It means that if you create a new set and that set is not used in the project, do not forget to save the template file, otherwise the new set will be lost.

Import

In the elements properties window you can export the sets to a .set extended file.

In the *Template file management* dialog window with the help of *Import* button you can add the added sets to the template file with .set extend.

The import sets overwrite the actual sets.

Export

There is a possibility to export from the template file just the sets, preferences, shortcuts of the selected elements to a .set extended file. So you can add these preferences to the actual template file of ARCHLine.XP® program, which is on another computer, using the before mentioned *Import* button.

- Add the name of the file.
- Choose that groups, which sets', preferences' you would like to export.

4.6.5. Template import wizard**Import from former versions**

You can load the template files from ARCHLine.XP® former versions

- ❖ With the **Open** button (after it was selected). The program handles this file as a default template file. This means, that icons of sets will be grey.
Or:

- ❖ with the help of **Template import wizard**:

After you have installed ARCHLine.XP® the *Template import wizard* appears by the first start.

You have a possibility here to load automatically the template files, keyboard shortcuts, user objects used in ARCHLine.XP® former version to the actual program version.

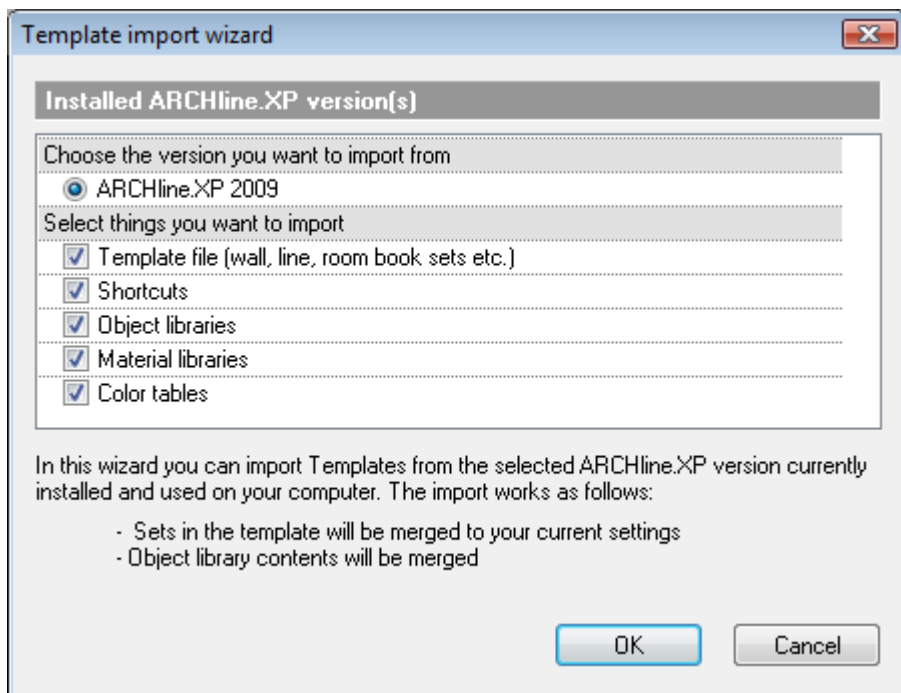
If you didn't make this by first start, then use in *File menu - Preferences - Template management dialog window* the *Template import wizard* button.

- Select the former program version (You can select from former program versions are installed on the computer).
- Mark the Template file, Keyboard shortcuts or the Object libraries option, to import the proper elements to the actual version.

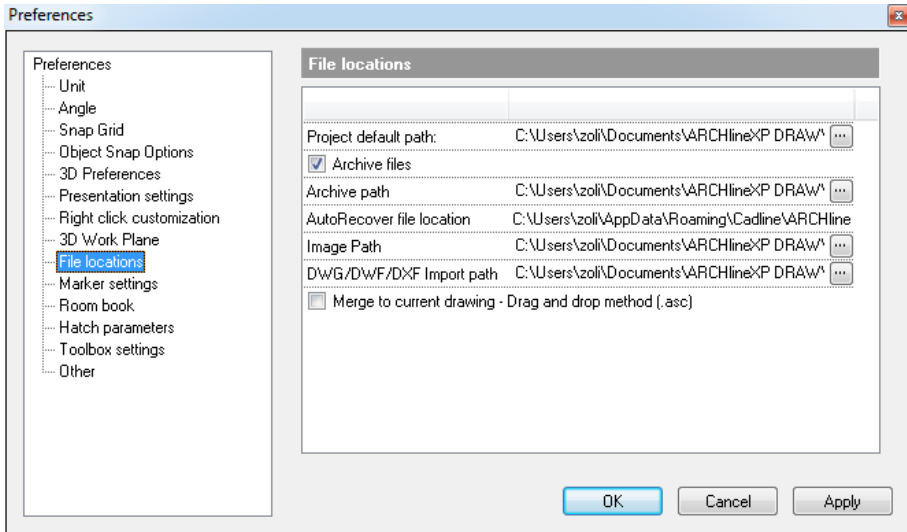
Then the program looks for the former version automatically, and it's

- ❖ actual template file bind to the selected .set extension user template file,

- ❖ overwrite the keyboard shortcuts,
- ❖ it saves the .oli files, made by user, to the ARCHLine.XP® oli folder, according to the selection.



4.7. Directory settings



You can modify your default directory settings in the *File menu - Preferences - General - File location* dialog box in the case of the following directories:

❖ Project default path

It is useful to change directory settings when you work in a network, as this way other users can see the same materials and objects and they may save their drawings to the same folder.



If you set the Project directory, the program will offer the last used directory when opening a new project.

4.8. Environment package

The Environment Package allows you to move sets and settings, materials, objects, and many more between multiple computers to use the same environment everywhere.

Just follow the typical configuration of packing and move in, or select Custom settings and adjust the contents of the package based on the actual needs. Using Environment Package

4.8.1. Create package

4.8.1.1. Create package – Typical settings

You can pack the environment components into a single package and move to another machine. You can unpack the environment file on the second computer to have the same settings on it.

When you click on the Create package button the following dialog will appear where you have to options to create an environment package file: Typical & Custom.

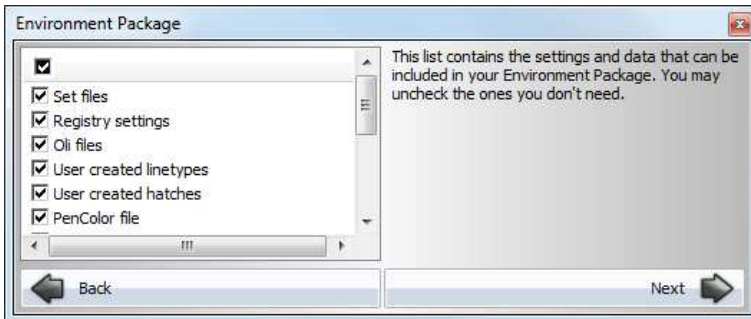


When you choose typical the command collects all components and packages it into one file. This setting is the recommended for most of the users. Click on the next button to step to the next page, where you can define the path for the created file.



4.8.1.2. Create package – Custom settings

When you choose Custom you can select the components to compress into the package. This option is recommended for those advanced users who are experienced in ARCHLine.XP settings and want to customize the package content.



You can tick the option next to the files and settings which you would like to copy into the environment file. The following list is for your information to help choosing from the options.

Set files

If you enable the Set files option, the software will make a copy of the template file into the environment package.

Registry settings

If you enable the Registry settings option, the software will make a copy of the user settings stored in the Windows registry, into the environment package.

Oli files

If you enable the Oli files option, the software will make a copy of the user created OLI files into the environment package. Oli files can be created multiple ways by the users (directly and indirectly), for example by downloading objects from Google 3D Warehouse.

User created line types

If you enable the **User created line types** option, the software will make a copy of the user created line types into the environment package.

User created hatches

If you enable the **User created line hatches** option, the software will make a copy of the user created hatches into the environment package.

Pen Colour file

If you enable the **Pen Colour file** option, the software will make a copy of the ARCHLine.XP Colour – plotter pen assignment file into the environment package.



User created materials

If you enable the **User created materials** option, the software will make a copy of the **User created materials** into the environment package.

XML files

If you enable the **XML files** option, the software will make a copy of the **XML files** saved in the \ProgramData\Cadline\ARCHlineXP2011\Support folder into the environment package.

Cabinet configuration files

If you enable this option, the software will make a copy of the locally created cabinet configurations into the environment package file. These configuration files help you edit the cabinets by their original detailed settings, not only as an object.

Command aliases

If you enable this option, the software will make a copy of the locally modified ARCHLine.PGP alias configuration file.

City images/locations

If you enable this option, the software will make a copy of the city images and locations that you can change in the Sun settings dialog.

User created light types

If you enable this option, the software will make a copy of the user created light. A user light can be created in the Light manager.

User created toolbars

If you enable this option, the software will make a copy of the user created toolbars. User created toolbars can be made by the Tools / Customize / Toolbars command.

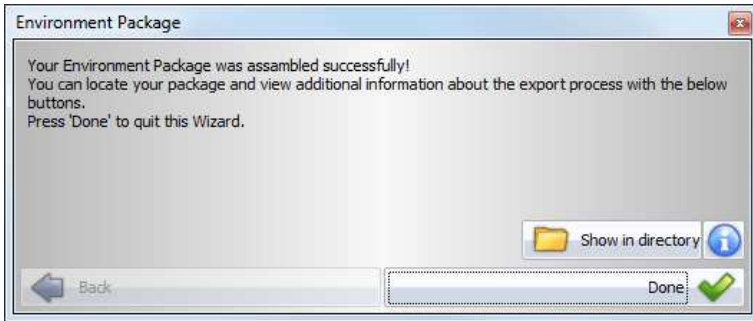
If you tick an option off in the list, the corresponding setting or file won't be compressed into the environment file. When finished, please press the Next button. The program collects the necessary data and shows the following page.



Press Commence and the software starts to create the environment package file. This can take long depending on the settings you enabled and the speed of the computer.



While processing you will see the Please wait... text at the right bottom corner of the dialog. Please be patient until the final page appears.



Click on Show in directory to open the folder of the finished environment package in Windows Explorer.

Click on the Information button to open the environment package information screen.

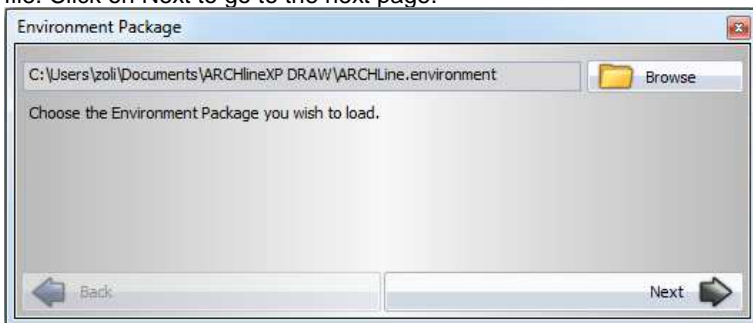
Click on Done, to close the Environment Package dialog.

4.8.2. Unpacking

4.8.2.1. Unpacking – Typical settings

You can unpack the content of a previously assembled single environment package into another computer.

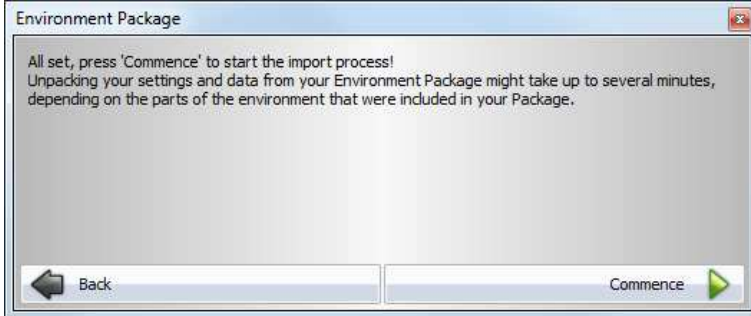
Click on the Browse button to find and open the environment package file. After opening it, you will see the name and path of the selected environment file. Click on Next to go to the next page.



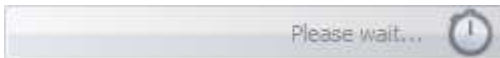
In the following page you can choose from the typical and custom settings to unpack the environment package. Click on Typical to unpack all the content from the package to this computer.



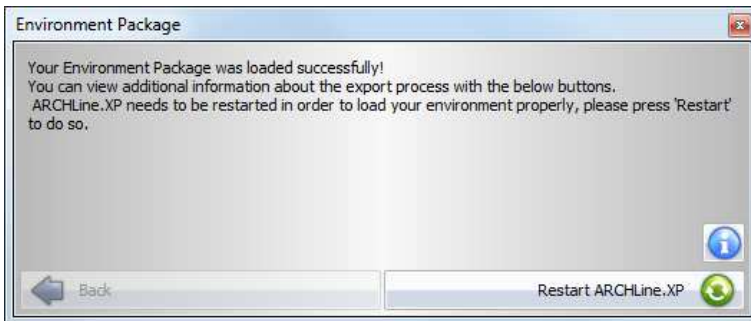
You will see the following page where you can start unpacking the file.



Click on Commence to start the process and unpack all the settings and files that can be found in the environment package.



While processing you will see the Please wait... text at the right bottom corner of the dialog. Please be patient until the final page appears.



You can close the dialog by clicking on the Restart ARCHLine.XP button which reminds you that after closing the dialog you should restart the software, before working with the new settings.

Please do not forget to restart ARCHLine.XP after closing the wizard! It can lead to serious errors if you do not restart the software after unpacking the environment file!

4.8.2.2. Unpacking – Custom settings

You can unpack the content of a previously assembled single environment package into another computer.

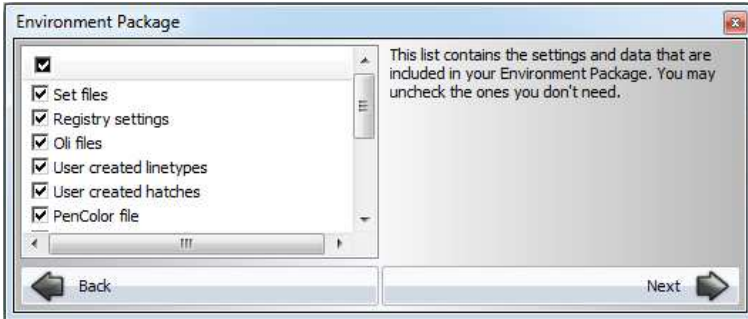
Click on the Browse button to find and open the environment package file. After opening it, you will see the name and path of the selected environment file. Click on Next to go to the next page.



In the following page you can choose from the typical and custom settings to unpack the environment package. Click on Custom to control which part of the content you would like to unpack from the package to this computer. This feature is recommended only for advanced users.



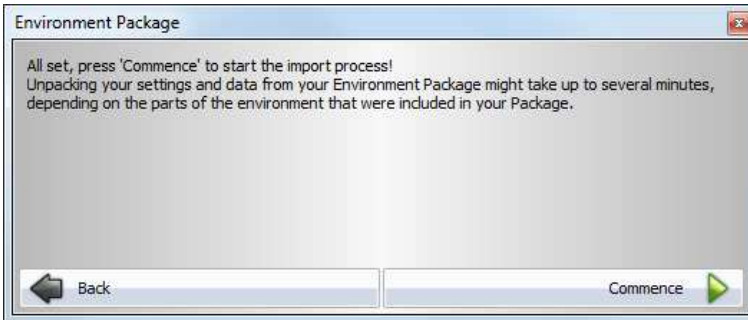
When you choose Custom you can select the components to extract from the package.



On the left side of the dialog you can find the settings that are compressed into the package file. If you do not see an expected option, it means that you might forget to pack it into the file when the package was created.

If you would like to learn more about the options in the Custom settings please read through the corresponding part in chapter Create package – Custom.

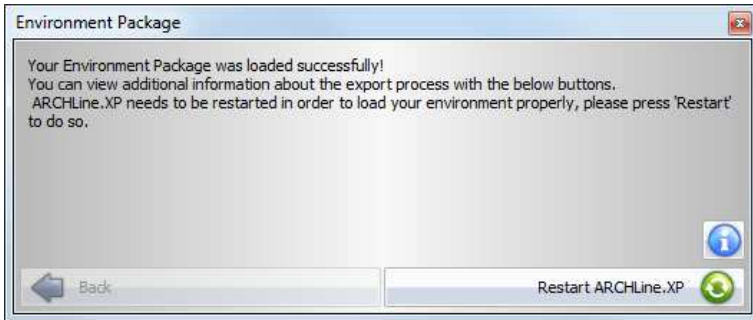
Click on Next to step to the following page.



Please press Commence to start the package import.



While processing you will see the Please wait... text at the right bottom corner of the dialog. Please be patient until the final page appears.



You can close the dialog by clicking on the Restart ARCHLine.XP button which reminds you that after closing the dialog you should restart the software, before working with the new settings.

Do not forget to restart ARCHLine.XP after closing the wizard as it can lead to serious errors if you do not restart the software after unpacking the environment file!

5. Data entry

You can define data (numeric and alphanumeric values, points and vectors) by using

- ❖ the keyboard,
- ❖ toolbar icons, or
- ❖ pop-up menus.

This way you can easily specify values and use special points and vectors, which greatly simplifies the drawing process.
In the following we will look at how to define *points* and *vectors*.

Defining points

You can define the value of a point the following ways:

- ❖ by typing X and Y global or local coordinates
- ❖ by moving the cursor in the preferred direction and typing the length
- ❖ by clicking on the drawing area
- ❖ with snap grid
- ❖ by using special points
- ❖ by fixing coordinates, distance or vector.

Defining vectors

The vector of the drawing can also be defined in various ways:

- ❖ with snap angle
- ❖ by pressing SHIFT
- ❖ HV indicator cursor
- ❖ with arrows
- ❖ with the Reference toolbar.

5.1. Defining coordinates

In ARCHLine.XP[®], coordinates can be specified either globally, when the program calculates values in relation to the origin of the drawing, or relatively, when values are calculated in relation to the last point.

This can be set in the Status bar.

**Global coordinate input**

Coordinates, values are calculated in relation to the origin of the drawing.

**Relative coordinate input**

Coordinates, values are calculated in relation to the last point.

If you press any key, the command line or input field on the drawing area comes up automatically depend on the *File menu - Preferences - General - Shortcut icon menu - Enable Dynamic input* option.



See the chapter 2.2.1. *Defining values*.

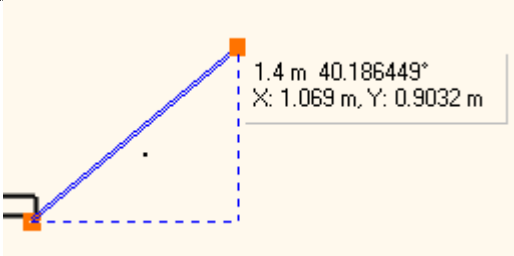
- Enter the X and Y coordinate values, following each other, separated with a space:



- Click Enter to close it.




Starting the project we suggest you to switch on the **Global coordinate input** and to place the first point of the drawing in the 0, 0. Later switch on the **Relative coordinate input**. In practice this simplifies notably to specify further points.

**Coordinate field**

Coordinate values can be attained from the coordinate fields in the drawing status line.

x: 4.58 y: 5.9

In case of global input () , the field displays the absolute X and Y coordinates of the cursor.

In case of relative input () , the field displays the DX and DY values of the cursor in relation to the last point.

5.1.1. Defining points with snap grid

Snap grid is of great help when defining points. It locks the cursor into alignment with the grid points.

You can enable this option with the *Tools menu - Snap* command.



See grid settings in detail in chapter 2.10 *Screen settings*.

5.1.2. Defining points by using special points

ARCHLine.XP[®] offers many possibilities to specify points in a simple way.

Defining a special point with Reference commands:



See in detail in chapter 2.9.5 *Reference toolbar*.

5.2. Defining angle

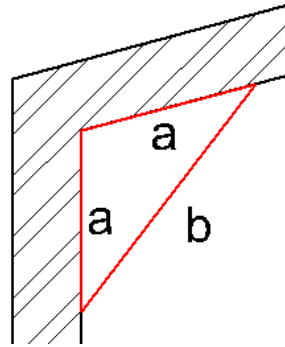
5.2.1. Direction by triangle

Simple survey

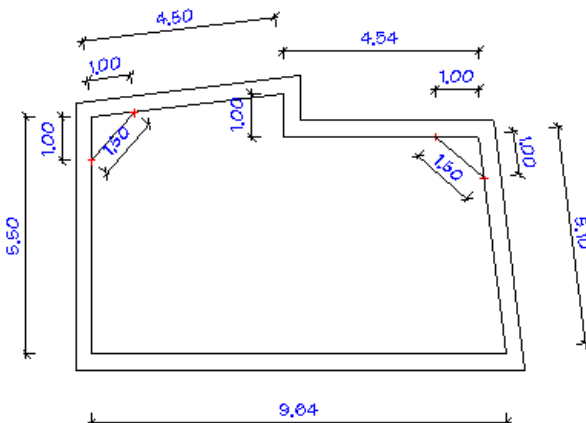
In the example below we demonstrate a very simple method for surveying. This method is not so complex like the survey module of ARCHLine.XP® but you can quickly define irregular rooms with a help of it. (As it is known, in the survey module the program uses a room-based surveying method, by which the walls with uneven thickness are come into existence.)

The method is the following:

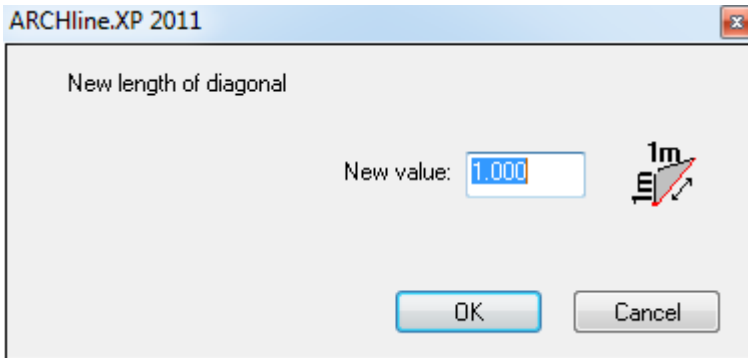
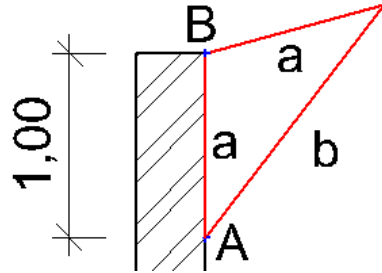
Starting from the corner point, measure 1 meter distance on the two adjacent walls. Using the constructed triangle gained from the measured data, the direction of the second wall relative to the first can be defined by the program. With this you can avoid the measuring of angles. On the figure the value of a is 1 m , b is the measured hypotenuse.



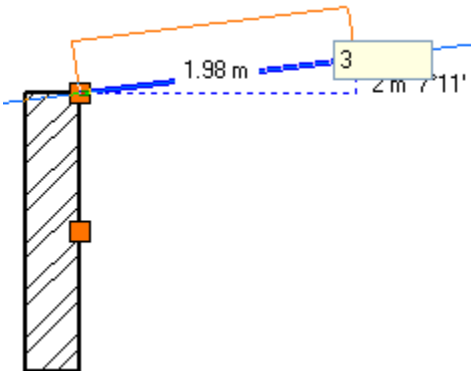
Following this method it is easy to create the floor plan below:



- Draw the first wall.
- When you get to point B, choose *Direction by triangle* command on the reference toolbar
- The program asks for point A, which is located on the wall 1 m far from point B. Move the cursor downside along the wall and type 1 m. At this point you have got the point A.
- In the appearing dialog enter the length of hypotenuse b.



- The direction of the second wall becomes fixed because of the triangle. Enter the length of the second wall.



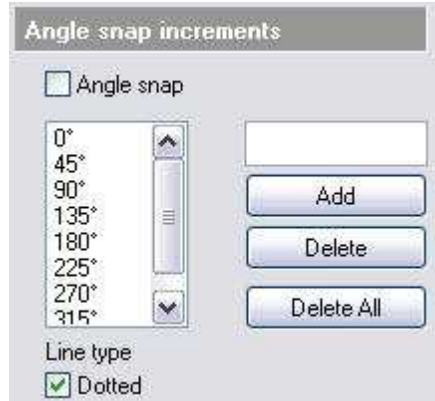
5.2.2. Defining direction with Angle snap

Angle snap limits the placing of the second point correlated to the first one. The second point is gravitated to the nearest fix angle. The default angles are the following: 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°.

You can define the values of the angle snap in the File menu – Preferences – General – Snap Grid dialog box.



See the detailed description in 2.10.2. Defining direction with Angle snap chapter.



Angle snap

Select this option to enable or disable angle snap.

If you enable angle snap, the cursor can only move towards the defined directions. This is a very strong control and can be used only in special cases. We recommend that you disable this option.

When you define *Length* or press the *Shift* button, the program finds the default angles even if the Angle snap option is disabled.

Ortho snap

Using the *Tools menu - Ortho* command you can switch on the ortho snap. In this case you can move the cursor into horizontal and vertical direction.

If the Angle snap and the ortho snap are switched on the program prefers the ortho snap.

Using angle snap with disabled snap option

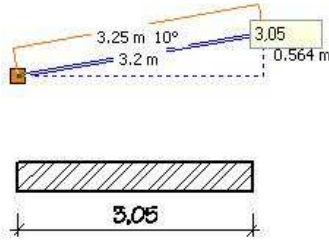
When you have specified the first point of an element:

- Move the cursor to the desired direction.
- The program is waiting for you to specify length or distance. Enter the appropriate values.
- The second point snaps to the nearest special angle.

Example:

To draw a 3,05 m long horizontal line:

- Specify the starting point.
- Move the cursor near the horizontal direction.
- Enter the value: 3.05.






5.2.3. Direction control by using the *Shift* button

You can also enable **Angle snap** by pressing the *Shift* button. If you press the *Shift* button continuously, the cursor moves towards the nearest predefined direction. After defining a direction, you can carry on with the command you want to apply.

The *Shift* button is most frequently used to reinforce vertical or horizontal directions.

You can combine *Shift* with cursor snap. With the help of the last three icons of the *Reference toolbar*, you can define which reference direction of the selected reference point to intersect the locked direction to specify a new point.

- ❖  Reference direction perpendicular
- ❖  Reference direction horizontal
- ❖  Reference direction vertical



If you do not use the icons, the reference direction will be defined by the actual status of the icon last used. Perpendicular is the default direction. These icons can also be used when the direction is not controlled by *Shift*, but specifying direction is contained in the command e.g. modifying the length of a simple wall.

5.2.4. Defining direction with the HV cursor

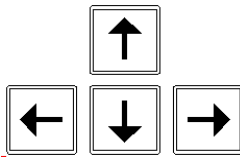
The *HV indicator cursor* can also show horizontal or vertical direction. You can enable the cursor in the *File menu – Preferences – General – Other* dialog box.

The HV indicator cursor appears when you select a point and move the cursor in horizontal or vertical direction. (In this case, recognizing a special point also means selection.)

5.2.5. Defining direction with arrows

You can define in which direction to create an element with the **arrow** keys of the keyboard.

In this case the **arrow** keys substitute the direction definition of the polar coordinate.



- Press any arrow button to define drawing **direction**.
- Specify the **length** of the element to be created.

The program creates the element of the specified length in the direction defined by the arrow.

5.2.6. Defining direction with Reference toolbar

You can use the Reference toolbar icons if you have to specify an angle different from the default directions.

You can define directions with an angle, you can use the angle of an existing element or you can lock a direction.



For description see Chapter 5.1.3 Defining points by fixing coordinates, distance or vectors.

5.3. AutoCAD® compatible coordinate input

The comma as separator

Opposed to the conventions in ARCHLine.XP® 2007 you can use the comma as separator for coordinate inputs. For this you have to switch off the *Comma (,) in Decimal point allowed* option in the *File menu - Preferences - General - Other* dialog.

Comma (,) in Decimal point allowed


For example if you want to draw a line from point X=0; Y=0 to point X=3; Y=4, it is enough to do the followings:

- Start the line drawing command.
- Type 0,0 and press Enter to specify the coordinates of the start point of the line.
- Type 3,4 and press Enter to specify the coordinates of the end point of the line.



By switching off the option the comma (,) is interpreted as a separator instead of a decimal point. Use the dot (.) character for decimal point.

You can specify relative or global coordinates.

Set the **Global / Relative coordinate** icon in the status bar to  global. With this setting the coordinate input works as follow:

Absolute coordinate input

In case of absolute coordinate input the syntax is the following:

X,Y ENTER

In that case the global origin is taken into consideration and the coordinate input is relative to this point.

The symbol of the global origin on the floor plan is represented as follows:



Relative coordinate input


In case of relative coordinate input the syntax is the following:

@X,Y ENTER

In that case the last specified point is taken into consideration and the coordinate input is relative to this point.

Use this possibility if it is easier to specify a point relative to previous point than specifying the global coordinates.



If the **Global / Relative coordinate** icon is set to  relative, it is enough to use the **X, Y ENTER** syntax for the coordinate input.

Polar coordinate input

Often you know only the angle and length values. In that case use the polar coordinate input. It can be very helpful if you wish to draw a line with a length of 2.53 m and an angle of 32°. You can specify absolute or relative polar coordinates as well.

Absolute polar coordinate input

In case of absolute polar coordinate input the syntax is the following:
 $\text{numR} < \text{numFi}$, where
 numR is the distance from the global origin,
 numFi is the angle.



Use this input method when you know the distance and angle relative to the global origin.

Relative polar coordinate input

In case of relative polar coordinate input the syntax is the following:
 $@\text{numDr} < \text{numFi}$, where
 numDr is the distance from the previously specified point,
 numFi is the angle.

6. Views

6.1. Setting view

When you draw it is very important to be able to change the view of the windows you are using. Changing View can be e.g. increasing or decreasing the apparent size of elements in the drawing, moving views of drawings or refreshing drawings.

In the 3D window you can set the view of the model; you can set named views, axonometric or perspective.

You can also set how to display elements in 3D. You can set named views, wireframe model, hidden lines, shaded or colour modes.



You can restore and display an architectural element displayed in the 3D window with the *Show on floor plan* command.

6.1.1. View toolbar

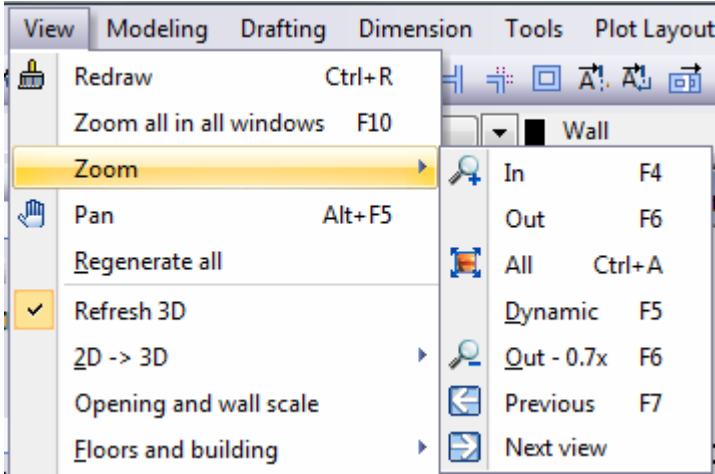


See the detailed description in 2.9.6.

6.1.2. Enlarging with View menu - Zoom

With the **View menu - Zoom** commands and the **Zoom all in all windows** command you can increase or decrease the view.

Zoom contains the following commands:



You can also activate these commands from *View toolbar*. For description, see the previous chapter: *6.1.1. View toolbar*.

6.1.2.1. Zoom out

Decreases the size of the drawing with the specified value. Proportions do not change in the window.

- Define the view box by its two opposite corners.

6.1.2.2. Zoom all in all windows (F10)

The command modifies the zoom scale so that the whole drawing (all visible elements) would be placed within the window. The same is done in each window.

6.2. Building 3D models

The program offers several possibilities to create a 3D model of the designed building. You can display all elements of the model on every floor, or just certain floors or selected elements or a selected part of the model.

The command can be activated from:

- ❖ the **View menu - 2D -> 3D** submenu.
- ❖ the **Status bar** -  **Build 3D model** icon, and
- ❖ the **F3**, **Alt +F3**, and **Alt + T** keyboard shortcuts.

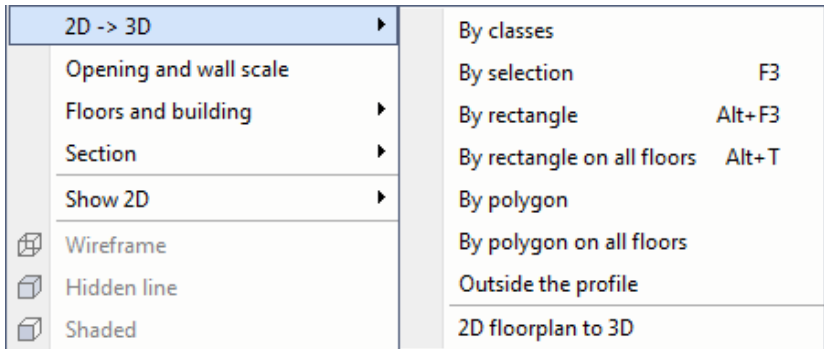
When you create new 3D models, the program opens a new 3D view window to display the 3D model of the floor plan.

The model is shown in the *Show hidden element* display mode. This means that every element is displayed with hidden lines, but the elements do not hide the edges of other elements. You can change settings with the *3D toolbar* icons.

The 3D view follows the changes made on the original drawing.

6.2.1. 2D -> 3D

The menu contains the following commands to create and display a 3D model:

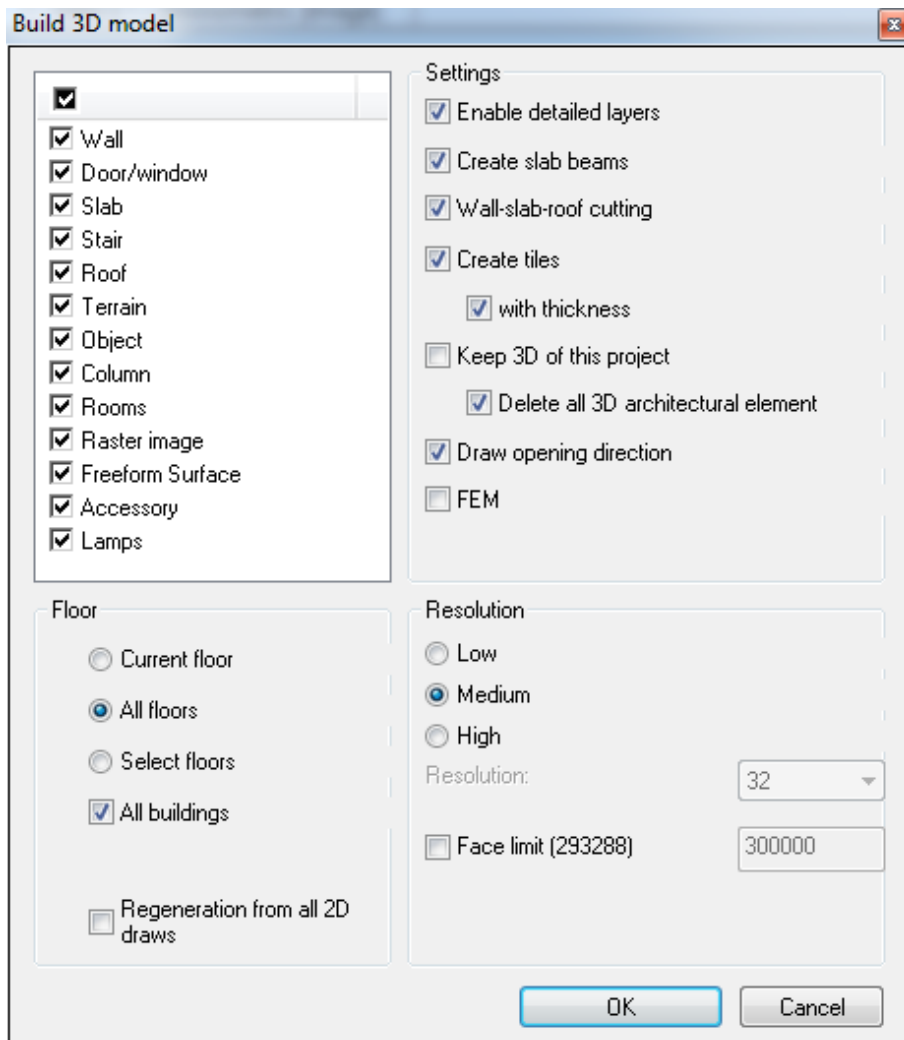


The commands don't modify the element itself, only the 3D appearance of it.

6.2.1.1. Building 3D view - by classes

To display the **Build 3D model** dialog box, go to the **View menu - 2D -> 3D -**

By classes command, or click on the  **Build 3D model** icon in the **Status bar**.

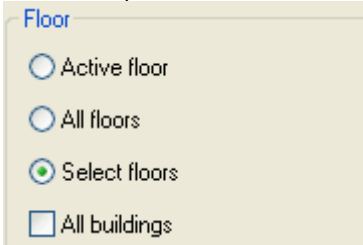


Elements

- Select the element types to display in 3D or click the box on top to select all elements.

Floors

- Select an option:



Active floor

The program only displays the active floors of the building.

All floors

All floors are displayed.

Select floor

For more complex buildings with a number of floors it is not enough to use the *Active floor* or *All floors* options to create the proper details of the 3D model. The *Select floor* option enables more varieties in the 3D model representation:

- The *Select floors* dialog appears.
- Select the floors from you wish to include in the 3D model generation. Use the SHIFT or CTRL keys for multiple selections.
- Click *Ok* to close the dialog.
- To change the floor selection, select either the *Active floor* or *All floors* option first, and then select the *Select floors* option again.

All buildings

Enable this option if you have more than one building in the drawing and you want to display all of them in 3D. If this option is disabled, the program only displays the active building.



Read about managing multiple buildings in Chapter 3.4. *Floor management*.

Settings

With laminate

- Enable this option if you want to display the layers of the walls.

Slab beams

- Enable this option if you want to display the beams of slabs.

Wall - slab - roof cutting


With this option you can fit:

- ❖ wall to slab,
- ❖ slab to roof,
- ❖ wall to roof.

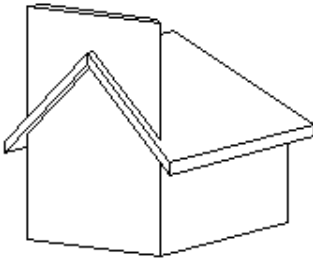
If you enable this option, the program automatically cuts the walls higher than the roof where they intersect it. To do this, you have to enable the cut option

in roof properties. 

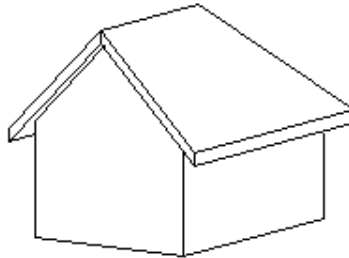
Similarly, slabs overhanging the roof,  and walls reaching beyond the

slab  are cut. To do this, you have to enable the Slab cut option in the Slab general properties dialog box.

Off



On



Keep 3D of this project

If you enable this option, the program creates a new 3D model only for the selected element types, while keeping the contents of the previous 3D display.

Delete entire 3D model

If you disable the *Keep 3D of this project* option, the **Delete entire 3D model** option comes up. If you enable this option, it deletes the entire 3D model and creates a new one.

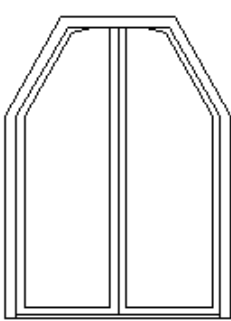
Create tiles

Enable this option to display the tiles that belong to layers of the wall or the slab. After enabling this option you can create tiles with zero or real width. If you use zero width, it significantly speeds up the display.

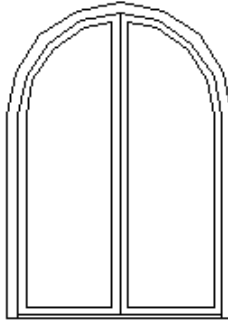
Resolution

With resolution you can set the smoothness of arched surfaces. The higher the resolution is, the smoother the arched surfaces are. However, high resolution can greatly slow down the speed of display.

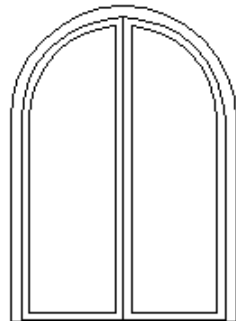
If you select high resolution, you can set the precise resolution value.



Low



Medium



High

OK

Closes the dialog box.

6.2.1.2. By selection (F3)

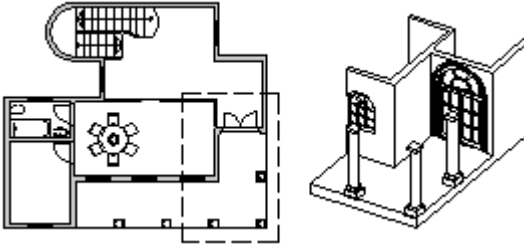
Displays the selected elements in 3D.

- Select the elements you want to display in 3D:
Enter Completes the selection.

6.2.1.3. By rectangle (Alt + F3)

A rectangle-based block cuts the three-dimensional model; the outside parts are discarded and the rest is displayed. This command only selects and cuts elements on the active floor.

- Define the view box by its two opposite corners.



6.2.1.4. By rectangle - on all floors (Alt + T)

A rectangle-based block cuts the three-dimensional model; the outside parts are discarded and the rest is displayed.

- Define the view box by its two opposite corners.

6.2.1.5. By polygon

A polygon-based block cuts the three-dimensional model; the outside parts are discarded and the rest is displayed. This command only selects and cuts elements on the active floor.

- Define the points of the polygon.



If you need help to draw a polygon, read the description of **Polylines**



in Chapter 11.2.2. *Commands for drawing lines.*

6.2.1.6. By polygon - on all floors

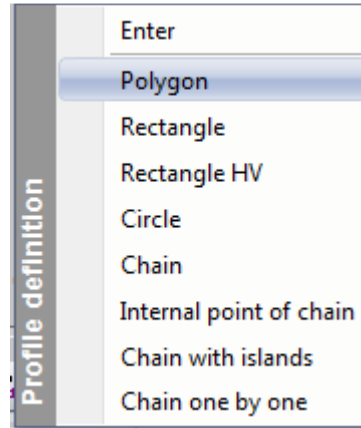
A polygon-based block cuts the three-dimensional model; the outside parts are discarded and the rest is displayed. This command only selects and cuts elements on the active floor.

- Define the points of the polygon.

6.2.1.7. Outside the profile

A profile-based block cuts the three-dimensional model; the outside parts are discarded and the rest is displayed. This command only selects and cuts elements on the active floor.

- Select the **POPMENU** keyword in the command line and define the type of profile in the *Profile definition* menu.

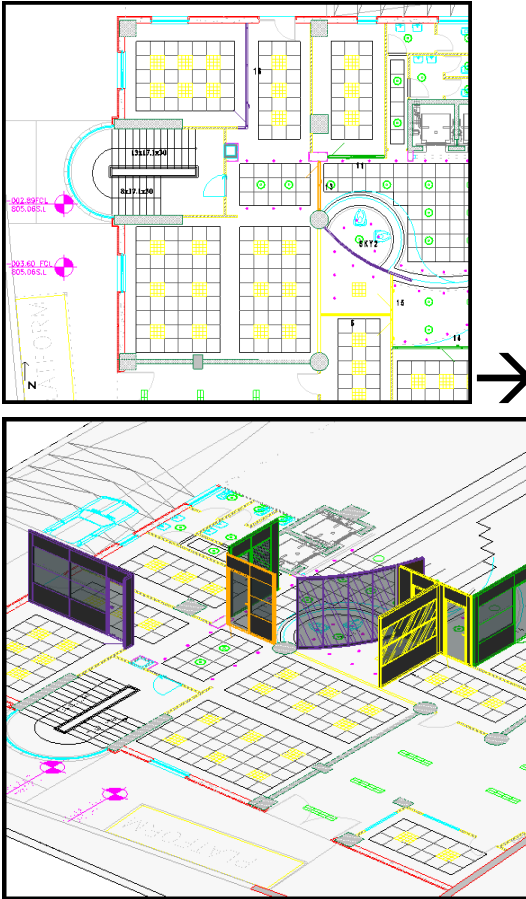


6.2.1.8. 2D floor plan to 3D

Using this command you can represent your 2D floor plan in the 3D model space as well.

The components of the floor plan – simple vector entities like lines, polygons, arcs, dimensions – are visible together with your 3D model. This way you can visualize the imported source data, such as DXF and DWG files or imported sketches together with the newly created building model containing walls, windows, doors, columns and other objects

This example shows a part of an imported DWG drawing, and the newly created 3D model



6.2.2. Creating 3D models with keyboard shortcuts


You can also create 3D models with keyboard shortcuts. These are summarized in the following table:

Alt + T Creates a rectangle, which cuts the model. The part of the 3D model which is enclosed in the rectangle becomes visible in the 3D view. The program displays the elements of all floors.

Alt + F3 Creates a rectangle, which cuts the model. The part of the 3D model which is enclosed in the rectangle becomes visible in the 3D view. The program only displays the elements of the active floor.

F3 Select an element and press the F3 button. The 3D model of the selected element appears,
or
if nothing is selected, press the F3 button. Select the elements on the floor plan you want to display. The program only displays the elements of the active floor.



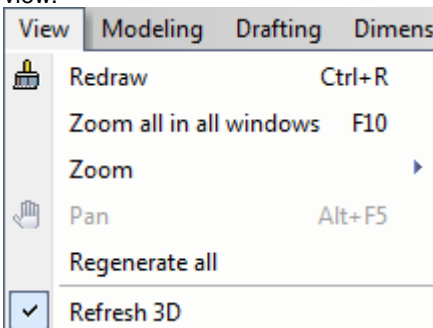
If you select an element and click the  **Build 3D model** icon in the **Status** bar, the program only displays the selected elements in 3D.

In this case the program does not activate the **Build 3D model** dialog box, but applies the previous settings.

6.2.3. View menu – Refresh 3D

This command enables to refresh the 3D model. A tick marks if the command is enabled.


If you set on, every modification of the floor plan becomes visible in the 3D view.



6.3. 3D views

After creating the model, you can display it in different views. When a 3D window is active, to set views you can use:

the **View menu – View Properties – Define View** dialog box, or

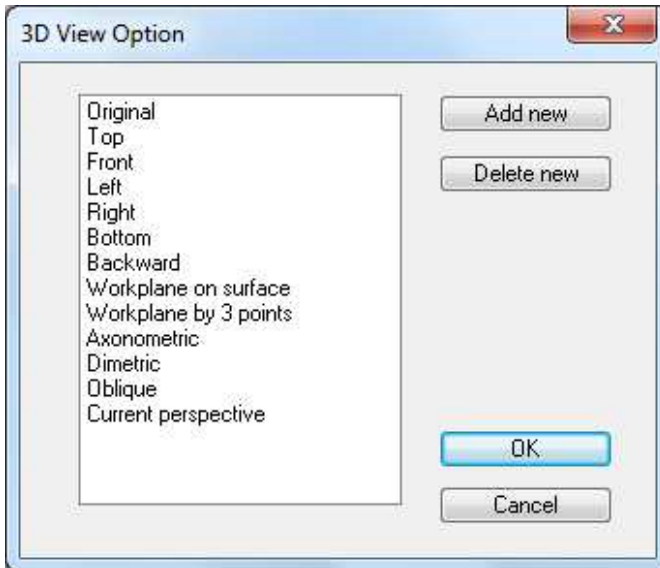
- ❖ the last six icons of the **3D view toolbar**  for the main views: right side view, front view, top view, axonometric view, back view, left side view or
- ❖ the elements of the **3D view** shortcut menu, which comes up if you right-click the header of a 3D window. The commands of the shortcut menu are the same as the commands in the **View** dialog box.

When you apply these views, the contents of the open window are not deleted; the selected view appears in the actual representation mode and with optimal zoom.

While working you can use different views at the same time in different 3D windows.

6.3.1. View menu - View Properties – Define View

You can choose from the following views in the dialog box:



Add new

With this command you can save the current 3D projection and assign a new name to it. This new view is added to the list of default view options so later you can select this view from the list too.

This command is useful mainly when you save different perspective projections.

Delete new

You can delete a 3D projection that you previously added to the list.

6.3.1.1. Original

Restores the original view and deletes all relative view transformations from the current window.

6.3.1.2. Perpendicular projections

These are the following:

Top view, front view, left and right view, bottom and back view.

6.3.1.3. Work plane on surface

You can define the view with a plane surface of a selected object. It means that the view is the plane surface defined by the object's surface area.

The normal vector of the object surface aims at the viewer.

In this case the origin of the local 3D coordinate system is the perpendicular projection of the global origin on the work plane.

- Select the desired surface, or if it is not clear which surface to select, first click on the **Select Solid** and click a certain surface of the desired solid.

ENTER Accepts the selected surface, or

NO Select another one.

6.3.1.4. Work plane by 3 points

You can define a view by three points of a work plane.

The first point defines the origin of the local coordinate system. The second and the third points define a vector, which determines the direction of the local x axis (its projected image is horizontal). The normal vector of the view is a vector perpendicular to the coordinate system that was defined by the three points.

- Specify the origin of the view.
- Specify a point on the positive x axis of the local coordinate system.

- Specify another point of the view.

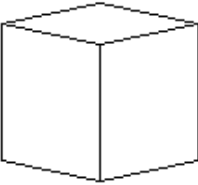
6.3.1.5. Axonometric

Automatically creates an axonometric view.

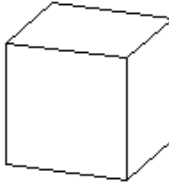
6.3.1.6. Dimetric

Automatically creates a dimetric view.

Axonometric



Dimetric



6.3.1.7. Current perspective

Applies the last set perspective to the selected 3D window.



You can read about perspective in detail in Chapter 6.3.3. *Perspective view*.

6.3.2. 3D view toolbar - Named views



Right view

Displays the right view of the model in the 3D window.



Front view

Displays the front view of the model in the 3D window.



Top view

Displays the top view of the model in the 3D window.



Axonometric

Displays the axonometric view of the model in the 3D window.



Back view

Displays the back view of the model in the 3D window.

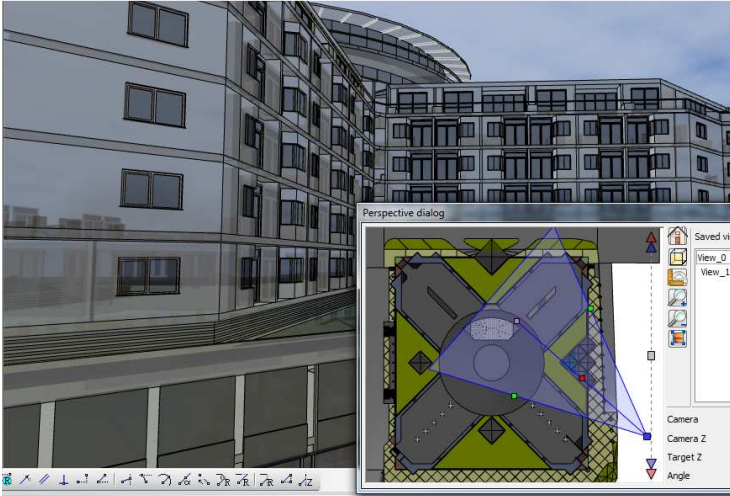


Left view

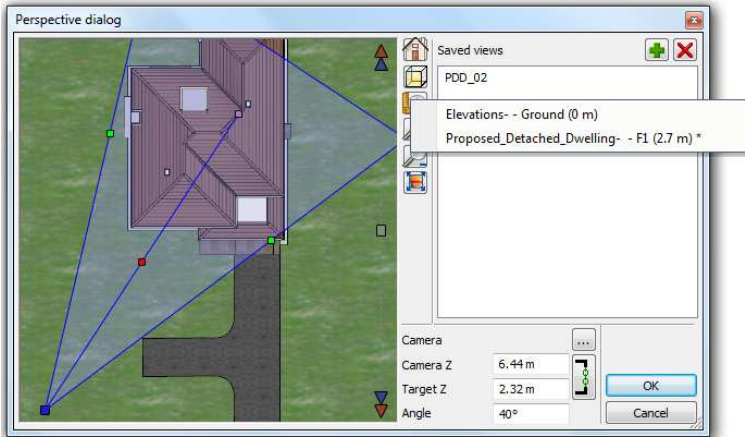
Displays the left view of the model in the 3D window.

6.3.3. Perspective view

You can set the 3D perspective view in the main menu: *View – View Properties – Perspective view* or press the perspective view icon on the Navigation Bar. The view is resizable, and on the left side you can see the top view of the model by default.

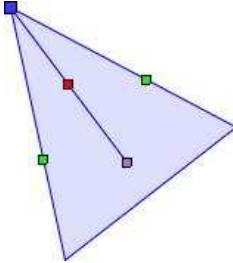


Also, when the project contains more than one 2D drawing, by clicking on the 2D view icon, a pop menu will appear letting you choose the one that contains the proper drawing.



6.3.3.1. View settings - camera handling

You can easily set the desired view by the camera, which you can find in the 3D view in the Perspective dialog window.



Camera tool

The camera tool displays the camera (blue point), the point of view or subject (grey point), the connection of the camera and the point of view (red point) and the angle (green dots) with different colour of markers. You can move the markers easily with the “Drag and drop” method.

The following camera handlings can be implemented using the aforementioned markers:

Viewpoint setting

You can set your viewpoint by moving the camera’s marker. The viewpoint always looks at the point of view or subject. The Viewpoint and the Point of view together set the view direction.

Point of view setting

You can set the point of view or subject by moving the correct marker. The viewpoint always points to the subject. The Viewpoint and the Point of view together set the view direction.

Angle setting

You can set the field of view of the camera by moving the corresponding markers.

Camera handling (dolly)

You can move the camera by moving the camera-marker. In this case the viewpoint will move with same extent and direction as the camera. Therefore we call this style of camera handling as dolly, also used to call in the film production, where the camera is moved by a cart.

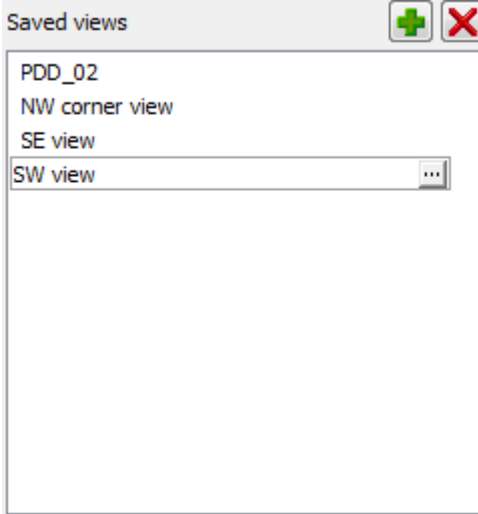
Thus the direction of the camera view is remain, only the spatial position changes.

6.3.3.2. Custom view handling

It is possible to save the individually set views. With this feature you can save your favourite viewpoints and recall them precisely any time.

Saved views list

You can check your custom viewpoints in the Saved views list.



Add view

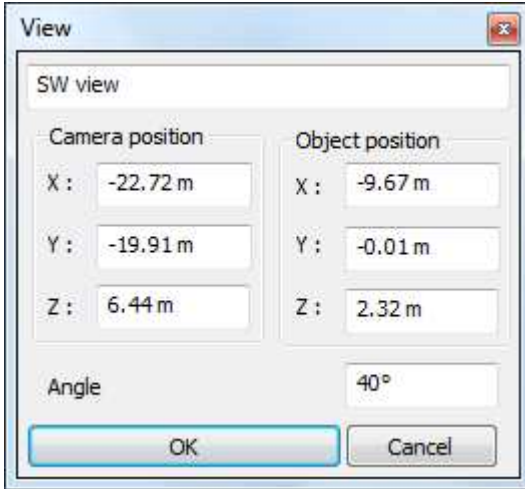
New views can be added to the Saved views List by using the Add view button. A new view will be added to the View List, which can be renamed anytime by clicking on it.

Delete view

You can delete a view from the Saved views List with the Delete View button. Warning! The deletion of the selected view will happen immediately and cannot be undone.

View properties

You can edit the settings of the currently selected view by using the View Properties button. You can change the name and angle and set the details of the Camera and Object Position, which is updated and saved into the selected view automatically by pressing the OK button.



Switch between Views

You can switch between previously saved Views by clicking on the name of the appropriate View. This previously saved View will be activated and will be displayed in the 3D View window when you press the OK button.

6.3.4. Define view by two points

Defines the perspective view by observer and observed points
Before:



After:



6.3.5. Navigation in 3D

You can navigate in the model with the following tools.

- ❖ **Definition of the origin of rotation**
- ❖ **Rotation**
- ❖ **Zooming**
- ❖ **Shifting**

6.3.5.1. Definition of the origin of rotation

The origin of rotation can be defined differently in axonometric and perspective views.

Axonometric

The origin of rotation is specified by the origin of a small co-ordinate system. The origin of rotation can be changed by the relocation of this co-ordinate system.

- Click the *Navigation bar - New rotation centre* icon.
- Specify the new origin of rotation.

Perspective

In perspective view the origin of rotation is the *observed point*. You can modify this many ways, for example in the *Perspective settings* dialog.

6.3.5.2. Rotation

You can rotate the model around the origin of rotation with:

- ❖ Shift + mouse wheel button pressed
- ❖ Arrows on keyboard
- ❖ Navigation bar

6.3.5.3. Zooming

You can zoom the model with:

- ❖ *Scrolling the mouse scroll*
- ❖ *Shift + mouse right button pressed*
- ❖ *Double click with the scroll button will zoom all*
- ❖ *Navigation bar*

In perspective view, zooming means the modification of the distance between view point and observed point.

6.3.5.4. Shifting

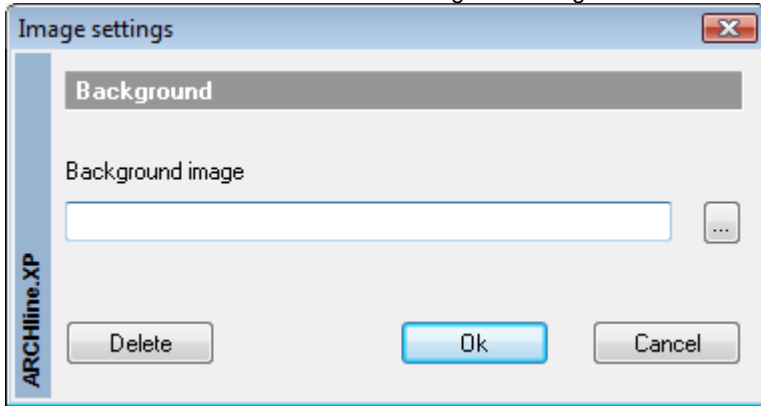
You can shift the model with:

- ❖ *Mouse middle button pressed*
- ❖ *Navigation bar*

6.3.6. Background image

You can load a background image in the 3D Image window. This will not necessarily affect the rendered image. Background image for rendering can be set differently.

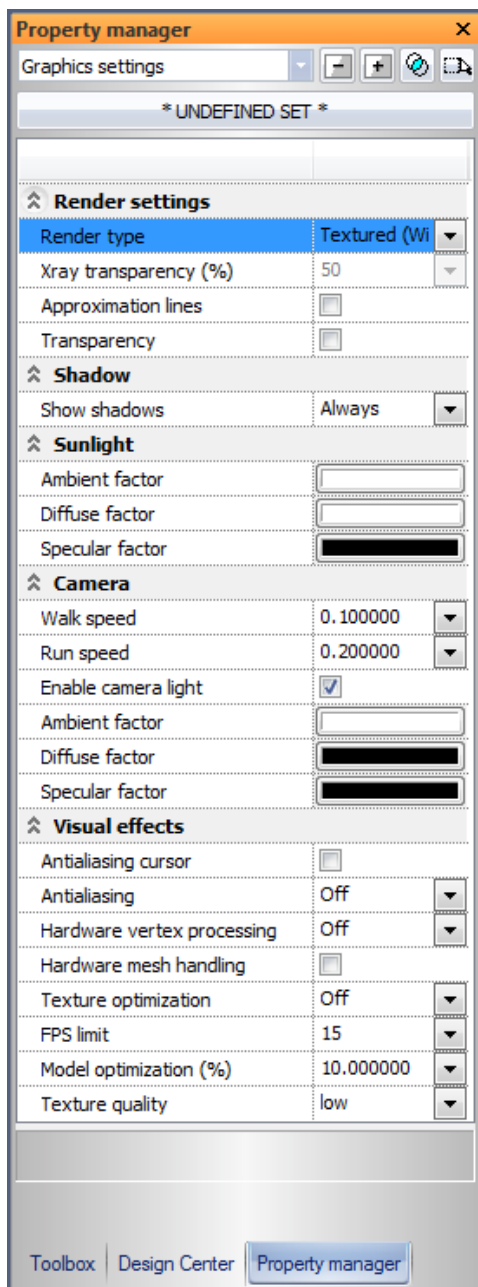
- Click the *View menu – View Properties – Background image* command.
- Select the background image in the appearing dialog. The image size information appears below the image file path information. The background image always fills the Image window, independently from its size.
- Use the *Delete* button to remove the background image from the window.



6.3.7. 3D window graphics settings

3D window graphic settings are the following:

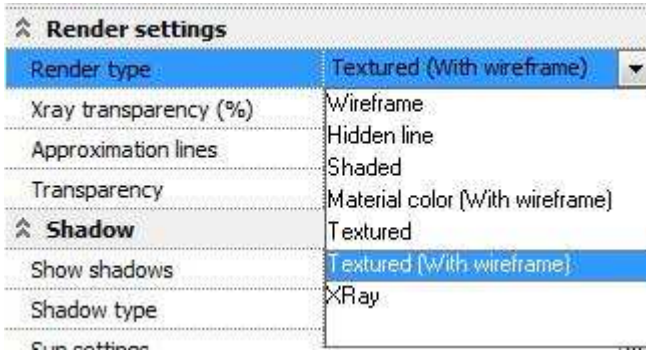
- ❖ Render settings
- ❖ Shadow
- ❖ Sunlight
- ❖ Camera
- ❖ Visual effects



6.3.7.1. Render settings

Render type

With the options found here you can set the rendering type used for the representation of the model.



Wireframe

In wireframe representation each edge of the model is visible.



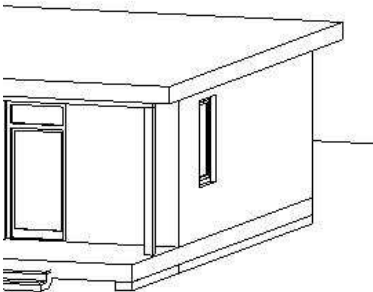
You can also display a wireframe model with the **3D view toolbar**



Wireframe model icon.

Hidden line

In hidden line representation the program displays only the edges of the model that can be seen from the current view. The program doesn't display the hidden lines in the background.



You can also display hidden-line removal with the **3D view toolbar**



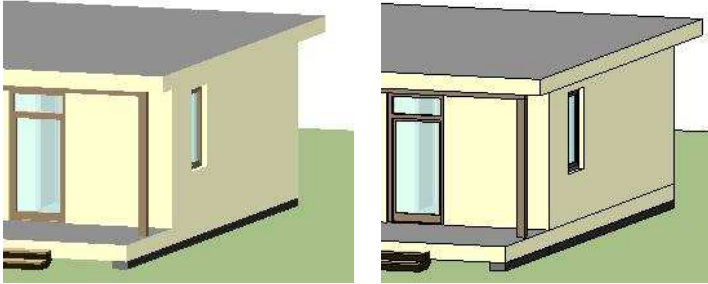
Hidden lines icon.

Shaded

Shaded means that the surfaces of the model are represented with the colour properties specified for the used materials. Only the surfaces that can be seen from the specific view are displayed.

Material colour (With wireframe)

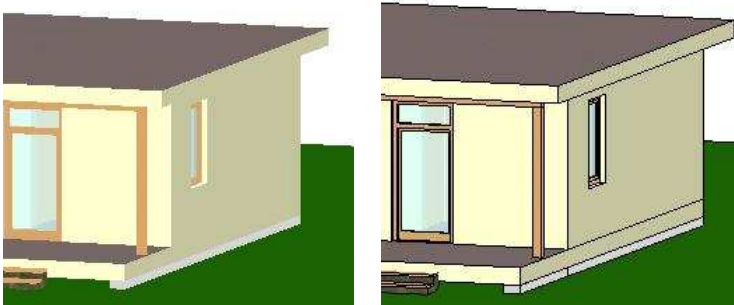
This representation is the combination of Shaded and Hidden line rendering types.

**Textured**

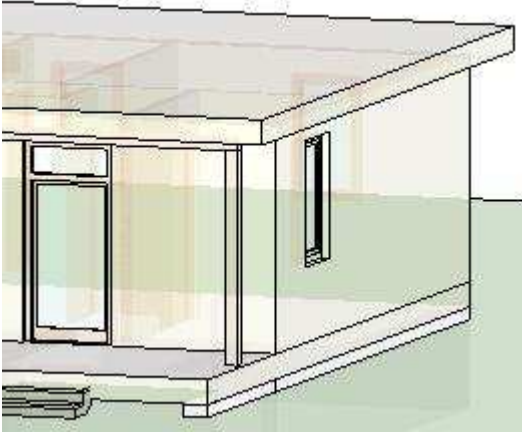
Textured representation means that the surfaces of the model are displayed with the texture properties specified for the used materials (if the texture property is not specified for a material then the material colour is used instead). Only the surfaces that can be seen from the specific view are displayed.

Textured (With wireframe)

This representation is the combination of Textured and Hidden lines rendering types.

**X-ray**

The X-ray rendering type is similar to the Textured (with wireframe). The difference is that non-transparent surfaces become transparent and therefore the structure of the model can be overviewed in unique and spectacularly way, similarly to an X-ray photo.



X-ray transparency (%)

When X-ray is selected from the Render type options, you can specify the amount of transparency. You can specify a value between 0% and 100%.

Texture shading

You can change the strength of the texture shading effect.

Dynamic section transparency

You can change the transparency of the dynamic section plane in the 3D model window.

Approximation lines

For the representation of arc surfaces you can switch on the displaying of approximation lines.

Transparency

Using this option you can make the edges behind surfaces with transparent materials visible.

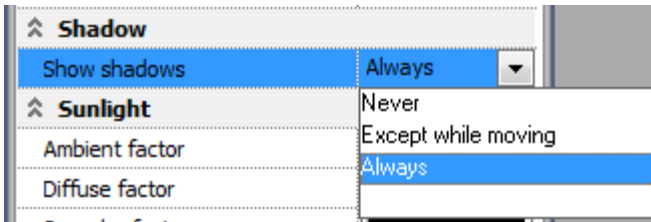


Lights

You can set the visibility of light sources in the 3D model. You can choose from the following options: Off, Light solid only, Light effects only and Light solid and light effect. This option doesn't control whether the lights are on or off but their visibility only in the 3D model windows.

6.3.7.2. Shadow

Show shadows



Always

The shadows will appear continuously. Choose this option only with proper computer configuration; otherwise the moving of the model will slow down considerably.

Except while moving

With this option selected the shadow will appear only when the model is staying.

Never

With this option the model will appear without shadow.

6.3.7.3. Sunlight

Enable sunlight

With this option you can enable or disable the sunlight effects in the 3D content window.

Ambient factor

It shows how the materials react to ambient light depending on the sunlight.

Diffuse factor

It shows how the materials react to diffuse light depending on the sunlight.

Specular factor

The intensity of shine is important primarily in case of arc surfaces, depending on the sunlight. The colour of shining of the material with specular factor property can be specified here.

6.3.7.4. Camera

Walk speed

It is called walking when we move in the model with the move keys. The speed of walking can be specified here. The measure of this is meter/second.

Run speed

It is running when we move in the model with the move keys, while the 'run' key is pressed and hold. The speed of running can be specified here. The measure of this is meter/second.

Enable camera light

With this option the camera light can be switched off and on. It is recommended to use this option switched on.

Ambient factor

It shows how the materials react to ambient light depending on the camera light.

Diffuse factor

It shows how the materials react to diffuse light depending on the camera light.

Specular factor

The intensity of shine, depending on the camera light is important primarily in case of arc surfaces. The colour of shining of the material with specular factor property can be specified here.

6.3.7.5. Visual effects

Properties that can be set in the Visual effects group are equal with the ones we have already mentioned in chapter Visual effects settings in the 2D window, completed with Hardware mesh handling and Texture quality.

Antialiasing cursor

You can enable cursor antialiasing, which results smoother cursor lines. Cursor lines appear in many cases during the drawing process, for example when drawing a line, a wall or other item.

Antialiasing

Antialiasing can make the lines of the 2D or 3D content smoother. It has the following options:

Off

Only in 2D

Only in 3D

in 2D and 3D

With these options you can turn on or off antialiasing in the corresponding 2D and 3D content windows.

Hardware vertex processing

Hardware vertex processing can be used with video cards with large memory. In case of hardware vertex processing the whole model is stored in the memory of the video card and therefore the result of this is a much faster work.

Texture optimization

Using this setting, the program will apply antialiasing only to the visible content of a window, while the appearance of the content outside the window (which is not visible) is simplified substantially.

FPS limit

FPS stands for frames per second or images/second. When the program detects that it is not possible to keep the limit value, it starts to simplify the representation of the content by texture optimization.

Model optimization

When a given (%) change has been made in the project, the program checks whether the FPS limit can be kept or not. If no, then it switches on the texture optimization automatically to increase the speed.

Texture quality

Here you can specify the representation quality of the materials used by the model in 3D windows. Depending on the selected option the program may override the original texture resolution and represents the materials of the model with poorer quality than the original.

The following options are available:

Low

Medium

High

Maximum

Example



Low



Medium



High



Maximum

6.3.8. Shadows

When you have a hidden-line or coloured or textured model, you can display shadows.



In case of 3D Image window, the Shadow output depends on its property. See chapter 13.3.4. *Shadowing or shading in the 3D Image window.*

Shadowing - Light direction

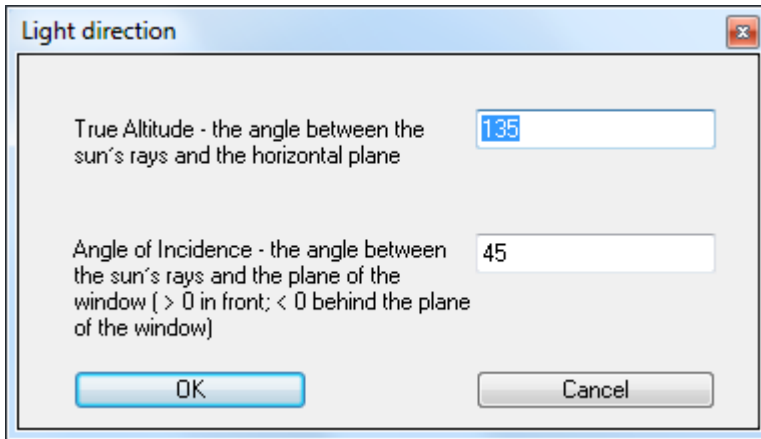
Two types of shadowing are distinguished in architectural design:

Sun shadow

In this case the position of the sun is defined by azimuth and zenith values. The position of the sun is the same as the value set in the Sun settings dialog box. Click on *Set* to specify values.

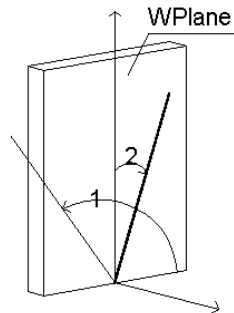
Elevation shadow

In the case of **elevation shadow**, the sunray comes from a very distant point and reaches the building in an angle that you define. Usually this angle is 45° or 135° , depending on whether the light comes from left or right. Click on *OK* to specify values.

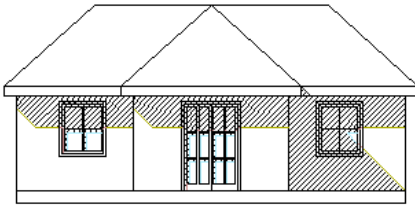


You can define the light source vector with its angle formed with the XY plane (1) and with the angle formed with the current work plane (2).

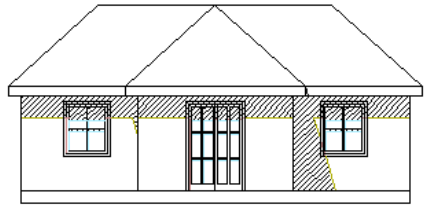
Technical shadow is mainly displayed in the main views.



In these two front views you can observe the difference between the technical shadow and the sun shadow:



Elevation shadow

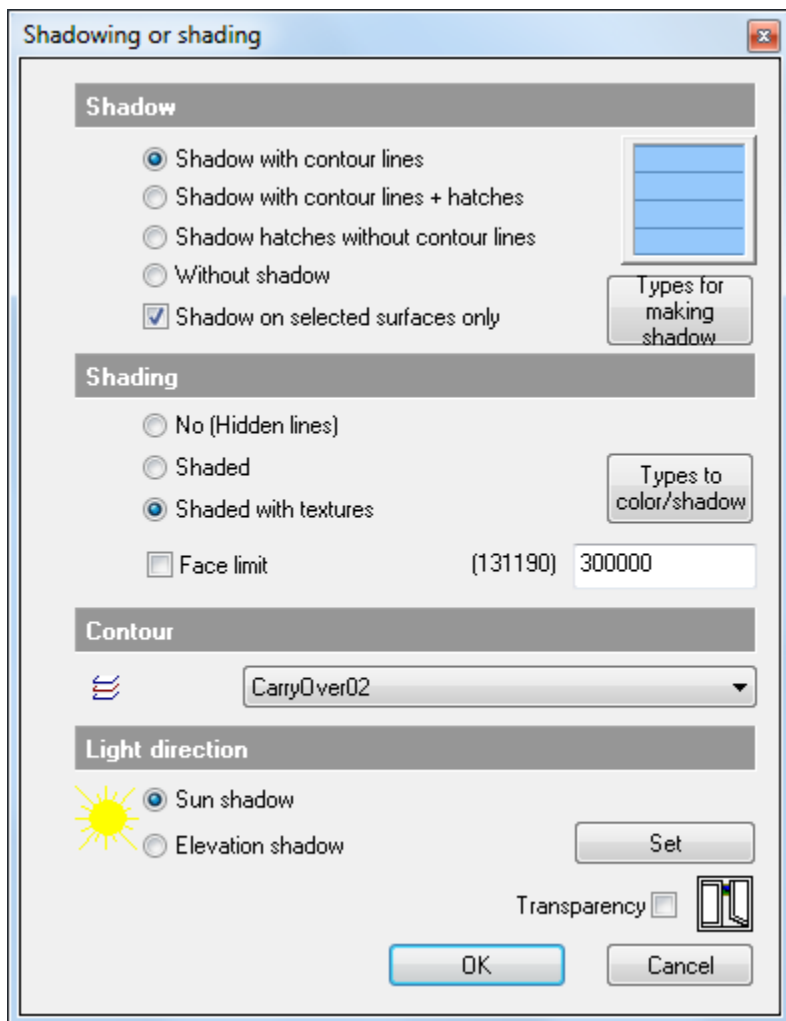


Sun shadow

The models are displayed in hidden-line mode. In both cases contour lines and hatches indicate the shadow, but shading is not added to the models.

Shadow on vector graphics 3D view

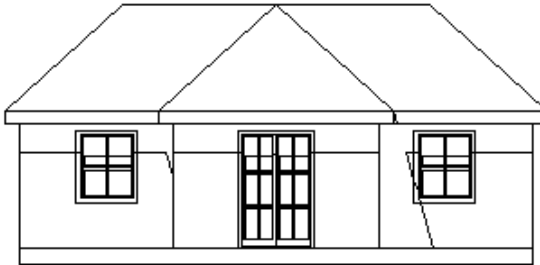
Besides light direction, you can specify how to display the shadow:



The shadow can be displayed *with contour lines* or *with contour lines and hatches*. Click on the icon to set hatch properties.

If you choose *without shadow*, no shadows appear on the model, so you can set a shaded image.

In the previous figure the shadow is made up of contour lines and hatches. Let's compare it with the next figure, where we only displayed the contour of the shadow.

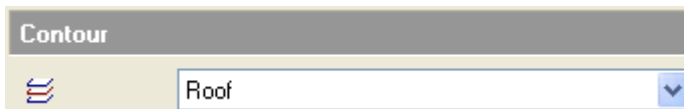


Shadow without hatches

Position of the contour line

Once you decide whether you want the shadow with contour lines or with contour lines and hatching, you can define on which layer to apply the contour lines. This way you can separate the lines from the model. The contour line is always black.

In the hatch general properties dialog box you can specify on which layer to apply hatching.



Shading

In this dialog box you can set the parameters for shading a model. The model can be displayed in hidden-line mode, with material colour or hatched with texture pattern.

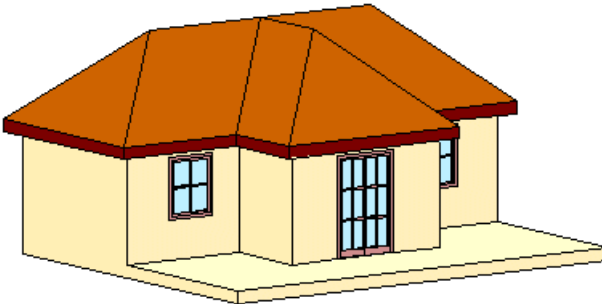


No (Hidden lines)

Displays the model in hidden-line mode.

Material colour

You can display the model with the colours assigned to the materials. If you turn off the shadow (Without shadow) option, you get a shaded image without shadow. The colour is the same as the one assigned to the texture in the Material properties dialog box.

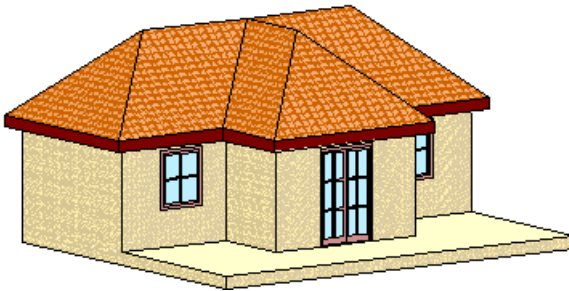
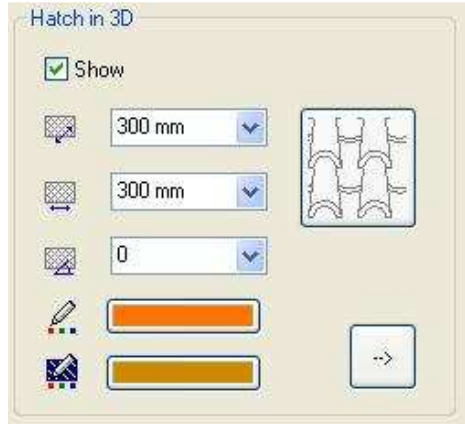


With material colour, without shadow

If you click on the **Types to colour** button, you can give, that on which elements apply the program the colouring. So for example, you can switch off the colouring of objects, which is very time-consuming in the vector graphics 3D window.


With texture pattern and background colour

You can display the model filled up with the hatch assigned to the materials and shaded with the background colour of the hatching. If you turn off the shadow, you get a hatched image without shadow. The colour is the same as the hatch background colour assigned to the texture in the Material properties dialog box.



With texture pattern and background colour



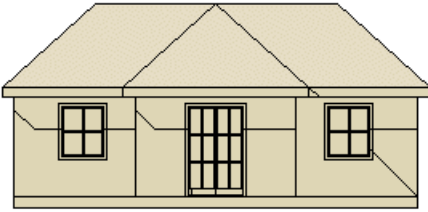
You can also display the shaded model with the **3D view toolbar**  **Hidden lines with hatch** icon, which creates the shaded model or the model hatched with texture pattern depending on the values set.

Transparency

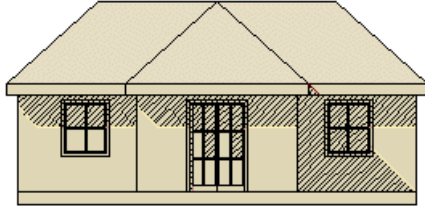
You can set whether the glass surfaces are transparent in the vector graphics image or not.



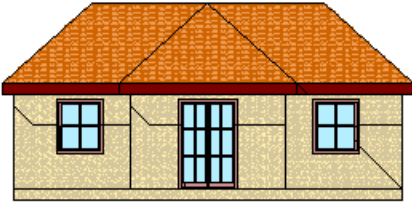
Let's see some examples for technical shadow with different settings:



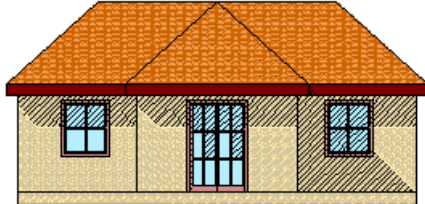
Shadow contour + Material colour



Shadow contour with hatches + Material colour



Shadow contour + Texture pattern



Shadow contour with hatching + Texture pattern



To disable Hidden lines with the hatch command press the **3D view toolbar**



Hidden lines icon.

Face limit

When you want to display a 3D model you can define the number of displayed surfaces. If there are too many surfaces, the number of the displayed surfaces can be decreased, so the display of the model can be optimized.



Face limit

(131190) 30000

In brackets you can see the number of the model's surfaces. We set the initial limit to 30000.

If the model has more surfaces, the difference is ignored.

The algorithm is the following:

in static cases (3D model, rendering), the program examines the size and the distance of the surfaces. It ignores certain surfaces on the basis of the result of this multiplication. This means that nearer, bigger surfaces remain, the smaller, further surfaces are ignored.

In dynamic cases (OpenGL, DirectX) the program only examines the size of the surface.



You can enable Face limit in the *File - Preferences - General - 3D preferences* dialog box.

6.3.9. Heliodon

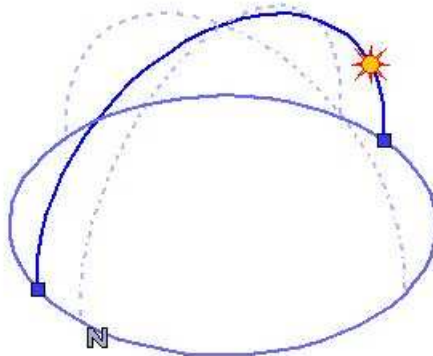
Heliodon is a tool that creates the appropriate geometrical relationship between an architectural scale model and a representation of the sun. By allowing adjustment for solar declination (season), the earth's rotation (time of day), and site location (latitude) a Heliodon can simulate sunlight penetration and shading for any combination of site location and time. The result is a useful representation of solar patterns for clear sky conditions. Heliodon provides an effective tool for the visualization and calculation of solar effects at the window, building, or site scale.

Heliodon tools

You can activate the Heliodon tool on the Sun Setting Toolbar in a 3D window.



The program displays the Heliodon in the centre of the active 3D window. You can switch off the Heliodon with another click on the Sun setting toolbar or with a simple left click on any point of the 3D window except the Heliodon markers.



Heliodon tool

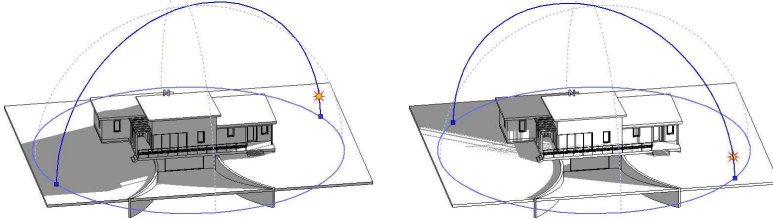
The Heliodon represents the sun position with its azimuth and zenith angle.

Azimuth

An azimuth is an angular measurement in a spherical coordinate system. The vector from an observer (origin) to a point of interest is projected

perpendicularly onto a reference plane; the angle between the projected vector and the reference vector on the reference plane is called the azimuth. See more in <http://en.wikipedia.org/wiki/Azimuth>

You can move the azimuth with the blue dot markers on the Heliodon's flat surface with mouse left click. The model illumination follows the changes and you can see how the building would look at various light conditions.



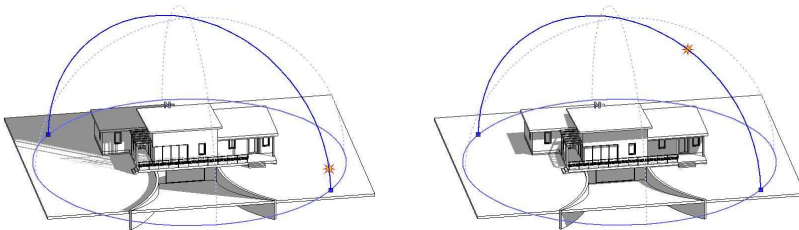
Azimuth movement

Zenith

The zenith is the point in the sky that appears directly above the observer. It helps to describe the location of the Sun

See more in <http://en.wikipedia.org/wiki/Zenith>

You can move the zenith with the small sun marker above the Heliodon's vertical half-circle with mouse left click. The model illumination follows the changes and you can see how the building would look at various light conditions.



Zenith movement

Concentric rings

Two rings represent the North and its perpendicular direction with dotted blue lines. When the designer sets up the right North direction the rings follows the changes. The N (North) sign displays the North direction.

The other ring represents the East-West axis.

6.3.10. Sun settings

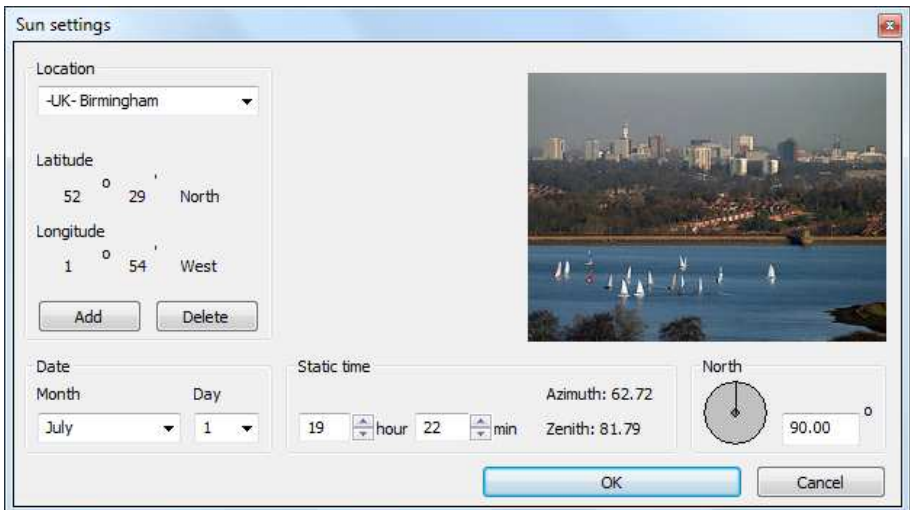
You can open the Sun settings dialog from the *View - View Properties* submenu.

In the dialog box you can set the position of the sun, depending on the geographical position, the date and time.

If you set a value, it appears in the Perspective dialog box. The rendered image is created on the basis of these values.

ARCHLine.XP® automatically displays the longitude and latitude of the selected town, as well as the zenith and azimuth values.

The dialog box contains pictures of the towns.



Location

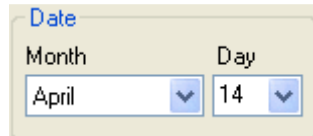
If you select a town from the pull-down menu, the picture and the longitude and latitude values of the town appear.

You can add new locations to the list with **Add** by entering the name, the longitude and latitude values of the town. You can also attach a picture.

To delete a location from the list press **Delete**.

Date

You can set the day and month of the desired sun position.



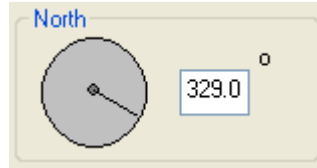
Time

After setting the date, you can set the time of the Sun's position.

If the time you set is during the night, i.e. the sun is under the horizon, the model turns grey to indicate night. At sunrise the model regains full colour.


North

You can define North direction in relation to the horizontal 0 degree. You can set North by entering a new value or by moving the arm. Make sure the North direction set here and the North direction on the floor plan are the same.



If you want to define North graphically, apply the *North direction* command in the View menu / View Properties.

- OK accepts changes and closes the dialog box.

You can start a photorealistic rendering with the  **Rendering** icon to see the changes on a rendered image also.



You can also carry out a shadow analysis. The command can be activated from the *Add-On - Animation* submenu. You can read about Shadow analysis in chapter 13.3.5.

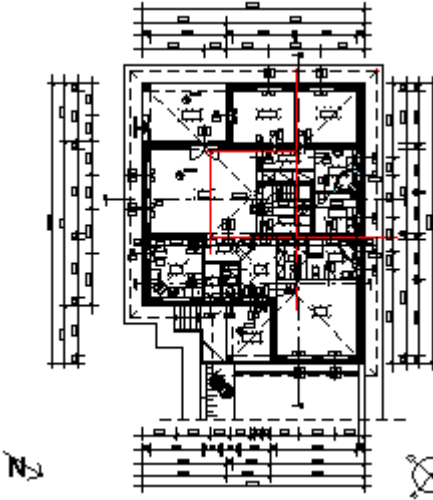
6.3.11. North direction

With this command you can define North graphically.

- Make sure the floor plan window is active.
- Click *North direction*.
The program displays a rubber-band line starting from the middle of the screen.
- Define the endpoint of the line.

The direction of this line indicates North.

The symbol in the bottom left corner of the floor plan window indicates North. If you modify the direction, the symbol follows the changes. This symbol does not show in print.



If you want to specify North with numbers, go to the *Sun position* dialog box.

6.3.12. Show/hide objects

If an object is completely overlaid by other objects in the active 3D window (other objects completely surround it), so none of its edges is visible, the object is not visible and cannot be selected when you project the image. To show hidden objects (or hide them again) apply the following commands of the **Show 3D**:

- ❖ Show solid
- ❖ Hide this object
- ❖ Hide selection
- ❖ Show all solids

You can instruct the program to search and display on the floor plan the architectural element contained in the 3D window:

- ❖ **Show on floor plan**

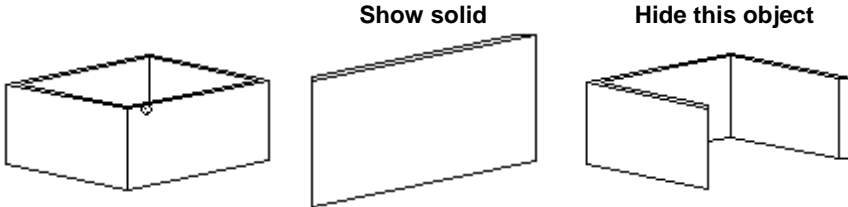
6.3.12.1. Show solid

Displays only the selected solid in the active window, all the other objects remain hidden.

6.3.12.2. Hide this object

Hides the selected solid in the active window.

Hide this object modifies the view only, not the solids.



6.3.12.3. Hide selection

Hides the selected solids in the active window. You can select multiple solids to hide.

Hide selection modifies the view only, not the solids.

6.3.12.4. Show all solids

Displays all solids in the active window.

6.3.12.5. Show on floor plan



Right-click on an architectural element in the 3D window, and in the shortcut menu choose the *Show on floor plan* command. The appropriate floor becomes active; in the centre of the window the program displays the selected element on the floor plan in optimal size. This command is useful in case of large drawings.

6.3.13. Walk and Fly

You can represent the 3D content of your projects in higher quality with the help of the *View - Walk and Fly* commands. This function will help you, when you would like to show the different details of the model in real.

You can do it in that way, as you walk in the building in the reality. You can apply the commands excellently in course of work, because the different settings of perspective views and design are become simple.

You can edit the different 3D elements, as if you stand in the model and work in the virtual space.

You can start the *Walk and Fly* commands with clicking on the *View* -  *Walk* and  *Fly* icon.

It works only in that case if you activate the 3D DirectX window.

6.3.13.1. Terminology

The difference between the *Walk* and *Fly* is the moving method in the virtual model.

Walk

In course of walk – like in the reality – the viewpoint height of the spectator doesn't change. When you move in the model with the help of walk, then it moves the viewpoint (the camera) on a fixed horizontal plane.

Fly



In course of fly the viewpoint height of the spectator can change as if it flies the model. This function can be important, when you need higher freedom of movement from *Walk*. You can reach down and up different levels (for example movement on the step) owing to the freedom open space coordination independently from the size of the model.

Because of the things just mentioned we have to talk about the camera. The camera is that point in the open space from where we look at the part of the model.

The observed point and the camera determine together the direction in which the spectator looks.

The field of view is also important, because you might need wider visual angle in viewing narrow spaces to see the proper part of the model.

6.3.13.2. Handling

You can start the *Walk and Fly* commands by clicking on the *View* -  *Walk* and  *Fly* icon.

When you use the *Walk* or *Fly* commands, the mouse cursor is disappeared and you can move in the space by the help of mouse and the keyboard. You can change the direction of view with the mouse, while you can move in the space with the proper button of keyboard. It is really similar to the movement in the reality, because you can move and look around at the same time. It is easier to understand if you imagine the mouse as the head of the spectator, and the keyboard as the body of the spectator.

You can interrupt the *Walk* or *Fly* command by:

- ❖ Pressing down **ESC**
- ❖ Left click
- ❖ Right click
- ❖ Function buttons

Using the mouse

In course of using Walk and Fly functions the mouse determines the view and walk direction. You just have to move the mouse there is no effect of the click. When you draw the mouse to yourself, then the spectator will look down otherwise upward. The moving of mouse controls the dimension of this. If you would like to look right or left, move your mouse to the right or left.

Start a command, move your mouse and study the effect.

Using the keyboard

You can use two sorts of keyboard layout to the keyboard movement.



1. Layout	2. Layout	Effect
Cursor up	W	Move forward
Cursor down	S	Move backward
Cursor left	A	Move left
Cursor right	D	Move right
Space	Page up	Elevate viewpoint
C	Page down	Lower viewpoint
Shift	Shift	Run

You can interrupt the *Walk* or *Fly* command by:

- ❖ Pressing down **ESC**
- ❖ Left click
- ❖ Right click
- ❖ Function buttons

Move in open space

It is practical to learn the movement in open space to move efficiently in it. For this you need the mouse and the keyboard at the same time.

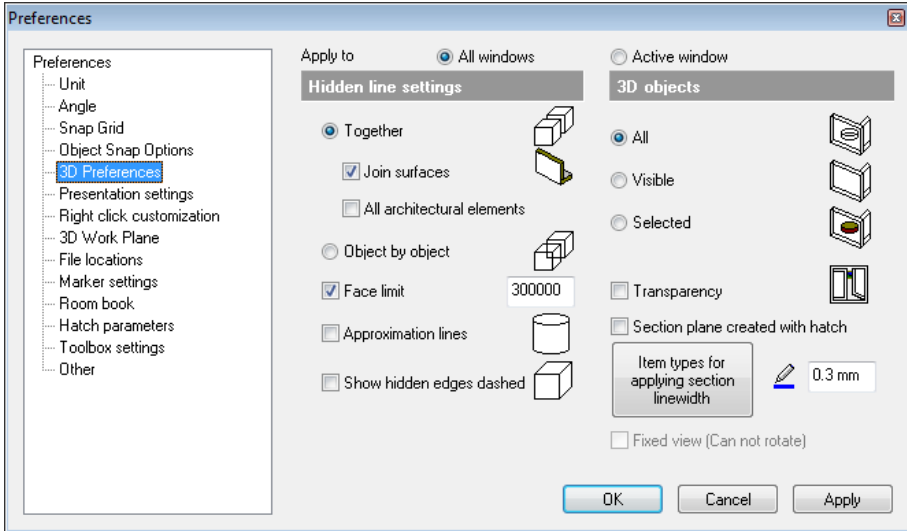
- Put one of your hands on directions button of the keyboard, and the other one on the mouse.
- Start the  *Walk* and  *Fly* command.

- After this, hold down the *Move forward* button, and release it when you would like to stop. Move the mouse to look around. Repeat this as many times as you wish.

You will notice that it will move to the direction you are looking at. You can combine the movement keys as you wish according to the simple example mentioned previously, so you have a possibility to complex movement in the open space.

6.3.14. Further settings of showing 3D solids

In the **File - Preferences - General - 3D preferences** dialog box you can manage the parameters of showing 3D solids.



Apply to:

Indicate whether you want to apply the settings to all windows or only to the active window.

All windows

The selected properties are applied in all windows.

Active window

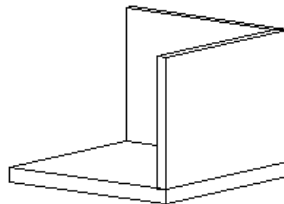
The selected properties are only applied in the active windows.

Hidden lines:

Real



Displays all solids with hidden lines, as seen in reality.

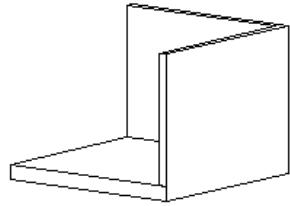


Join surfaces

When you display the objects as seen in reality, *Join surfaces* shows or hides the common edges of different surfaces.



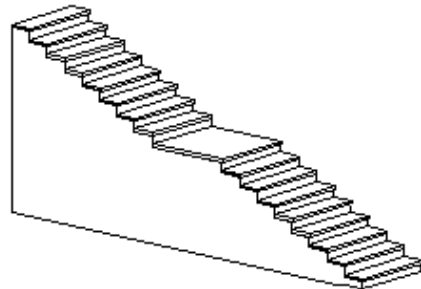
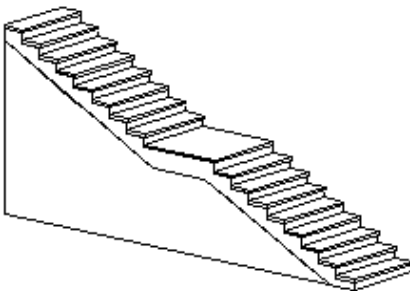
If you activate the **Join surfaces** option, the common edges between **wall and wall**, **wall and slab** or **roof and roof** are displayed in hidden-line mode, provided that the material of the joining surfaces is the same.



Within the *Join surfaces* command the *All architectural elements* option means that in the case of the same material the staircase under the wall is joined to the wall.



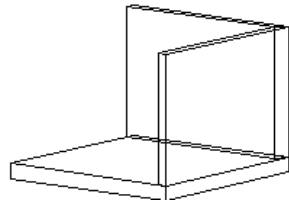
In all other cases the edges are shown



Show hidden object



It displays 3D solids individually in hidden-line mode, i.e. as opposed to wireframe mode, not all edges are visible, only the ones hidden by other objects.



Face limit

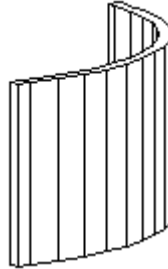
When you want to display a 3D model you can define the number of displayed surfaces. If there are too many surfaces, the number of the displayed surfaces can be decreased, so the display of the model can be optimized.



Face limit can be activated on the 3D Preferences page of the **File menu – Preferences – General** dialog. For description see Chapter 6.3.7. *Shadowing or shading.*

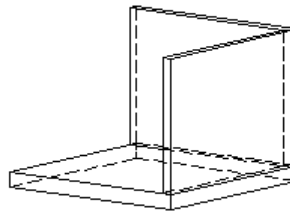
Approximation lines

Displays the approximation lines of solids.






Show hidden edges dashed

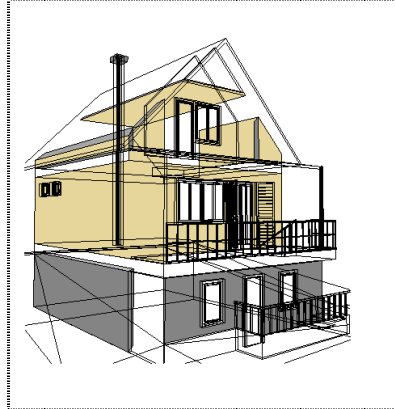
Displays hidden edges with dashed lines.



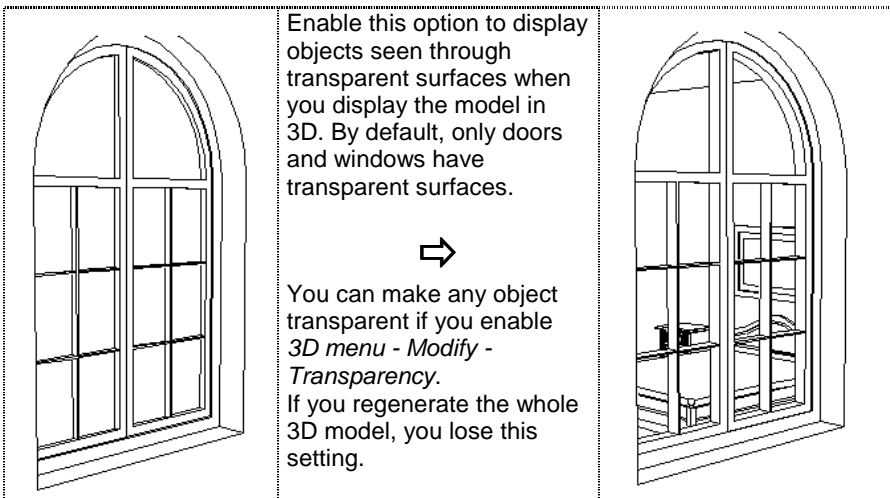
Selection

You can define on which solids to apply the selected command, e.g. **Hidden-line display**. The model can be very impressive in colour display, if you show each object differently, i.e. you display certain parts of the model with hidden lines, other parts with colour.

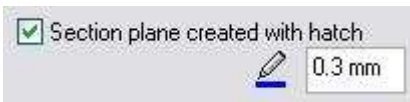
- All**  Applies the selected parameters to all solids.
- Visible**  Applies the selected parameters to visible solids.
- Selected**  Applies the selected parameters to the selected solids.



Transparency




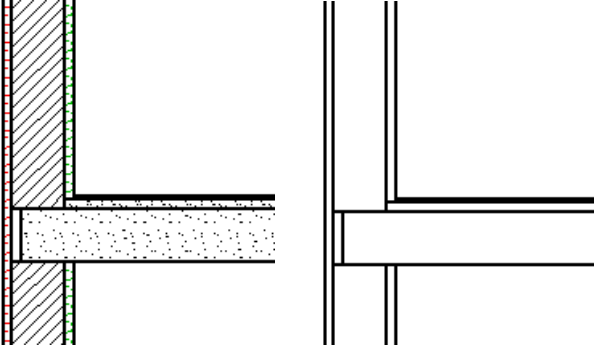
Hatch section plane(s)



Enable this option to display section planes with hatches. For the contour of section planes the program uses the line width set in the dialog box.



You can also activate the commands from the **Edit toolbar – Define section**  dialog box.



The hatch applied to the model is independent from the hatch applied to the sections. It can be done in Drawing 3D only with colour or with hatch corresponding to the texture, depending on the options activated in the Navigation bar **Shadowing or shading** dialog box.

6.4. Show 2D

With show 2D you can hide selected elements or element type in the floor plan window. These elements appear in the 3D window, independent of the fact whether they are visible on the floor plan or not.

Elements hidden on the floor plan do not show in print.

6.4.1. Hide objects

Hides the selected elements, so that these are not visible in the floor plan window.

- Select the elements in the floor plan window you want to hide.

6.4.2. Show classes

Activate the options to display element classes on the floor plan, or tick the **All** option, if you want to display all classes. Naturally, disabled element classes remain hidden.

6.5. Section

Overview - Dynamic section 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 vector graphics shadowing and with vector graphics hatching but it requires longer generation time. Vector graphic 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 section 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 *section 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 (vector graphics 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

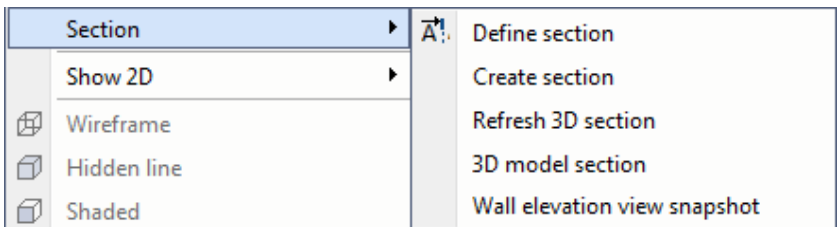
You have the possibility to cut a model with a stepped section line and display the result on a rendered image. This command really cut the 3D model.

Dynamic cutting plane

Applying the dynamic cutting plane in a 3D 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.

6.5.1. 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 can 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 section view of the model in accordance with the section line in a new section window.

In the section window the program refreshes the section 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 section 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 section view, the name of the window will be generated automatically (Section1, Section 2 etc.). In the *Project navigator* dialog you can rename 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 *Project navigator* 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.

6.5.1.1. Defining a section

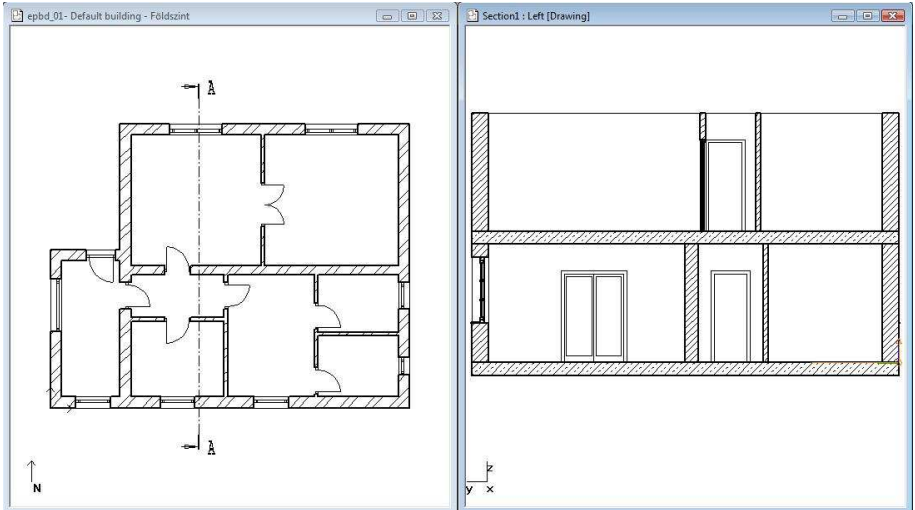
Activate the floor plan. To create a section, follow the steps below:

- Click *View menu - Section – Define section* or *Edit toolbar -  Define section* icon.
- The Section properties dialog appears. Specify the properties of the section.
- Set the start and the end point of the section line on the floor plan.
- Click on the side of section line where the section 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 6.5.1.2. *Section properties settings*, 6.5.1.3. *Defining the section line*, 6.5.1.4. *Creating sections* for the details.

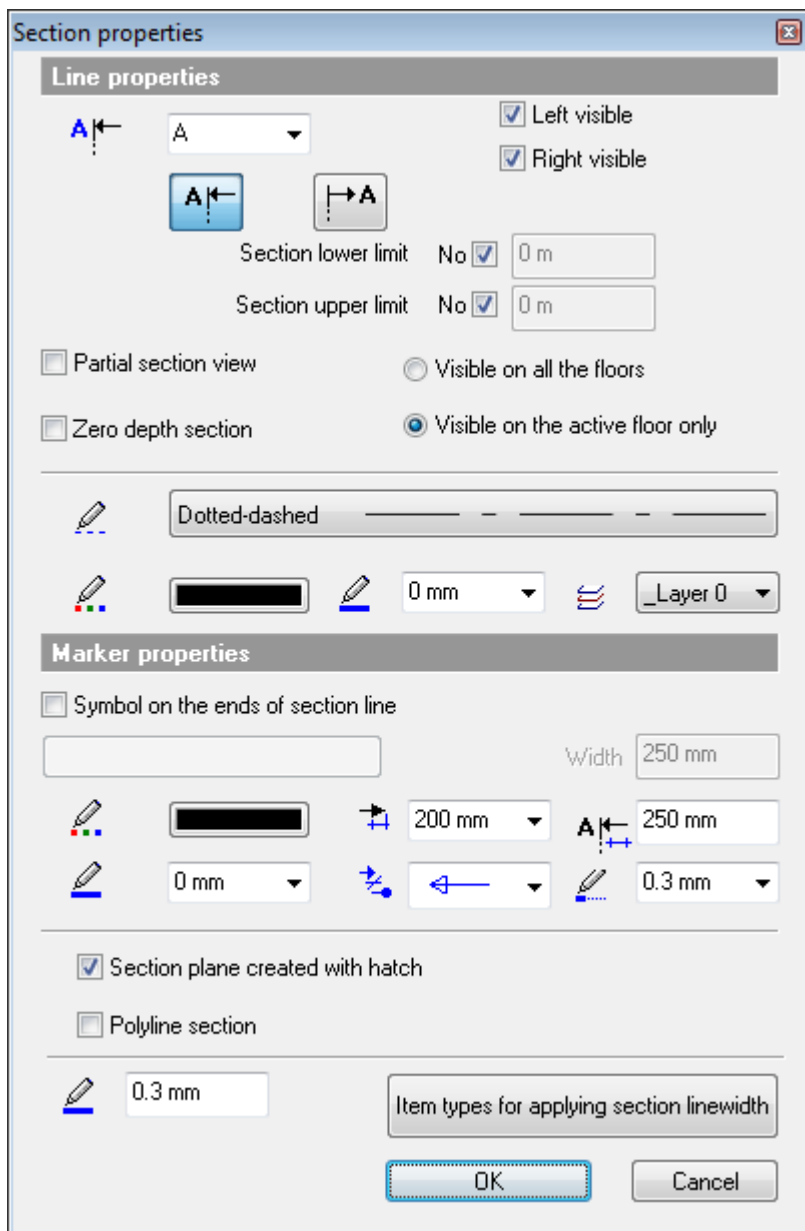


Besides the appropriate setting of view properties in the 3D window (right view, front view etc.), the section view is also capable of creating façade view. In that case place the section line outside of the building and set the proper view direction.

6.5.1.2. 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 section view.

You can define the section properties in the dialog:



Line properties

Set line properties:

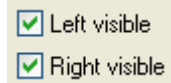
❖ the section's letter symbol:



❖ position of letter symbol:



❖ visibility of letter symbol:



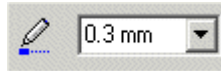
❖ the lower/upper limit of section: you can disable this option, or you can set a value

❖ colour of section line

❖ type of section line

❖ width of section line

❖ width of marker line:



Marker properties

Set marker properties:

❖ colour

❖ line width

❖ length of marker line

❖ size of marker

❖ type of marker

Hatching section plane

When you generate a section 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 **Section plane created with hatch** option.

You can also set the line width of the contour line applied to cross-sectional cutting planes.



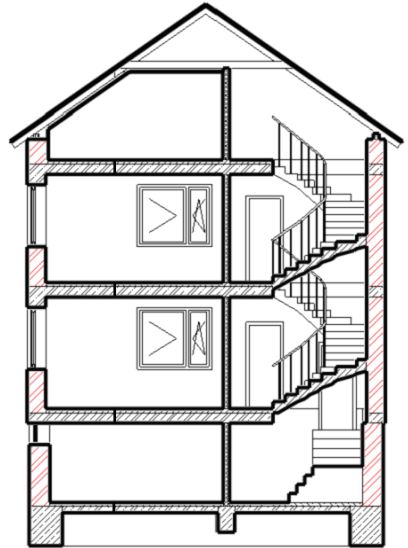
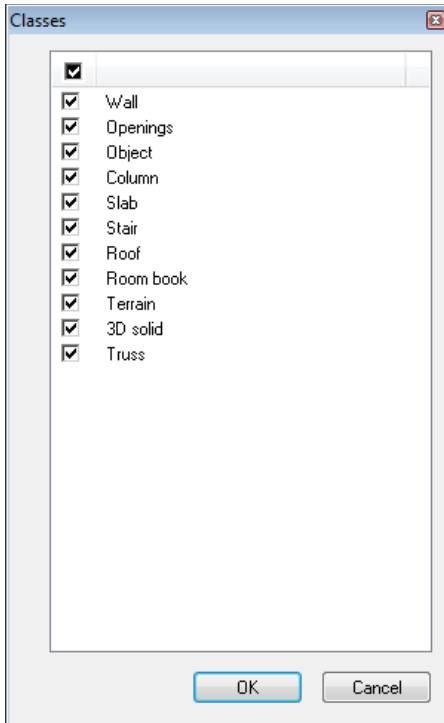
The **Section plane created with hatch** option and the hatch line thickness can be found in the *File - Preferences - General - 3D preferences* dialog box also.

Section properties – Item types for applying section line width

Using the section tool there is the possibility to set different line thickness based on the element type that was intersected by the section plane.

This possibility gives you the ability to visualize main structural elements and other elements with different conditions.

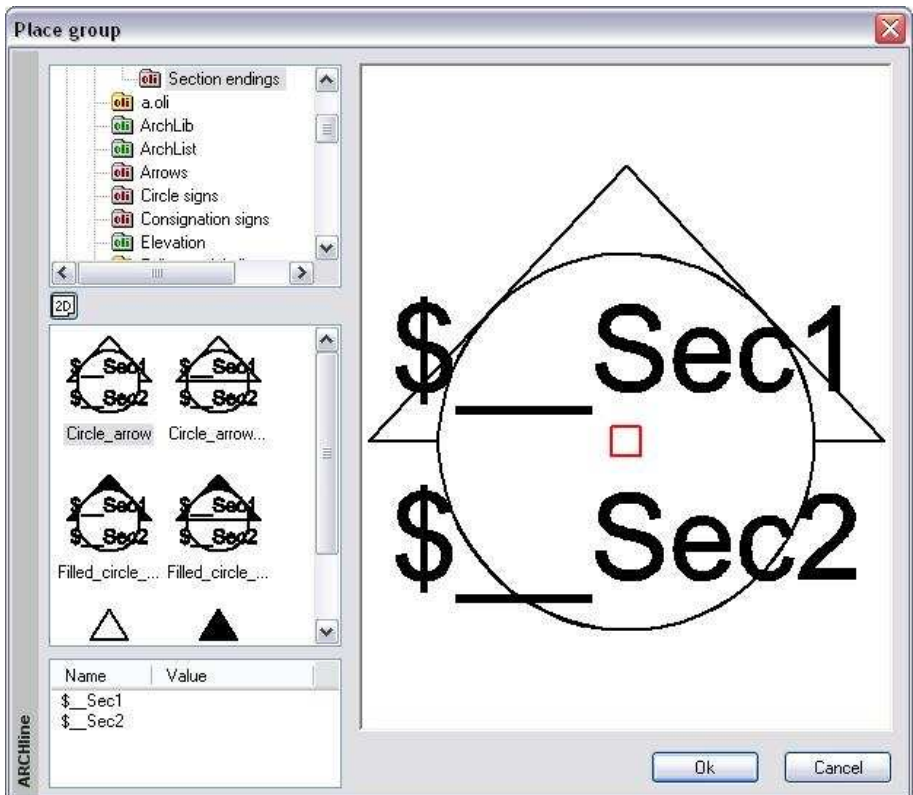
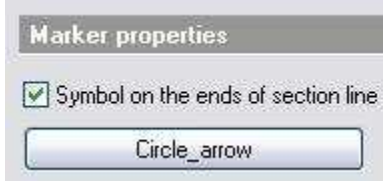
The setting can be found in the Section properties dialog window.

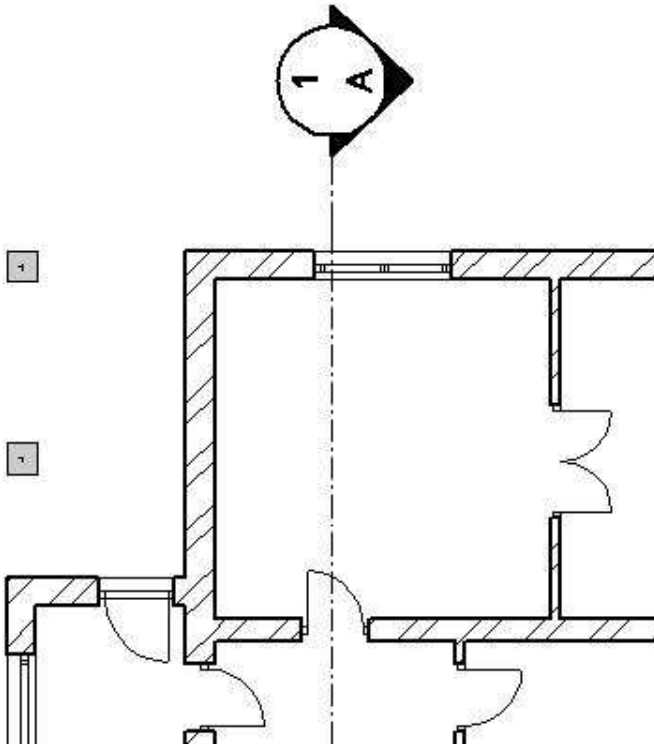


Section symbols

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.





6.5.1.3. 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 polyline.

Line section

- Specify the two end points of the section line.

Polyline section

- Define section line with a chain of lines and arcs. You can break the section line.
- **Enter** close the section line.
- To define the direction of the section view, click on the side of the section line from which you observe the model. The program places the markers on this side of the sectioning line.

After the definition of the section line, the program offers the creation of it. See 2.1.3.chapter Creating sections.

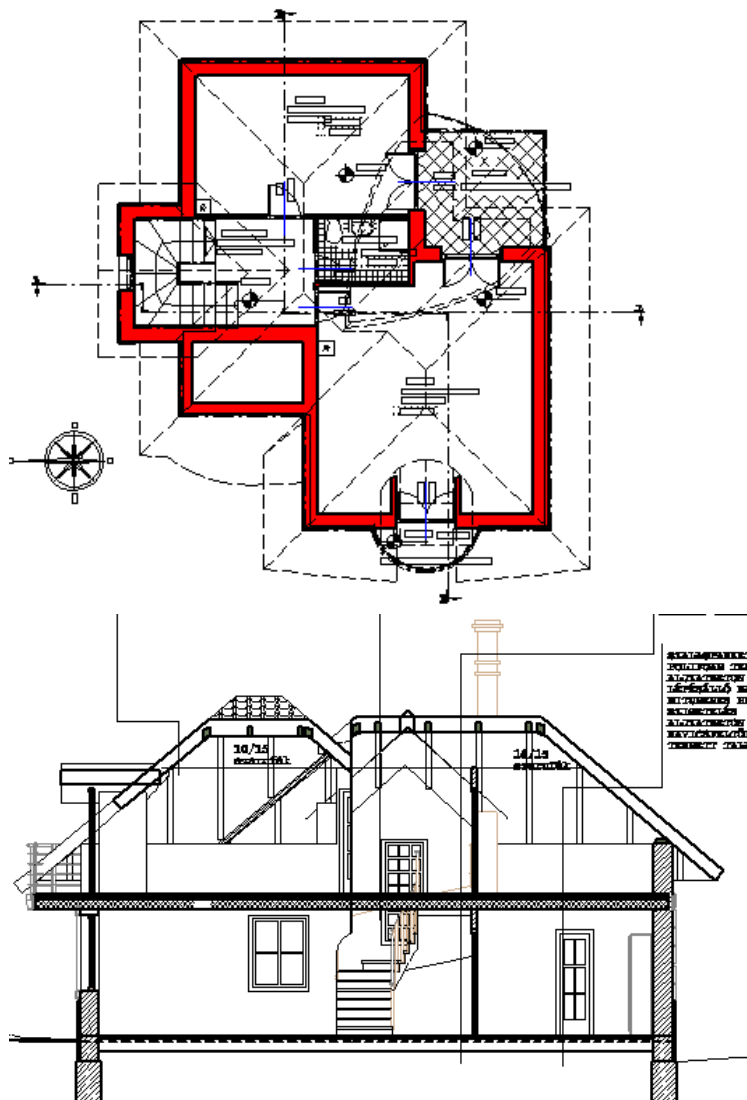
6.5.1.4. Creating sections

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 section* command.
The program creates the section 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 section 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 create the section with the **Section shortcut menu – Create** command.

6.5.1.5. 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. When using this setting, you can use

View toolbar –  *Hidden lines* or the *Section – Refresh* 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 section 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.

6.5.1.6. 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.

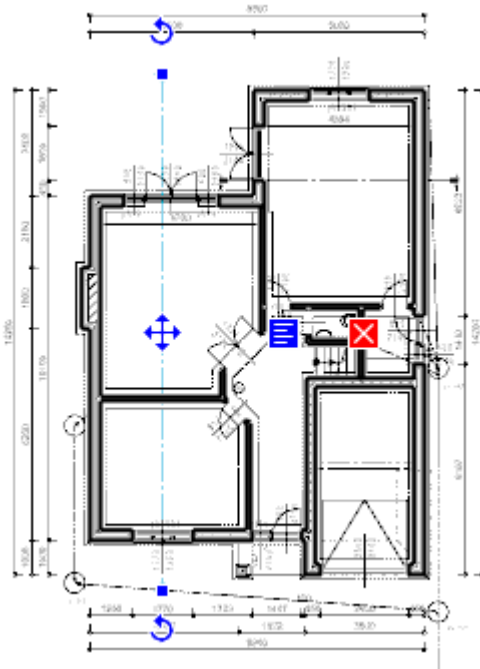
Changing the position

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:

Markers appear on the section line. With the help of these markers the section line can be moved, rotated or mirrored.

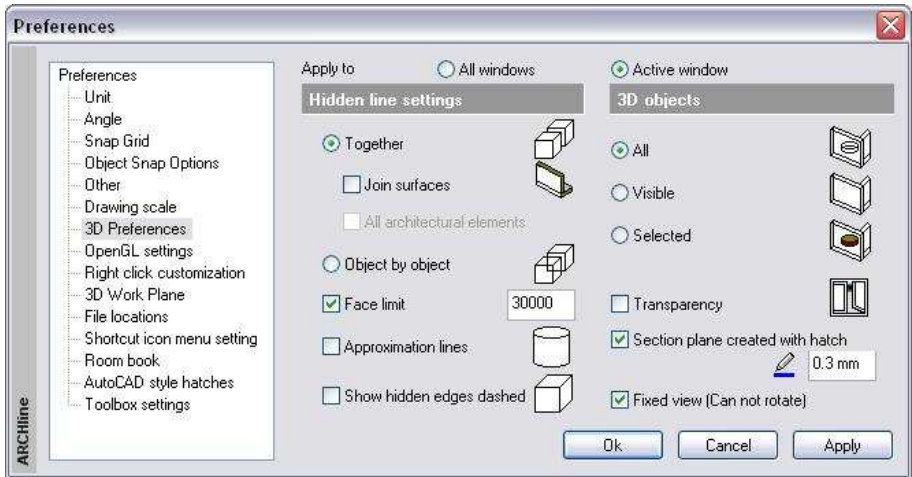
Mirroring means the changing of the viewing direction.



6.5.1.7. Fixed view of a section window

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

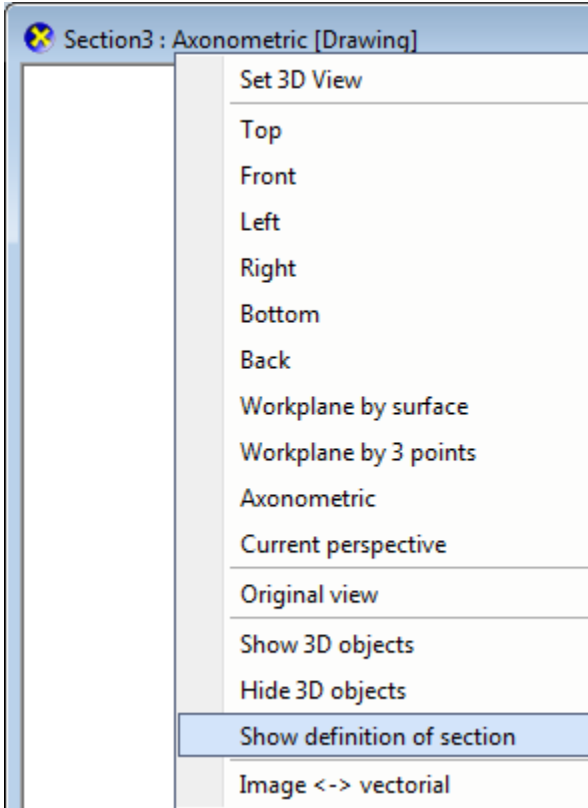
- Activate the 3D section window.
- Click the Active window button in the *File menu – Preferences – General – 3D Preferences* dialog.
- Switch on the *Fixed view (Cannot rotate)* option.



6.5.1.8. 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.



6.5.2. 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.

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 drawing windows as the number of section views!

We recommend you to detail the section views in these 2D windows.

Copying the content of section view into a 2D window

- Create a new window with the *Windows 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 by mouse click or keyboard input. 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, detail 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 drawing 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.

6.5.3. Stepped section in a 3D section window

With the *Section – Create section* 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:

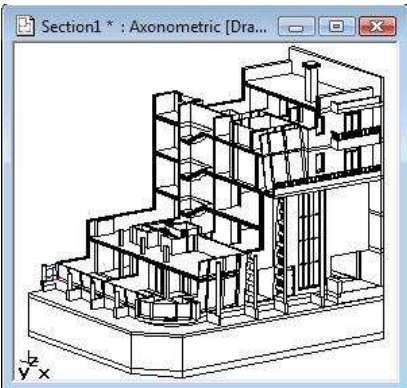
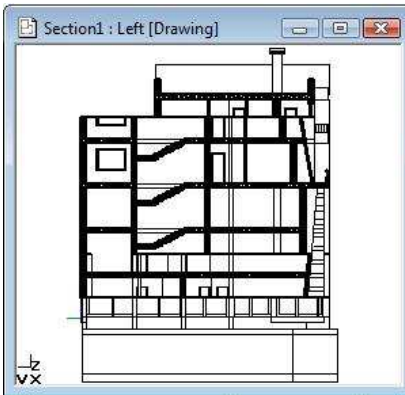
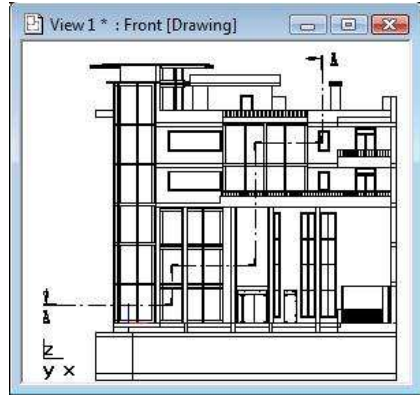
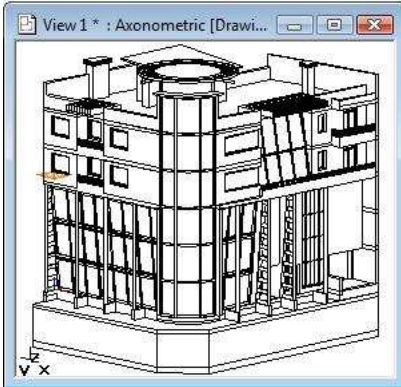
- Create a section view of the model, e.g. front view in a 3D view (drawing) window.
- Click  Define section.
- Draw a section line in the 3D view window and define the direction of the section view.
- Allow the program to create the section or create it later by selecting the section line.

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, and

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. 3D image view and rendering still displays the whole model.

Advantage:

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



6.5.4. 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:

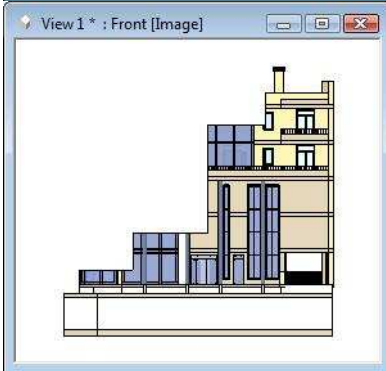
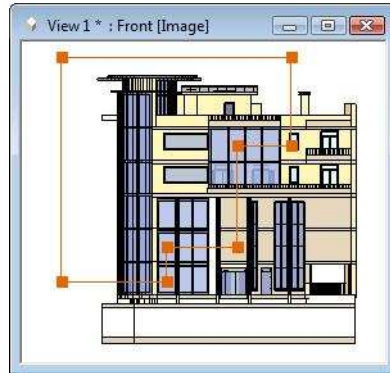
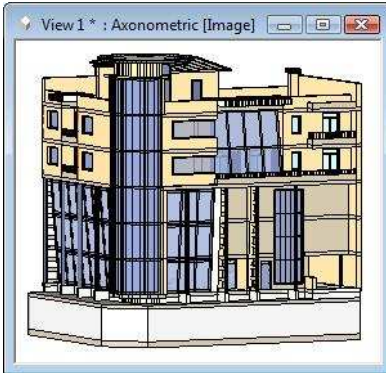
- Create a 3D view of the model in a 3D view (Image) window, for example.
- Select *View menu - Section - 3D model section* command.
- Select the **Polygon option** from the Profile definition tools appearing on the left side.
- Draw the stepped section line with the polygon. Close the profile.
- Click on the part of the solid, which you will keep after cutting.

- Rotate the model in the window and the stepped section will appear.

The program cuts the model in the 3D view window. 3D image 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 again.

Advantage:

As you cut the real 3D model, you can also create a photorealistic picture of the stepped 3D section of the model.



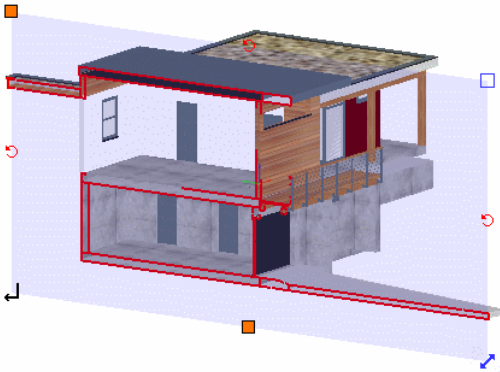


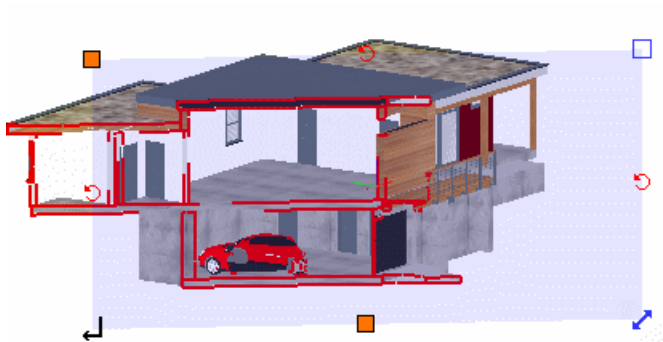
6.5.5. Dynamic section plane

Dynamic section plane command allows you to view any cross-section of the 3D model. It slices the model with an invisible (optionally angled) plane, so you can only see the content of one side of it.

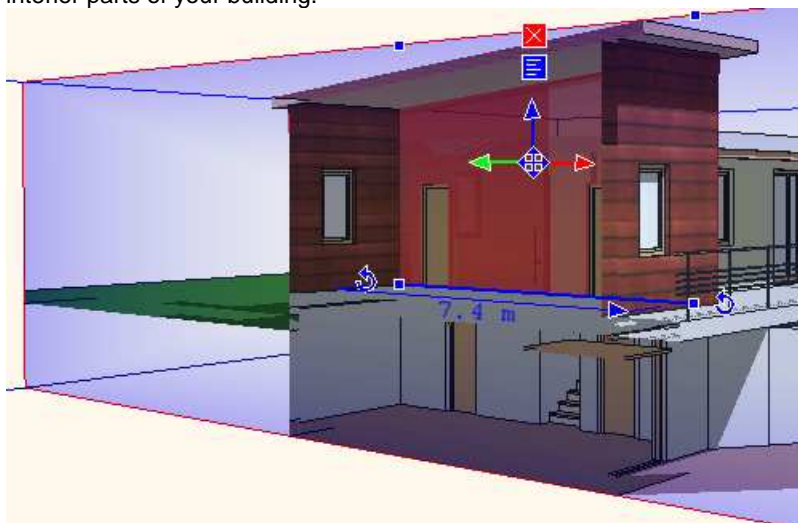
To use the command you have to work in a 3D window (image). You can use this function both in axonometric and perspective views.

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.






There is the possibility to “click through” the section plane. This will let you edit and change elements even in a dynamic section presentation mode. This might be useful when you work on axonometric and you want to edit interior parts of your building.



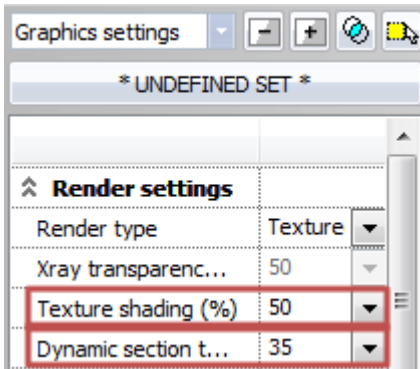
Defining a section

Create your 3D model in a 3D Image window and activate this window.

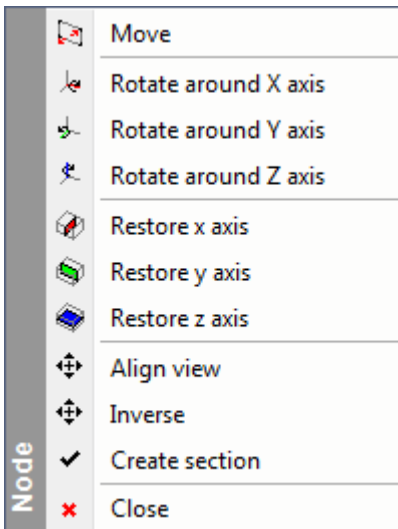
Click  *Define section* on the Edit toolbar.

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

There are two options in the 3D Graphics settings to change the texture shading and the transparency of the dynamic 3D section plane.



Markers appear in the corners of the dynamic section plane. Click on these markers to see the dynamic section marker menu:



Move: With this command you can shift the section plane to a direction defined by a normal vector perpendicular to the section plane.

Rotate: With these commands the section plane can be rotated around horizontal and vertical axes.

Restore: With these commands you can restore the default position of the section plane.

Align view: With this command you can set the view to be parallel to the section plane.

Inverse: This command inverts the section.

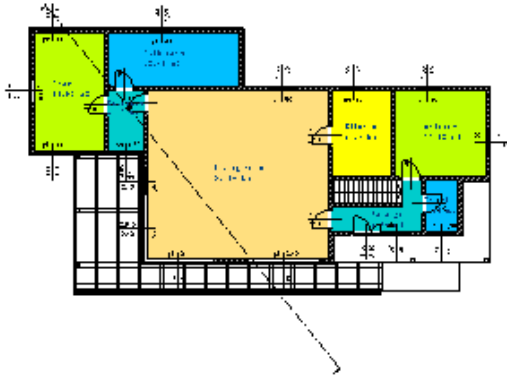
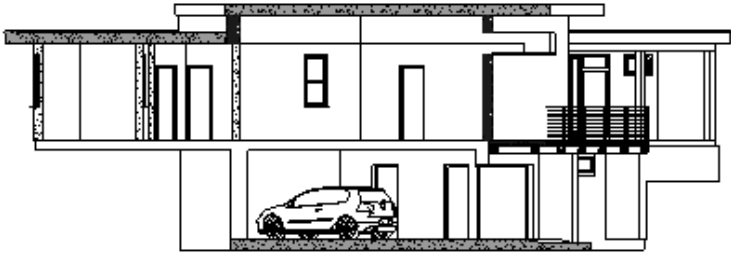
Create section: With the help of this command you can create a dynamic architectural section.

Close: This command closes the dynamic section tool. The section plane disappears and you can see the whole actual model again.

Limitations

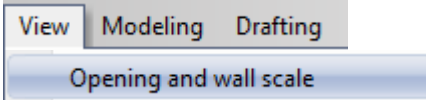
Be aware of the following limitations when you work with dynamic 3D section:

- ❖ 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 centre line of the section plane projected on the floor plan.



6.6. Opening and wall scale factor

The View menu contains the following command to display the symbol of doors and windows on the floor plan with different scale factors:

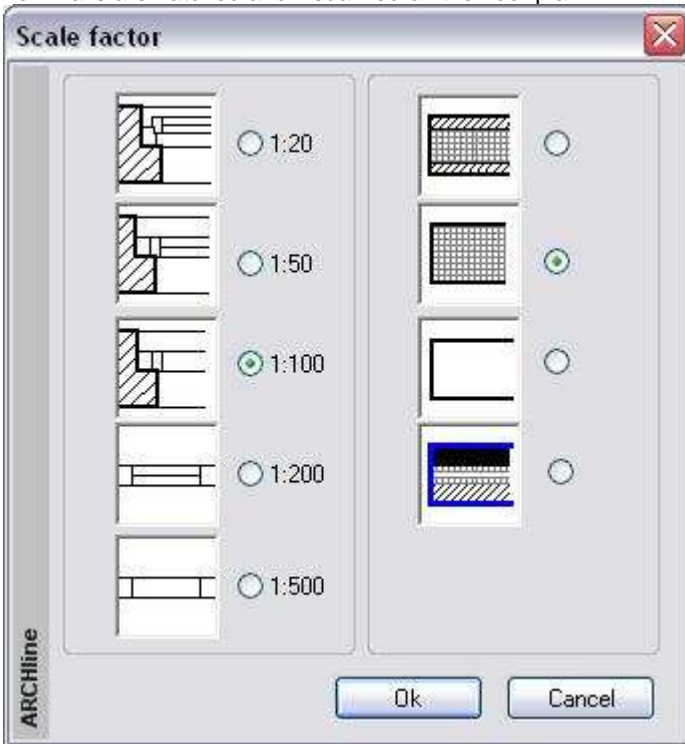


You can specify how walls are visualized independent from the scale factor of the whole drawing.

The abovementioned independence means that e.g. you print your drawing in 1:100 scale, while you set 1:50 for the scale of doors and windows, so these appear on the plan in more detail.

In the dialog box you can set:

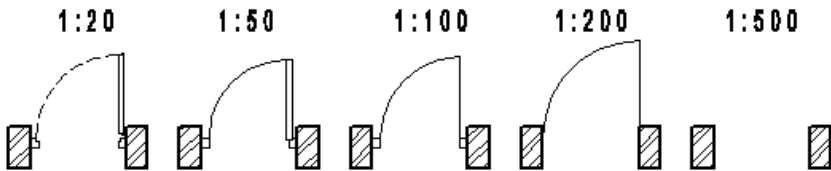
- the scale factor of doors and windows,
- how walls are hatched and visualized on the floor plan.



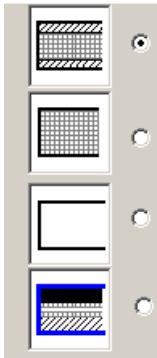
I) Scale factor of doors and windows:

Doors and windows have a standard form of display in all scales. Whichever scale you apply to doors and windows, it does not affect their physical size, only the form of display.

ARCHLine.XP® offers 5 scale factors to display doors and windows (1:20, 1:50, 1:100, 1:200, and 1:500).



II) Wall display

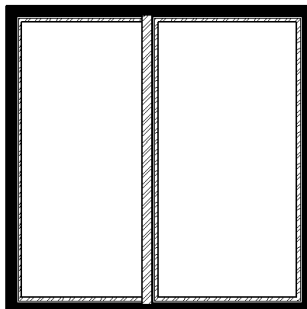


Walls are displayed with all their layers.

Walls are displayed with the hatch applied to the *displayed layer*.

Walls are displayed without layers and hatching.

Independent of the hatching applied to the wall, the outside layer of the building's outside walls are hatched black, as it is displayed in the figure.



6.7. Hand-sketching

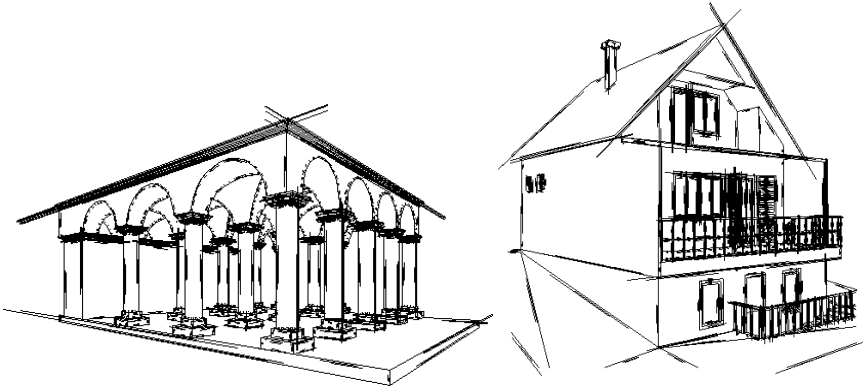
Activate the **File – Preferences – Hand sketch style** command to display the drawing hand-sketched. The quality of the freehand drawing depends on the parameters you set.



The commands are not valid to 3D image windows.

6.7.1. Assign to all

Assigns freehand-style to the whole active drawing.



To restore the previous style of the drawing, click on **Assign to all** again.

6.7.2. Assign

Assigns freehand-style to a group of drawings. For instance, you can select the perspective drawing (which is a group) from other drawings on the plot layout, and you can assign freehand-style to it. Naturally, the floor plan is displayed in normal mode.

- Select a group to which you want to assign this style.
- Select other groups, or
Enter to complete the command.

6.7.3. Delete

Deletes freehand-style from the selected areas of the active drawing.

- Select a group to delete freehand-style from.
- Select other such groups, or
Enter to complete the command.

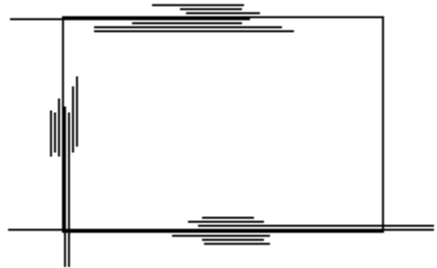
6.7.4. Parameters

The display of freehand drawings depends on the parameters set in the dialog box.

You can modify the following values:

- ❖ the **number of iterations**, which defines line width, and
- ❖ the **divider**, which defines the length of lines.

Try different values and choose the one you find best.



Default

Sets the values back to default.

Set as default

The values you set become default settings.

- **Ok** The program applies the values you set to the existing and future freehand drawings.

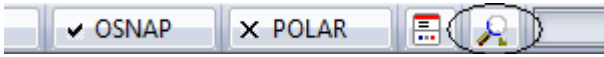
6.8. Magnifier tool

Magnifier tool can be used in any design situation, when a fine mouse movement is needed to define a specific point. Using the Magnifier, you don't have to change the actual view, because when you switch Magnifier on, you are able to zoom inside the magnifier borders.

During the use of Magnifier tool you can start and run any other design tool.

Using the Magnifier

You can find the Magnifier tool at the bottom part of the interface of ARCHLine.XP on the Status bar or in the View menu. Click on the icon to switch it on/off.



When you switch the Magnifier on, you can move your mouse over the active drawing. You can see the borders of Magnifier.



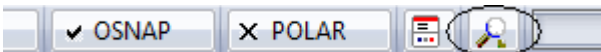
Use the wheel on your mouse to zoom in inside the borders of the Magnifier. This way you can enlarge the area inside the borders. You can see the actual Magnification value at the left top corner of the Magnifier's rectangle.



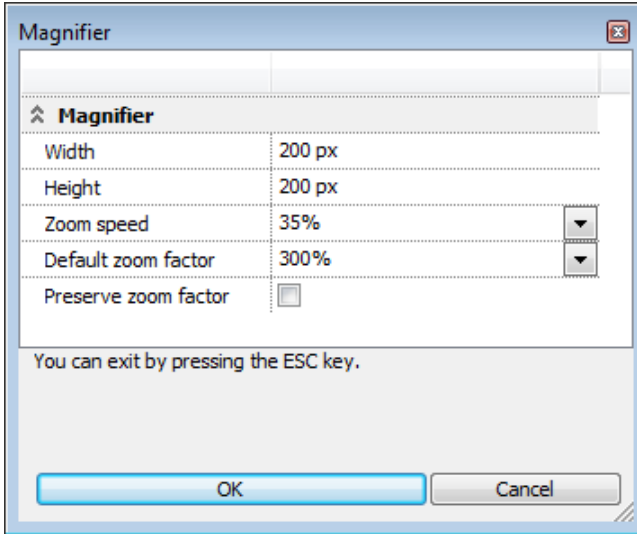
To exit Magnifier, please push the Magnifier icon again on the Status bar of ARCHLine.XP, or push the ESC key on your keyboard.

Magnifier settings

You can change the settings for the Magnifier tool by right-clicking on the Magnifier icon on the Status bar of ARCHLine.XP.



You will see the following dialog.



Width

You can set the width of the border of the Magnifier rectangle in pixels.

Height

You can set the height of the border of the Magnifier rectangle in pixels.

Zoom speed

You can change the magnification step, which will be used when you scroll the mouse wheel.

Default zoom factor

By setting the Default zoom factor you can define the starting value of Magnifier, which you will see when you activate the Magnifier tool.

Preserve zoom factor

By setting the Preserve zoom factor, the software will remember the last used zoom factor, when you exit the Magnifier. Next time when you start Magnifier the software will start with the preserved value, instead of the default zoom factor.

7. Selection

General

To apply most editing commands, it is necessary to select drawing elements. The set of the selected drawing elements can be expanded or restricted. The selected elements appear in highlighted colour. ARCHLine.XP[®] offers two methods for most editing commands:

- ❖ According to the first method, you must select an element first and then specify the command to be executed on it.
- ❖ When using the other method, you must specify the command first and then select the element the command is executed on.

Choose the method that fits your needs the best.

You can also select an element in different ways:

- ❖ Clicking on the element with the mouse, or selecting by window (selection rectangle).
- ❖ By using the Selection menu.

7.1. Selection with the mouse

As described in Chapter on *ARCHLine.XP[®] Interface - 2.1 Mouse*, elements can be selected by clicking with the left mouse button on an element, or a selection rectangle can be defined with the mouse. In the previous chapter we also described that you can apply an editing command in two different ways. Let's see the first method:

I. First choose the element then an editing command.

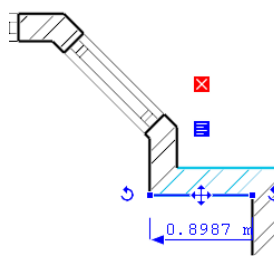
When the mouse pointer is an arrow shape, the elements can be selected as follows.

II. Activate an editing command then select the elements you want the command to be executed on.

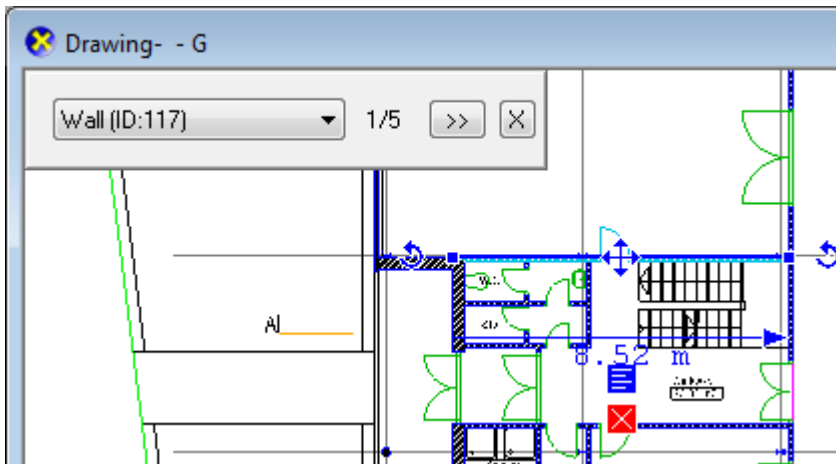
With this method you can select elements in a similar way to the previous method, with the following difference: The selection must be completed with the Enter key

7.1.1. Selecting one element

- When the cursor is in arrow shape (press the ESC button to get it) you can select an element with the mouse click on it.
The selected element changes the colour to the selection colour.

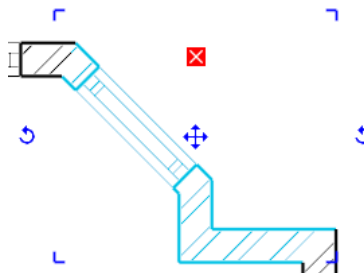


Note: If there are multiple elements at a certain click point, the quick selection menu pops up helping to choose the proper element.




7.1.2. Selecting more elements

- While pressing the **SHIFT** button more elements can be added to the selection.
- Clicking on an element, it is added to the selection.
- ❖ The selected elements change their colour to the selection colour.
- ❖ The elements selected at once only have a *limited set of markers*.



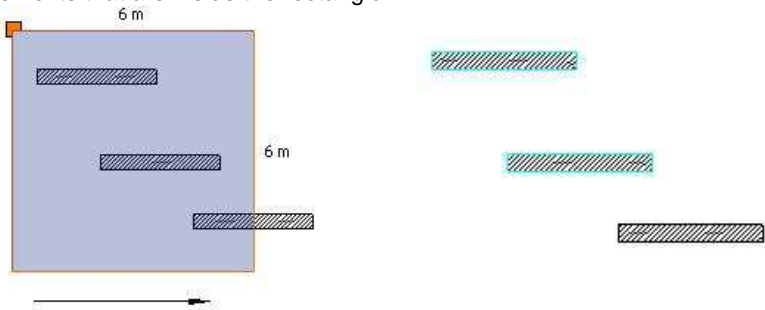
7.1.3. Rectangle selection

When the cursor is in **Arrow** shape , (that means the program is not in active command), there is the possibility to define a selection rectangle. If you click on an empty area of the drawing with the left button of the mouse, you can move the cursor and click again. The program selects the elements that are inside the rectangle. However it is not all the same which direction the cursor is moved.

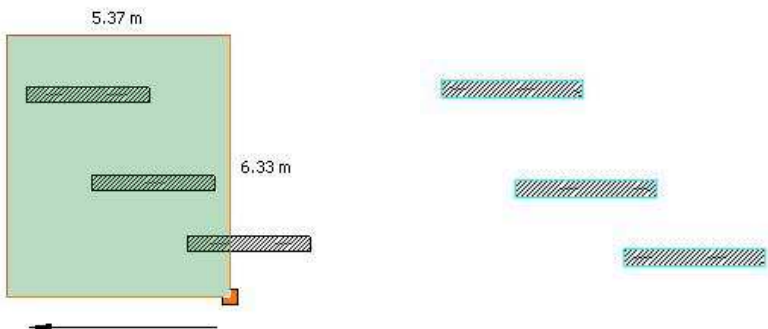
Define the selection rectangle with its two opposite corner points:

- Click with the left mouse button to define the first corner point of the selection window.
- Move the cursor and click to define the other corner point.

If you move the cursor **from left to right**, the program selects all the elements that are inside the rectangle.



Moving **from right to left** the program selects all the elements that are inside the rectangle and those also that are cut by the rectangle.



You can apply editing commands to the elements selected.



The *Selection window* highlights the selection area with transparent colour. The colour depends on that you select the area from right to left (green) or from left to right (blue).

7.1.4. Quick Class selection

- Open the Toolbox.
- Press CTRL and 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 using the Property manager.



For a detailed description of the option see the instruction *2.4 Toolbox*.

7.1.5. Quick selection dialog

Quick selection dialog can be helpful in case of complex drawings when more elements found by a left mouse click selection operation. It can happen that you have to select the desired element from a range of 5, 10 or even more elements.

Quick selection dialog makes the overview of more elements easy by creating a clear, user-friendly selection list.

How to use

When clicking a point with left mouse button on the drawing where more elements found, press TAB key repeatedly for switching between elements. At the same time the Quick selection dialog appears by which you can monitor the state of selection continuously.

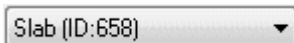


The Quick selection dialog doesn't appear when you can't switch to another element (for example there is no other element nearby).

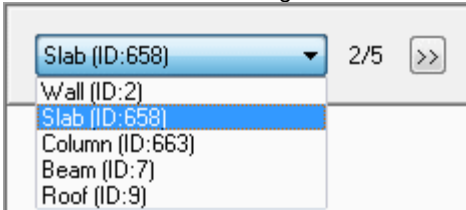
Quick selection dialog shuts down by cancelling the selection.

Quick selection list

The list appearing in the Quick selection dialog helps to choose the desired element from the list of more elements. Click the quick selection list button for this.



Click the element you want to choose from the appearing list and then it will be selected on the drawing.




After that you can modify the properties of the selected element in the appearing Property manager on the left or different operations like rotation or move can be executed.

Forward button

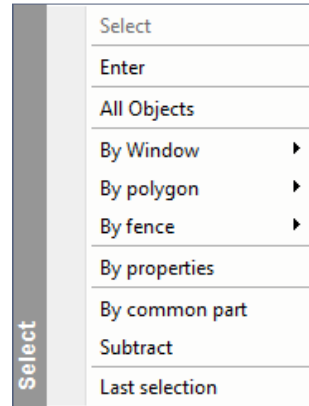
With the help of Forward button you can switch to the next element in the selection list. Its operation is the same as pressing the TAB key repeatedly. Click Forward button to choose the next element in the list.



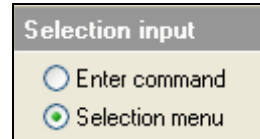
7.2. Selection menu

To select, you can use the  Selection button in the *Status bar* that activates the *Selection menu*.

With the pop menu you can select elements in the drawing by using different options. The Selection menu can be used for pre-selection of elements and also for selection within an editing command. In the latter case selection must be completed with Enter.



The *Selection menu* also appears when the program is waiting for selection, and you press the right mouse button. In this case it is a precondition that in the selection field in the *File - Preferences - General -Right-click Customization* dialog box instead of the Enter command you assign **Selection menu** to right-click.



7.2.1. Enter

The selection is completed with the Enter key or the Mouse right button click.

7.2.2. Selection by window

Options of selection by window:

One floor - in

The program selects all the elements on the current floor that are entirely within the selection window.

One floor - out


The program selects all the elements on the current floor that are entirely outside the selection window.

All floors - in

The program selects all the elements on all floors that are entirely within the selection window.



With this instruction it is easy to select the entire building. It is useful if you want the building to be placed to a definite location on the key plan or the terrain, or to be rotated as moved. For this transformation you can use the

Move  instruction and "Multitrans" option.

All floors - out

The program selects all the elements on all floors that are entirely outside the selection window.

- Specify a corner point of the window.
- Specify the opposite corner point.

7.2.3. Selection by polygon

Options of selection by polygon:

One floor - in

The program selects the elements on the current floor that the selection polygon entirely encloses.

One floor - out

The program selects the elements on the current floor that are entirely outside the selection polygon.

All floors - in

The program selects the elements on all floors that the selection polygon entirely encloses.

All floors - out

The program selects the elements on all floors that are entirely outside the selection polygon.

- Specify the first corner point of the polygon.
- Specify the next corner points of the polygon. The polygon may also contain arcs.
- **Enter** Ends the selection of the corner points.

7.2.4. By fence

Options of selection by fence:

One floor

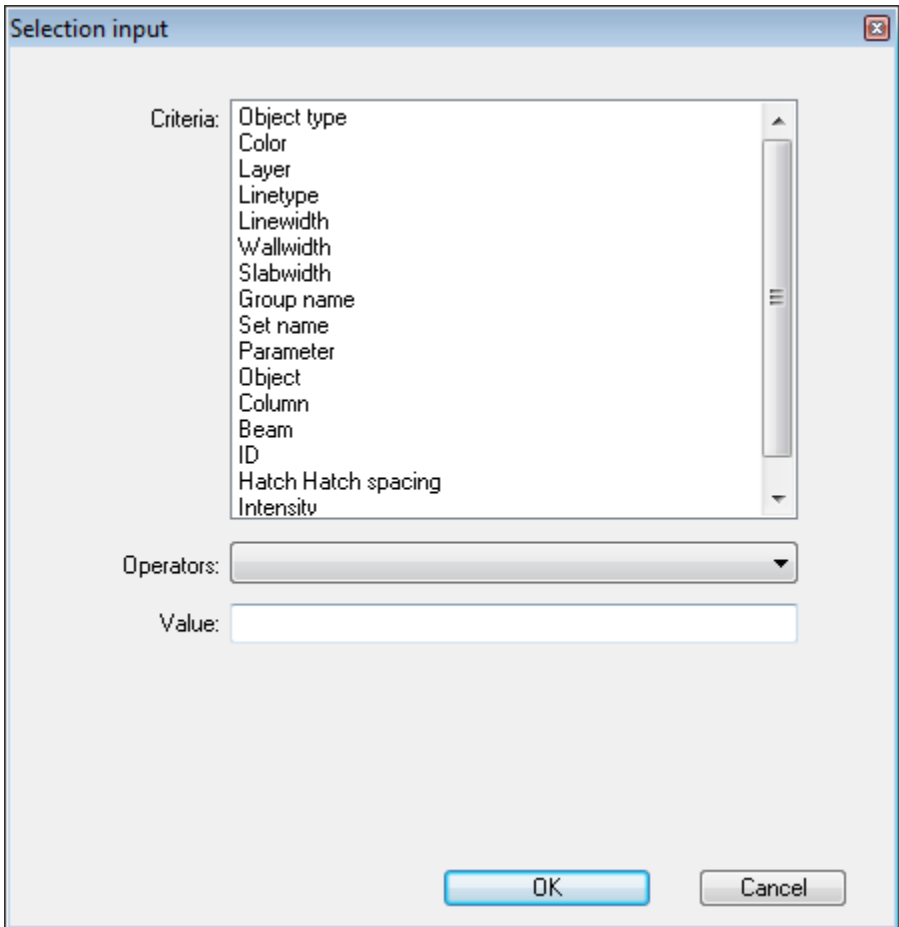
The program selects all the elements on the current floor that intersect the specified fence.

All floors

The program selects all the elements on all floors that intersect the specified fence.

- Define the fence as a series of lines, arcs with which you select the elements.

7.2.5. Selection by properties



- Specify the criterion of selection.
- Specify the operator that depends on the defined criterion.
- Specify the value of the operator (if any).



In the case of a complex logical criterion, after *specifying all criteria* and selecting the appropriate logical operation, the dialog box must be closed with **OK**. You can continue specifying the criterion by recalling the *Selection by properties* dialog box.

- Specify the logical connection by selecting the appropriate option:

Add / Or relation:

Expands the previous selection with elements meeting the new criterion.

Common part of selections / And relation:

Selects only those elements that meet both the previous and the new criteria.

Subtract

Selects only those elements that meet the previous criteria but not the new ones.

- Specify a new criterion and an operator that will be the new condition for selection.
- **OK** Close the dialog box.
- **Enter** End the instruction.

Doing so, you can specify the selection even on the basis of a complex system of conditions in the same dialog box. You can also specify the system of conditions in different dialog boxes one after another.

Let's see the criteria and the associated operators.

7.2.5.1. Object type

The program selects all elements that belong to a certain element type in the drawing.

Operators associated with element types:

All items	Polyline	OLE document
Room	Spline	Truss
Wall	Circle	Freeform Surface
Column	Circular arc	Light
Beam	Ellipse	Electrical Accessory
Slab	Elliptic arc	External louvre
Roof	Dimension	
Stair	Text	
Terrain	Hatch	
Objects	Group	
Point	Raster image	
Line	Room book	

- Select the desired element type.

With this option you can select e.g. all walls on a given floor.

Selection by element type with the Ctrl key


Another, quicker way of selection by element type is the following:
By choosing a main icon in the Side menu and using the CTRL key, the program selects all the elements in the drawing that are represented by the icon.

- Press Ctrl and click one of the main icons in the Side menu, for example: **Wall**. The program selects all walls in the current drawing.

7.2.5.2. Colour

You can carry out the selection with the defined colour.
Operators associated with colour:

- ❖ **Add**
Selects the elements of a specified colour.
- ❖ **Except the following values**
Selects the elements that have different colour than the defined one.
- Select the colours from the colour palette, or
Enter the colour indexes in the *Value* field separating them by spaces. You can specify more colours at a time.

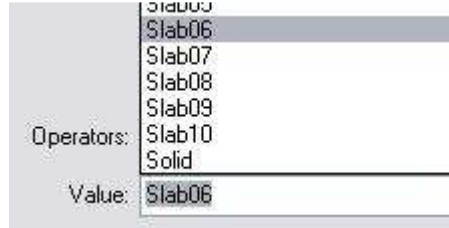
Value:	<input type="text" value="12 3 54"/>	
--------	--------------------------------------	---

7.2.5.3. Layer

You can carry out the selection with the defined layers.
Operators associated with layers:

- ❖ **Select**
Selects all elements placed on a specified layer.
- ❖ **Except the following values**
Selects all elements that are not on the specified layer.

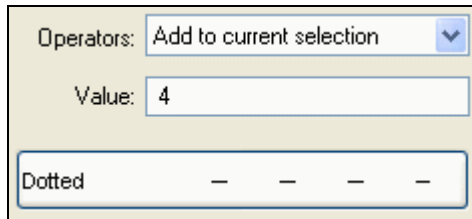
- Select the desired layer from the pull-down menu, or enter its number or name in the *Value* field. You can also define more layers at a time, separating them by spaces.



7.2.5.4. Line type

You can carry out selection with the defined line type.

- ❖ **Select**
Selects all elements of a defined line type.
- ❖ **Except the following values**
Selects the elements that have a different line type than the defined one.
- Click the line type button. From the list displayed select the desired line type, or enter the index of the line type in the *Value* field. You can also define more line types at a time, separating them by spaces.



7.2.5.5. Line width

You can carry out selection with the defined line width.

- ❖ **Equal**
Selects the elements of a specified line width.
- ❖ **Not equal**
Selects the elements that have a different line width than the specified one.
- ❖ **Region**
Selects all elements the line width of which is within the specified region.
- ❖ **Out of region**
Selects all elements the line width of which is outside the specified region.

- When applying the *Equal* and *Not equal* commands, choose the appropriate line width from the pull-down list of the *Value* field, or enter its value.
You may define only one value.

- When applying the *Region* and *Out of region* commands, enter the lower and upper limit of the region in the appearing fields.

7.2.5.6. Wall width

Selects walls of a specified width according to different criteria.

- See the selection properties as 7.2.5.5. Selection by line width.

7.2.5.7. Slab width

Selects slabs of a specified width:

- The selection unit is slab width. Otherwise see the selection properties as 7.2.5.5. Selection by line width.

7.2.5.8. Selection by name

To define the name, you can also use Meta characters, for example: *.

Selection by group name

As a result of the selection, you get all the groups that you defined by a given name.

- Define the desired name.

Selection by set name

As a result of the selection, you get all the elements the selected set name is assigned to.

- Select the desired set name.

Selection by parameter name

As a result of the selection, you get all the groups that you defined by a given name.

- Define the desired name.

Selection by object name

As a result of the selection, you get all the objects, that you defined by a given name.

- Select the desired name.

Selection by column name

As a result of the selection, you get all the columns, that you defined by a given name.

- Select the desired name.

Selection by beam name

As a result of the selection, you get all the beams, that you defined by a given name.

- Select the desired name.

Selection by ID

As a result of the selection, you get the element that you defined by a given unique ID.

- Define the desired ID.

Selection by Hatch Spacing

Selects hatches of a specified width:

- See the selection properties as 7.2.5.5. Selection by line width.

Selection by Intensity

Selects light sources of a specified Lumen value:

- The selection unit is Lumen (lm). Otherwise see the selection properties as 7.2.5.5. Selection by line width.

7.2.6. Last selection

The program activates the last selection, thus the previously selected elements can be further edited.

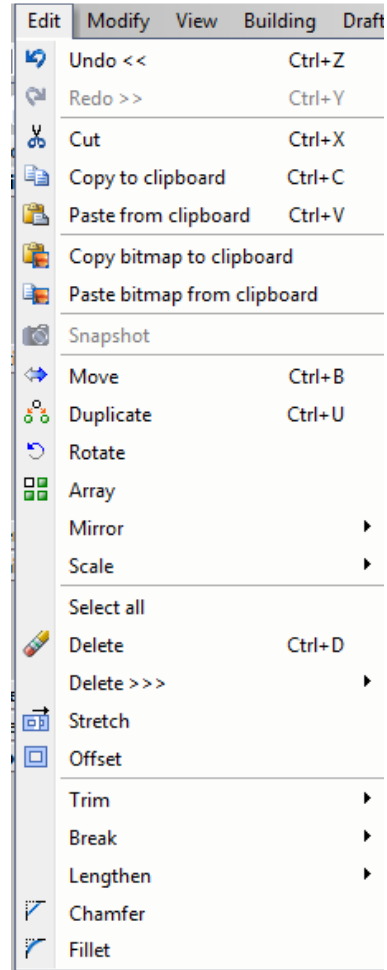
8. Editing

This chapter describes the editing commands, including: move, copy, rotate, mirror, scale, delete, stretch and offset.

With the editing commands you can edit the selected elements. Except Undo and Redo, each command activates a geometrical transformation.

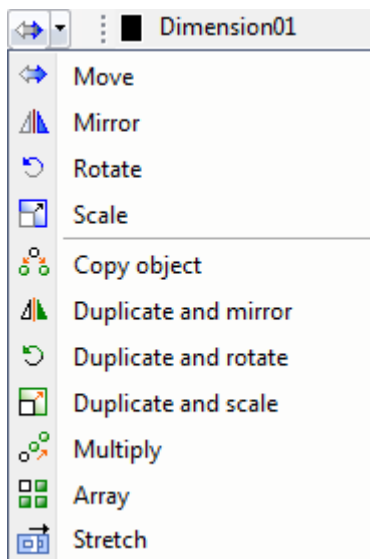
These commands can be accessed:

- ❖ **From the Edit menu and**

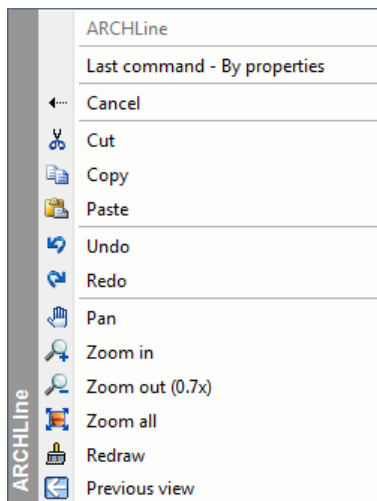


- ❖ **From the Edit toolbar or the Move toolbar menu on the Status bar.**










- ❖ You can also access some editing commands from the **General Shortcut menu**. The General Shortcut menu appears if you open the *General menu* option in the *File - Preferences - General - Right click customization* dialog box and then right-click on the empty drawing area.




8.1. General editing commands

Let's see the instructions in the **Edit menu**. The icons you can access from the toolbar are also displayed in front of the instructions.

	Undo <<	Ctrl+Z
	Redo >>	Ctrl+Y
	Cut	Ctrl+X
	Copy to clipboard	Ctrl+C
	Paste from clipboard	Ctrl+V

8.1.1. Undo - Ctrl Z

The program stores the last 15 editing steps,  thus it is possible to restore the previous status. Each time you click "Undo", the command reverses the last operation.



This instruction cannot be used to restore the commands in the **View menu**.

8.1.2. Redo - Ctrl Y

To redo a command reversed by **Undo**,  you can use the **Redo** command.



It is not possible to use this instruction to recover the result of commands in the **View menu**.


8.1.3. Program clipboard

- ❖ The program clipboard is a temporary internal memory. Part or all of a drawing can be placed to and removed from the memory. When turning off the program, the clipboard content will be lost.
- ❖ The drawing placed to the clipboard overwrites the drawing previously placed there.
- ❖ This clipboard is not equivalent to the Windows clipboard.
- ❖ This clipboard is used for inserting graphic information within ARCHLine.XP® so after selecting the elements you always have to specify the reference point.




The program clipboard provides an effective way to copy any 3D *view, section* to a floor plan window. The drawing thus copied has no connection with the 3D model in the floor plan window. Consequently, editing becomes optional, the view and the section can be edited as required. With this option the program provides freedom for the designer.

8.1.3.1. Cut - Ctrl X

Move the selected elements to the clipboard.  Erases the elements selected in the floor plan window. Retains the elements selected in the 3D window, so it has the same effect as the *Copy* command.

- Select the elements to be moved.
Enter Ends the selection.
- Specify the reference point of the selected elements.

8.1.3.2. Copy - Ctrl C

Copies the selected elements to the clipboard.  The drawing copied to the program clipboard overwrites the drawing previously placed there.

- Select the element you want to copy.
Enter Ends the selection.
- Specify the reference points of the selected elements.

8.1.3.3. Paste – Ctrl V

Inserts the clipboard content by the reference point into the specified point.



You can activate the command only if you have already placed elements on the clipboard.

The element or elements can also be rotated as placed. To do so, choose the appropriate option:

Options:

Rotation angle...	Specify the rotation angle in the form of a number
Interactive rotation	Specify the angle with its two sides
Rotate and Transform	Specify scaling and a rotation angle before placement



The **Ctrl + C** and the **Ctrl + V** keyboard shortcuts are very useful when drawing in ARCHLine.XP®.

With the previously mentioned keyboard shortcuts it is possible to move a 3D view to the floor plan window. The view (elevation, section, etc.) thus moved is no longer linked to the 3D model and becomes a 2D drawing, so it can be edited freely.

8.1.4. Copy bitmap to clipboard

When activating this command the program copies the drawing in the current window to the Windows clipboard in a picture file format. This way it is easy to insert the drawing as a picture e.g. into a Word document without exporting it in Metafile (.emf) format.



In Windows use the *Edit - Paste (Ctrl + V)* command to paste.

In ARCHLine.XP® uses the Edit menu **Paste bitmap from Clipboard** command to paste the content of the Windows clipboard.

8.1.5. Paste bitmap from clipboard

Paste bitmap from Clipboard command pastes the content of the Windows clipboard to the drawing as a picture.

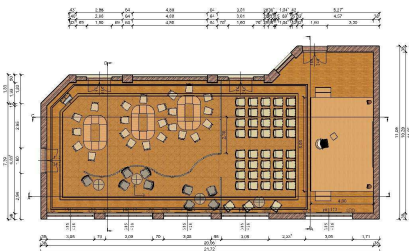
8.1.6. Snapshot

Snapshot is a raster image that is taken in a 3D window.

Snapshot enables you to create attractive coloured documentation of elevation views and floor plans.

The Snapshot function helps you to move and calibrate a raster image into the 2D floor plan exactly in the right place and size.

It is a special raster image that keeps the 3D model vertex points so you can precisely measure distances and angles on that 3D view raster image.

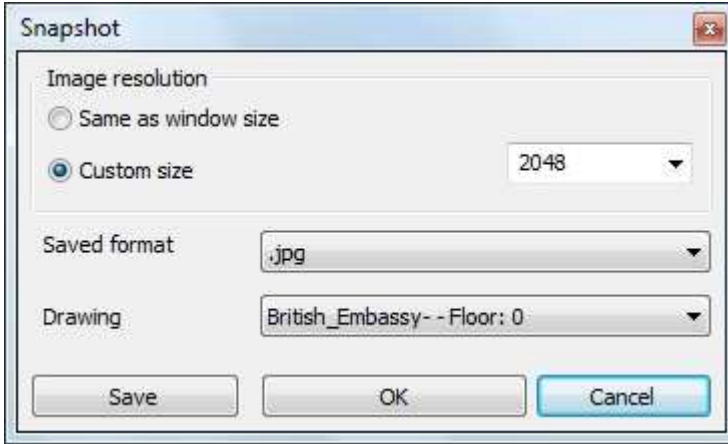


Floor plan with Snapshot



Wall view

You can start the command from Edit menu when a 3D image window is active. It displays the following dialog.



Resolution

The raster image resolution defines the document quality. You can choose as:

❖ **Same as window size**

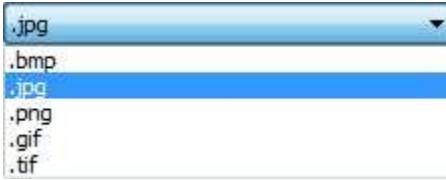
The software captures a screen shot of your 3D active window to an image with the same resolution.

❖ **Custom size**

Choosing the custom size option you can select a predefined resolution from the drop-down list at the right, as the resolution for the image's largest size. Choose a larger value to set the final result more detailed. Using larger values will make the project file size growing larger also. Please choose the size of the snapshot carefully, as you want your project not to grow too large, because handling larger projects could make workflow slower on some machines. Otherwise if you choose a small resolution, the final image may be pixelated which can make it less useful. Please choose from the drop-down list.

Saving format

You can choose the snapshot image's file format from the drop-down list. This file format will be used during the process of the snapshot. Different file formats store images with different file size and quality conditions. Please select the desired file format.



Target drawing

Select the target drawing where to insert the snapshot image.



Save

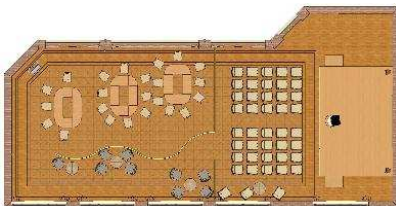
Use the **Save** button to save the snapshot image into an image file on your hard drive instead of a target drawing. Please specify the path and name of the file in the appearing **Save as...** dialog window.

8.1.6.1. How to make a snapshot

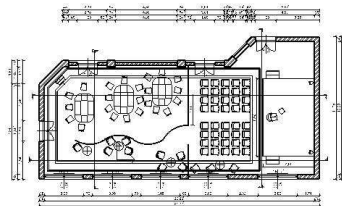
To create a snapshot of the 3D content you need to choose the 3D window that you want to use as the theme of the snapshot. (For example: a top view of the 3D model).

As a second step you need to start *Edit menu – Snapshot tool*. In the appearing dialog window set the resolution for the snapshot image, set its format and please set the target drawing from the drop-down menu as well. When finished please press the **OK** button.

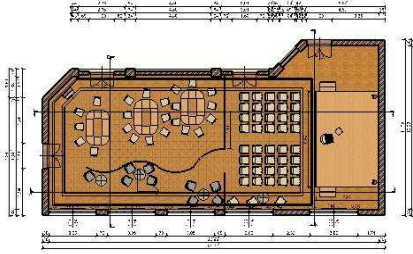
The software will automatically create the snapshot image of the previously set 3D content, and it will be placed soon into the selected target drawing. The result of snapshot will be scaled.



Top view of the 3D model (theme of the snapshot)



Original 2D drawing (the drawing, which is set as the target)



Result - 2D drawing and Snapshot combined

Wall elevation view snapshot tool

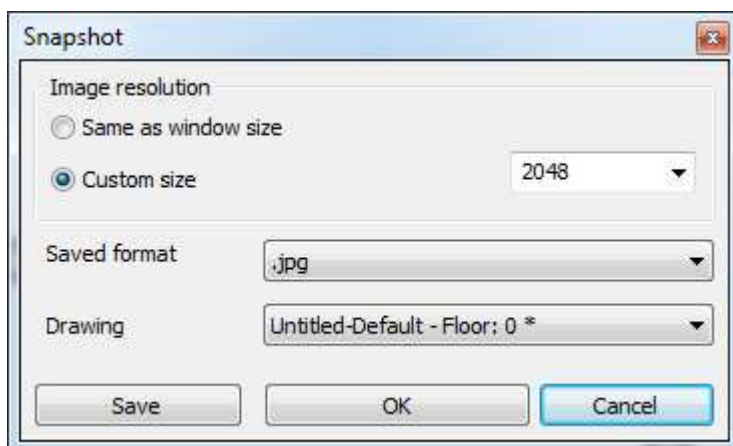
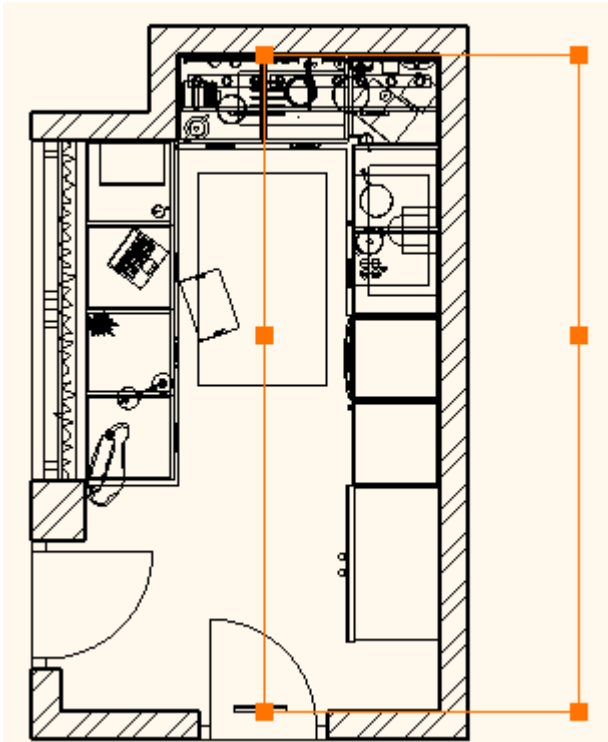
This command makes a frontal view of the selected wall together with a part of the 3D model.

You can select the wall and the visible wall side.

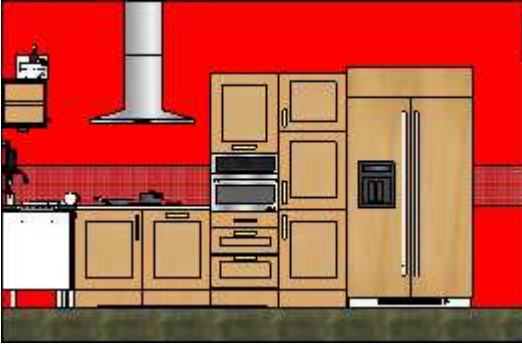
The program makes visible the part of the 3D model that is inside the polygon limited by the wall endpoints and the visible part click point.

You can edit these polygon nodes and when you press the ENTER button the 3D partial model is created.

The perpendicular view of the wall will be placed as an image onto the selected floor plan.



Here is an example of the result:



How to use the tool

- ❖ Start the View menu / Section / Wall elevation view snapshot tool. Also you can use the Wall elevation view tool in the Documentation part of the left side Toolbox.
- ❖ Choose the side where you would like to see the elevation from.
- ❖ Edit the automatically recognized contour as you wish, if necessary.
- ❖ Hit Enter

Set the properties and click on OK.

8.1.6.2. Snapshot and object snap

Snapshot is able to copy and paste any 3D view into another 2D drawing in correct scaling, and it is also able to keep the reference points of the original 3D view. This will happen automatically when using the Snapshot tool.

This way you can use snapshots as individual drawings too. The software will recognize the reference points of the snapshot, so for example you are able to place dimension on it.



Snapshot with dimensions

8.1.6.3. Contour of a snapshot

Contours of a snapshot equal to the contours of the original 3D view.

This feature is great when you want to place some specific drawing or 2D group behind the snapshot.



2D group in front of a snapshot



2D group behind a snapshot

8.1.7. Move


With Move you can move the selected elements, or with a complex transformation you can move, rotate and scale them in one step.

With this transformation you can also copy elements.

Transformation commands:

- ❖ Move
- ❖ Duplicate
- ❖ Multiply
- ❖ Multiply by matrix

8.1.7.1. Move

With the **Edit - Move**  command you can carry out the following transformations:

- ❖ You can move the selected elements, or
- ❖ You can apply a multi transformation to the elements. To do so, click **MULTITRANS** in the left side options menu. You can move the selected element by applying the move, rotate and scale transformations one after another.

I) Move:

- Select the desired elements.
- **Enter** Ends the selection.
- Specify the reference point of the selected elements.
- Specify the new place of the reference point.

II) Multi transformation:


If you choose **MULTITRANS**:

- Select the desired elements.
Enter Ends the selection.
- Specify the reference point of the selected elements.
- Specify the new place of the reference point. The last specified point is also the rotation and scale centre, or
Enter If you do not want to move the selected element (displacement factor: 0).
- Specify the rotation angle with the mouse, or
Enter If you do not want to move the selected element (angle: 0-degree).
- Specify a point with the mouse that defines the scale. The distance between the specified point and the scale centre of the transformation defines the scale factor. If the scale factor is << 1.0: the element is reduced, if the scale factor is >> 1.0: the element is enlarged.
Enter If you do not want to scale the selected element (scale factor: 1.0).

Options:

Rotation angle...	Specify the rotation angle in the form of a number
Interactive rotation	Specify the angle with its two sides
Scaling...	Specify the scale factor
X	Scale only in x direction
Y	Scale only in y direction

8.1.7.2. Copy object

With the **Edit** -  **Copy object** command you can carry out the following transformations:

- ❖ You can copy the selected elements, or
- ❖ Click **REPEAT** if you want to copy an element multiple times.
- ❖ Choose **MULTITRANS** in the More options menu. Thus you can move, rotate and scale the selected elements as moved.

REPEAT:


- Choose **REPEAT** in the More options menu.
- Specify the number of copies.
- Select the desired elements.
- **Enter** Ends the selection.
- Specify the base point of displacement.
- Specify the endpoint of displacement.

The program places the desired number of elements at the distance between the base point and the endpoint of displacement.




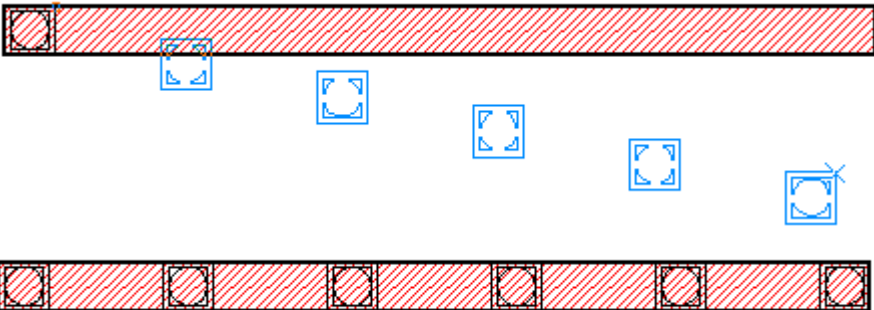
For a detailed description of this command see Chapter 8.1.5.1 on *Move*.

8.1.7.3. Multiply

With the *Multiply* -  icon in the *Move toolbar menu* you can place elements of a certain number at an equal distance from each other along the specified line.

Suppose you want to place columns on a wall. You know the number of the columns and that there is an equal distance between them. However, you do not know exactly this distance.

- Draw the wall and place the first column on it.
- Choose the **Multiply** -  command.
- Select the element you want to multiply. Complete the selection with Enter.
- Specify the number of copies.
- Specify the base point of the distance you want to divide. (Specify the point of the first element that will touch - in the case of the last element - the endpoint of the distance you want to divide.)
- Specify the other endpoint of the distance you want to divide. Before specifying the endpoint you can choose **REPEAT** in the More options menu if you want to change the number of copies.

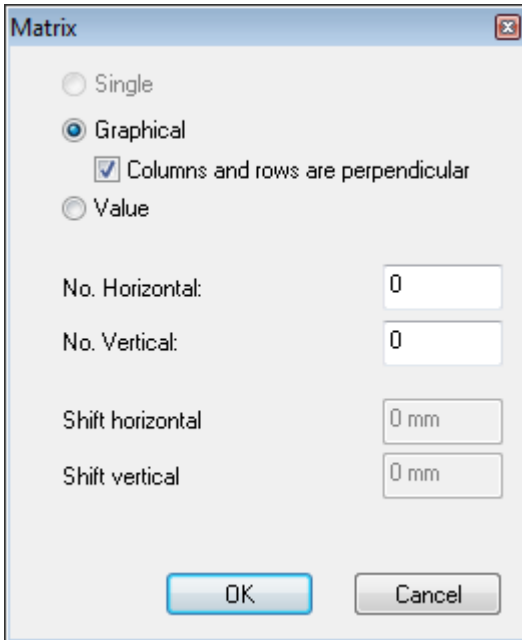


8.1.7.4. Array

It copies a given object according to the given number of row and column.



- Start the Array tool.
- Select the element, that you would like to multiply. Close the selection with Enter.
- Set the starting point of the move.
- Determine the array in the appearing dialog window. OK.



I) **Graphical**

It places a specific number of elements equidistant from each other on the selected grid.

- Determine the place of the last element in the first row. So you can fix the divided distance, and also give the direction of the row.
- Determine the place of the last element in the last row. So you can fix the divided distance. If the *Column and row are perpendicular* option is switch off, the given point determines the direction of columns too.

II) **Value**

It places a specific number of elements in the given distance (Shift horizontal and vertical) from each other on the selected grid.

- Determine the direction of the matrix first row.

It places specific number objects in the given distance from each other in this direction by the line. The columns of the matrix are perpendicular to the rows.

8.1.8. Rotate

With this transformation you can rotate, or rotate and duplicate the selected elements.

Rotate commands:

- ❖ Rotate
- ❖ Duplicate and rotate

8.1.8.1. Rotate


With the  **Rotate** icon in the **Move toolbar menu** you can rotate the selected elements.

- Select the elements you want to rotate.
- Specify the rotation angle.
- Specify the rotation centre.
- **Enter** Completes the command.

Options:

Rotation angle...	Specify the rotation angle in the form of a number.
Interactive rotation	Specify the angle with its two sides.

8.1.8.2. Duplicate and rotate

With the  **Duplicate and rotate** - icon in the **Move toolbar menu** you can rotate and copy the selected elements.

You can also make multiple copies.

Option:

REPEAT	When making multiple copies, specify the number of copies.
---------------	--



For a detailed description of the command see Chapter 8.1.6.1 *Rotate*.

8.1.9. Mirror

Places or copies elements by applying mirror transformation.


Two types of mirror transformation:

- ❖ Axial reflection
- ❖ Point reflection

Commands you can apply here:

Mirror	▶		Move	Ctrl+Q
Scale	▶		Duplicate	Ctrl+W

8.1.9.1. Mirror - Move


With the **Edit -  Mirror - Move** command you can reflect the selected elements about a centre point or an axis.

- Select the elements you want to move.
- **Enter** Ends the selection.
- Specify the first point of the mirror axis. Ending the command with Enter, the program reflects the selected object about a centre point.
- Specify the second point of the mirror axis. The program reflects the selected element about an axis.

Option:

On selected item	The highlighted line is the mirror axis, and the highlighted point is the mirror centre.
-------------------------	--

8.1.9.2. Mirror - Duplicate

With the **Edit -  Mirror - Duplicate** command you can mirror the selected elements to a centre or an axis and copy them.



For a detailed description of the command see *Chapter 8.1.7.1 on Mirror - Move*.

8.1.10. Scale

Enlarges or multiplies the elements.

Commands that you can apply here:

Scale	▶		Move
Select all			Duplicate

8.1.10.1. Scale - Move


With the **Edit** -  **Scale - Move** command you can enlarge/reduce the selected elements.

- Select the elements you want to enlarge.
- **Enter** accepts the selected elements.
- Specify the scale centre.
- With the mouse specify a point that defines the scale factor. The distance between the specified point and the scale centre defines the scale factor. This factor is indicated by the mouse pointer info tooltip. Choose **Scaling** in the More options menu if you want to specify the scale factor. A scale factor less than 1 reduces the elements. A scale factor greater than 1 enlarges the elements.

Options:

Scaling...	Specify the scale factor
X	Scale only in x direction
Y	Scale only in y direction

8.1.10.2. Scale - Duplicate

With the **Edit** -  **Scale - Duplicate** command you can enlarge/reduce the selected elements. You can also multiply the copies.

Option:

REPEAT	When making multiple copies, specify the number of copies.
---------------	--



For a detailed description of the command see Chapter.8.1.8.1 on *Scale - Move*.

8.1.11. Delete single (Ctrl + D)

Deletes the selected elements in the current drawing one by one.



- Start the tool.
- Click the element you want to delete.
- Select further elements to be deleted, or **Enter** Ends the command.




All elements associated with the selected element are also deleted. (For example, if you assigned dimension to an element, when deleting the element, the dimension lines are also deleted.)

If you delete an element in the 3D window, the **Select a surface** option appears in the More options menu. With this keyword you can delete the patterns placed on the surface of the solid (2D group)

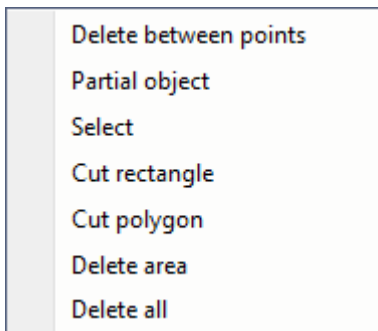


You can activate the command in the following ways:

- ❖ By clicking the *Delete* -  icon in the *Edit toolbar*, or
- ❖ In the *Shortcut menu* of each element as well. In this case right-click the element.
- ❖ If the mouse pointer is an arrow shape: hold the **Ctrl** key and click an element, then **the entire element is deleted (only with specific settings in File menu – Preferences – General / Marker settings – Special shortcut)**.
- ❖ If you click an element in the drawing and press the **Del** key, the program deletes the **entire element**.

8.1.12. Delete

With the commands in the **Edit - Delete** menu item you can delete the elements or the specified part of the elements in the current drawing. The menu item contains the following commands:



The *Delete*, *Select*, *Delete area*, *Delete all* instructions can be applied to all element types. The other delete instructions can only be applied to geometric elements, but not to architectural ones. Thus, for example, with the *Delete between points* command it is not possible to delete the part between the two intersections of the wall.


8.1.12.1. Delete between points

The program enables you to delete the section of an element between the intersections (or endpoints) nearest to the selected point. If the element does not have or has only one intersection with other elements, this command corresponds to the delete operation.

- Select the element to be deleted between its nearest intersections. The program immediately deletes that part of the element.
- Repeat the previous step if you want to delete further parts of the element, or **Enter** Ends the command.



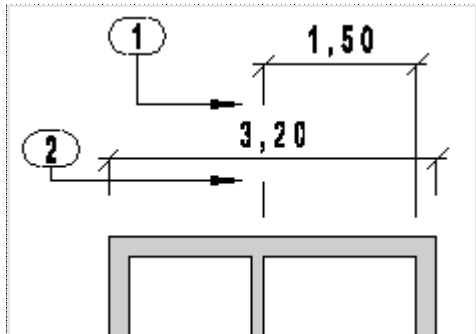
You can activate the command in the following ways:

- ❖ By clicking the **Delete between intersections** -  icon in the *Edit toolbar*.
- ❖ When the mouse pointer is an arrow shape: hold the **Ctrl** and **Shift** keys and click an element, and then the program deletes the section of the element that is between the intersections.

8.1.12.2. Partial delete

Deletes the section of the element between the selected points.

- Select the base point of the line you want to delete: *Point 1*
- Select the endpoint of the line you want to delete: *Point 2*
- Select further lines to be deleted, or **Enter** Ends the command.



The Partial *Delete* can be applied to dimension projection lines as well.

8.1.12.3. Delete selected

Deletes the selected elements in the current drawing.


- Select the elements to be deleted.
Enter Ends the selection and deletes the elements.
- Repeat the previous step if you want to delete further elements, or

Enter Ends the command.



To select a group of elements you can apply the commands in the **Status bar - Selection** menu.



You can also activate the command with the **Delete selected** -  icon in the **Edit toolbar**.

8.1.12.4. Cut rectangle

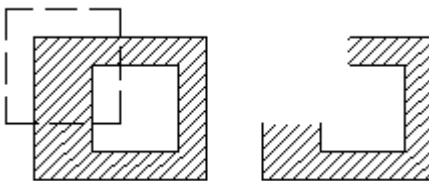
With this command you can delete elements in the following ways:

- ❖ You can delete the elements or their sections that are inside a specified rectangle or area.
- ❖ Before deleting you can pre-select the elements on which the deletion will be carried out.

If an element is not entirely enclosed by the rectangle or area, only its section inside the rectangle or area is deleted. The contour of the selection area is shown by broken line.

Deletes all elements or all sections of an element inside a specified rectangle:

- Specify the first point of the selection window.
- Specify the other point of the selection window.
- Repeat the command, or
Enter Ends the command.



Deletes all elements or all sections of an element inside a specified area:

- Choose **POLYGON** in the More options menu.
- Define the polygon within which you delete all elements or all sections of an element.
- **Enter** Completes the definition of the polygon, and the program executes the deletion.

Deletes all elements or element sections inside a specified area, but you can select the elements on which deletion will be carried out:

- Choose **PRESELECT** in the More options menu.
- Select the elements the deletion will be applied to.
- Specify the polyline that is necessary for the deletion.
- **Enter** Completes the definition of the polyline, and the program executes the deletion.



If you specified an open polyline, the program automatically connects the first and the last point of the polyline to create a closed polyline (polygon).

8.1.12.5. Cut polygon

Deletes all elements or all sections of an element inside a specified area. If an element is not entirely enclosed by the area, only its section inside the area is deleted. The contour of the selection area is shown by broken line.

- Define the polygon within which you delete all elements or all sections of an element.
- **Enter** Completes the definition of the polygon, and the program executes the deletion.

Options:

Circle	The selection area is a circle
Parallel shifted...	Before defining the polygon specify the offset value. It means that the area will be an area enclosed by the contour of the reference point enlarged or reduced by offsetting.
Width...	The selection area is a polyline with a specified width.

Arc	The next element of the polyline is an arc.
Select an item	The next element of the polyline is an existing element.
Spline	The next element of the polyline is a spline.

8.1.12.6. Area

The command deletes the elements that are entirely inside the selection area. The contour of the selection area is shown by broken line. After closing the selection area you can select the elements to be deleted one by one.

- Specify the polyline necessary for deletion.
- **Enter** Completes the definition of the polyline.

- Select the elements the deletion will be applied to.
- **Enter** Ends the selection,
- **Enter** The program executes the deletion.



For a detailed description of the options see the previous instruction,
8.1.10.5. *Cut polygon*

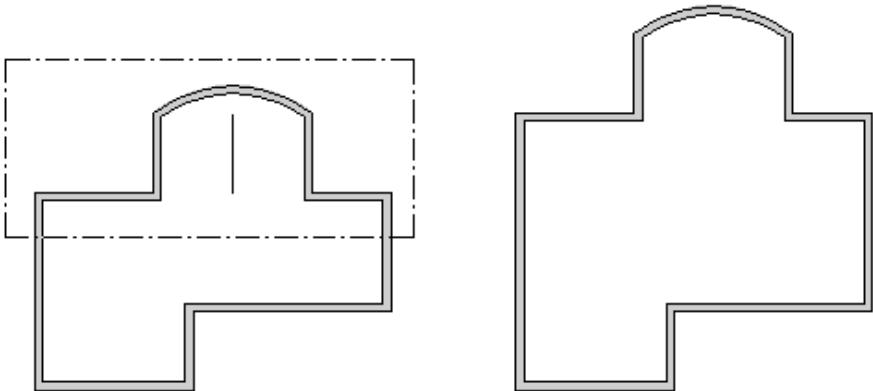
8.1.12.7. All

Deletes all elements in the current drawing.

8.1.13. Stretch

The **Edit - Stretch** command stretches the sections of an element that are completely inside a selection area.

- ❖ If the element is a single line or a segment of a polyline, the program moves its endpoints only, and connects them again with a straight line.
- ❖ The 'curves' (circle, arc, ellipse, elliptic arc, splines) intersected by the area are cut at the intersection. The instruction connects the intersections with a straight line at the same time retaining the geometrical relations.
- ❖ All hatchings and dimensions assigned to the element follow the changes of the stretched element.
- ❖ In addition to the geometric elements the command is also valid for the wall and the slab. After stretching the wall connections are restored.



You can specify the area in the following ways:

- ❖ **By selection rectangle** or
- ❖ With the **Polygon** option.

Window

- Specify the corner point of the window.
- Specify the other corner point of the window.
- Specify the start point of the offset vector.
- Specify the endpoint of the offset vector.


Area

- Choose **Polygon** in the More options menu.
- Specify a chain of lines and arcs. Enter.
- Specify the start point of the offset vector.
- Specify the endpoint of the offset vector.
Enter Ends the command.

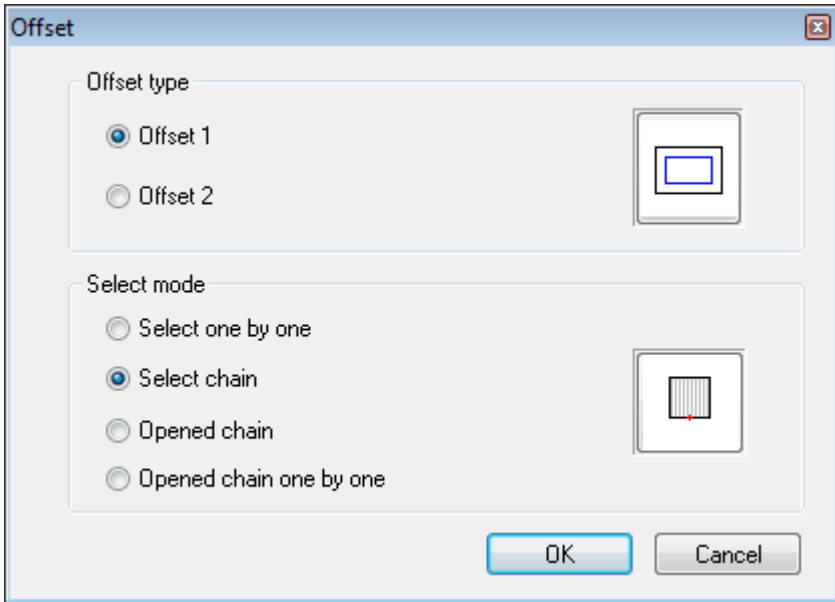


For a detailed description of the options of **Polygon** see the instruction *8.1.12.5 Delete – Cut polygon*.

8.1.14. Offset

With the **Edit -  Offset** command you can create a contour around the selected element at a specified distance. The contour of lines, polylines, arcs and splines retains its original type during the offset transformation, while circles are transformed into arcs, and the contour of ellipses and elliptic arcs into splines.

- When you activate the command, the **Offset** dialog box is displayed:



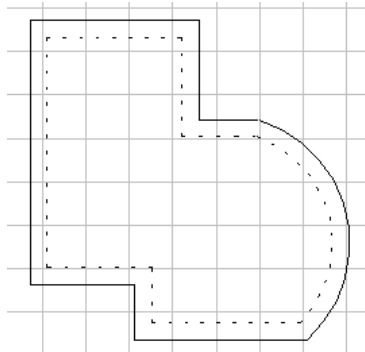
Offset type

- Select the desired offset type by clicking the button or the icon:

Offset 1



Offsets the drawing of the profile (chain of one or more elements) at a specified distance from the selected elements.



Offset 2

Offsets the drawing of the profile (chain of one or more elements) at a specified distance from the selected elements. Should the new profile become geometrically distorted, the program rounds the corners off.

**Select mode**

- Specify the select mode:

Select one by one
Select chain
Opened chain
Opened chain one by one

Select one by one

You must select the components of the closed chain one by one.

Select chain

Just select a segment of the closed chain. The program automatically starts searching for the chain. If the search is successful, the contour appears.

Opened chain

You can specify the open chain by clicking near one of its endpoints. You can specify a segment of the chain by selecting any part of it (except its endpoint). Then you can choose the chain starting from the selected element to the endpoint that is farther from the centre of the selected element.

Opened chain one by one

You can also specify the contour of the open chain by selecting the chain segments one after another.

Offset distance

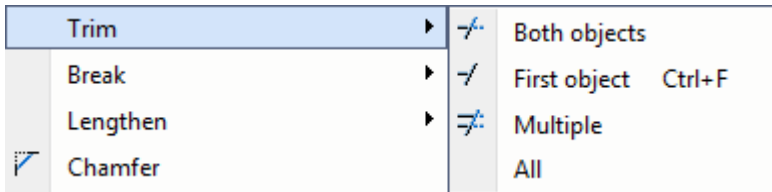
Offset distance: distance of the new contour from the selected elements. After closing the **Offset** dialog box, the program asks you to specify the offset distance:

- Drag the mouse pointer to the direction where you want to create the offset. Enter the offset value.

8.1.15. Trim

With the options in the **Edit menu - Trim** command, you can trim elements by trimming or extending them, so that their endpoints closest to the selected points coincide.

Select a subcommand:



8.1.15.1. Both objects

Trims the two elements by trimming or extending them. Adjustment involves the intersection closest to your selection.

- Select the first element you wish to trim.
- Select the second element you want to trim.

Enter Completes the command.



You may also activate the command with the **Edit toolbar - Trim both elements** icon. The command can be used for walls and corresponds to the L connection.

8.1.15.2. First object - CTRL + F

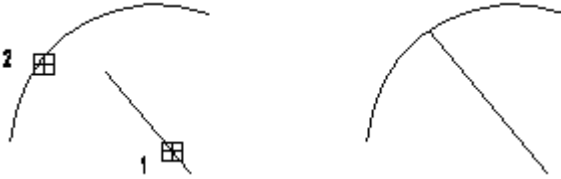
The command trims (or extends) the unnecessary section (missing section) of the first selected element compared with its intersection with the second element.


Adjustment concerns the intersection nearest the selected section.

The second selected element only helps selection and is not modified with this command, just as the other endpoint of the first element is left intact.

- Select the element you want to trim.
- Choose the element you want the first element to intersect with.

Enter Completes the command.



You may also activate the command with the **Edit toolbar** -  **Trim first element** icon. The command can be used for walls; it corresponds to the T connection.

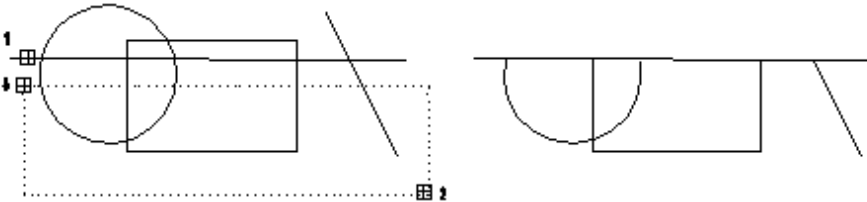
8.1.15.3. Multiple

The command trims all subsequently selected elements to the first defined element.

It trims or extends that section of the elements you define after the first selected element, which is closer to the intersection.

The first selected element and the other endpoints of the specified elements are not modified with this command.

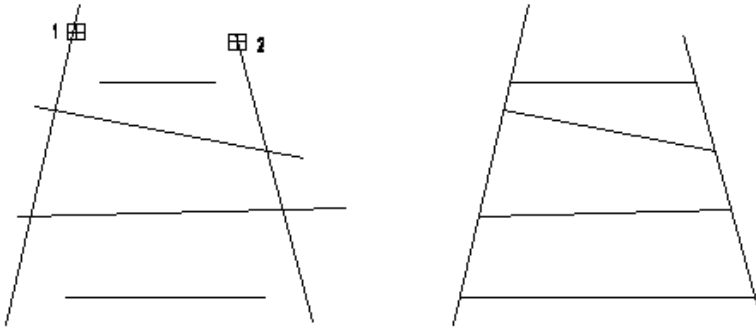
- Define the element to which you wish to adjust the elements selected subsequently.
- Specify the elements you want to adjust.
Hit **Enter** Completes the command.



8.1.15.4. All

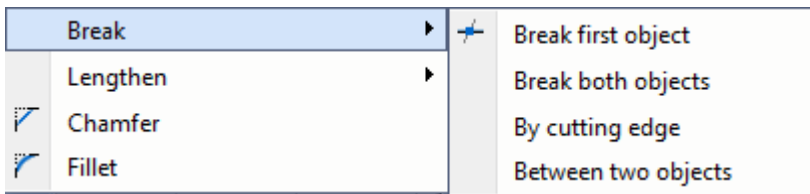
Trims to the segments all elements falling between the two given bordering segments. This means that the elements are trimmed or extended to their intersection with the adjacent segments.

- Select the first line to which you wish to adjust the elements.
- Select the second reference line.
Hit **Enter** Completes the command.



8.1.16. Break

Breaks the elements at a point defined with another element. Using this command, you can split an element in two separate parts. The program transforms circles into arcs, and ellipses into elliptical arcs. Choose a subcommand:



8.1.16.1. Break first object

Breaks the first selected element in two new elements at the point where it intersects the second (reference) element closest to selection. The command does not break the second element.

- Choose the element you want to break.
- Choose the element that intersects the first element.
Hit **Enter** Completes the command.

8.1.16.2. Break both objects

Breaks both selected elements in two new elements at their intersection closest to selection.

- Choose the element you want to break.
- Choose the second element you want to break.
Hit **Enter** Completes the command.

8.1.16.3. By cutting edge

You can break the selected elements with the help of an imaginary reference line.

The cutting points will be at their intersections with the reference element.

- Define the start point of the cutting edge.
- Define the endpoint of the cutting edge.
- Select the element to be break at its nearest intersection.

Hit **Enter** to end selection.

Hit **Enter** Completes the command.

8.1.16.4. Between two objects

By using this command, you can break the element at its two intersections closest to a surrounding selection.

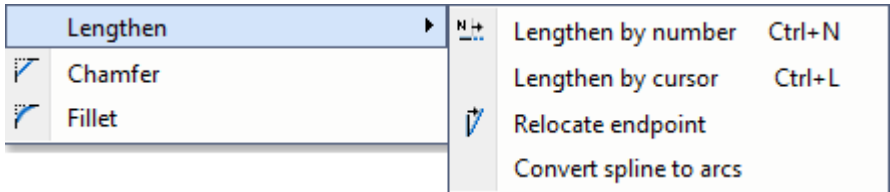
- Select the element you want to break between two intersections.

Hit **Enter** Completes the command.

8.1.17. Lengthen

You can modify the length, radius, endpoint and resolution of the elements with this command.

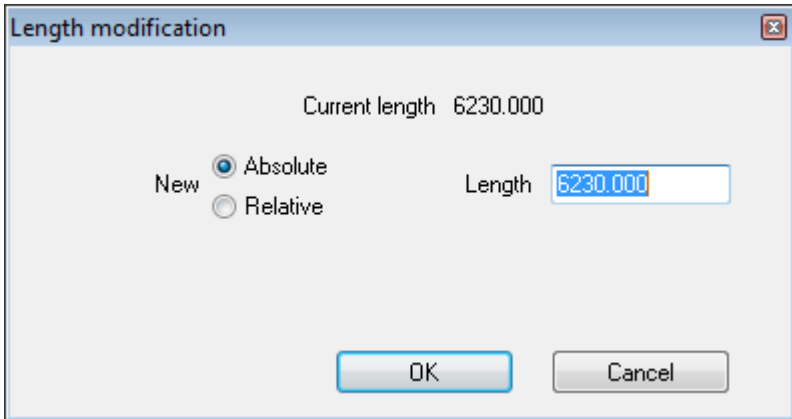
Select a subcommand:



8.1.17.1. Length by number - CTRL+N

With this command you can alter the length of a selected element (segment, arc, elliptical arc) by moving its endpoint closest to selection and specifying the new value in the form of a number.

- Select a line, arc or elliptical arc.
The **Length modification** dialog box appears displaying the current value of length.



Choose an option and define the new value.

Absolute Specifies the length of the element.

Relative Specifies by what value the length of the element should be increased/decreased.

OK Completes the command.

8.1.17.2. Lengthen by cursor - CTRL+L

You can alter the length of the selected line, arc or elliptical arc by moving one of its endpoints to the desired place without changing its direction. With circles you can graphically modify the radius, whereas with ellipses the minor and the major axes.

- Select the endpoint of the line segment, arc or elliptical arc along which you move the element. (The endpoint closest to selection will be moved.)
- Define the new place of the endpoint graphically. Using the expand line departing from the endpoint, you can move the specified endpoint to its new place, or

Option:

Beam	Extends the selected beam.
-------------	----------------------------

Hit **Enter** to complete the command.



Once you select the element, you may also modify its length or radius with the hotspots. See the *Tools -2.1.2 Clicking with the left mouse button* Chapter.

8.1.17.3. Relocate endpoint

You can modify the selected line segment, arc or elliptical arc by moving one of its endpoints to the desired place.

- Select a line segment, arc or elliptical arc.
- Move the endpoint closest to selection. Specify its new position. Using the expand line departing from the other endpoint of the element; you can move the selected endpoint.

Enter Ends the command.

8.1.17.4. Convert spline to arcs

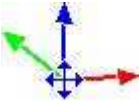
With this command you can alter the resolution of arched elements. The value defined for resolution specifies how many linear segments a polyline representing circles or ellipses should consist of.

- Specify the value of resolution.
- Select the elements the resolution of which you want to modify.

Enter Ends the command.

8.2. Main axis markers for 3D move

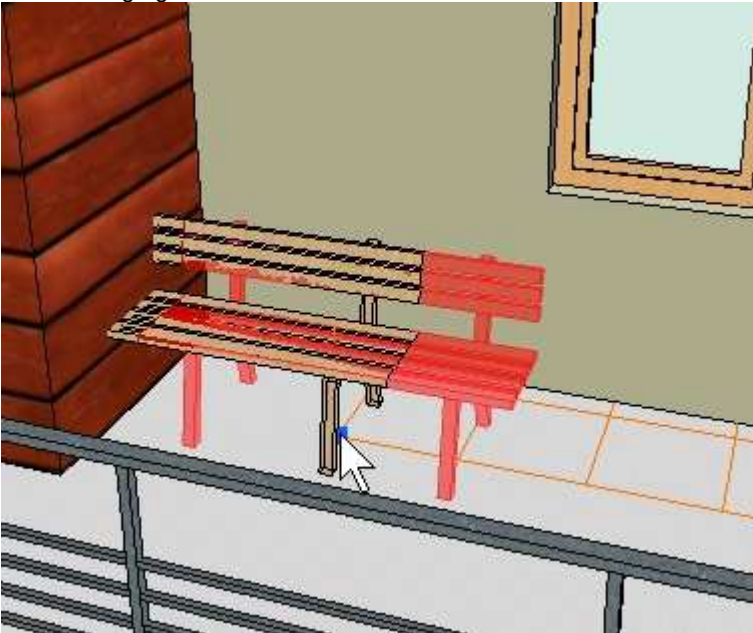
With the effective usage of 3D technology ARCHLine.XP® makes the operations in the model space easy by interactive 3D cursors.



When selecting a 3D element, the program shows the main axis for moving operations. With the help of these markers you can move the selected element in the space easily along the main axes. Each axis has different colour representation. The horizontal X axis is represented by green, the horizontal Y axis is represented by red, and the vertical Z axis is represented by blue colour.

How to use

Clicking one of the main axes starts the movement along the axis. You can set the new position by moving the mouse cursor to the desired point and then clicking again.



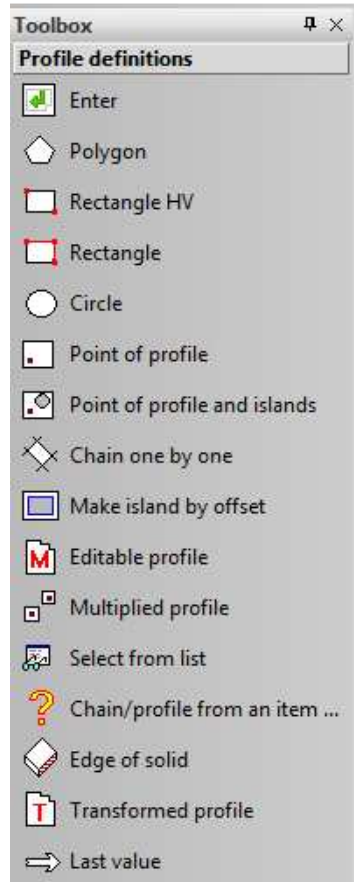
You can see possible overlaps while moving the mouse

8.3. Specifying profile

When applying more commands to create or modify elements it is necessary to edit profile.

For example, profiles are used when specifying the contour to be cut into the wall or slab, when defining the slab, roof with a contour or when creating a terrain.

- ❖ When a command is waiting for the specifying a profile, the **Profile definitions** tool appears the commands of which can be used for specifying the profile. To close the *Profile definitions* tool, use the first icon, the Enter icon.



8.3.1. Polygon

Creates a polygon that can be used as a profile.

- Specify the polygon as a chain of lines and arcs.
Enter Closes the polygon.

Options:

Arc	The next element of the polyline is an arc.
Select an item	The next element of the polyline is an existing element.

Smooth	The next element of the polyline is tangential to the previous element.
---------------	---

8.3.2. Rectangle


Creates a rectangle that can be used as a profile.

- Specify the first corner of the rectangle.
- Specify another point of the rectangle's base line, or
- Specify the corner opposite to the first corner of the rectangle.

Options:

Width...	Creates the rectangle with a specified width.
Define rectangle X/y size...	Creates the rectangle with a specified width and height



See the description of the *Polyline drawing commands* -  *General rectangle* in Chapter 11.3.2.

8.3.3. Rectangle HV

Creates a rectangle that can be used as a profile. The sides of the rectangle are horizontal and vertical.

- Specify the first corner of the rectangle.
- Specify the opposite corner of the rectangle.

8.3.4. Circle

Creates a circle that can be used as a profile.

- Specify the centre point of the circle, or use the **Devise 3 points**, **Axis** keywords.

8.3.5. Point of profile

This command makes a profile from the closed polyline created in the active window. Just click inside the polyline and the program will search for the closed chain.

- Specify an internal point of the profile.

8.3.6. Point of profile and islands

This command makes a profile from the closed polyline created in the active window by searching for the islands inside the closed chain.

- Specify an internal point of the profile.

8.3.7. Chain one by one

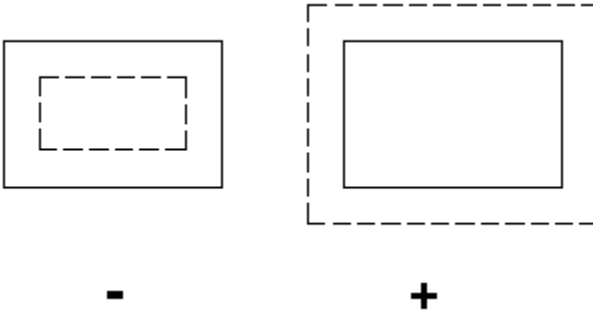
This command creates a profile from a closed polyline by selecting its segments one by one.

- Select the sides of the profile one by one.
Enter Ends the selection.

8.3.8. Make island by offset

This command creates an island inside the specified closed chain by offsetting the contour with the defined offset value.

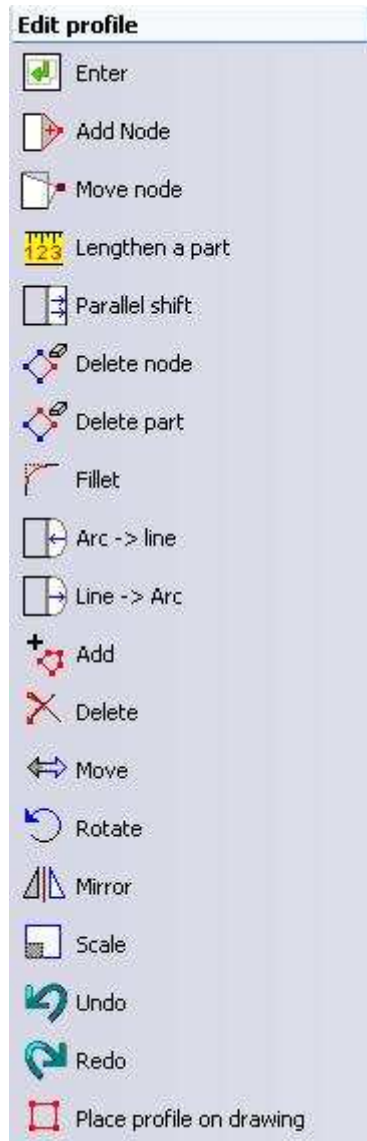
- Specify the external profile. To do so, you can use the *Profile definitions tool*.
- Define the offset value. If the value is negative, the program creates an island inside the contour. If the value is positive, the offset is produced outside, thus the original contour will be the island.



8.3.9. Editable profile

When modifying architectural elements, you may need to edit the geometry of a formerly created profile.

- ❖ When you use a profile editing command, in the Toolbar the *Edit profile* tool pops up whose commands can be applied for editing the profile. Use the first, Enter icon to close the *Edit profile* tool.



Add node

Inserts a new node between the nodes closest to where you click in the contour.

- Select the section of the profile where you wish to insert the new node.
- Define the place of the new node in the drawing.
- You can repeat the command, or
Enter Completes the insert node command.

Move node

Moves the selected node of the contour.

- Select the node of the contour you wish to move.
- Define the new place of the node.
- You can repeat the command by selecting a new node, or
Enter Completes the move node command.

Lengthen a part

The program recognizes the direction of the selected section of the contour line. By entering the value of modification (relative length) you increase or decrease the length of the selected section by that value.

Parallel shift

You can shift the selected edge by a given distance. You may shift all edges of the contour line in one step. This function is useful for example, in the case of slabs, when the floor plan of the slab needs to be enlarged or reduced in all directions.

- Select a section of the contour to shift.
- Define the new place of the selected contour section.
- Choose the next section of the contour, or
Hit **Enter** to end command.

Option:

ALL	Shifts all edges of the contour line. Only for slab editing.
------------	---

Delete node

The command deletes the selected nodes of the contour line. The program deletes the node closest to your selection together with the segments setting out of the node. The endpoints of the deleted segments are connected by a new line.

- Choose the nodes of the profile you wish to delete, then

Hit **Enter** to end command.

Delete part

Deletes the selected section of the contour if the two adjacent sections are not parallel straight segments. The command lengthens the bordering segments of the deleted section till they intersect.

- Choose the sections of the profile you wish to delete one by one, then Hit **Enter** to complete the delete section command.

Fillet

Rounds off the selected or all possible corners of the profile by the defined radius.

- Define the radius of rounding.
- Select the corner you wish to round off.
- You can repeat the command, or Hit **Enter** to end the round off corner command.

Option:

ALL	Rounds off all possible corners.
------------	----------------------------------

Arc → Line

The command converts an arc contour line into a straight line.

- Select the arc segments you wish to convert into straight lines.
Enter Completes the command.

Line → Arc

Converts a straight contour line into an arc, or modifies the radius of an existing arc segment.

- Select the section of the contour you wish to convert into an arc or the radius of which you want to modify.
- Define the arc by specifying an internal point, or Choose from the following keywords:

Options:

Diameter	Value of the diameter
Radius	Value of the radius
Perimeter	Value of the perimeter (arc length)
Arc	Value of the chord height of the arc

- Specify the desired value.

The command draws the arc nearest the cursor instead of other possible arcs.

If you specify a diameter longer than the distance between the endpoints, you have four possible arcs to create.

If you specify a diameter equalling the distance between the endpoints, you have two possible arcs to create.

If you specify a diameter shorter than the distance between the endpoints, you will not be able to create an arc.

- Select the appropriate arc.
- You can repeat the command, or Hit **Enter** to end command.

Add Polygon

You can edit the polylines and polygons in a profile with the commands under the Polygon command:

New
Delete
Move
Rotate
Mirror
Scale

Undo

Undoes the last operation when modifying the profile.

Redo

If you undid an operation using the **Undo** command when modifying the profile, you can repeat it with the **Redo** command.

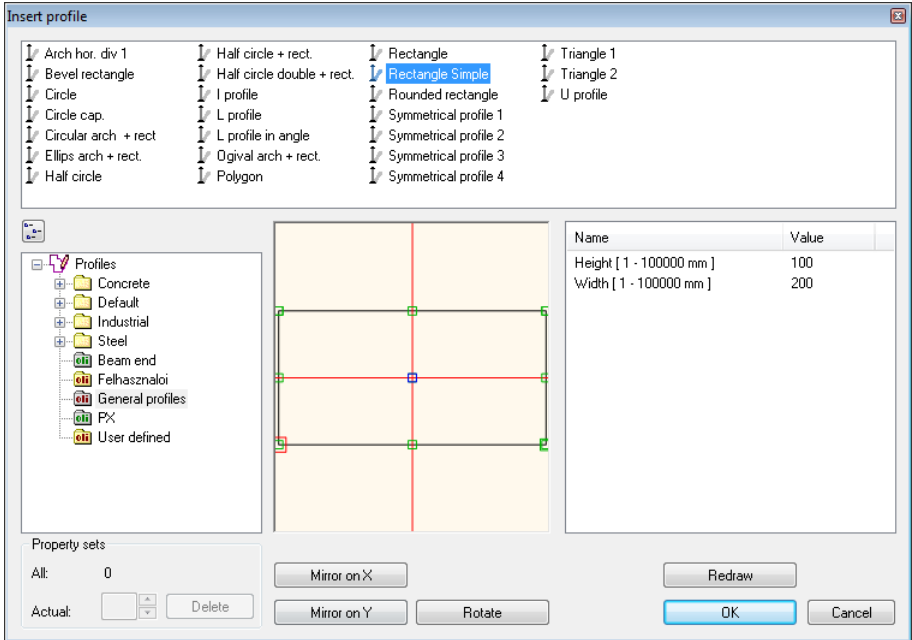
! The Undo and Redo commands in the Edit menu do not correspond to the Undo and Redo commands used when modifying the profile.

Insert profile in drawing

The requested or modified profile can be placed on the drawing with this command.

8.3.10. Select from list

Profiles are grouped into different categories of the profile directory. With this command you can choose a predefined profile from the appropriate category of the profile directory.



- Choose the desired profile category and type from the list; the shape of the selected profile and the list of its geometrical characteristics appear. You can modify the values; after modification press **Redraw** to update the drawing area of the dialog box.
- To place, activate the desired reference point. The eligible reference points are shown by small squares in the drawing area that can be activated by clicking. The active reference point is red while the others are green.
- Use the **Mirror** and **Rotate** buttons for the optimal setting of the profile.
OK Closes the dialog box.

The profile directory can be extended with closed and open profiles. To do so, use the *Building menu – Accessories – Define closed profile or Define open profile* instructions.



For the description see Chapter 9.10.5 on *Creating profiles*.

8.3.11. Select item

It applies the contour of the closed element or the hatching in the drawing as a profile.

8.3.12. Surface of solid

The profile will be the contour of one of the surfaces of the solid.

- Select a surface of the solid near the edge (inside the surface).

8.3.13. Transformed profile

This command transforms a defined profile with the 3D transformations. You can apply this option when using the 3D solid modeller.

- Specify the profile with the *Profile definitions tool*
- Choose the desired transformation from the 3D transformations pop menu.

8.3.14. Last value

The selected profile is the last defined profile (if any).

8.3.15. Select connected lines

With this command you can select the connected lines of a profile without having all nodes being specified one by one. If a profile consists of more chains, select the single elements of the profile.

8.3.16. Room selection

You can select a room the contour of which you wish to use as a profile.

8.4. Modification

You can modify both the properties and the geometry of the created elements.

Modifying properties

Some opportunities to modify the properties are available from the Modify menu. But the modification of any element is available with the **Properties** command from the *Shortcut menu or in the Property manager*.

Modifying geometry

The geometry modifying commands are available as follows:

- ❖ Click on the appropriate icon in the Toolbox or the Main menu , or
- ❖ Right click on the element from the Shortcut menu.

8.5. Specifying properties

Before you create any element, you can set the properties of the element in the **Properties** dialog box. You can activate the dialog box in several ways:

- ❖ With the **Building menu - Properties** commands, or
- ❖ With the **Drafting menu - Properties** commands, or
- ❖ With the **Dimension menu - Properties** commands, or
- ❖ Right-click on the icon of the element in the **Toolbox tool**.

Here you can specify the global properties that will be associated with all corresponding element types created subsequently.

8.6. Modifying properties

You can modify the properties of elements already created in the following ways:

- ❖ *One by one*, by selecting the desired property in the *Shortcut menu - Properties* dialog box.
- ❖ By copying the properties of a reference element with the *Modify menu - Copy properties* command.
- ❖ Using the **Property manager**, see the *Chapter 2.5*
- ❖ With the *Modify menu – Create similar* command it is possible to create new elements, using the properties of an element already created.
- ❖ In the *Substitute material* dialog the selected texture can be changed to the desired one in all the elements in the plan.
- ❖ You can modify the material of the elements using the Design center.

8.6.1. Modifying the properties of certain elements

You can modify the properties of certain elements if you:

- ❖ The Property Manager visualizes the properties of the selected objects and modify its values
- ❖ Right-click the element, then select *Shortcut menu - Properties*.
- ❖ Select the item and click on the Properties marker.

When the *Properties* dialog box displayed you can specify properties that will be assigned only to the selected element.




You can find the detailed the specification and modification of the properties of each element type in the corresponding chapters.

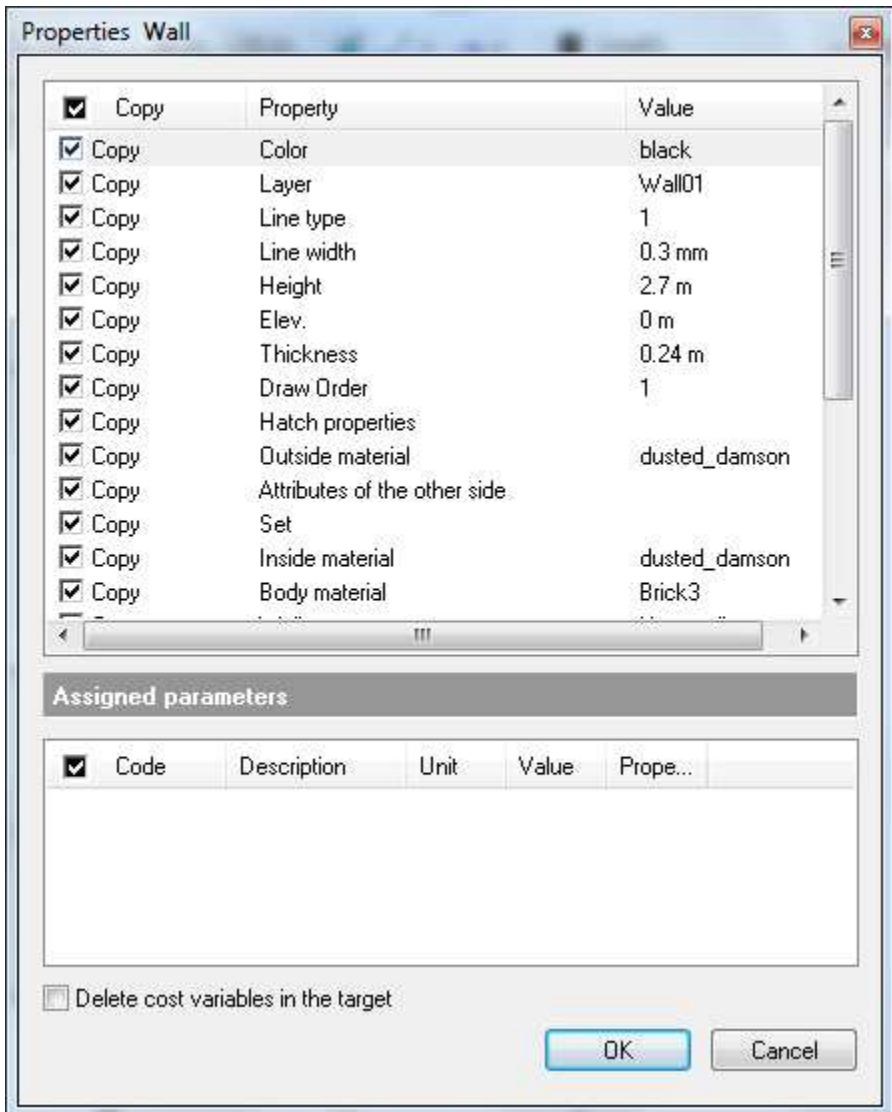
8.6.2. Copy properties

With the **Copy properties** command you may also modify the properties of an element group if you copy all or certain properties of a selected element to a group of elements.

You can activate the command:

- ❖ In the **Modify menu**,
- ❖ Right-click the element, then selecting the *Copy properties* option in the *Shortcut menu* displayed, or
- ❖ With the *Copy properties* icon -  in the *Edit toolbar*.

- Activate the command, and
- Choose an element the properties of which you wish to copy, or select the option corresponding to the desired element type in the command line if selection is ambiguous, that is when elements overlap.
- Select the desired properties in the **Properties** dialog box. E.g. in the case of wall the following dialog box appears:
- By clicking the checkbox in front of a property you can turn that property on and off. If you click the box in the heading you can turn all properties on and off.
The program assigns only those properties to the selected elements that have been selected.
- You can decide whether you copy the parameters (which may contain important data for quantity calculation) assigned to the element.



- Select the elements you wish to modify.
Enter Completes the command.

In case of objects you can copy properties between floors as well.

For this please select the **Go to: Lower floor** or **Go to: Upper floor** keyword from the More options menu.

Options:

Go to: Lower floor	The software activates the following lower floor if there is any.
Go to: Upper floor	The software activates the following upper floor if there is any.



In case of object if the “Name” option is switched on, the objects to be modified will inherit the object type as well.

8.6.3. Create similar

You can create a new element with the properties of an existing element by using the **Modify menu - Create similar** command.

You can activate the command:

- ❖ In the **Modify menu** or,
 - ❖ By right-clicking the element and selecting the *Create Similar...* option in the *Shortcut menu* displayed.
- Activate the **Modify menu - Create similar** command.
 - Select an element to open its property list.

The program reads the properties of the selected element and enters the create element command. The element drawn subsequently will have the properties of the selected element.

If for example you select a wall to read its properties, the program offers the **Create wall** command.

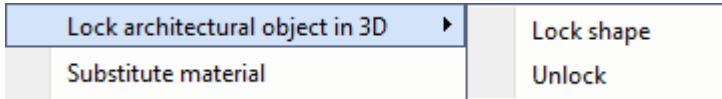
8.6.4. Lock architectural object in 3D

With this command you can lock 3D models to architectural elements (the architectural elements in the Building tool from wall to object) independent of their 2D symbol. This way you can easily create detailed drawings, such as decorated walls, without displaying their details on the 2D drawing. Once you lock an architectural element, you may make any modification in the 2D drawing; its 3D view will not be altered.



We suggest that you only decorate walls and use the **Lock in 3D** mode when you have completed the construction of the building structure. In this case you will not have to make frequent modifications.

The commands are the following:



8.6.4.1. Lock shape

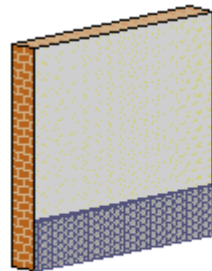
Example:

You can create a wall with its foundation without displaying the foundation in the 2D view. You can see how this command works in the following example:

- Draw a wall with its foundation. To create a foundation draw a wall with the following parameters for example:
wall thickness: 0.05 m,
height: 0.6 m,
wall material: stone-2

- Select the **Lock architectural element in 3D - Lock shape** command. Choose an architectural element (the wall in the model), to which you want to attach additional objects and whose 3D model you wish to lock.
- Select the additional objects for locking their 3D model.
 (Select foundation.)

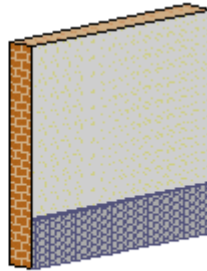
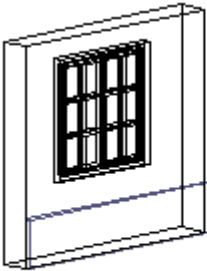
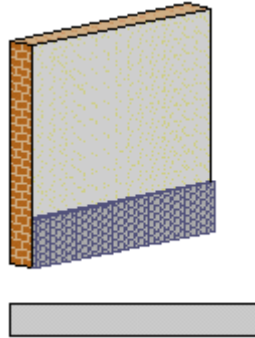
Enter Completes selection.



Once you locked an architectural element's 3D model, the **3D fixed** option is activated in the properties dialog box of the object.

The 3D view of the wall with foundation is now locked. From this time on you can delete the 2D view of the wall, its 3D view will not change.

For example, if you place a window on the wall, the window will only be displayed on the 2D symbol of the wall. In the 3D view the window will only be indicated by the wireframe model, as the 3D model of the wall has been locked.



If you wish to display the new shape of the wall (with the window), you have to use the *Lock architectural element in 3D - Unlock* commands under *3D menu - Architectural element ->3D solid*.

8.6.4.2. Unlock

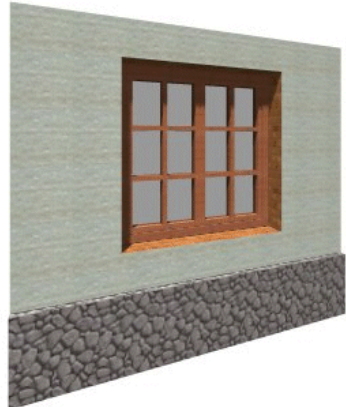
With this command you can unlock the selected objects, and work with them as ordinary architectural elements.

- Select an architectural element the 3D view of which you want to unlock.



The **3D fixed** option is deactivated in the *Properties* dialog box.

In this case select the wall to unlock its solid 3D view. The program now displays the wall with the inserted window.



We suggest you that before unlocking use the *3D menu – Arch. object -> 3D solid* command, thus the 3D model of the foundation will be saved. Repeat the *Lock shape* command for the wall and the foundation to save the new layout of the wall. (If you regenerate the wall without using this command, you will lose the foundation.)

8.6.5. Substitute material

With the *Modify - Substitute material* command you change the selected texture of each element of the drawing to the one you specify. This concerns all architectural elements of a drawing and involves all floors.

When you activate the command the **Material** dialog box appears.

- Select the material category you wish to replace. Click **Select**.
- In the dialog box then displayed select the new material. Click **Select**.

8.6.5.1. Substitute materials using the Design center

By using the Design center you can modify the material of selected elements in an instant without activating the *Properties* dialog box and browsing in the Select by element dialog box.

Using the Design center you can modify the material of elements on the floor plan and in the 3D view in different ways.

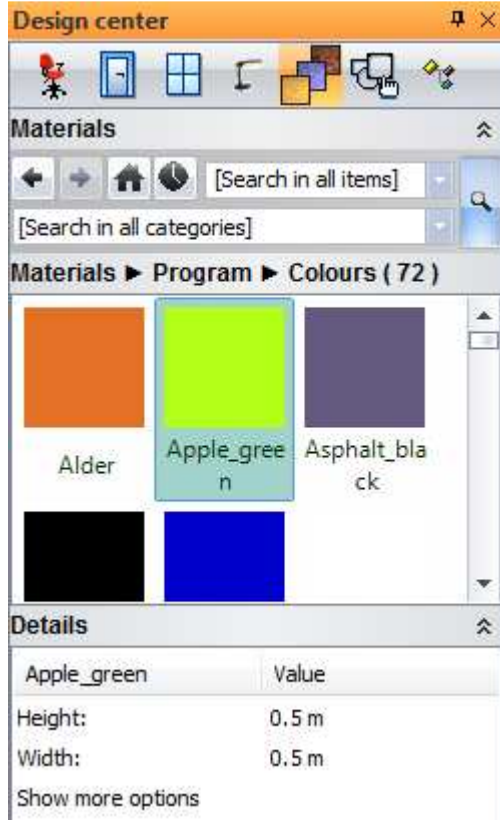
Modifying materials on the floor plan



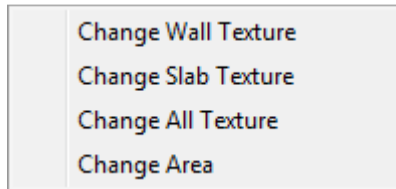
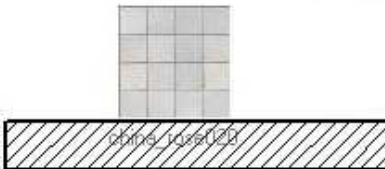
You can use this command for all architectural elements except doors and windows.

You find the materials applied in the program arranged in classes and categories in the *Materials* directory of the Design center.

- Open the desired category, e.g. *Program Materials class - Colours*. The program displays all materials within that category.



- Click the name/picture of the texture with the left mouse button.
- While holding the mouse button, drag the texture on the element you wish to modify.
- Once the texture is on the element, release the mouse button.



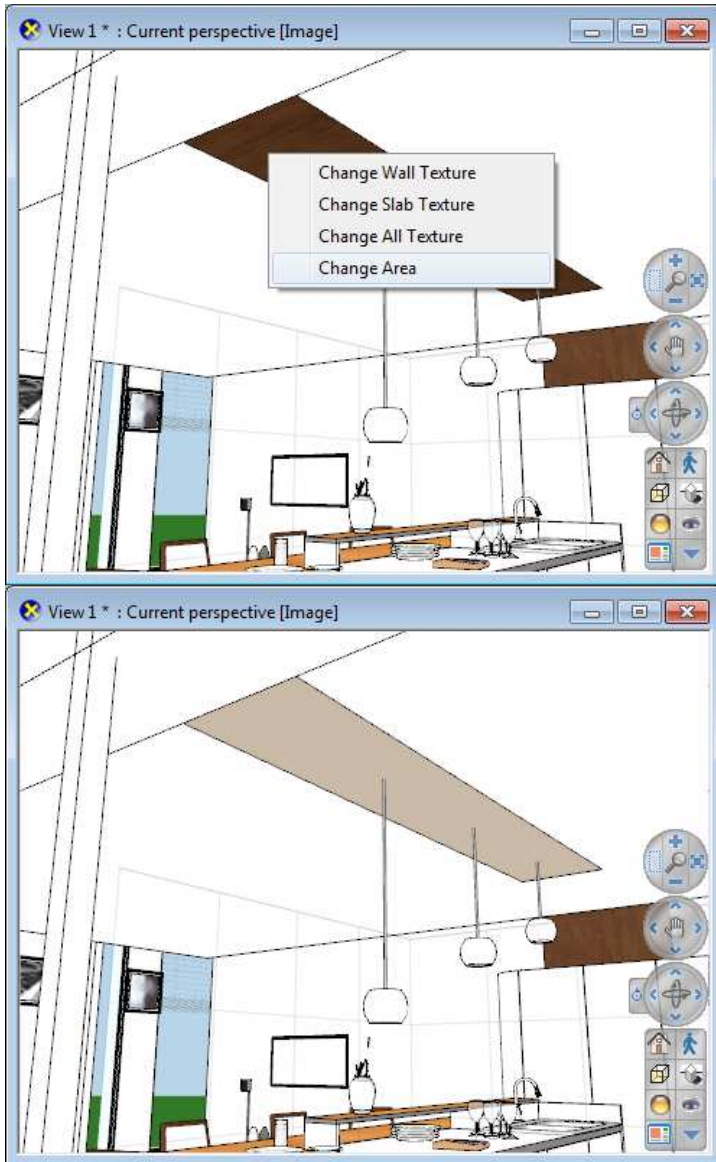
- In the menu then displayed choose the option you wish.

Modifying materials in 3D

The command changes the texture selected with a plane of the model to the material you choose in the Design center.

- Select the desired material in the appropriate material category, and then click its name/picture with the left mouse button.
- While holding the mouse button grab the texture over the plane to which you assigned the texture you wish to modify.
- Click the requested plane. The program then selects the plane.

The program automatically opens a menu and you can choose an option.



8.7. Explode

Using the two additional commands in the *Modify menu*, you can break down elements to their components.

8.7.1. Explode by selection

You can explode compound elements (such as text, dimension, hatch, groups and architectural elements) into their components.

Explode what element	into what elements
Text	Line, elliptical arc, spline, hatch
Dimension	Line, text
Hatch	Line
Group	Elements it contains
Architectural elements	Graphical components or subgroups

You can explode elements in the following way:

- Select the compound elements you wish to explode.
- Choose the *Modify menu - Explode by selection* command.
- Select the next element, or
- **Enter** Completes the command.

Option:

Text	Explodes the selected multiline texts into multiple single-line texts.
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8.7.2. Explode

- In the displayed dialog box click on a class to explode all elements in the selected class.
- Click **OK**.

The program explodes the selected elements.