ARCHLine.XP® 2009

Windows

News in

Release 2

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

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News in ARCHLine.XP® 2009 Release 2

1. Rendering

1.1. Introduction

ARCHLine.XP 2009 R2 provides an integrated powerful, easy-to-use rendering and visualization technology based on the latest release of LightWorks product, LightWorks 8.0.

This release builds on previous versions and includes the release of some new, exciting features.

This photorealistic-rendering engine includes a physically based lighting model supported by advanced sky, analytical anti-aliasing, ray-trace algorithms, and a range of global illumination techniques.

1.2. More about rendering

Techniques and quality of rendering can differ. We would like to introduce the background of this technology in the followings.

Ray tracing

Ray tracing is a technique for generating an image by tracing the path of light through pixels in an image plane. The technique is capable of producing a very high degree of photorealism.
See more: http://en.wikipedia.org/wiki/Ray_tracing_(graphics)

Global illumination

Global illumination is a general name for a group of algorithms used in 3D computer graphics that are meant to add more realistic lighting to 3D scenes. Such algorithms take into account not only the light which comes directly from a light source (direct illumination), but also subsequent cases in which light rays from the same source are reflected by other surfaces in the scene, whether reflective or none (indirect illumination). Theoretically reflections, refractions, and shadows are all examples of global illumination, because when simulating them, one object affects the rendering of another object.
See more: http://en.wikipedia.org/wiki/Global_illumination

Global illumination – Color bleeding

The transfer of color between nearby objects is caused by the colored reflection of indirect light. This is a visible effect that appears when a scene is rendered with Global Illumination.
See more: http://en.wikipedia.org/wiki/Color_bleeding (computer_graphics)

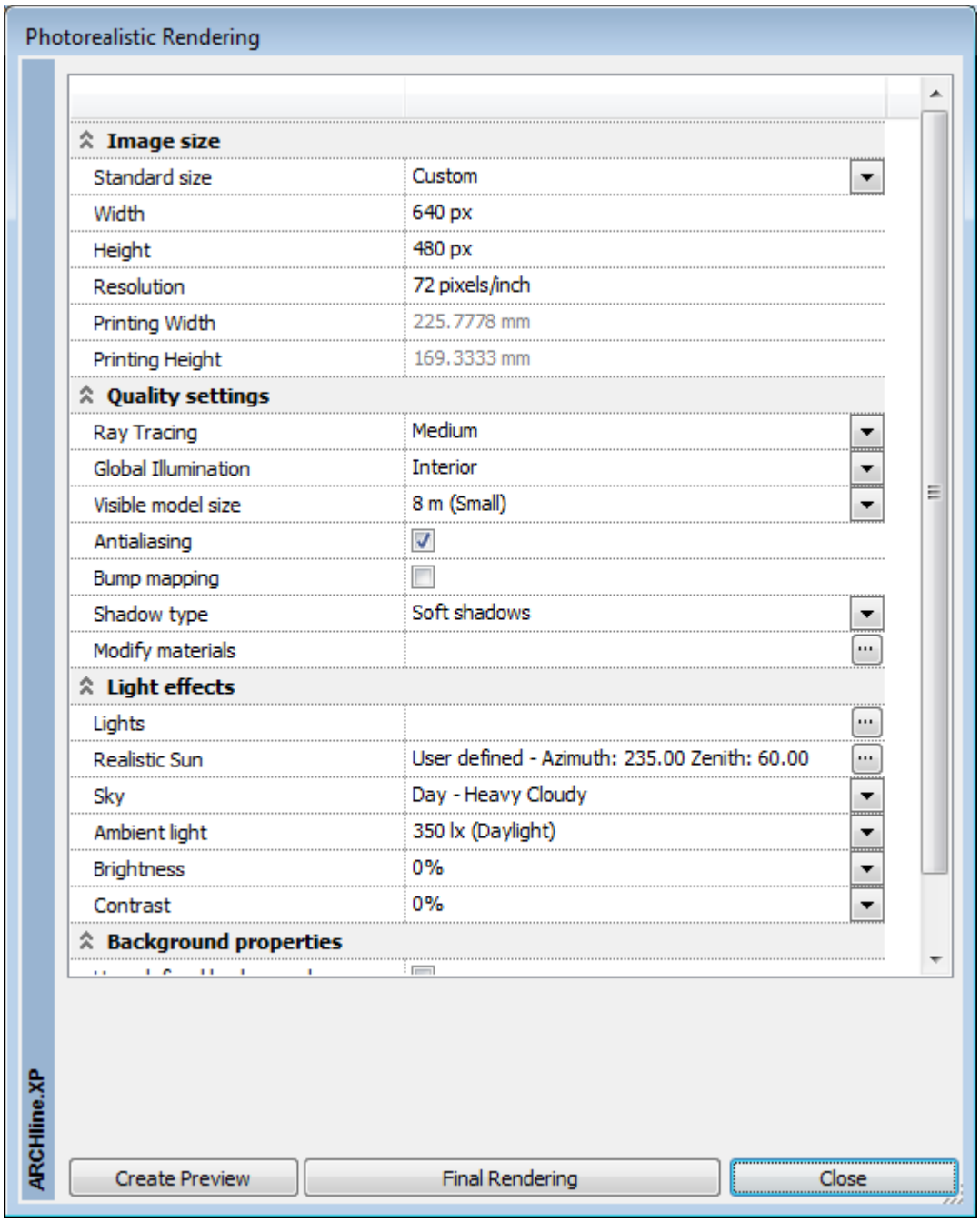
Ray tracing

Global illumination

1.3. Usage of rendering

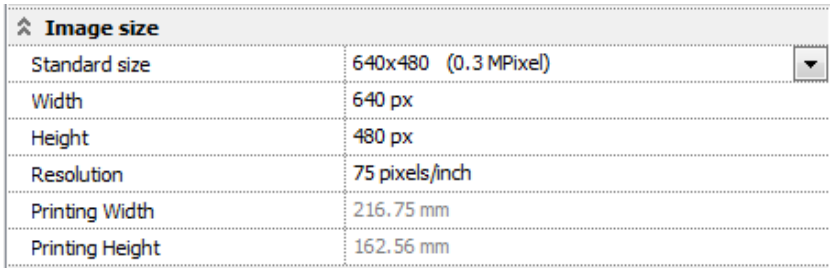
You can make photorealistic pictures with ’rendering’ icon.

 Icon is active if you work in the 3D window
If you click on the icon you will go to ’rendering’ window.



1.3.1. Rendering Settings

1.3.1.1. Image size



Standard size

You can use from the standard sizes in the list.

Width

The width of the final image in pixels. You can use custom values as well.

Height

The height of the final image in pixels. You can use custom values as well.

Resolution

The resolution (pixel density) of the final image. This value has an influence on printing size.

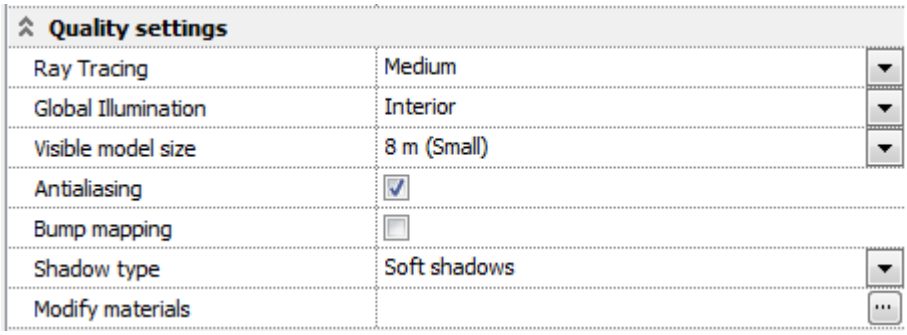
Printing width

This value is calculated from Image size and Resolution.

Printing height

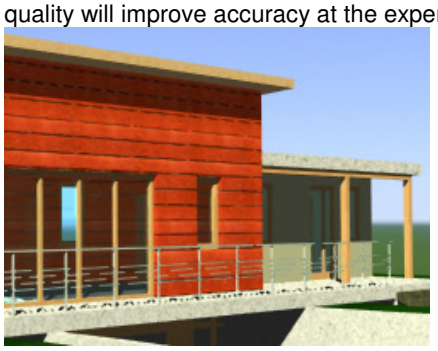
This value is calculated from Image size and Resolution.

1.3.1.2. Quality settings

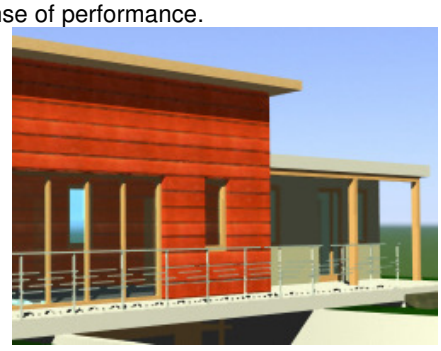


Ray Tracing

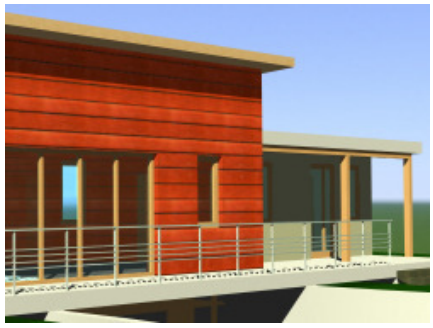
Ray Tracing displays the model with tracing the path of direct light through pixels in an image plane. Higher quality will improve accuracy at the expense of performance.



Low setting
(Simple textures and details)



Medium setting
(Smooth textures and simple details)



High setting
(Smooth textures and details)

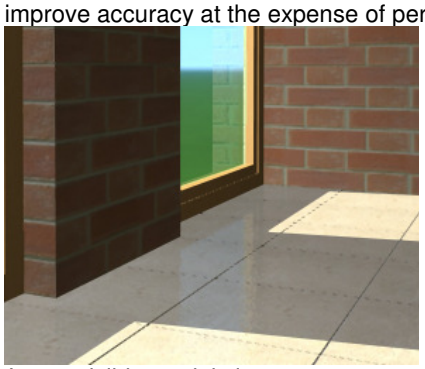
Global Illumination

Global Illumination represents real-world lighting situation. It calculates the amount of lights distributed from each surface to every other surface. This method is also capable to calculate color bleeding on surfaces. "

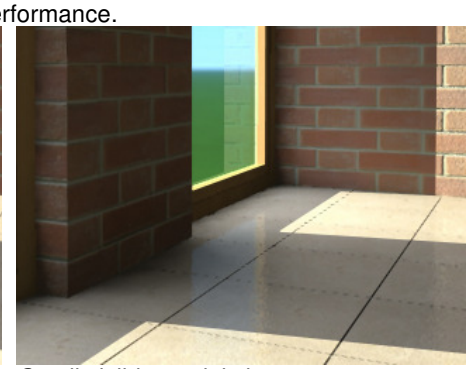
See more: http://en.wikipedia.org/wiki/Global_illumination

Visible model size

You should set up this value to approximately the main, visible part of the model. Reducing this value will improve accuracy at the expense of performance.



Large visible model size



Small visible model size

Anti-aliasing

With the help of Anti-aliasing, the edges of a rendered scene will be more realistic, smoother.

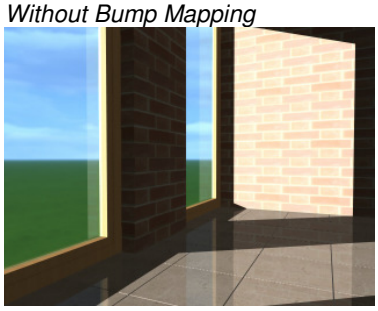
Without anti-aliasing

Using anti-aliasing

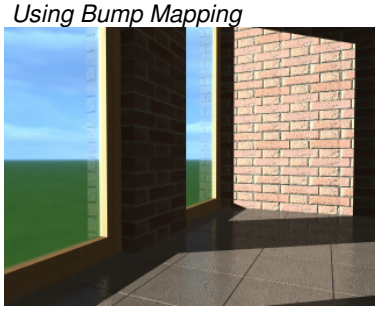
Bump Mapping

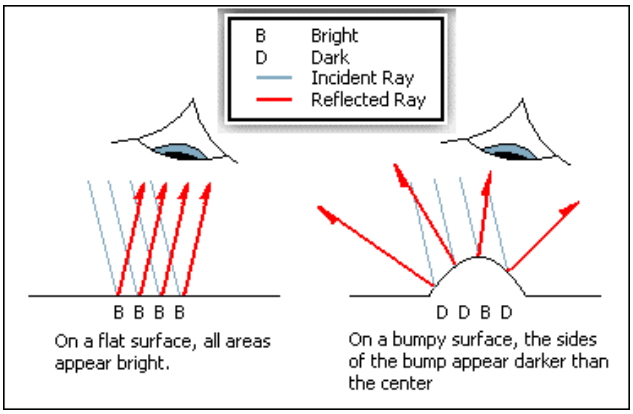
Bump mapping is a technique used to add more realism to images without adding a lot of geometry. Texture mapping adds realism by mapping images to geometric surfaces. Bump mapping adds per-pixel surface relief shading, increasing the apparent complexity of the surface. This uses lighting properties and indicates which parts are dark and which are light on a texture, making it look more geometrically complex because of light refraction.

Without Bump Mapping



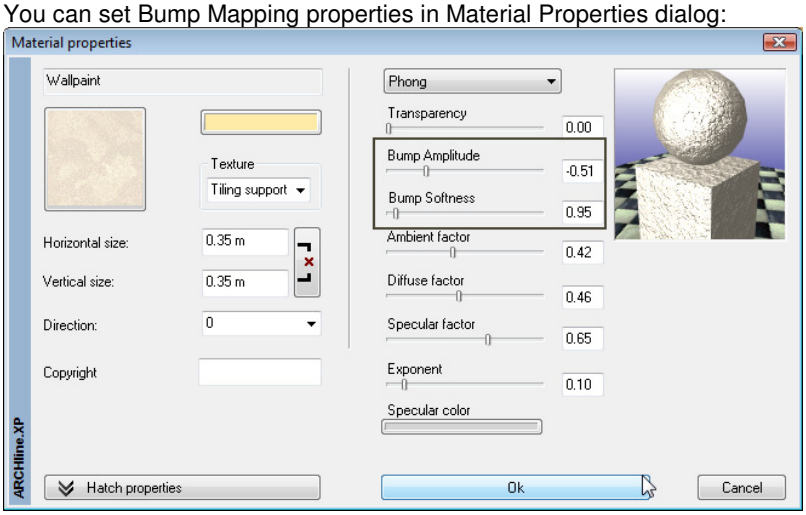
Using Bump Mapping





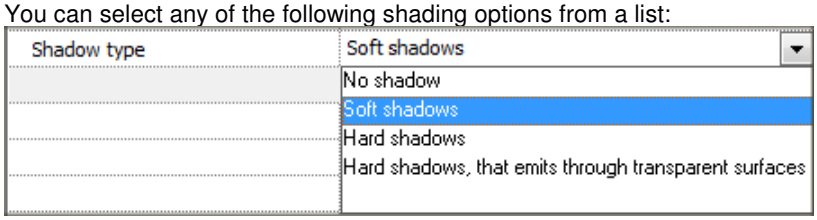
See more> http://www.tweak3d.net/articles/bumpmapping/

You can set Bump Mapping properties in Material Properties dialog:



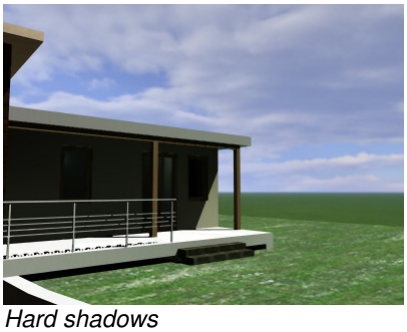
Shadows type

You can select any of the following shading options from a list:



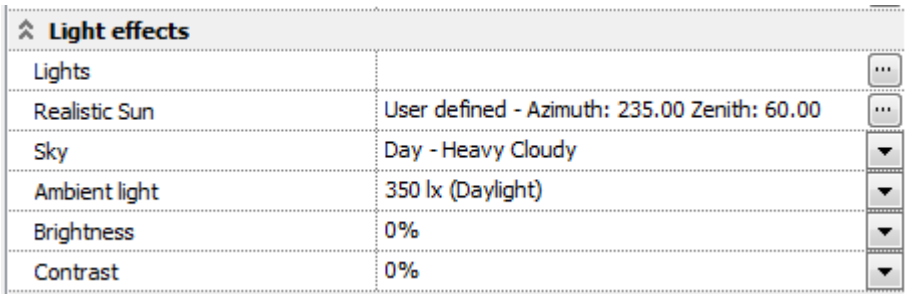
Calculating shadows may slow down the rendering process, but provides more realistic images.

Soft shadows



Hard shadows

1.3.1.3. Light effects



Lights

You can change the values of the artificial light sources, represented in your model before rendering or you can switch off all the lamps or groups of the lamps.

Lumen based estimation of lights
Unlike the definition of previous versions the source of light is defined by lumen flux units.

The below chart shows the utilization of different light sources which gives us practical help in defining flux (lumen) according to different lamp types. In ARCHline.XP 2009 R2 source of light's type is based only on incandescent lamp.

Luminous efficacy = *Ratio of luminous flux emitted from a light source to the electric power consumed by the source lumen per watt lm/W*

Light source type	**Luminous efficacy** (lm/W)	Light source emission (Lumen)
Incandescent 100 W (220 V)	14,4	1440
Halogen 100 W (220 V)	17	1700
Compact fluorescent 9–26 W	57–72	513-1872
Metal halide lamp	90	
High pressure sodium lamp	85–150	
Low pressure sodium lamp	100–200	

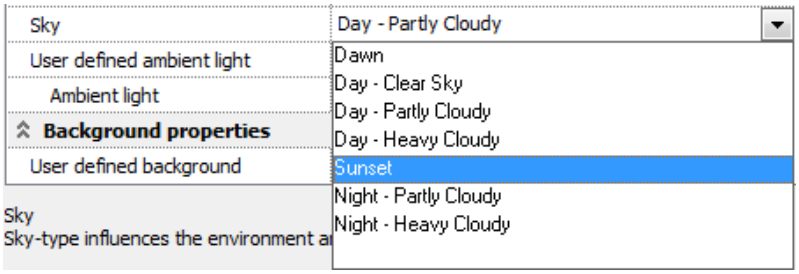
See more: http://hu.wikipedia.org/wiki/F%C3%A9nyforr%C3%A1s

Sun

You can set sun by defining the geographical location, the north direction, the date and the time, or you can set the sun to an optional position.

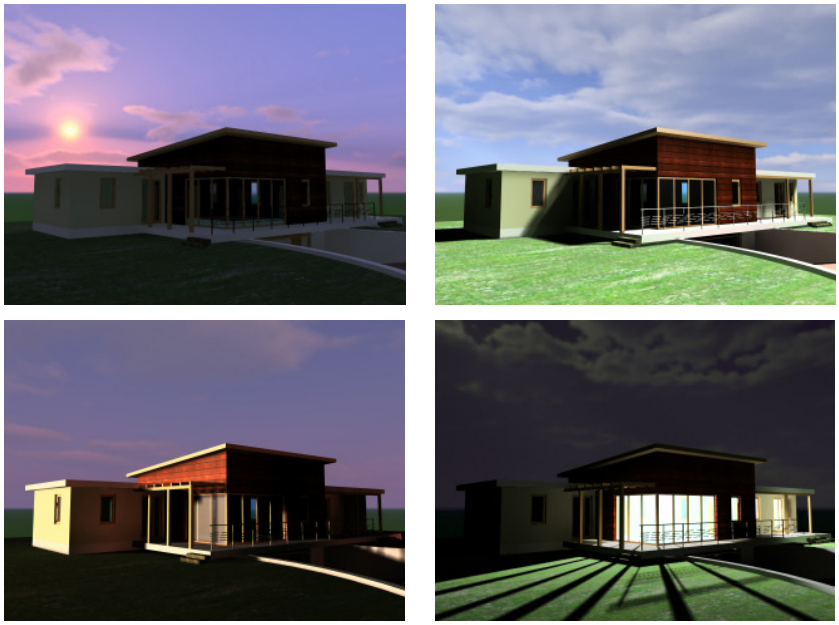
Sky

You can choose the aspect of the sky that influences the light from outside in panoramic images background.



Panoramic background affects the light coming from the surroundings. Panoramic background not only shows the realistic appearance of any models, but even more. With its help very near to reality it shows different light distributions. For example if we display a certain picture with morning light we will get totally different light conditions such as we try it with sunset lights where the rays will give slightly red colored light.

Prospective in different panoramic backgrounds.



Ambient light

Using this option you can set unique ambient lights. Basically the panoramic background's ambient light is shown in the picture which can be chosen at the „sky" option. The unit of lighting is in Lux. (lighting is 1 Lux if 1 Lumen flux is perpendicular to 1 m2. 1 Lux is equal to the light of full moon and lights at noon is roughly equal to 30,000 Lux)

Ambient light in bigger volume is increasing lighting in the picture. The disadvantage is, it is decreasing the contrast of tones.

Low ambient light *High ambient light*

Camera light

With the camera light you can switch on and control the camera's high light. A light source is emitting light from the view position. No shadows are ever cast from a camera light. It can be well used for lighting dark or under lighted places. The light unit is defined in lux.
In use of global illumination the camera light is going to switch off automatically.

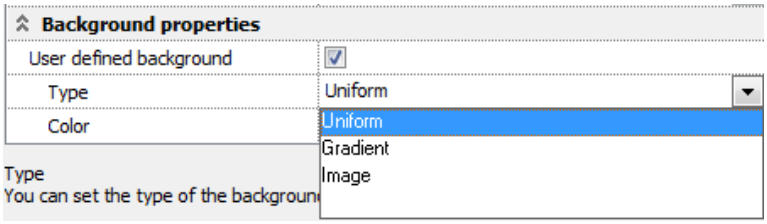
Brightness

Adjust the brightness of the image. Negative values make the image darker and positive values make the image brighter.

Contrast

Adjust the contrast of the image. Negative values brighten up darker areas and darken brighter areas to reduce the overall contrast, positive values do the opposite.

1.3.1.4. Background type



User defined background

The image background can be monochrome, uncolored or an imported picture. If you switch off the user defined background option, you will see the panoramic background that has been chosen for 'sky' option. In case of switching it on you can set properties of the image background behind the model.

Plain

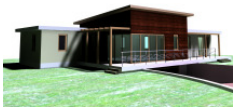
Use this scroll down menu or the color dialog box to set background color.
Set background color with the color table.

Graduated

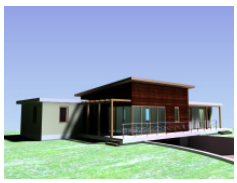
Define a top and a bottom color to set the background color of the image. The color of the background will change gradually from the top color to the bottom color.
Set the top and the bottom color of the background in the color table.

Image

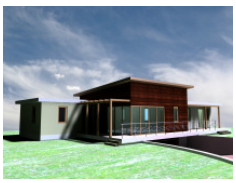
You can load an image into the background of rendering.
In the **Open image** dialog box select the appropriate background image.



Plain



Graduated



Image

1.3.2. Render modes

Create Preview

The image quality simplified compare to that of image created in *Final Rendering* mode. It takes less time to create images in *Preview* mode, and you can easily change the rendering parameters before starting the time consuming Final Rendering.

Final Rendering

Here you can start creating the final photorealistic image.

Create Preview

Final Rendering

Save to File

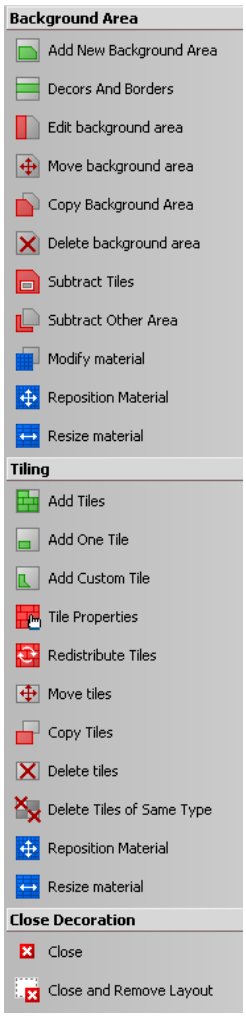
When the rendering image is ready you can save the output to a file.

- Define the name and the path of the image file in the ***Save as*** dialog box appearing.
- Define the file format of the image file (*.bmp*, *.jpg*, *.tif*, *.tga*).
  These formats differ in their quality and their respective size too.

2. Tiling

The *Decoration / Tiling* function can be used for walls, slabs, terrains and room books, designing the real arrangement of tiles and paving.
Using this command it is possible to define an area on the wall, floor, ceiling or terrain that is going to have different material. Later on you can define the arrangement of tiles on that part.

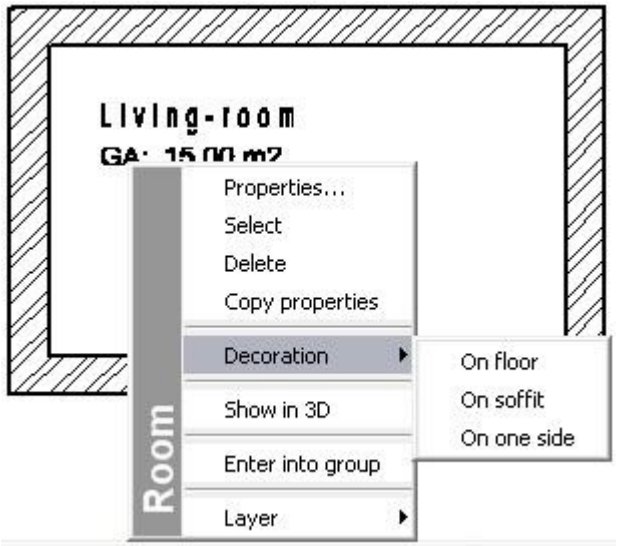
Decoration layout definition means that the distance between the tiles and the direction of them have to be defined. The pattern given out by them can also be defined. Inside an area covered by tiles it is possible to define another background area with arbitrary shape and different pattern. There is also possibility to place individual tiles among the others of an area.
The lists of these surfaces are going to contain the number of tiles grouped according to the whole and cut size.
To define new background area of decoration on architectural elements use commands of the *Add-On menu -- Tiling* or *Wall/Slab/Room book/Terrain Popup menu – Tiling... .*



Room book

Decoration layout can be added to the floor, to the ceiling or to any sidewall of a room through its room book.

Note that you can add decoration to these surfaces only if a room border surface template is attached to the room book. About *Room border surface templates* see the chapter *9.5.1.5. Border surfaces (in the manual)*..



The difference between the decoration added to the sidewall of a room and the sidewall decoration added through a room book is that in the first case the decoration will be defined along the full wall length, whereas in the second case only a part of the wall defined by the wainscot of the sidewall will be decorated.
Apart from this the decoration layout definition works like for walls and slabs.

You can add background area to a 3D object by the *3D - Modify material - Decoration* command. It is not possible to define decoration layout here. See the details in chapter *18.10. Modify materials (in the manual)*.

Walls, Slab

Decoration definition consists of two phases.

I. Background area definition
II. Tiling

- To decorate a surface of a wall/slab/room book/terrain, click on the element by right mouse button. Select one of the Tiling… commands in the shortcut menu. If you have selected the *Tiling In 3D*, *Slab/Tiling on Floor* or *Slab/Tiling on Ceiling* command, you can start the decoration immediately, otherwise the program first creates the layout of the selected area and you have to place it on the drawing.

  Once the surface to decorate is selected, a number of decoration commands appear in the Toolbox. You can start the decoration by selecting one of them.

  You can close the decoration process by selecting the “Close” command in the Toolbox or pressing the ESC or ENTER key. Use the “Close and remove layout” command instead of “Close” if you do not want to keep the decoration layout on the drawing.

2.1. Background area

You can assign new material to the selected face of a wall or slab with the help of a contour. In this way it is simple to create for example a plinth or other decoration that can be well presented on the photorealistic image. If your decoration includes only homogeneous materials then your decoration is complete with the background area definition.

You can also use the created background area for the grounding of tiling. The material of the background area is important, because it defines the material representation of the gap between tiles. Additionally, the shape of the background area defines the surface geometrically where the distribution of tiles will apply (See later: Tiling).

! Tiles can be placed only on those areas where the background has already been defined.

With the help of the available options background area can be added, edited or modified:

- ❖ Add New Background Area

- Decors and Borders
- Edit Background Area
- Move Background Area
- Copy Background Area
- Delete Background Area
- Subtract Tiles
- Subtract Other Area
- Modify Material
- Reposition Material
- Resize Material

For the last three commands see the details in chapter *2.1.3. Modify Material*

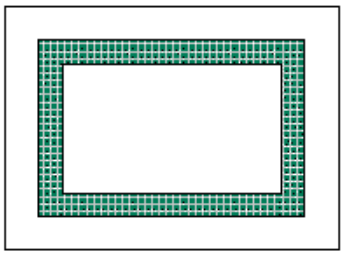
2.1.1. Add New Background Area

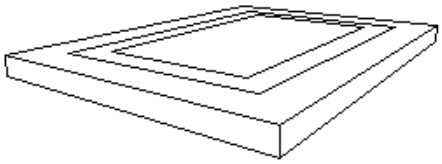
- Select the Add New Background Area command in the Toolbox.
- Define the profile of the decoration using any option in the *Toolbox – Profile definition tool.*
- From the appearing *Material* dialog select the material that will belong to the closed contour.

See the details of *Profile definition* in chapter *8.2. Specifying profile* (in the manual).

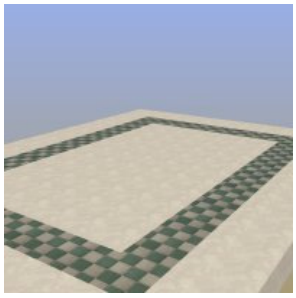
In case of decorating a floor or ceiling select the **ROOM** keyword instead of defining the profile, if you want to assign new material to the entire floor (top face of a slab) surrounded by the walls.

Decorations appear both on the wall layout, 3D view and on the photorealistic image.





! Don't be confused! The pattern you see on this drawing is only a background area used as decoration.
Define a background area according to the glue line material used for tiling if you want to place tiles on this background area.

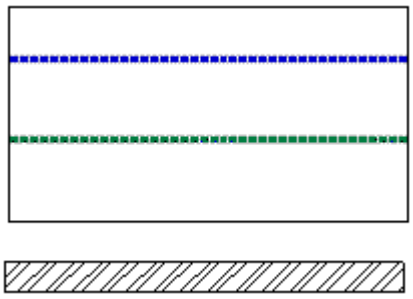


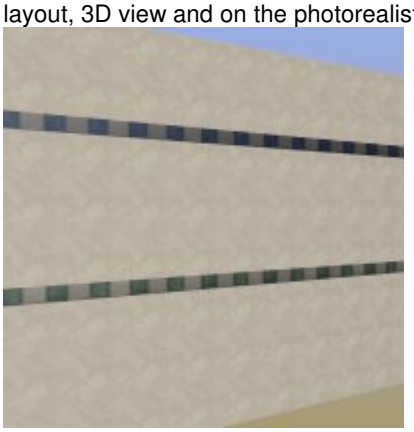
2.1.2. Decors and Borders

This option can be used for wall side only. More decor stripes can be defined to the selected wall surface (max 7).

- Select the Decors and Borders command in the Toolbox.
- The *Define decor strip* dialog appears.
- Define the height of stripe bottom from the bottom of the wall.
- Define the width of stripe counted from the bottom of it.
- Select the material of stripe.
- Press the Append button if you need to create more stripes on the wall. Stripes already existing appear in the list. Select one and modify if it is needed.
  The selected stripe can be deleted by the Delete button.
- **OK** closes the dialog.

Decor stripes appear both on the wall layout, 3D view and on the photorealistic image.





! Don't be confused! The pattern you see on this drawing is only a background area used as decoration. Define a background area according to the glue line material used for tiling if you want to place tiles on this background area.

2.1.3. Edit Background Area

- Select the Edit Background Area command in the Toolbox
- Select the contour you want to edit.
- **Enter** to close the selection**.**
- Select from the appearing Edit Profile tool (move node, rounding, etc.) and modify the selected contour.

See the details of Profile editing in chapter 8.2.9. Editable profile (in the manual).

2.1.4. Move Background Area

- Select the Move Background Area command in the Toolbox
- Select the areas to be moved.
- **Enter** to close the selection.
- Give the reference point of the contour and move it to its right place.

2.1.5. Copy Background Area

- Select the Copy Background Area command in the Toolbox
- Select the areas to be copied.
  Enter to close the selection.
- Give the reference point of the contour and move it to its new place.

2.1.6. Delete Background Area

- Select the Delete Background Area command in the Toolbox
- Select the areas to be deleted
  Enter to close the selection.

2.1.7. Subtract Tiles

If individual tiles are defined on an existing background area you can subtract the area of them from the surrounding pavement area.

- Select the Subtract Tiles command in the Toolbox
- Select a background area
- Select tiles
  Enter to close the selection.

You can leave “gaps” between the area and the tiles by selecting the **Offset** keyword in the command line while selecting the tiles and entering an offset value. This way the program shifts the profile of the tiles with the given value and subtracts these increased areas from the background area.

2.1.8. Subtract Other Area

Similar to subtracting tiles, you can subtract other background areas from an area, too.

2.2. Tiling

You can create the arrangement of tiles on the previously defined background area - on the surfaces of architectural elements. The material, type, size of tiles and gaps between them can be defined precisely here.

Select from the following options:

- Add Tiles
- Add One Tile
- Add Custom Tile
- Tile Properties
- Redistribute Tiles
- Move Tiles
- Copy Tiles
- Delete Tiles
- Delete Tiles of Same Type
- Reposition Material
- Resize Material

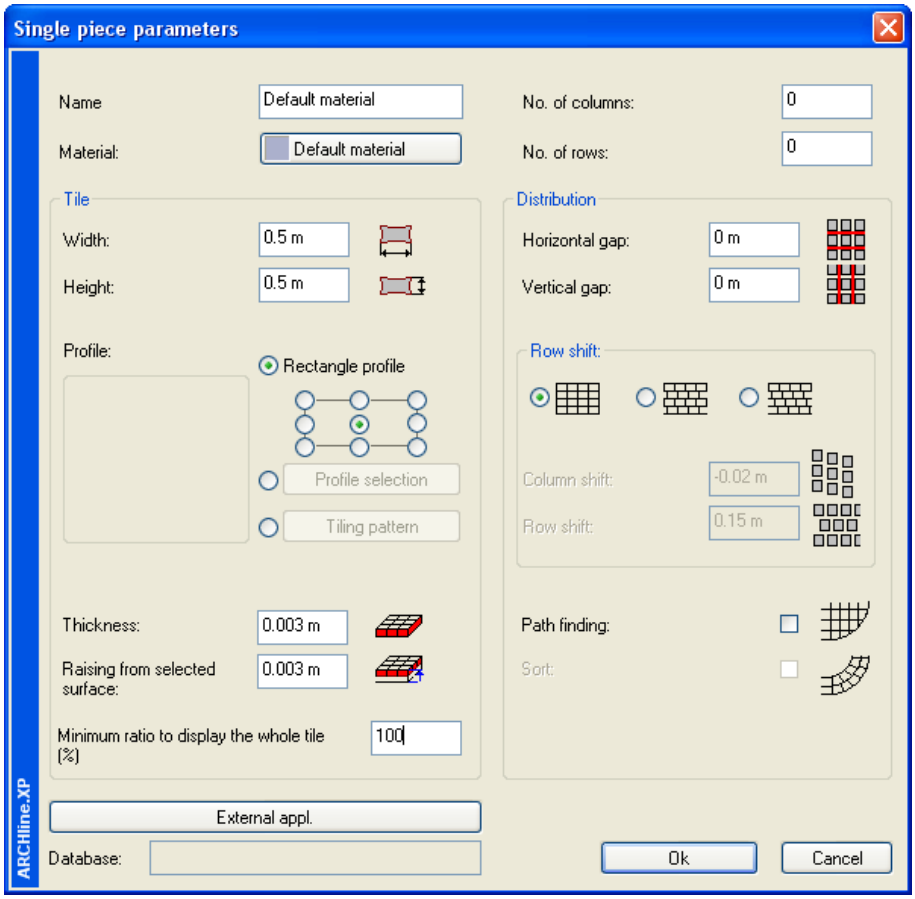
 For the last two commands see the details in chapter *2.3. Modify Material*

2.2.1. Add Tiles

With the help of this command you can define the regular arrangement of tiles on the selected background areas.

- Select the **Add Tiles command** in the Toolbox.
- Select a background area to define the tile arrangement on it or click on the *Full* keyword in the command line to place tiles on the whole surface of the architectural element.

The following dialog appears:



Name

- Give the name of tile of the selected background area.

Material

- Define the material of the tiles by clicking on the button, select from the material library of the program.

Number of columns/rows

- If you wish to cover only a part of selected area with tiles, type the number of rows and columns. If you want to cover the entire area, write 0 in both fields.

Width / Height

In the fields define the box size that surrounds the tile. Give the size of the tiles: type the width and height values. You can resize tiles with custom profile or complex tiling patterns by changing these values, too.

Profile

The default shape of tile is rectangular, but any other profiles from the program profile library can be used or you can cover the selected area with a complex Tiling pattern previously created of several unique tiles.

Define the type of the profile of the tile:

- Rectangle profile – If you select Rectangle profile, define the reference point of placement of the rectangle tile.
- Profile selection – Click on the *Profile selection* button and select the adequate profile from the Profile library if the profile is not rectangle.
- Tiling pattern – Click on the *Tiling pattern* button and select a complex pattern from the library.

See the details of creating a *Tile pattern* in chapter *2.6*.

Thickness

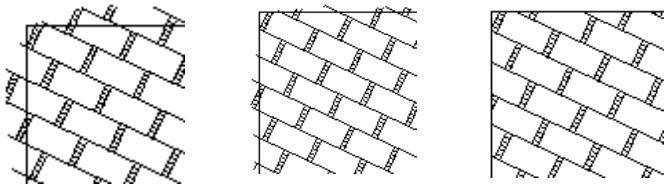
- Define the needed width of tiles.

Raising from selected surface

- Define the raising value of tiles measured from the background area. If 0 is defined, the tiles will be placed exactly on the surface.

Represent whole-size tiles (minimum ratio to display the whole size of the tile)

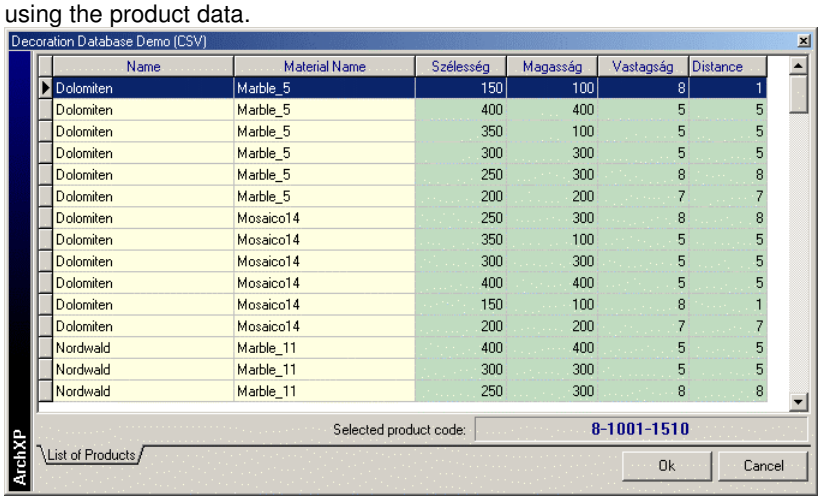
If the size of the cut tile is above a certain % of the original tile size, the program counts it as an entire one. The aim of this option is the practical approach when we represent nearly whole tiles as a whole one in the list of tile calculation.
In these examples we intentionally used extreme values for better illustration.



External application

The application was made using Microsoft Access DAO. A database can be filled with data and modified according to the needs of the user. A product code or article number can be assigned to the material that appears in the ***Single piece parameters*** dialog in the *Name* field and at the same time it can be identified in the Excel list of tiles.

- Select material to the tiles from the external database you created. In the example here is a database created by us. Select the frequently used products from your producer's product catalogue and fill your own database using the product data.



Horizontal / Vertical gap

- Define the distance between the tiles in horizontal and vertical directions.
The gap will be presented with the material of the background area.

Row shift

- Select from the three graphical options:

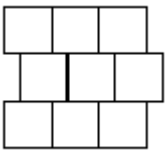

There is no shifting between rows; the tiles are matched to each other by their corners precisely.

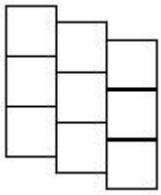

If the button is switched on you can define the value of horizontal *row shift*. Every second row will be shifted with this value from the first one.


If this option is selected, you can define horizontal and vertical shift values in the *Row shift / Column shift* fields.

Row/column shift

- Define the horizontal and vertical shift values of the tiles. The fields become active if the relevant options had been selected first





Example 1: (tiles: 0,3x0,3)

, Row shift: 0,1

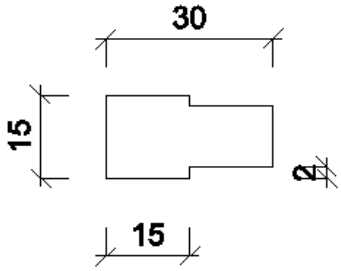
Example 2: (tiles: 0,3x0,3)

, Column shift: 0,1

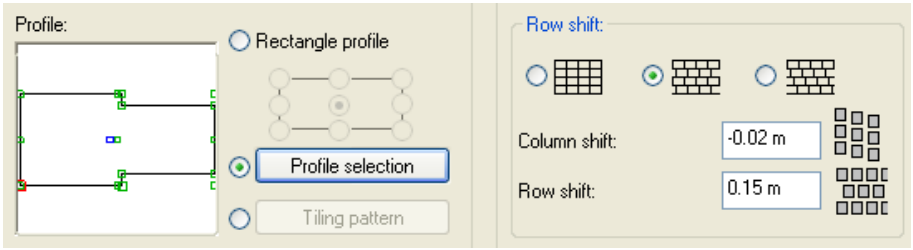
Row and column shifting Example

There is a possibility to remove every second line X and Y direction in the Single piece parameters window. You can use well this command at for example: placing *Viacolor cover*.

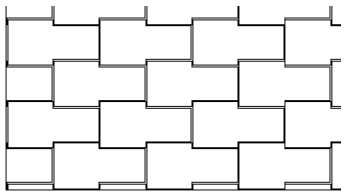
In our example we use the following profile:

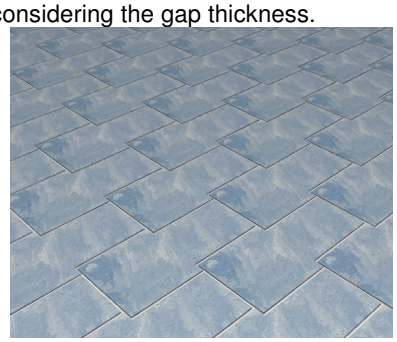


- Choose the proper profile in Single piece parameters dialog box.
- From the Row Shift options select the second one.
- Enter -0, 02 in the Column shift field, and 0,15 in the Row shift according to the profile.



The program will move exactly the tiling considering the gap thickness.

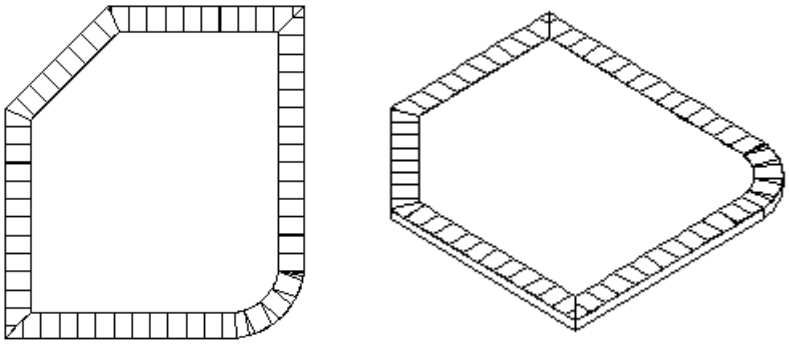


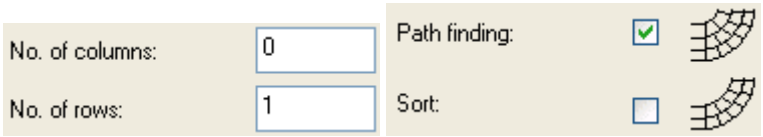


Path finding

If this option is switched off, the program will not take the contour of the area into consideration so the tiles will be arranged in a homogeneous pattern along the path.
If this option was activated there is possibility to place tiles along a path. This function is important because by this you are not restricted to align subsequent tiles only to the vertical edges of the tiles but even to a curved path.
At placing you have to define the start point and the end point of the path to which the path finding applied. In case of closed path like on the figure below the start point and the end point can be the same so the path finding will be applied along the whole contour. In case of path finding the number of rows has to be defined. Opposed to the default case when zero row and column numbers mean full coverage, row number of zero means one row here. The number of columns depends on the path.

For example:

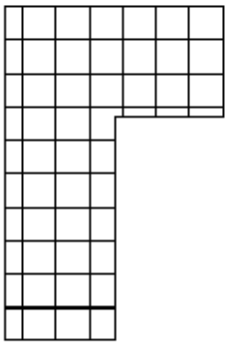


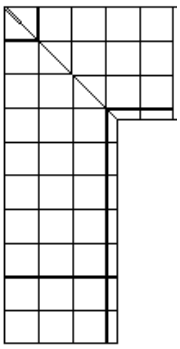


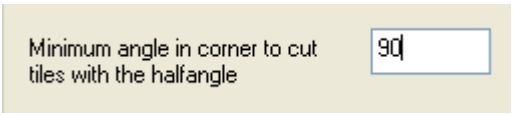
Cutting the tiles in corners

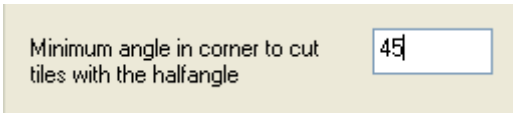
It is also possible to cut the tiles in corner according to the figure above. If the *Path finding* option is switched on the *Minimum angle in corner to cut tiles with the halfangle* option will appear. You have to specify an angle here. If the angles of connected edges at path breakpoints exceed the specified angle the program will cut the tiles in half angle.

Let's see an example:
The edges meet in the corner in right angle and the specified minimum angle is 90°. In this case half angle cutting rule won't be applied therefore the tiles in the corner go to the edge without cutting.
It the edges meet in the corner in right angle and the specified minimum angle is less than 90° (for example 45°), the program will cut the tile in half angle of the corner.



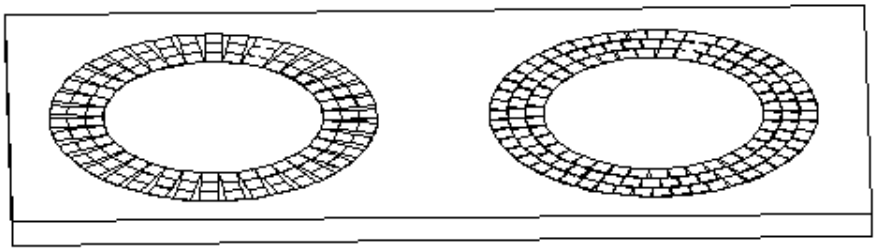






Sort

If the *Path finding* option is active, by switching on the Sort option you can precisely adjust the tiles to each other within the path.
In the figure below on the left side the decoration tiles are sorted so they are adjusted to each other. On the left side the tiles are not sorted along the path.



OK to close the *Single piece parameters* dialog box.

- To place the decoration, please define the start and end point of the path if the Path finding option is activated.
- Place the pavement on the background area with its reference point.
- Define the direction of it by the cursor, or select from the options of the command line:

XANGLE	Define an angle for the rotation.
GRAPHICAL	Define the angle by the endpoints of the sides of angle.

- Define a new material for pavement in the reappearing *Single piece parameters* dialog, or
  Cancel terminates the command.

2.2.2. Add One Tile

This command is the simplified version of *Add Tiles* command. With the help of this one piece of tile can be placed easily. It doesn't need any background area.

- Select the Add One Tile command in the Toolbox.
- The Single piece parameters dialog appears.


See the details in chapter *2.2.1*. Add Tiles.

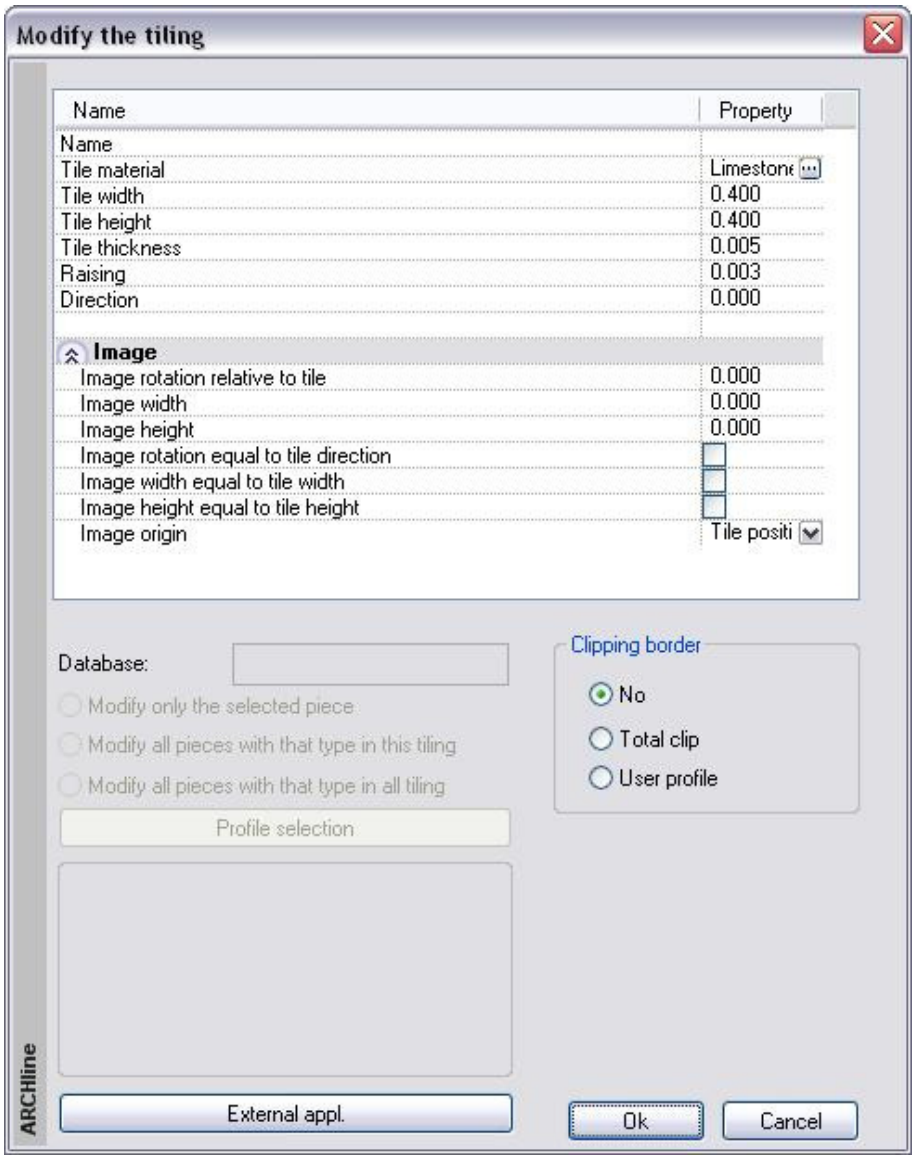
2.2.3. Add Custom Tile

With the help of this command you can place custom tiles on the selected background areas.

- Select the Add Custom Tile command in the Toolbox.
- Define the profile of the tile using any option in the *Toolbox – Profile definition tool.*


See the details of *Profile definition* in chapter *8.2. Specifying profile* (in manual).

The following dialog appears:



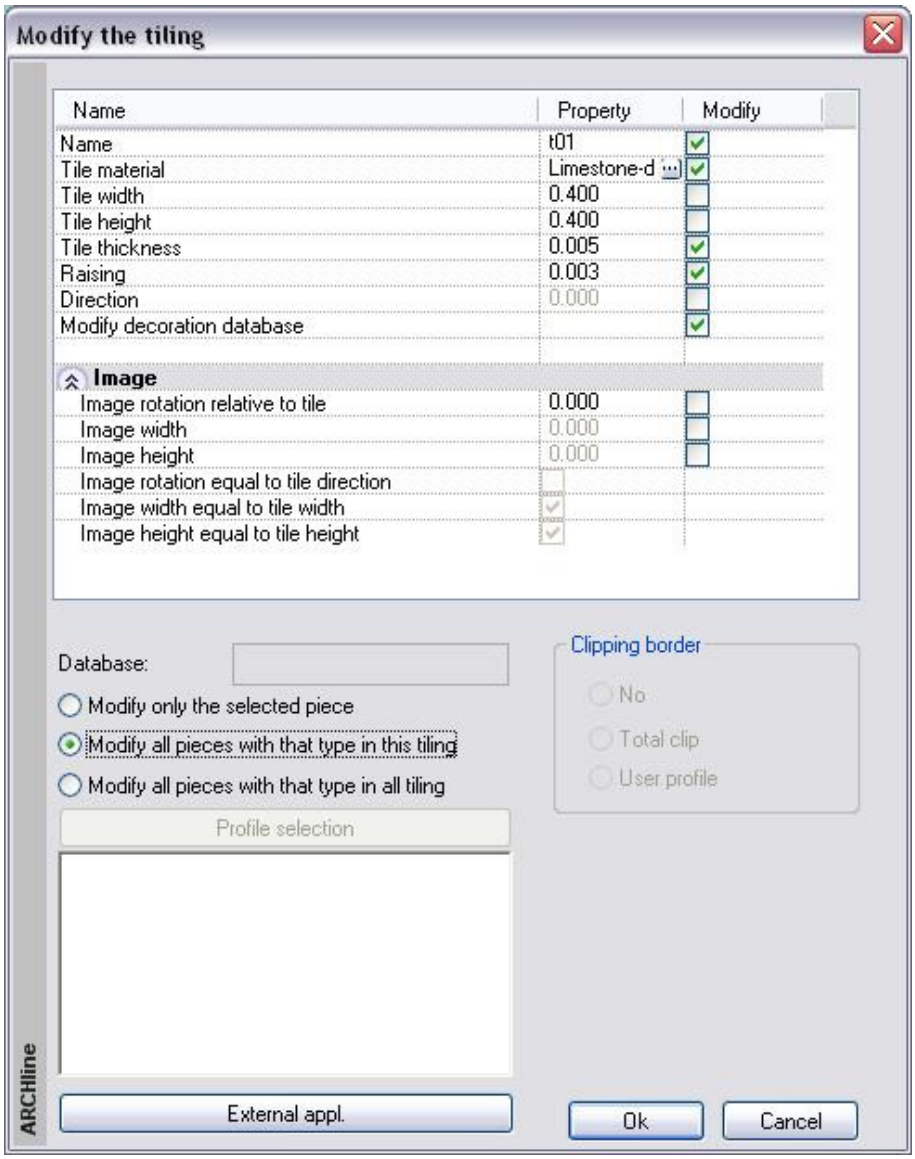
- Similarly to the *Create single pieces* function, you can give the names of tiles in this dialog; you can assign material to them from the program material library.
- Besides you can define the thickness of tiles and their raising from the background.
- Finally you have to define the *Clipping* border. Choose from the following options:

No	The whole selected area is going to be used.
User profile	The new pavement can be defined by an individual profile. By this you can cut the tiles by the defined profile.
Total clip	With the help of **POPMENU** options you can design a profile on the background area to place the tiles on. The tiles can also be cut in this case.

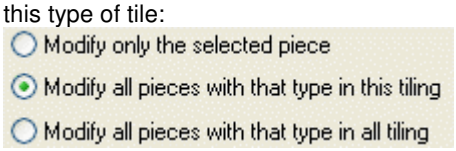
2.2.4. Tile Properties

Decoration tiles can be modified by each or at once.

- Select the Tile Properties command in the Toolbox.
- Select the tile or tiles you wish to modify.
  Enter to accept the selection.
  The *Modify the tiling* dialog appears.



- You can select which tiles to modify: only the selected ones, all of this type of tile inside the base area or all of this type of tile:



- You can modify the following parameters by clicking on the values in the *Property* column:

  - ❖ name of tiles,
  - ❖ material and its properties,
  - ❖ size,
  - ❖ thickness,
  - ❖ raising,
  - ❖ Direction of tiles.
  - ❖ Profile: Switch on the Modify profile option so you can click on the *Profile selection* button to define a new profile for the tiles from the profile library. Profile modification is possible only for non-rectangular tiles with free contour profile definition.
  - ❖ The image properties of the material.

These include the settings of the material assigned to the tiles. Setting possibilities are as follows:

- *Image rotation relative to tile*: Opposed to the direction definition where the tiles are rotated the program rotates the material of the tile with the given angle.
- Image width, image height.

- You can make the rotation angle, the width and height of the image equal to the rotation angle, the width and height of the tile, respectively.
- You can also define the origin of the image.
- To validate the modifications, switch on the necessary options in the *Modify* column.

In case of individual tiling the program use by appearing the material ordered to the hatching in decoration group. It could be more materials in one group. You can also modify the material of individual tiling. In this case the program modifies all material, which has the same material as the selected in the decoration.

2.2.5. Move Tiles

- Select the Move Tiles command in the Toolbox
- Select the tiles to be moved.
  Enter to close the selection.
- Give the reference point of the contour and move it to its right place.

2.2.6. Copy Tiles

- Select the Copy Tiles command in the Toolbox
- Select the tiles to be copied.
  Enter to close the selection.
- Give the reference point of the contour and move it to its new place.

2.2.7. Delete Tiles

- Select the Delete Tiles command in the Toolbox
- Select the tiles to be deleted.
  Enter to close the selection.

2.2.8. Delete Tiles of Same Type

You can delete in one step all of the tiles which have a same name.

- Select the Delete Tiles command in the Toolbox
- Select the tiles to be deleted.
  Enter to close the selection.

2.3. Modify material of background areas and tiles

By means of these commands you can modify the material of a background area or tile.

2.3.1. Modify Material

You can change the material of a background area.

- Select the Modify Material command in the Toolbox
- Select the contour whose material has to be changed.
  Enter closes selection.
- Select a different material from the appearing *Material* dialog. **OK**.

To change the material of a tile sees the chapter *24.2. Tile properties*.

2.3.2. Reposition Material

This command is used to modify the origin and the direction of texture pattern. It is useful when placing an image on a wall surface.

- Select the Reposition Material command in the Toolbox
- Select an area.
  Enter to close the selection.
- Define the start point of the pattern.
- Define the direction of the material pattern relative to the start point.
  Enter direction of the pattern is horizontal.

2.3.3. Resize material

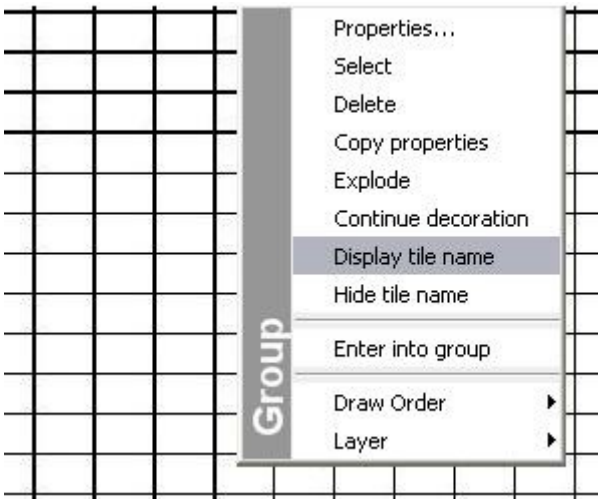
By means of this command you can modify the sizes of the texture of the selected background area or tile.

- Select the Resize Material command in the Toolbox
- Select the decoration to modify its size.
  Enter to close the selection.
- Define the new width of the texture, or
  Enter accepts the original value.
- Define the height of the texture, or
  Enter keeps the original ratio of height and width.

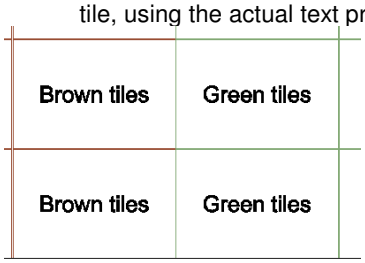
2.4. Tiling - Show tile name on tiles

To make the tile identification easier, it is possible to show the tile names on the decoration layout on the floor plan. For this you only have to do the followings:

- Click on the tiled decoration layout with your right mouse button.
- Select the *Display tile name* command.



- The program will place the tile name on each tile, using the actual text properties:



! The program lists the name of the tile, not the name of the material!
Pay attention, when you use long tile name!

2.5. Listing tiles

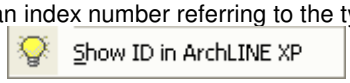
When all the tiles have been placed, the list of the tiles can be created in an Excel list.

- Select the *Add-On menu – Tiling – Quantity Take-Off* command; switch on the *Wall, Slab, All items* and the *View output after save* options. **OK**.

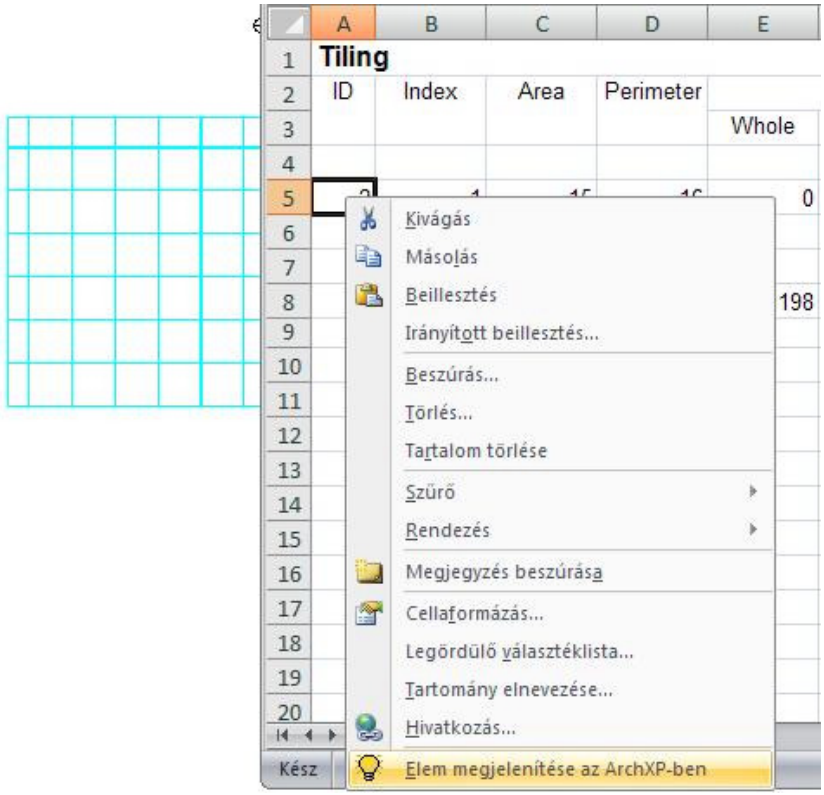
Give the file name in the *Save document* dialog: *dekorationlist.xls*. **Save it**.

The Excel list has two parts: the **Summarize** page shows the path of ARCHLine.XP® project file, the surface of the tiles in m2, and the names of types and materials with the size and pieces of tiles:

	A	B	C	D	E	F	G
1	c:\documents and settings\izabella\dokumentumok\archlinexp draw\untitled.pro						
2							
3							
4		Tiling area (m2)	45				
5							
6	Index	Type Name	Material	Width	Height	Thickness	Count
7							
8	1	t01	Limestone-durago	400	400	5	312

There is an index number referring to the types of tiles: click on index 6 with the right button of the mouse and select the 

command from the menu. The program jumps to the draw item belonging to the selected index:

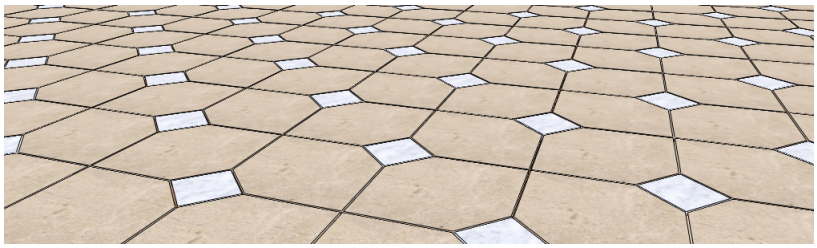


The **Slabs** page shows the detailed list, in which the surface, the perimeter, the number of the different tiles and the number of the whole and part tiles also appear.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Decoration														
2	ID	Index	Area	Perimeter	Piece				Piece details						
3					Whole	>50%	<50%	Total	Index	Type Name	Material	Width	Height	Thickness	Count
4															
5	1	1	5.58	27.24	0	0	0	0			creme_lindgrün033.jpg				
6															
7															
8	9	1	5.58	27.24	102	34	62	198							
9									1	Csempe01	Tile-rounded	200	200	10	198
10															
11	33	1	5.58	27.24	102	34	62	198							
12									1	Csempe01	Tile-rounded	200	200	10	198
13															
14	39	1	5.58	27.24	65	6	6	77							
15									1	aa	Tile-rounded	200	200	10	77
16															
17	711	1	27.19	21.11	30	3	3	36							
18									1	aa	Tile-rounded	400	400	10	36
19															
20	1008	1	5.9	19.34	117	0	0	117							
21									1	aa	Marble_11	200	200	10	117
22															
23	1206	1	5.87	19.36	97	38	0	135							
24									1	aa	Marble_11	200	200	10	135

2.6. Tile Patterns

You can cover a surface of an architectural element not only with a rectangular or custom profiled tile but with a complex pattern as well. A tile pattern consists of separate tiles.



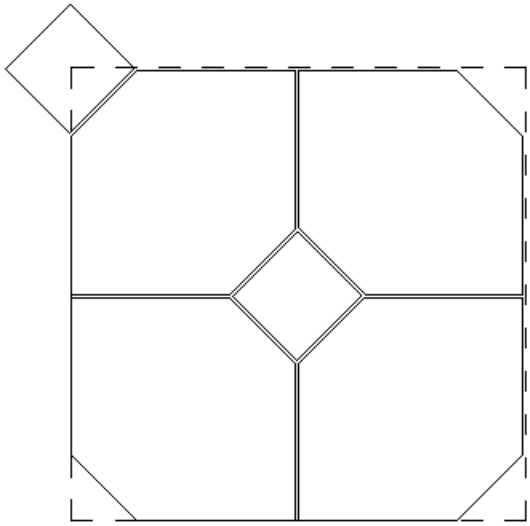
Once you have a tile pattern, you can distribute it on a background area like distributing a single tile.

Tile patterns are stored in an object library as a special group. You can find some predefined patterns in *the Groups/Tiling patterns* folder of the Design Center

Creating tile pattern

This command is used to create a new tile pattern.

In case of complex patterns, first draw the pattern precisely by means of drafting tools like lines or arcs.



- Select *Tiling/Create tile pattern* in the Add-On menu.
- Define the profile of the tile pattern unit using any option in the *Toolbox – Profile definition tool.* (On the figure above, the profile of the tile pattern unit is the square drawn by dashed line)

Define a simple rectangle here: the program will use the height and width of the profile as a shift distance to multiply the tiles of the pattern, the exact shape of the profile won't be taken into consideration.

See the details of *Profile definition* in chapter *8.2. Specifying profile* (in the manual).

- Select the *Add One Tile* or *Add Custom Tile* command in the Toolbox and create tiles on the pattern area.

  The tiles can overhang the profile of the tile pattern unit. Pay attention to define a pattern that can be distributed continuously on a surface.

You cannot change the gaps between two tiles of the same tile pattern unit in the dialog later; you should draw here the exact pattern including gaps.

See the details of adding tiles in chapter *2.2.2 Add One Tile* and *2.2.3 Add Custom Tile.*

- Select the *Close* or *Close and Remove Layout* command in the Toolbox.
- As the last step you have to name the tiling pattern and save it in a user defined object library.

You can use your new tile pattern by means of the commands *Add Tiles* or *Add One Tile*. See the details of adding tiles in chapter *2.2.Tilling*

Modifying a tile pattern

This command is used to modify a tile pattern previously created.

- Select *Tiling/Create tile pattern – continue* in the Add-On menu and select a tile pattern layout on the drawing. You can also click on the tile pattern layout with right mouse button and select *Continue decoration* from the menu.

If you would like to modify a pattern in the object library which is not present in any drawing window, first place it on a drawing.

- Select a command in the Toolbox. You can add, edit and remove tiles here.

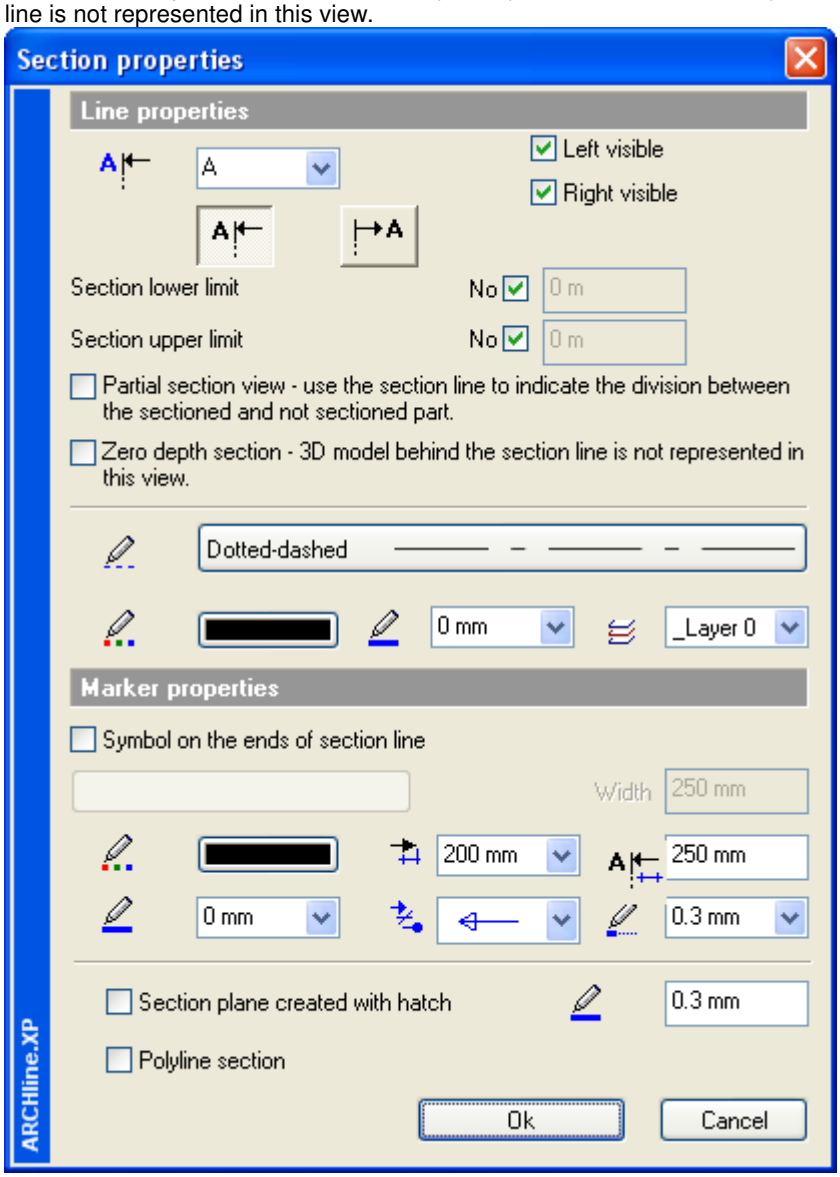
See the details of adding, editing and removing tiles in chapter *2.2.Tilling*

- As the last step you give a different name to the tile pattern and save it in a user defined object library.

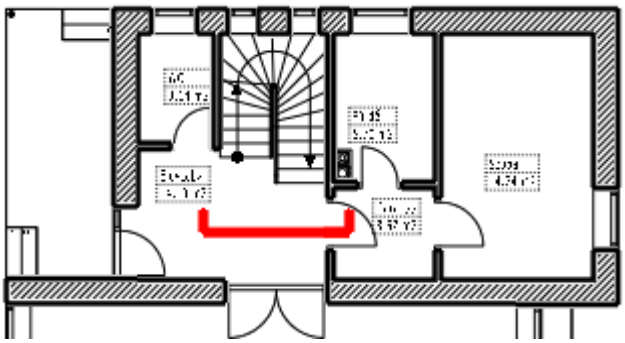
3. Other New Functions

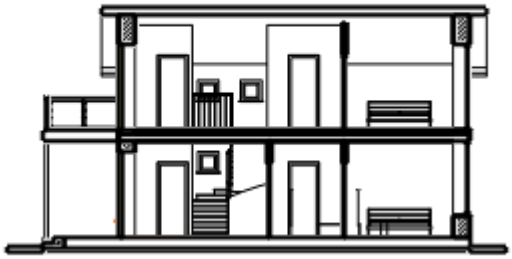
3.1. Section

In ARCHline.XP 2009 R2 you can limit the visible area horizontally and vertically in the section view instead of showing the whole model located on the visible side of the section line. You can define zero depth sections as well, where the parts of the model directly cut by the section line are only visible; the model behind the section line is not represented in this view.



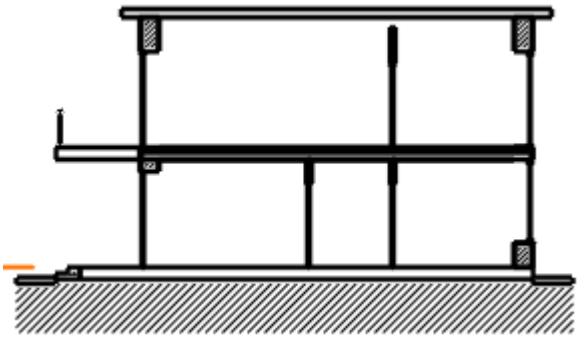
❖ **Partial section view**: By switching this checkbox on, in the section view you can limit the visible area horizontally by the section line endings. .





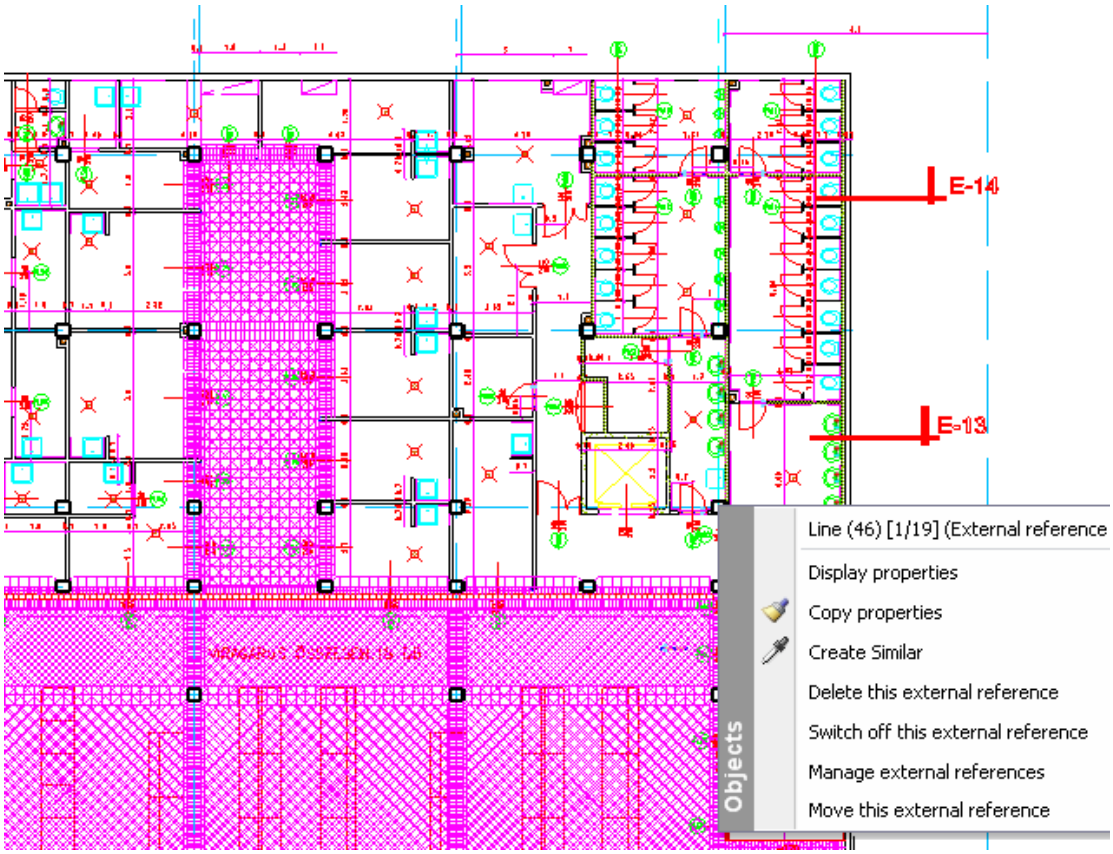
Full section view **Partial section view**

❖ **Zero depth section**: By switching this checkbox on you can define sections where the parts of the model directly cut by the section line are only visible. The model behind the section line is not represented in this view.



3.2. Move external reference command

XREF allows to many users to work on individual components of a project. As XREF can be updated, added, or unattached to the project the new Move command enables to relocate an XREF easily according to the user needs.

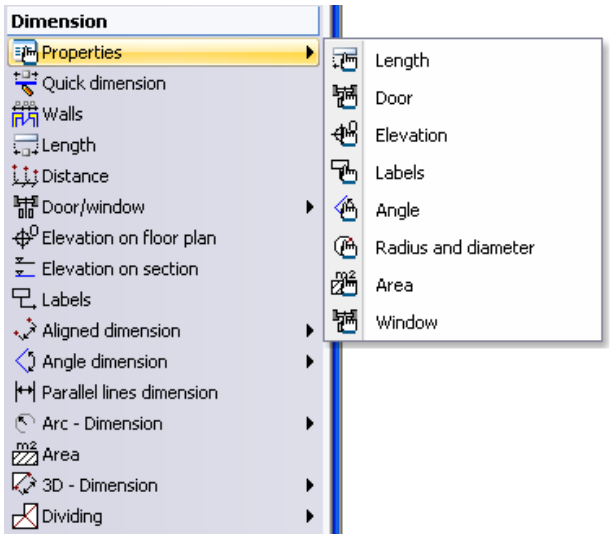


Click on the external reference with right mouse button and select the *Move this external reference* command. You can move the external reference by clicking first on the reference point and then on the target point.

3.3. Dimension – enhanced Set manager

The universal dimension set has been divided into more sets according to the various type of dimensions. It helps you to create more sophisticated property setting to the following dimension types:

- Length
- Door
- Window
- Elevation
- Angle
- Label
- Radius and diameter
- Area



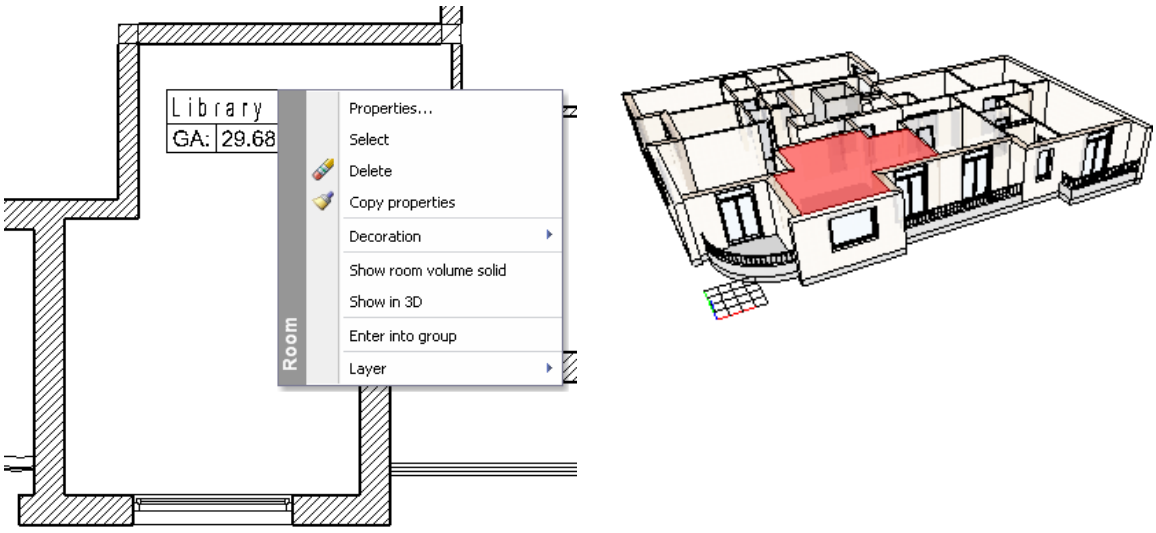
You can set the default properties by selecting Dimension / Properties and the appropriate dimension type in the Toolbox. The following table shows which default set will be used when starting a dimension command.

Quick dimension	Length / Radius and diameter
Walls	Length
Length	Length
Distance	Length

Door/window	Door / Window
Elevation on floor plan	-
Elevation on section	Elevation
Labels	Label
Aligned dimension	Length
Angle dimension	Angle
Parallel lines dimension	Length
Arc – Dimension	Radius and diameter / Length
Area	Area
3D – Dimension	Length
Dividing	-

3.4. Room book – Show the calculated volume in 3D

The calculated volume of a room book can be displayed as 3D solid. This feature makes easy to control the calculated cubic content value.



Click on a Room book on the floor plan with right mouse button and select *Show room volume solid.* The volume appears in the 3D window. Note that this is a temporary 3D representation of the Room book, it will disappear if you regenerate the model.

3.5. High resolution printing for DirectX 3D model window

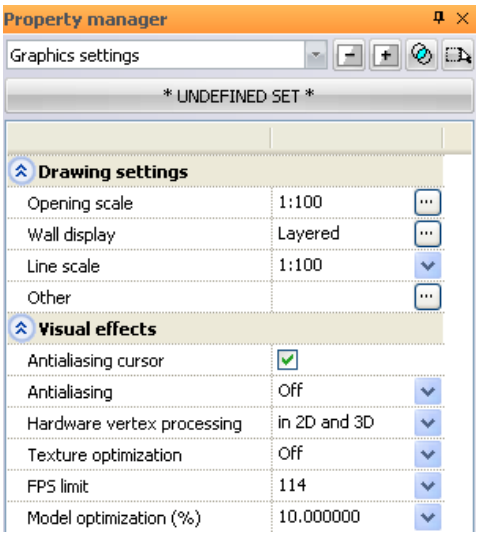
ARCHline.XP 2009 R2 improved the printing quality for 3D model printing. The new 2009 R2 release draws your scene to a high resolution temporary buffer and then sends the bitmap data to the printer directly. This way the 3D image printing quality is significantly better and comparable to vectorial printing quality.

3.6. Line scale

In case of empty selection the Property manager now displays the *Drawing settings* as well.

- Opening scale – you can set the detail level of the doors and windows. It has the same effect as the *Opening and wall scale* command in the view menu.
- Wall display – you can set the representation of the walls on the 2D floor plans. It has the same effect as the *Opening and wall scale* command in the view menu.

  About *Opening and wall scale* command see the chapter 6.6 *Opening and wall scale factor* (in the manual).



- Line scale – here you can scale the lines according to the desired plot scale. This setting affects the width of the lines and the scale factor of the dashed, dotted and other custom line types. By changing this value you will see the lines of the 2D window like they were printed in the given plot scale.

  For example if you set the line scale to 1:100, a line of 1mm width and a 10 cm wide beam (drawn with hairlines) have the same width on the screen.

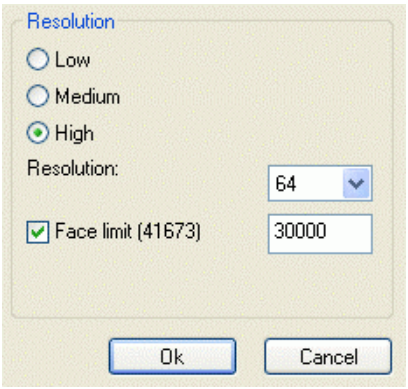
- Other – By pressing this button the general *Preferences* dialog will be opened.

3.7. Others

3.7.1. User Interface

- *Face limit:*

You can set the maximum number of visible surfaces in the 3D window in the Build 3D model dialog.

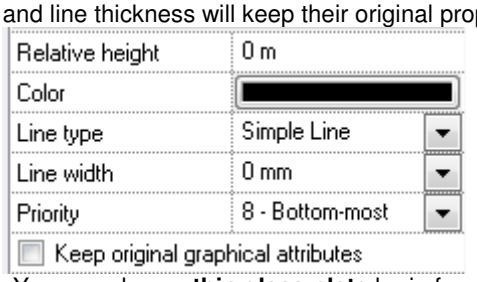


You can maximize the number of displayed surfaces to be displayed in the 3D model. If the number of the surfaces of the current 3D model exceeds this limit, smaller surfaces will be omitted for performance reasons. If you miss some small surfaces in the 3D window, just increase or switch off the face limit.
In brackets you can see the number of the surfaces generated during the previous regeneration of the model.

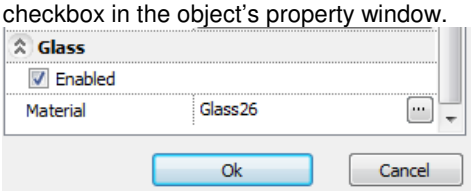
- Sprites are working in 3D image DirectX window: they rotate around the Z axis with the view and always show their front view.
- Edit layers command is available in the Move marker menu in case of slabs and walls.
- Cut and paste / Copy and paste commands are removed from the text shortcut menu:
- Teamwork function is switched off in the German/Hungarian/English language versions.

3.7.2. Objects

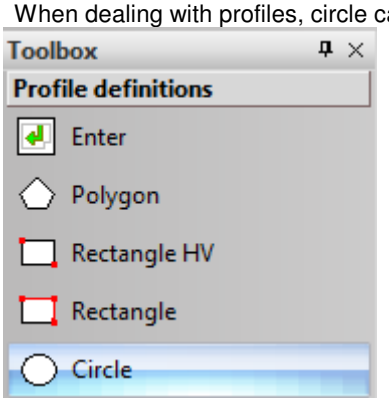
- If you switch on the **'Keep original graphical attributes'** option of an object, the color, line type and line thickness will keep their original properties (properties at the time of object creation)



- You can place a **thin glass plate** be in front of the picture on wall by switching on the new “Glass” checkbox in the object’s property window.

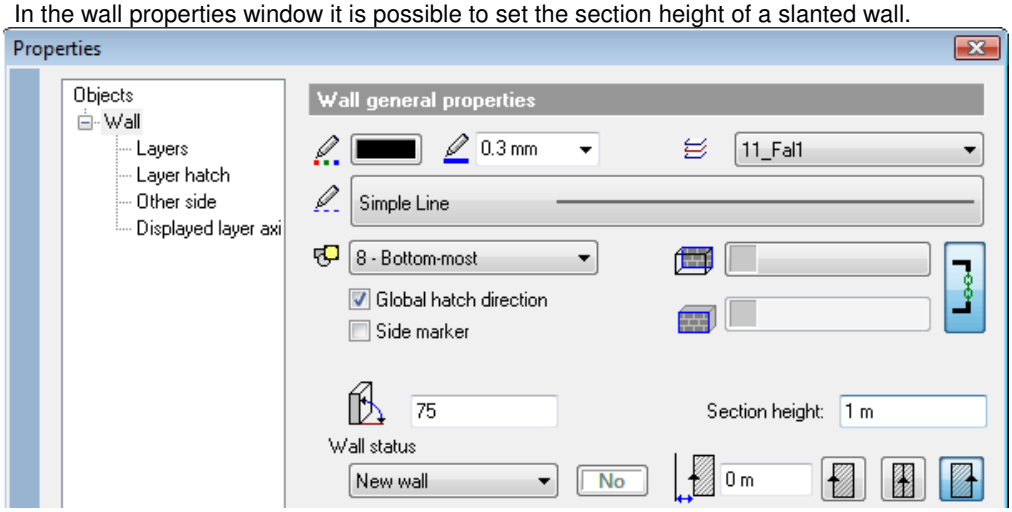


- When dealing with profiles, circle can be defined by point and radius by default.

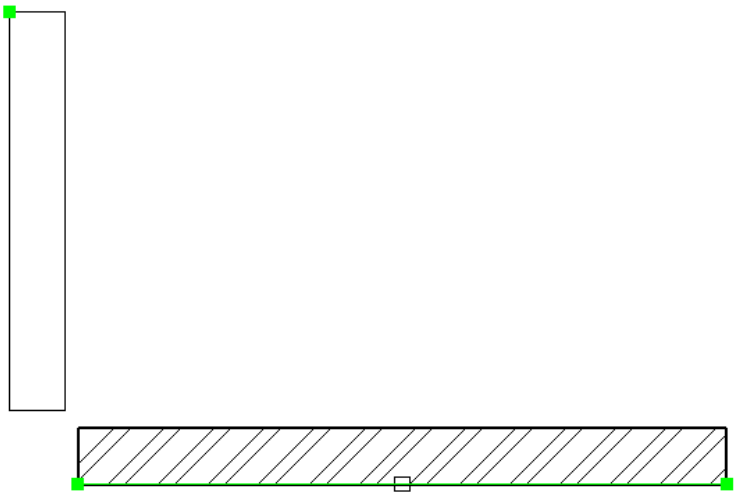


3.7.3. Wall

- In the wall properties window it is possible to set the section height of a slanted wall.

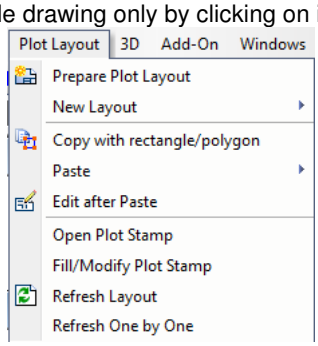


❖ After placing a wall layout on the drawing, the selected wall side is represented by a marker both on the wall and on its layout.



3.7.4. Plot Layout

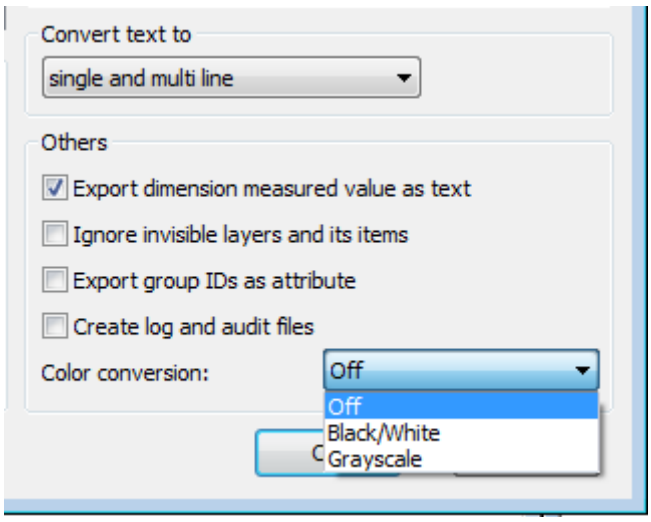
❖ **Refresh One by One**: Instead of refreshing the whole plot layout in one step, there is now a possibility to refresh a single drawing only by clicking on it with the right mouse button and selecting the Refresh this command.



❖ New menu element for opening .pef (Printing environment) files from previous ARCHline.XP versions in the Plot Layout main menu: **New layout** / **Import layout**

3.7.5. DXF/DWG export

❖ **New option** in the DXF/DWG export dialog:
Color conversion: Off, Black/White, Grayscale



3.7.6. Switch to Interior version

❖ **New option** in the Toolbox Settings dialog: The Standard version of ARCHline.XP enables to switch between the interface of Interior Design or Architecture.