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# *ARCHLine.XP<sup>®</sup> 2014*

## ***News***

### ***Release 1***

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# Real design with real products - ARCHLine.XP 2014

ARCHLine.XP team has been committed to provide high quality software solution for **architectural, interior design and furnishing industry** users.

ARCHLine.XP 2014 helps you better communicate with your clients and work more effectively.

Real design with real products is not a dream anymore.

## 1. Interface evolution

### 1.1. Improved Design Centre

The broadly well accepted user interface of ARCHLine.XP 2013 continues with minor evolution in ARCHLine.XP 2014. The most important improvement makes the DC (Design Centre) more effective and integrates new and well known functions in a very compact manner.

Search function is browsing the complete ARCHLine.XP item database.

You can collect the most frequently used elements into My Favourites.

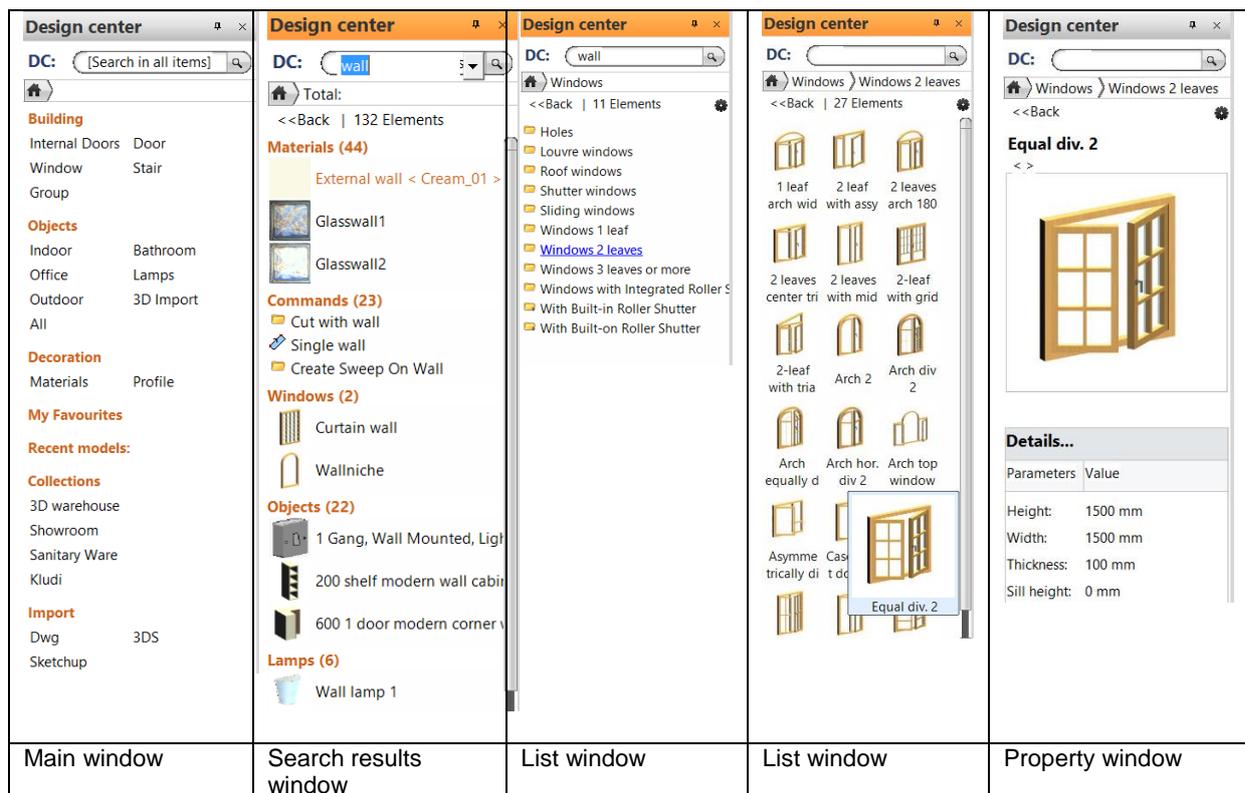
The selected element is displayed as high resolution good quality image.

The new Design Centre integrates the Project Navigator tree structures as Project Manager, Templates and Zones.

This chapter describes the interface elements you will encounter while you are using Design Center.

#### 1.1.1. Design Center Windows overview

The Design Center (DC) graphical user interface consists of Main window, and different list views per Components (Building, Objects, Decoration, My Favourites, Recent Items, Brands and Collections, Import and Project Navigator).



Window	Description
Main window	The Main window is where the Design Center components are displayed
Search results window	The Search results window displays the search results
List window	The List window displays the appropriate categories and items
Property window	The Property window displays the image and properties for the selected item.
Project window	The Project structure is displayed as a tree, and Project components are added as nodes to the tree.

### 1.1.2. Activating DC components

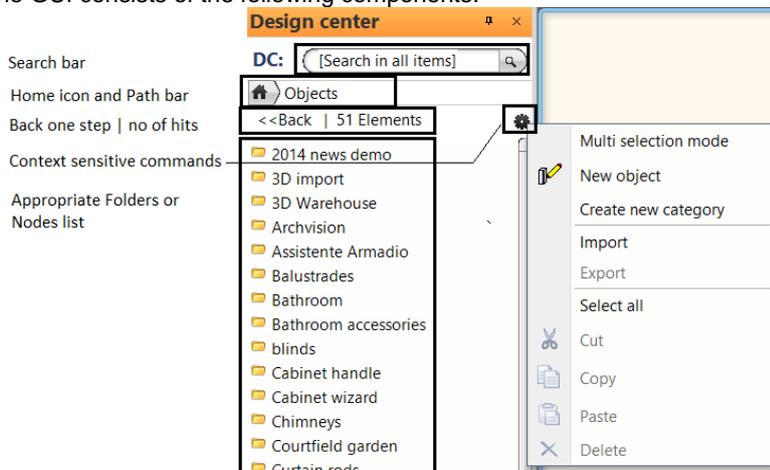
To open a DC component window, you can click the corresponding node in the Main window with mouse left button. When you activate one of these node in the Main window, the following action happens:

Building, Objects, Decorate	The selected item's categories are displayed in the DC.
My Favourites or Recent Items	The relevant items are displayed in the DC. Your Favourites or Recent Items are stored in a file on your computer, so it keeps its content even if you restart ARCHLine.XP.
Brands and Collections	Activate the corresponding website to download an object
Import	Open file dialog is displayed to select and open a DWG, SKP, 3DS file
Project Navigator	Project Navigator displays the project structure, sets and zones in a tree

### 1.1.3. Building, Objects and Decoration lists

The selected item's categories are displayed in the DC. The list displays the categories as a tree from root level to sub-categories with folder icon or items with thumbnails as nodes.

The GUI consists of the following components:



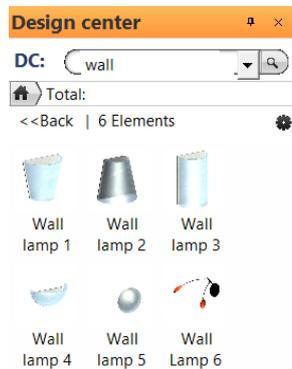
#### **Search bar**

The Search bar is found to the top of the DC. The Search Results window displays the search results after submitting a term.

To search, just type a term in the Search box, wait a second or click on the zoom icon on the right. ARCHLine.XP will take you to the search results page.



The search results are displayed in a list. You can click a header line to activate the corresponding list.  
 The header displays the number of hits in bracket (e.g. Materials (44)) in each category if the hits are greater than 3. To display all the hits in a category click on the header.  
 In this Example click on Lamps (6) will display all the Lamp hits.



**Home button**  
 Clicking on Home button brings you back to the DC Main window.

**Path bar**

The path bar appears beside the home button in every DC window and displays your current location as a series of links separated by arrows. You can click any of them in the bar to go back to that location.

**Back**

The back button appears below the home button in every list window and take you back to the previous window.

**Number of hits**

This number refers to the sum of all the items in the current window.

**Context sensitive menu commands**

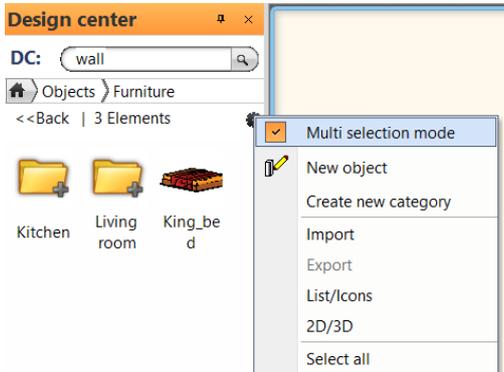
Each window has its own specific menu commands. To display the commands click on the black gear icon. It includes the commands described in the table below.

Command	Description
Multi Selection mode	By default, a user can activate a single item with a click in a list window. You can set the Multi Selection Mode active to select multiple items simultaneously.
New object	Define new object
Create new category	DC allows you to create new Categories, rename or delete existing ones, and organize your Categories hierarchically. Each Category may be assigned to a Category Parent, allowing you to set up a hierarchy within the Category structure. Category Name must be unique on its own level.
Import	Import a selection of DC items from an ARCHLine.XP .environment file.
Export	Export a selection of DC items to an ARCHLine.XP .environment file.
List / Icons	You can change view mode displaying the window contents using large icons or small icons and label.
2D / 3D	You can change view mode displaying the window contents using 2D or 3D icons.
Select All	This button allows to select all items. You may need this when there are a lot of items to select, and most of them should generally be selected. Pressing Ctrl +A the program will select all the data in the window similar to how Select All works.
Cut	Cut, copy and paste allows you to easily copy or move items and categories from one location to another. Pressing Ctrl+C and Ctrl+V will copy items and categories in a similar way.
Copy	
Paste	
Delete	

## 1.1.4. Using Multi Selection mode

### Activation

By default, a user can activate a single item with a click in a list window. You can set the Multi Selection Mode active to select multiple items simultaneously. To display the command click on the black gear icon (Edit menu).



! You can activate the Multi Selection mode alternatively with pressing down CTRL and click on any item in the DC window. This action automatically activates the Multi Selection mode.

### Selection

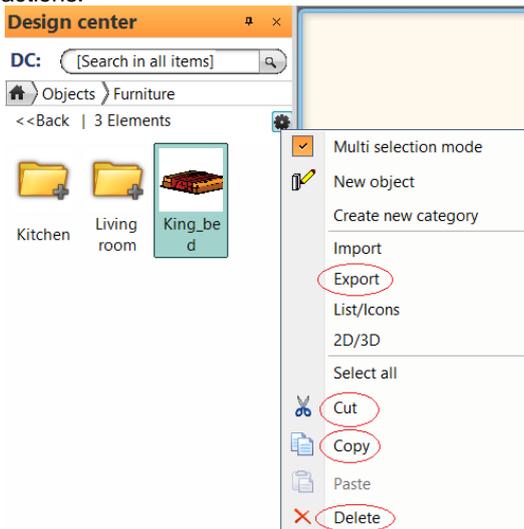
Multi Selection mode allows actions to be performed on one or more **items** or **Categories (Items)** displayed in the DC window.

For actions to be performed on multiple Items at once, those items must be first selected via one of these methods:

- ❖ **Select one or more Items at a time** - To select a Category, the Multi Selection mode checkbox must be checked (clicked). It is possible to keep selecting more Categories by clicking on their respective icon or label.
- ❖ **Select all Items in DC window** - All Items in a DC window can be selected by the Select All command or pressing the CTRL+A shortcut.
- ❖ **Reverse Selection** - A Reverse Selection means checked items become unchecked, and unchecked items become checked. A Reverse Selection is accomplished by holding the CTRL key on the keyboard and clicking the Item.

### Actions

Actions describe the commands to be performed when Multi Selection mode is checked. The follow describes these actions:



- ❖ **Export** - Export the selection of DC items to an ARCHLine.XP .environment file.
- ❖ **Cut, Copy** - Cut and copy allows you to copy or move DC items from one location to another using ARCHLine.XP internal clipboard.
- ❖ **Paste** - Paste command retrieves the DC items from that clipboard and places it into another location. Once DC items has been copied or cut from DC window, you can then paste it into another DW window. Simply browse to the new location where you would like the DC items to be pasted and then choose one of the methods for pasting the DC items:
  - When you are in the new location where you would like the DC items to be pasted press Ctrl + V button at the same to paste the DC items.

- Open the DC Edit menu with a click on black gear icon and then click on Paste command.
- ❖ **Delete** - Deletes the currently selected DC items.

Example: Copy one or more items from one category to another one.

1. Browse to the location where you find the objects.
2. Open the DC Edit menu with a click on the black gear icon.
3. Check on Multi Selection mode
4. Hover the mouse cursor over the item to be copied and click on it. Press the CTRL button if you select more items.
5. Open the DC Edit menu again and click on Copy command or press Ctrl + C button.
6. Browse to the new location where you would like the DC items to be pasted. If the new location does not exist yet you can create it with Create new category command from DC Edit menu.
7. Open the DC Edit menu again and click on Paste command or press Ctrl + V button.

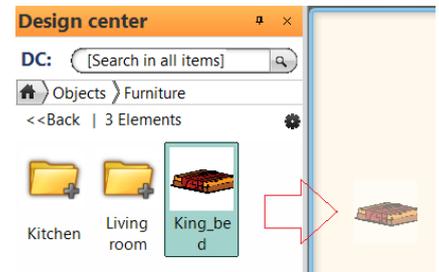
### 1.1.5. Using Single Selection mode

By default you are working on DC in Single Selection mode. In this mode you can activate commands with drag and drop technique or select one from the DC Edit menu with a click on the black gear icon.

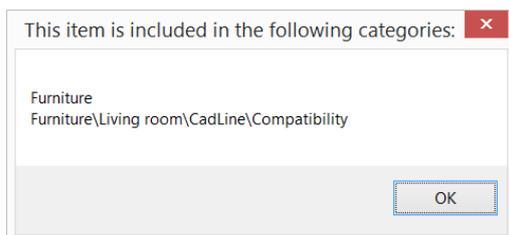
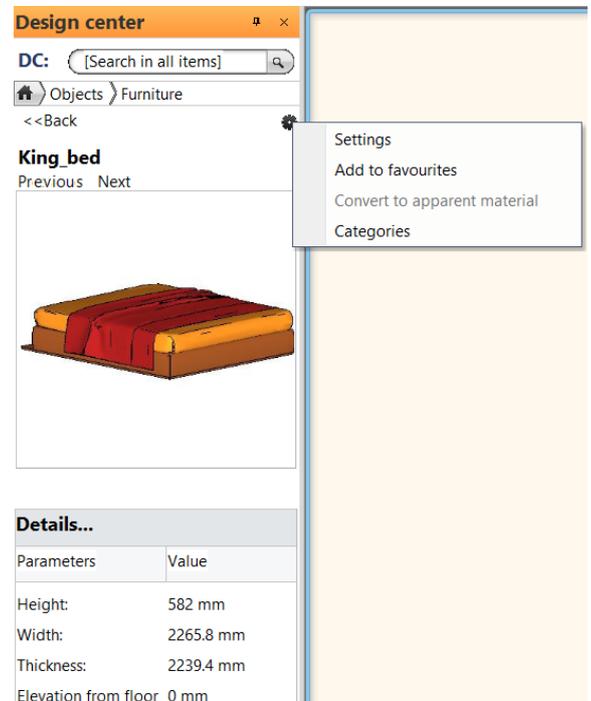
#### Actions

Actions describe the commands to be performed when Single Selection mode is on. The follow describes these actions:

- **Place with Drag and drop** - Hover the mouse cursor over the item to be placed. Press down the mouse button then move the mouse with the left button down onto the drawing area and release the mouse button up. Follow ARCHLine.XP cursor during the placement.
- **Click on item** - Click on the selected item. The DC Property window open automatically.



- **Place with Drag and drop** - Hover the mouse cursor over the image. Press down the mouse button then move the mouse with the left button down onto the drawing area and release the mouse button up. Follow ARCHLine.XP cursor during the placement.
- **Settings** - Open the DC Edit menu and click on Settings command. You can edit the item in its property dialog.
- **Add to favourites** - Open the DC Edit menu and click on Add to favourites command. The item will appear in your DC My Favourites list window.
- **Convert to apparent material** - This command is enabled when you are on a DC Texture window. You can convert the selected texture into apparent Material.
- **Categories** - Open the DC Edit menu and click on Categories command. The program display the associated categories in a dialog.



### 1.1.6. Collections

Activate the corresponding website to download an object from 3D warehouse, Sanitary Ware or ARCHLine.XP Showroom and place directly onto the drawing. Additionally company download websites may appear here.

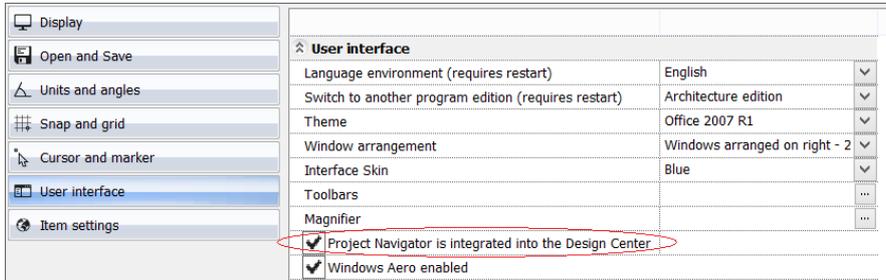
## 1.1.7. Import

Opening file dialog is displayed to select and open a DWG, SKP, 3DS file.

## 1.1.8. Using Project Navigator

Project Navigator displays the project structure, sets and zones in a tree. All components are added as nodes to the relevant tree.

! You can split Project Navigator from DC and manage it as standalone window placing anywhere on the screen. You can control it in the Options menu / User interface panel.

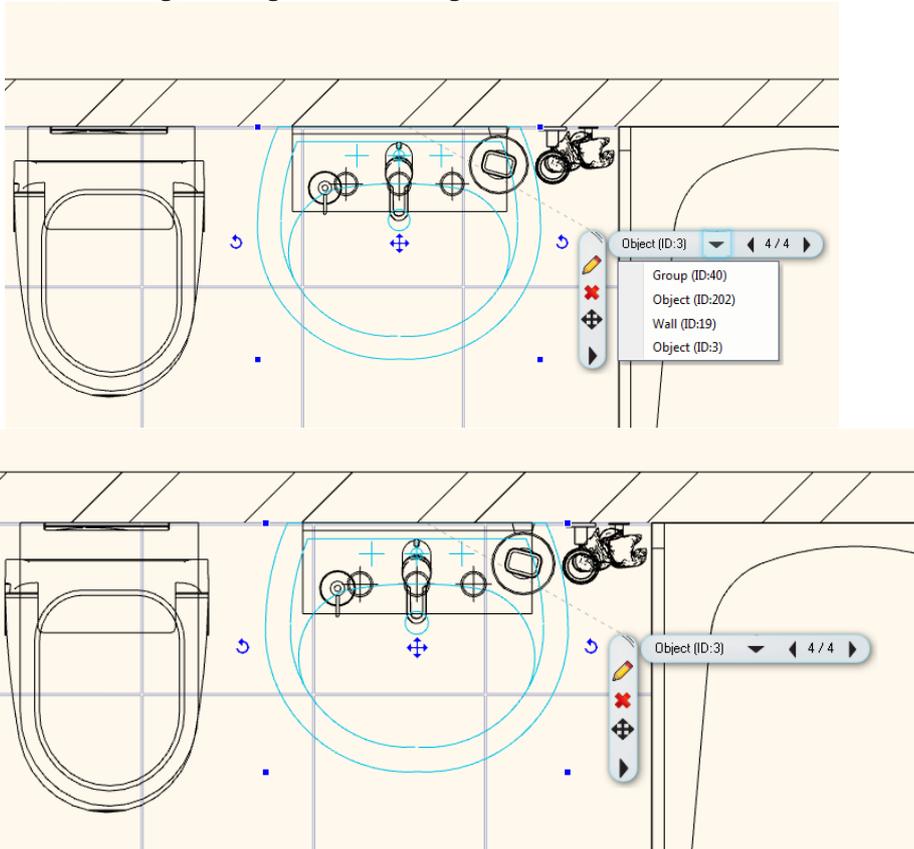


## 1.2. Floating toolbar

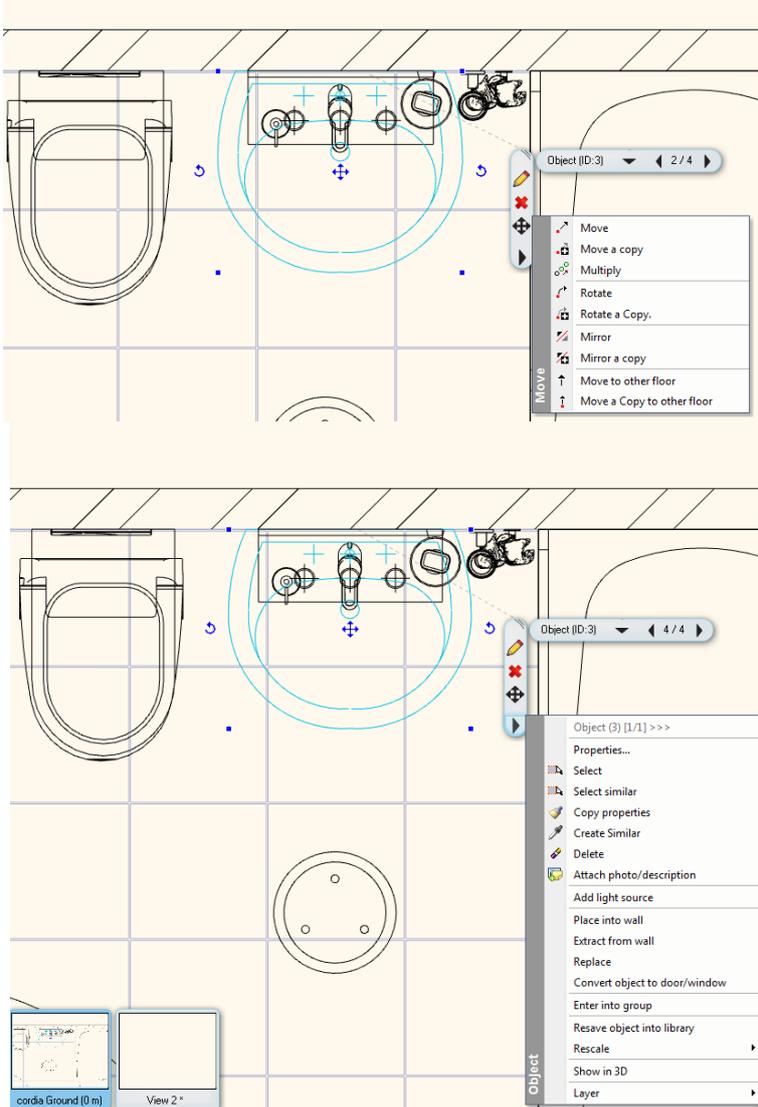
Click on the drawing elements to change their settings. Upon the selection of the drawing elements the Floating Toolbar appear within the model space area of your display. The Floating toolbar contains the most commonly used general editing commands and the properties of the selected drawing elements, which is the same as the right click of the mouse. Floating toolbars are handy for several reasons. They can be moved out of the way. you can always easily recognize: the Floating toolbar with a thin line connected to the selected item. If you select more than one drawing elements, on the Floating toolbar appear a scrolling menu list and you can choose whit which element would like to work.

*For example:*

### 1. Selection, Scrolling, Floating toolbar moving



2. General editing commands, the list of items depending on individual commands



1.3. Phong shading

In the ARCHLine.XP 2014 will be introduced one of the most advanced 3D imaging method the Phong shading . Phong reflection is a local illumination model and can produce a certain degree of realism in 3D objects by combining three elements - diffuse, specular and ambient lighting for each considered point on a surface. The Phong shading usually means that the lighting calculations can be done per-pixel, and that the lighting variables are interpolated across the polygon.

See more information on Wikipedia.



Flat shading: the boundaries between polygons are sharply visible due to the sudden change of brightness

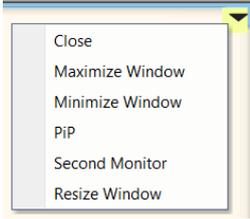


Phong shading: Each pixel is defined separately in the brightness.

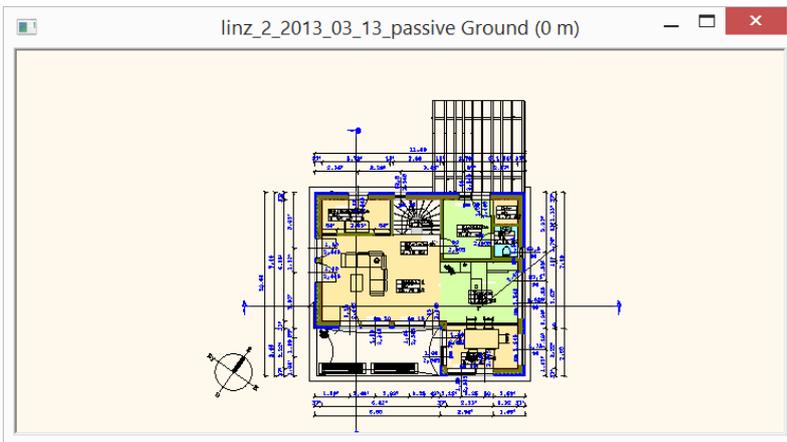
## 1.4. Second Monitor

In the ARCHLine.XP 2014 it is easy to configure the display layout using the second monitor placing there one or more 2D or 3D view windows.

To adjust the display layout, you need to open up the Menu bar on the top left corner of the active view. \ Here you find the **Second Monitor** button. Click on it to prepare the window movable to your second monitor.



Click on it to make the window movable to your second monitor. The window layout will change and displays a wide header.



Click on the header and you should be able to drag the window from one screen to the other without changing any settings.

## 1.5. Natural color rendition

Natural color mode indicates how natural the colors of objects appear regardless of illuminated by a light source.

Natural color display mode is essential for producing documents like wall elevation view, where it's important that tiles, paintings, etc display the accurate color and appear as it looks on a normal noon day.

Natural color rendition



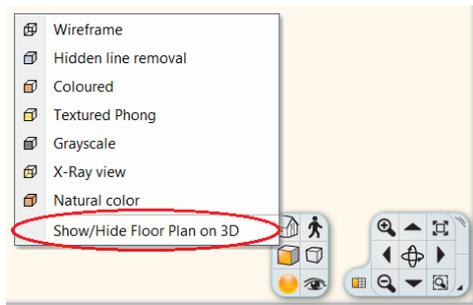
Textured Phong Shading



## 1.6. Show/Hide Floor Plan on 3D

The floor plan consist of 2D items such as lines, dimensions and building components as walls, slabs, roof, etc. The new Show/Hide Floor Plan on 3D command superimposes the 2D *Floor Plan* onto a 3D *Model* displaying them together.

This kind of presentation including annotation and dimensions makes easier to understand the 3D view. The combined 2D-3D offers a very informative layout to communicate your ideas.



Textured 3D view	Floor Plan on 3D X-Ray view (Building)	Floor Plan on 3D X-Ray view (Current floor only)

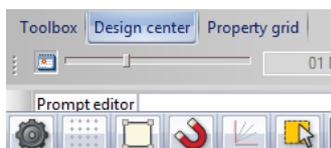
## 2. Tiling with real catalogue sets



The new tiling template enables to add tiling pattern to wall or any other surface as a one click definition. If you would like to try another tiling style, by a click you are able to change the whole tiling of the room or it is possible to modify the tiling styles wall by wall, so you can test the effects of them.

Create tiling patterns from the tiles of the selected manufacturer and save them in styles. These styles can be used in the project or saved into templates which are reachable in other projects as well. Please create the appropriate tiles first and then you are free to dream your tiling style.

### Create new tile



The easiest way to create a new tile is via the Design Center. Entering the Material folder the Settings icon in the upper right corner of the Design Center window becomes active. Click on the icon and choose "Create new material" command from the pop-up menu. You can set in the Material properties window for example the name of the material, its category, physical features image settings and dimensions.



For a description of material properties see *Chapter 3.2.2.4. The Material Properties dialog box.*

## 2.1. Create tiling style

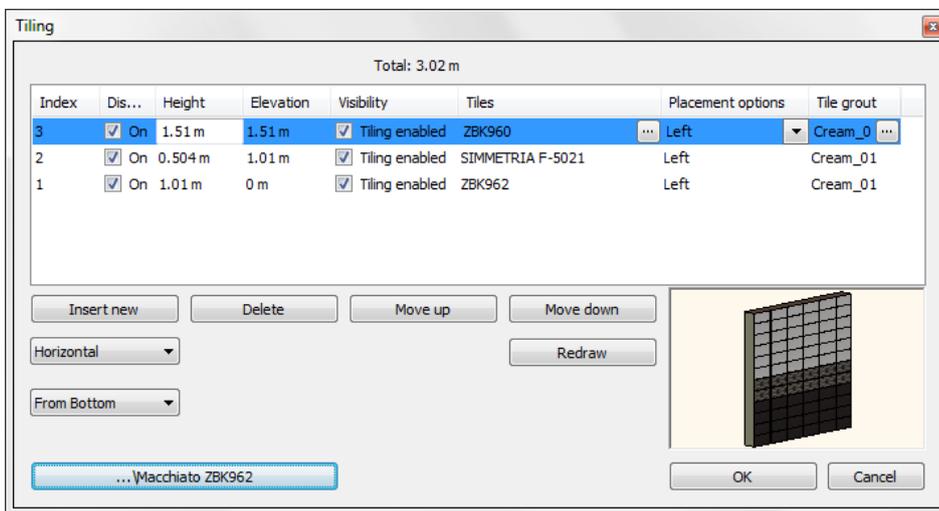
First you should create the tiling styles using existing materials what you would like to use in the model, then it is possible to apply them.

We can specify the orientation of the tile and other special properties while creating tiling style. You can activate the dialog box in several ways:

- ❖ Architecture edition (Studio): Add-on / Tiling / Properties
- ❖ Interior edition (Interior): Furnishing / Tiling / Properties



There is a Factory tiling style in the Tiling dialog box what you can use to create a new pattern or delete the rows to start a new one.



The tiling style can be created horizontally (with rows) or vertically (with columns) what you can check in 3D drawing on the right lower corner of the dialog box. It is also possible to define where to start the tiling (From Bottom or From Top).

### Specify horizontal pattern

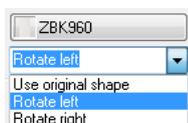
Let's start by creating a horizontal pattern. The chosen tiles and the pattern stripes will form horizontal lines. You can specify the start of the tiling from top or from bottom.

To define a pattern stripe you should specify the whole height of the stripe, the type of the tile, the color of the grout. The first line starts from 0, this is the relative height. The From Bottom / From Top option will take the exact location of it. With the placement options you can set the position (left, right or center) of the stripe's first tile.

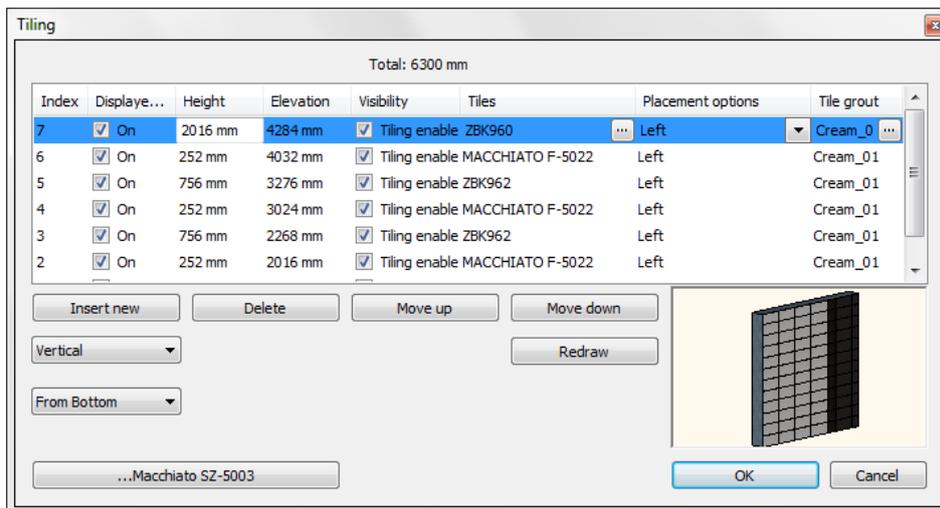
The created stripes are movable afterwards and their position is changeable too. In the preview window (right lower corner of the dialog box) you can check your work.

### Specify vertical pattern

The method is the same as mentioned previously. There is one difference, we rotate the stripes by 90 degrees.



That is why it should be corrected on the *Tiling parameters* window. If you would like to keep the original position of the tile, you should choose Rotate left / Rotate right from the *Orientation*.



### 2.1.1. Navigation buttons

#### **Insert new:**

creates a new stripe

#### **Delete:**

deletes the selected stripe

#### **Move up / Move down**

moves the selected stripe up / down

#### **Redraw:**

updates the 3D model in the right lower corner

### 2.1.2. The properties of the stripes

Please find below the modifiable or informative properties of the tile stripes.

Index	Displayed layer	Height	Elevation	Visibility	Tiles	Placement options	Tile grout
7	<input checked="" type="checkbox"/> On	504 mm	4224 mm	<input checked="" type="checkbox"/> Tiling enabled	ZBM6713	Left	Cream_0
6	<input checked="" type="checkbox"/> On	804 mm	3420 mm	<input checked="" type="checkbox"/> Tiling enabled	ZBK673	Left	Cream_01
5	<input checked="" type="checkbox"/> On	252 mm	3168 mm	<input checked="" type="checkbox"/> Tiling enabled	ZBM6713	Left	Cream_01
4	<input checked="" type="checkbox"/> On	1608 mm	1560 mm	<input checked="" type="checkbox"/> Tiling enabled	ZBK671	Left	Cream_01

#### **Index**

It shows the number of the exact tile stripe in the row. Using one index for the same tiles in one or more lines is recommended. If you would like to have more lines under an index number, please modify the height of the stripe. Please create a new stripe (with the next index number) by clicking on Insert new button if you would like to use another type of tile.

#### **Displayed layer**

We can adjust the visibility of the stripe. Use this solution for example in case of kitchen wall tiling between the lower and upper cabinets. The first line starts from 0 m, so we create a 0,9 m high stripe with No. 1 and switch off the visibility of it at the Displayed layer option. You will not see this tiling and the designed tiling starts with 0,9 m.

#### **Height**

Here you can specify the height of the tile (including grout). If you would like to place for example three rows with the same tile, you should add the height of the tile three times and calculate the grout thickness as well (between the mentioned three tiles).

The calculation of the height is  $n \cdot (t+g) = h$ , where

$n$  = number of the rows (with the same type of tiles)

$t$  = height of the tile

$g$  = thickness of the grout

$h$  = total height (with the same type of tiles)

## Elevation

Shows the relative height (from 0 m) of the stripe.

## Visibility

You can control the display of tiles (by switching on or off). If you switch off the visibility (the tiles are invisible), you will only see the material of the grout behind the tiles.

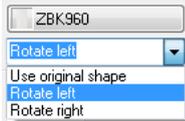
## Tiles

You can set the properties of the tiles in the selected stripe: 



For a description of Tiling parameters see *Chapter - 15.1.12. Add Tiles*.

**Orientation:** rotates tile.



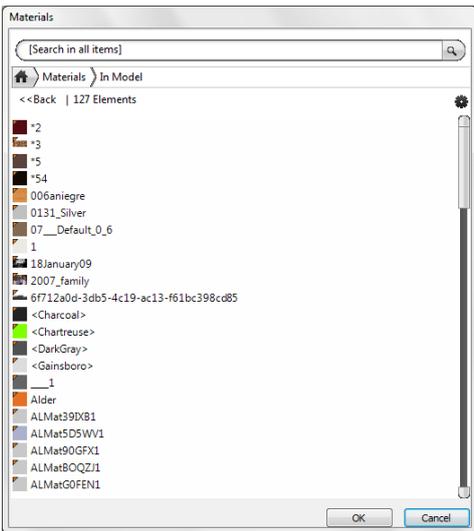
Orientation plays important role when you create vertical patterns.

Choose Rotate left / right option if you would like to keep the original position of the tile.

## Placement options

You can set the starting place of the tiling (from the left side of the wall, from center or from the right side).

## Grout



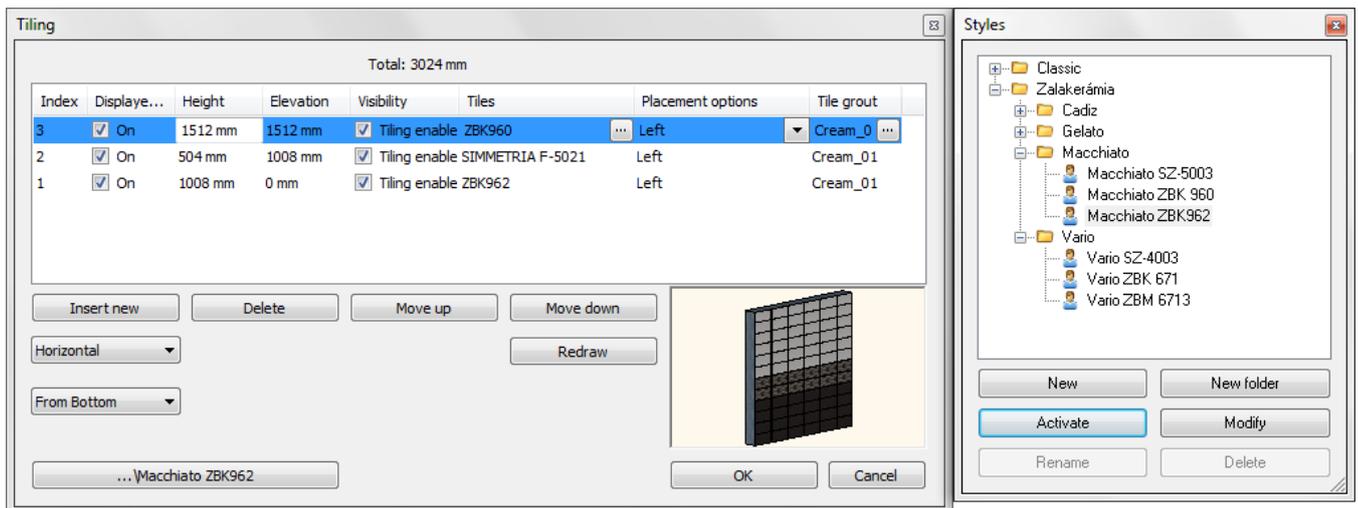
It is possible to choose a grout-material from the Materials library.

## 2.1.3. Save tiling style

**Style button:**



displays the window where you can save the adjusted tiling style as a new style or activate, modify, rename, delete an existing one.



The following operations can be done with styles:

- Create new folder (including one or more styles)
- Activation of style
- Modify, rename, delete a style
- Activate a style and create a new style with this active one.
- Copy property with a style

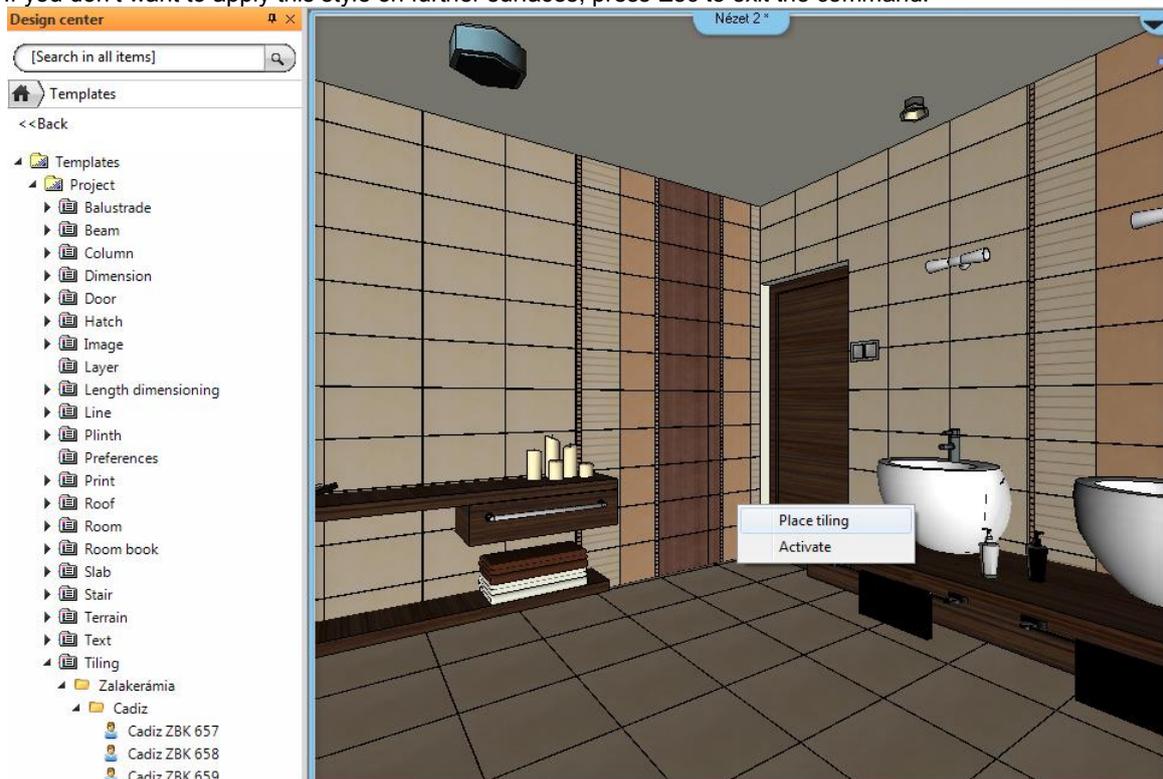
## 2.2. Place tiling style from the Design Center

The tiling is easily applicable by dragging into the surface the selected style. Its steps are as follows:

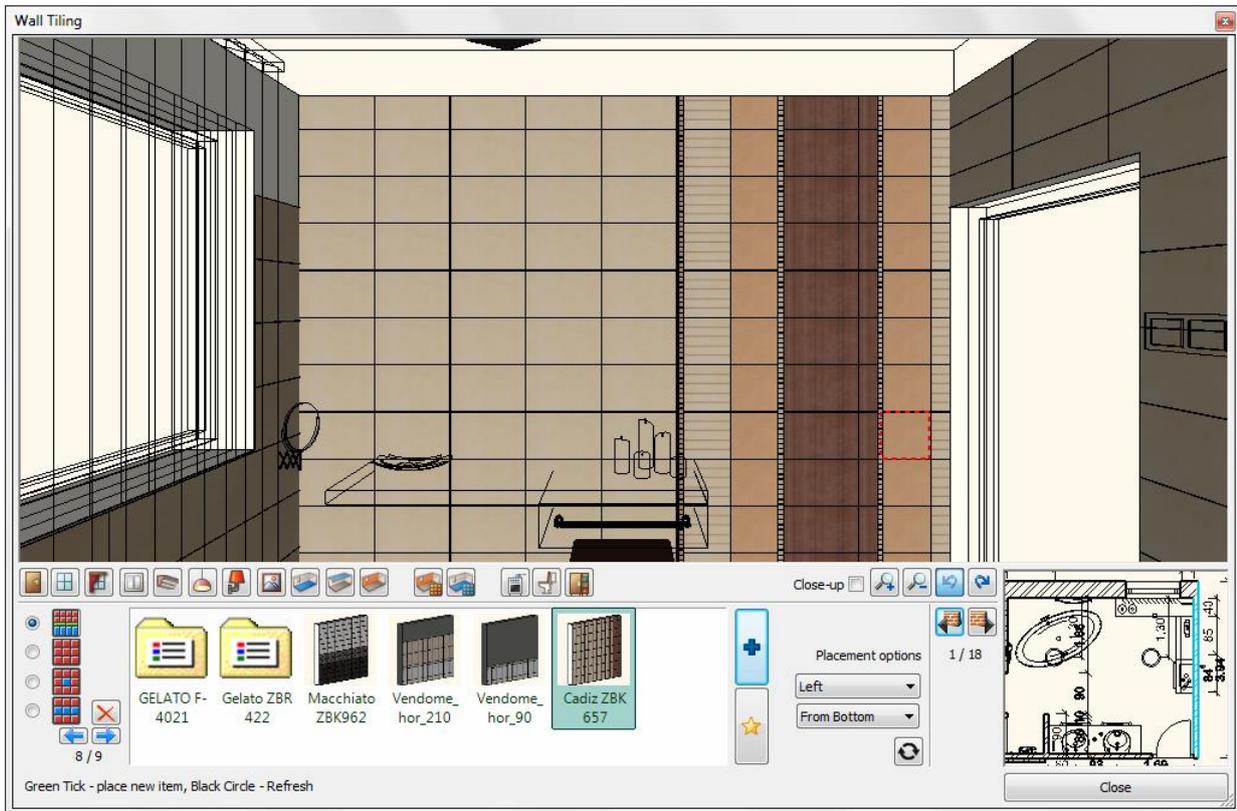
- Search in the Design Centre from Templates the style what you would like to use.

**!** The program saves the created styles only into the Project folder. If you would like to reach it from another project as well, make a copy from this style to another folder, for example into the My folder.

- Press and hold down the left button of the mouse and drag the style to the desired surface and release the button.
- Select the "Place tiling" option in the pop up menu.
- Click on the surface what you would like to cover. The program places the chosen tiling style on the selected surface. In case of floor covering please define the direction of the tiling.
- If you don't want to apply this style on further surfaces, press Esc to exit the command.



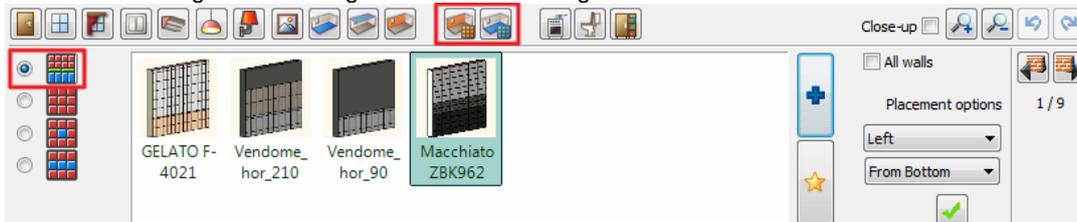
## 2.3. Place tiling style from the Room Maker



The previously created sets are easily applicable in the Room Maker, and some details can be simply modified (for example change a tile or a row / column). How to use the Tiling styles in the Room Maker?

- Start Room Maker. (Click on Toolbox – Start – Room Maker, then point inside an area bounded by single walls. The dialog box of Room Maker shows up.)

- Click on Wall Tiling or Floor Tiling button to reach Tiling sets.

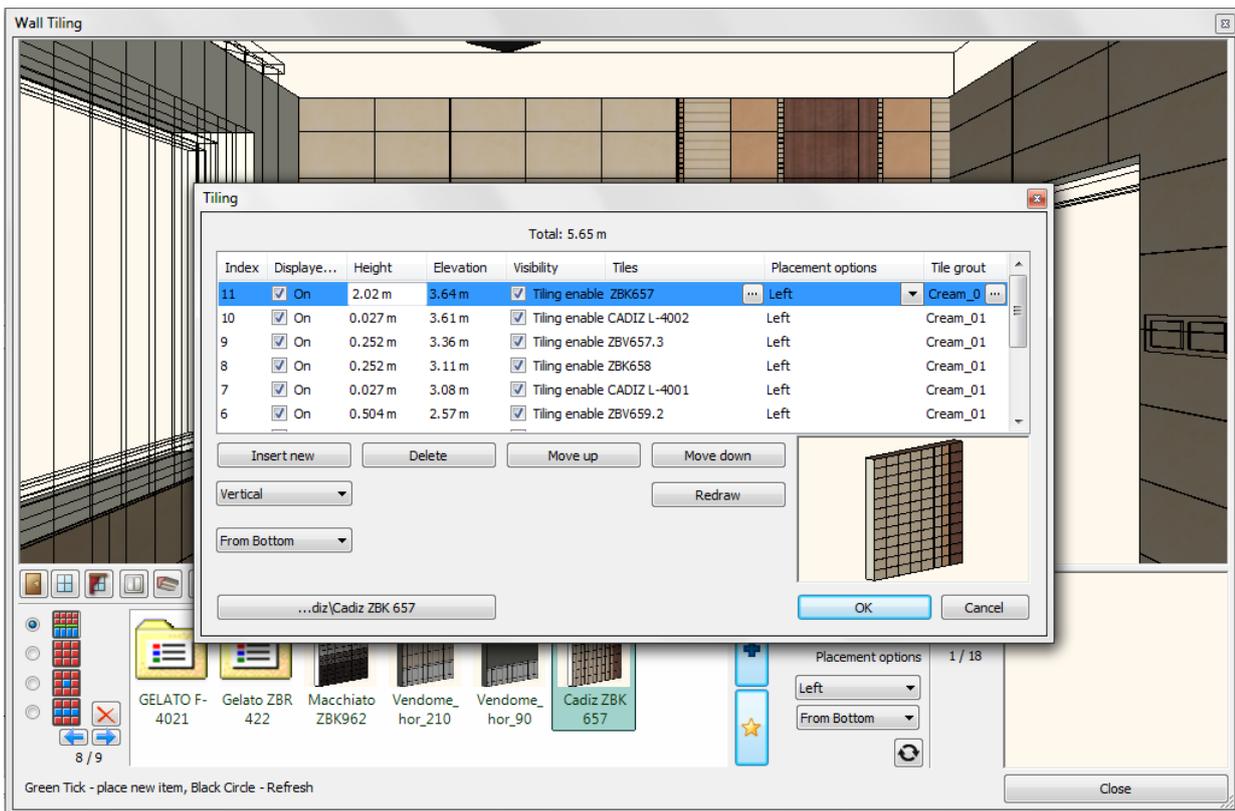


- On the left side of the dialog box there are the tiling modes and the first one is the Sets or Tiling styles. Several tiling styles show up in the Favourites by clicking on it and you can open existing ones by clicking on the Select new item from the library (blue plus). Select the set what you would like to use, press green tick and the tiling takes place on the wall.
- The applied set can be modified or customized if it is necessary.



For description of the Tiling settings in Room Maker see Chapter 9.13.2.14. *Wall Tiling Panel* and 9.13.2.15. *Floor Tiling Panel*.

You can create a new set as well by clicking on the Tiling styles button (yellow star).

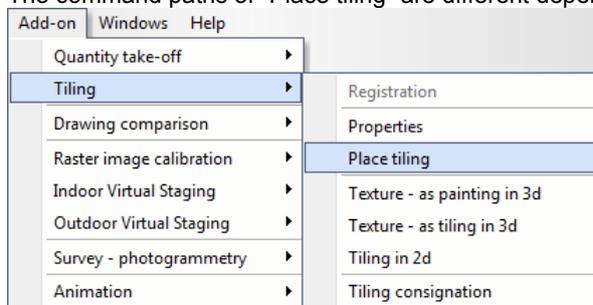


## 2.4. Place tiling style by command

There are three ways to place tiling style by command:

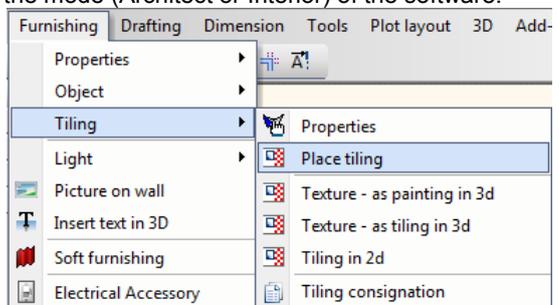
### From Menu bar

The command paths of "Place tiling" are different depending on the mode (Architect or Interior) of the software.



#### Architecture edition:

Add on menu / Tiling / Place tiling

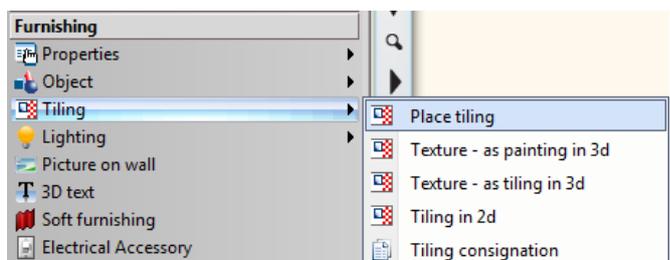


#### Interior edition:

Furnishing / Tiling / Place tiling

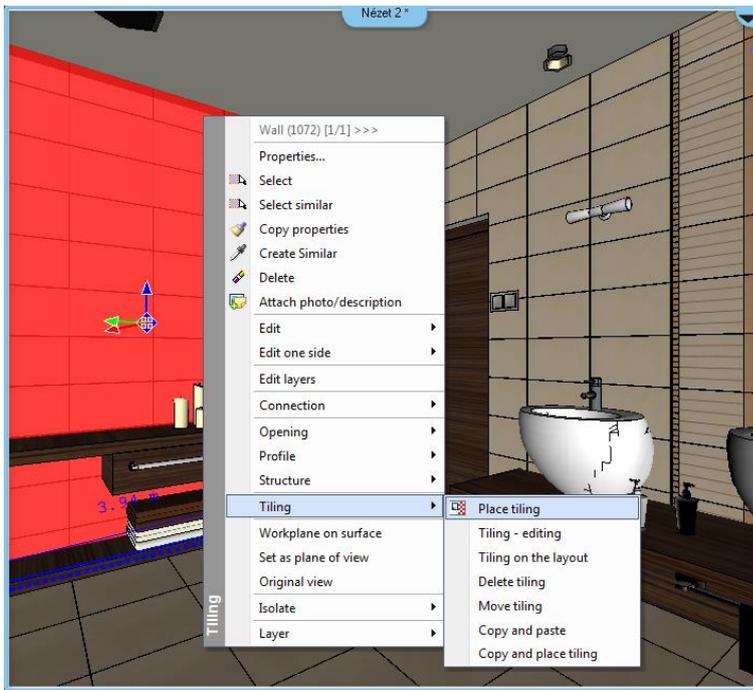
### From Toolbox

Place tiling in Toolbox is only accessible in the Interior edition on the following path:  
Furnishing menu / Tiling / Place tiling



### From Local menu

Click on the wall with the right button of the mouse, the Local menu of the wall shows up, where you can find Tiling / Place tiling. This command is only accessible in 3D-window.



## 3. Lamps in group

### *Design the lighting with groups of lamps*

Lamps in groups command allows you to plan lamps on the ceiling, or running front of the cornice, or build recessed lighting with profiled mouldings, or with false ceiling.



With the Lamps in group command you can quickly create variations of lighting with the changes of

- ❖ location of the luminaires,
- ❖ the number of light sources,
- ❖ the host wall or ceiling's profiles, shape, colour, texture.

### 3.1. Place multiple lamps

**Lamps in groups** command allows you to plan lamps on the ceiling, or running front of the cornice, or build recessed lighting with profiled mouldings, or with false ceiling.

You can find this command in

- **Architectural Edition:** *Building menu / Light* or in the *Building menu of Toolbox / Lighting*
- **Interior Edition:** *Furnishing menu / Light* or in the *Furnishing menu of Toolbox / Lighting*

Draw an open or closed chain along which the lamps will take place. You can use the appearing commands to draw the chain. By clicking on the right mouse button you can reach the **Profile definitions** commands. When entering a closed chain lights can be created within the enclosed area.

After drawing the chain the *Lighting* dialog box shows up. Here you can specify the final allocation of lights.

In the *Lighting* dialog box you can follow up the changes on top in the 3D and in the 2D preview in the right side of the window. Use the tab buttons (left side in the middle) to change between pages with various operations.



#### **Lamp selection**

Select the lamp what you would like to use. If you would like to search for another lamp or modify the properties of the object use the buttons on the right side. Use the *Mirror* option if you would like to mirror the object.

It is possible to rotate objects around the X/Y/Z axes or move them along the X/Y/Z axes.



#### **Profile**

You can specify the properties of the profile on the path and false ceiling in this tab with the use of three buttons on the left side of the window.



On the **Section Profile** tab you can add the profile section of an solid which you would like to create on the path. Using the buttons next to the selection of profiles you can choose another profile from the library or define a new one with profile editor commands. The width and height values of the predefined profiles are flexible, you can edit them and save the changes. Switch off the *Show profile on the path* option if you don't want a profile along the drawn shape. If the *False ceiling* option is on and you define a closed chain as a profile, a false ceiling will be created in the enclosed area. To specify thickness of the false ceiling, enter a value into *Thickness*.



The program cuts the solid or false ceiling around the lamps. It is possible to specify these holes with a profile. This command (with the chosen profile) creates the hole from the bottom to the top of the lamp. Using the buttons next to the selection of profiles you can choose another profile from the library or define a new one with profile editor commands. The width and height values of the predefined profiles are flexible, you can edit them and save the changes. Switch off the *Make holes in false ceiling* option if you don't want holes around the lamps.



On the **Material** tab you can specify the material of the created swept solid.



### Distribution mode

On this tab you can specify the distribution of the lamps along the path. If you placed the group of lamps along a closed path, you can distribute the lamps in the enclosed area.



You can define on this **Along path** tab the distribution of the lamps along the path and on nodes and endpoints. You can allow the lamps along the path with the *Lamps enabled on path* option and choose between the *Full path* or *Each path one by one* distribution. According to this you can enter the *Number of items*, *Distance*, *First and Last value* (because it depends on placement options). Fix these values with the padlock buttons next to them or the program calculates automatically them.

Specific parameters:

Number of items – the number of placed lamps

Distance – the distance between the lamps

First – the distance of the first lamp from the starting point

Last – the distance of the last lamp from the endpoint

Use the *Lamps enabled on nodes* option to place lamps on nodes of the path.



On this **Area** tab you can define the matrix distribution of the lamps in the enclosed area by the path if the *Lamps enabled on area* option is on. This tab is disabled in case of open chain. The details of the distribution and the placing options are similar to the distribution in *Along path* tab but the values of rows and columns of matrix can be specified separately in the left/ right side if the *Same as horizontal* option is switched off. It is possible to enter the rotation angle of the matrix as well.



### General settings

You can specify the general properties of the group of lamps, for example relative height, the 2D representation properties, the color, the layer, etc.

There are four modes of representation in 2D:

- ❖ Top view – shows the false ceiling and the lamps in hidden line removal mode,
- ❖ Symbol – shows only the selected 2D symbol on the place of lamps,
- ❖ Top view with profile – shows the top view and the profile of the path,
- ❖ Symbol with profile – shows the symbol and the profile of the path.



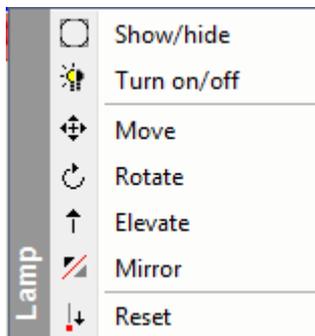
### Save

You can save the created or modified group of lamps into the Design Center by using *Save* or *Save as* option. Here you can load those group of lamps which are already exist and modify them as well.

## 3.2. Modify certain items of lamps in group

You have the possibility to modify the items of group of lamps one by one in 2D and 3D window as well.

- Press **Alt** on the keyboard and click with the mouse in the same time on the group of lamps. The items of the groups become visible and the (open or closed) path.
- It is possible to show or hide lamps, turn on or off the lights, move, rotate, elevate and mirror by clicking on the markers of the items of the group.
- Choose *Reset* to delete these modifications.
- You can delete all of the individual modifications by clicking on *Reset custom lamps* in the local menu of the group.



The **Elevate** is enabled only in 3D window.



The specific changes or a part of them may be lost if your modification of group of lamps in *Lighting* dialog box affects the distribution of lamps as well.

### 3.3. Modify the light source of the lamps in group

The group of lamps uses only one kind of lamp and light sources of these lamps have the same settings. So one lamp represents the whole group.

How to reach the light source settings?

- Select the group of lamps.
- Click on *light sources* button in the **Properties** tab. The light source properties of the selected group shows up.
- The method of set light source properties is the same as in case of custom lamps.

## 4. Texture management with apparent materials

The whole concept of architectural and interior design may change with applying the new apparent material feature. Apparent materials are materials whose visual appearance changes depending on the real colour or texture at which they are actually associated and visualized. You can easily compare various solutions for the same building or room layout simply assigning different paint finishes, coatings without changing the 3D model.

During the designing process the modification of the architectural or interior concept needs to apply new materials, colours.

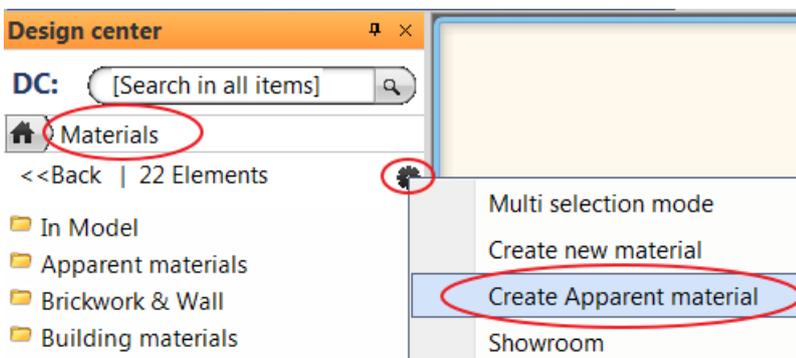


### 4.1. Creating apparent material

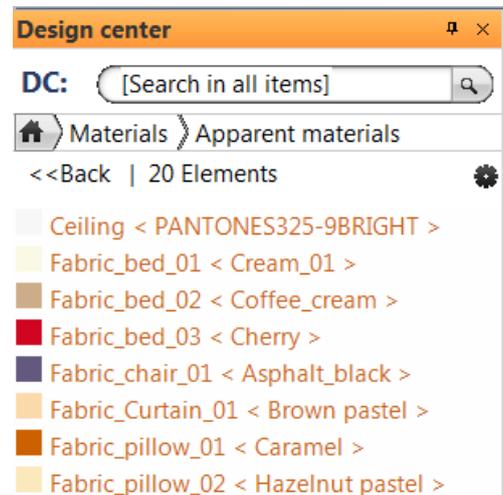
Apparent materials can be created from the Design Center, There are some already created materials in the *Materials – Apparent materials* category, which you are free to use in your designs or create new ones. We recommend that you use simple and descriptive names. The name has two parts. The first part is the reference, the second is the real material name. The real material name is between <> marks. You can easily find them with their orange color in the library. For example, *Fabric\_bed < Cream\_01>*

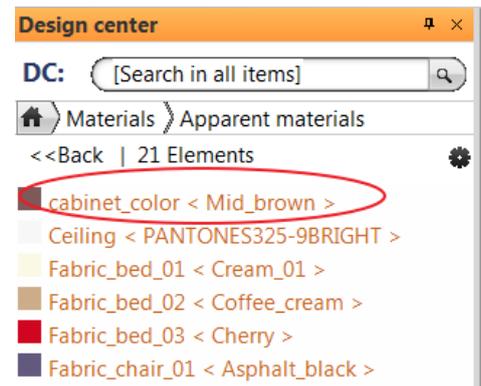
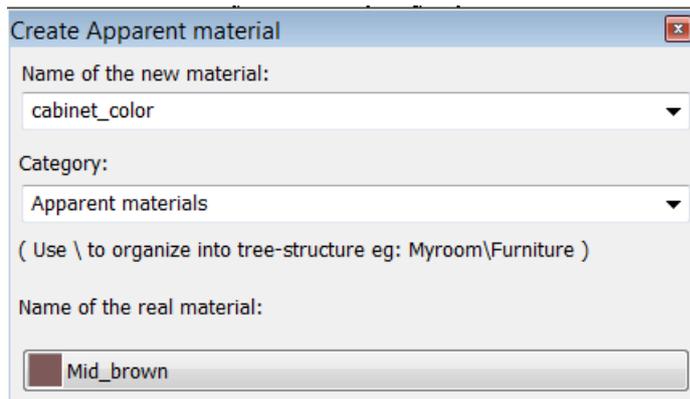
How to create an apparent material?

- Click on the Settings icon and select the *Create Apparent material* command:



- Enter the name of the apparent material in the dialog: for example, *cabinet\_color*.
- Enter the category name. We recommend that you keep the offered *Apparent materials* category so these materials are reachable from the same place.
- Select a real material which you would like to add to this name.





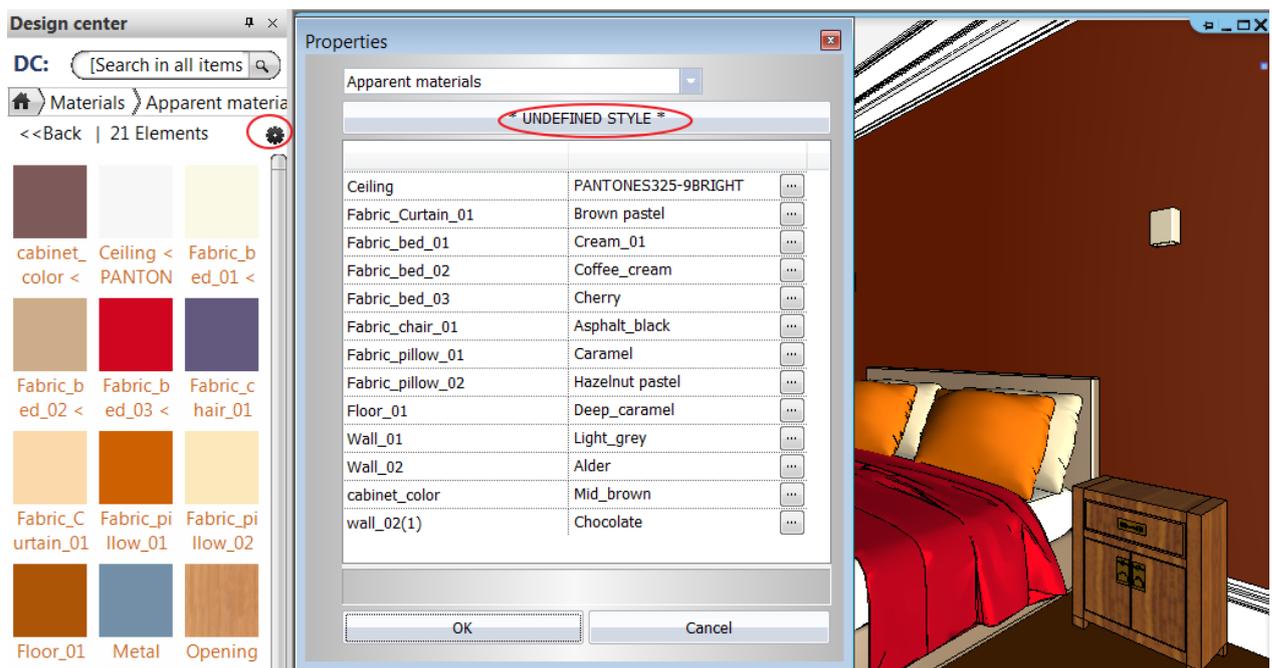
Create only as many apparent materials as it is absolutely necessary that you could show the different material variations on the typical, large surfaces.

## 4.2. Apparent Material Manager

Create the project with the apparent materials and use them on the characteristic surfaces of the project. Then you have the possibility to save the used apparent materials as a style. Create different versions and save them as styles. Use these styles to show different versions of the project materials and make snapshot or render if you wish.

### How to create new apparent material style and how to use them:

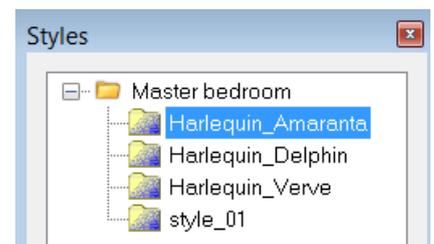
- Click on the Settings icon in Design Center – Materials window.
- Select Apparent material manager command in the menu.
- The Apparent material manager appears, it includes the apparent materials with the original material assignment in the project category.
- Save this first version of materials as a style by clicking on the Undefined style button: for example, style\_01.

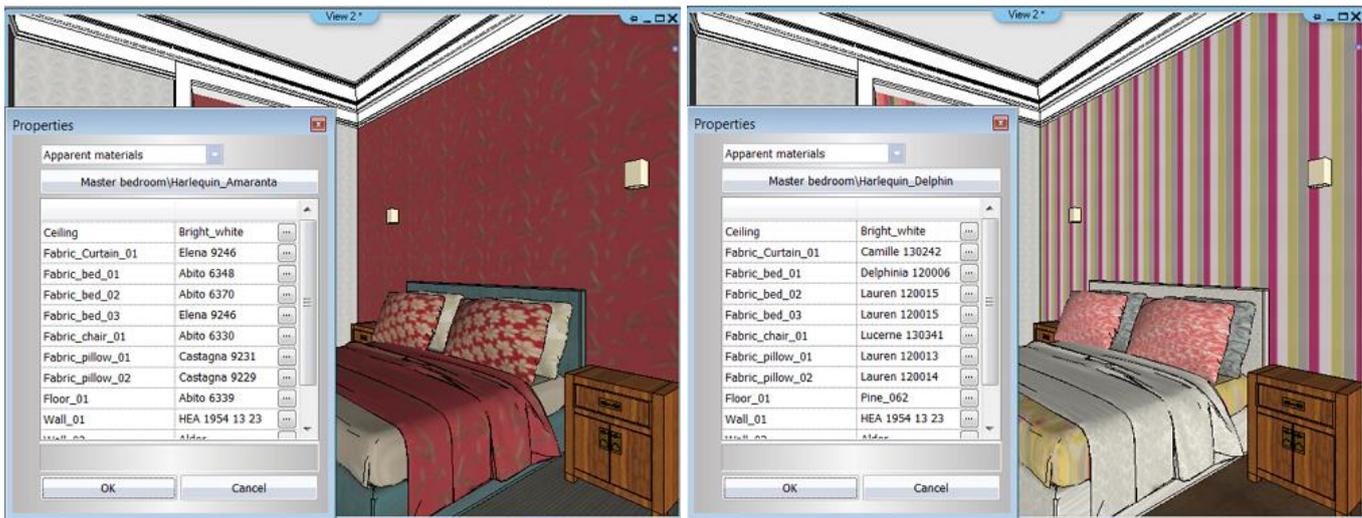


Select material to the apparent materials one by one. This will be the second version of materials.

- Save it to another style and so on.
- Close the window and refresh the 3D model by clicking on *Build 3D model*. The material version of the activated style will appear in the model.

The following examples show the different versions of materials by using apparent materials.

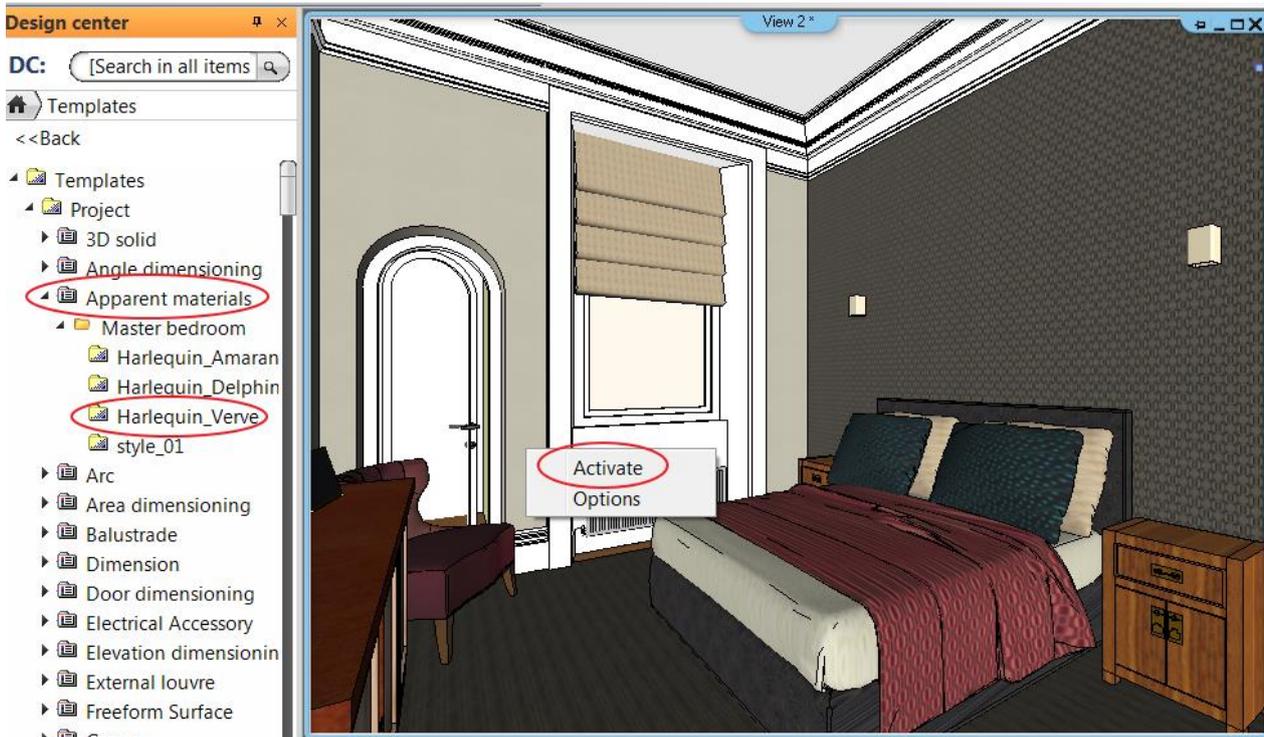




### Apply apparent material styles from Templates

You can reach easily the created styles and use them in the project from *Design Center – Templates*: These styles are stored in *Project – Apparent materials* category.

- Use drag and drop method, drag the selected style to the model.
- Choose *Activate* in the menu and rebuild the 3D model.



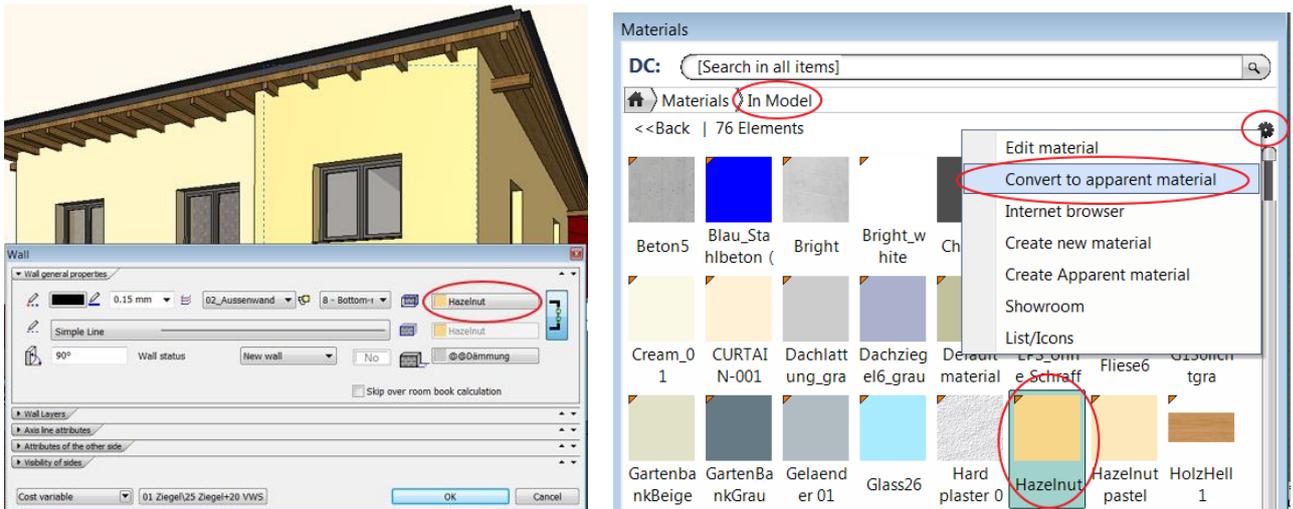
You can open the *Apparent material manager* by clicking on *Options*.

## 4.3. Convert material to apparent material

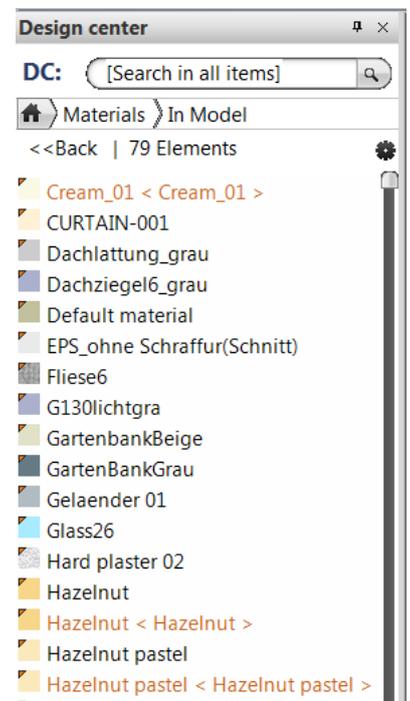
If your project is complete, the characteristic surfaces have the required materials and you would like to show different versions from it, this method is recommended.

The use of the apparent materials in the library may cause extra work because they should be assigned to the surfaces again. It is possible to convert project materials to apparent materials. These apparent materials are available only in the mentioned project.

- Select the object in the project which material you would like to convert to apparent material.
- Click on the *Settings* icon in the *Materials* window and choose the *Convert to apparent material* command and then click OK.



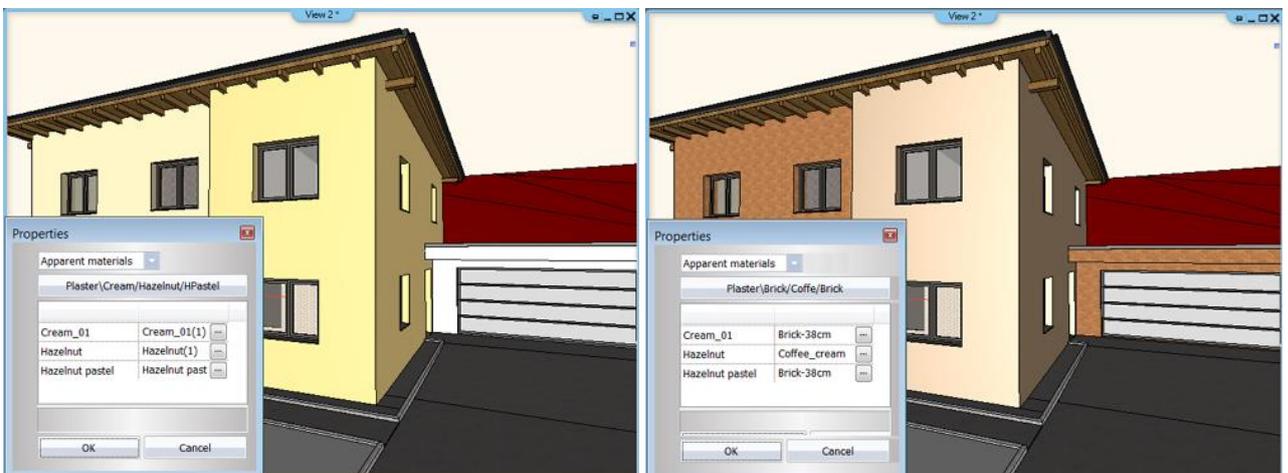
The new apparent material appears in the properties window of the selected object. The apparent material is displayed in orange in the *Design Center – Materials – In Model* category as well. The apparent material will assume the name of the material and the original material is between <> marks: For example, Hazelnut <Hazelnut>



! Only the materials in the *In Model* category are convertible to apparent materials.

The created apparent materials are in the *In Model* category and they are in the *Apparent material manager* as well. Creating styles are recommended as described above.

Example:



## 5. Rendering with post-processes

The simple interface of the ARCHLine.XP Render is offering ready-made templates to quickly set up the quality of the final image. The image is rendered with a progressive rendering method which gives you the ability to have an idea of the full image and make decisions based on that even at the initial phase of the rendering. You can also zoom and pane the image while it is still not finished to check the smallest details. If that is necessary, you stop the rendering at any time; you can make fundamental changes and start another render without closing the renderer.

The post-processes are extremely useful as they allow you to make changes on the image even during rendering, so you can fine-tune features like brightness, contrast or many more without having to save the image and open it in an image manipulator tool.

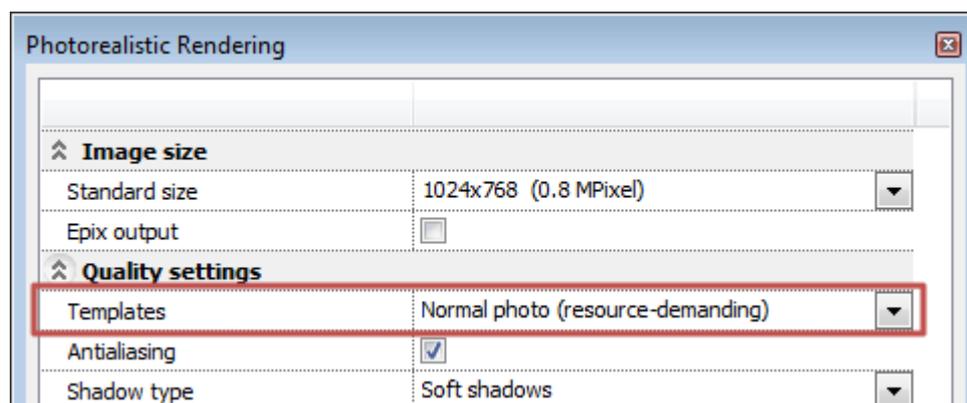
### 5.1. Progressive rendering

The image is rendered with a progressive method. This means that the initial phase of image rendering the Renderer shows a very coarse approximation of the final result. This result is becoming better by time approaching the final image. The progressive gives you a great opportunity to make decisions of the image even when there is plenty to calculate and you do not have to wait until the full image is rendered totally. In contrast to scan line rendering when the image is processed in one step from top to down this can save plenty of time for you when doing the test renders.



### 5.2. Render Templates

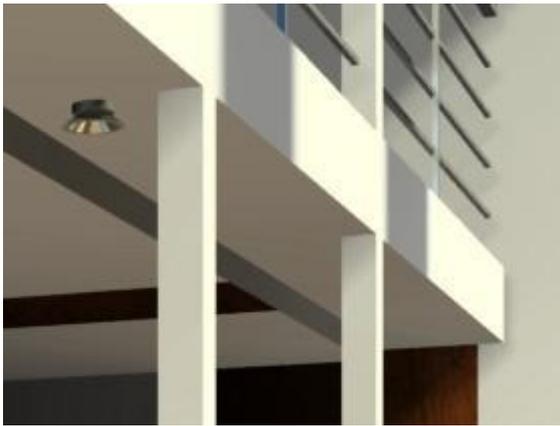
Render templates are ready-made pre-sets of Ray tracing, Global illumination, Radiosity and Shading accuracy values for your convenience. Professional users still have the option to tweak all the setting by selecting the Custom template. Render templates can be found in the Quality settings paragraph of the Photorealistic Rendering dialog.



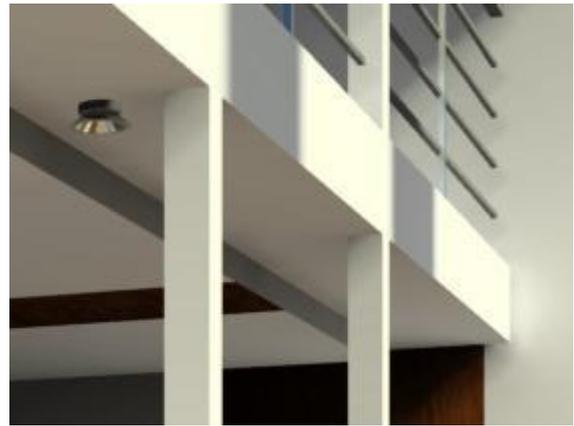
You can choose the following templates:

- ❖ Simple ray trace
- ❖ Fast photo
- ❖ Normal photo (resource-demanding)
- ❖ Detailed(resource-demanding)
- ❖ Custom

As the names suggest there are simpler and rather detailed templates, very likely giving better results for longer render time. The largest difference between these templates is that the shading and lighting calculations become more accurate towards higher quality settings. In the name of Normal photo and detailed template it is highlighted that these demand more resources than the others, meaning that using these the render time will very likely be longer. In case of using the Detailed template the render time is very likely be the longest - based on real life experiences this means double or longer time compared to Normal. Comparing the results of these two templates you will see better and more accurate shading and contact shadows between surfaces in favour to the Detailed render template.

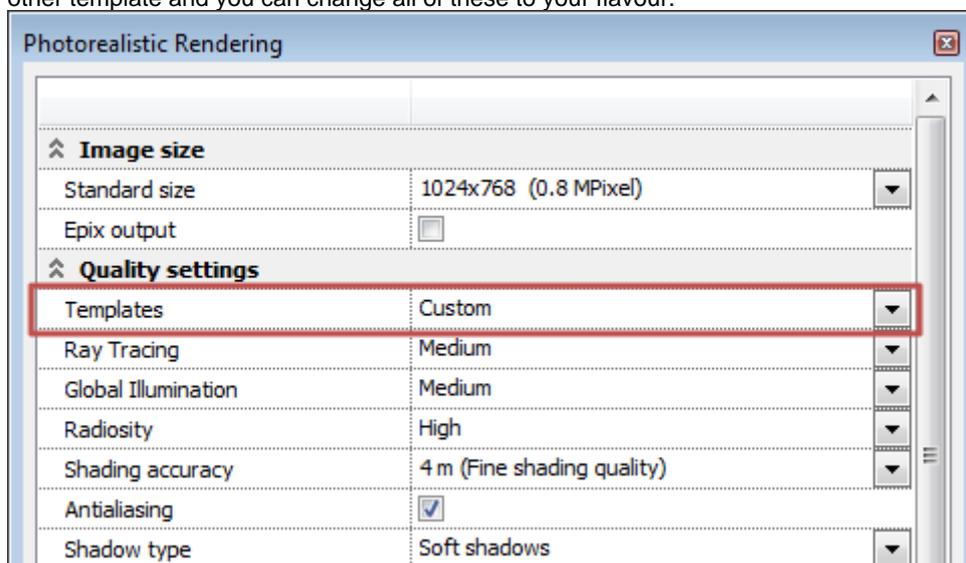


Fast photo template  
Simpler shading and diffuse lighting representation  
❖ Rendering takes relatively short time



Detailed template  
More accurate shading and diffuse lighting representation  
❖ Rendering takes longer

For professionals there is the Custom template. If you choose this template you will see the details of a previously chosen other template and you can change all of these to your flavour.



The Custom template lets you tailor these settings to perfectly match your current scene. This way you can save render time and you may also have better details in some cases if the ready-made templates are not ideal for special scenery.

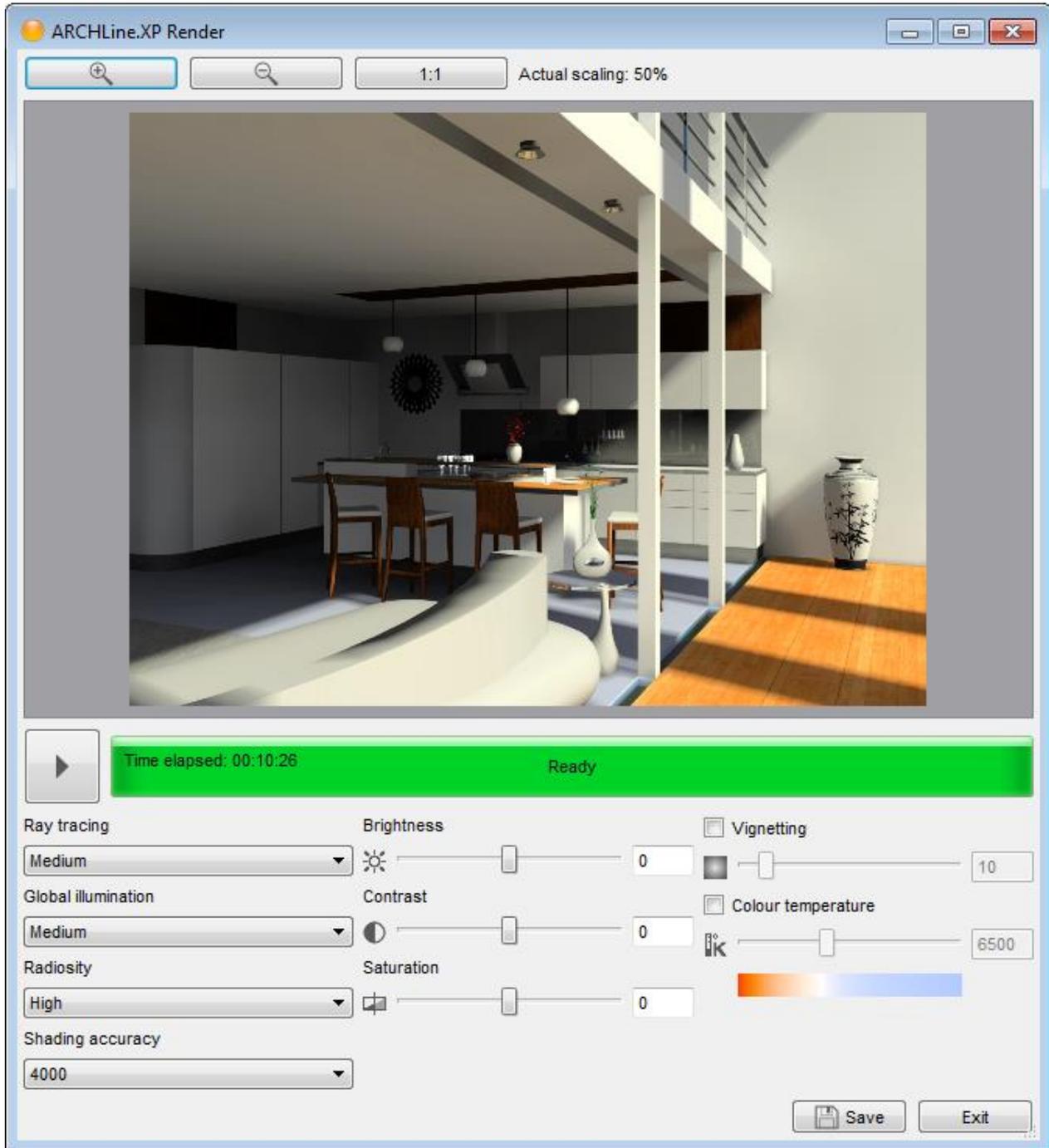
An example: In some cases, if the Shading accuracy is too high for the actual scene, the image might not be rendered at all. If this happens the renderer will give you a warning message, you can select the Custom template and select or type a smaller value in the Shading accuracy field to be able to create a rendered image.

### **Radiosity**

Radiosity is a global illumination algorithm, an application of the finite element method to solving the rendering equation for scenes with surfaces that reflect light diffusely. In the renderer there are lower level and higher level radiosity settings. Lower level radiosity is a fast method while higher level radiosity takes longer to calculate.

In practice Radiosity helps better representing the shading and lights in dark areas especially when these are barely lit or not even lit by direct light only diffuse light. A good example is a dark room which has a window to an open brightly lit area, but the light source or that area doesn't cast any light directly into this space. In this case Radiosity solution provides a better and very likely brighter representation of the walls, ceiling and other surfaces.

## 5.3. The ARCHLine.XP Render Interface



### 5.3.1. Image area

The largest part of the ARCHLine.XP Render interface is occupied by the Image area and Zoom tools. At the initial phase of rendering the Image area represents a snapshot of the scene to be rendered. The final image starts to be processed over the top of this snapshot once the calculations reach a certain level.

#### **Zoom image**

The image represented in the Image area can be zoomed and panned even during the rendering process. To zoom in or out use the Zoom buttons at the top of the Image area. You can also zoom the image by simply hovering your mouse over the image area and using the mouse scroll-wheel. Scroll up to zoom in and scroll down to zoom out. The current zoom ratio is represented next to the zoom buttons on the right hand side. To see the image in real size, just click on the 1:1 button.

#### **Pan image**

If the represented image is larger than the Image area you can pan it even during rendering. To pan the image hover your mouse over the Image area, press and hold the scroll-wheel and move your mouse.

### Stop / Re-render button

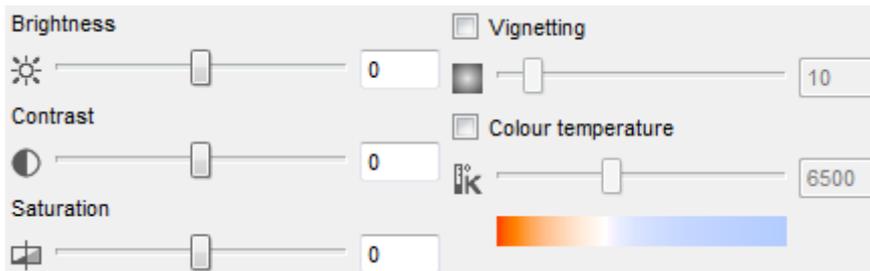
At the bottom of the Image area you can find the Stop / Re-render button on the left hand side. If you push it during rendering, the process will be stopped immediately. When rendering is finished normally or stopped by the user, all the quality settings become editable under the Stop / Re-render button. If you make changes you can push the Re-render button to render a new image with these changes.

### Progress bar



Right under the Image area you can see the Progress bar. The Progress bar is providing information about what actually happens. When the renderer appears model initialization starts. During this there is no rendering yet, only a snapshot of the model appears. When the calculations start you can see information about the time elapsed, the percentage of readiness of the whole rendering process and the estimated time left on the progress bar.

## 5.3.2. Post-processes



Once the image is ready some of its features are often need some fine tuning. The post-processes of the ARCHLine.XP Render are a great help in this job. Using the post-processes of the renderer you can change the brightness, contrast and many other features of the image, even on the fly when the renderer is still working.

### Brightness

Use the Brightness post-process to change the image brightness even while the image is still rendering. Use the slider or type a specific value between -100 and +100 to see a darker or brighter version of the rendered image.

Note: The Brightness post-process is not the same as the Brightness value of the Photorealistic Render settings dialog. The main purpose of the post-process is to give you an additional tool to change the brightness of an image that was already rendered with specific render settings. This setting has no effect on the quality of lighting – while the Brightness option in the Photorealistic Render Settings dialog actually has.



Brightness: -100



Brightness: 0



Brightness: 100

### Contrast

Use the Contrast post-process to change the image contrast even while the image is still rendering. Use the slider or type a specific value between -100 and +100 to see a different version of the rendered image.

Note: The Contrast post-process is not the same as the Contrast value of the Photorealistic Render settings dialog. The main purpose of the post-process is to give you an additional tool to change the contrast of an image that was already rendered with specific render settings. This setting has no effect on the quality of lighting – while the Contrast option in the Photorealistic Render Settings dialog actually has.



Contrast: -100

Contrast: 0

Contrast: 100

**Saturation**

Use Saturation post-process to change the saturation of a rendered image. If you lower saturation, the image will tend to lose its colours. If you increase saturation you can boost the colour saturation of the image even over the normal level.



Saturation: -100



Saturation: 0



Saturation: 100

**Vignetting**

Use the Vignetting post-process to make the corners and edges of the image a bit darker. This post-process also can be turned on or off.



Vignetting: OFF



Vignetting: 50



Vignetting: 100

**Colour temperature**

Use the Colour temperature post-process to create a warm-tone or a cool-tone version of the same image. Colour temperature is measured in Kelvin. Lower values result in warmer colour tones (deep orange tones) and higher values result in cooler colour tones (sky-blue tones). Using this post-process you can create different colour tone versions of the same image without having to change the real light colours of the whole scene.



Colour temperature: 3500 K



Colour temperature: 6500 K



Colour temperature: 9500 K

## 6. New concept of balusters

### Extended rules for contemporary balustrade or fence design



Balustrades in ARCHLine.XP enable you to control every aspect of balustrade design  
Balustrades can be freestanding or anchored to stairs.

### Balustrade properties and creating balustrades

When you create a balustrade, you have to define:

- ❖ the Balustrade properties using the Balustrade wizard,
- ❖ the balustrade path.

### Balustrade properties - Balustrade wizard

The method enables the modelling of balustrades or other separator elements like fences on a final construction drawing level.

Click with right mouse button on  *Balustrade tool* or use the *Building menu - Properties - Balustrade* command. After you activated this command, a *Balustrade wizard* pops up. You can specify these values in three steps, in the following three dialog boxes:

- I. Edit baluster
- II. Edit handrail
- III. General settings



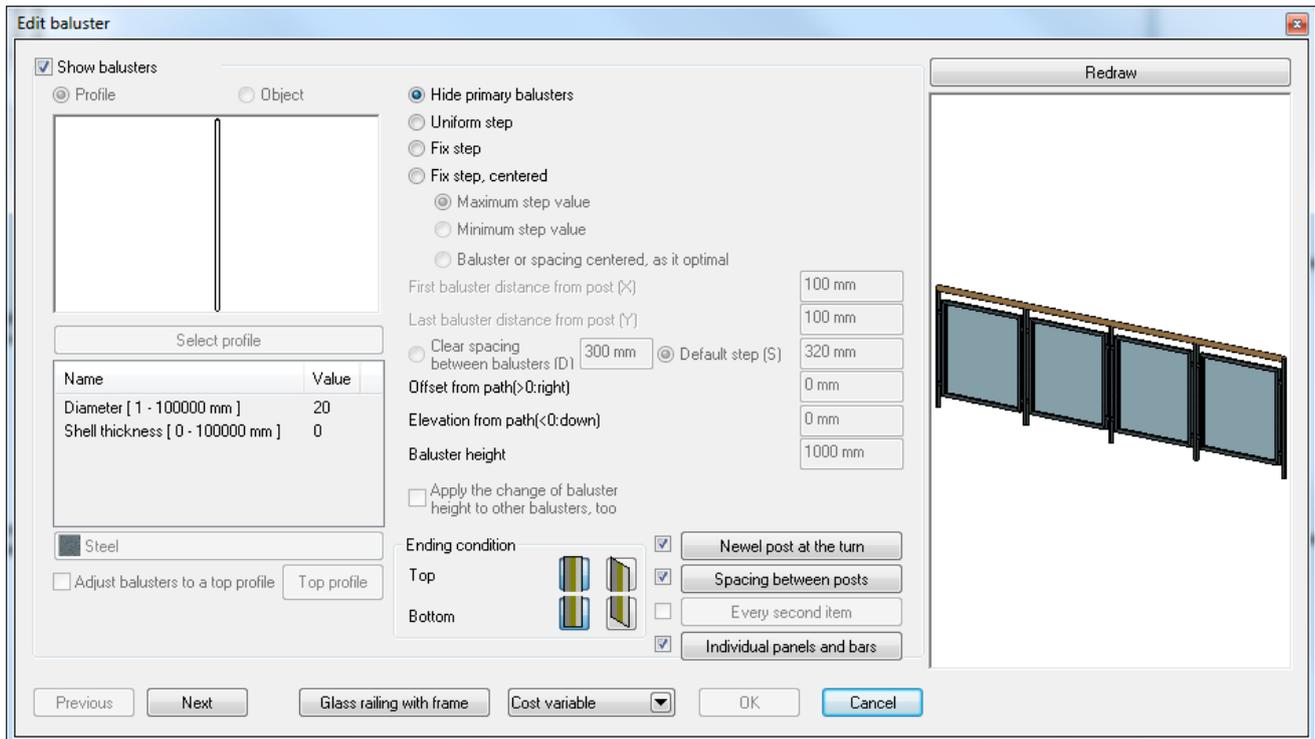
After defining balustrade properties, save those into a **style**. When placing a balustrade, balustrade wizard will not appear. Instead, it will be created along the defined path with the properties of the active style.

### 6.1. Balustrade wizard - Edit baluster

In the first dialog box you can set baluster properties.

There are the following possibilities of creating repeated and individual elements:

- ❖ Periodically repeated elements (primary distribution) (primary balusters)
- ❖ Placing posts inside primary periods (Spacing between posts button)
- ❖ Secondary periods inside primary periods (Every second item button)
- ❖ Newel posts as separators between primary periods (Newel post at the turn button)
- ❖ Individual panels and bars (Individual panels and bars button)

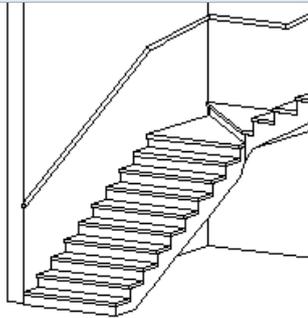


#### Balustrade without balusters:

You can create balustrades without any balusters. To do this, turn off the **Show balusters** option and the program only creates the handrail. You can install such handrails e.g. on the wall by the stairs.

#### Balustrade with balusters:

If you want to install balusters, tick the **Show balusters** option.

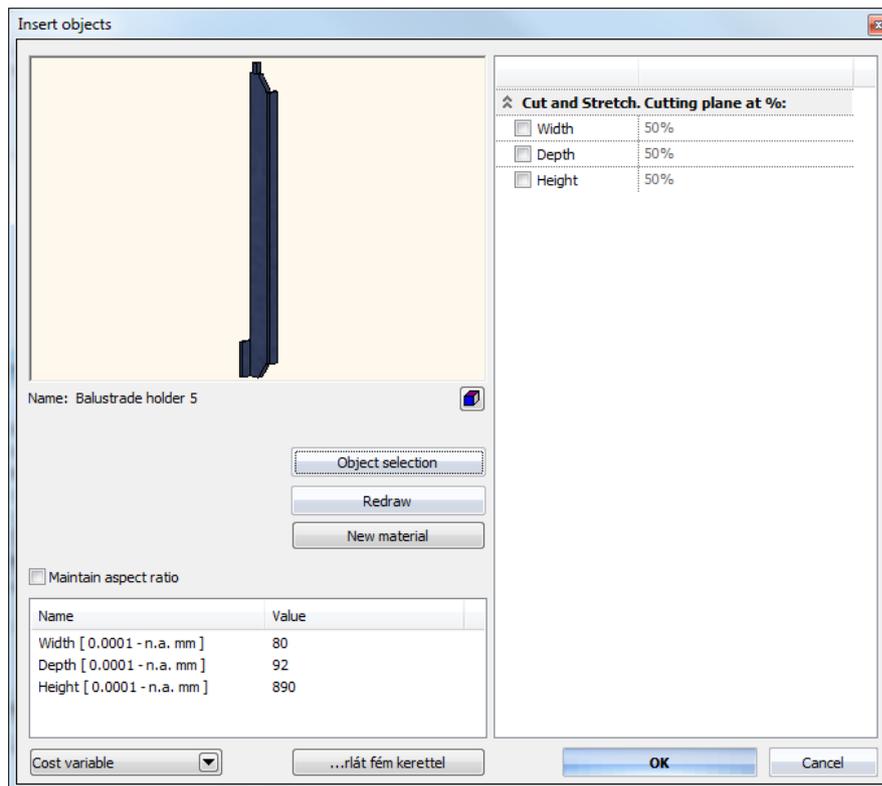


You can define balusters by objects or profiles.

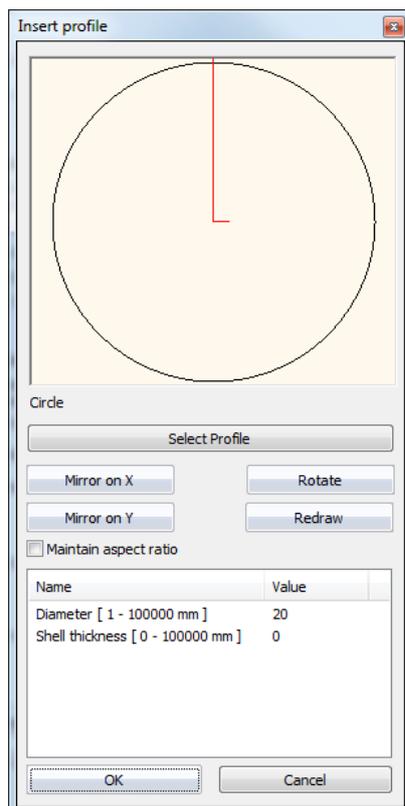
**!** You can define baluster by objects or profiles if one of the distribution methods is selected. When you select **Hide primary balusters** option, only the **Newel post at the turn**, **Spacing between posts** and **Individual panels and bars** buttons are available for baluster definition.

#### 6.1.1. Baluster by object

- Click on the **Object** option, then the **Object selection** button to display the *Insert objects* dialog box.
- Select the desired baluster from *Balustrades* category.
- Set the parameters of the selected object. Define the material of the object, as well.
- **Ok** Returns to the *Edit baluster* dialog box.



### 6.1.2. Baluster by profile



If you want to define balusters with a sectional profile instead of an object:

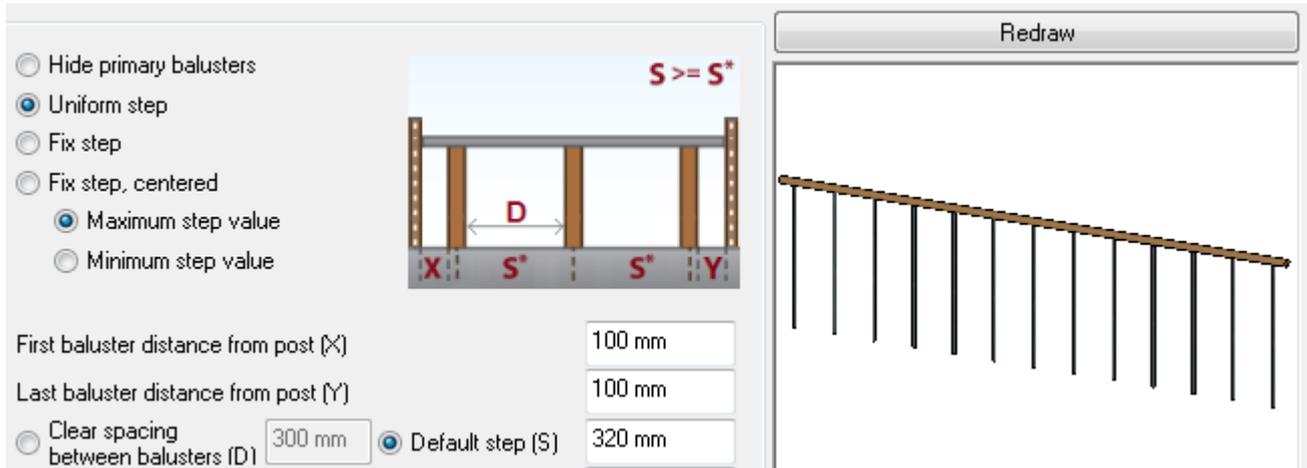
- Click the **Profile** option, then the **Select profile** button to display the **Insert profile** dialog box:
- Select the desired profile from the profile directory.
- Set the parameters of the selected profile.
- **Ok** Returns to the *Edit baluster* dialog box.



Read about the **Insert profile** dialog box in detail in Chapter 8.2.10. *Select from list.*

### 6.1.3. Primary balusters distribution settings

The distribution of the previously defined balusters by object or profile can follow different rules.



**First and last balusters are in symmetry.** The distance between balusters are equal and the distance of the first and last baluster from post is fix. Distance between balusters can be defined either by **Clear spacing between balusters (D)** or **Default step (S)** parameters. These two options make the definition of distance easier because in some cases you know the gap between two balusters, in other cases you know the distance between two balusters. The distance between two balusters (S) will always be longer than the gap between two balusters (D) by the width of baluster (object or profile). You can set the **First baluster distance from post (X)** and **Last baluster distance from post (Y)** parameters, too. This is the distance between the first/last baluster and the start/end of the balustrade part. Primary rule is the correspondence to X/Y parameters, secondary rule is the correspondence to D/S parameters. Since D/S distance matches rarely to the specified X/Y distances, you can select between **Maximum step value** and **Minimum step value** options. In the first case the gap/distance between balusters will be D/S or less, in the second case the distance between balusters will be D/S or more.

Example: if  $X=Y=7$  cm,  $D=5$  cm and the width of a baluster is 13 cm, 16 pieces of balusters will be created along a 2.85 meter long path with the option of maximum step value, with the gap of  $D^*=4.2$  cm between balusters. With the option of minimum step value 15 pieces of balusters will be created with the gap of  $D^*=5.4286$  cm between balusters.

**Fix step.** The distance between balusters (S or D) and the first baluster distance from post (X) are fix values, exactly the same as defined. The **Last baluster distance from post (Y)** is not editable in that case. **From the beginning** and **From the end** options define whether the measuring of X must be started at the beginning or the end of the balustrade part. Based on our previous example, 16 pieces of balusters will be created with the gap of  $D=5$  cm between balusters. However, the last baluster will be drawn with the width of 8 cm instead of 13 cm.

### 6.1.4. Primary balusters placement settings

Offset from path(>0:right)	0 mm
Elevation from path(<0:down)	0 mm
Baluster height	1000 mm
<input type="checkbox"/> Apply the change of baluster height to other balusters, too	

**Offset from path (>0: right).** Horizontal alignment relative to the path of balustrade. E.g. balusters can be installed on the side of the staircase structure.

**!** The value specified in the *Offset from path* aligns only the primary balusters. The offset of handrails can be defined in another dialog.

**Elevation from path (<0: down).** Elevation of balusters relative to the path of balustrade.

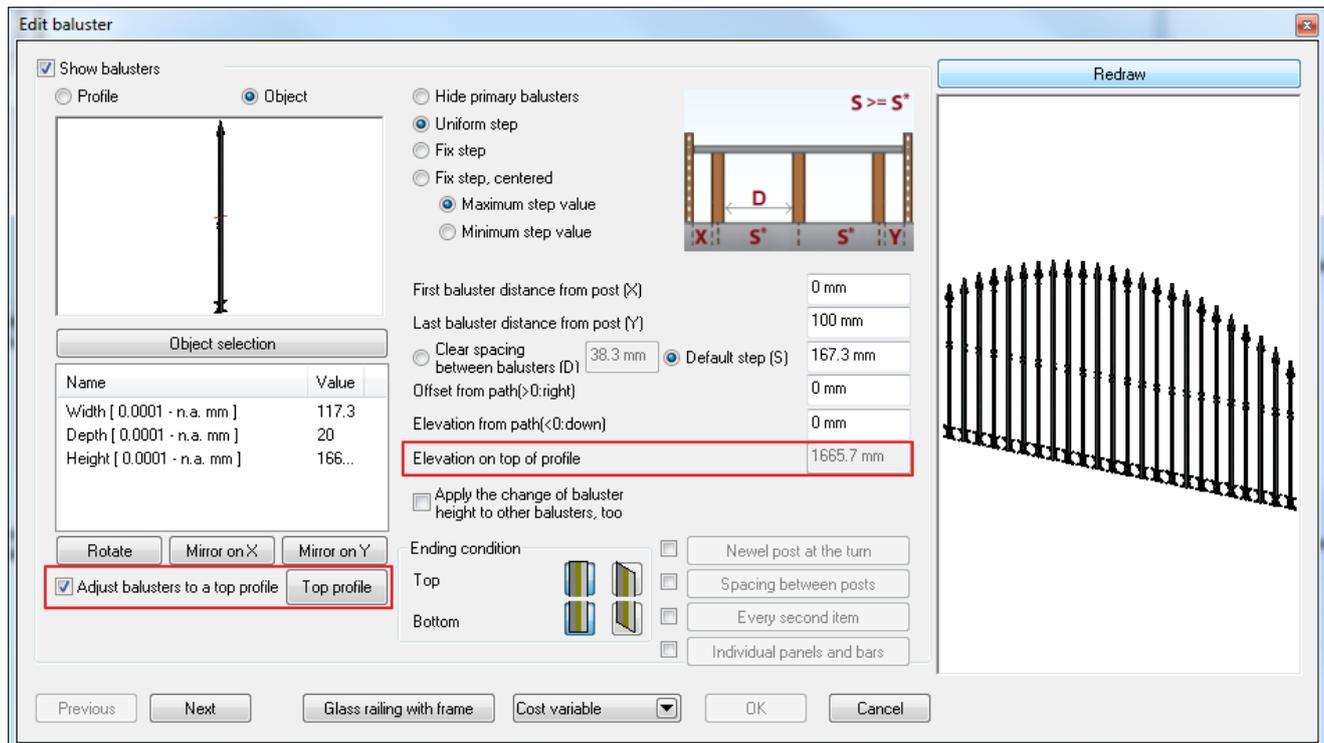
**Baluster height.** The height of balusters can be set here. If the baluster is created by object, its height cannot be modified here.

**Apply the change of baluster height to other balusters, too.** Modification of the height parameter of the primary baluster will be applied to other baluster types, too, as follows:

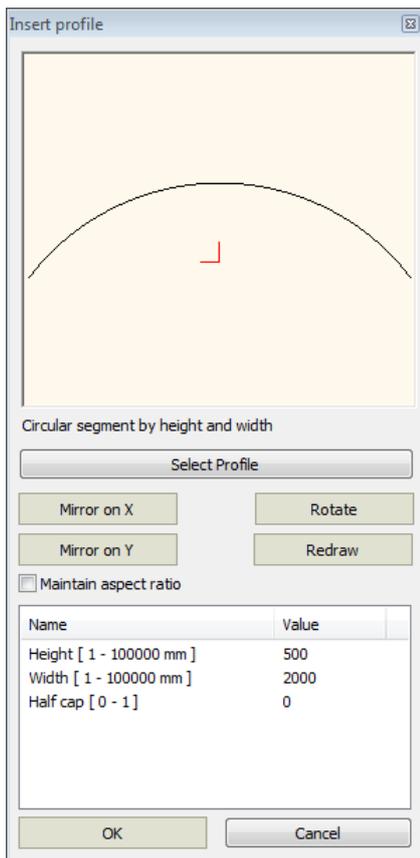
- Check the **Apply the change of baluster height to other balusters, too** option.
- Select the representation of those baluster types you want to incorporate into the operation.
- Click **Redraw** button to update the representation of balustrade in the preview window.
- Change the **Baluster height** value.
- Click **Redraw**. The height of all the incorporated baluster types will follow the change. At the same time, the **Apply the change of baluster height to other balusters, too** option switches off. For example, when you elevate the height of the primary balusters by 0.2 meter, the height of balusters created by the **Every second item** and **Newel post at the turn** methods will be elevated by 0.2 meter, too, if those baluster types are incorporated into the operation.

### 6.1.5. Adjusting balusters to a top profile

Inside a period you can define an open profile to which you can adjust the height of balusters.



- Switch on the **Adjust balusters to a top profile** option.
- Click **Top profile** button and select *Circular segment by height and width* profile.



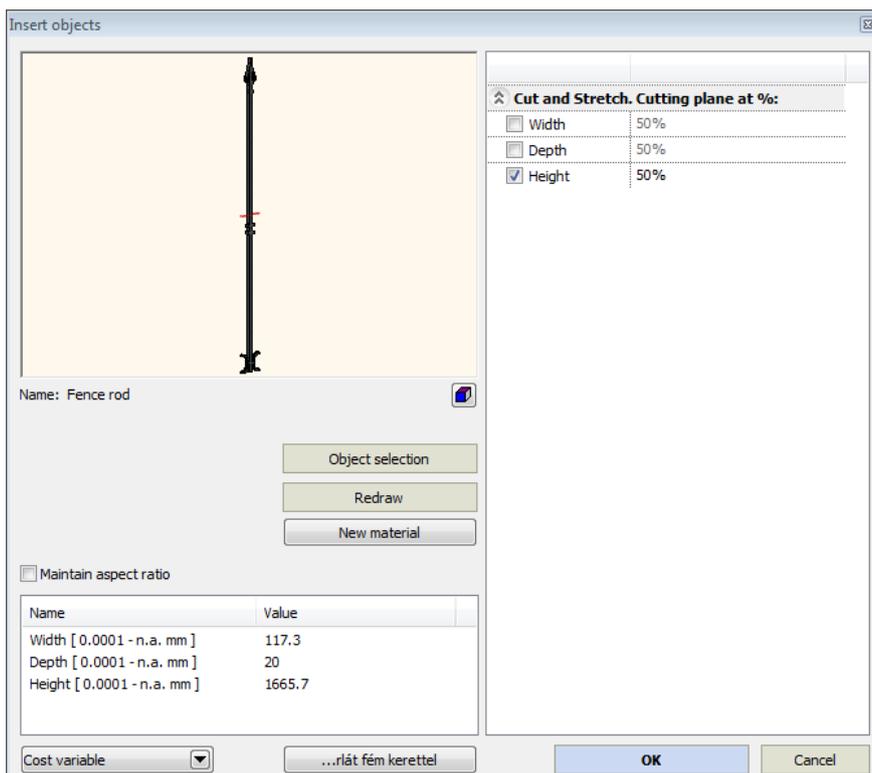
- After defining the top profile, the top of balusters will be adjusted to the profile.

The stretching of the object is available by defining a cutting plane.

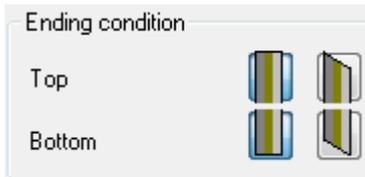
This is the so-called **Cut and Stretch** property. In the three main directions cutting planes can be positioned in percentage of the main dimensions. The program cuts the object with the cutting plane at the defined position and inserts an appropriate piece with homogenous cross section at the place of cutting.

Thus you can achieve changes in the dimensions with a non-linear transformation.

After stretching, that's why you find the decoration in the middle of the fence rod still with a constant height, horizontally along the balustrade part.



### 6.1.6. Top and bottom ending of balusters



You can define the top and bottom ending of balusters that can be horizontal or slanted. It comes into the picture when the path of balustrade is not horizontal. In that case the baluster endings can follow the slope if you select the slanted option.

### 6.1.7. Secondary balusters distribution settings

#### *Every second item*

It's a frequent case when balusters in a fence are placed in two rows behind each other with an offset. This way the second row hides the gaps between balusters in the first row. With the spacing between posts function it is available, too.

- Click check box for **Every second item** button and then click the button itself.
- In *Every second item* dialog you can define a secondary baluster distribution in addition to the primary baluster distribution.

**Every second item**

Profile  Object

Offset from middle point (>0: forward)

Offset from path(>0:right)

Elevation from path(<0:down)

Baluster height

Ending condition

Top

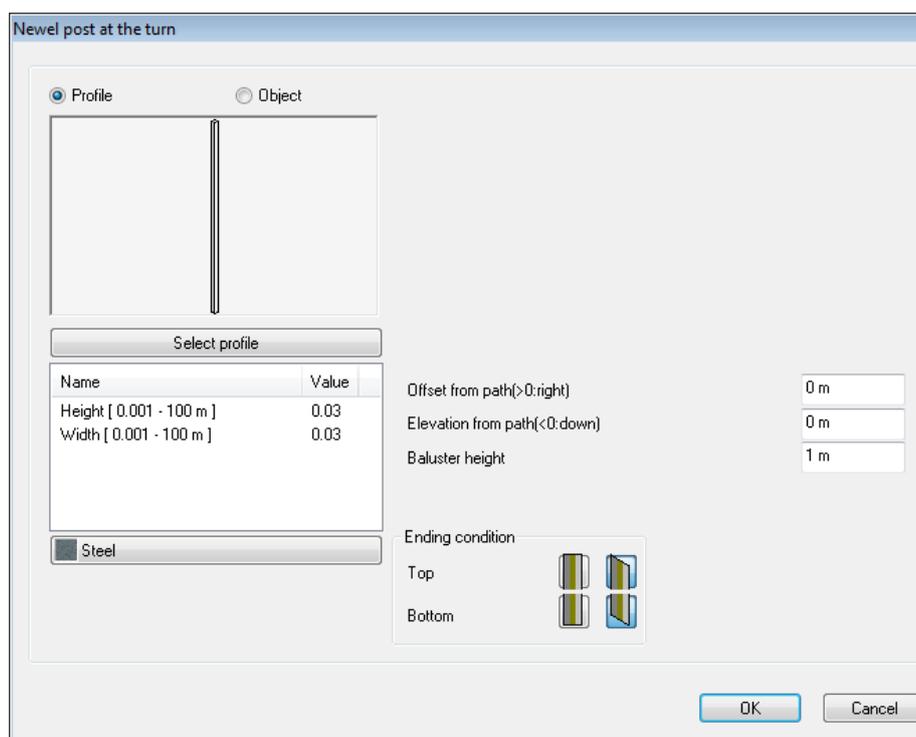
Bottom

OK Cancel

The distribution method is the same as you specified in the *Edit baluster* dialog. You can select a different profile or object for balusters, a different top profile to adjust the top of secondary balusters. An **Offset from middle point (>0: forward)** defines the offset relative to the midpoints primary balusters. In addition, you can specify the **Offset from path (>0: right)**, **Elevation from path (<0:down)**, **Baluster height** parameters. Also, you can define the baluster ending conditions.

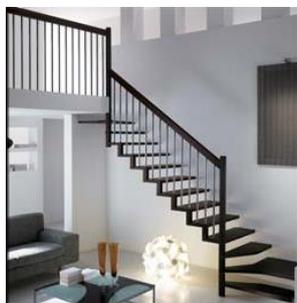
#### *Newel post at turn*

Newel post is a tall post at the head or foot of a stair, supporting the handrail.



You can define newel post during the balustrade definition or later when you modify it.

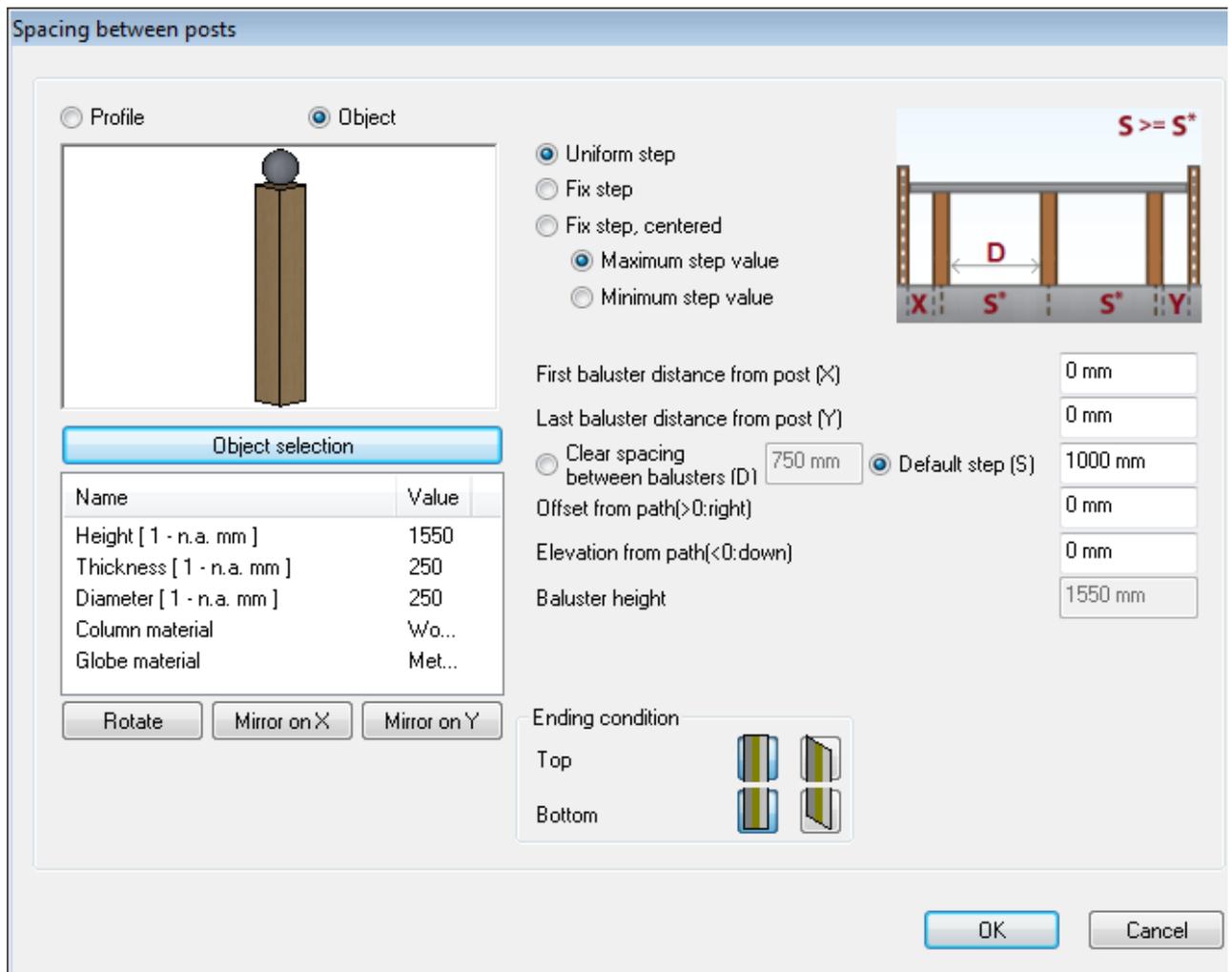
- Click the checkbox for **Newel post at turn** button, select a profile or object in *Newel post at the turn* dialog, then specify the profile/object parameters and placing conditions. The specified newel post will be placed in each node of the balustrade path.
- Click **OK** to close the dialog and return to *Edit baluster* dialog.
- Newel posts at turn may modify the distribution of primary and secondary balusters, therefore click **Redraw** button to see the changes in the preview window. The newel posts make the distribution period shorter on both ends of the balustrade part by the width of a newel post.



### Spacing between posts

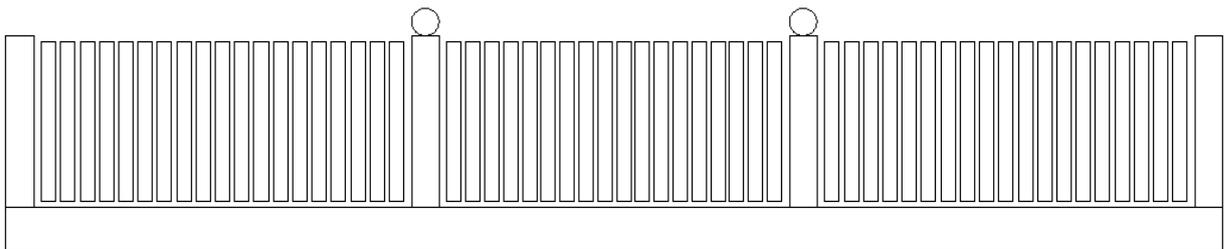
Balusters can be placed between the nodes of balustrade path with different distribution rule than the rule applied to primary and secondary balusters distribution.

- Click the checkbox for **Spacing between posts** button and then click the button. The *Spacing between posts* dialog comes up. Here you can define balusters by profile or object and their distribution between two nodes of balustrade as you can do it in the *Edit baluster* dialog.



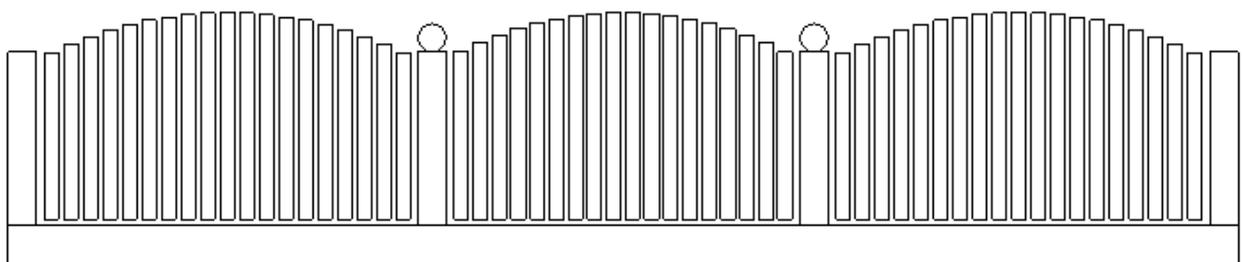
- After completing the settings, click **OK**. You get back to the *Edit baluster object* dialog and you can check the modifications in the preview window.

On the figure below you can see two newel posts created by **Newel post at the turn** and two balusters created by **Spacing between posts**.



Between balusters created by **Spacing between posts** the same distribution rule is applied to the primary and secondary balusters as you defined in the *Edit baluster* dialog. As a consequence, **Top profile** option in the *Edit baluster* dialog applies to each distribution between two balusters created by **Spacing between posts**.

This case is shown on the next figure:

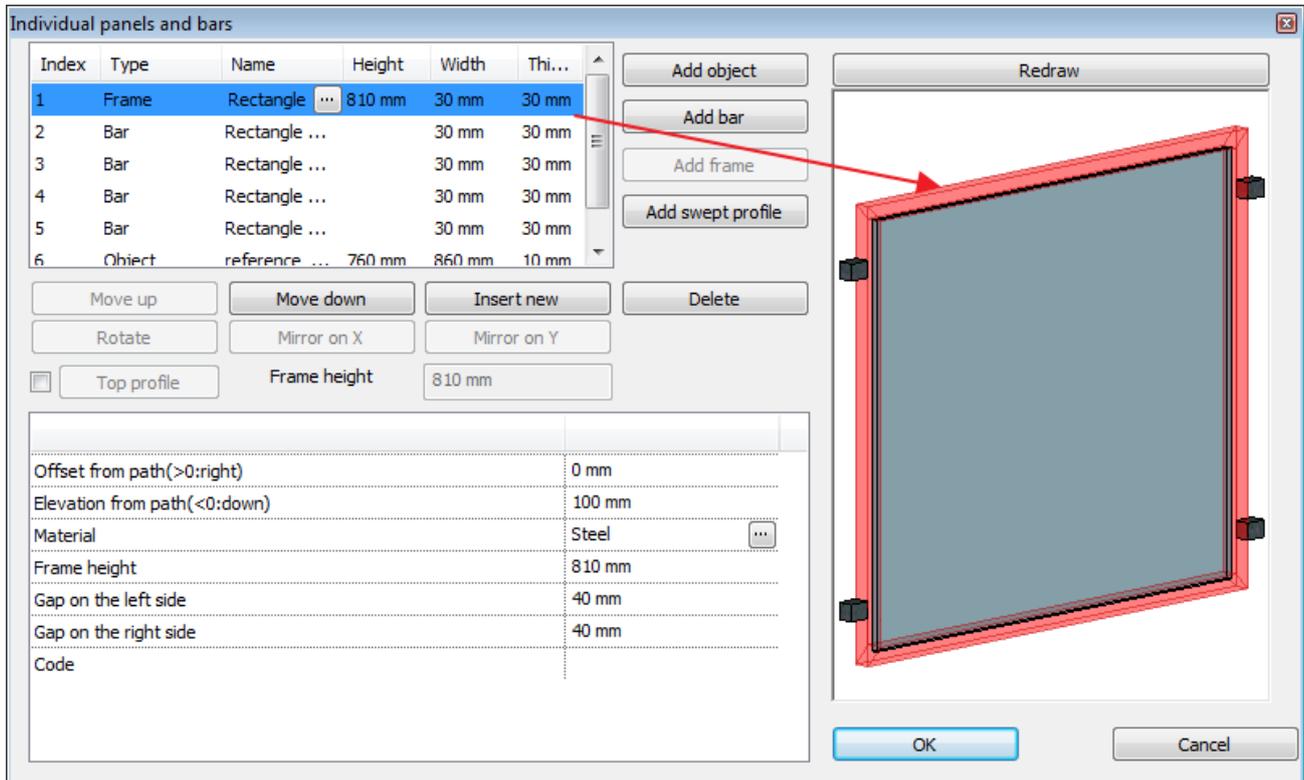


### 6.1.8. Adding individual panels and bars

In addition to the prior mentioned possibilities you can add individual components to the balustrade. For this you must click **Individual panels and bars** button in the *Edit baluster* dialog. You can add the following individual components in the *Individual panels and bars* dialog:

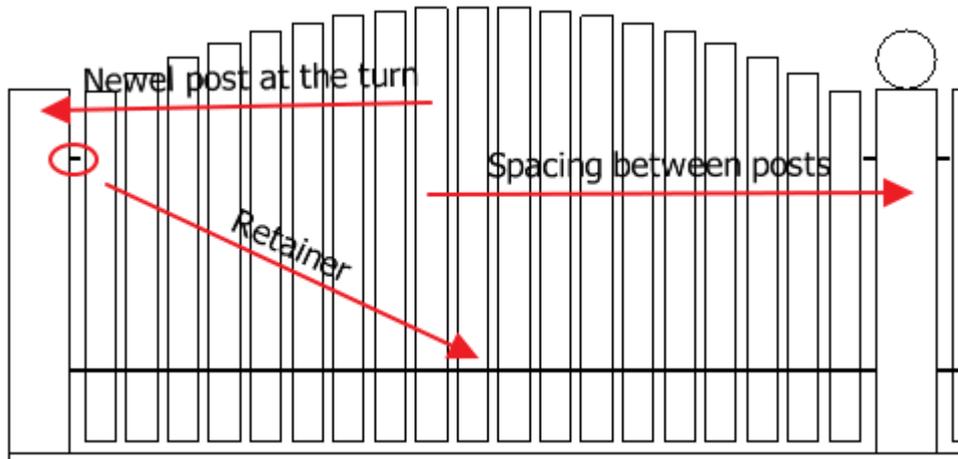
- ❖ Object
- ❖ Bar
- ❖ Frame
- ❖ Swept profile

The individual elements are listed in a table in the dialog. The selected element in the list is represented in the preview window so you can easily identify it.



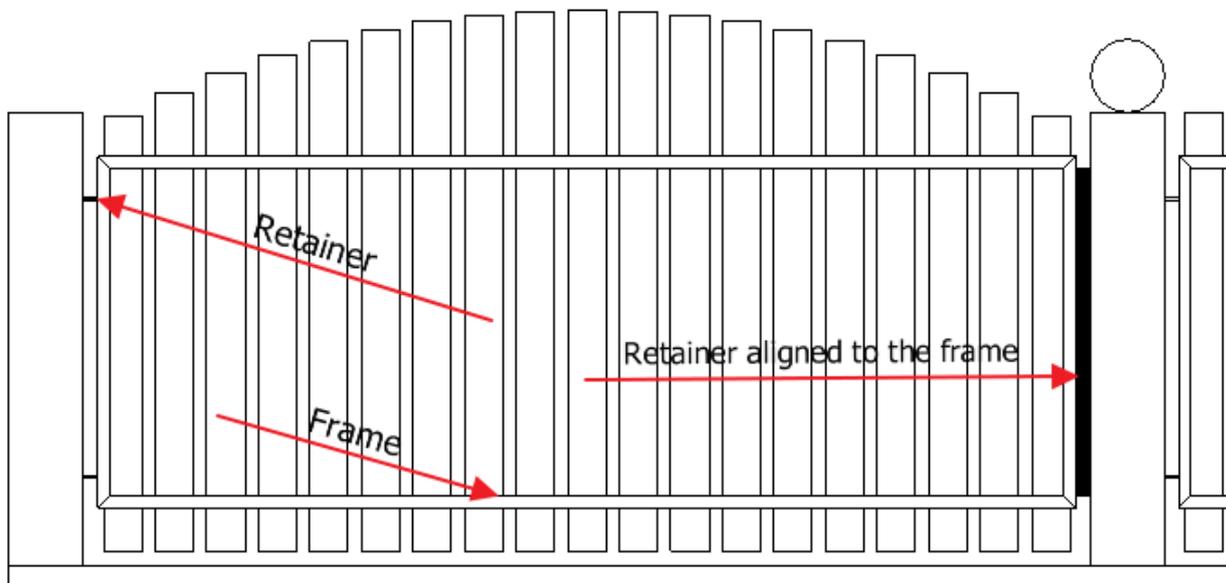
#### Adding objects

- To add an object, click **Add object** button. In the top-left part of the dialog a new component appears in the list with parameters of index, type (free object), name, height, width and thickness.
- To modify the object, click ellipsis button in the name column. The *Insert objects* dialog comes up, where you can define the same height, width and thickness parameters what you can see in the list of individual components then.
- With the buttons below the list of individual panels and bars you can rotate (**Rotate** button) and mirror (**Mirror on X** and **Mirror on Y** buttons) the selected object.
- In the bottom-left part of the dialog you can specify the placement conditions.
  - Offset from path (>0: right):** defines the horizontal offset relative to the path of balustrade.
  - Elevation from path (0<: down):** vertical distance between the bottom of the object and the path of balustrade.
  - Adjust length to the available width:** stretches the object so that it fills the gap between balusters created by **Newel post at the turn** or **Spacing between posts**. For example when you place a retainer as an object and you apply this option to this retainer, the program stretches this object between balusters created by **Newel post at the turn** or **Spacing between posts**.



**Trim overhanging sides:** when you specified an object that hangs over the space between balusters created by **Newel post at the turn** or **Spacing between posts**, the program cuts the overhanging parts automatically, avoiding the disturbing of the next baluster distribution period.

**Adjust height to the frame:** this option is available when frame is defined as individual component in the *Individual panels and bars* dialog. In that case the height of object is aligned to the height of the vertical side of the frame, which modifies the **Elevation from path** parameter of the object, too.



**Placement options:** you can define whether the object should be placed to the left, right or middle of the balustrade period. Depending on the choice of **Left/Right/Middle** there are other tuning possibilities: **Distance from left (>0: inside)**, **Distance from right (>0: inside)**, **Offset from the middle point (>0: forward)**.

**Cut balusters by top profile:** this option is available when you use the **Top profile** option in the *Individual panels and bars* dialog. With this option the top of the individual objects will be cut with the defined top profile.

**The figures follow the increase:** when the path of balustrade is not horizontal, you can set the individual object either to stay horizontal or follow the slope along the path.

**Code:** you can write any information here, for example the part number of the individual object.

### Adding bars

- To add a bar, click **Add bar** button. In the top-left part of the dialog a new component appears in the list with parameters of index, type (truss), name, width and thickness. The field for height remains empty.
- Click ellipsis button in the name column to open the *Insert objects* dialog, where you can define the section profile of the bar you want to create. The width and height values you define here will appear as width and thickness in the in the list of individual components in the *Individual panels and bars* dialog.
- In the bottom-left part of the dialog you can specify the placement conditions.

**Offset from path (>0: right):** defines the horizontal offset relative to the path of balustrade.

**Elevation from path (0<: down):** vertical distance between the bottom of the object and the path of balustrade.

**Material:** you can define the material of the bar.

**Bar orientation:** you can define horizontal, vertical, diagonal or tilted (with free angle of slope) orientations. In case of diagonal orientation you can select from left bottom -> right top or left top -> right bottom options. If there is a frame defined as individual component, you can use the **Adjust to the frame** option.

**Adjust length to the available width:** depending from the bar orientation selection, you can use this option. In that case the bar extends to the balustrade period.

In case of **Horizontal** bar orientation you can set **The figures follow the increase** option for the case the path of balustrade is not horizontal.

**Bar length:** you can define custom bar length. In case of custom bar length definition you can set the position of the bar inside the balustrade period to the middle, right or left. Additional adjustment possibilities are the **Offset from middle point (>0: forward)**, **Distance from right (>0: inside)** and the **Distance from left (>0: inside)** options. With the **Multiple placement** option multiple copies of bars can be created by different rules. You can define the direction and spacing for the multiplication. The direction of multiplication can be horizontal, vertical or perpendicular to the direction of rod. You can define the spacing between bars with the **By step of bars** and **By clear spacing between bars** options. In case of horizontal and vertical bar orientations there are only two options for the direction of multiplication.

**Code:** you can write any information on the bar here, for example the part number of the bar.

#### Adding a frame

- To add a frame, click **Add frame** button. An element with frame appears in the list of individual components and then the **Add frame** button becomes inactive. Only one item can be created from this type of component.
- Click ellipsis button in the name column to open the *Insert objects* dialog, where you can define the section profile of the frame you want to create. The width and height values you define here will appear as width and thickness in the in the list of individual components in the *Individual panels and bars* dialog.

The following properties can be set:

**Offset from path (>0: right):** defines the horizontal offset relative to the path of balustrade.

**Elevation from path (0<: down):** vertical distance between the bottom of the frame and the path of balustrade.

**Material:** you can define the material of the frame.

**Frame height:** the distance between the bottom and top of the horizontally oriented frame. This parameter appears in the list of individual components in the height column.

**Gap on the left side:** at the beginning of the balustrade period this is the gap between the first balustrade component and the frame.

**Gap on the right side:** at the end of the balustrade period this is the gap between the frame and the last balustrade component.

**Code:** you can write any information on the frame here, for example the part number of the frame.

#### Adding profile along path

With this function you can add individual ornamental elements to a balustrade.

- Click **Add swept profile** button. In the list of individual components appears a new component with the type of profile along path.
- Click ellipsis button in the name column to open the *Insert objects* dialog, where you can define the section profile of the component you want to create. The height value you define here will appear as thickness in the in the list of individual components.

The following properties can be set:

**Offset from path (>0: right):** defines the horizontal offset relative to the path of balustrade.

**Elevation from path (0<: down):** vertical distance between the bottom of the component and the path of balustrade.

**Material:** you can define the material of the component.

**Frontal profile:** this profile defines the path on which the section profile specified in the name column of the individual component is swept along.



Only closed profile can be selected for frontal profile.

**Placement options:** you can select from a drop-down list whether the component should be placed to the left, right or middle part of the balustrade period. Depending on the **Left/Right/Middle** selection you can specify the **Distance from left (>0: inside)**, **Distance from right (>0: inside)** or **Offset from middle point (>0: forward)** parameters.

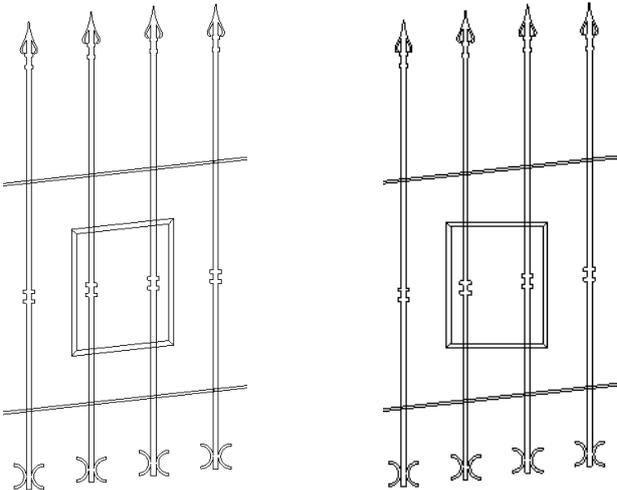
**Angle:** the frontal profile can be rotated on a vertical plane with this angle relative to the vertical direction.

Example: profile along path in the middle of the balustrade period, without rotation angle and with rotation angle of 45 degrees.



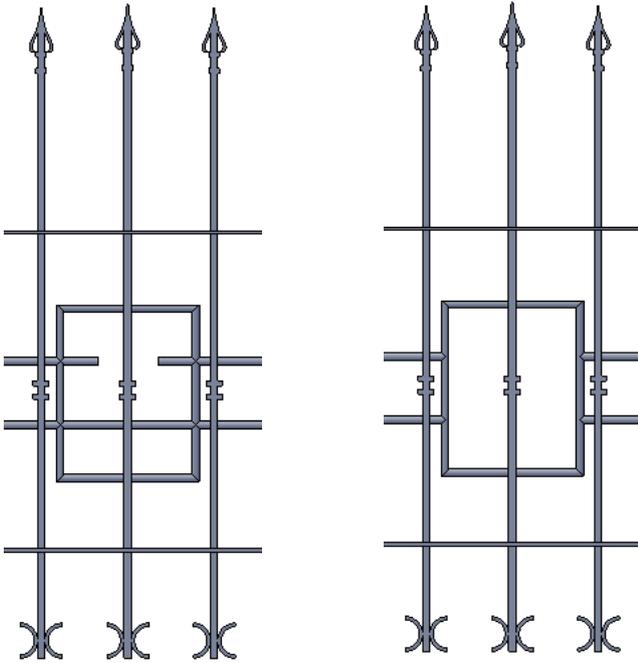
**The figures follow the increase:** when the path of balustrade is not horizontal, you can set the individual object either to stay horizontal or follow the slope along the path.

Example: profile along path with rectangle frontal profile, with and without the option of the figures follow the increase.



**Cut bars:** when the frontal profile of the component intersects with bar components, you can define if bar parts inside the frontal profile must be removed or not. The cutting operation is executed even if different offset from the balustrade path values are specified for the swept profile and the bar.

Example: profile along path, rectangle frontal profile, with and without cut bars option.

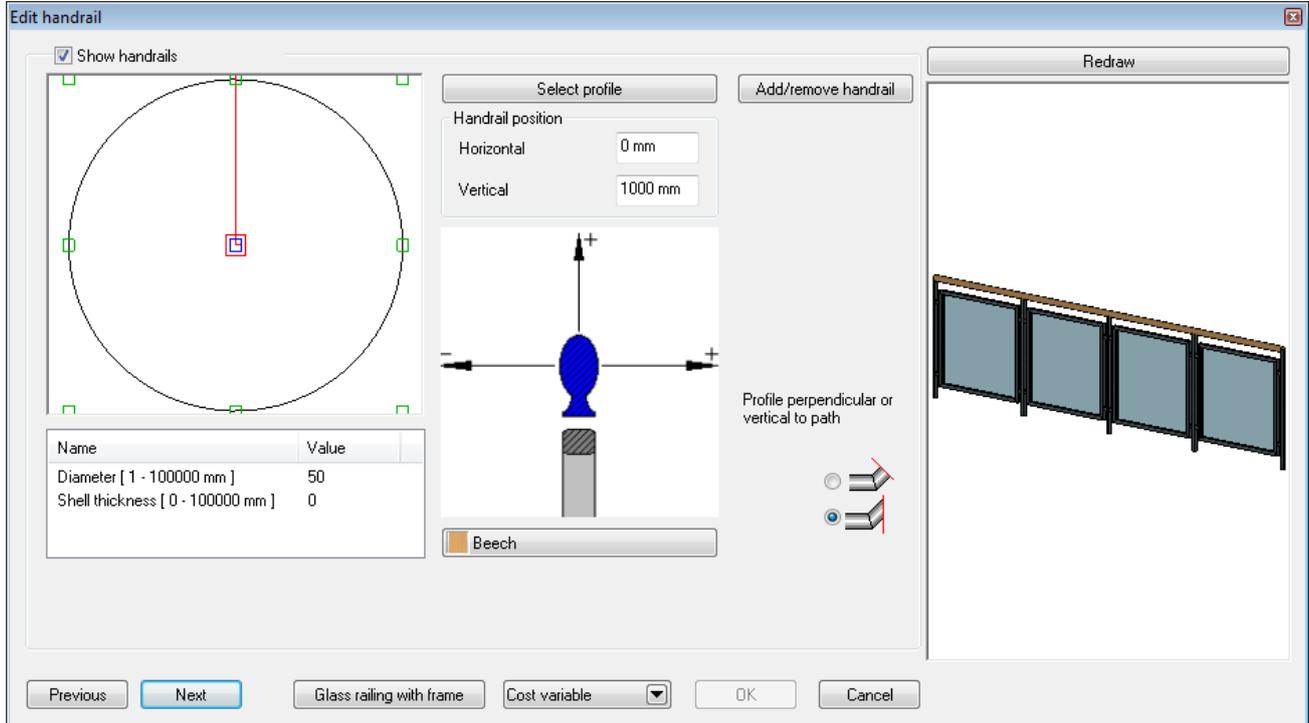


**Code:** you can write any information on the individual component here, for example the part number of the ornament.

- Click **Redraw** button to see the changes in the preview window in the *Individual panels and bars* dialog.
- Click **OK** to get back to the *Edit balustring* dialog. Click **Redraw** to see the changes in the preview window.
- Click **Next** button to continue the editing of balustrade on the next page by editing the handrails.

## 6.2. Balustrade wizard - Editing handrails

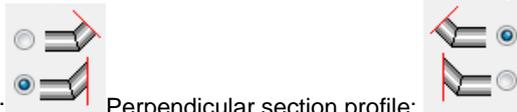
You can set handrail parameters in the following dialog box.



The program displays the handrail only if you tick the **Show handrails** option.

- Click on the **Select profile** button to display the **Insert profile** dialog box, where you can choose the appropriate profile.
  - **Ok** Returns to the *Edit handrail* dialog box.
- Carry on with settings in the *Edit handrail* dialog box:  
You can define the horizontal and vertical distances between the handrail and the balustrade path in the **Handrail position** section. You can specify both positive and negative values.

- The button below the figure in the middle part of the dialog is for specifying the material. Click this button to open the *Materials* dialog, where you can assign a material to the handrail.
- Select whether the section profile of the handrail should be vertical or perpendicular to the path of balustrade.

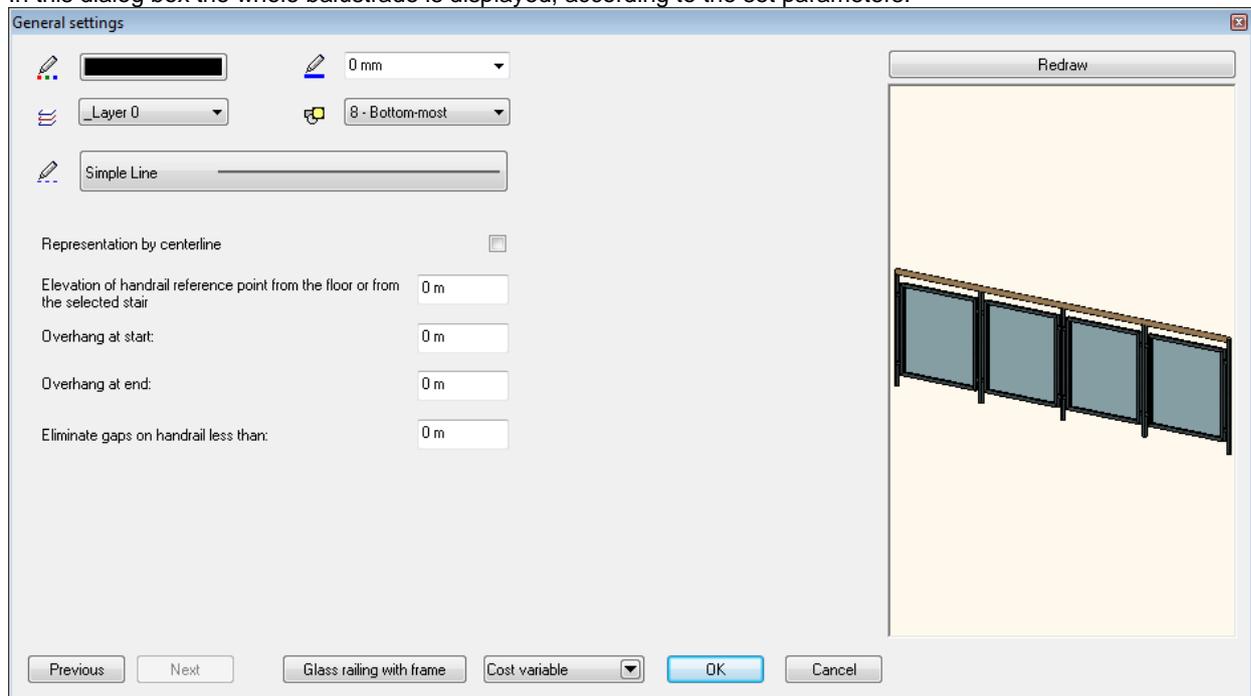


Vertical section profile:      Perpendicular section profile:

- Click **Add/remove handrail** button if you want to add more handrails to the balustrade. The **Add/remove handrail** dialog appears, where you can see the list of handrails in a table. There are buttons below the table, with which you can insert, delete, move up or move down each row. In each row you can see the parameters of a handrail. In the *Index* column you can find the numbering of handrails. In the *Edit handrail* dialog you can always see the parameters of the first handrail from this list. In the *Profile* column you can find the profile of the handrail. Click the ellipsis button to open *Insert profile* dialog, where you can modify the profile. In the *Material* column you can find the materials assigned to the handrails. Click the ellipsis button to open the *Materials* dialog, where you can modify materials. In *Shift horizontal* and *Shift vertical* columns you can specify the offset of handrails relative to the path of balustrade.
- After finishing with handrail settings, click the **Next** button to display *General settings* dialog box.

### 6.3. Balustrade wizard - General settings

In this dialog box the whole balustrade is displayed, according to the set parameters.



You can define on which *layer* to put the balustrade. You can also specify the colour and the line type and line width of the balustrade on the floor plan and in 3D environment.

Use the **Representation by centerline** option if you want to represent the balustrade by line on the floor plan. If you don't use this option, the top view of the 3D model of balustrade will be represented on the floor plan.

**Elevation of handrail reference point from the floor or from the selected stair:** you can define the elevation of balustrade relative to the stair or the path of balustrade. When you place a balustrade by specifying a path, the elevation is measured from the zero level of the active floor. The elevation of each balustrade node can be defined during the placement procedure.

**Overhang at start:** if you place the balustrade on a stair by the **Create Balustrade on Stair** command, the program automatically extends the balustrade by the specified value in horizontal direction at the start of balustrade.

**Overhang at end:** if you place the balustrade on a stair by the **Create Balustrade on Stair** command, the program automatically extends the balustrade by the specified value in horizontal direction at the end of balustrade.

**Eliminate gaps on handrail less than:** If there is less interruption in the baluster than the given value, the program makes it continuously.

At this point you have defined all parameters of the balustrade. On the preview image displayed in the dialog you can check the result of your settings. If you want to make further modifications, click **Previous** button to go back to the second or the first dialog box and modify balustrade properties.

To accept your settings, click **Ok**.

## 6.4. Installing balustrade

If you saved balustrade settings in a **style** and you made it active, the balustrade will be created along the specified path without showing up the balustrade editor dialog.

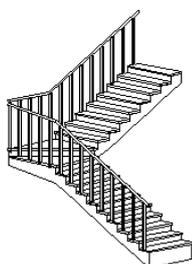
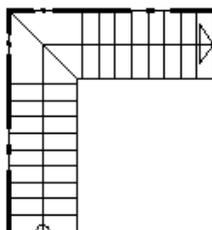
The *Balustrades tool* offers two possibilities for installing a balustrade:



### Create balustrade on stairs

Select one side of the stairs. The program uses this side as the alignment path of the balustrade.

- Click on one side of the stairs.  
The program creates the balustrade on the stair with the active balustrade settings.



### Create balustrade by path

You have to define a path for the balustrade. The path can be either open or closed.

- Define the points of the alignment path after each other.  
The path can contain lines and arcs. When these are joined, the next line or arc can join to the tangent of the previous arc.
- **Enter** Completes specifying the alignment path.

#### Path points with the same height

- After specifying the nodes of the path and pressing *Enter*, base height defined in the balustrade settings will be assigned to all nodes of the path.

#### Path points with different heights

- After specifying the nodes of the path you can select the node to which you want to assign a different height.
- Give the height of the node relative to the base height defined in the general balustrade settings.
- Repeat the node selection and height specification with any other nodes.
- Pressing *Enter*, the balustrade is created.

#### Height defined by stair

For giving the height value you can choose a point of a stair.

- After selecting the node and the **STAIR** subcommand, choose a point of a stair to obtain its height.

#### Height defined by roof

Similarly, for giving the height value you can choose a roof.

- After selecting the node and the **ROOF** subcommand, choose a point of an edge of a roof to obtain the required height. By default, the top height of the roof plane at the selected point will be assigned. By selecting the **BOTTOM** subcommand, you can assign the bottom height of the roof plane at the selected point.



### Create balustrade - closed path

You have to define a closed alignment path for the balustrade.

- Define the points of the alignment path after each other.  
The path can contain lines and arcs. When these are joined, the next line or arc can join to the tangent of the previous arc.
- **Enter** Completes specifying the alignment path.  
The command joins the two end-points of the balustrade.

You can assign different height for the points of the path.



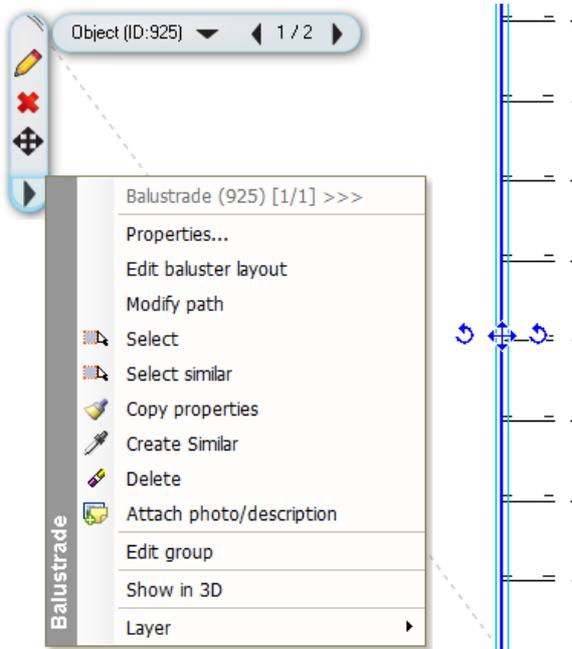
See the description in the chapter *Create balustrade - open path*.

## 6.5. Modifying balustrades

You can modify a balustrade after you have installed it. You can change its:

- ❖ *properties*,
- ❖ *alignment path*,
- ❖ *geometry and components*.

If you click right of left mouse button on balustrade, shortcut menu appears with commands for modifying the properties or editing balustrade.



### 6.5.1. Modify balustrade properties

The balustrade editor dialog box that has been used before creating the baluster comes up. In this dialog box you can modify the properties of all balustrade periods or those periods that have not been modified by custom settings.

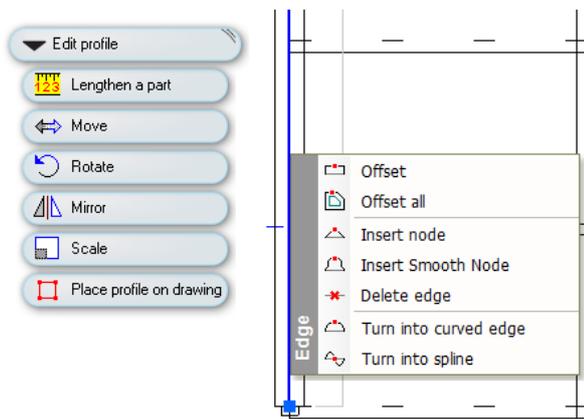
Modifying the properties of a balustrade, you can use the **Full regeneration** and **Regeneration by parts** options in the *Edit baluster* dialog. With the **Full regeneration** option you can apply the changes to every periods of the balustrade, even to the periods that have been customized before. With the **Regeneration by parts** option you can apply the changes only to the periods that have not been customized before. If there is no balustrade period with customized settings, the **Regeneration by parts** option is not available.



If you want to customize the settings of a balustrade period, use the **Edit baluster layout** command.

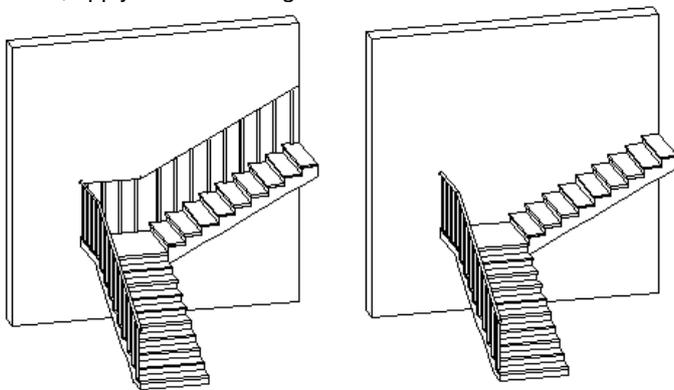
### 6.5.2. Modify balustrade path

To edit balustrade paths, the program offers the *Toolbox - Edit profile* tool. At this point you can edit the balustrade path on the floor plan (in top view).



See the description of the *Edit Profile tool* in Chapter 8.2.9 *Editable profile*.

With the **Modify path** command you can easily install a balustrade on only one side of the steps, instead of both sides. To do this, apply the *Delete edge* command.

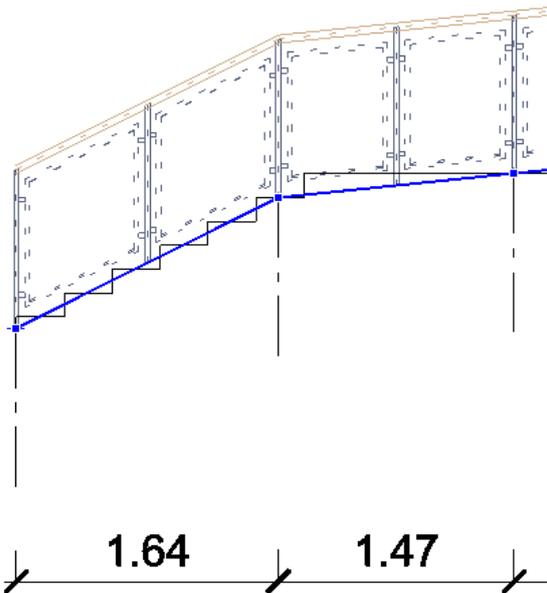


### 6.5.3. Edit baluster layout

With this command you can modify the geometry and components of an existing balustrade.

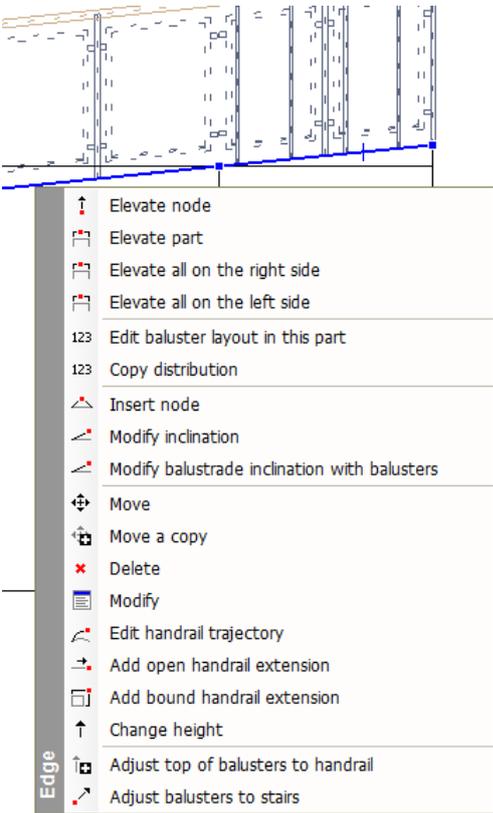


- Place the side view of the balustrade layout on the floor plan.
- side view of the balustrade layout appears on the floor plan with dimensions

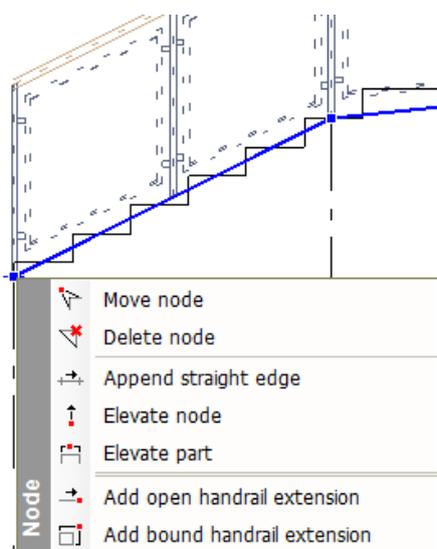


Markers appear on the layout, by which you can activate the edit menus:

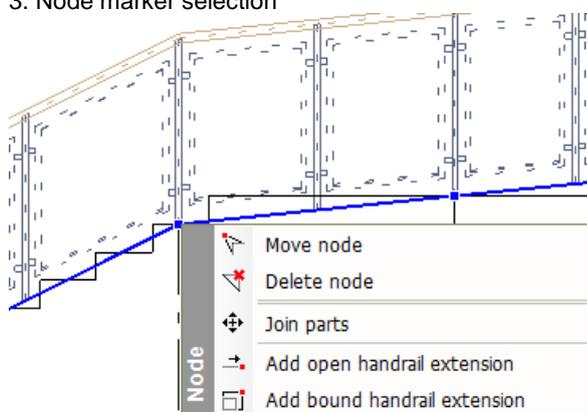
1. Edge marker selection



2. End node marker selection



### 3. Node marker selection



#### **Elevate node**

With this command you can modify the elevation of the balustrade node nearest to the click point graphically or entering a value.

#### **Elevate part**

Graphically or entering a value, with this command you can elevate the whole balustrade period at once.

#### **Elevate on the right side**

Graphically or entering a value, with this command you can elevate the selected balustrade periods and all the other periods that located to the right side of the selected period.

#### **Elevate on the left side**

Graphically or entering a value, with this command you can elevate the selected balustrade periods and all the other periods that located to the left side of the selected period.

#### **Edit baluster layout in this part**

With this command you can edit baluster layout of a balustrade period independently from the other balustrade periods on the *Edit baluster* page of the balustrade editor dialog. In addition to the editing possibilities we you have met before, two new options appear in the dialog:

- ❖ **Add baluster on the first post:** check this option you to remove the baluster at the beginning of the balustrade period.
- ❖ **Add baluster on the second post:** check this option to remove the baluster at the end of the balustrade period.

#### **Copy distribution**

With this command you can copy the baluster distribution from one balustrade period to other periods. You only have to click on the targeted balustrade periods to copy the distribution from the selected period.

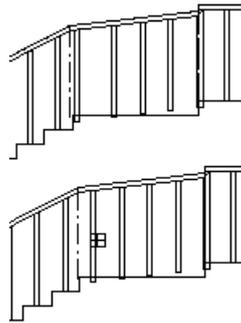
#### **Insert node**

With this command you can insert a new node between two existing balustrade nodes.

### ***Move handrails or balusters***

With the **Move** command you can move

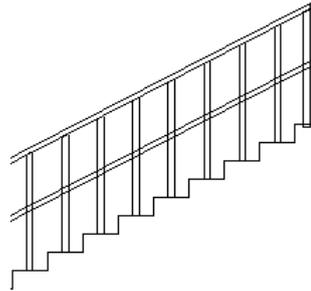
- ❖ the selected handrail or
- ❖ the selected balusters only according to the direction of the balustrade.
- ❖
- Select the balusters or the handrail.
- Define the reference point.
- Define the new position of the balusters/handrail.



### ***Move a copy of handrails or balusters***

With **Move a copy** command you can duplicate:

- ❖ the selected handrail or
- ❖ the selected balusters, which you can move only according to the direction of the balustrade.
- Select the balusters or the handrail.
- Define the reference point.
- Define the new position of the balusters/handrail.



### ***Delete balusters and handrails***

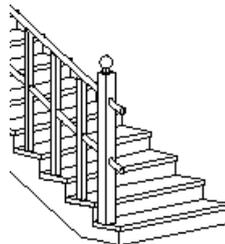
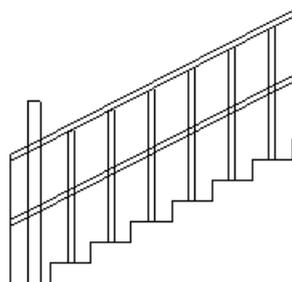
With **Delete** command you can delete the selected balusters or handrails.

- Select balusters and handrails you want to delete.
- Press **Enter** to complete the deletion.

### ***Modify balusters and handrails***

With **Modify** command you can modify the type of the selected handrail or baluster.

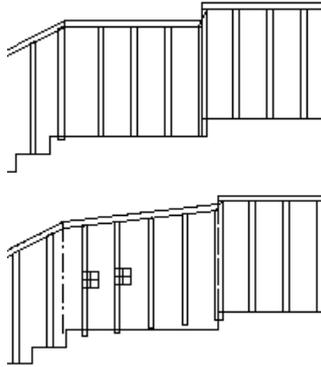
- Select the balusters or the handrail.
- A dialog box appears, in which you can modify the properties of the selected object.
- E.g. modify the last baluster of the balustrade:



### Modify balustrade inclination with balusters

You can adjust the balustrade to the stairs. The handrail follows the angle of the stairs and the balusters follow the stairs. Select two balusters to define the part of the balustrade to be aligned with the stairs.

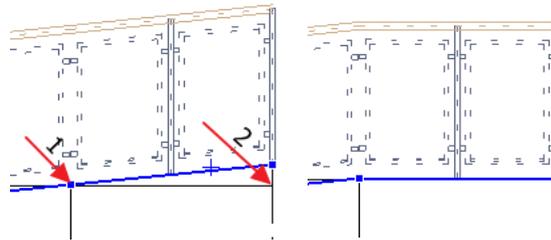
- Select two balusters which indicate the part of the balustrade you want to adjust to the stairs.



### Modify balustrade inclination with points

With **Modify inclination** command you can define the angle of the selected balustrade period with the direction defined by the two selected points.

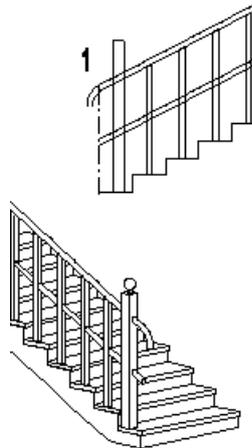
- Select the handrail whose angle you want to modify.
- Select the first point.
- Select the second point to define the angle of the handrail.



### Add open handrail-extension

You can add an overhanging end-part to the handrail.

- Using the *Profile definition* tool in the Toolbox define the path of the overhanging handrail, which you add to the layout image of the balustrade. Apply also the **OPENCHAIN** subcommands.
- Specify the reference point of the selected profile. (See point 1 in the figure.)
- Add the new handrail part to the layout image of the balustrade. (Select point 1 in the figure.)

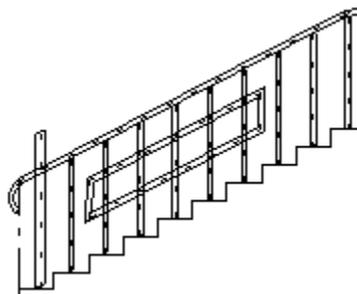


For a description of the *Profile definition*, see Chapter 8.2. *Specifying profile*.

### Add bound handrail extension

You can add a bound end-part to the handrail:

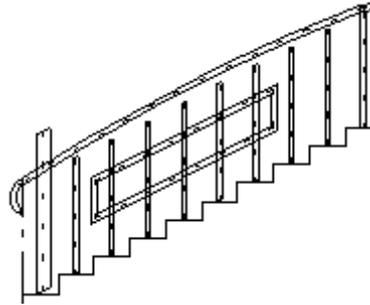
- Using the *Profile definition* tool define the path of the bound end-part, which you add to the layout image of the balustrade.
- Specify the reference point of the selected profile.
- Add the handrail path to the layout image of the balustrade.



### Edit handrail trajectory

You can modify the trajectory of the selected handrail section.

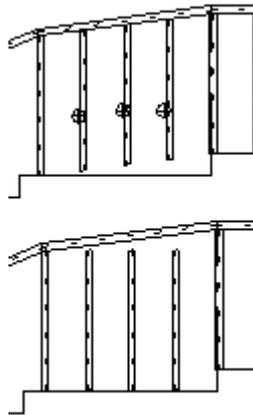
- Select that part of the handrail you want to modify.
- Apply the **Edit profile** commands (e.g. the **Line -> Arc** command).



### Adjust balusters to stairs

Adjusts balusters to the stairs. Only the bottom of the baluster is fitted to the stairs. The *length of the balusters does not change*. To adjust the baluster precisely to the stairs, apply the **Adjust balusters to handrail** command.

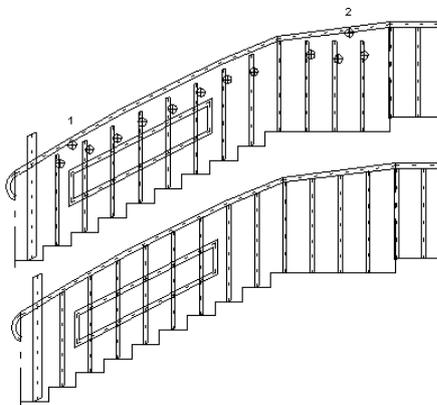
- Select the balusters you want to adjust to the stairs.
- 



### Adjust top of balusters to handrail

You can adjust the top of the balusters to the handrail.

- Select the (appropriate side of the) handrail, to which you want to adjust the top of the balusters.
- Select the balusters whose top point you want to adjust to the balustrade.
- 



### Change the height of balusters vertically

With the **Change height** command you can apply this command to balusters in two ways:

- ❖ You can adjust the bottom of the selected balusters vertically to the specified point. The length of the balusters does not change.
- ❖ You can modify the length of the balusters by defining a new top point.
- Select a baluster on the layout to move its elevation (click the bottom point of the baluster) or change its height (click the top of the baluster).
- Specify the new position/height of the balustrade.

### Append straight edge

This command is available at end node markers. With this command you can add a new balustrade period to the beginning or the end of balustrade.

- Click a point on the layout to define the new endpoint of the balustrade.

**Join parts**

This command is available at node markers inside a balustrade path. With this command you can join two neighbouring balustrade periods together.

- As soon as you click on the command, the program automatically joins the neighbouring periods.

**Split part**

This command is available at a node marker if formerly two periods were joined at this node with the **Join parts** command. With this command you can split the two parts that were joined together earlier.

- As soon as you click on the command, the program automatically splits the formerly joined parts apart.

**Delete node**

With this command you can delete the selected balustrade node.

**Move node**

With this command you can move the selected balustrade node.

**Elevate node**

With this command you can modify the elevation of a balustrade node graphically or entering a value.

## 7. Multi-touch screen support

The ARCHLine.XP 2014 is the full feature design software that you interact with using your fingers.

To use ARCHLine.XP with multi-touch gestures, you need a **tablet** or a **laptop with** a screen that supports multi-touch or a **desktop PC** connected to a touchscreen that supports multi-touch.

<http://windows.microsoft.com/en-us/windows-8/tablets>

Move over mouse: When you use ARCHLine.XP 2014 with a tablet or touchscreen PC, you can browse your projects, zoom, pan, draw or edit - using nothing but your fingers.

If you find difficult to use your fingers you can choose an alternative solution using a simple capacitive stylus.

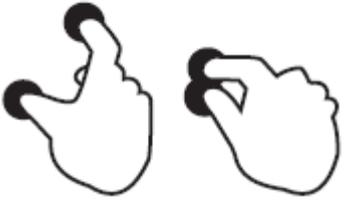
When you have multiple drawings open, switch between them by tapping on drawing pane bar.

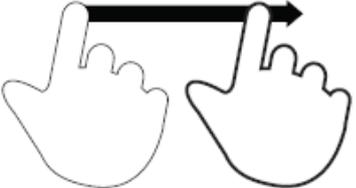
Need to zoom in? Place two fingers on the screen of a multi-touch tablet and spread them apart.

To draw a wall, touch it with one finger and tap the screen with a second to place the starting and end point.

ARCHLine.XP with Touch is fun to learn and easy to use.

### **Major User Actions -Currently supported by touch gestures**

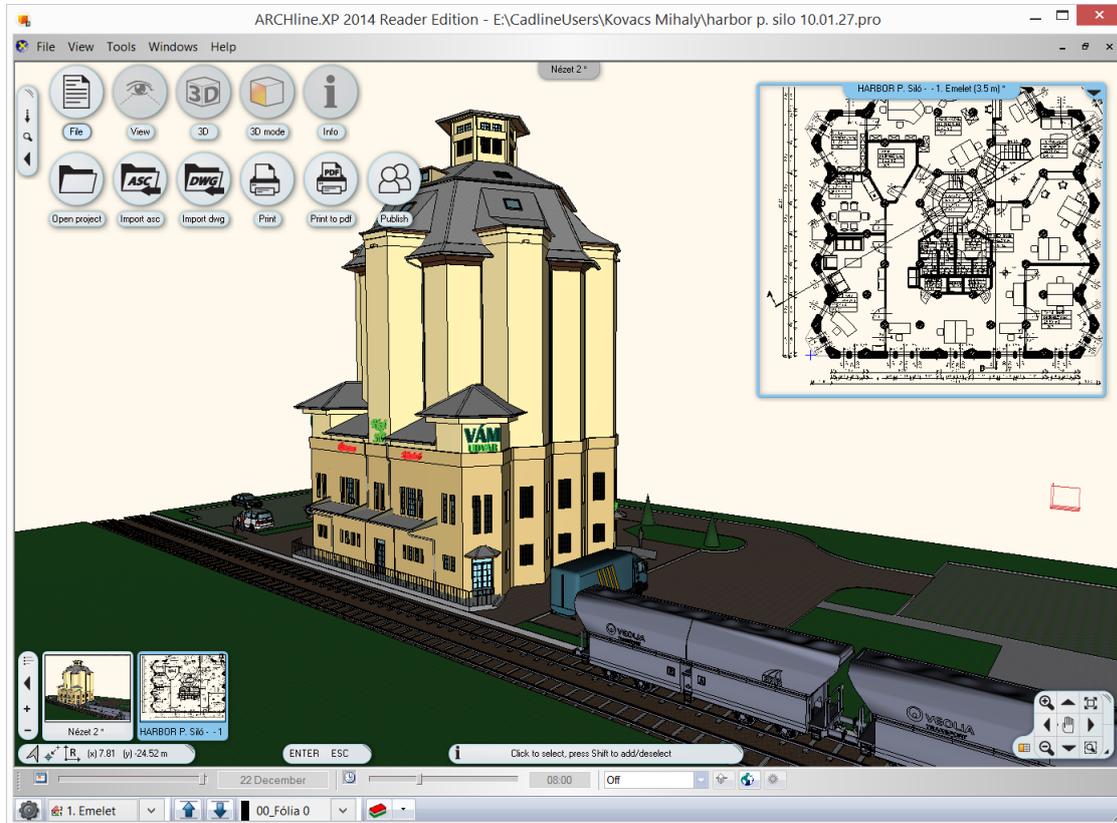
Gesture	User action	Name	Description
	<b>Scale down (zoom out)</b>	pinch	Touch surface with two fingers and bring them closer together
	<b>Scale up (zoom in)</b>	spread	Touch surface with two fingers and move them apart
	<b>Pan</b>	two-finger drag	Move two fingers up, down or left, right across surface
	<b>Optimal view</b>	two-finger tap	Briefly touch surface with two fingers
	<b>Rotate</b>	press and drag	Touch surface with one finger and rotate second finger over surface without losing contact

	<b>Cursor movement</b>	drag	Touch surface with one finger and rotate second finger over surface without losing contact
	<b>Input point</b>	press and tap	Press surface with one finger and briefly touch surface with second finger <i>(Valid in command mode while the program is waiting for input point)</i>
	<b>Select item</b>	tap	Briefly touch surface with fingertip
	<b>Display item's property dialog</b>	Double tap	Briefly touch surface with fingertip <i>(Equal to mouse double click)</i>
	<b>Display item context sensitive menu</b>	press and tap	Touch first object with one finger and briefly touch surface with second finger <i>(Valid in selection mode - equal to mouse right click)</i>

## 8. ARCHLine.XP Reader

ARCHLine.XP Reader is the free software for viewing and printing all types of ARCHLine.XP project or drawing documents.

ARCHLine.XP Reader is available to all users working with ARCHLine.XP projects or drawings in 10 languages. You can install and run parallel to your commercial ARCHLine.XP application.

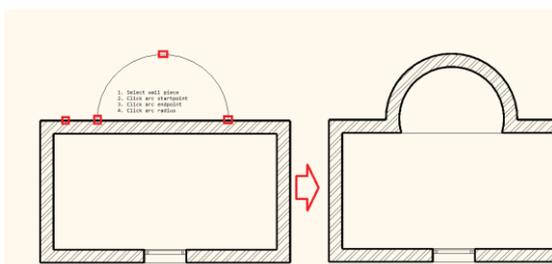


## 9. Others

### 9.1. New wall editing commands

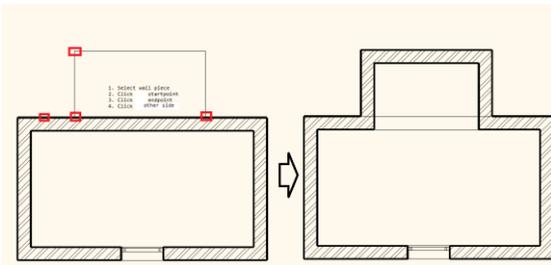
#### ***Insert Curved wall:***

1. Select wall, 2. Select arc starting point on the wall, 3. Select arc endpoint on the wall, 4. Enter radius



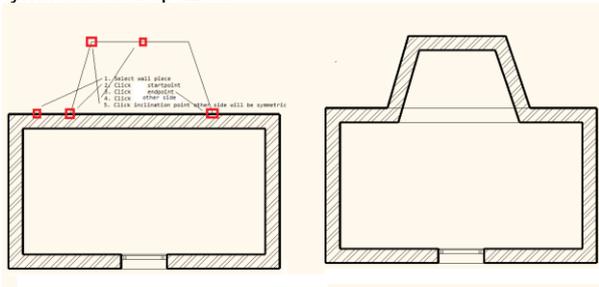
#### ***Insert Square add-on:***

1. Select wall, 2. Select starting point on the wall, 3. Select endpoint on the wall, 4. Offset the selected section



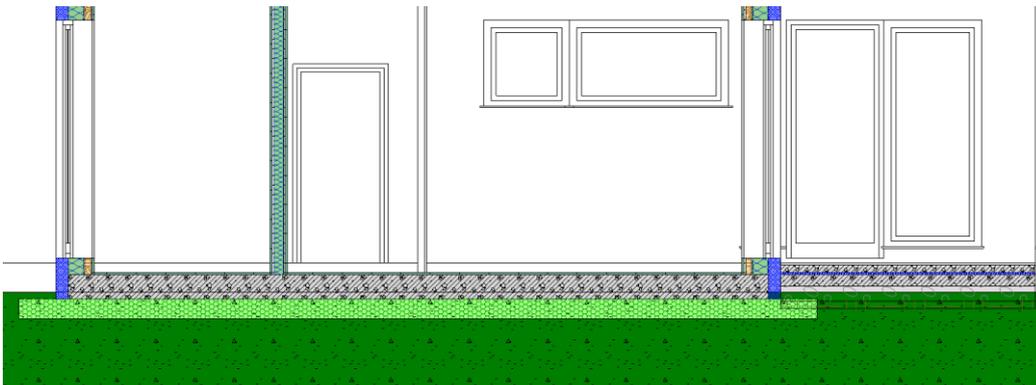
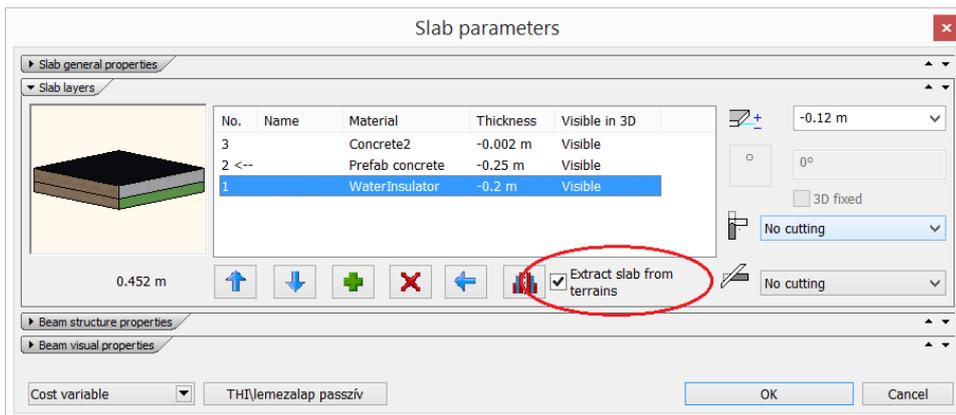
### Insert Angle add-on:

1. Select wall, 2. Select starting point on the wall, 3. Select endpoint on the wall, 4. Offset the selected section, 5. Define symmetrical trapezoid



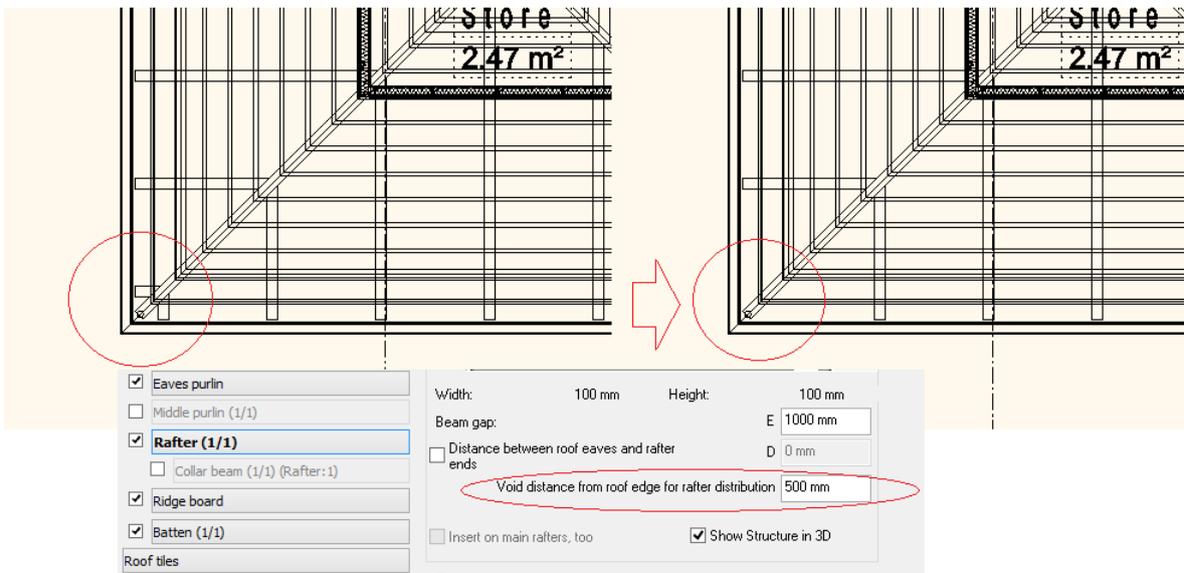
## 9.2. Extract Slab or Foundation from Terrains

The Extract Slab or Foundation from Terrains Feature cuts the slab body from terrain.



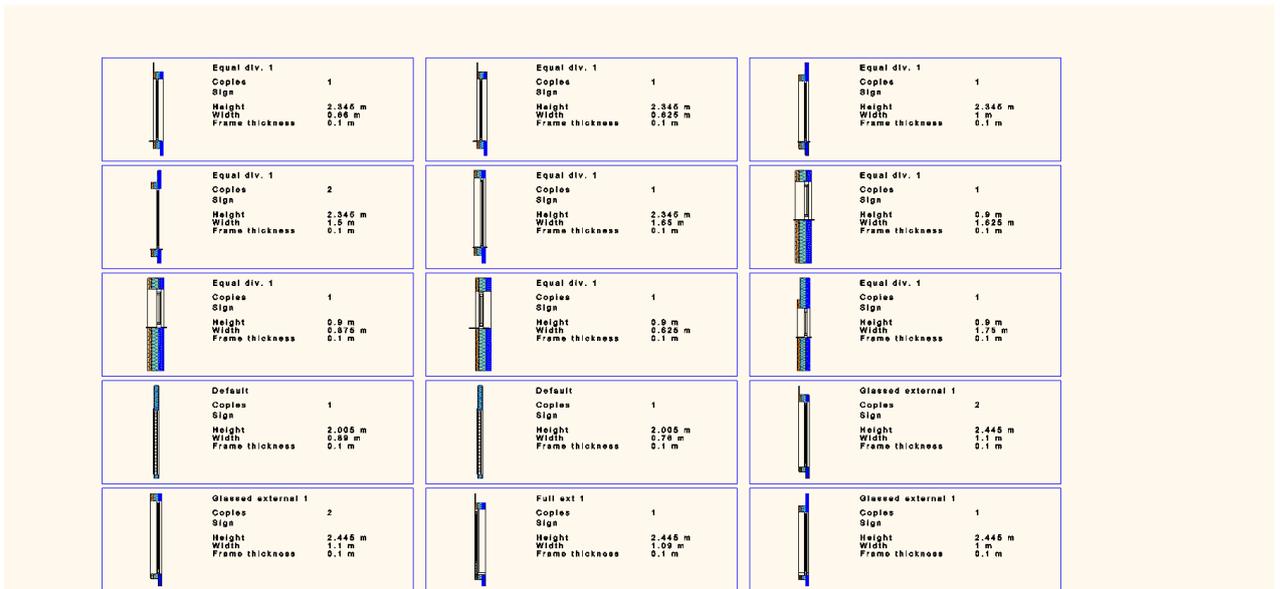
## 9.3. Rafter improved placement rule

In order to avoid the placement too short rafters you can define the minimum distance from roof boundary where the calculated rafters are ignored from placement rule.



### 9.4. Sections table list

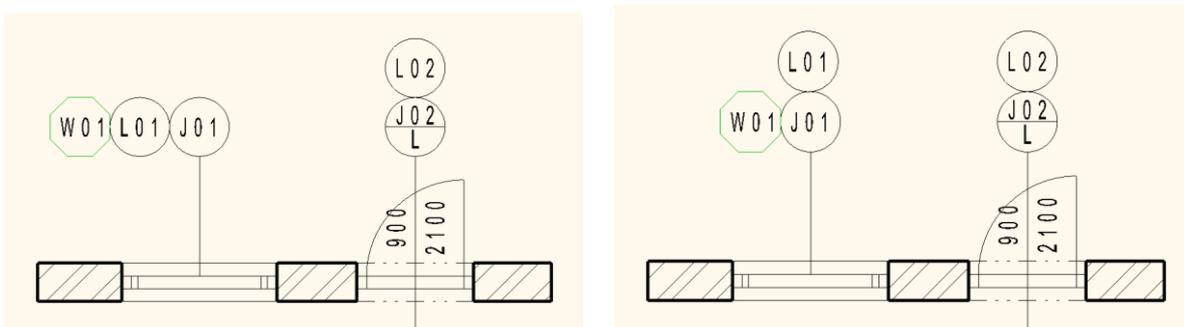
You can create a graphic table list and place it on the drawing based on the section of the openings and the section lines.



### 9.5. Updated SketchUp format

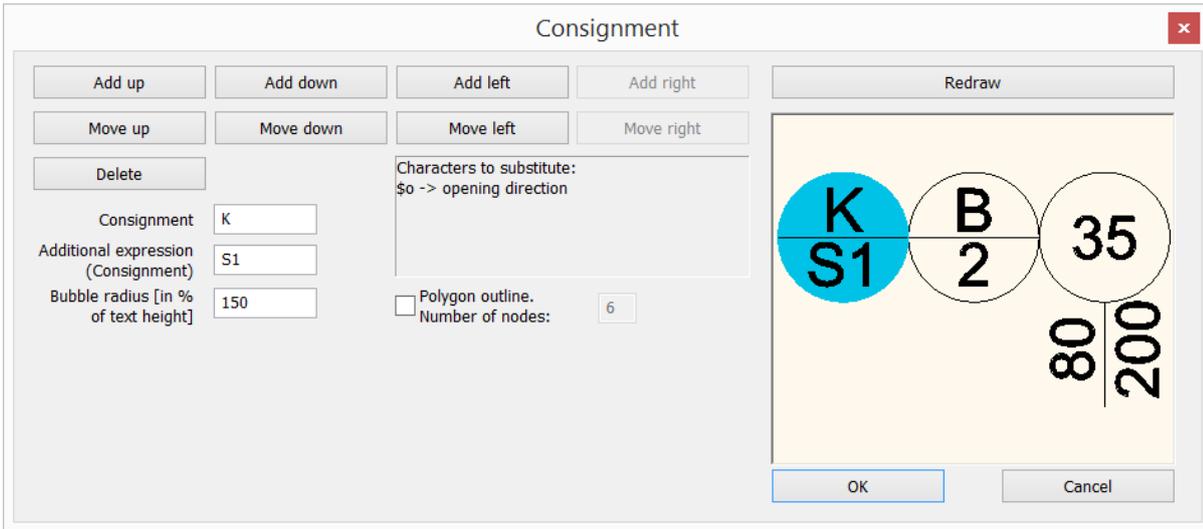
The SKP import/export is extended with the new SketchUp 2013 file format. ARCHLine.XP 2014 is compatible with SketchUp 2013 files so you can import and export the 3D model between ARCHLine.XP 2014 and SketchUp 2013.

### 9.6. Multiple bubbles for openings



Enhanced Detail Bubbles—Control the appearance and placement of bubbles on custom form for even more graphic detail.

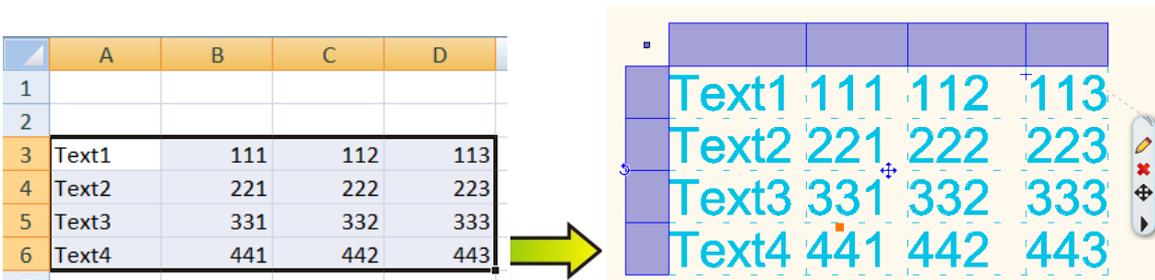
The bubble radius is defined in % relative to the text size.  
 Further display and layout options:



### 9.7. Drag-and-drop from Excel

Drag-and-drop is a mouse technique that you can use in Excel to pick up a cell selection and drop it into an ARCHLine.XP window as table text.

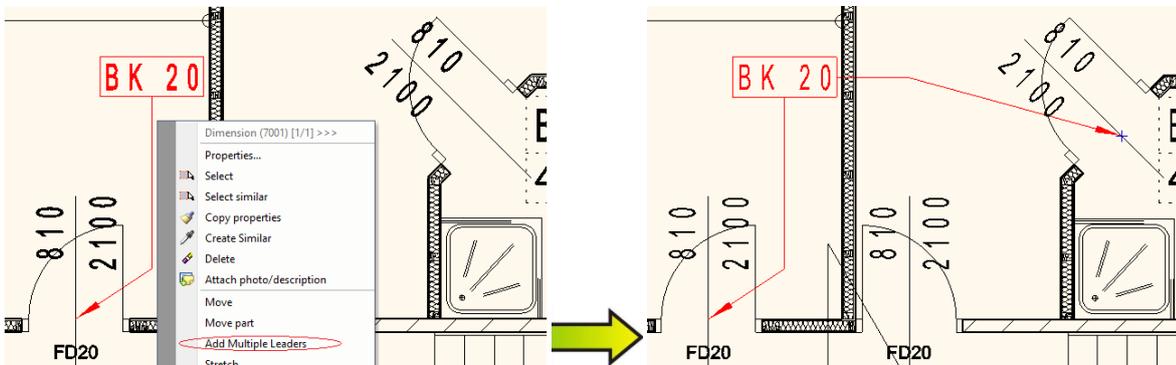
You can start dragging the selected cells to its new position in ARCHLine.XP window when the Excel pointer changes to a white arrow attached to a smaller, four-headed black arrow.



### 9.8. Multiple leaders

Multiple leaders is a new feature that helps you create leaders with more control and flexibility. A multiple leader consists of multiple arrowheads, leader lines or curves, and one text label.

You can add any number of Multiple leaders into a single leader Label dimension.



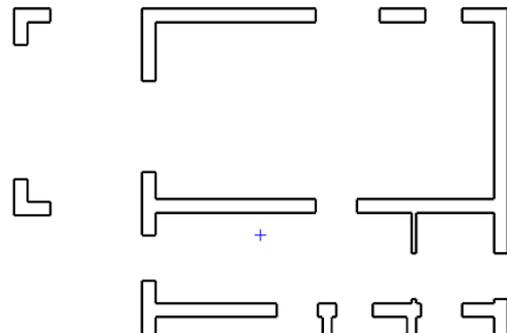
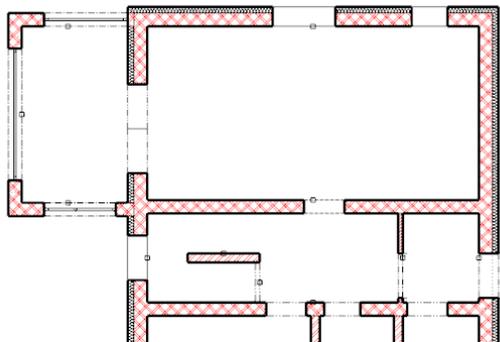
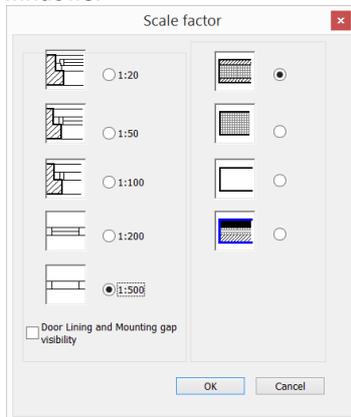
Command :

Right-click on the appropriate dimension to see the Add Multiple Leaders placement option. in dimension context sensitive menu. In order to make the command visible you should click on the leader part of the dimension.

Draw the additional leaders heading from the text label to leader landing location in a loop. Press Enter to close the command.

## 9.9. Floor plan without opening external and internal ref. line in 1:500

In 1: 500 scale factor in 2D floor plan it displays only the contours of the walls without any representation of doors / windows.

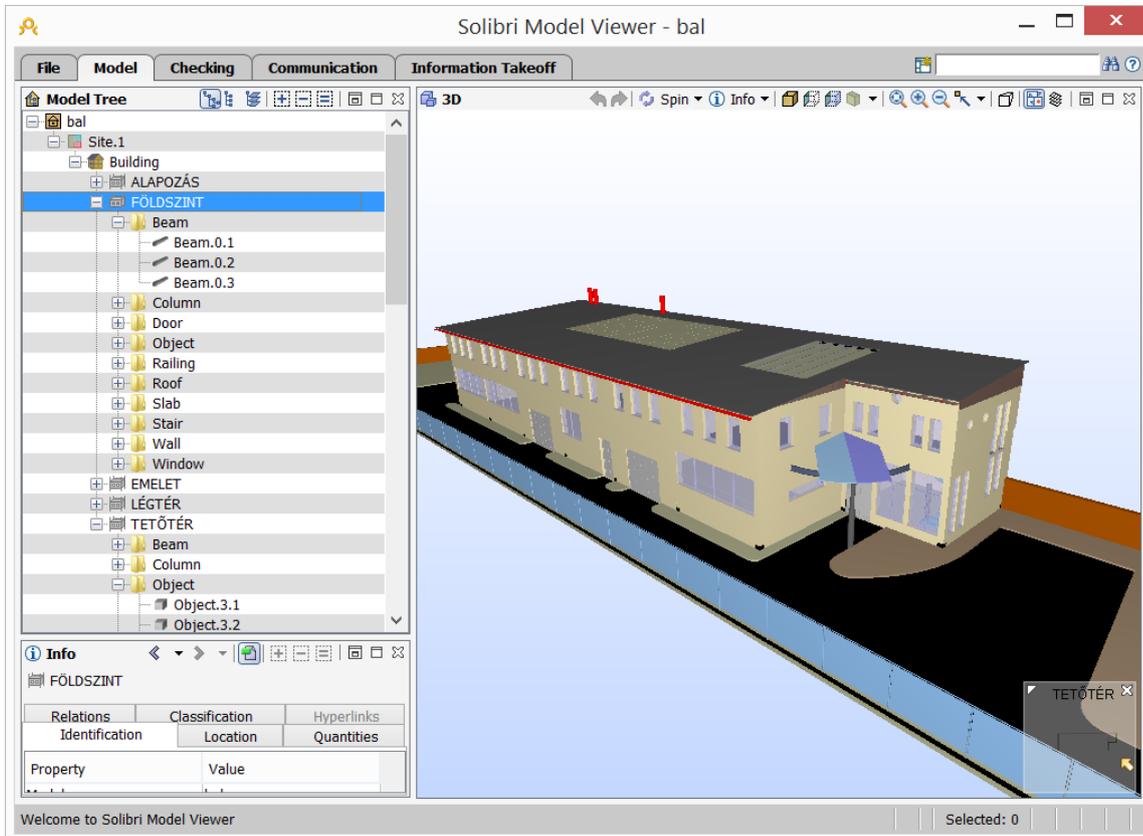
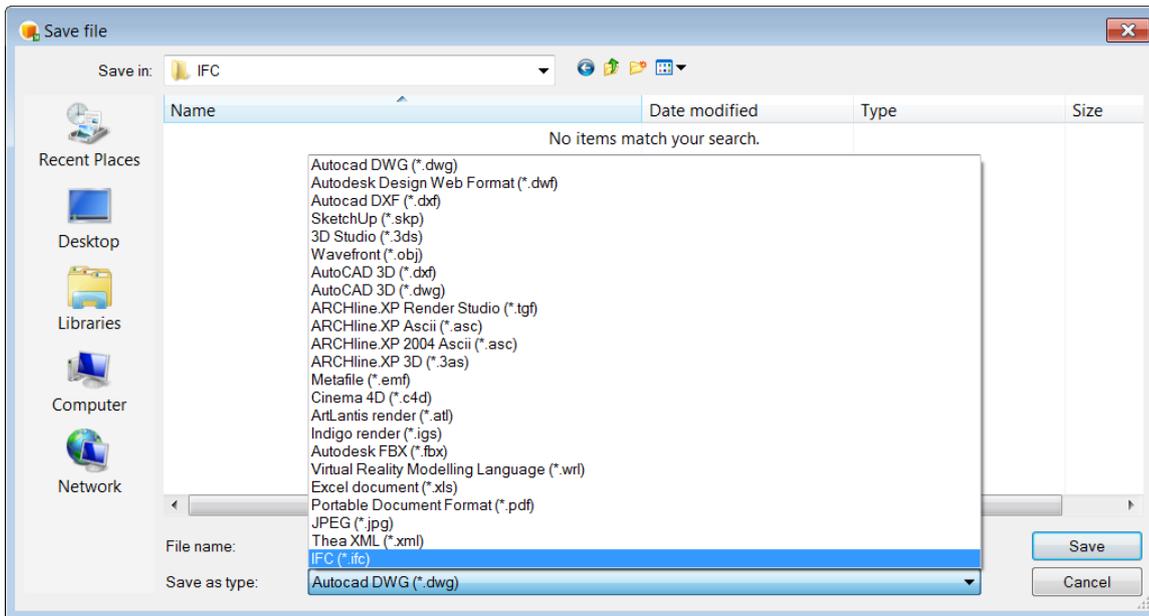


## 9.10. IFC Export - Industry Foundation Classes

The 3D model can be exported into IFC format based on the IFC2x3-TC1 version.

*„The Industry Foundation Classes (IFC) data model is intended to describe building and construction industry data. It is a platform neutral, open file format specification that is not controlled by a single vendor or group of vendors. It is an object-based file format with a data model developed by buildingSMART (formerly the International Alliance for Interoperability, IAI) to facilitate interoperability in the architecture, engineering and construction (AEC) industry.”*

The IFC model export format generated by ARCHLine.XP is the way in which the 3D architectural model information can be transmitted to Structural, Quantity take-off or similar applications.



The IFC model export format generated by ARCHLine.XP is the way in which the 3D architectural model information might be transmitted to Structural, Quantity take-off or similar applications.