ARCHLine.XP® 2020

Windows

PRELIMINARY COURSE

Interior Design Tutorial

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

Contents

1. Workshop: Reception Room 11

1.1. Room maker 13
1.2. Editing wall 15
1.2.1. Add Rectangle extension to the room 15
1.2.2. Add next Rectangle extension 16
1.3. The slab 17
1.3.1. Slab parameters 17
1.3.2. Create slab 18
1.4. Add ceiling 19
1.4.1. Plain ceiling properties 19
1.4.2. Placing the Pain ceiling 20
1.5. Room Maker 21
1.5.1. Room Maker – Toolbar Overview 21
1.5.2. Room Maker – Interface overview 21
1.5.3. Add doors 22
1.5.4. Add windows 24
1.5.5. Add curtains 26
1.5.6. Add Light Switches and Sockets 32
1.5.7. Add Profiles 33
1.5.8. Add ceiling lamps 34
1.5.9. Add wall lamps 36
1.5.10. Add Painting 36
1.5.11. Floor covering 38
1.5.12. Wallcovering 38
1.6. Perspective 3D views 40
1.7. Windows on wall corner 42
1.8. Change materials by using the Drag and Drop method 43
1.9. Lights editing – create copy - Optional 45
1.10. Editing curtain 46
1.11. Place furniture 47
1.12. Visualisation 51
1.12.1. Shadows 51
1.12.2. Rendering 53

2. Workshop: Foundation 59

2.1. Introduction 59
2.1.1. Welcome Dialog Box 60
2.1.2. Interface 60
2.2. Basic Drafting tools 61
2.2.1. Drawing in ARCHLine.XP® 61
2.2.2. Undo and Redo 63
2.2.3. Zoom in, Zoom out and Optimal zoom 63
2.2.4. Panning the drawing 64
2.2.5. Simple selection and delete 64
2.2.6. Select multiple items 65
2.2.7. Selection by rectangle 65
2.2.8. Selection by type 68
2.3. Design 68
2.3.1. Creating walls 68
2.3.2. Continue creating walls 70
2.3.3. Wall dimensioning 71
2.3.4. Active windows 72
2.3.5. Manage 3D View 73
2.3.6. The 3D representation modes 73
2.3.7. Set 3D window properties 73
2.3.8. Creating partition walls 74
2.3.9. Using T and L wall connections 77
2.3.10. Set floor plan window properties 79
2.3.11. Save project 79
2.3.12. Slab tool – Create floor 80
2.3.13. Floor management – Create and edit floors 83
2.3.14. Creating Doors 85
2.3.15. Modifying the properties of an existing item 88
2.3.16. Creating Windows 90
2.4. Furnishing and representation 92

2.4.1. Setting up the perspective ... 92
2.4.2. Furniture items – Design Center ... 93
2.4.3. Move and rotate ... 95
2.4.4. Furniture items – The 3D Warehouse ... 97
2.4.5. Modifying downloaded objects - Optional ... 99
2.5. Layer management ... 100
2.5.1. What are the layers? ... 101
2.5.2. Layer Management ... 101
2.5.3. Remove items to another layer ... 102
2.5.4. Drafting the second alternative arrangement ... 103
2.5.5. Playing with the model – The “3D hammer” tool ... 105
2.6. The importance of “Save as” function ... 108

3. Workshop: Bathroom - Tiling ... 111

3.1. Open and Save the project ... 111
3.2. Tiling in 3D ... 112
3.2.1. Wall tiling ... 112
3.2.2. Floor tiling ... 114
3.3. Placing Tiling Style in 3D ... 121
3.4. Modifying the tiling on the floor ... 123
3.5. Mosaic tiling ... 125
3.6. Mixing tiles - Optional ... 129
3.7. Placing mirrors as tiling ... 131
3.7.1. Mirror above the washbasins ... 131
3.7.2. Mirror above the dressing table ... 134
3.8. Deleting tiles on the layout ... 135
3.9. Tiling Layouts ... 136
3.10. Wall elevation view ... 137
3.11. Tiling consignation ... 139

4. Workshop 4: Kitchen Design ... 145

4.1. Open and Save the Project ... 145
4.2. Base cabinets ... 146
4.2.1. Creating base cabinet ... 146
4.2.2. Creating the corner cabinet ... 151
4.2.3. Placing the oven ... 156
4.2.4. Drawer cabinet ... 158
4.2.5. Wide drawer cabinet ... 159
4.3. Creating new front panel ... 161
4.3.1. Dishwasher ... 163
4.4. Create Countertop ... 164
4.5. Adding Cabinets ... 169
4.5.1. Add high cabinets ... 169
4.5.2. Creating the “box” with countertop ... 171
4.6. Edit Plinth ... 173
4.7. Display the whole plan ... 176

5. Workshop: Documentation ... 181

5.1. Open and save project ... 181
5.2. Creating Mood board ... 182
5.2.1. Open mood board ... 182
5.2.2. Paper setup ... 182
5.2.3. Place images ... 183
5.2.4. Modify images ... 184
5.2.5. Place materials in same size ... 186
5.2.6. Place colours with hatch ... 187
5.2.7. Place text ... 189
5.2.8. Print to PDF ... 190
5.3. Create snapshot ... 190
5.4. Create architectural floor plan ... 192
5.4.1. Layer properties management ... 192
5.4.2. Dimension ... 194
5.4.3. 2D symbols ... 197
5.4.4. Room stamp ... 200
5.4.5. Place text ... 203
5.4.6. Print to PDF ... 203
5.5. Create coloured floor plan ... 204
5.5.1. Preparation ... 204
5.5.2. Create floor snapshot ... 205

5.6. Creating wall elevation views ... 206
5.6.1. Dimensioning Length ... 209
5.6.2. Elevation on section ... 210
5.7. Create plot layout ... 211
5.7.1. Prepare plot layout ... 211
5.7.2. Copy to plot layout ... 212
5.7.3. Using layers on plot layout ... 214
5.7.4. Refresh drawing on the plot layout ... 216
5.7.5. Using more plot layouts ... 216
5.7.6. Create, save, modify and use the plot stamp - optional ... 217
5.7.7. Other modification options ... 223
5.7.8. Print to PDF ... 224

6. Workshop: Lights ... 227

6.1. Placing lamps from the library ... 227
6.1.1. Placing lamp on the floor plan ... 228
6.1.2. Placing lamp in 3D ... 229
6.2. Recessed spot lamps ... 230
6.2.1. Placing spots to a given profile - optional ... 234
6.3. Creating new lamp ... 236
6.3.1. Adding light source ... 238
6.3.2. Save lamp to Design Center ... 241
6.4. Changing direction of spot lights ... 242
6.5. LED strips ... 245
6.6. Luminous text ... 247

7. Workshop: Rendering ... 256

7.1. Default settings ... 256
7.1.1. Perspectives ... 256
7.1.2. Layers ... 256
7.2. Render settings ... 258
7.2.1. Render time ... 258
7.2.2. Sun settings, shadows ... 259
7.2.3. Main settings ... 261
7.2.4. Create the first rendered image ... 265
7.3. Render styles ... 267
7.3.1. Use render styles ... 268
7.3.2. Display Furniture ... 271
7.3.3. Replace material ... 272
7.3.4. Display decoration ... 273
7.3.5. Display other details of the model ... 274
7.4. Render effects ... 275
7.5. Render list ... 276
7.6. The specialities of the outdoor render ... 277

What is ARCHLine.XP®?

ARCHLine.XP® is CAD based architectural and interior design software. The model is created from a collection of well-known building components such as wall, door, window, stair, roof, column, etc.
In addition to this ARCHLine.XP® comes with parametric interior design components such as furniture design tools, curtains, lights, sockets, switches, cornices, skirting boards, tiles, pictures on wall, etc.
Using ARCHLine.XP® you can design rooms with any shape – offices, reception rooms, lofts, kitchens, bathrooms and bedrooms, add furniture, appliances and finishes and develop the scheme of an entire house.
Furniture for any space can be remodelled or designed from scratch and every element of units and cabinets are individually customized.

Description

This tutorial contains step-by-step guide that show how to create stunning interior spaces in ARCHLine.XP®.
It will teach you how to design interior space like a reception room, with furniture, lights and other accessories.
You will create section and elevation scenes and dimensioned floor plan documentation drawing.
You will learn how to apply manufacturer textiles and finishes and create stunning rendering for your client.

This tutorial is provided to interior designers, beginners in computer design.

Getting Started

To get the most out of this tutorial it is best to run ARCHLine.XP® and YouTube with the appropriate video, so that you can get experiment with the concepts that are mentioned in the tutorial.

Fundamental concept on how to create interior spaces in ARCHLine.XP®

ARCHLine.XP® is an accurate design software based on 2D floor plan. It means you will create the 3D multi-level interior spaces always from the 2D layout.

This new generation BIM software creates all 3D model views, section and elevation scenes, printing layouts and lists from the 2D floor plan centred information automatically.

As an example, if you draw a wall on your floor plan and place window and door into this wall, the 3D view will display the perfect 3D model without any further instruction needed.
However, you can work on your wall and window in 2D floor plan or 3D view either and the project remains congruent.

First of all, download the **WORKSHOP PROJECTS - PRELIMINARY** from the website and install it. It includes all project for all preliminary workshops.

https://www.archlinexp.com/education/workshops/workshop-application-preliminary

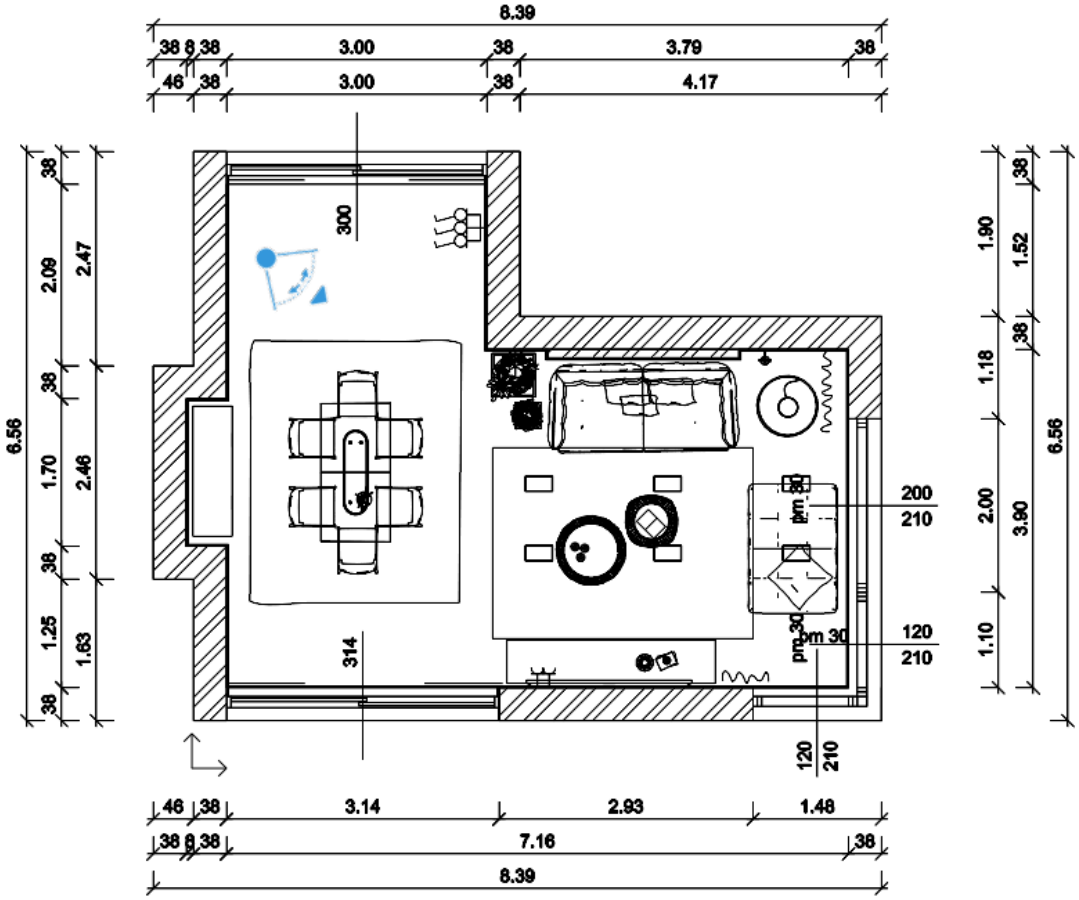
Workshop 1: Reception Room

1. Workshop: Reception Room

This course goes through the design of a typical reception room and provides you with the following principles and basic skills in both 2D and 3D:

- Fundamentals of CAD design: Interface and Drawing tools
- Basic architectural design: Accurate drawing of walls, doors, windows, slab, ceiling
- Interior design: Cornicing, skirting boards, curtains, painting, lights, furniture
- Visuals: Finishes and materials from producers, shadows, photorealistic rendered images
- You will be able to visualize a 3D model, wall views, photorealistic/rendered images, incorporating textures and fabric patterns.
- Suitability: Beginners in computer design.

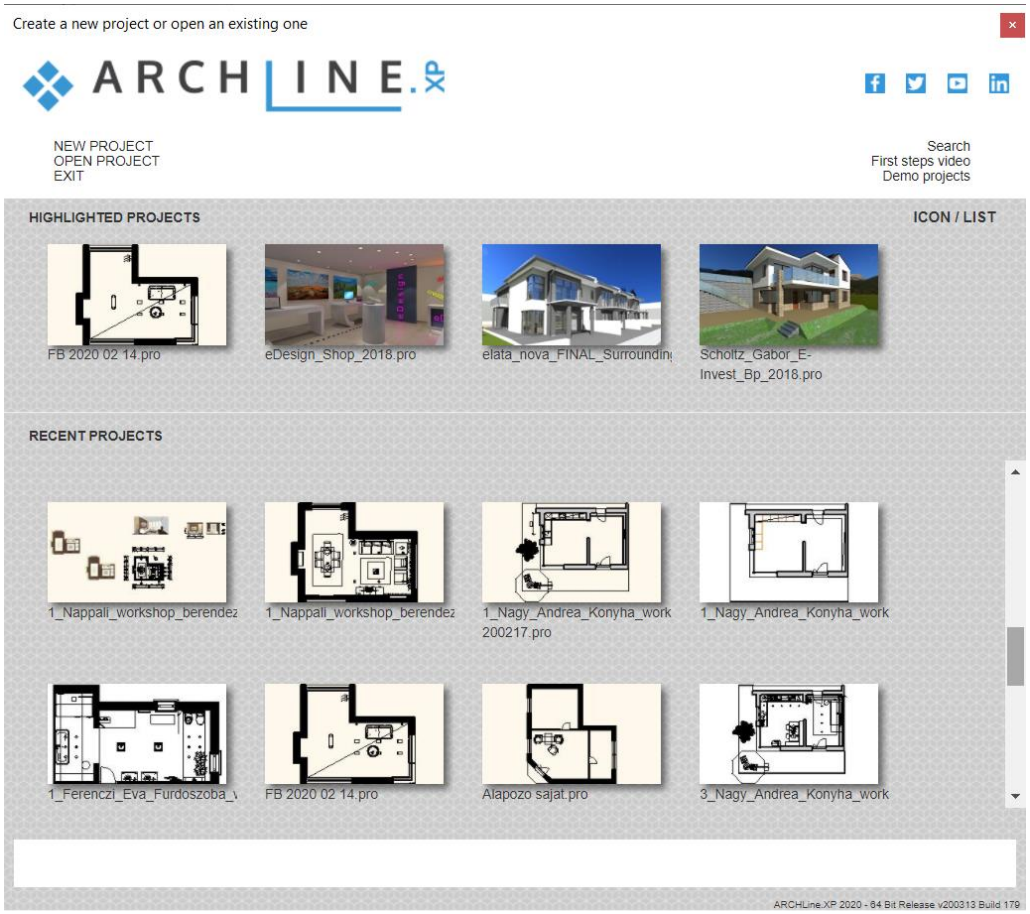
In this workshop, we are going to create the project of the next reception room:



- Please open the following playlist in your browser:
  https://www.archlinexp.com/education/workshops/workshop-application-preliminary

Starting

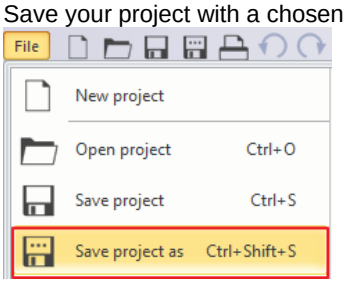
- Start ARCHLine.XP®. Your screen should look similar as follows:



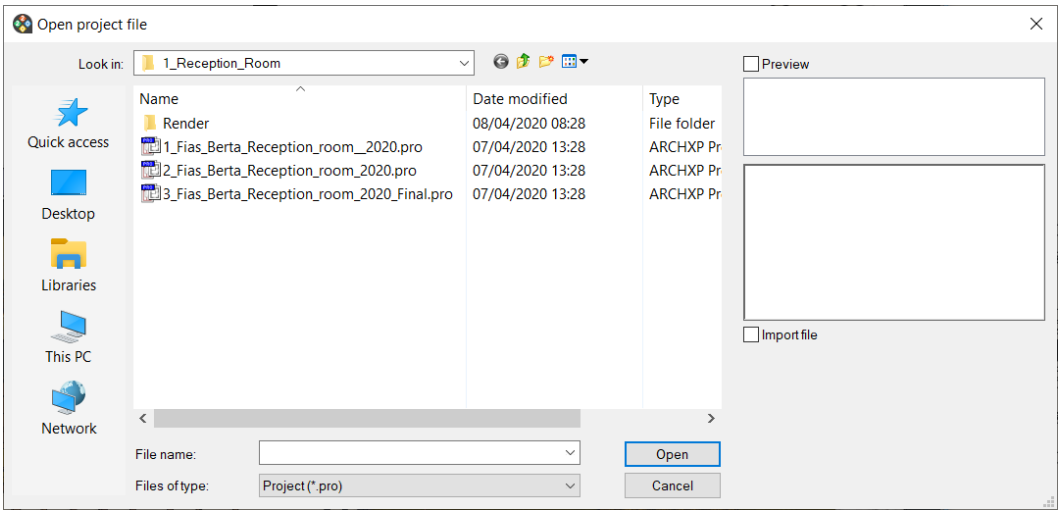
- Click on **New Project** to start.

Save your project

Save your project with a chosen project name such as “Reception_room” or “My_reception_room” and so on.

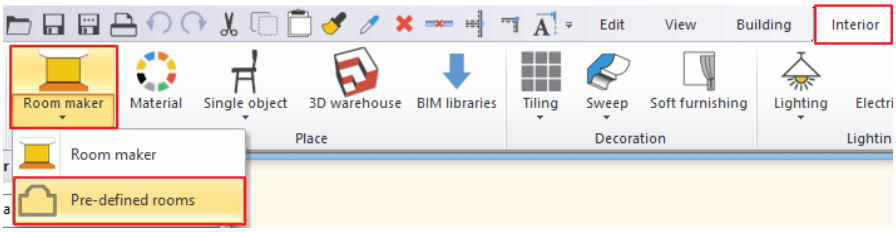


- Click on **File menu – “Save project as”** command, enter your file name and save the project.
  Your screen should look as follows:

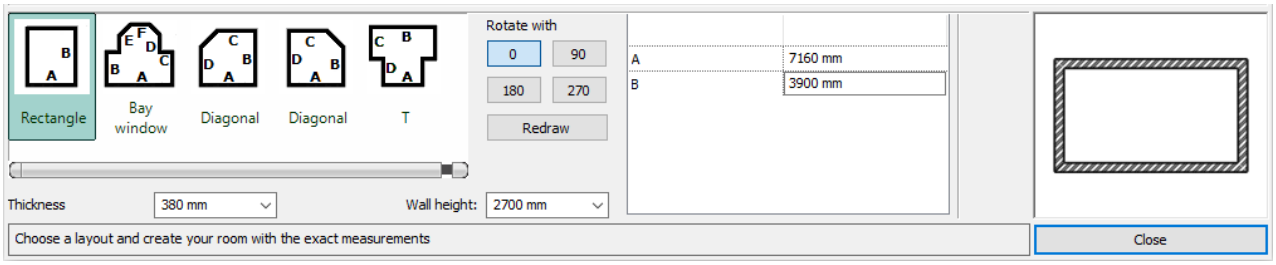


1.1. Room maker

- Click on **Ribbon Bar / Interior / Room maker / Pre-defined rooms** command.



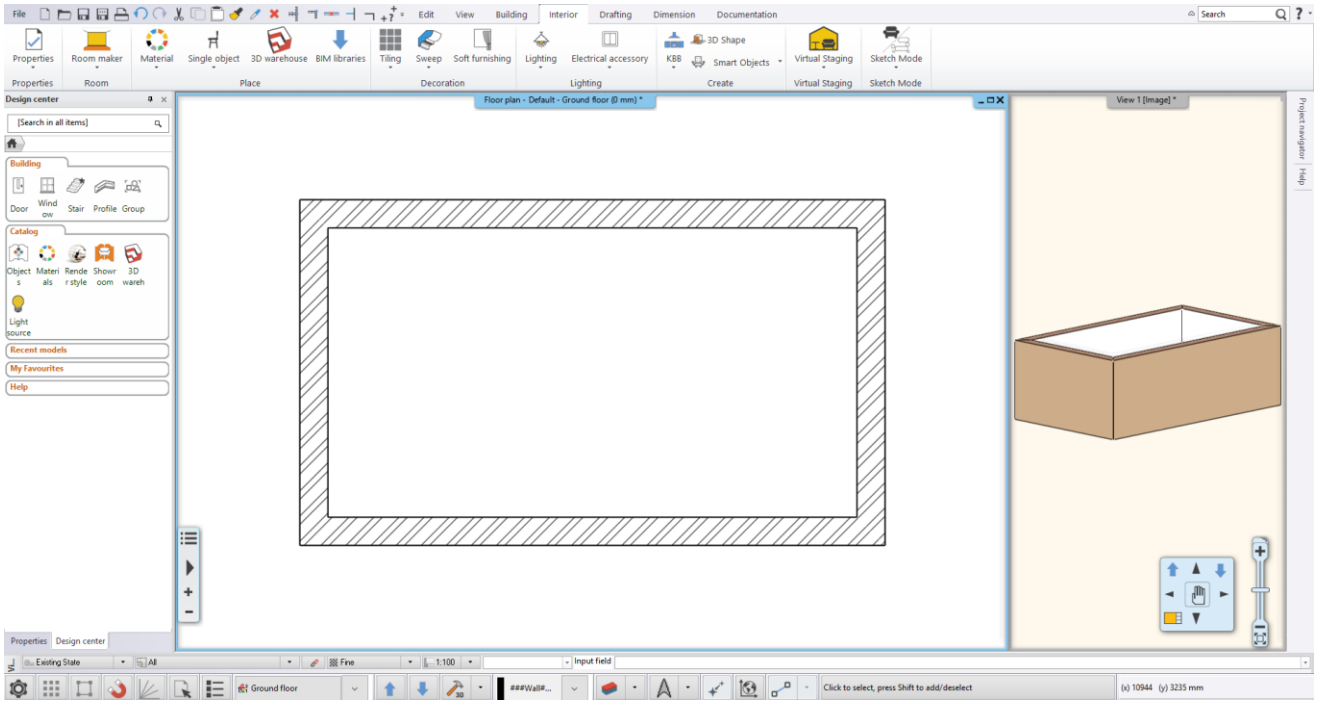
- In the appearing dialogue box choose: **Rectangle.**



- Create a room with exact room internal measurements: A: 7160 mm, B: 3900 mm.
  The values represent the internal wall lengths.

- Set wall properties: Thickness: 380 mm, Wall height: 2700 mm.
- Press the *Close* button and place the room on the drawing area near to the origin using the mouse left click.

Your screen should look as follows: If you see only a part of the walls, click on “+” sign on the slider next to NaviBar to zoom in or “– “sign to zoom out. Or you can easily move the slider itself. Choose the Fit to Window button at the bottom of the slider icon to get the optimal view.

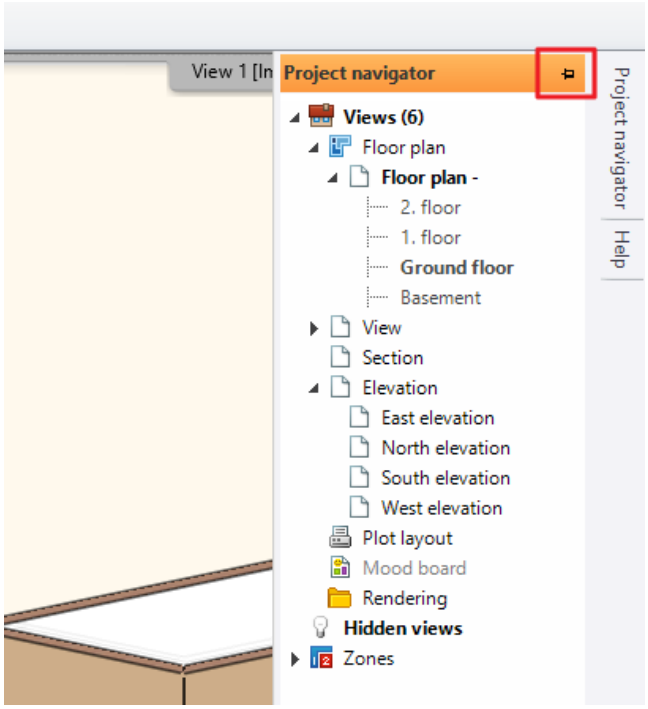


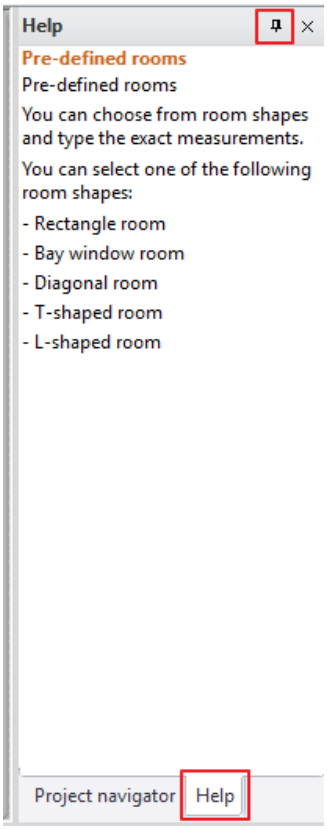
Help menu

Before moving forward, let’s pin the project navigator as it is shown above:

In case the content of the project navigator does not appear on screen (it disappears when the cursor is not over it), then hover the cursor over there, and click on the pin icon to fix it.

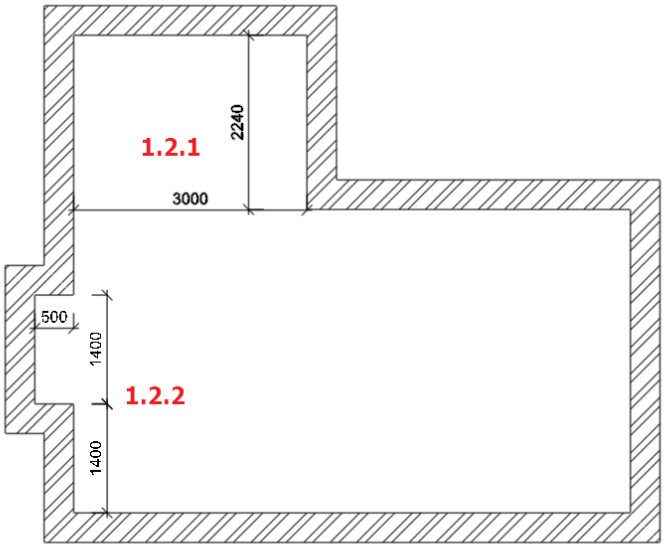
Click on the Help tab, here appears the description of the last used command. The Help menu constant presence makes it easier to learn how to use the software.



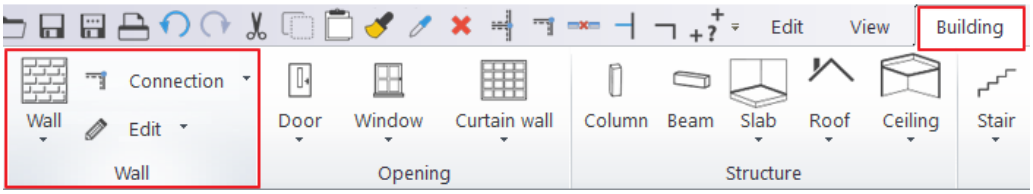


1.2. Editing wall

We aim to make the following adjustments, let's draw room extensions as it is shown below:



- The wall editing commands are located in the **Ribbon Bar / Building / Wall panel**

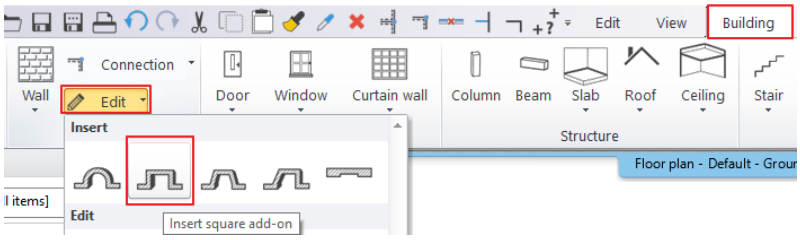


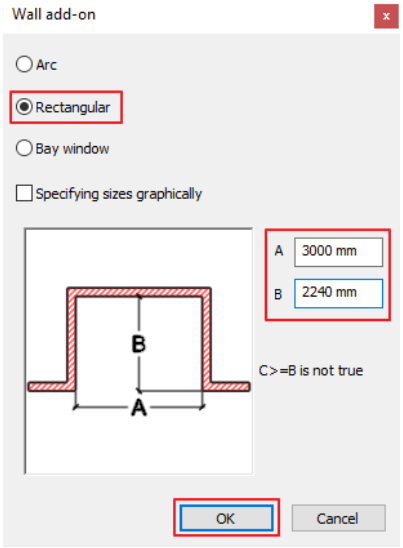
It is easy to create room extensions and edit walls in the 2D window.

1.2.1. Add Rectangle extension to the room

Create a rectangle-shaped room extension, as shown in the illustration above; length: 3000 mm, depth: 2240 mm. The values represent the internal wall lengths.

- Click on **Ribbon Bar / Building / Edit / Insert / Insert square add-on** command



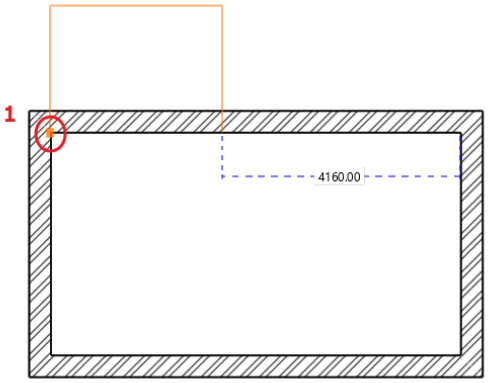


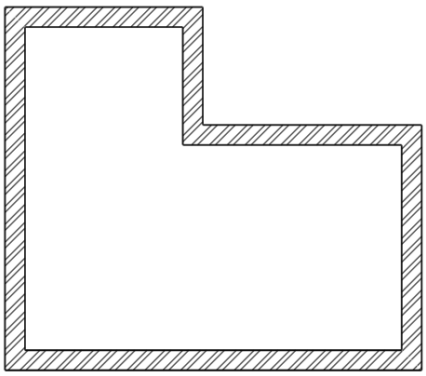
- Choose the room extension type: **Rectangular**.

  The room extension sizes can be defined by graphically or numerically.
  We choose the numerical way.

- In case of using numerical values, enter A and **B** values and hit the “OK” button.

- Move the cursor over the wall (1) you want to insert the rectangle extension and click on the starting point of the wall add-on. Now the extension is created.
- If you do not want to add more extension hit ESC to close the command.

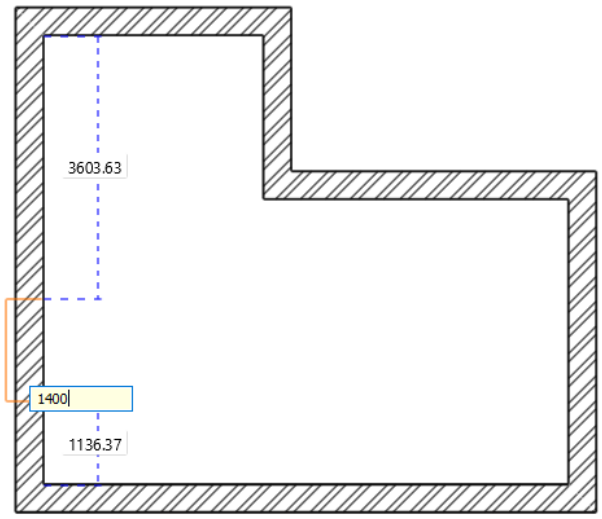




1.2.2. Add next Rectangle extension

Create another rectangle-shaped extension on the left side of the room, which is at 1400 mm away from the room left corner. The length is 1400 mm, and depth is 500 mm.
The values represent the internal wall lengths.

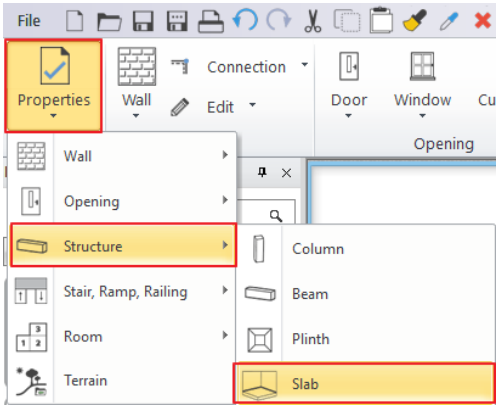
- Click on **Ribbon Bar / Building / Edit / Insert / Insert square add-on** command.
- Choose the room extension type: Rectangular.
- We choose the numerical way and type the value of **A:** 1400 mm and **B:** 500 mm. Then hit “OK” button.
- Moving the cursor over the selected wall, you can read the distance between the wall corners and the wall extension’s endpoints.
- Type the room extension distance from the wall corner point: 1400, then hit “Enter”.



1.3. The slab

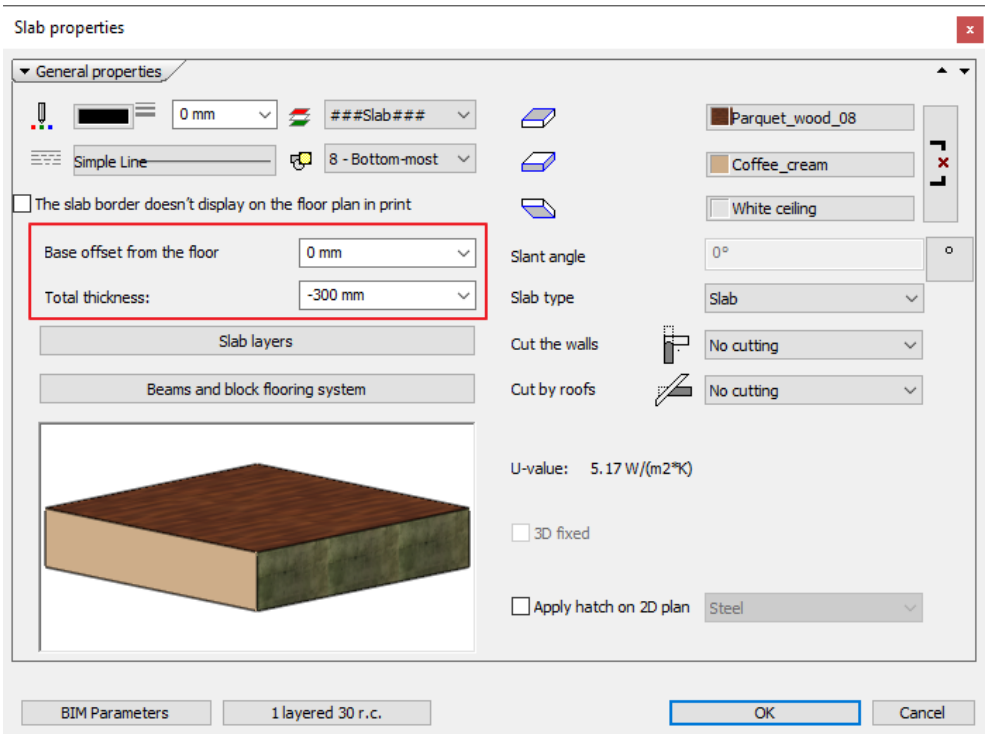
1.3.1. Slab parameters

Check the slab properties before you create the floor.



- Define floor properties: **Ribbon Bar / Building / Properties / Structure /Slab**

- Set up these values in the dialogue window:
- Base offset from the floor: 0 mm;
- Total thickness: -300 mm (as the floor is extended downwards from 0 mm).

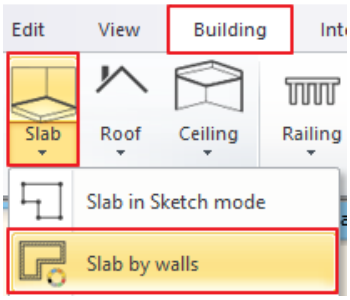


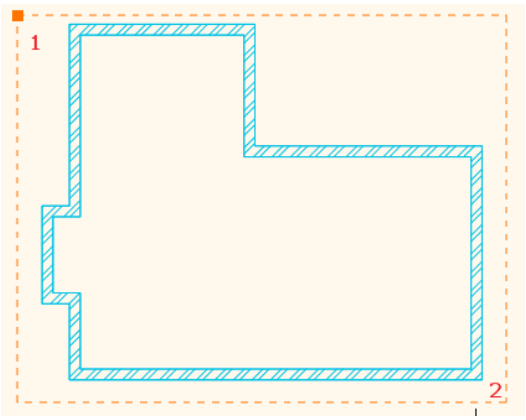
1.3.2. Create slab

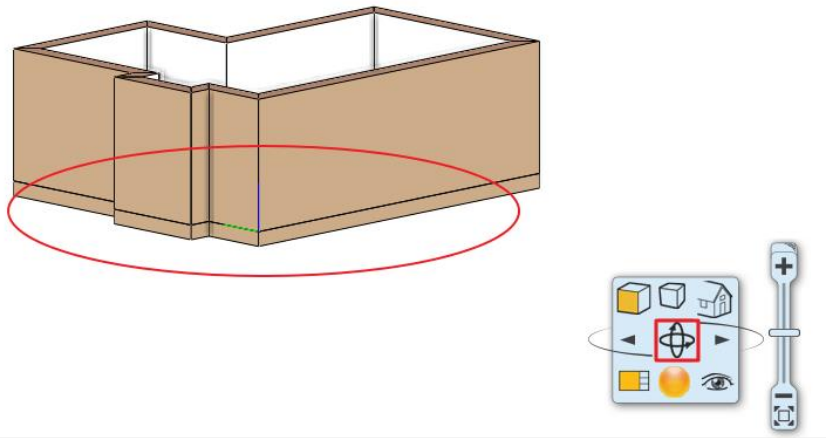
The "Slab by walls" tool is very convenient; you need to select the walls, and the slab will be created along the outer contour.

- Select the command: **Ribbon Bar / Building / Slab / Slab by walls**.
- Click on the two opposite corner points of the selection rectangle (1,2) and hit Enter to finish and close the command.
- The program creates the floor and generates it in 3D view as well.

The slab is placed under the walls. Now check it in the 3D view as well. To activate the 3D window, click inside then rotate the model by clicking on Rotate button on the NaviBar.
Left-click on the Rotation button on the Navibar and hold it down. As you are moving your mouse, the model will be rotated.







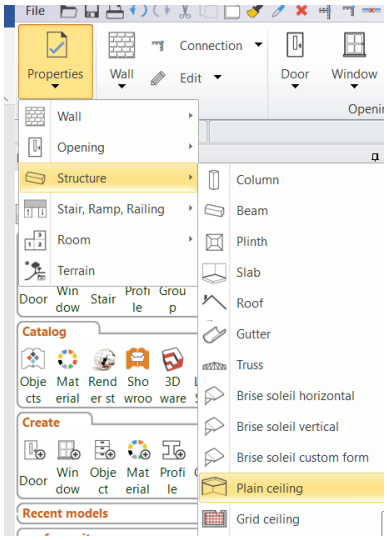
1.4. Add ceiling

Activate the floorplan window by clicking inside with left-mouse button.

Before placing the ceiling, first of all, set the Plain ceiling properties.

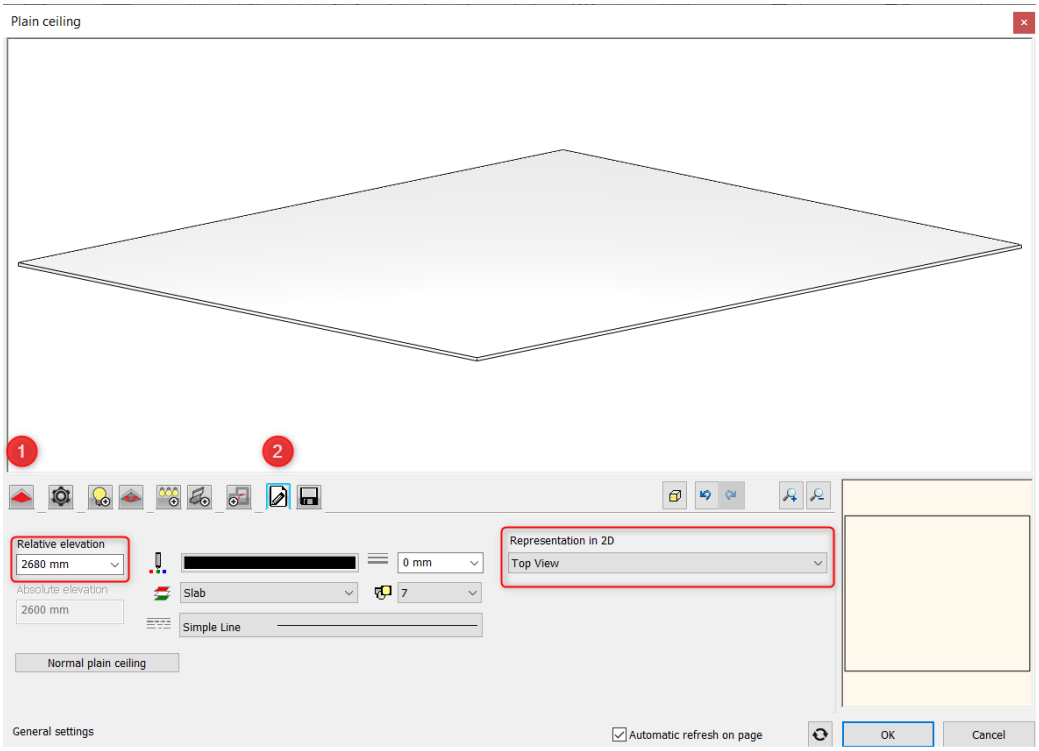
1.4.1. Plain ceiling properties

Set the ceiling properties: **Ribbon bar / Building / Properties / Structure / Plain ceiling**



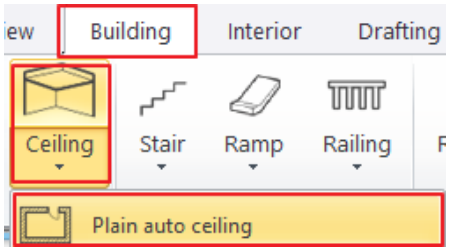
Set the following values in the dialogue window:

- Click on the Materials and thickness tab to change the material to “Bright white” (1).
- Click on the General settings icon (2).
- Change the Relative elevation to 2680 mm and Representation in 2D to Top view.

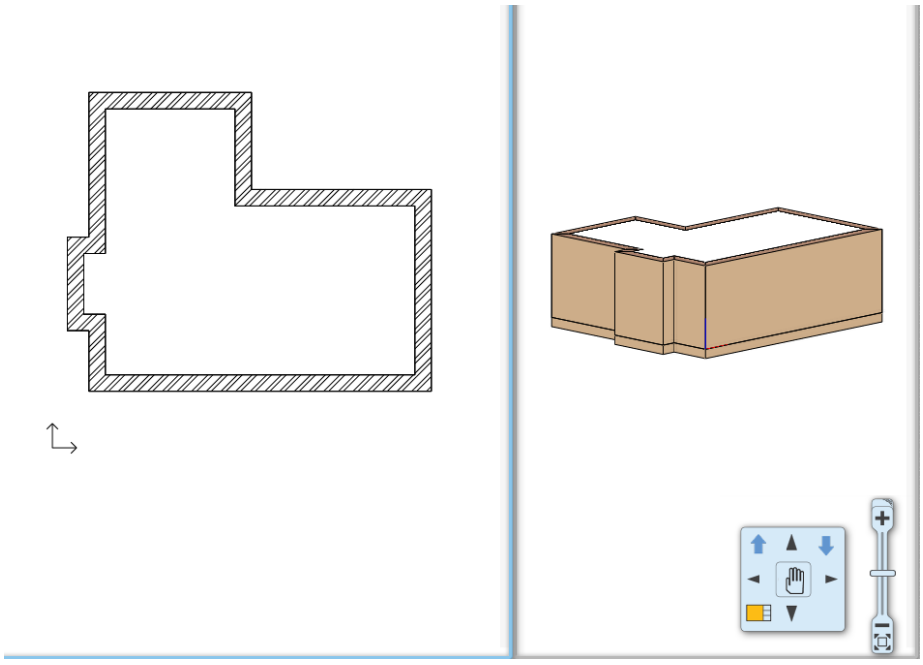


1.4.2. Placing the Pain ceiling

Select the command: **Ribbon Bar / Building / Ceiling / Plain Auto Ceiling**

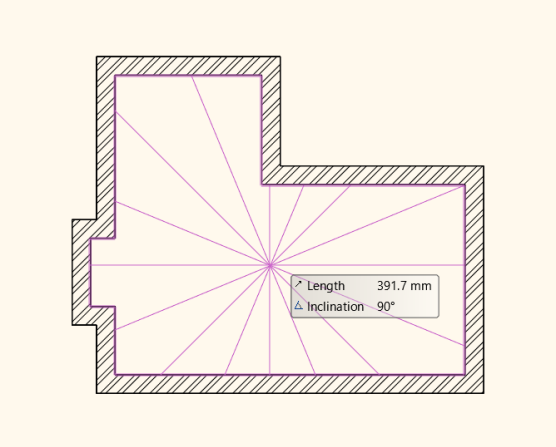


- Click inside the room.
- The program automatically recognizes the room contour and places the ceiling that appears in 3D view as well.



1.5. Room Maker

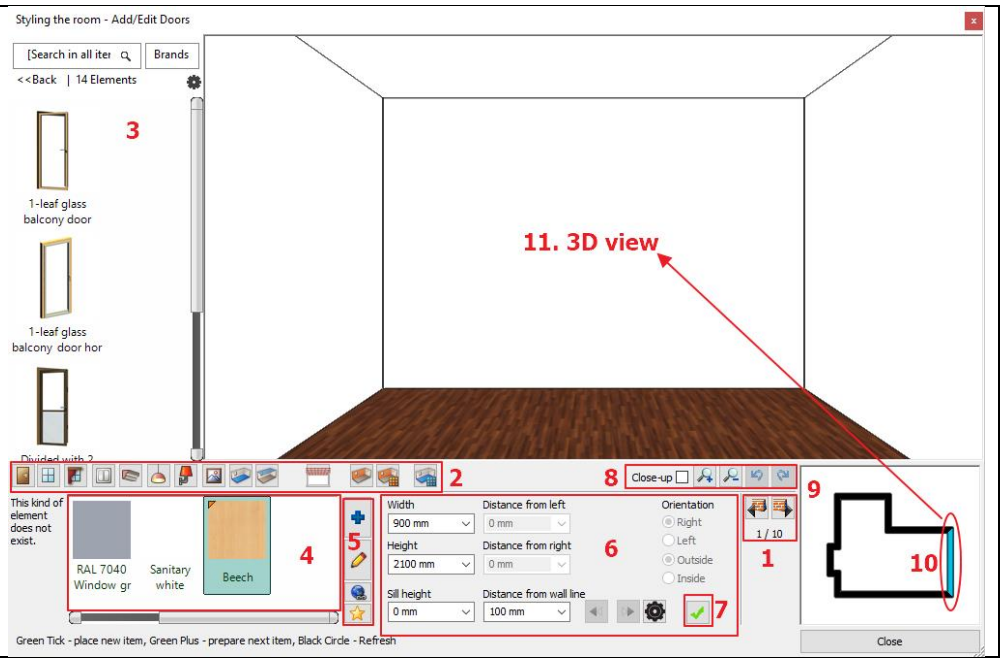
Room Maker is an all-in-one design tool that highly speeds up the interior design flow.
Let's start placing doors and windows, then decorate it with objects of your own choice.



- Start the command: **Ribbon Bar / Interior / Room Maker**
- Click inside the room on the floor plan.
- The dialogue window will appear on your screen.

1.5.1. Room Maker – Toolbar Overview

1. **Wall finder**
2. **Toolbar**
3. **Design center**
4. **Texture finder**
5. **Add new material**
6. **Properties**
7. **Insert new**
8. **Zoom in/out**
9. **Undo/redo**
10. **Floorplan**
11. **3D view**



1.5.2. Room Maker – Interface overview

1. **Wall finder:** Clicking on the icon the room will move to left or right and show the selected wall which can be modified. There you have an option to work on the ceiling or the slab as well.
2. **Toolbar:** Contains all tools for interior designers. One command is always active. The room maker always uses the selected command.
3. **Design center:** It is a built-in library for selecting objects/items.
4. **Texture finder**: Here, you can find the last used textures.
5. **Add new material:** Choose other materials from Design Center, modify the parameters of the selected item.
6. **Properties:** You can define these parameters, when you insert or modify a new item or material.
7. **Insert new:** You can insert a new item by clicking on the Green Tick.
8. **Zoom in/out:** Zoom in or out on the 3D view.
9. **Undo/Redo:** Withdraw the last changes on the floor plan and set the previous status. You can undo and redo up to 16 actions.
10. **Floor plan:** The floor plan is presenting the selected item.
11. **3D view:** 3-dimensional view of the selected wall/floor/ceiling

1.5.3. Add doors

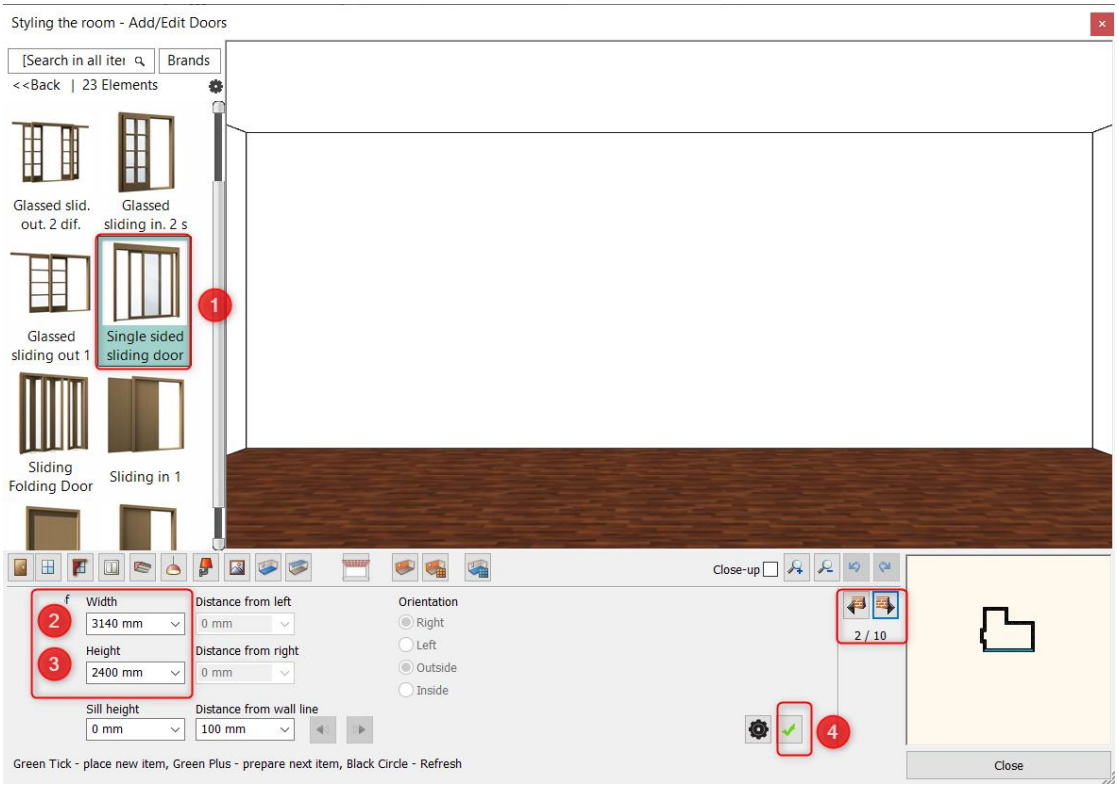
First door

With Wall finder, you can switch from wall to wall. We always work on the opposite wall.

We place a "**Single-sided sliding door"** on the wall with the length 7160 mm.

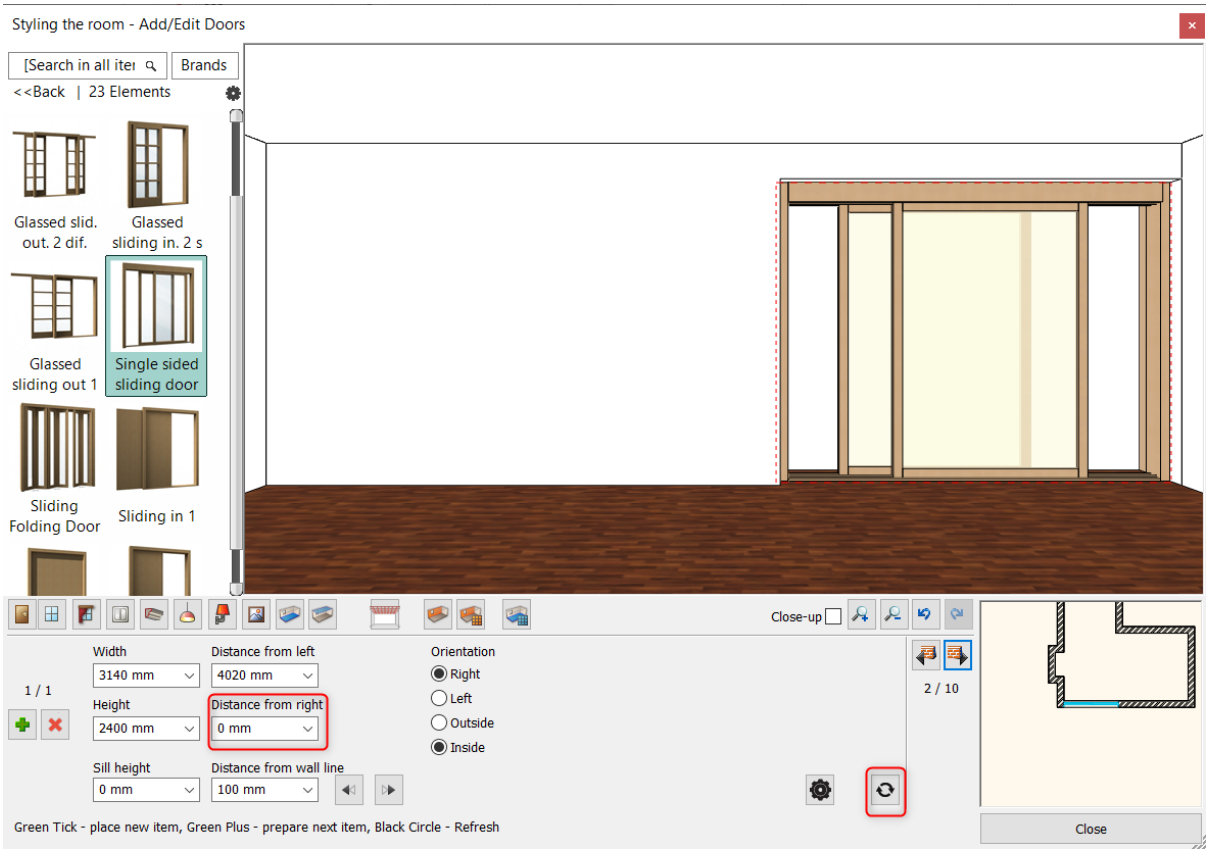
- Select the wall with the length 7160 mm clicking on the Wall finder button.
- Select the door: **Type finder / Indoor / Sliding**.
- In the Type finder - Design Center, click on the Back button and select the first line as "Search in all items".
- Type the door name partly in the search field: "Single-sided".
- The search result list appears and click on the door you asked for (1).
- Change the properties of the sliding door: Width: **3140** mm Height: **2400** mm (2,3).

- Click on Green tick to accept changes.



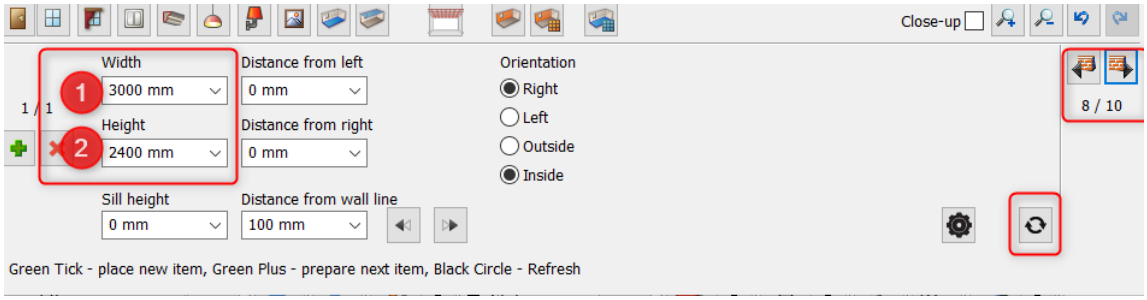
Next, change the distance from the wall corner:

- Modify the previously created door “Distance from right” to 0 mm.
- Click on the refresh button.



Second door placement

- Select the wall with the length 3000 mm by using the Wall finder button and place the next door here.
- Select the same door type, “**Single-sided sliding door”** and change properties:
  Width: 3000 mm (1)
  Height: 2400mm (2)



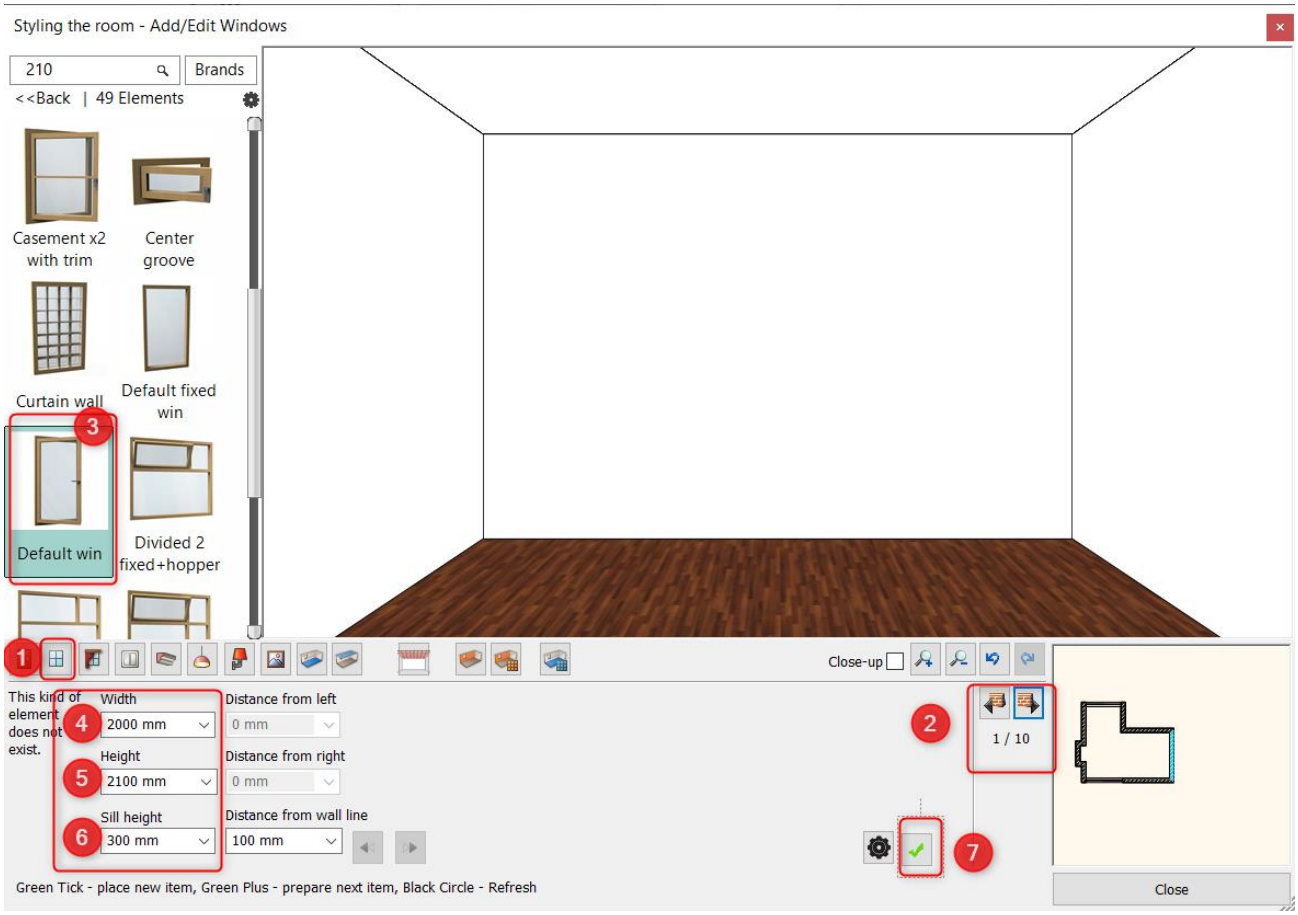
- To create the new door, click on the green tick.

1.5.4. Add windows

First window

Place two windows on the wall with the length 3900 mm.

- Select the window icon (1) on the Toolbar. Please navigate to the indicated wall with Wall finder (2): We place the first window on this 3900 mm long wall.
- Choose “Default win” type from the favourites (3) and change properties: Width:2000 mm, Height: 2100 mm, Sill height 300 mm, (marked as 4,5,6).



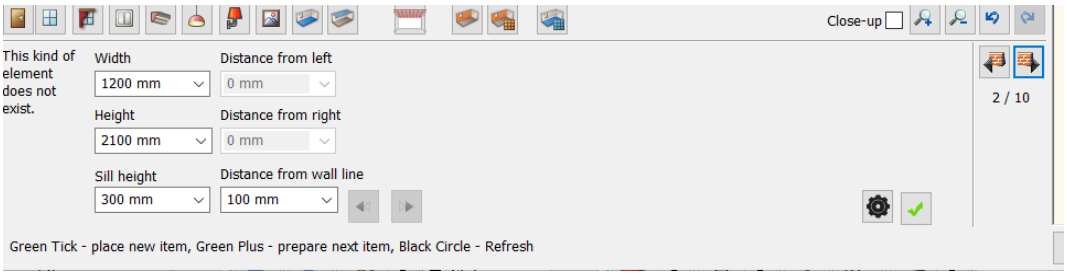
- Click on Green tick (7) – the window is placed in the wall centre point.
- Set the distance from the left wall corner to 800 mm.
- Now place another window on the same wall following the steps above.

- To create the new window, click on the Green cross icon.
- Set the window parameters: width 1100 mm, heights 2100 mm, sill height 300 mm, then place it by clicking on the Green tick.

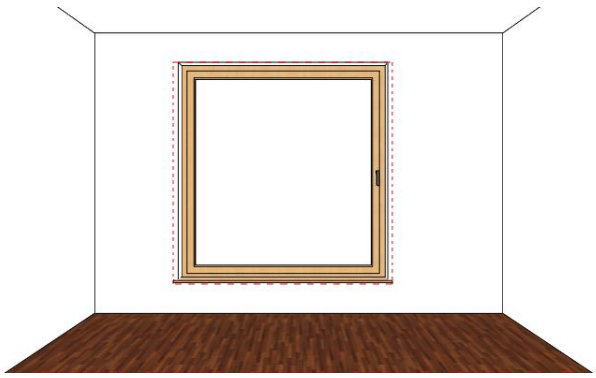
Third window

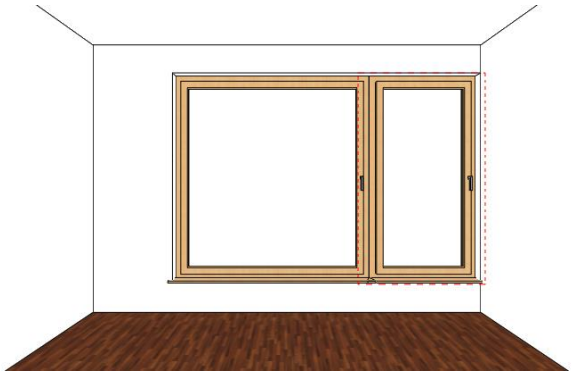
Place one window on the wall with the length 7160 mm but use different window parameters.

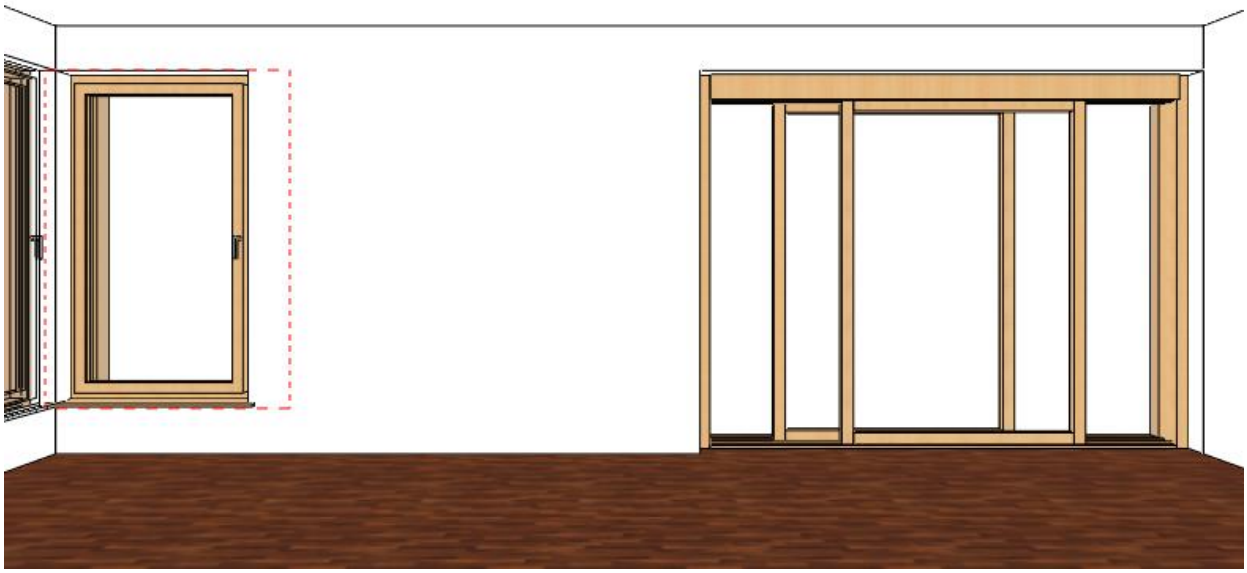
- Select this wall.
- Choose “Default win” type from the favourites and change properties:
  Width: 1200 mm, Height: 2100 mm, Sill height 300 mm.



- Click on Green tick, to place the window in the wall centre point.
- Change left distance to 300 mm and press Enter or Refresh button.





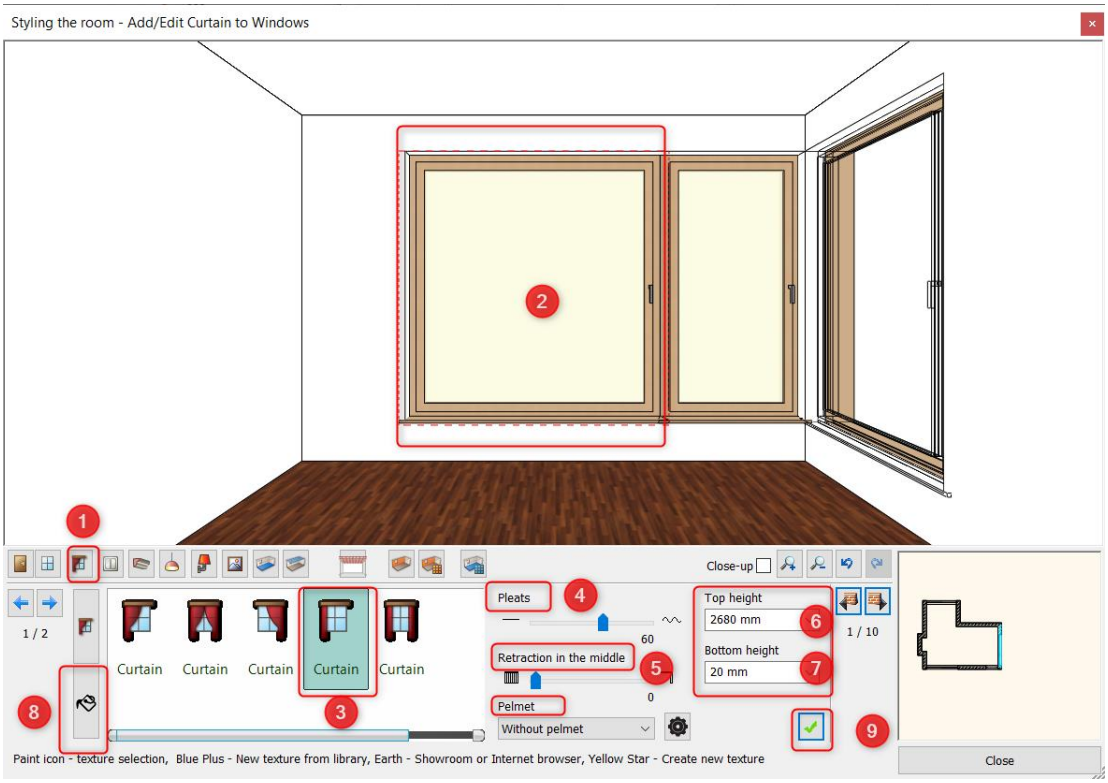


1.5.5. Add curtains

ARCHLine.XP offers a wide variety of window treatments such as blinds, shades, curtains. First select the window, then find a curtain and customize it. There are many ways to choose textiles and other materials. You can use the built-in materials or create customized ones. You can download materials from the ARCHLine.XP Showroom by selecting from the manufacturer's catalogues or import them directly from the manufacturer's website.

Curtain 1

- Select the indicated wall with Wall finder.
- Press on the Toolbar the curtain icon (1).
- Click on the left window (2).
- Select the fourth curtain-type from the favourites (3) and change properties:
  Pleats: high (60) (4),
  Retraction in the middle: no (0) (5),
  Without pelmet (6),
  Bottom height: 20 mm (7).
- Click on the Texture (8) and select "Curtain 002".
- Click on Green tick (9) – it will place the curtain in front of the window.



Second curtain

Place a curtain with previously set properties on the wall of 7160 mm the length.

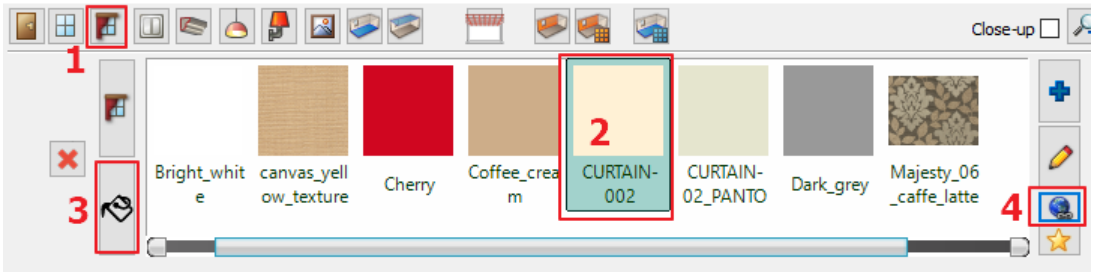
- Click on Green tick, to place the curtain.

Curtain material modification – Optional

There are many ways to bring in new fabrics and other materials when you need them.

This task requires Internet access.

- Click on the Curtain icon on the toolbar (1).
- Click on the curtain (2).
- Click on the Texture button (3).
- Click on the Internet button (4).



You have two choices: to select a pattern from the ARCHLine.XP Showroom or the Producer website using the Internet browser.

Pattern from the Showroom

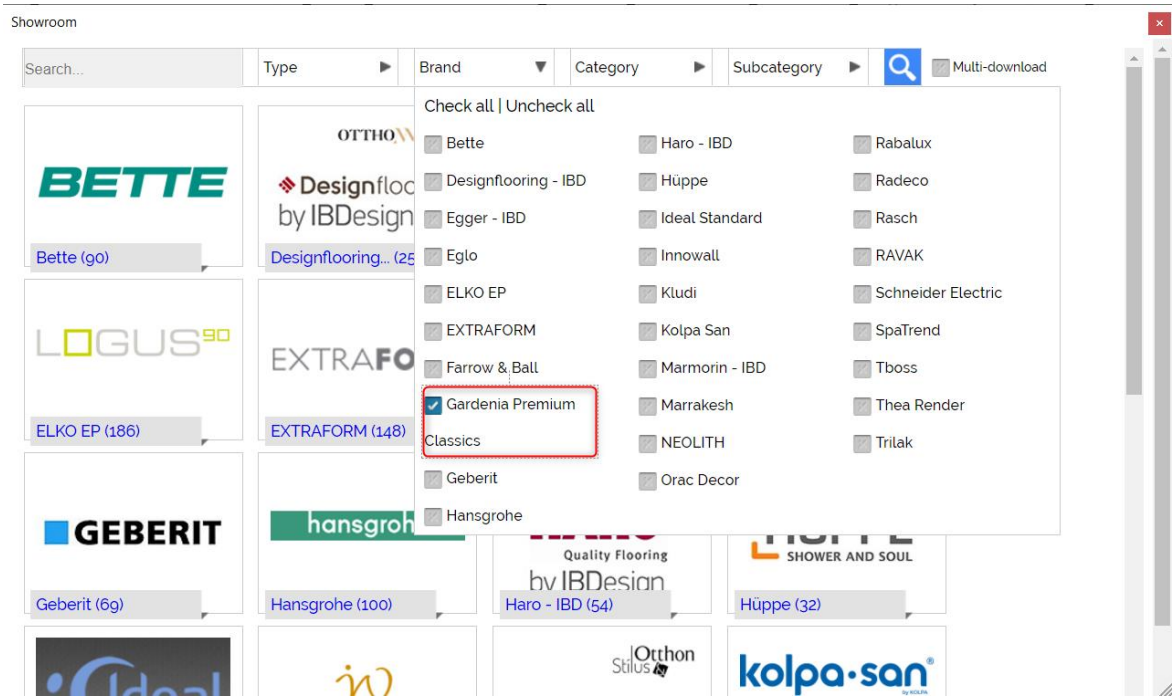
The ARCHLine.XP Showroom is a collection of fabrics, lamps, furniture and other ARCHLine.XP items delivered to you by manufacturers.

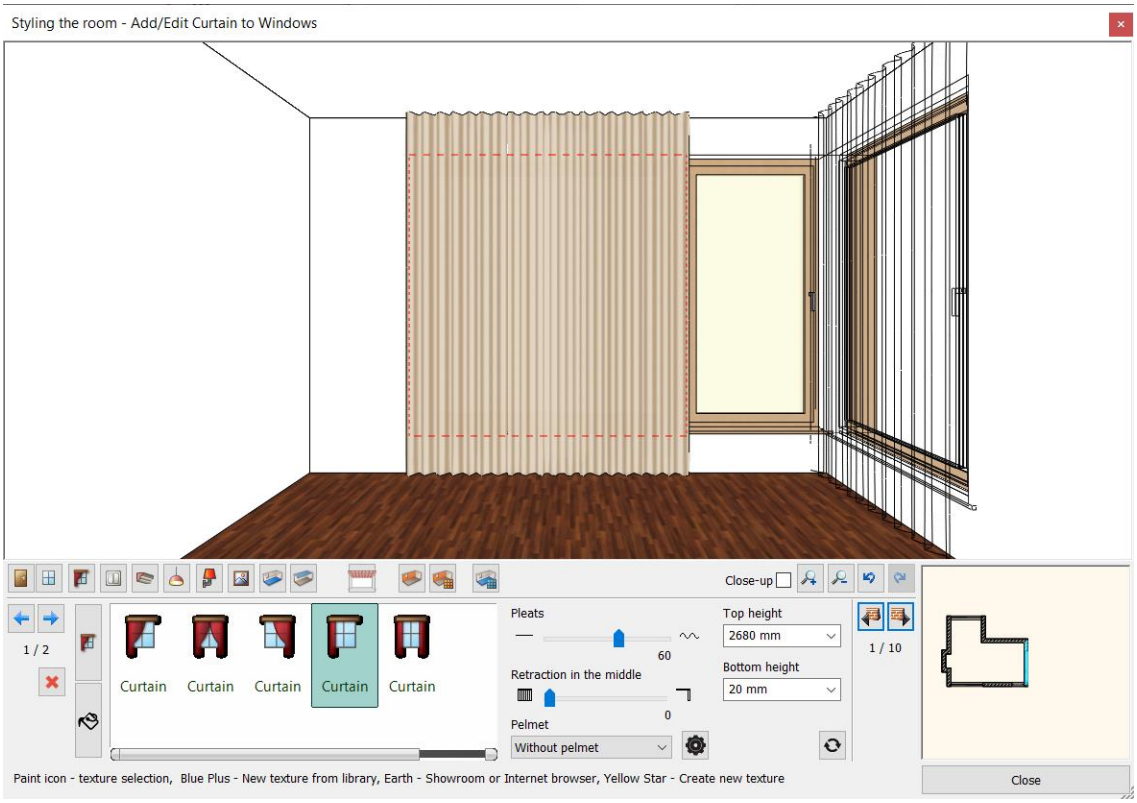
Click on the Showroom button and browse through ARCHLine.XP virtual collection.

Find material by type, manufacturer, product family or product group. You can download more than one material at a time. Select the desired material and click "Download". You can also save the image of the material to your computer. If you click Cancel, the downloaded material will be created as a new material, and you can find it in Favourites.

- In Showroom dialogue window select Material / Colour / Gardenia Premium Classics / Montreal product line and choose "*Montreal_F_105_x*" material.

  The new downloaded material will be applied immediately on the curtain.



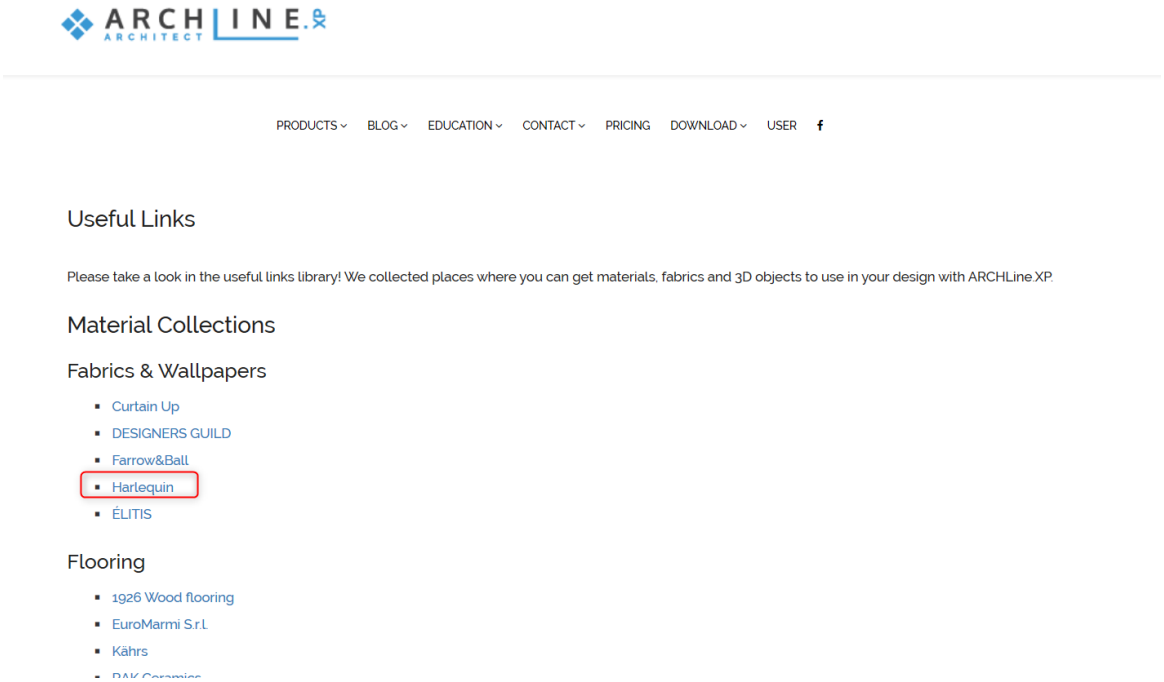


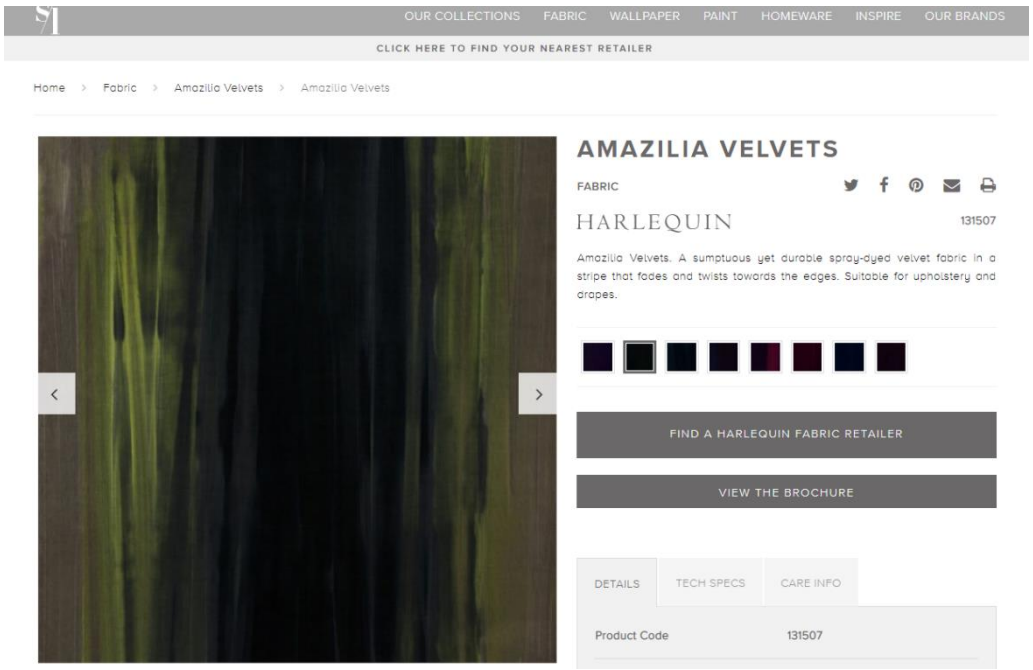
Patterns from Producer's website

More often the desired fabric is only available on the producer's website.

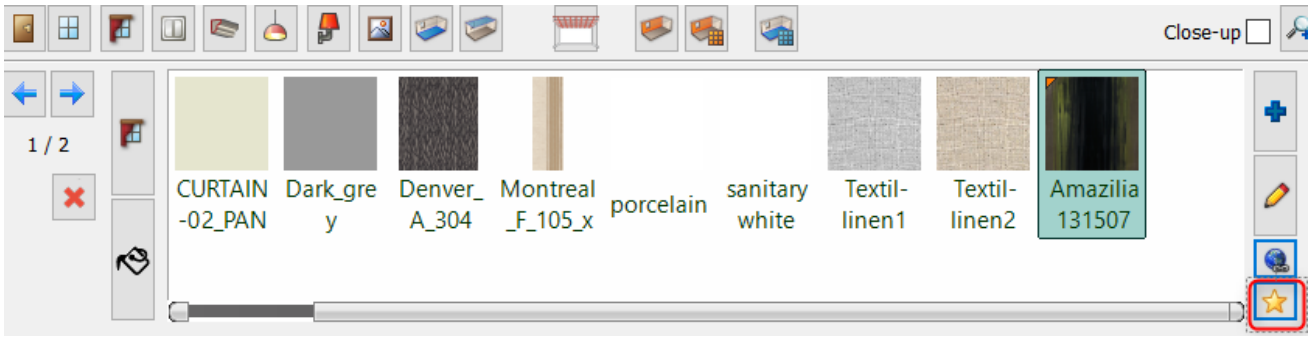
Now click on the Internet button and choose Internet browser. Your browser opens the ARCHLine.XP® Useful links website: https://www.archlinexp.com/education/tips-documentation/useful-links

Here you can type producer website address and find the requested material.
In our example, we go to the Style library website to select the Amazilia fabrics from **Amazilia Velvets collection.**

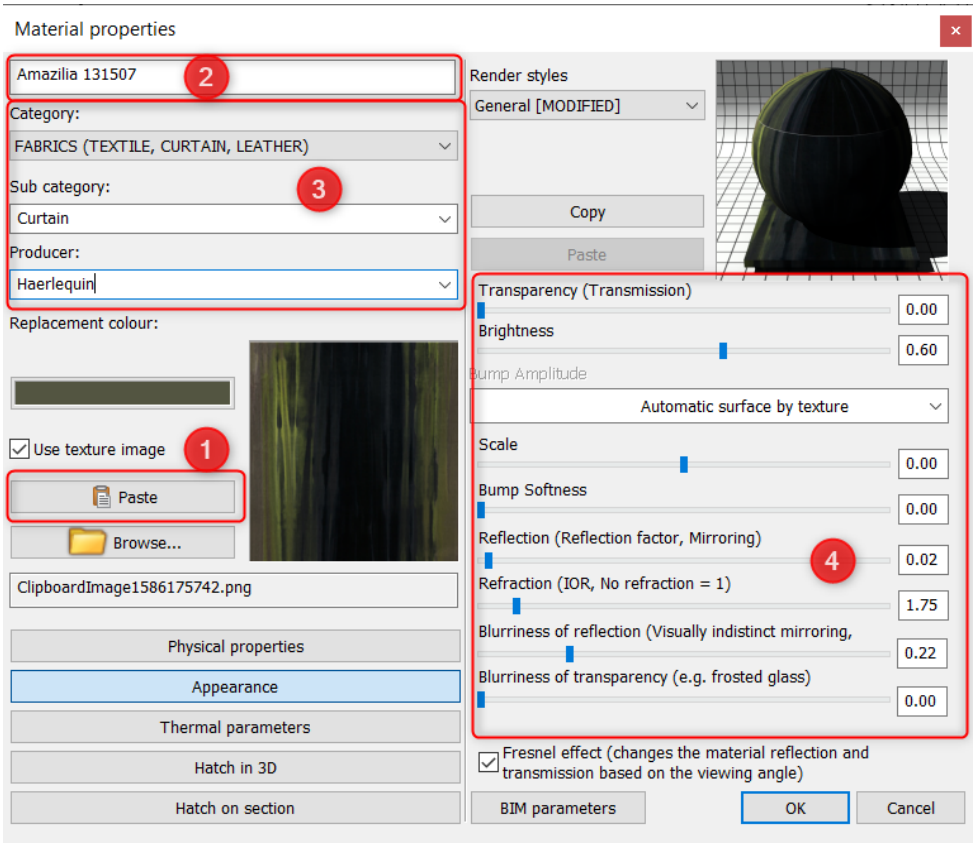




- Click on the fabric to enlarge it.
- Now right click on the image and choose “Copy image” command
  Return to Room Maker and select New material icon.

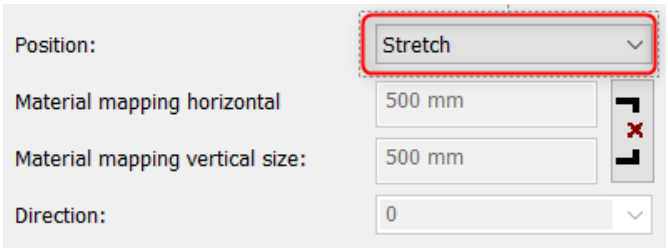


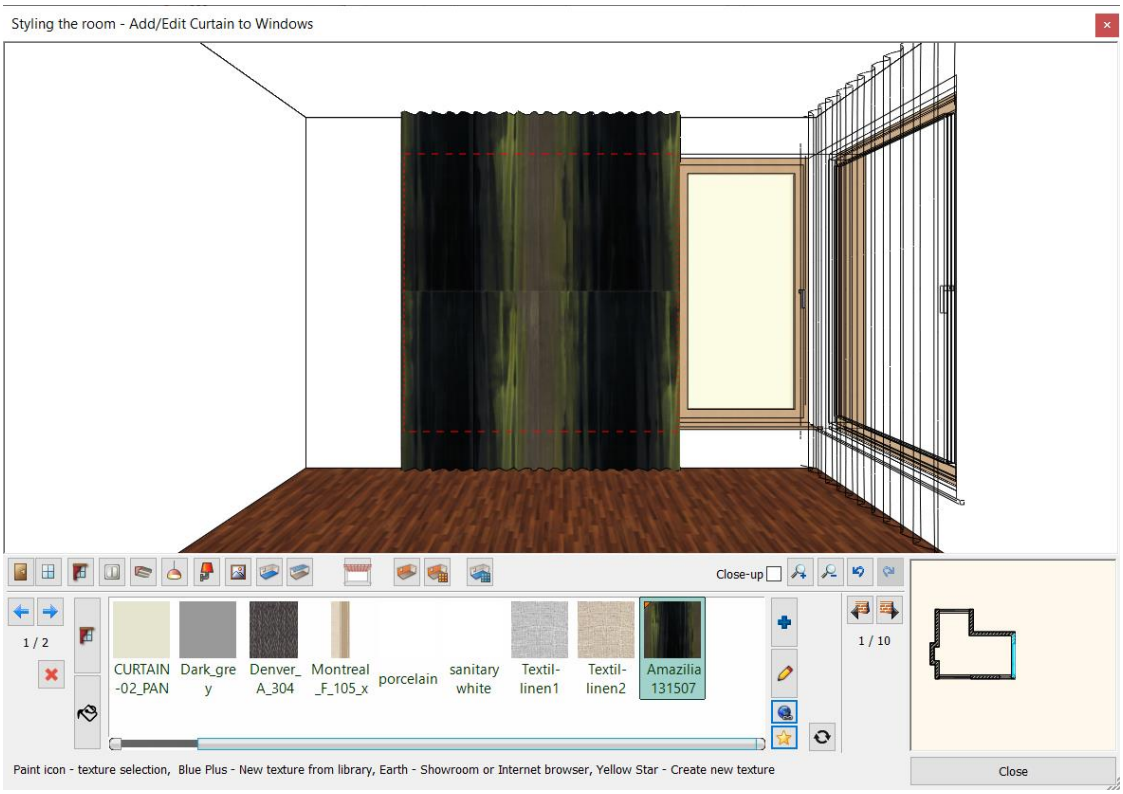
- Press the Paste button (1).
- Type the name or copy and paste from the website into the name field (2),
- Select a category, and here you can also add the producer’s name (3).
- Here, you can also modify the properties of the photorealistic representation (4). You can make it brighter or more textured.



- Now set the downloaded fabric “Physical properties. Change the position to “Stretch”.
- Click „OK”. The newly created curtain will appear within the Favourites list.

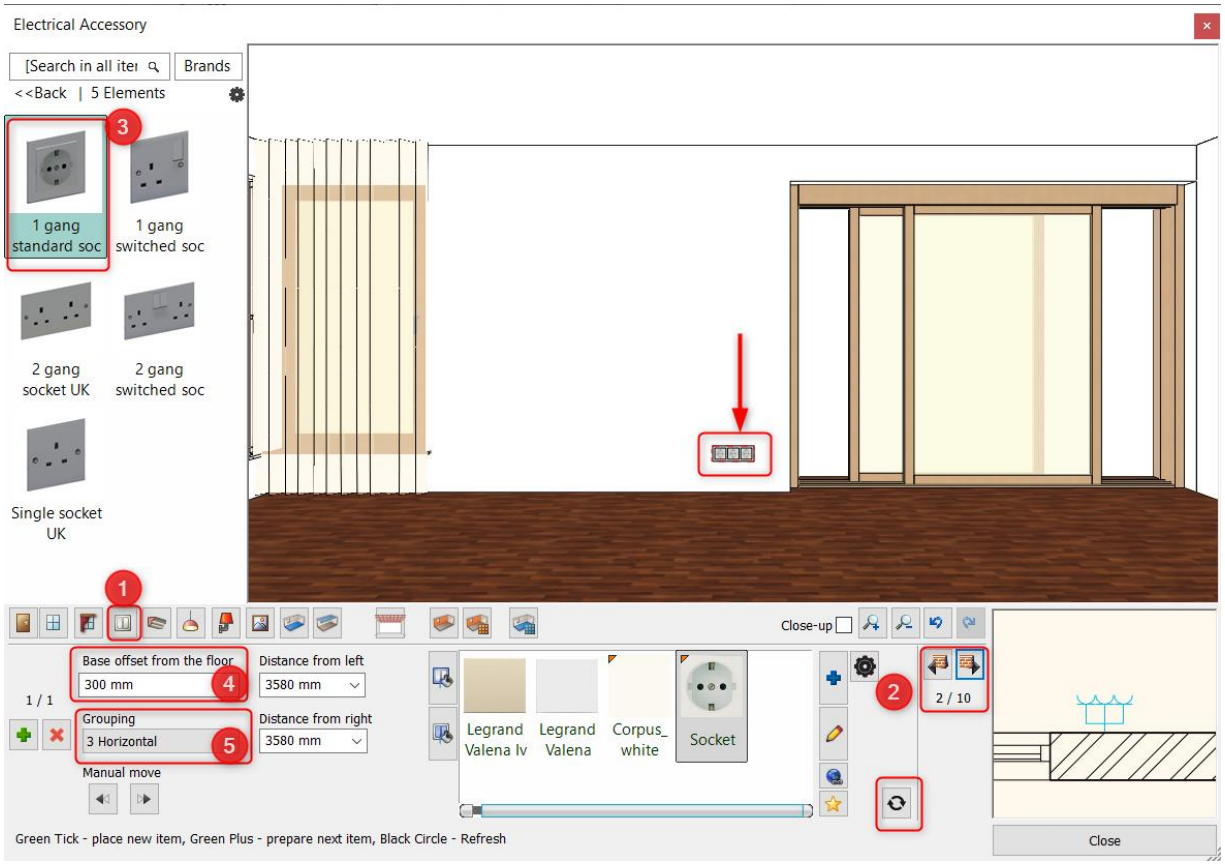
  The new fabric is applied to the curtain immediately.





1.5.6. Add Light Switches and Sockets

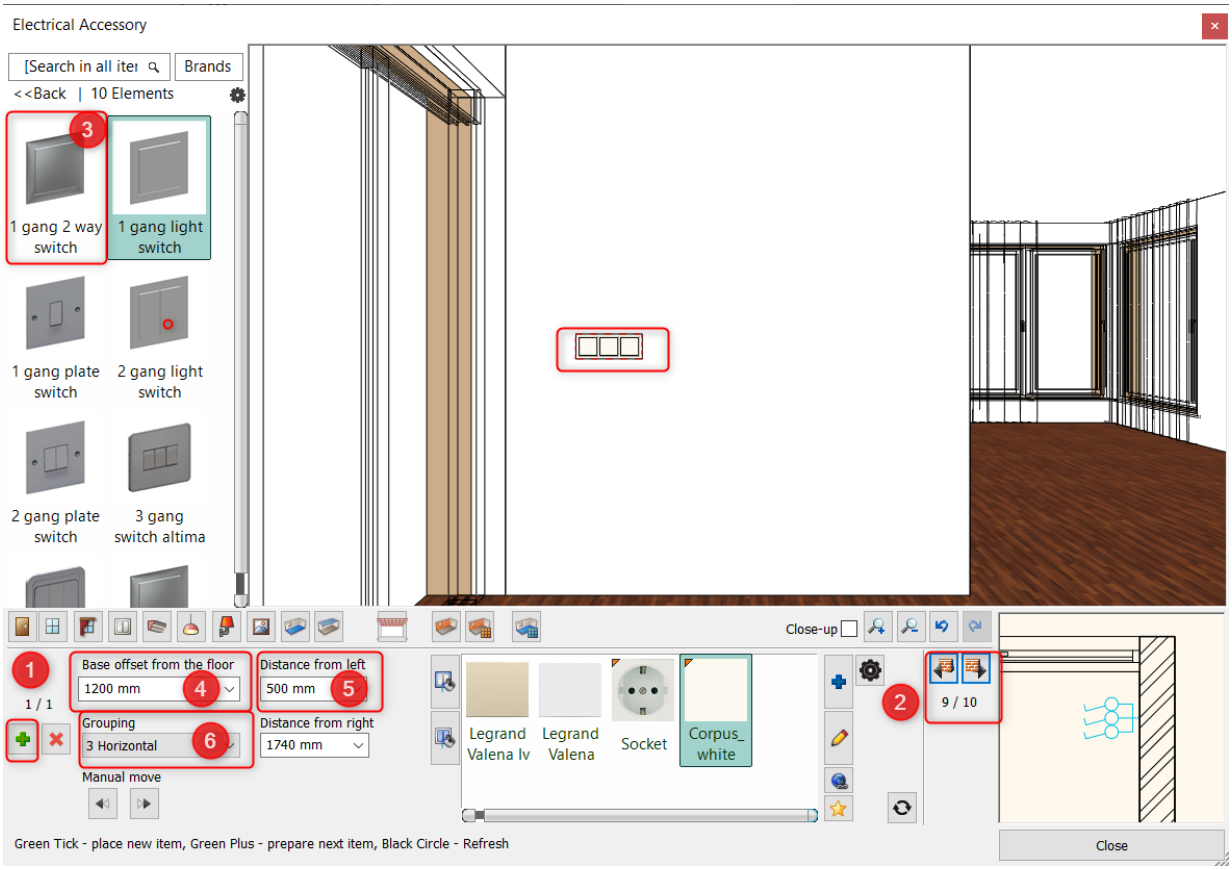
- Select "Electrical accessory" (1) on the toolbar.
- Select the 7160 mm long wall with Wall finder (2).
- In the Design Center select Socket outlets and select the “1 gang standard socket” (3) and set the properties:
  Base offset from the floor: 300 mm (4).
  Grouping 3 Horizontal (5).
- Click on Green tick, to place the socket on the wall.



Place a single-gang switch on the wall with length 1900 mm next to the sliding door.

- Click the Green Plus button.
- Select the 1900 mm long wall with Wall finder (1).
- In the Type finder - Design Center, select Plate switches and select the “1 gang 2-way switch” and set properties:
  Base offset from the floor: 1200 mm (2).
  Distance from left: 500 mm (3).
  Grouping 3 Horizontal (4).

- Click on the Refresh button (5), to place the switch on the wall.

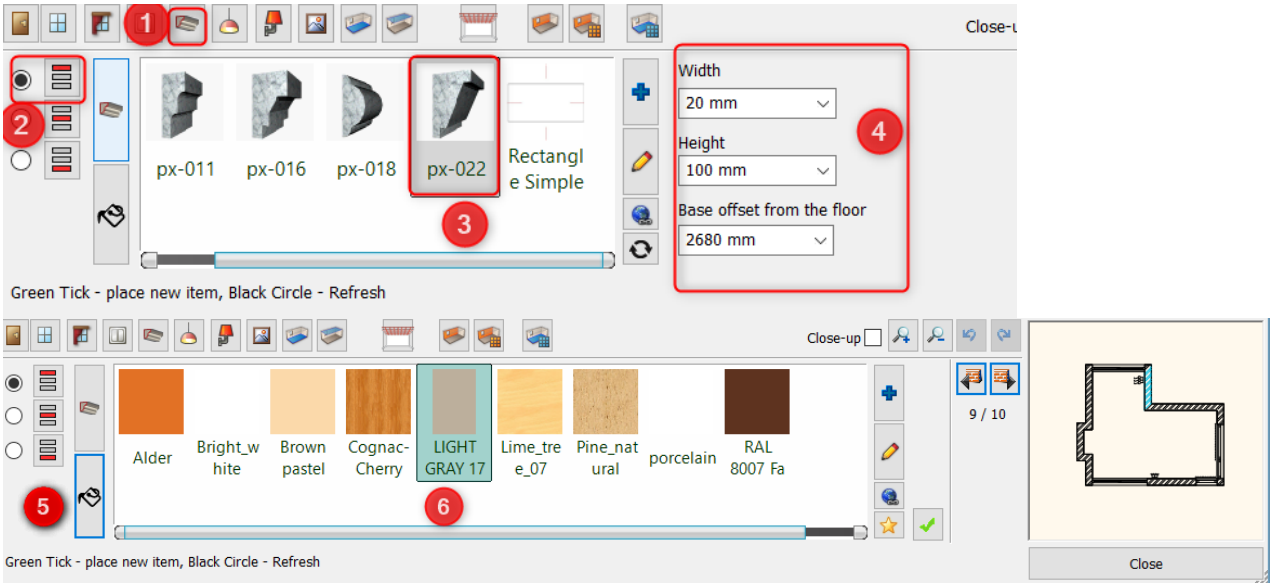


1.5.7. Add Profiles

Crown moulding

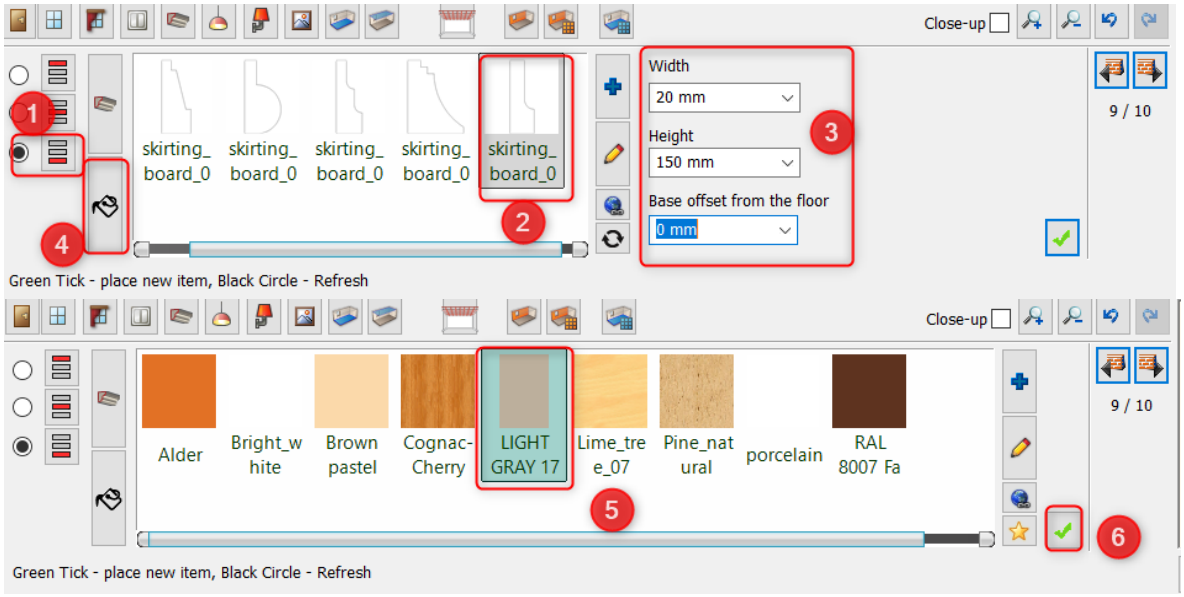
Place crown moulding that goes around the room.

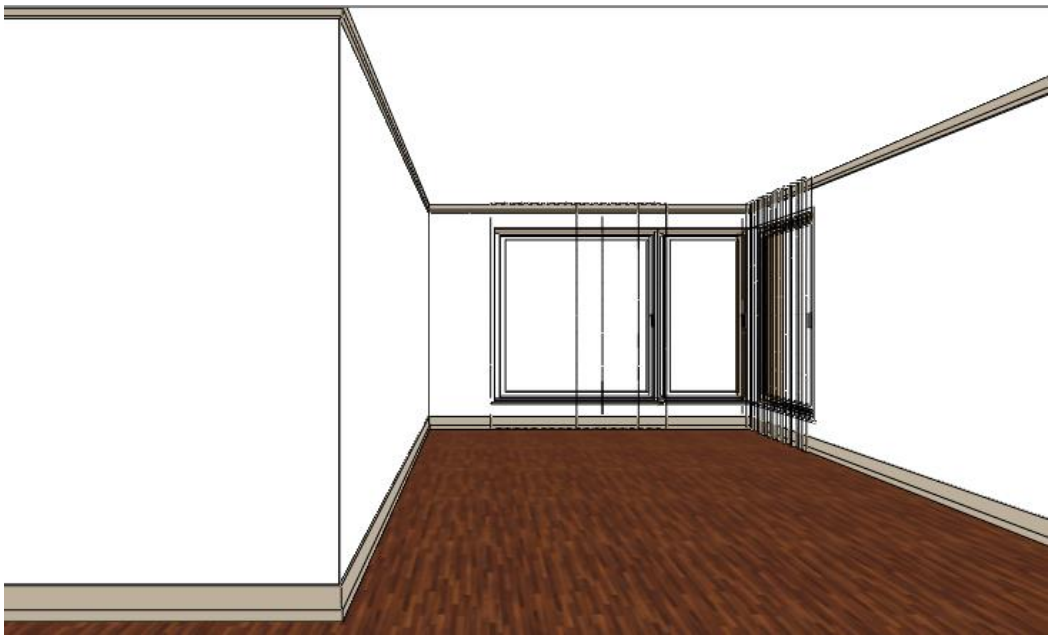
- Click on Profiles on the Toolbar (1).
- Choose the profile option (2).
- Select the “px-022” profile from Favourites (3) and change its properties (4):
  Width: 20 mm,
  Height: 100 mm,
  Base offset from the floor: 2680 mm.
- Select a material for the profile: Click on the Edit material (5) and select “LIGHT GRAY 17” (6).
  Click on the Blue cross button to display the Materials Library.
  Find the material by typing its name in the search box.
- Click on Green tick (7) and it will place the crown moulding around the room.



Skirting Board

- Click on Skirting Board icon on the left and set the position (1).
- Select the “skirting_board_006” profile from Favourites (2) and change properties (3):
  Width: 20 mm,
  Height: 150 mm,
  Distance from the floor: 0 mm.
- Click on the Edit material (4) and select “LIGHT GRAY 17” (5), click on the Green tick to apply changes.





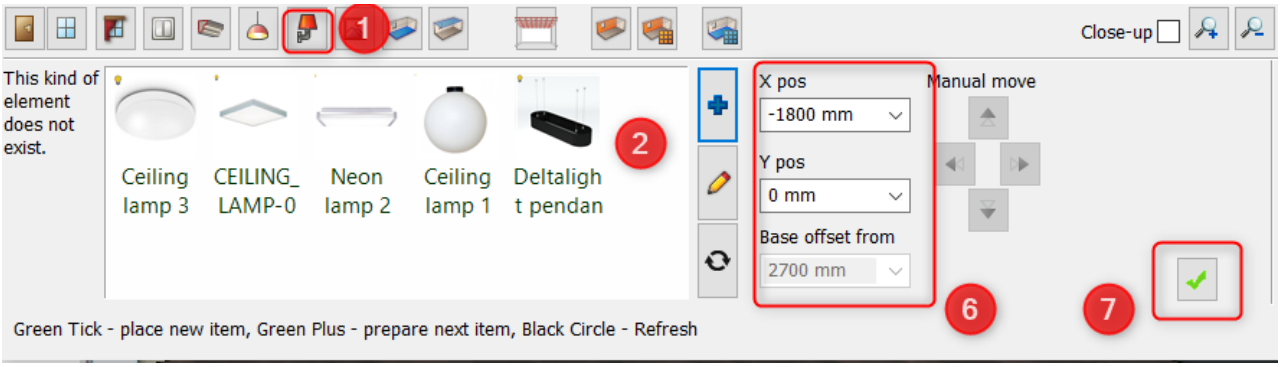
1.5.8. Add ceiling lamps

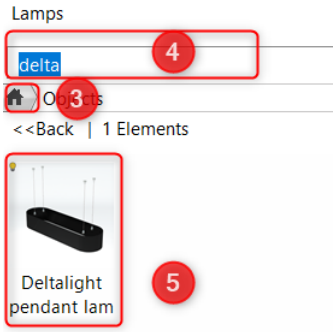
Place lamps on the ceiling. You can select pre-defined lamps from the built-in library, or you can import from 3D warehouse.

- On Toolbar, click on the Ceiling lamps icon (1).

Ceiling lamp

The “ Deltalight pendant lamp” is missing from the Favourites; therefore, we have to find it in the Library.





- Click on the Blue cross icon (2),
- In the appearing Lamps window click on Home button (3) and type in the search field the name of the object (4): “delta”.
- Select the “Deltalight pendant lamp” (5).
- Close the window by pressing “OK”.

  Now the object is within Favourites.

- Change the lamp X position: -1800 mm, Y position: 0 mm. (6)
- Click on Green button (7) – now the lamp is placed on the ceiling.

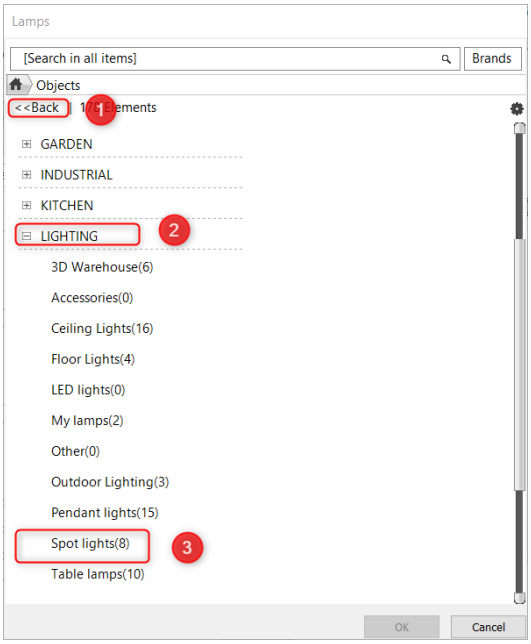
Spotlights

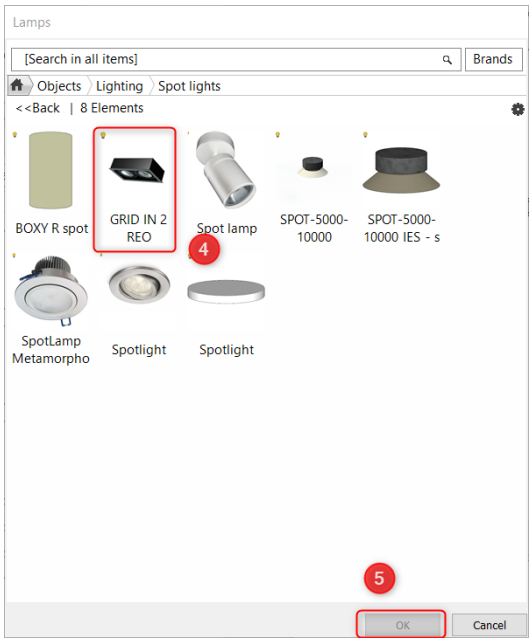
- To create a new lamp, click on the Green cross icon.

- By clicking on the Blue cross, you can find it in the Library.
- In the appearing window click on Back (1), so you know you are in “Objects library”.
- Here find Lighting folder (2)
- Choose Spotlights (3) subfolder.
- Click on the “GRID IN 2 REO” (4).
- Close the dialogue by pressing „OK” (5).

- Set the position: 0 mm, 0 mm and
- Click on Green tick – it is placed in the centre of the ceiling.

  The new object will appear in the Favourite list.



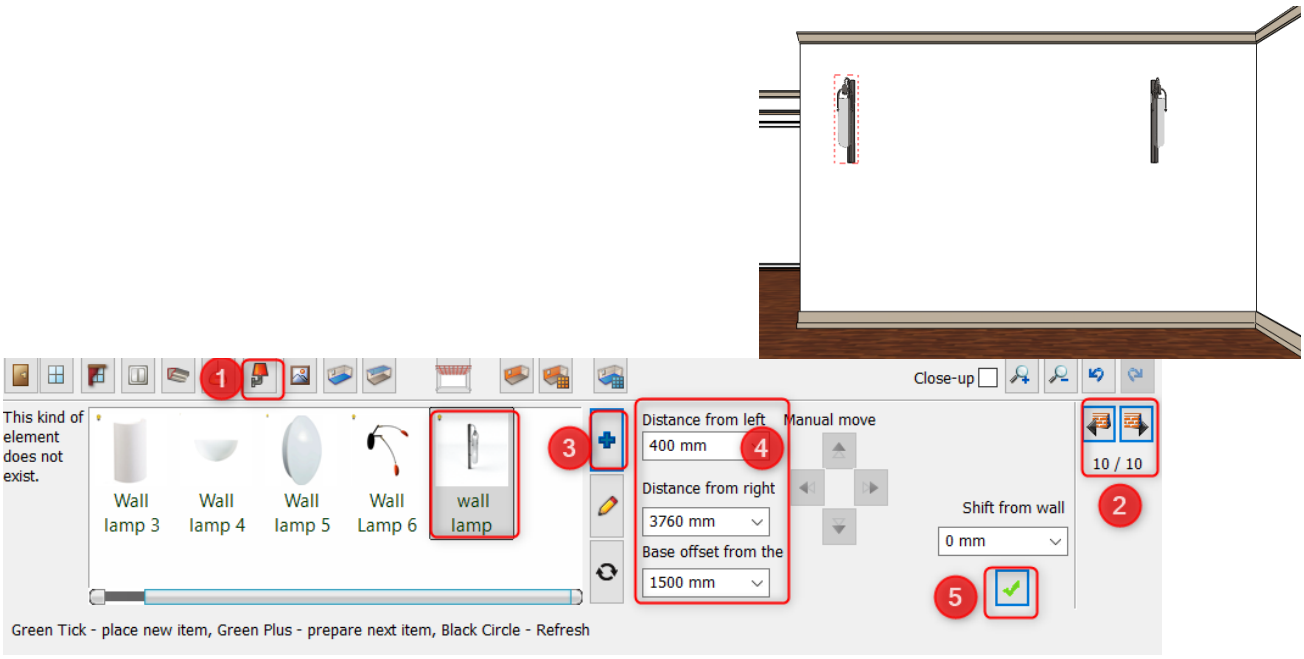


Place the spotlight in the middle of the room.

- X position: 0 mm, Y position: -400 mm.
- Click on Green tick – the spotlight will be placed. Finally, change the base offset to 2600 mm.

1.5.9. Add wall lamps

- Click on the Wall lamps icon (1) on the Toolbar.
- Select the 4160 mm long wall using Wall finder (2).
- Choose" Wall Lamp" (3) from the favourites and change properties: Distance from left: 400 mm, Base offset from floor: 1500 mm (4).
- Click on Green tick (5) – it is placed on the wall.



- Press the Green cross to place the next light:
  Set the "Distance from right" to 1000 mm.
- Click on Green tick– it will place the next lamp on the wall.

1.5.10. Add Painting

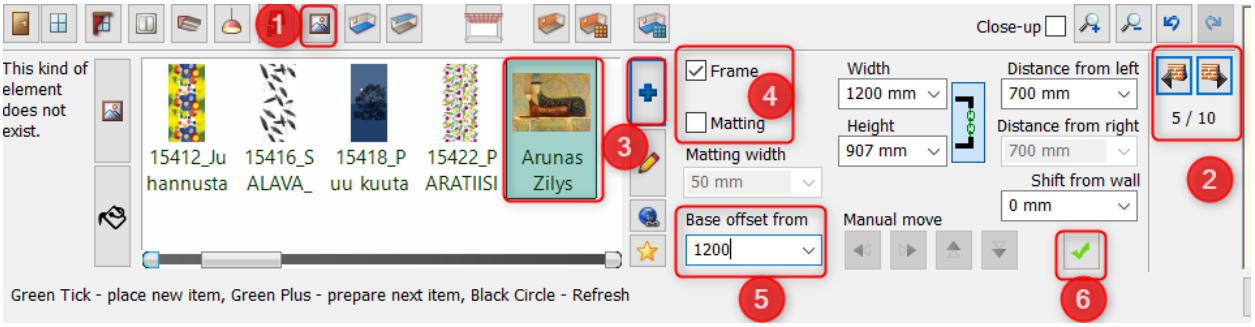
Place pictures, posters and other decorative panels on the wall surfaces.

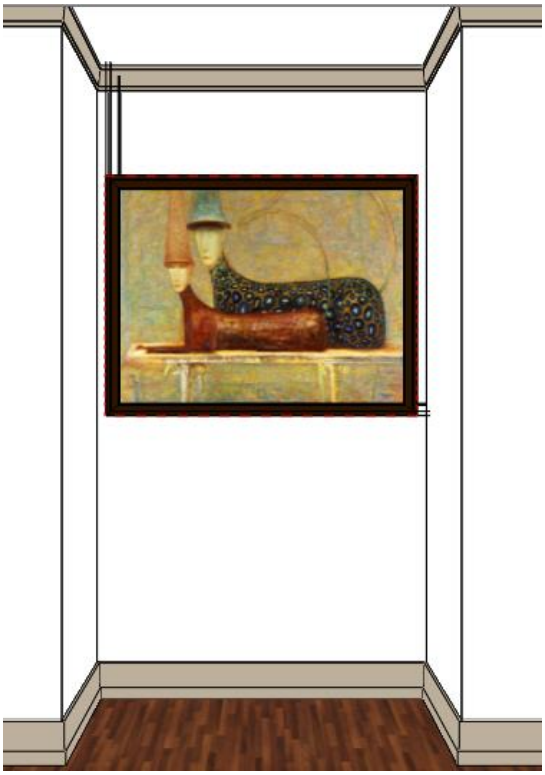
1.First painting:

Place picture on the recess of the wall extension.

- Click on Toolbar "Picture on wall" icon (1).

- Select the wall by using Wall finder (2).
- Choose" Arunas Zilys" composition from the favourites (3) or find it in the Material library by pressing the Blue cross icon.
- Change properties: Frame: ON, Matting: OFF (4)
- Change the "Base offset from" value to 1200 mm (5)
- Finally click on the "Green tick" button to place it on the wall (6).

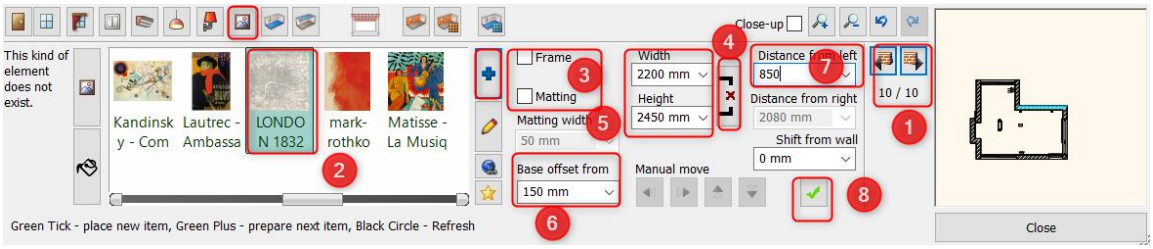




Second painting:

Now place a bigger poster on 4160 mm long wall between wall lamps.

- Select this wall by clicking on the Wall finder button (1).
- Choose "*LONDON 1832*" (2) from the library and change properties:

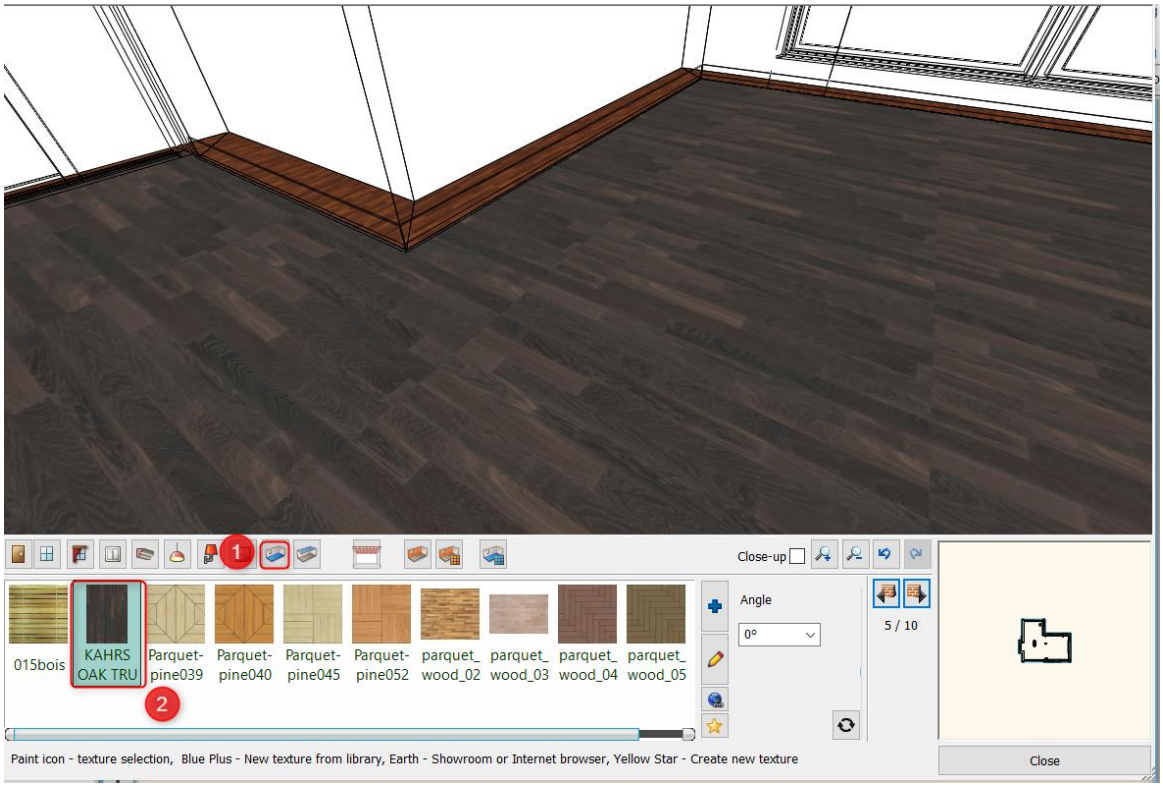


- Turn OFF the Frame and Matting (3)
- Enable to set the painting size manually (4), enter the width: 2200 mm and the height 2450 mm (5)
- Change the "Base offset from" value to 150 mm (6)

- Distance from left: 850 mm (7)
- Finally click on the "Green tick" button to place it on the wall (8).

1.5.11. Floor covering

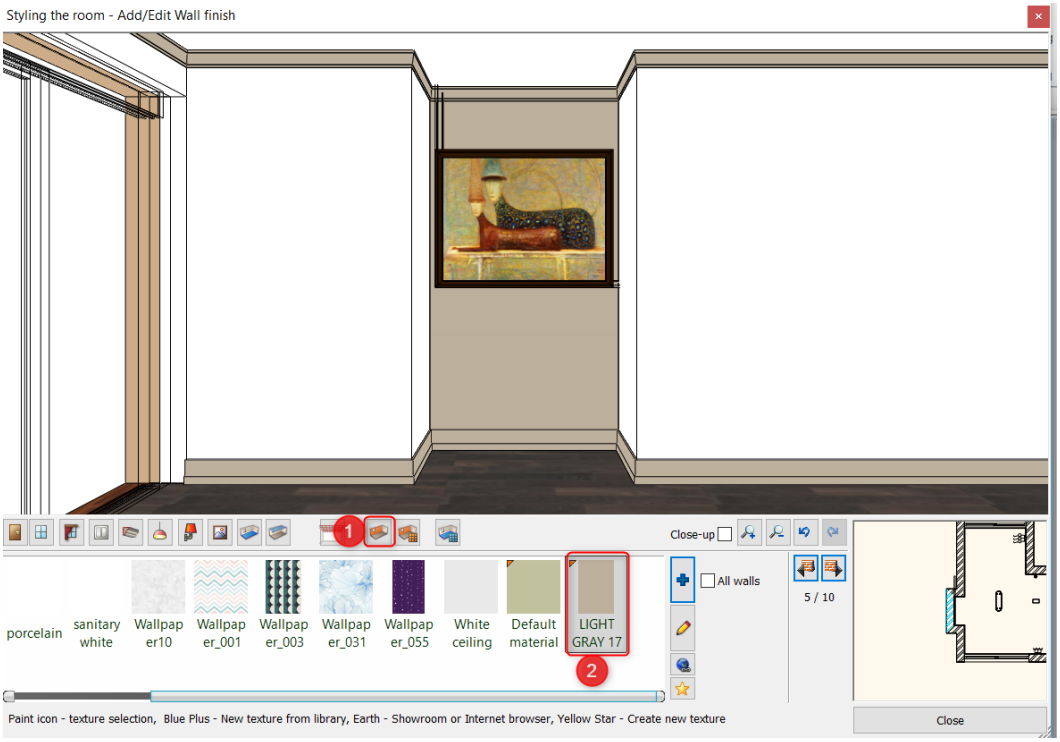
- You can choose from a wide range of materials to cover the floor. Click on the Add/Edit Floor finish icon (1) on the Toolbar.
- Choose "*KAHRS OAK TRUFFLE*"" from the library (2). After selection, it will be applied on the floor.



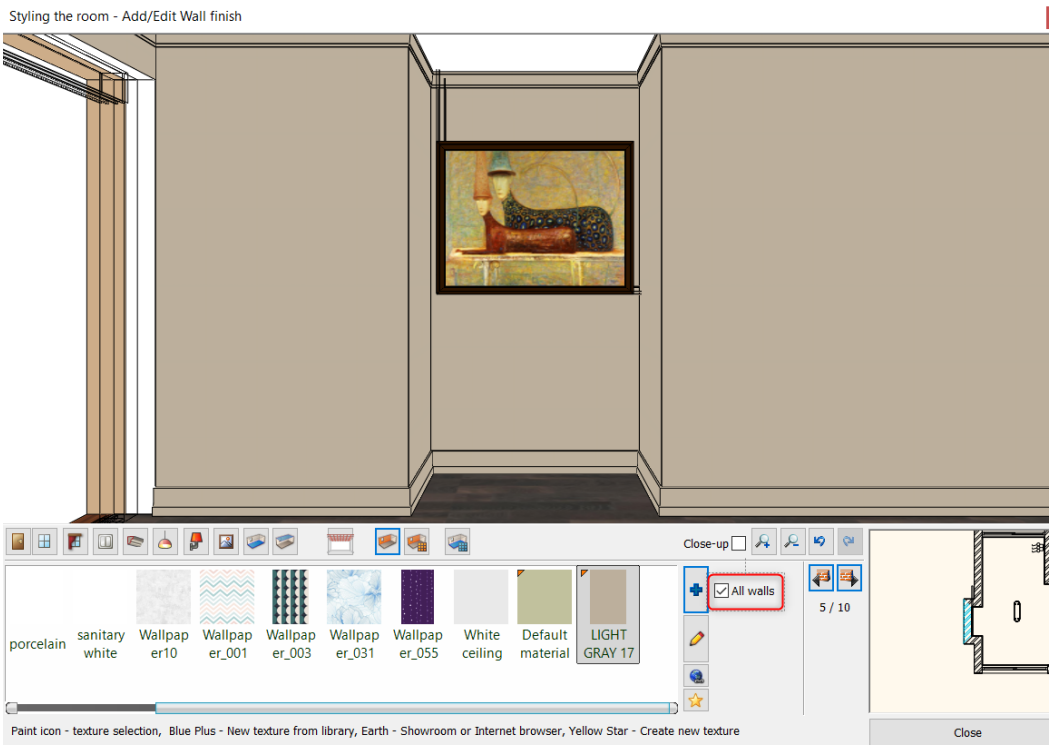
1.5.12. Wallcovering

Walls can be changed one by one or all of them at the same time. You can choose colours or wallpapers from the Library. Also, you can download wallpapers from the Warehouse or import from the Producer's website.

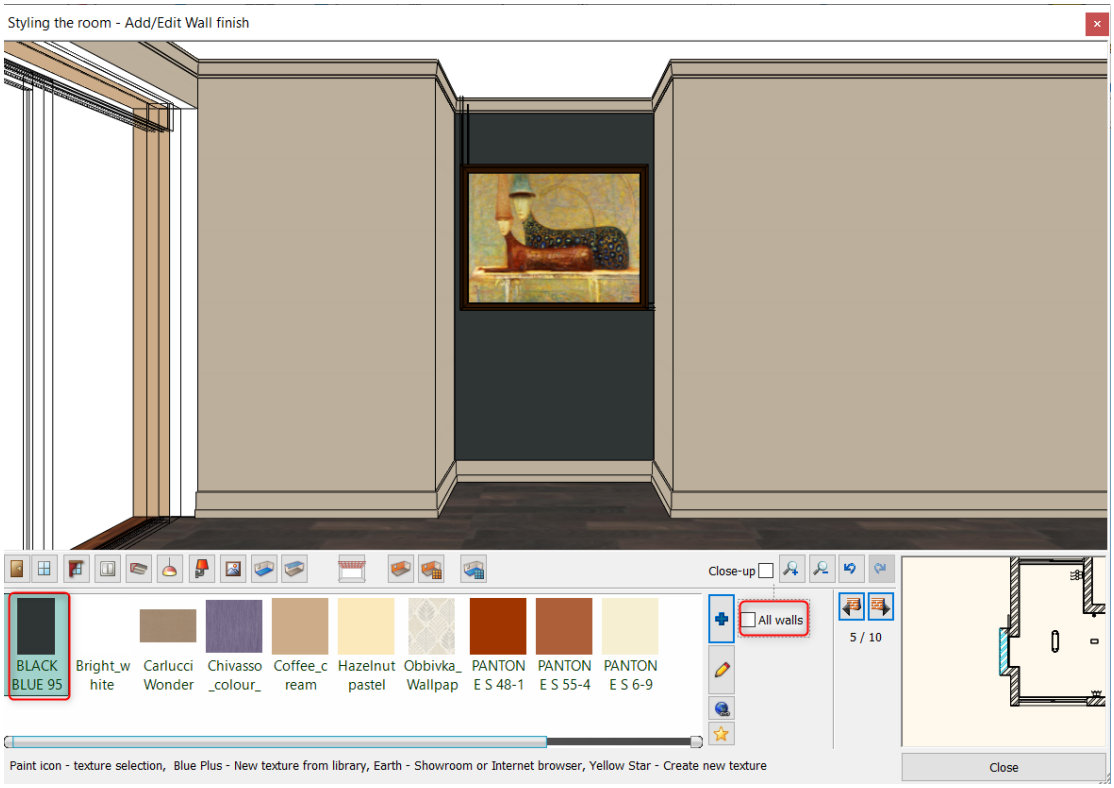
- Press on the Toolbar / Add / Edit Wall finish icon (1).
- Select “LIGHT GRAY 17” colour (2).



- Enable the "All walls" option to apply the selected colour on all walls in one step and then click on *“LIGHT GRAY 17”* again.

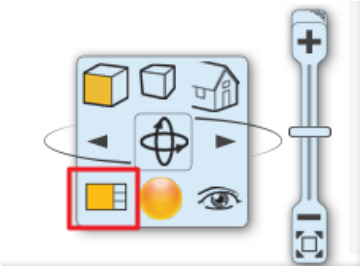


- Now switch off “All walls” option.
- Set “BLACK BLUE 95” colour, now this will be applied on the selected wall only.



- Finally, close the Room maker dialogue window.

1.6. Perspective 3D views



Click inside the 3D window, then the "Magnify View" button on the Navigation bar, this way the 3D window will appear on the screen left side.

By clicking on the “Magnify View” again, the 3D window will expand to full screen. Clicking again, the screen will regain its original size.

The “Magnify View” can change the content of the windows.

Similarly, to 2D content, you can zoom in/out the 3D model. Also, you can move and rotate it. You can do it by using the slider on NaviBar or the mouse wheel.
Clicking on the rotation icon the model can be rotated in 3D.

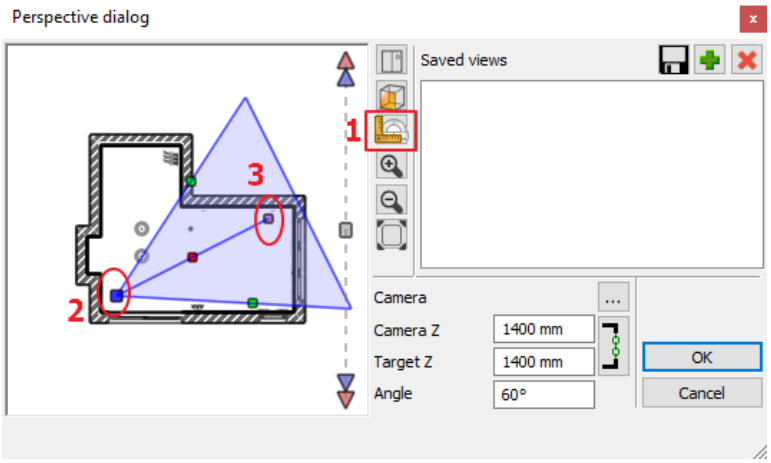
Now we will set different perspective views which will be a great help later to look through different rooms. The 3D window is active, click on **NaviBar** and select **Perspective dialogue** icon . Define four different perspectives and save them.

Perspective view dialogue

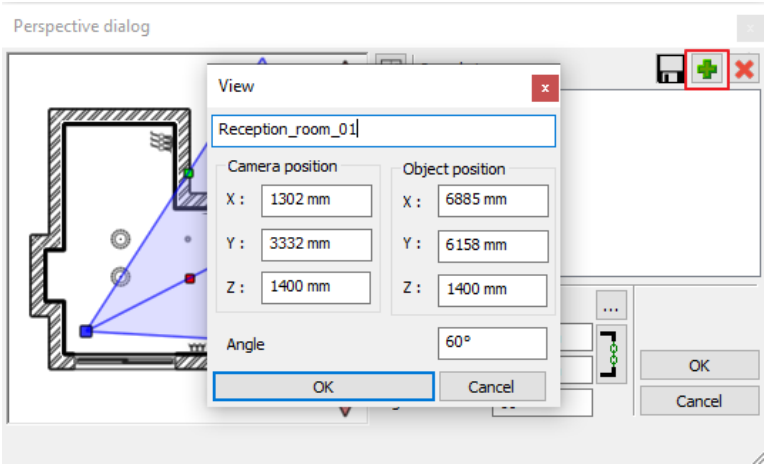
Open the Perspective Dialogue window.

The top view of the model will appear here. We recommend to select the 2D view.

- Click on the 2D View icon (1). Now click on Blue sign (2) symbolizing the camera and hold down the mouse left button while moving the camera to the right bottom corner of the model. Now select the lilac sign (3) symbolizing the target point and move it to the top left corner.

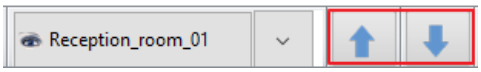


When you are ready click on the green cross icon to save the view.



Repeat it to define another perspective view. Now the camera point should be the top left corner of the model, and the target point should be the right bottom corner. Save it again by pressing the Green cross. Create two more perspective views, and by pressing OK, you can close the dialogue window.

You can navigate through your saved views easily by clicking on the blue arrows or use PgUp and PgDown on your keyboard.



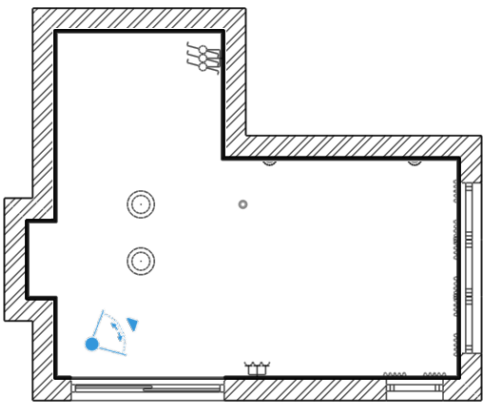
Fast perspective settings

When the perspective views are ready, and the dialogue window is closed, we can see a new icon on the floor plan.

With the help of this camera icon, you can quickly set the perspective views.

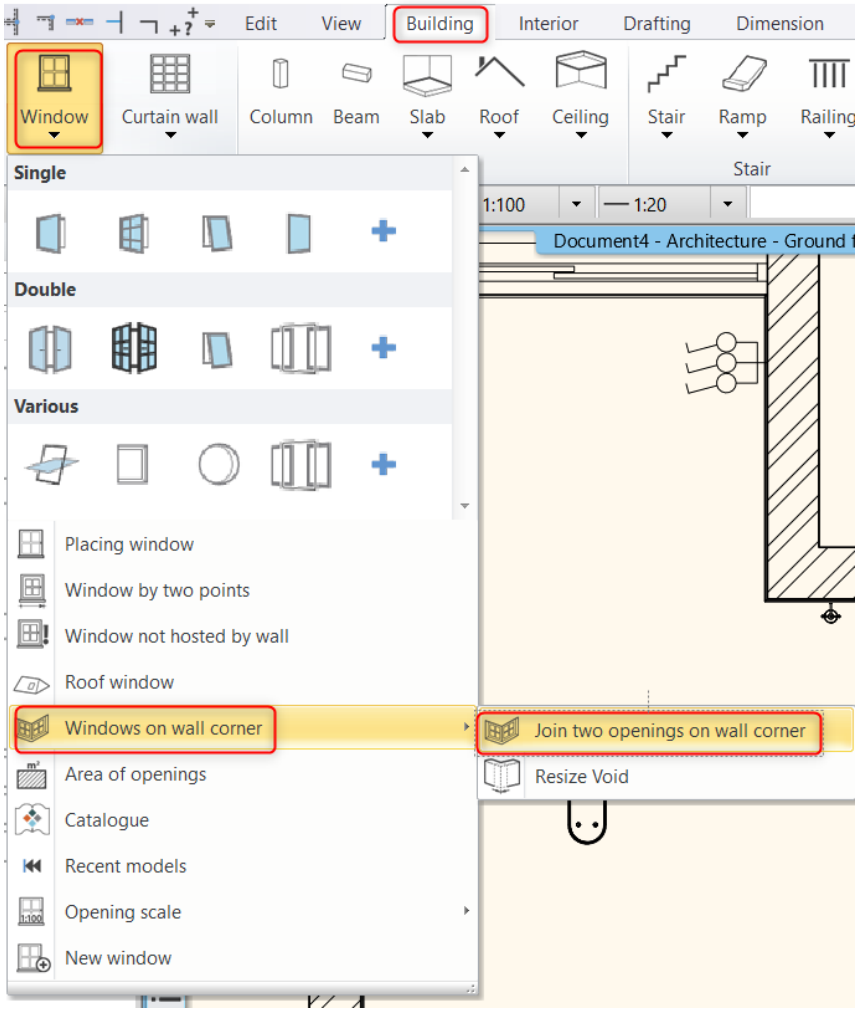
This camera icon makes it possible to show what you would see if you were standing at the given location on the floor plan.

By clicking on the circle, you can move the camera. By clicking on the triangle, you can rotate it, so that way you can change field of view.



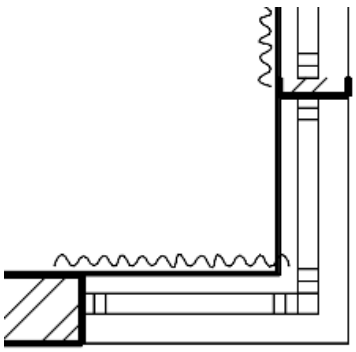
1.7. Windows on wall corner

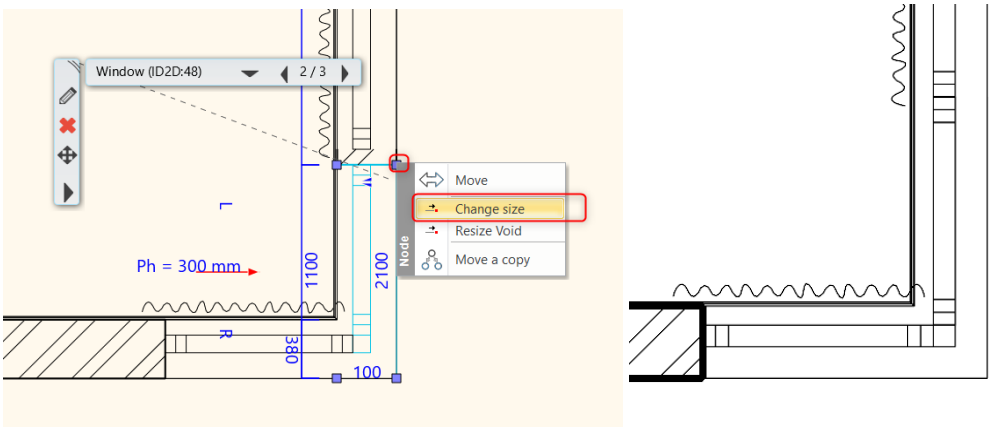
Now join the two windows on the wall corner to create a corner window.
Use the **Join two openings on wall corner** command from the **Ribbon bar / Building / Window / Windows on wall corner** menu.



Select the first and second window with one click.
Modify the width of the two joining corner windows.

- Select one window of 1100 mm length.
- Click on the blue dot corner marker and select the **Change size** command.
- Adjust size and snap it to the larger window.

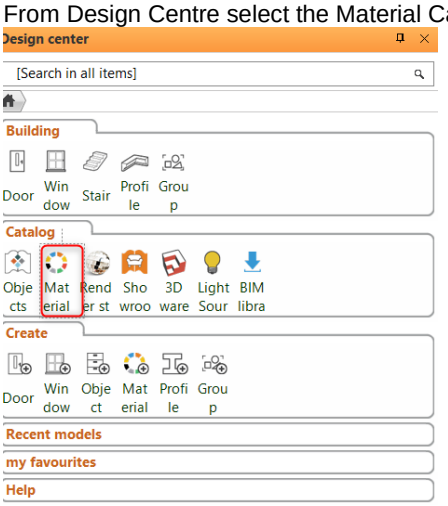




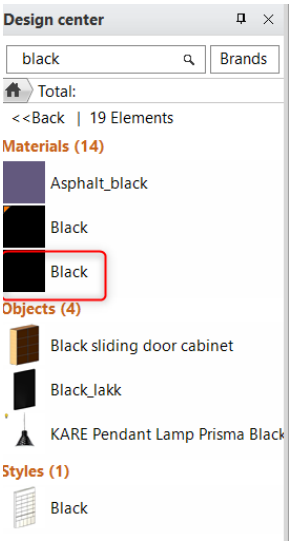
1.8. Change materials by using the Drag and Drop method

Next task is to change materials on all openings.

- From Design Centre select the Material Catalog.



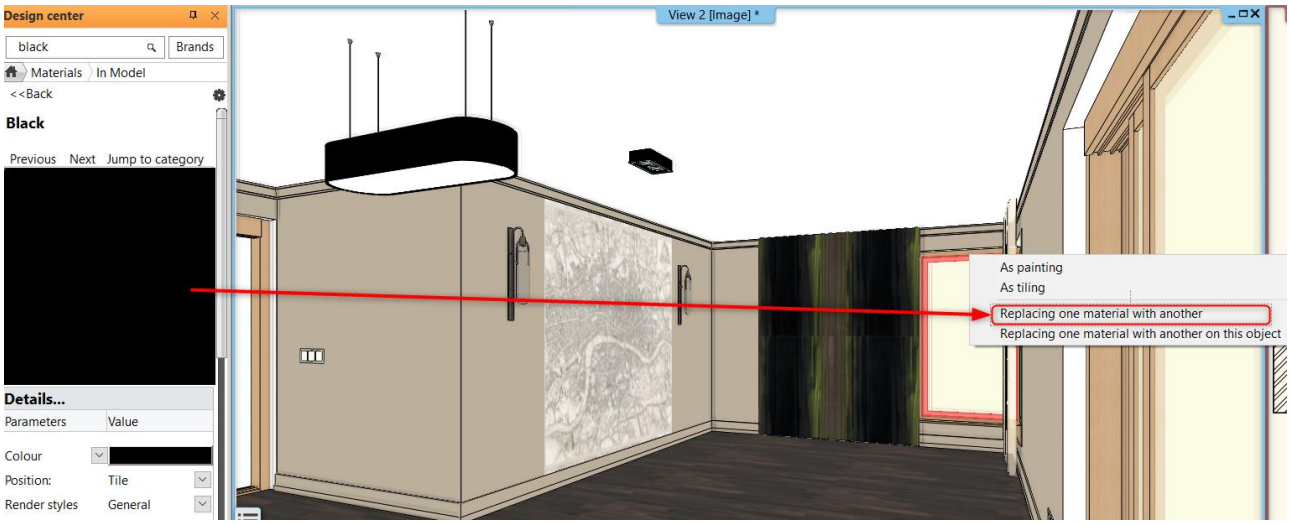
- Type “Black” in the search field, then click on it.



- Now drag the Black material and move it over to any window frames in the 3D window, while you are holding down the mouse left button.

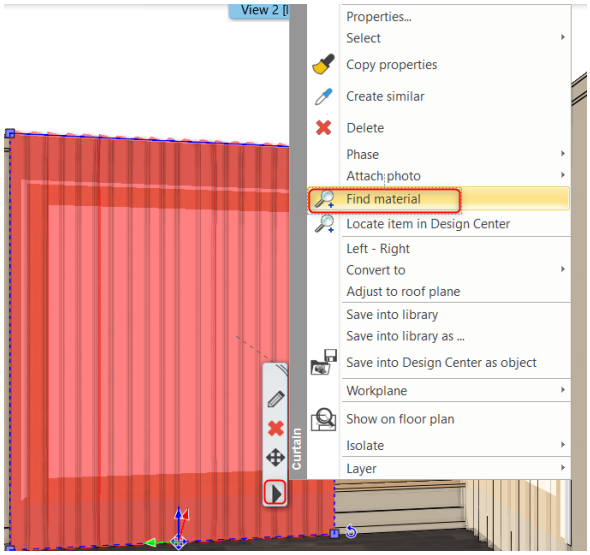
  The nature of Drag and drop method is the following: - Hover the mouse cursor over the item to be placed. Press down the mouse button then move the mouse with the left button down onto the drawing area and release the mouse button up.

- Release the mouse button up and choose from the appearing options “Replacing one material with another. This way, you can replace all the same material to a new one in the given project in one single step. In our case, the window frame material is changed to black.

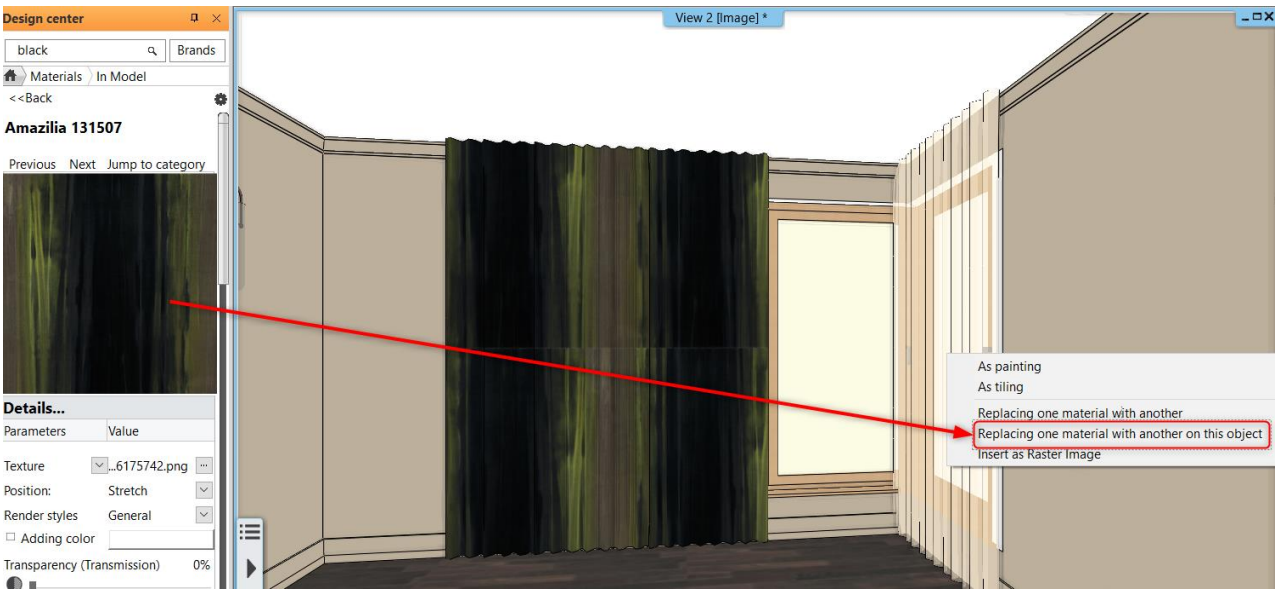


Finally, let’s replace the material of the second curtain to that greenish one which was used before on the other curtain.

- Activate 3D window and select that view from where both curtains can be seen well by using the blue arrows on Statusbar.
- Select the green curtain, now on the appearing floating menu, click on the black arrow to open the local menu.



- From the local menu select the “Find material” option. The program automatically identifies the material. As a result, the “Amazilia 131507” material will appear in the Design Center.
- By using the previously shown drag and drop method, place this material on the other curtain. In this instance, select “Replacing one material on this object” option.

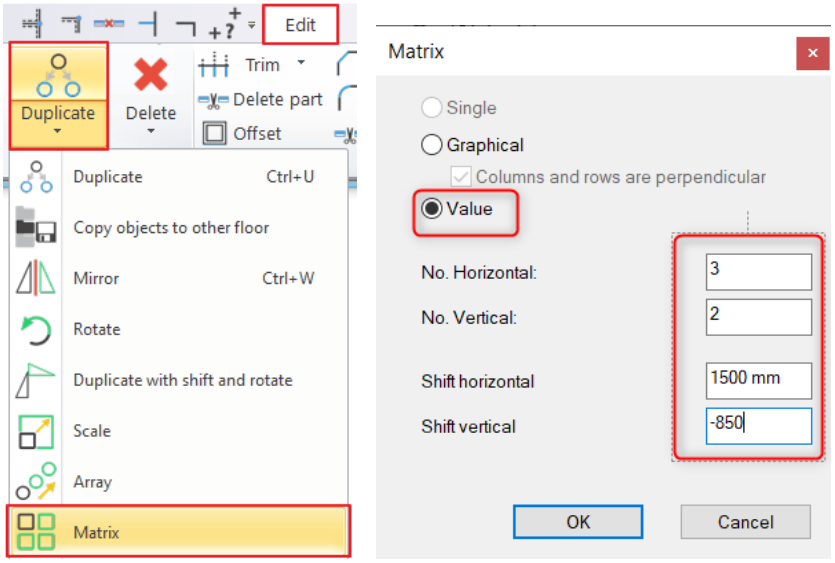


1.9. Lights editing – create copy - Optional

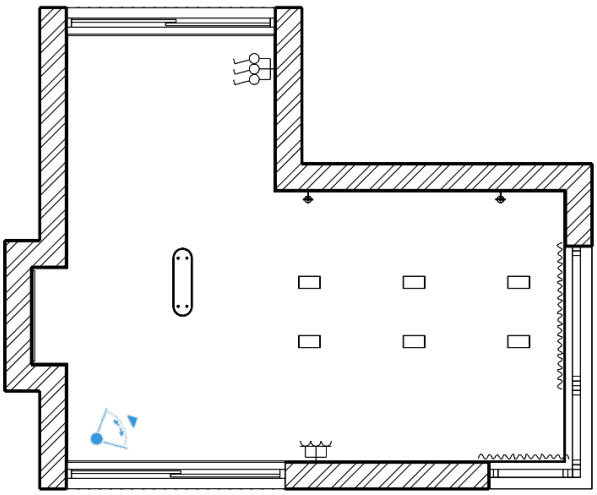
This time we will duplicate the spotlight so we could arrange them in a 3x2 matrix.

Activate and enlarge the 2D drawing.
When you click on any drawing items, those will be selected. Selected items are represented with different colours and also appear the floating menu bar and a few makers around them.

- Select a previously placed spot lamp on the floorplan.
- Then click on the **Ribbon Bar / Edit / Duplicate / Matrix** command.
- Click on any points of the spot lamp.



- In the dialogue window, choose the Value option.
- Set the No. horizontal: 3, and No. of vertical: 2.
- The distance between the lamps 1500 mm and -850 mm.
- Place the lamps.
- You can see the result on the floor plan and in the 3D window.

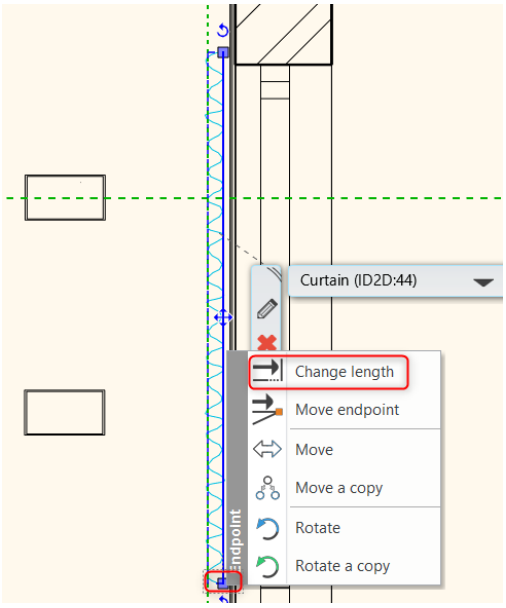


1.10. Editing curtain

In the previous example, we demonstrated that a selected item is represented with different colour and also appear the floating menu bar and a few makers around it.

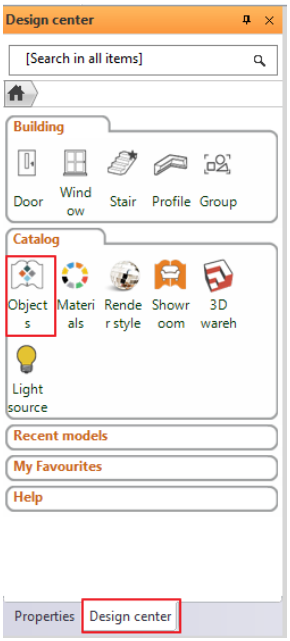
These markers are assigned to a selected item and situation.
In case of a curtain, you can change the width with these markers.

- Zoom in the curtain on the floor plan.
- The curtain is highlighted with a light blue colour. Click on the blue dot marker at the bottom. Select the "**Change length"** command from the appearing menu.
- Make the curtain narrower.



- Repeat these steps on other curtains.

1.11. Place furniture



Now we will furnish the room. Leave the floorplan window active.
On the left-hand side, you can find the Design Center.
In the Design Center, you can find building parts, groups, symbols, objects, furniture, materials and many more for your design.
You can browse the libraries or search an item by using the search field.

- Click on the **Design Center**. Choose Catalog – Objects folder. Now all subfolders appear.

The Furniture list to be placed:

Husk-Sofa-BB-Italia, Puff 001, Mesina 2, Mesina 3, WALL TV OK, Cerona Buffet 240x50x75, rug, table, Industrial table lamp, Modern planters, table BoConcept-Milano-table-black, chair 001, vaso, DWR_Photon Rug_Cream, commode 001, candles, deco, Parna 001

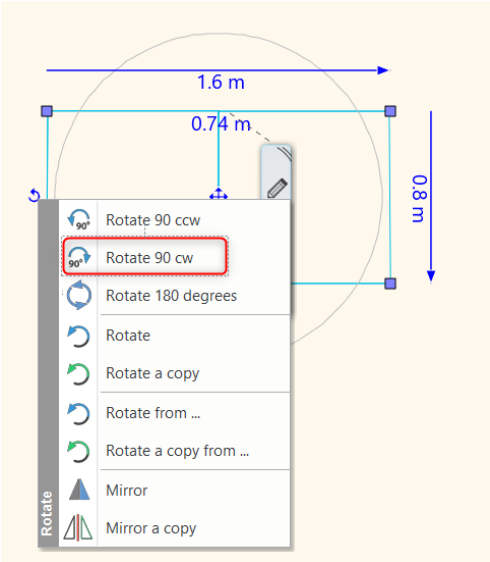
- Select an item, e.g. sofa (Husk-Sofa-BB-Italia).
- Drag and drop it to the floor plan. Move the mouse and click to place it.

Place other furniture as well.

Moving furniture

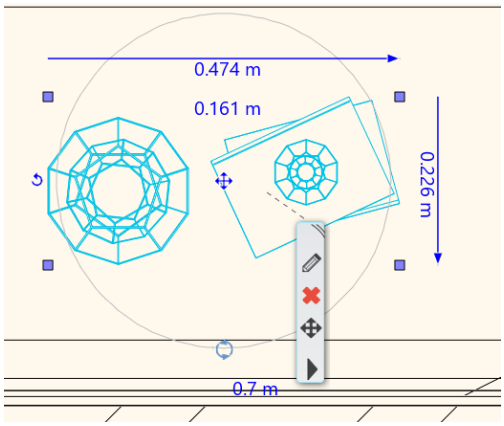
Next step is to rotate the table by 90 degrees:

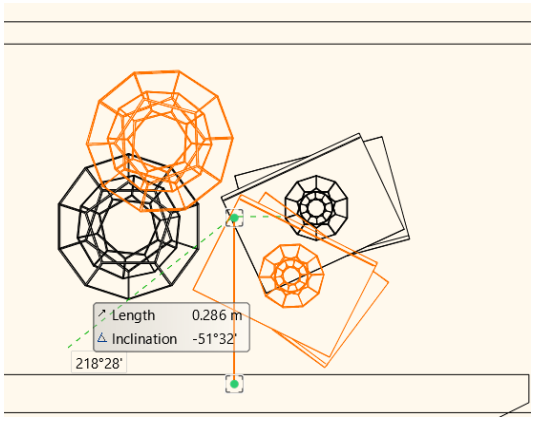
- Click on the table. The selected item highlighted in light blue. Click on the rotation marker. Select any commands “Rotate 90ccw/cw” from the appearing menu.
- The table will be positioned according to the selected command.



There is another method to rotate items. Now turn the television to face towards the dining room.

- Click on the television and select “Free rotation marker”. This way, you can rotate an object around its own axis and define the angle you want to move.

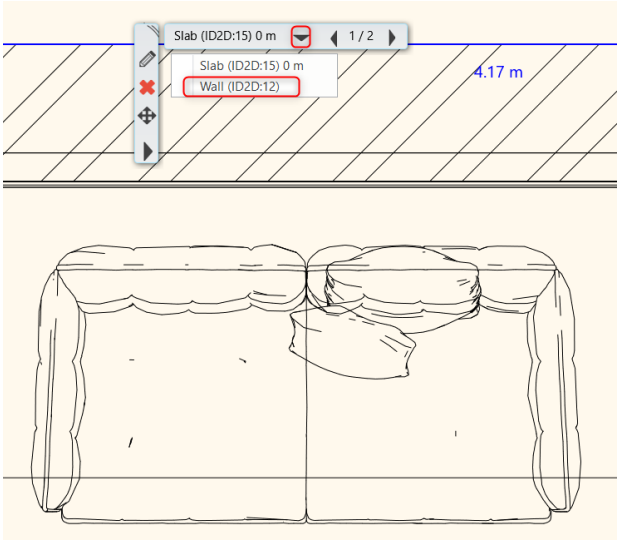




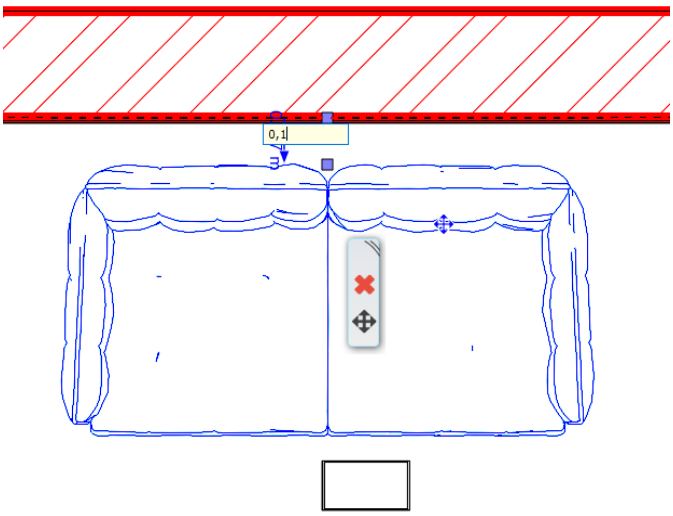
If you want to select multiple items, hold down CTRL key and simultaneously click on other items.

Now we move the sofa away from the wall by 100 mm.

- First select the wall, then the sofa by holding CTRL key down. If accidentally the slab is selected, click on the black arrow and choose the wall from the list.



- To modify the distance value, click on it and type the new figure.

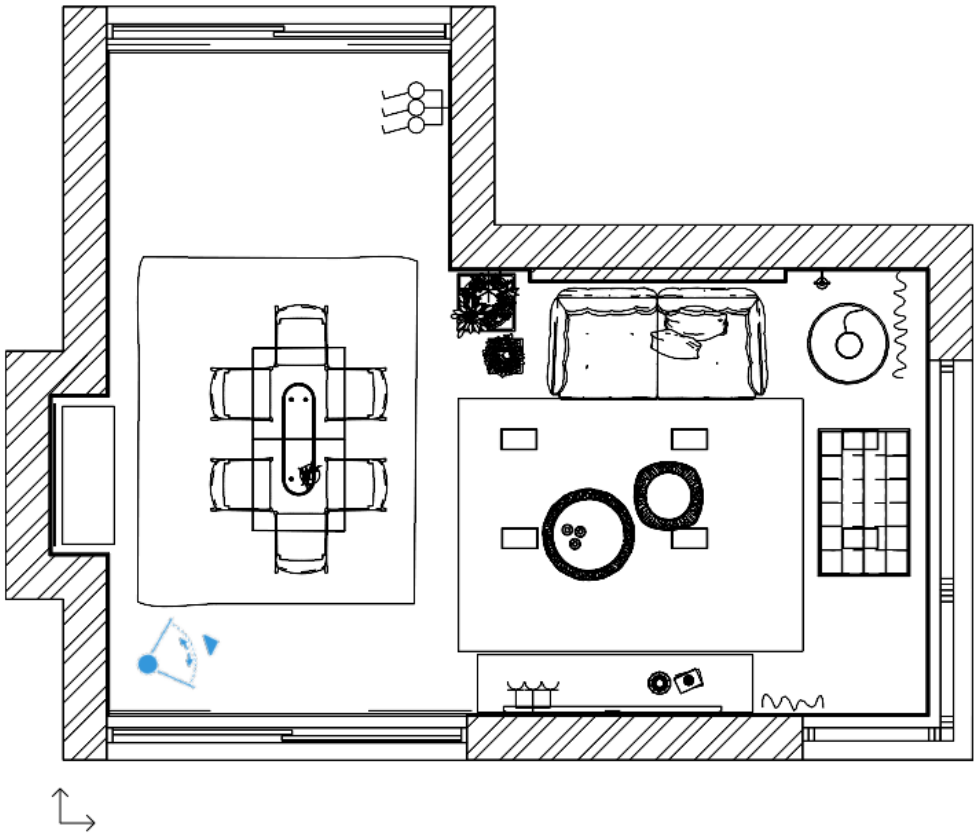


Place Objects in 3D:

Let's place candles on the table on the 3D model.

- To place an object on an existing 3D surface first activate the 3D window.
- Find the candle ("candles") and drag and drop it into the 3D view. ARCHLine.XP recognizes the 3D surfaces.
- Click on a surface where you would like to place the object.

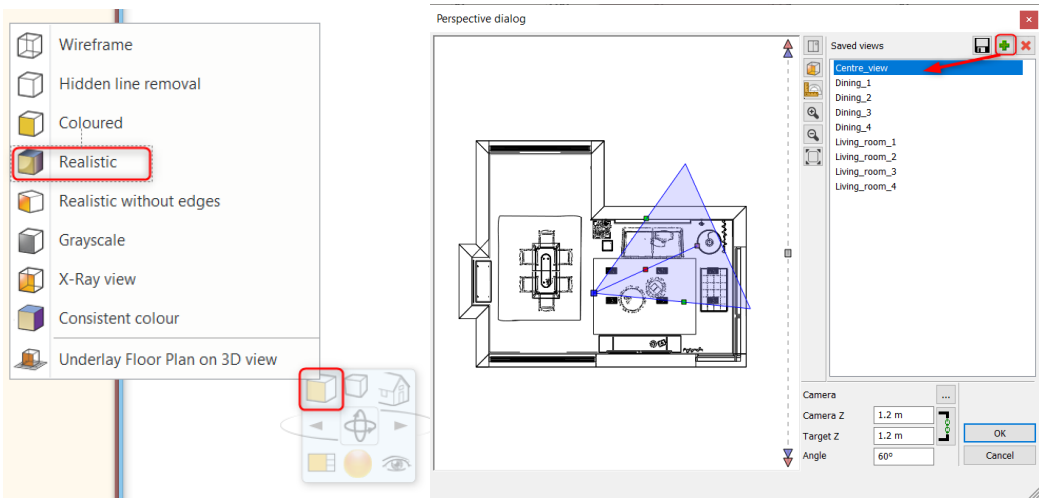
Repeat these steps to bring even more objects into the 3D interior.



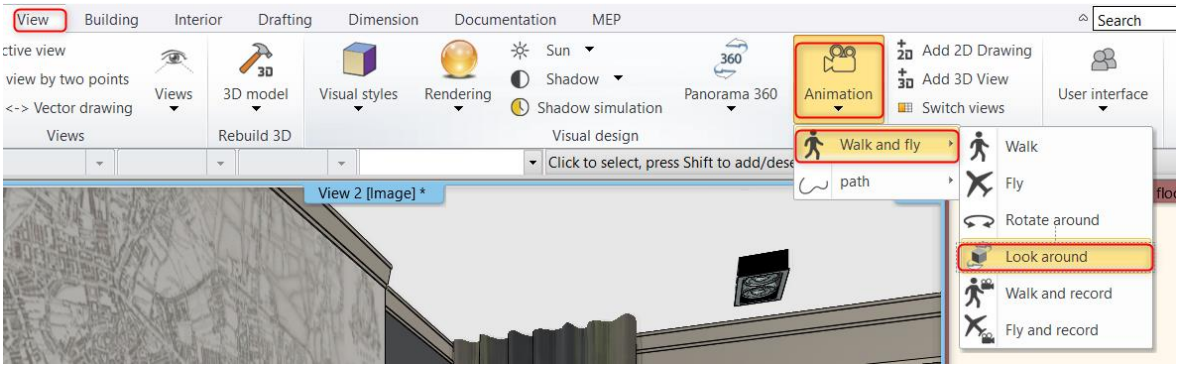
1.12. Visualisation

In the 3D window, there are lots of ways to display the model. So far, we used the coloured 3D model preview. Activate the 3D window.

Now select the “Realistic” option to get a more realistic representation of the 3D model.
Now we define a “Centre view” in the Perspective dialogue, so the camera will be in the middle of the room.



- To look around click on **Ribbon bar / View / Animation / Walk and Fly** and choose **“Look around”** command.

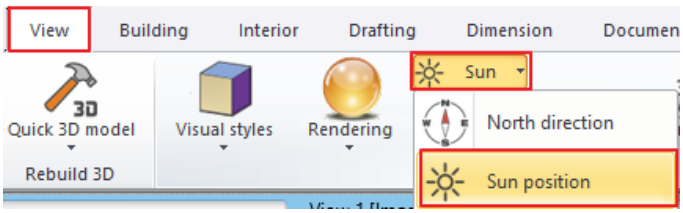


By pressing ESC command, you can stop the animation any time.

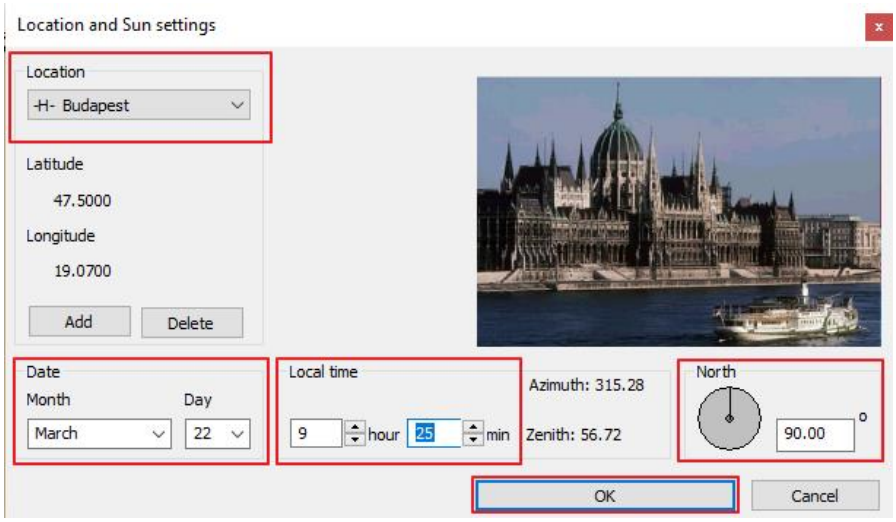
1.12.1. Shadows

You can visualise the 3D model with shadow effects.

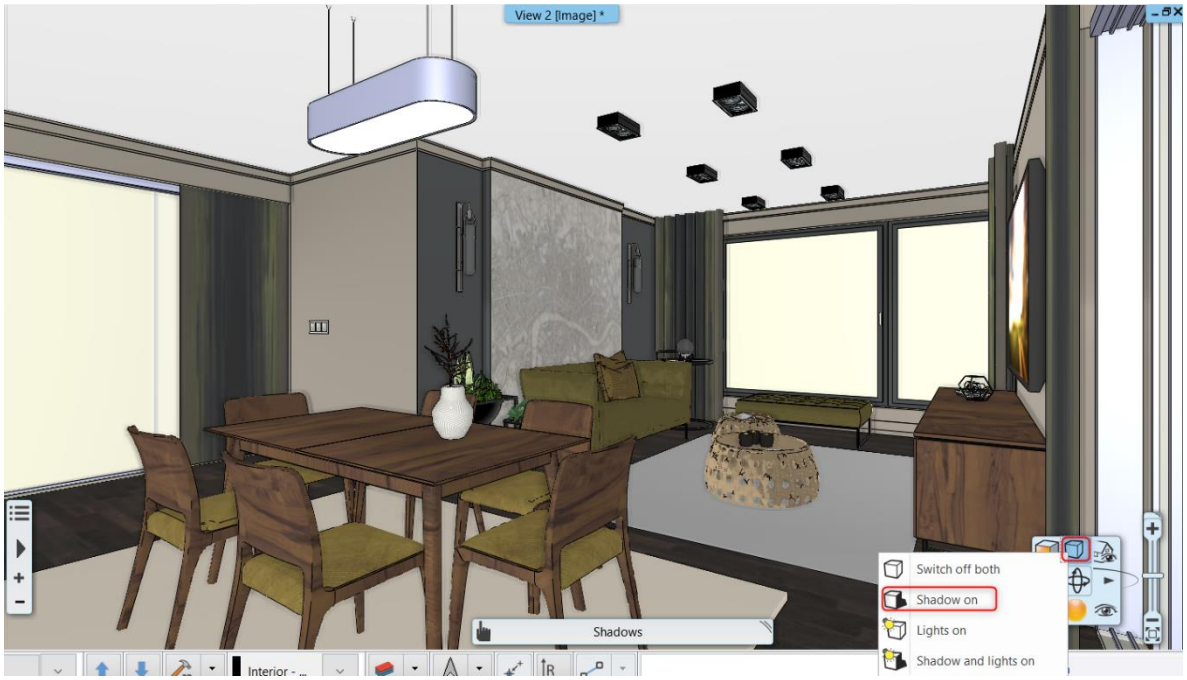
- First activate the Sun setting tool from the **Ribbon bar / View / Sun / Sun position** option.



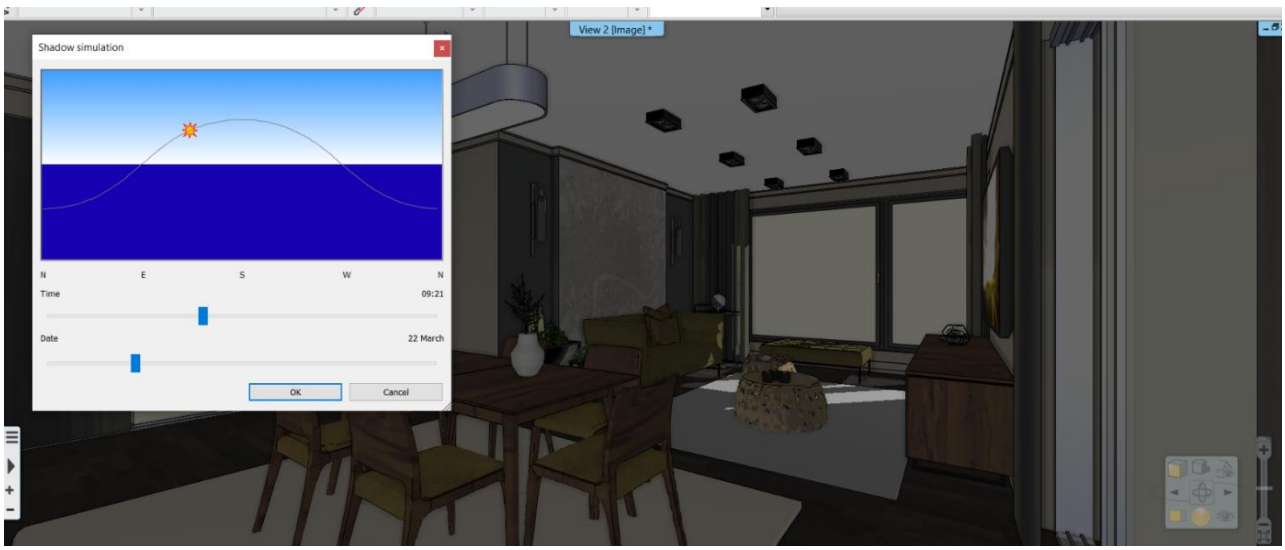
The exact shadow calculations will be given after setting the location, the date, the time and the north direction.



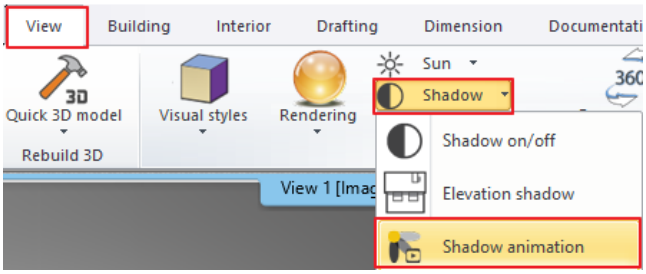
On Navibar turn on Shadow. The 3D model will look as it is shown below:

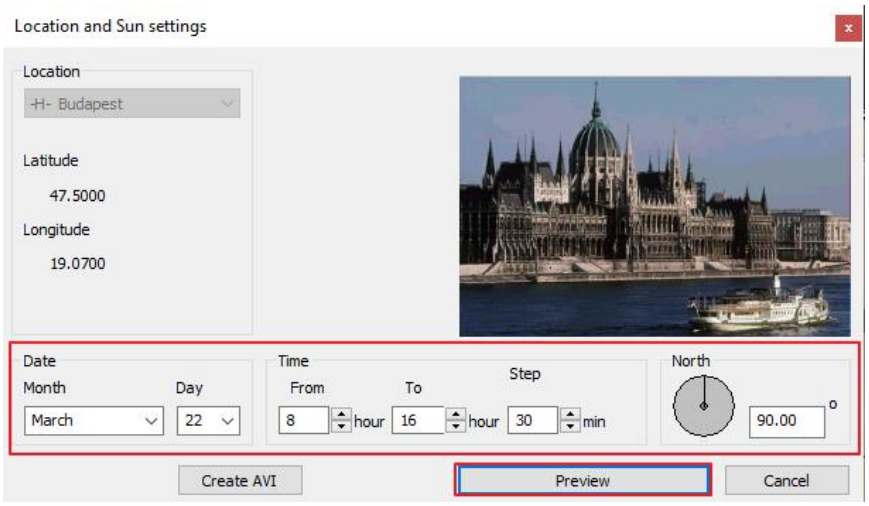


Choosing from the **View menu / Shadow animation** command the date and time can be selected by the slider, which will be followed by the model.



When a time interval is given, then a shadow simulation can be done. This command can be found under the **Ribbon menu/ View / Shadow simulation**.



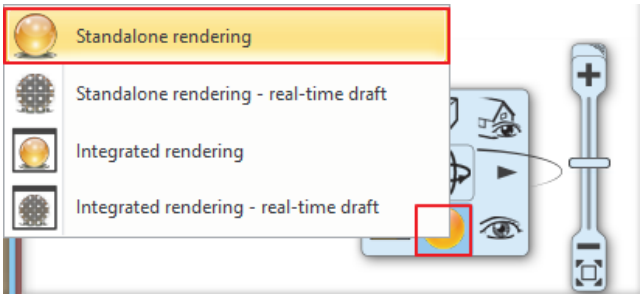


1.12.2. Rendering

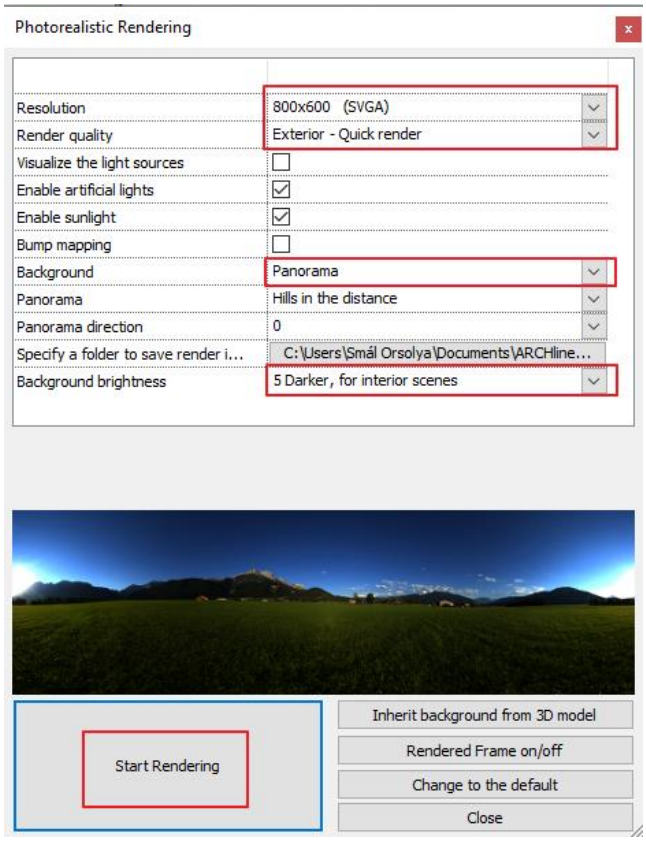
Finally, we create photorealistic renderings.

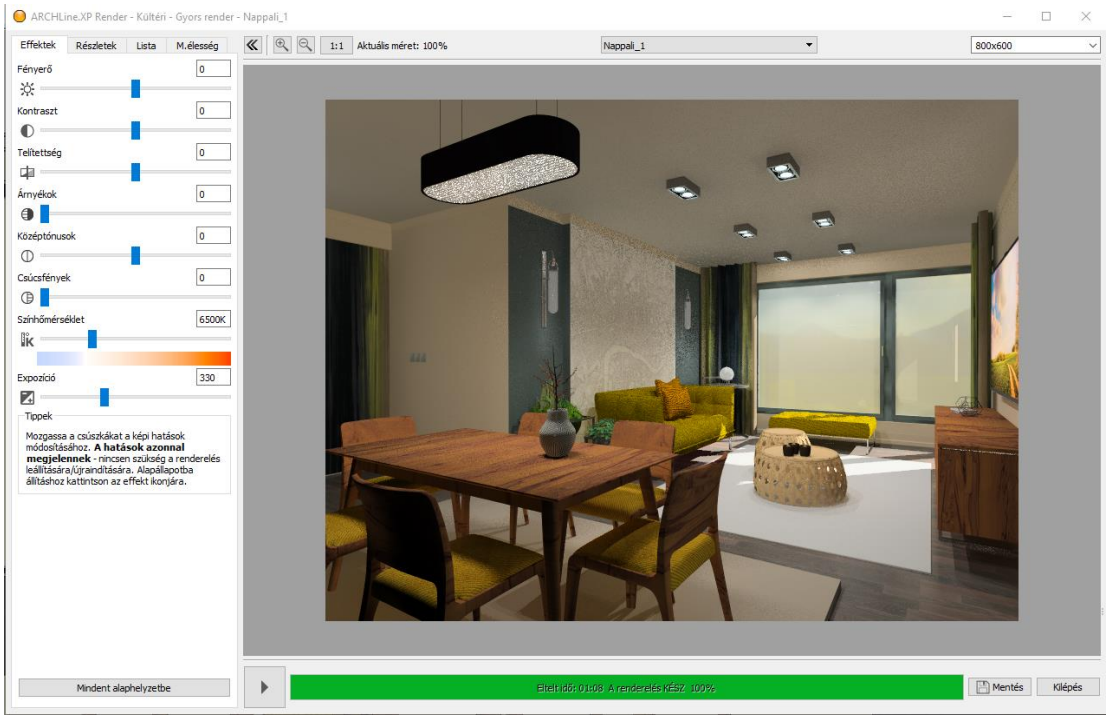
To get the best quality photorealistic rendering, we might have to create 10-15 images.
We suggest to use only the low resolution and low quality for the first rendering, therefore, choose Exterior-Quick render as Render Quality.

- Click on the Rendering icon on the Navibar and choose “Standalone rendering “option.



- Set values as it is shown on the diagram:





Based on the rendering result make changes on the model and repeat the rendering.
When you are satisfied with the rendering image, change the rendering settings to “Interior – Quick render”.
Only now set values to high quality and resolution, do rendering again to get the final result. Please expect longer rendering time in this case.

Using this method, you can save time.

When the rendering is complete, save it. Modify the effects if those are needed and then save the image again. This way, you can compare the different versions.

Workshop 2: Foundation

2. Workshop: Foundation

2.1. Introduction

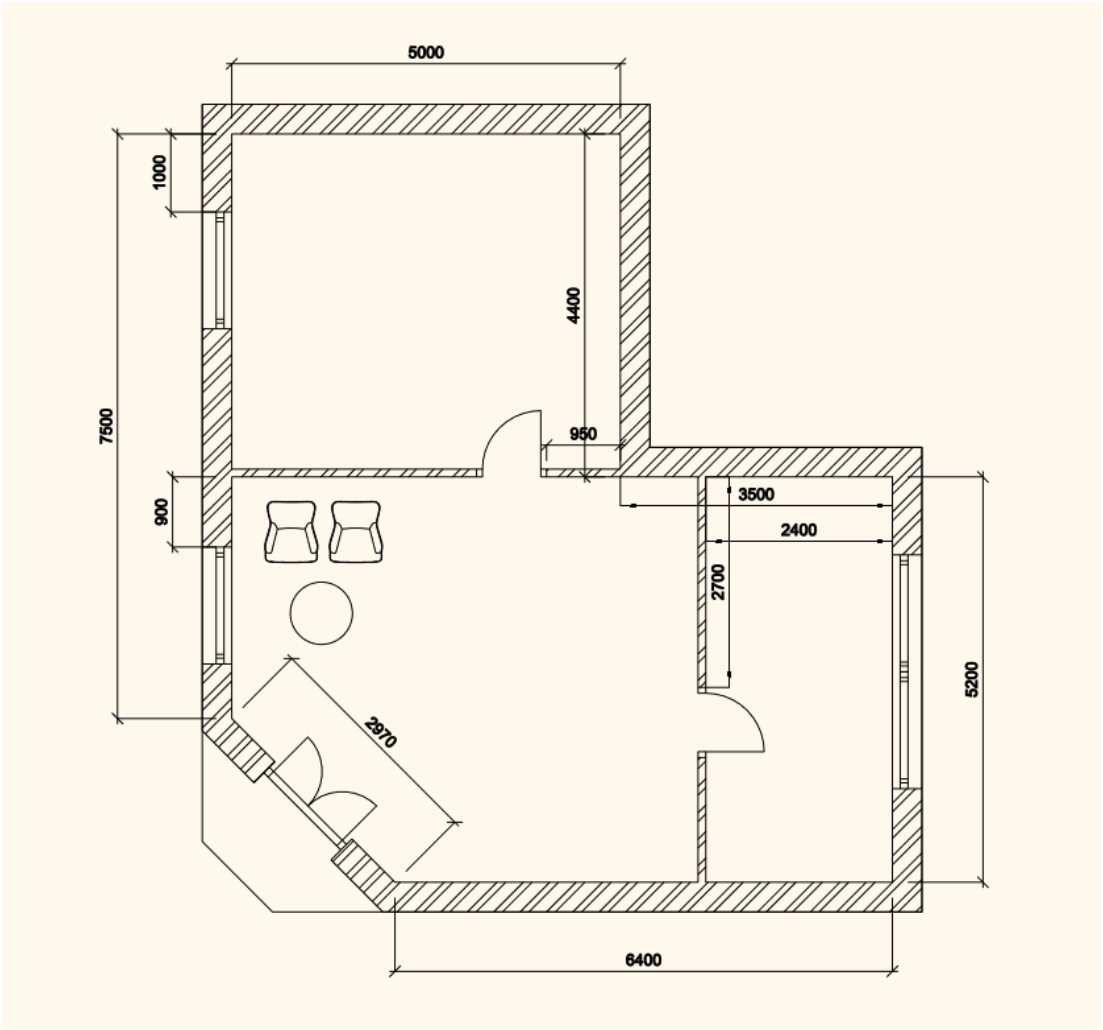
This tutorial will introduce the fundamental basics of ARCHLine.XP®. The goal is to help you to learn the appropriate tools and concepts for everyday work in an easy to follow and logical way.

We recommend this tutorial to everyone:

- who took part on ARCHLine.XP® Reception Room workshop and wants to know how to use the software from now on.
- who would like to learn the tools that are necessary when drawing a completely general layout

ARCHLine.XP® is compatible with the Windows operating system and it is using the terminology of it when talking about menus and icons, and other interface elements. It is true when we talk about how to create, select, edit items or clicking (left mouse button) to launch a command (for example by clicking on an icon or selecting one from the menu), and to print on printers installed in Windows. The tutorial goes through the basic functions of the software, the knowledge of which is necessary to solve design tasks and to use the program effectively. The software is far more powerful than what you will learn from this tutorial. You can learn about additional features by using the built-in "Help" and attending the courses and trainings or by experiencing by yourself.

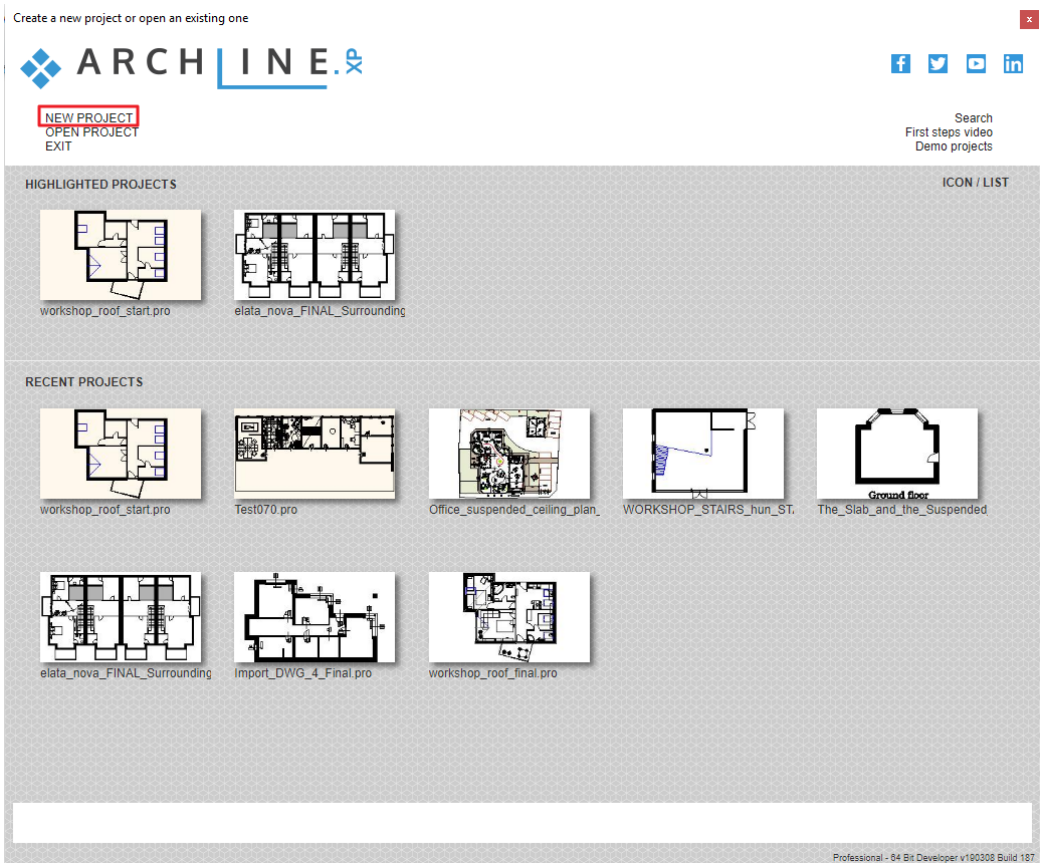
In this tutorial, we will create the following layout:



- Open your internet browser and watch ARCHLine.XP Foundation video tutorials: https://www.archlinexp.com/education/workshops/workshop-application-preliminary

2.1.1. Welcome Dialog Box

When ARCHLine.XP® starts, you can create a new project on the Welcome dialogue box by clicking on the New Project button.



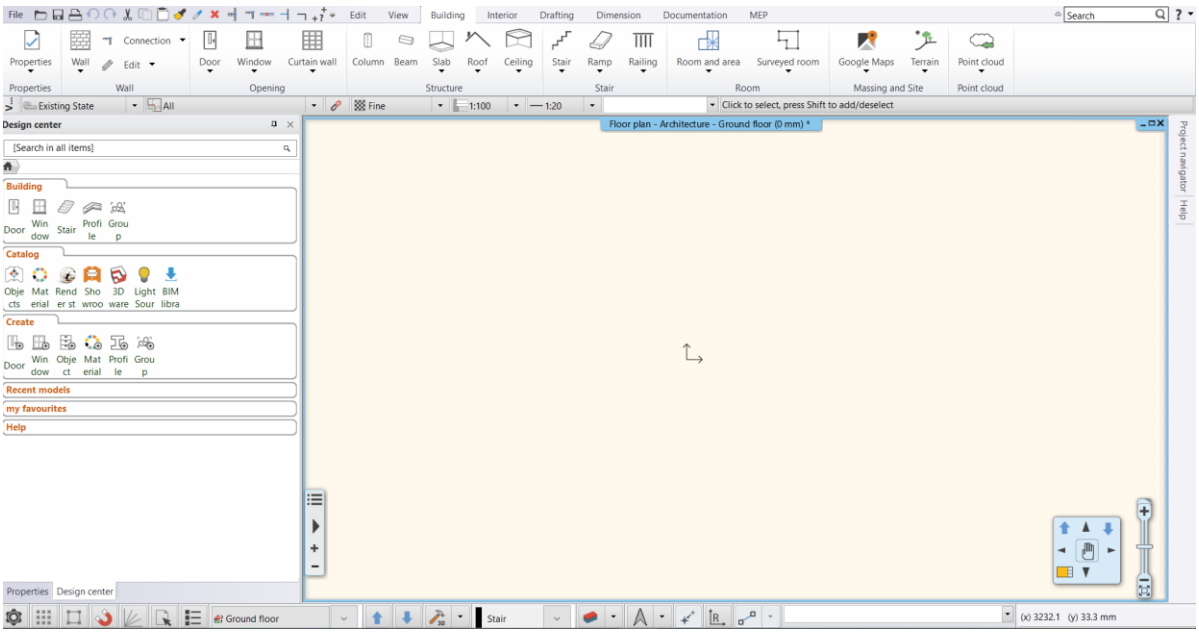
Start a new project

- Click on the **New project** button in the Welcome dialogue box.
- This will create a new blank project with an empty floor plan here you can begin your work.

2.1.2. Interface

Before starting the actual work, it is worthwhile to take a look at the ARCHLine.XP® software interface and its main components. Thus, later in the tutorial, it will be easier to associate specific names and concepts to the appropriate parts of the interface.

The ARCHLine.XP® interface has the following main parts: File menu, Toolbars, Ribbon bar, Design Center, Properties, Project Navigator, Coordinate bar (Status bar), Help and Drawing area.



For your convenience we suggest you to work with the default layout of ARCHLine.XP®.

If the interface is other than the default layout, click on the arrow at the end of the Toolbar. Opening the dropdown menu please use the **Toolbars / Reset interface to factory default** command. This way the default toolbar position will be restored.

On the right side of the screen appears the Project Navigator by default. If you want to hide as it is shown on the picture above, please do the following. Move the mouse over the pin icon then click on it. The way things are this will appear only when the mouse is hovered over.

By default, on the right side of the screen, the Help panel appears next to Project Navigator. The Help panel shortly introduces how to use the currently selected tool. It will show an image (optional) and the steps for using the tool and the special options (if any) related to the tool. The advantage of the Help menu is that you can follow the tool description while you are working.
Tooltips can also speed up the work. If you want to hide as it is shown on the picture above, please do the following. Move the mouse over the pin icon then click on it. The Help menu his will appear only when the mouse is hovered over.

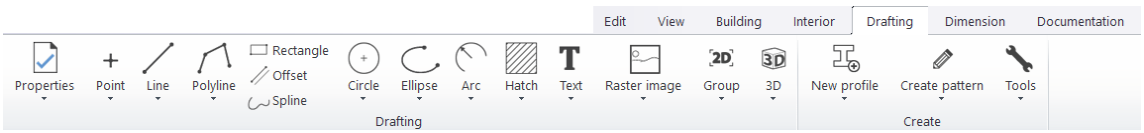
Working with ARCHLine.XP®, the Ribbon Menu and work area is used mostly. On Ribbon Menu can be found the most frequently used tools organized in groups such as Building, Drafting, Interior tools. The tool groups can be opened one-by-one so that way only, the most essential tools will be displayed.

The Ribbon Bar

The Ribbon Bar is a comprehensive catalogue of commands using to create objects. They are arranged in groups. It's logical and fast.

Opening tool groups on Ribbon Menu

- Click on "Drafting" tab.



The Drafting tool groups

2.2. Basic Drafting tools

2.2.1. Drawing in ARCHLine.XP®

Before starting your work, familiarize yourself of drawing with the software. In this chapter, you can review all the necessary main concepts

*The use of the mouse – * Click & Release **

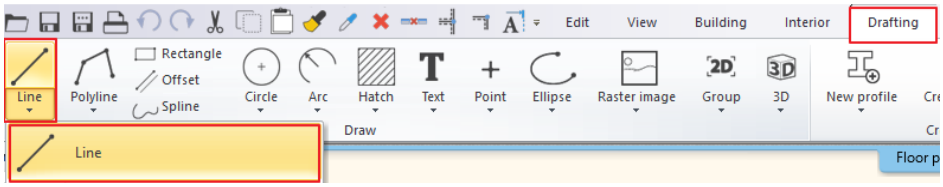
Before starting, we have to clarify the meaning of a “Click” in the tutorial – and generally in the software.
A click is defined as**:**

“Click: pushing down and releasing the left mouse button immediately.”

First, learn the process of free drawing by creating some simple lines.

Drafting lines:

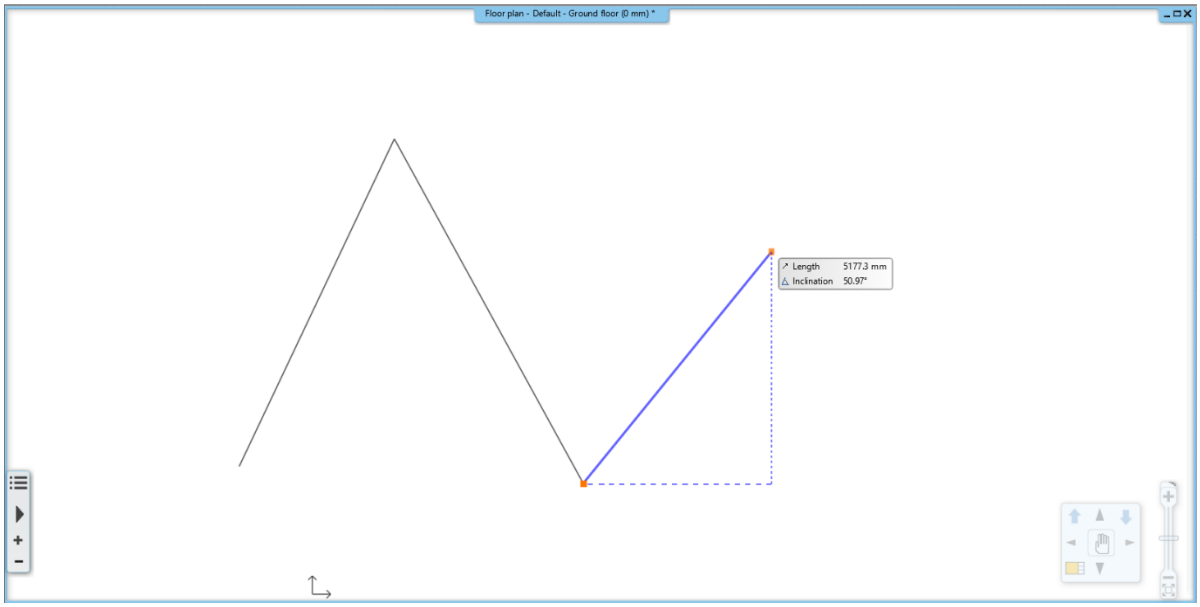
- Choose Line command under **Ribbon bar / Drafting**.



- Then move the mouse over the drawing area. You will see that the shape of the cursor is changed; this indicates that you can draw now.
- Click anywhere on the left side of the drawing area. You placed the first point of the line.
- Now move the cursor to the right and click somewhere again. You drew your first line, which appears as a solid black line.
- Now move the cursor again, and you will see that the endpoint of the previous line automatically became the starting point of a new line.
- Now move the cursor to the blank drawing area, and click again. The second line is ready.

You can easily create lines graphically by just “clicking”. Please do it with simple clicks always: hold down the mouse button for a second and immediately release it.

There is no need to use the other mouse button for drawing; the left button is all you need, same as you browse the internet or edit a Word document.



The drawing contains two lines, and the third one can be started

Exit the tool you are currently using

The drafting up the third line automatically started in this example, we want to draw only two lines; therefore, we have to finish using the current tool.

- Press the ESC on the keyboard. It will end the command.

Now you can see if you move the mouse over the drawing area now, the blue reference line which followed the cursor earlier is disappeared. The mouse cursor regained its original arrow shape.

Whenever you want to finish using a tool, press the ESC key on the computer keyboard.

2.2.2. Undo and Redo

The software continuously keeps track of the last 16 steps of the drawing process. Right now, we made two steps by drawing two lines. If you want to withdraw the last created line, click on the “Undo” command. The “Undo” command withdraws the last action in the order of previously executed commands.

The “Undo” command on the toolbar

- Click on the “Undo” command, and it will make the last created line disappeared.
- Click on the “Undo” again, and the first line will also disappear.

Please note that the colour of the “Undo” button is changed to light grey, because there are no more steps that can be withdrawn. Since the software can undo only the last 16 actions, you can’t get back to an earlier stage by using this tool. The opposite of the “Undo” command is the “Redo”. Any withdrawn drawing step can be restored by using the Redo command.

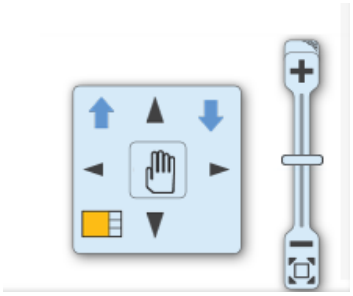
The “Redo” command next to the “Undo” on the Toolbar

The “Undo” and “Redo” commands can be used for corrections of small mistakes, for example, when you would like to remove a previously created item which is at the wrong position. In this case, first press the ESC on your keyboard and click on “Undo” command as many times it is necessary to get what you want to see on the drawing area. If you accidentally take too many steps back, please use the “Redo” command.

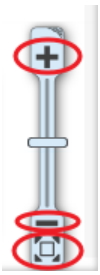
- Now please use the “Undo” and “Redo” commands to remove the two lines we have drawn before and then make them reappear again.

2.2.3. Zoom in, Zoom out and Optimal zoom

You can zoom the drawing by using the slider next to the Navibar at the right bottom corner.



NaviBar



By clicking on “+” sign, you can zoom in; clicking on “– “sign you can zoom out. The optimal zoom command can be used by clicking under the “– “sign on the slider. Using the slider, you can also zoom in/out.

During everyday work, you may need other quicker tools to zoom in/out the drawing content on the floor plan rather than using Navibar tools. The software offers a very convenient tool, the mouse wheel.

Zoom out with mouse wheel

If you wish to see the drawing from further distance you can zoom in by scrolling down with your mouse wheel. This is exactly the same way when you scroll down while reading a word document.

- Move the mouse over the 2D drawing and then scroll down with your mouse wheel.

  Each time you scroll the drawing will be smaller.

Zooming out with mouse wheel.

- Move your mouse over the drawing and scroll upwards with the mouse wheel.

Did you notice? It looks your drawing is moving off the screen. At the first sight, this is not obvious, but scrolling back and forth, it becomes even more visible. Before understanding this aspect, let's arrange the optimal zoom of the project.

Optimal Zoom

The command can be found at the bottom of the slider next to Navibar. Click on the icon below the "– "sign to use it. There is another way to get the optimal zoom result, double click with the mouse wheel.

- Keep the mouse over the 2D drawing and double click with the wheel of the mouse.

"Double click: pressing the button or the wheel of the mouse twice quickly."

A double-click will only occur if you press the wheel twice quite quickly, otherwise the computer will understand two separate clicks instead of a double-click.

If you manage to perform the double click, you will be able to see the whole 2D drawing on the screen fitting into the corners of the drawing window.

Finally, let's talk about targeted zoom. In some cases, the drawing is "slipping" off-screen during zooming. It happens because the program takes into account the position of the mouse cursor at the moment of zooming.

In case of zooming in, the area under the mouse will move towards the centre of the drawing area.
Let's use this knowledge in the following step:

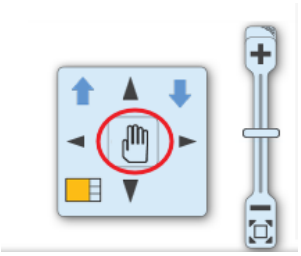
Zoom out a specific area:

- Hover the mouse cursor over the edge where the two lines join each other and scroll up. Notice that the software is zooming to the corner point.

  If the corner point is "slipping" out from under the mouse cursor, please move the mouse over the corner again and use the mouse wheel to zoom out again. The program will zoom out the specified area once again approaching the CORNER point. This way, you can entirely control the zoom function.

- Double-click the mouse wheel again to achieve the optimal zoom.

2.2.4. Panning the drawing



You may need to move the 2D drawing frequently. As if we move the drawing sheet with our hand on a desk. You can be done by pressing the hand icon on the Navibar icon.
The quicker way is the following:

Panning with mouse wheel.

- Move the mouse over the drawing.
- Press down and keep pressing the mouse wheel.
- While you are holding down the mouse wheel, move the drawing left to right, up and down. Look how smoothly the drawing with two lines is moving.
- When you release the wheel, the program places the drawing at the position of release.

Please practice using the zoom and pan tools for a few times, and very soon you will notice it becomes quite natural and obvious to use.

Let's summarize:

- ❖ **Scroll up with mouse wheel is zoom in, scroll down is zoom out.**
- ❖ **Double click with mouse wheel is Optimal zoom.**
- ❖ **Holding down the mouse wheel while moving the mouse is pan.**

2.2.5. Simple selection and delete

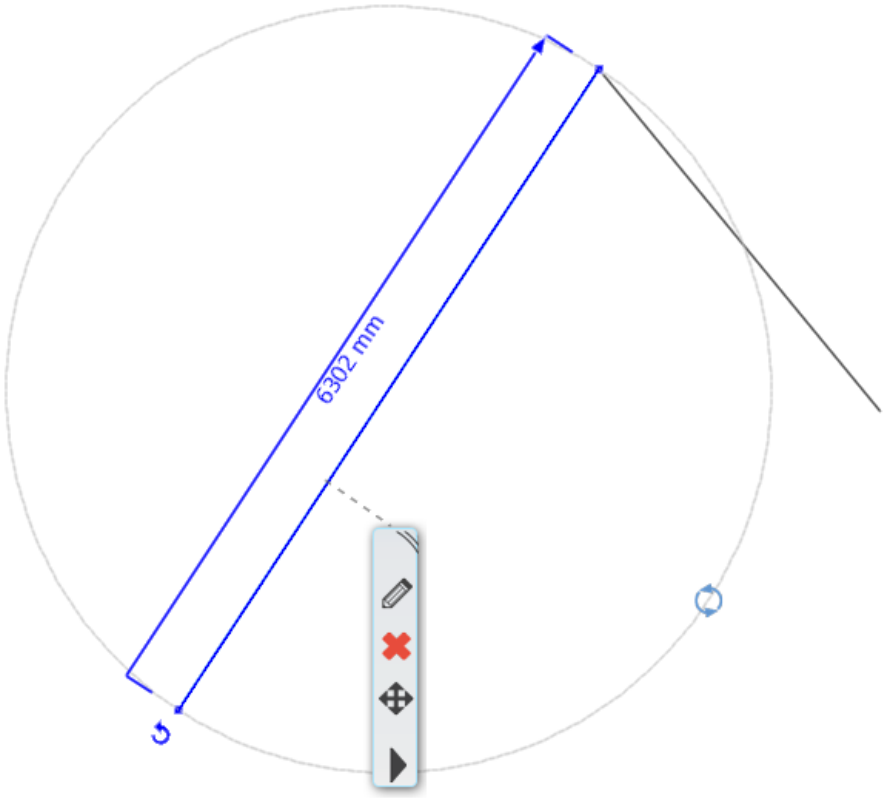
It is essential to know how to delete a specific item of the drawing. In this example, we want to remove only the first line and keep the second one.

To tell the program which elements you would like to work with, you have to select it. To select it, you need to hover the mouse cursor over the first line, and then you need to click on it.

Simple selection

- Move your mouse over the first line drawn, and then click once.

ARCHLine.XP® represents selection by a selection colour and by a few markers appearing around the selected item. **Markers** are interactive tools that help to modify selected items without using menus. The main point of using ARCHLine.XP® markers is that they are straightforward to handle. The appearance of markers can be various depending on their goal. Using markers reduces time, increases design speed and can be learned quickly. When an item is selected, the floating icon menu also appears giving you fast access to the Modify, Erase and Move commands and the local menu of the selected item.



Delete

- Click on the delete icon ✖ and you will see that the line is disappearing.

Undo

- Click the “Undo” command, and the last executed step on the plan, which was the deletion of the line will reappear on the drawing again.

2.2.6. Select multiple items

During editing, one of the essential tools is the selection. Please note if now you select one of the lines, and then you click on another one, the previous selection disappears. To be able to select multiple items at the same time, we need to know how to use multi-selection. For this, the CTRL key is used on the keyboard. Do the following:

Multiple selection

- Select one of the lines and press and hold the CTRL key on your keyboard.
- While still pressing the CTRL key, move the mouse over the other (unselected) line and click on it.
- Now you can release the CTRL key, and you will see that both of the lines are selected.

Holding down the CTRL key while an item is already selected, you will be able to add another one to the selection. The markers will appear, and you can now delete the two lines together, by using ✖.

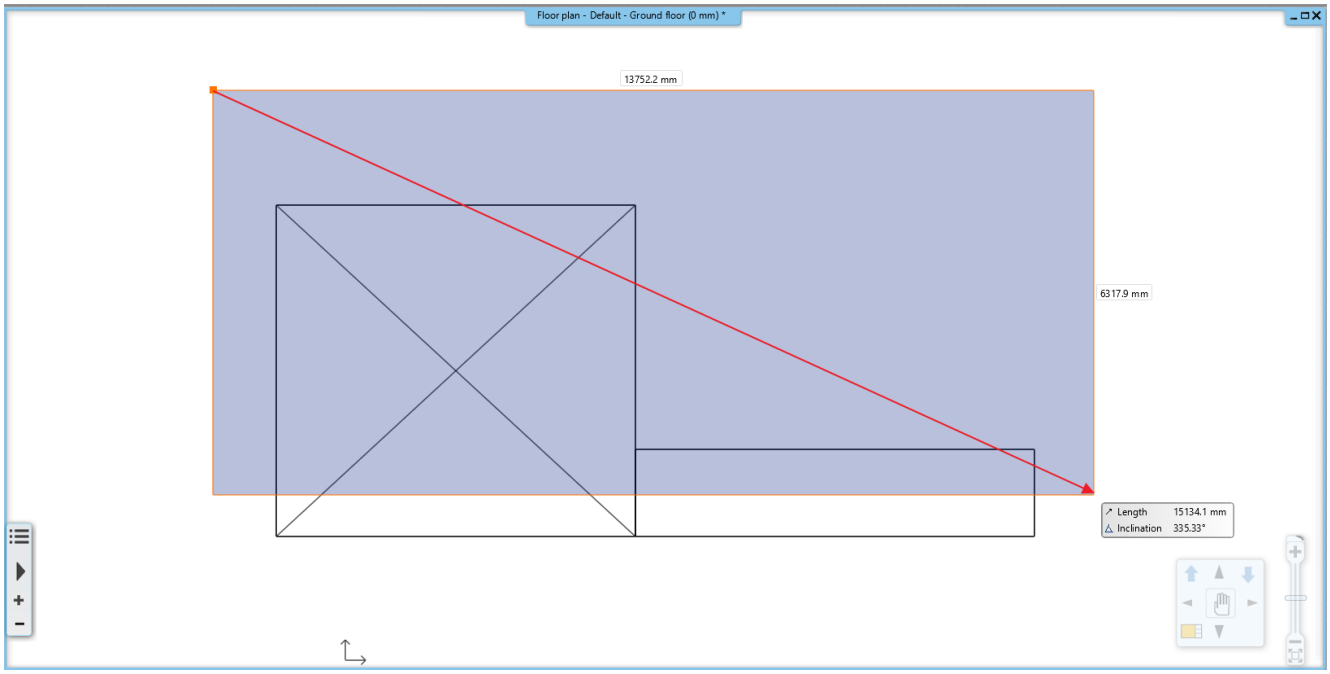
2.2.7. Selection by rectangle

To select multiple items, you can use the rectangle selection.

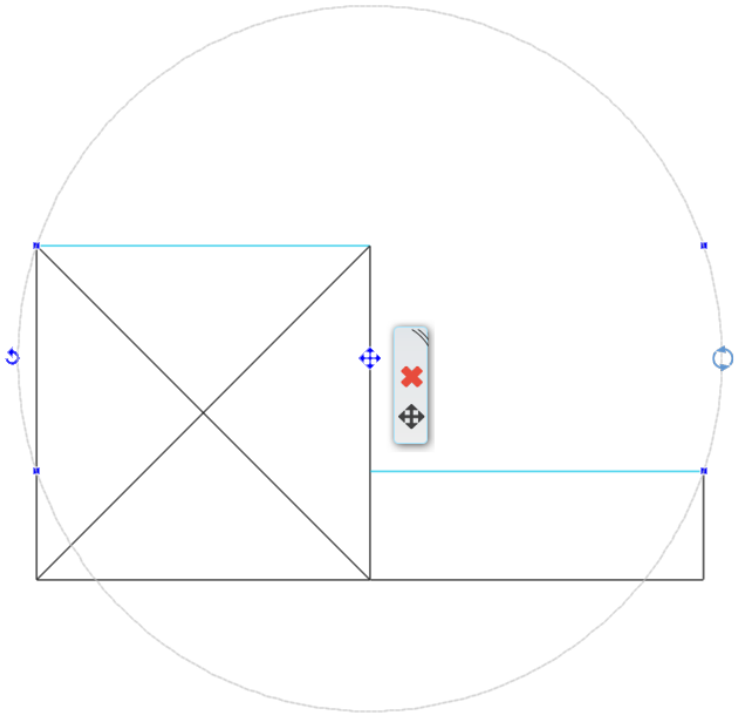
The rectangle selection can be performed by clicking on a blank part of the drawing area then moving the mouse to another position and clicking again on the drawing area. This way, you can specify a rectangle. There are two cases of the rectangle selection:

Selection by rectangle: from left to right

- Draw some lines the same way as before.
- If you are currently in a command, please press ESC to close it.
- Move the mouse to the upper left corner of the drawing area and click on the blank field.
- Move the mouse down to the right so that the resulting semi-transparent blue rectangle partially covers the lines, and make sure that there are lines which are a bit out of the blue selection box. Click again.



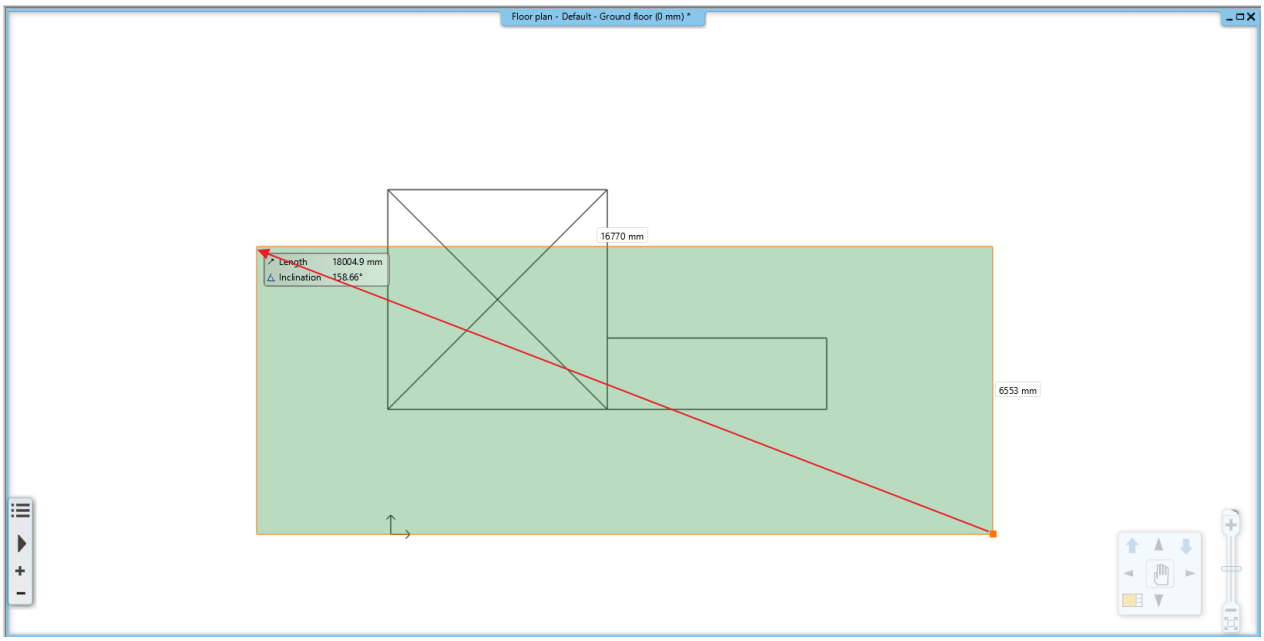
Selection by rectangle from left to right – we deliberately left out the bottom part of the drawing.



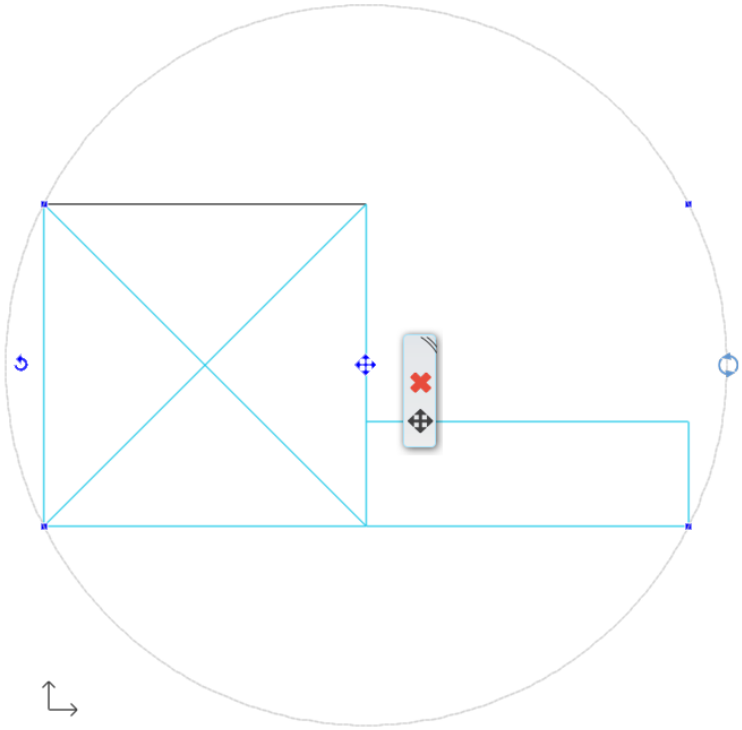
The result: only those lines are selected which ones were entirely within the rectangle.

Selection by rectangle: from right to left

- Press ESC on the keyboard to end the previous command.
- Move the mouse to the bottom right corner of the drawing area and click on the blank field.
- Move the mouse up to the left so that the resulting semi-transparent green rectangle partially covers the lines, and make sure that there are lines which are a bit out of the blue selection box. Click again.



Selection from right to left. We left out the top part of the drawing.



The program selected all the elements which were inside the rectangle or intersecting the contour of the rectangle.

Comparison:

Selection by rectangle from left to right:

- The selection rectangle should be drawn from left to right.
- The colour of the selection rectangle is BLUE.
  The program selects only those elements which are completely within the selection rectangle.

Selection by rectangle from right to left:

- ❖ The selection rectangle should be drawn from right to left.
- ❖ The colour of the selection rectangle is GREEN.

The program selects all the elements which are inside the rectangle or intersecting the contour of the rectangle.

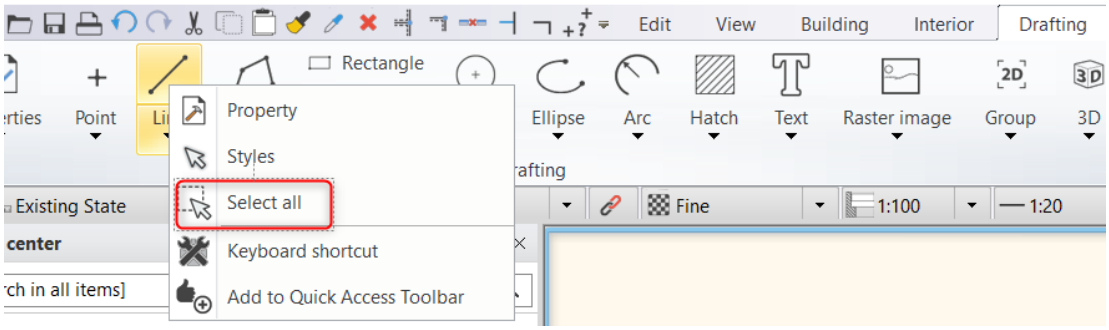
Examples in a real project:

Selection by rectangle from left to right: It is much easier and faster to select all the equipment of a room by drawing a selection rectangle that includes all of the equipment. If some of the walls are partly in this area, it's okay because they will not be selected.
Selection by rectangle from right to left: In case you want to select all drawing objects, even those that stick out from the drawing area, it is sufficient to select the desired items partially.

2.2.8. Selection by type

A single click can select the same type of items.

The method is the following:



- Right-click on the type of the items on the Ribbon bar you want to select, then choose **Select all** command. Now all items from the given type are selected on the drawing.

Exercise:

Draw two circles between lines by using the Drafting / Circle tool.
Select all the lines on the drawing:

- Click right-click to the Line icon on the Ribbon bar.
- Click on **Select All** command.

Now all the lines on the drawing are selected.

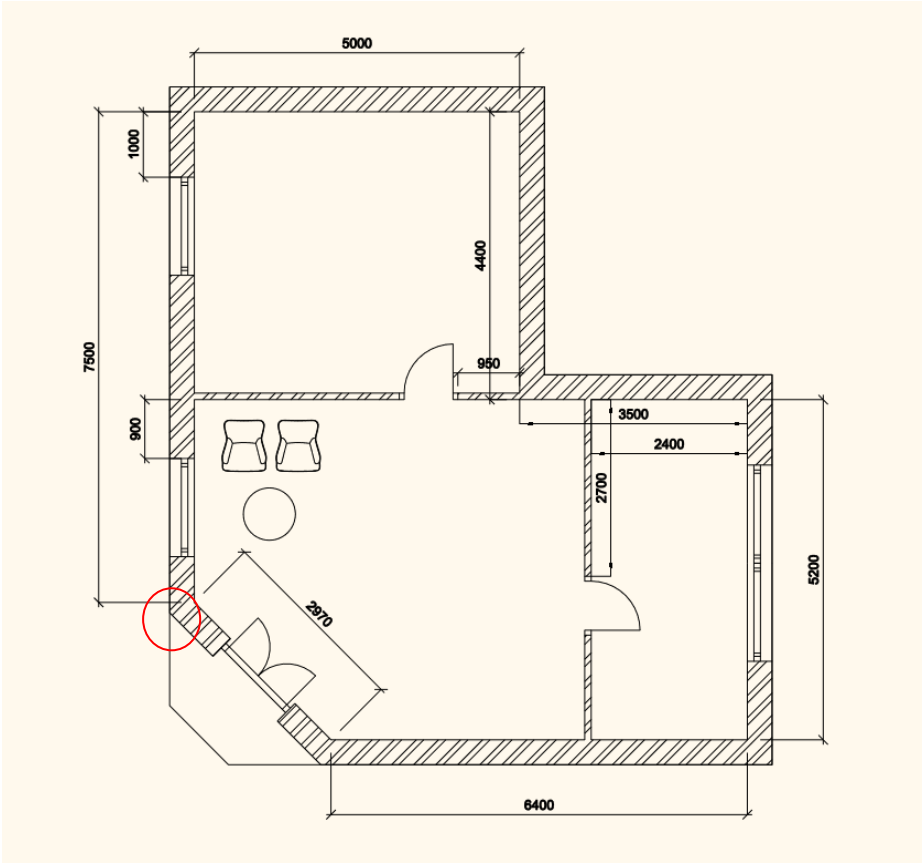
- Finally erase all the lines, circles of the drawing by using the Delete icon.

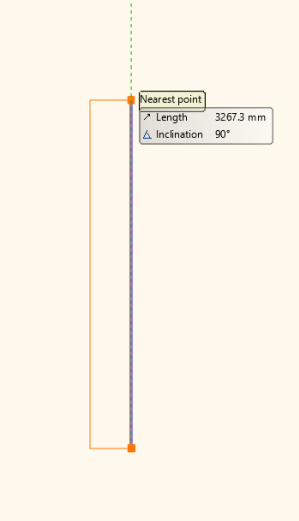
2.3. Design

2.3.1. Creating walls

We will start with a simple floor plan. Similar to the way you can create simple lines, you can create much more complex drawings by using other tools. This time we will create walls with known lengths. We will create the following floor plan:

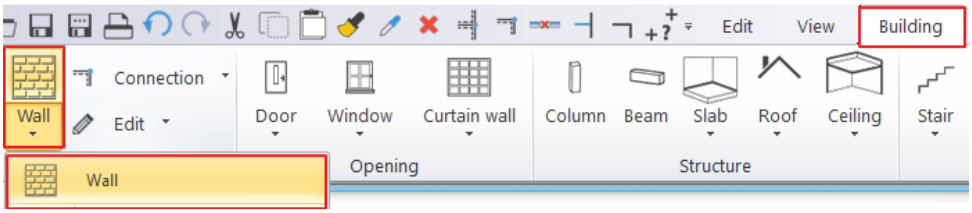
Start your work by drawing the main walls. The first wall is 7500 mm long, vertically on the drawing, which defined by its internal size. We start from the red corner is shown on the picture.





Creating wall by a known length

You can create walls by selecting **Wall** tool under the **Ribbon bar / Building** commands.

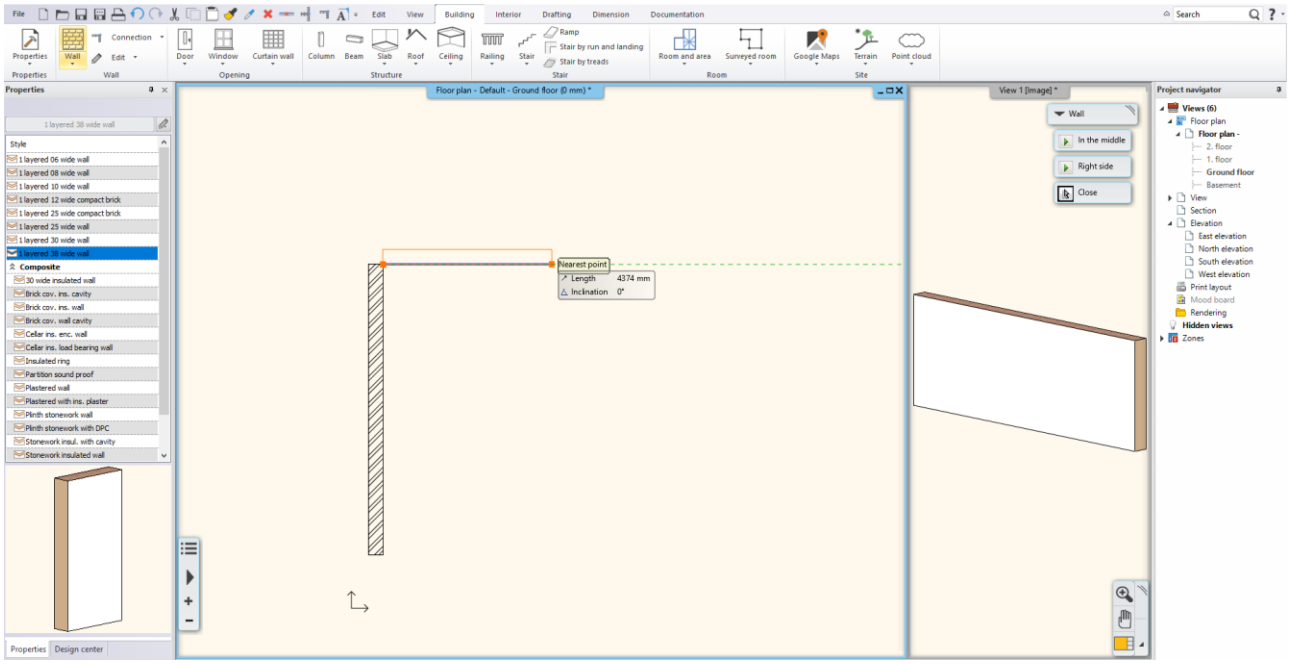


- Move the cursor on the drawing area; the cursor shape will change.
- Set the starting point of the wall on the left side of the drawing area by a click.
- Now move the cursor vertically to up.

- The blue line is the reference line of the wall, while the orange line represents the thickness. The length can always be defined along the blue line.
- The wall will be 7500 mm long, so type the 7500 on the keyboard.
- Press the Enter on the keyboard to accept the value.

The 7500 mm long vertical wall is created, and a new window opens up on the right side, which shows the 3D model of the created wall.

On the screen, a favoured layout of ARCHLine.XP® can be seen, which is also called the Split View. When you create the first element that has an equivalent in 3D, the program automatically displays it in the 3D model window. This split layout helps continuously monitoring how your design appears in 3D view, which is created on the floor plan. The software automatically generates the 3D model. With the help of this layout, you can follow what you are creating on 2D floor plan how that appears in 3D.



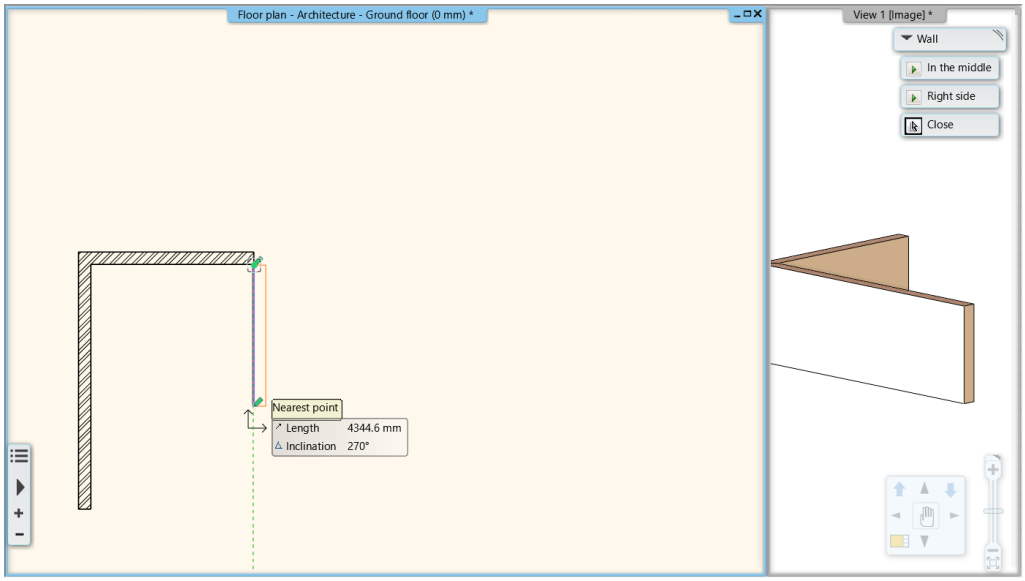
ARCHline.XP split layout

Similar to drawing lines, the program the uses endpoint of the first wall as the starting point for the second wall. This way, you can draw connected walls as it was shown previously on the floor plan.

- Move the mouse horizontally to the right and type 5000, and then press Enter on your keyboard.

Now a perpendicular second wall is created linked to the first wall. It might happen that we cannot see the endpoint of the second wall. To solve this problem, use the pan and zoom techniques shown before.

- Using zoom in/out and pan tool arrange that the drawing fills the quarter of upper left side, so the remaining three quarters will remain empty. Here we will create the rest of the plan.

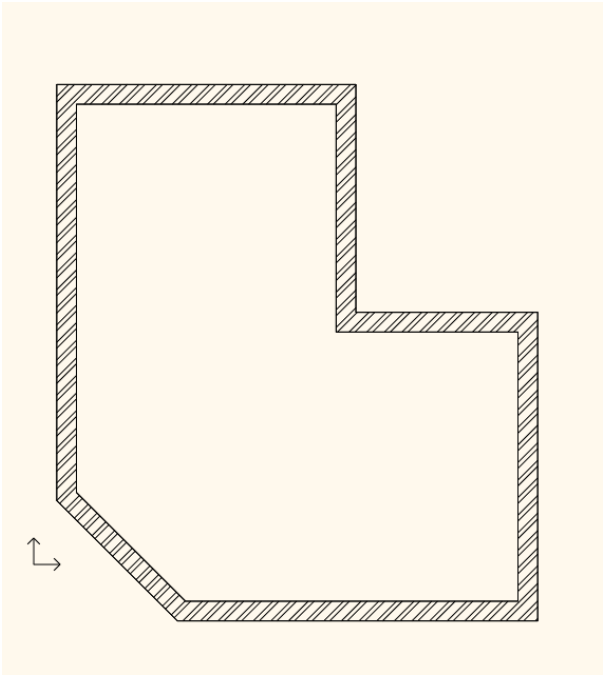


2.3.2. Continue creating walls

Continue creating walls

- Move the mouse vertically down and type 4400 and hit **Enter**. When the Enter key is pressed, the third wall is created.
- Move the mouse horizontally to the right and type 3500 and press the **Enter** key on your keyboard.
  Don't forget that you can zoom in / out and pan drawing at any time during drawing. Move the mouse vertically down and type 5200. Press the Enter on your keyboard.
- Move the mouse horizontally to the left and type 6400 and press the Enter key on your keyboard.

- Finally, move the mouse up, and when you see the Endpoint cursor, click on the starting point of the first wall. The walls form a closed shape; the room is ready.

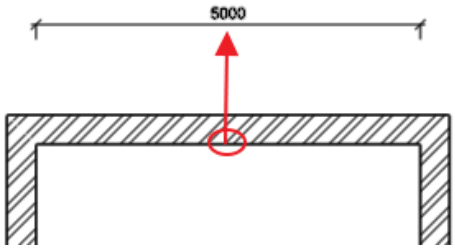


- Finally, press the ESC your keyboard to close the command.

If you haven't worked yet with design software, you may find it difficult at first to deal with everything, as you often need to zoom in and pan the drawing to see the correct detail. Don't worry, it's completely natural. Soon you will discover that you start combining these instructions efficiently, all you need just a little practice.

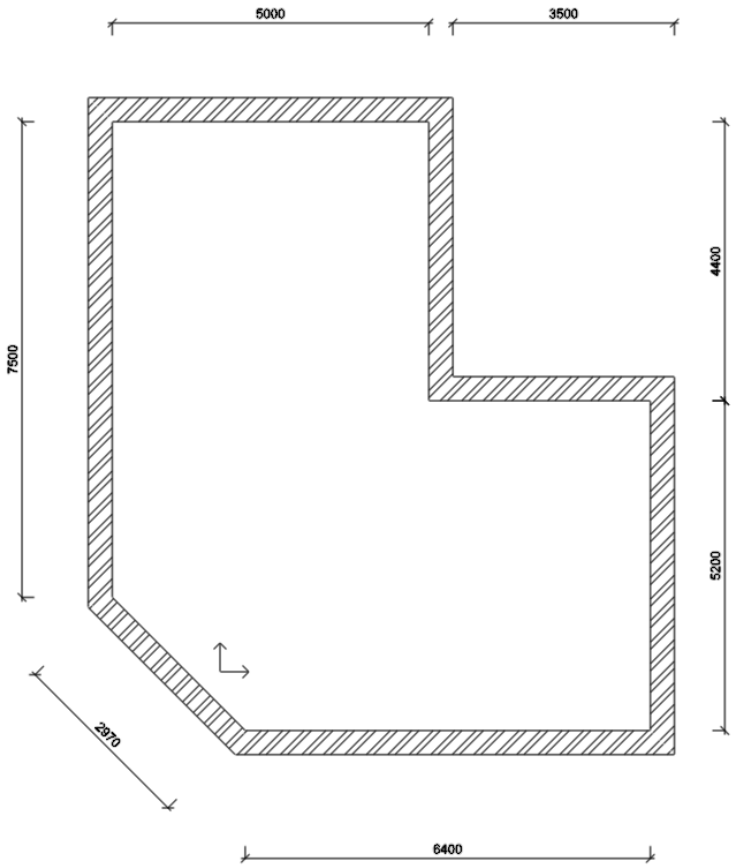
2.3.3. Wall dimensioning

Before we move forward, let's measure the inner-distance of walls.
We can continue working only if the measured values are the same as the previously entered ones.



- Select **Dimension / Quick dimension** command.
- Click on the inner side of any walls, then

- Move the cursor outside the wall. This way, you define where to place the dimension line.
- Repeat this action on all walls.



2.3.4. Active windows

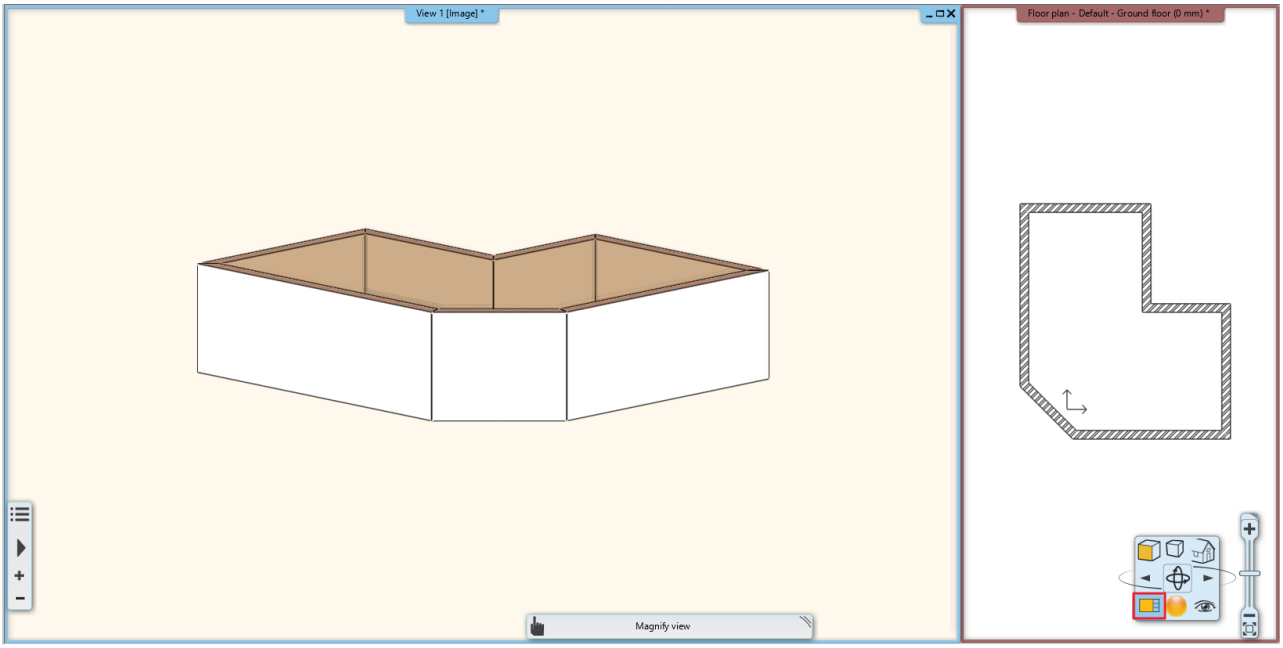
As you noticed, when drawing the first wall, the 3D model was automatically created in a second window. The advantage of the split layout is that the changes we make on the floor plan can be seen in the 3D model too.

So far, the active window was the 2D, where we created the walls. To handle the 3D content, you have to click anywhere in the 3D window to activate it first. In this case, the 3D model window frame will change its colour, and the Navibar will also change a little bit.

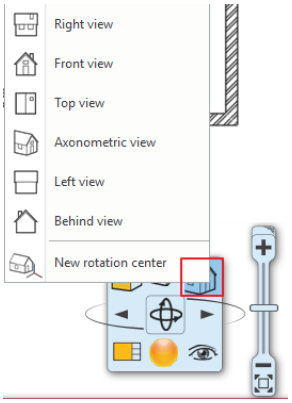
You can swap the 2D and 3D windows. For this you have to click on the Navibar at the bottom left corner on the “Magnify window” button. Please do the following:

Enlarge the active window

- Currently, the 2D window is active. Click on the 3D window. This way, you can make it activated.
- Press the “Magnify window” tool on the Navibar . The 2D and the 3D is switching places.
- Repeat the previous steps to exercise a few times. Finally make the 3D to be the active, larger window.



2.3.5. Manage 3D View

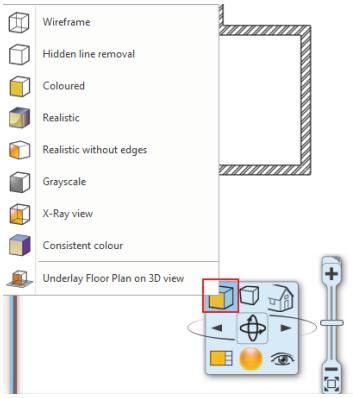


Working in the 3D, just as on the 2D drawing, you can zoom in and zoom out and pan the content. You can see the 3D view from different directions. Besides using the “Rotate” command of the Navibar, there is also a quicker way to do so. Please do the following:

Rotate the 3D view using the mouse right button

- Move your mouse over the model in the 3D window.
- Press and hold down the mouse right button and start to move the mouse
- When you want to complete the rotation, release the mouse right button.
  You will experience soon this way you can work more efficiently and smoothly than using Navibar.
- Set the view so you can see the model slightly from the side and above by rotating it. So, this way you'll be able to follow the changes easily when creating the partition walls, the openings and the ceiling.

2.3.6. The 3D representation modes



As we know, there are more efficient tools for rotation, zooming, panning rather than the Navibar. There are several other tools offered by Navibar which can be handled from here more conveniently. Let’s see the standard views and presentation settings now.

Views

- On the Navibar, click the Current view icon to display a menu showing the different views to choose.
- Try various views by selecting them (From the right side, Front view, Top view, etc.).
- Finally, select the Axonometric view and rotate to have a better view from the top.

Due to the easy switch between the standard views anytime, you can quickly set a particular aspect of the 3D model whenever it becomes necessary. Besides, the 3D model representation can also be changed.

Presentation settings

In the Navibar, click on the 3D preview mode icon, from the appearing menu you can set how to display the model.

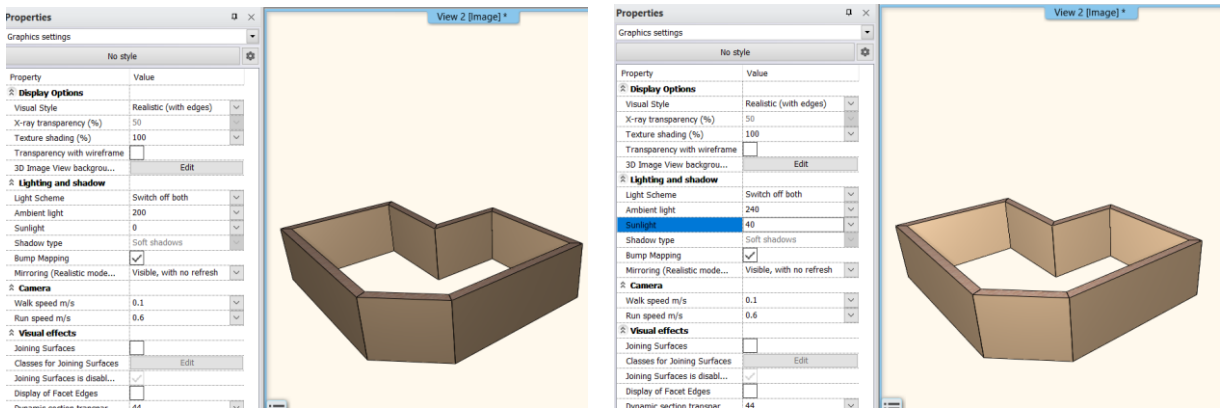
- Try each of the different representations and see how the model will change.
- Finally select the default **Realistic** display mode.

At the moment, we will not look through the other options on the Navibar; instead, let’s continue working on floor plan.

2.3.7. Set 3D window properties

In some cases, the previously recommended Realistic 3D representation mode might be too dark, but this can be adjusted.

Activate the 3D window. Make sure that there is no item selected.
Click on the Properties tab, and now the 3D window settings will appear on the left side of the screen.
Increase the values of the “Ambient light” and the “Sunlight”.



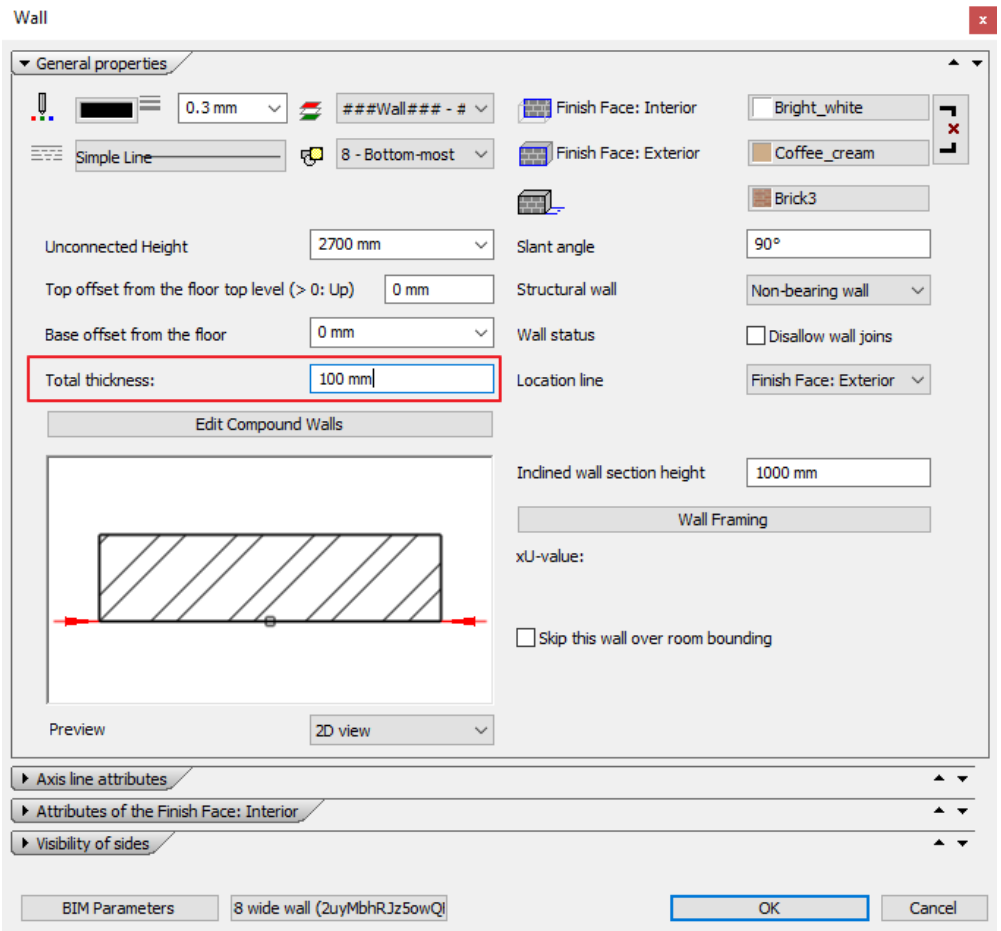
2.3.8. Creating partition walls

Specifying settings

The main walls are ready. Let's continue working on the partition walls. Before starting, please activate the 2D window and enlarge its content. If we kept drawing the partition walls, then those would have the same properties as before.
To draw the partition walls, we have to change the properties (e.g. wall thickness).
There are two ways how to set the properties of the partition wall.

Method 1: Setting properties:

- Click on the **Ribbon bar / Building / Properties / Wall / Wall** command. It will bring up the **Wall properties** dialogue box.
- Change the wall thickness from 380 mm to 100 mm and click on the OK at the bottom of the dialogue.

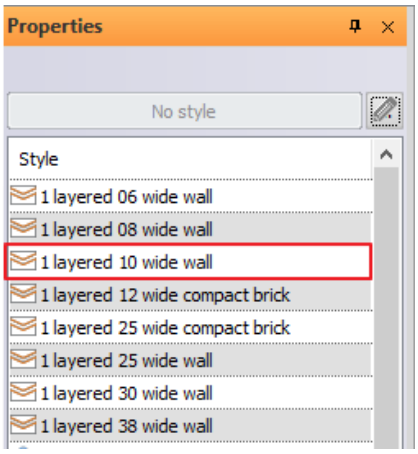


We use millimetres as units, but you can use other units as well. You can modify it under File / Options and choose Units and Angles page.

In the drawing, nothing has changed, but from now on, when you create a new wall, its thickness will be 100 mm. To draw partition walls, please follow these steps:

Method 2 Using Styles

When you click on **Ribbon bar / Building / Wall** command, the Design Center switches to Properties on the left side. Here the *Styles* appear which contains pre-defined and previously saved wall styles. From here, you can easily choose a wall with the right properties.



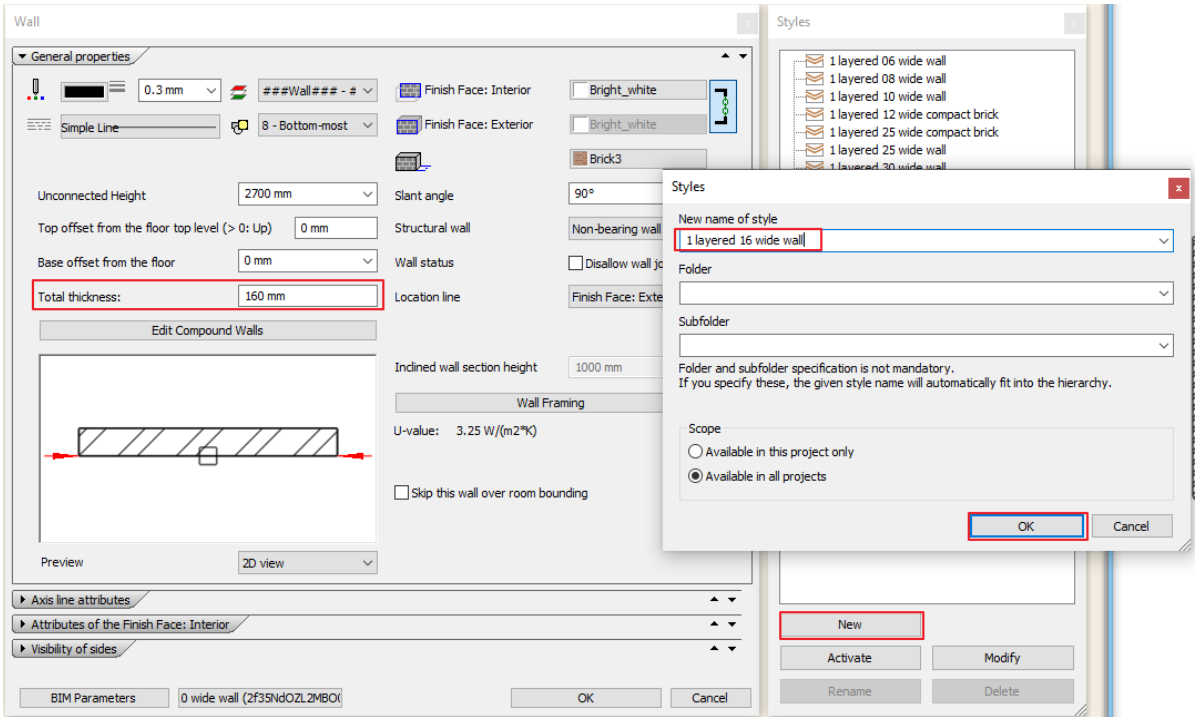
- Select the "**1 layered 10 wide wall**" style. As soon as you select it and start drawing the wall properties will change.

Create a new wall style

- Click on the "pencil" icon to create a new style.
- Set the properties of the wall in the dialogue window. E.g. Total thickness: 1600 mm.
- Click on the button with the style name, in the lower-left corner.
- Next in the appearing "Styles" box click on "New" button.

In the appearing window type the name of the new style and the folder, then save it.

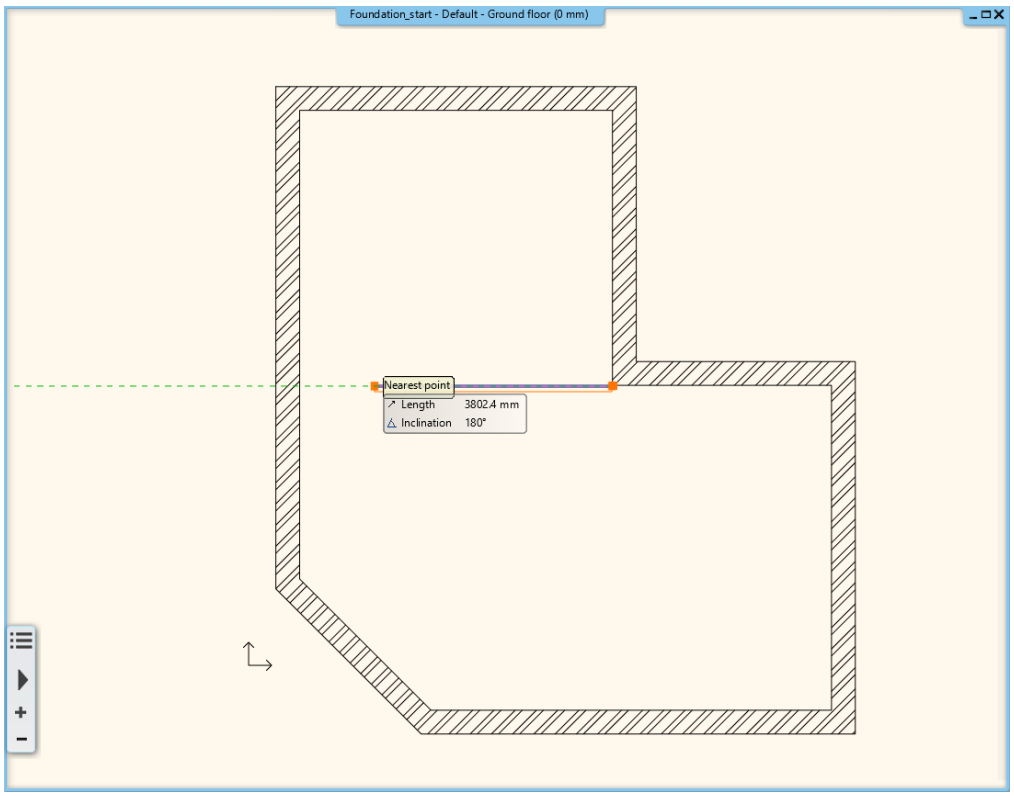
The new style also appears under **Properties / Styles**: “1 layered 16 wide wall”.



Partition wall

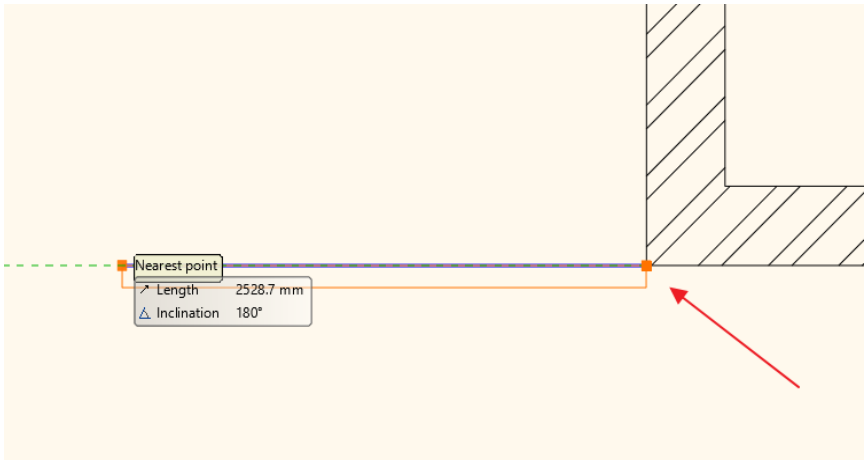
- To create a partition wall, click on the **Ribbon bar / Building / Wall** tool.
- Activate the floor plan window and move the mouse to the inner corner point of the L-shaped floor plan and click to place the starting point of the partition wall exactly into this corner point.

When you hold the cursor on the top of a corner point, then cursor shape changes that sign is symbolizing the endpoint of the wall. This way, the software indicates that the mouse cursor is right on top of an endpoint.



- Move the mouse to the left horizontally. Now check the appearing virtual wall represented by an orange and blue line.

  We created the wall, then the wall thickness falls below the reference line in blue, as the orange line shows it.

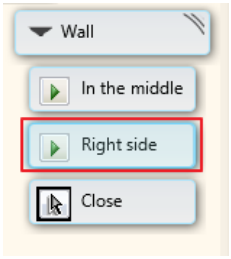


  For now, we need the wall thickness to be above the blue reference line, so that the partition wall and the adjacent main wall will share the same line. We have to switch the reference line. In the right top corner of the work area appears a floating menu. From here, select the proper commands to modify the position of the reference line.

- Now click on the “Right side” command then move the mouse back to the drawing area. Now, the reference line of the wall is on the other side of the wall thickness.
- Place the wall endpoint the opposite to starting point.
- Press the Enter on the keyboard. The program will not create the next partition wall starting from the previously placed wall endpoint. Now you can define a new starting point.

  We draw the next partition wall at a given distance from the corner of the main wall.
  Set the starting point of the second partition wall. To do this, we will need to place a temporary reference point in a corner and measure a distance from there.

To create the wall, click on the **Ribbon bar / Building / Wall** tool and specify its starting point.



- Select the “Reference” command from the Coordinate bar.

- Move the mouse in the corner point on the right side of the L shaped floor plan, when the program recognises it click once.
- Move the mouse horizontally to the left and type 2400, and press Enter. The program now measured the distance of 2400 mm horizontally to the left from the previously defined reference point, and placed the starting point of the wall.
- Move the mouse vertically downwards and when the perpendicular point is recognised on the opposite wall, click once to place the endpoint. (Be careful, the Midpoint nearby can quickly grab the cursor, so you should zoom in to be able to work precisely.)
- Press ESC to close the wall tool.

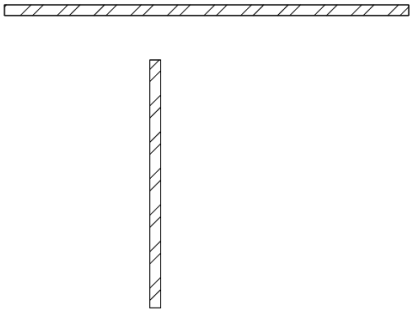
2.3.9. Using T and L wall connections

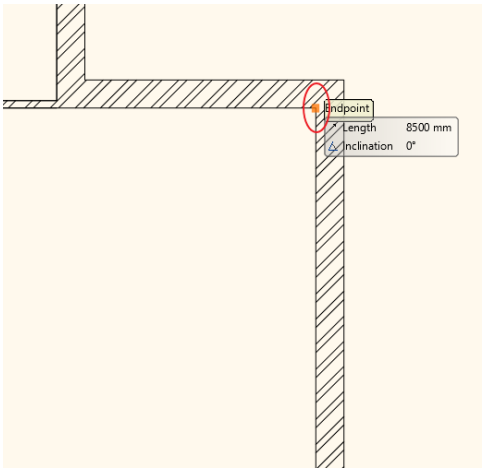
When the main and partition walls are ready, the connections between walls might be inadequate. Let’s see examples of how to use T and L connections to join walls.

T connection

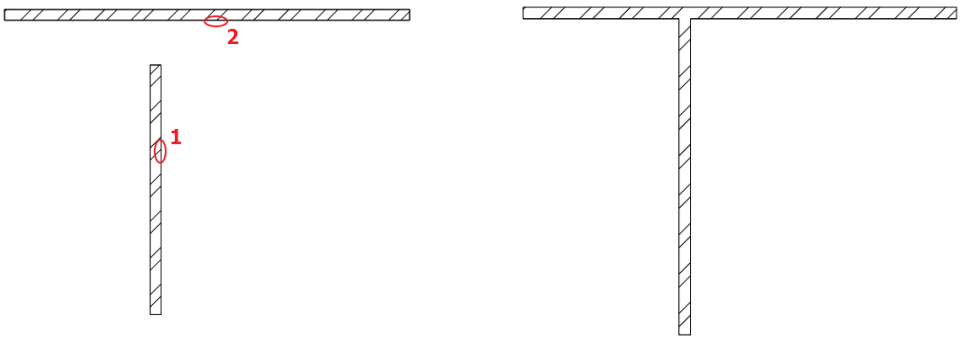
- ***The T connection removes the unwanted wall parts or adjusts missing wall segment of the first selected item relative to the intersection with the second item. The wall is selected secondly will not be modified.***

  Now let’s see that case when T connection adjusts the missing wall segment relative to the intersection with the second wall.
- Draw two walls as it is shown below:



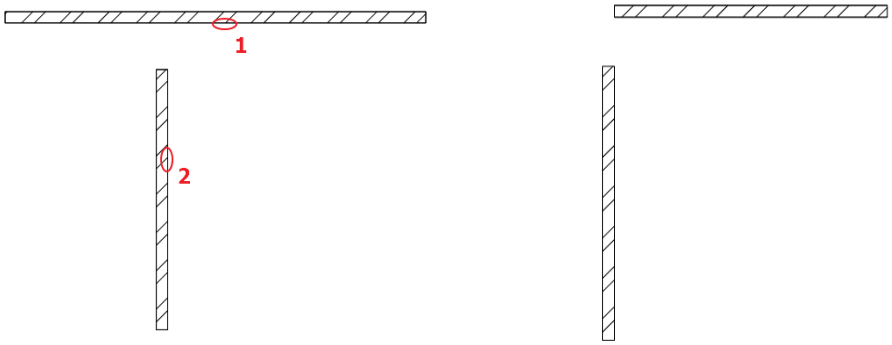


- Click on icon (representing T connection) on Toolbar then select with a single click the wall to be adjusted (1), then the second wall (2).



The missing part was lengthened.

- Undo this action by pressing icon.
  Now let's see how T connection command shortens the first wall relative to the intersection with the second wall.



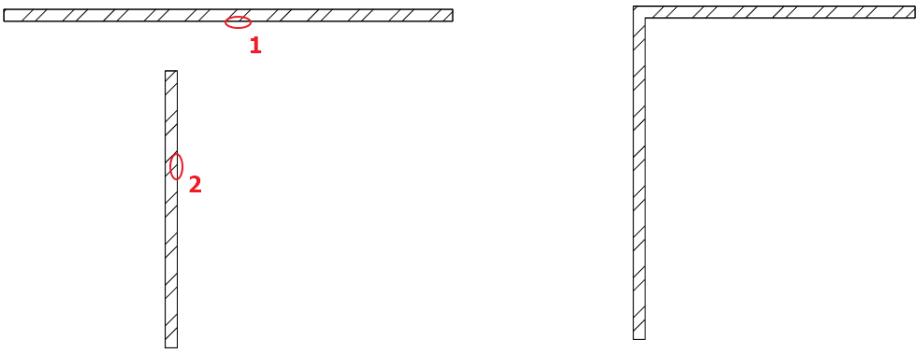
The wall segment which extends over the intersection will be modified.

- Undo this action by pressing icon.

L connection

The L connection aligns the selected items to each other; shortens or extends walls. So those endpoints will be joined which are closer to the selected points join.

- Click on icon (representing L connection) on Toolbar then with a single-click to select the first wall, then the second wall.

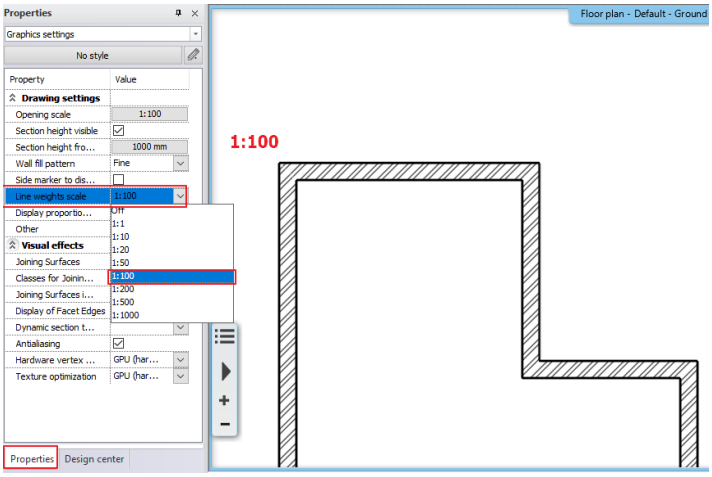


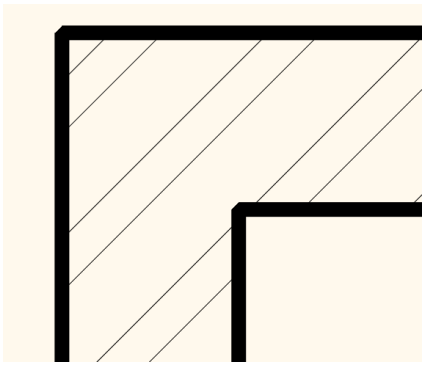
L connection is created between walls.

2.3.10. Set floor plan window properties

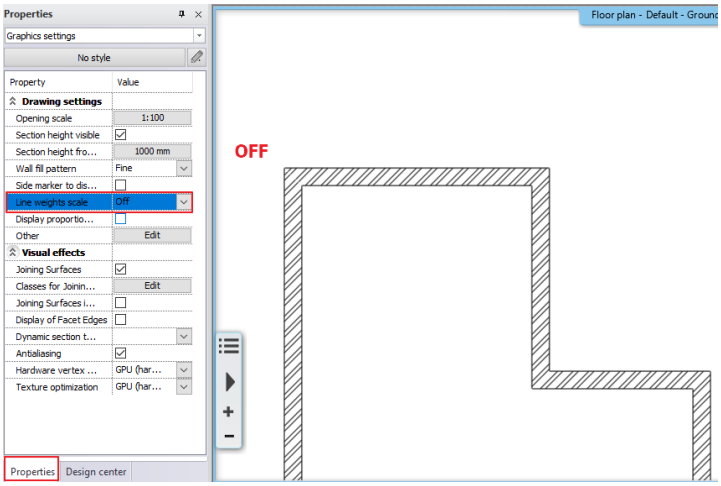
Let's go back to the floor plan. Activate the 2D window; make sure there is no selected item. Click on the Properties tab, and 2D window settings will appear on the left side of the screen.
Here among others, the line weight scale can be modified.

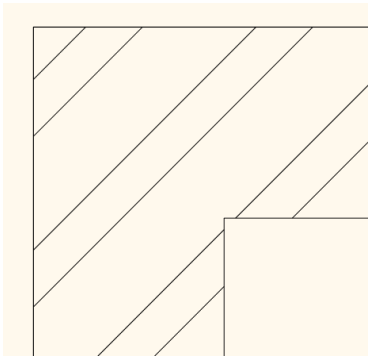
For architectures we recommend to apply 1:100.





For interior designers, it is recommended to switch off this tool. In this case, by default, all lines will be displayed with 0 linewidth.





This function does not affect printing.

2.3.11. Save project

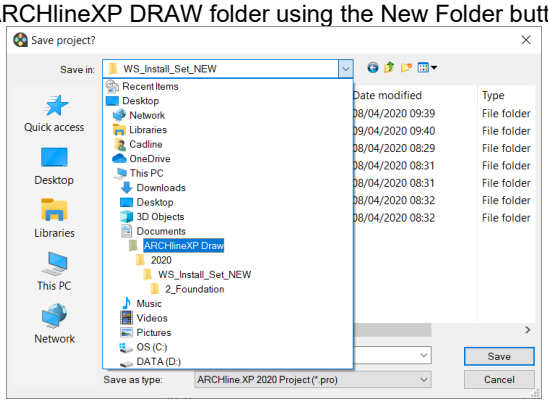
When creating a new project, there is no automatic save until we save the project ourselves.
Please do the following.

Save the project

- Select the "File / Save project" command.

This is the first time we save the project; the programme automatically brings up the "Save project" dialogue window, here we can name the project and specify the folder under to be saved.
By default, during the installation process, the software creates ARCHLine.XP DRAW folder where projects can be saved. This can be found under the Documents folder on your computer.

Create a new folder under the ARCHlineXP DRAW folder using the New Folder button. Name it as “Foundation”.



- Open Foundation folder and type the following filename: “Foundation 01”
- Click on the Save button.

From now on it is enough to click on Save project button on Toolbar, then the program will automatically refresh the content of “Foundation 01” with the actual state.

We suggest you to save your projects quite frequently (e.g. every 10 -15 minutes).

It is recommended to make a second copy of your project from time to time. We will discuss it later.

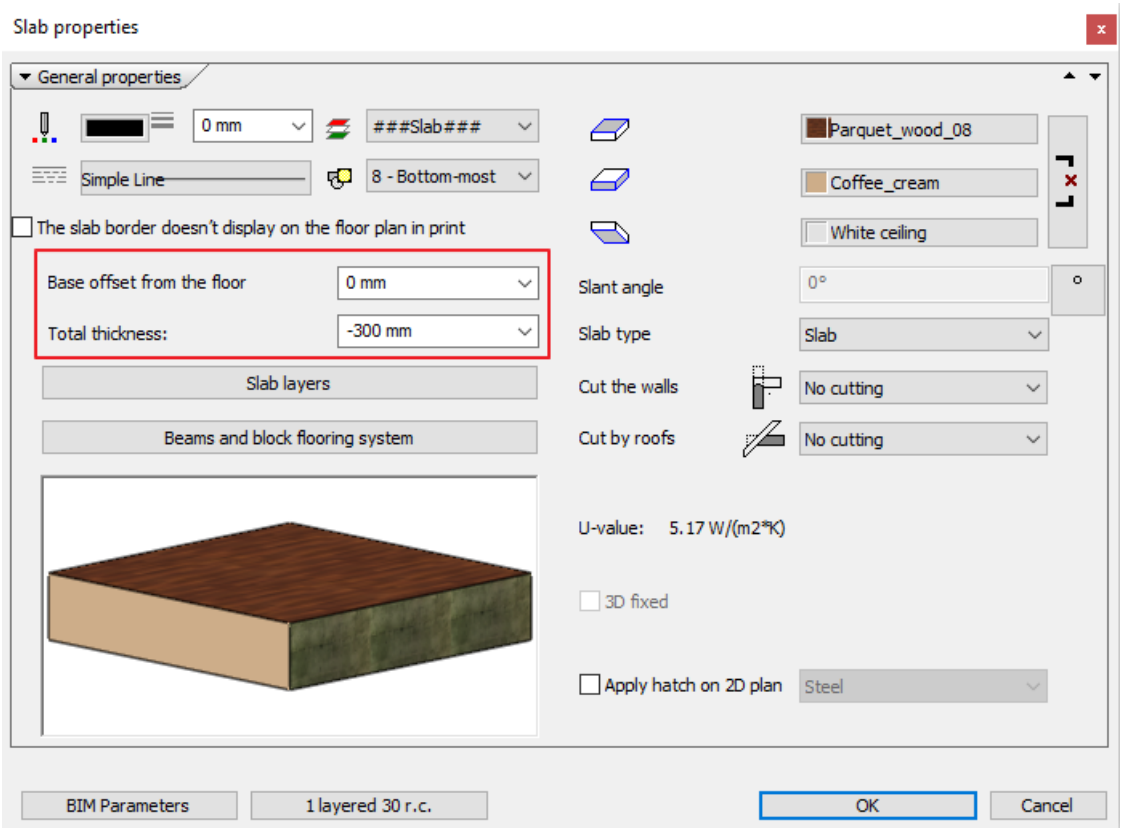
The use of the default ARCHLineXP Draw folder has no restriction. Under program settings, this folder can be changed to another one. After that by default, the program offers to create new projects under this new folder or open existing ones.

2.3.12. Slab tool – Create floor

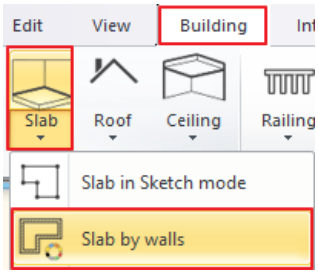
Along wall contours, you can easily create a floor by using the Slab tool. Similarly, to Wall tool, before using the Slab tool, you can check and set its properties. Please do the following:

Creating slab

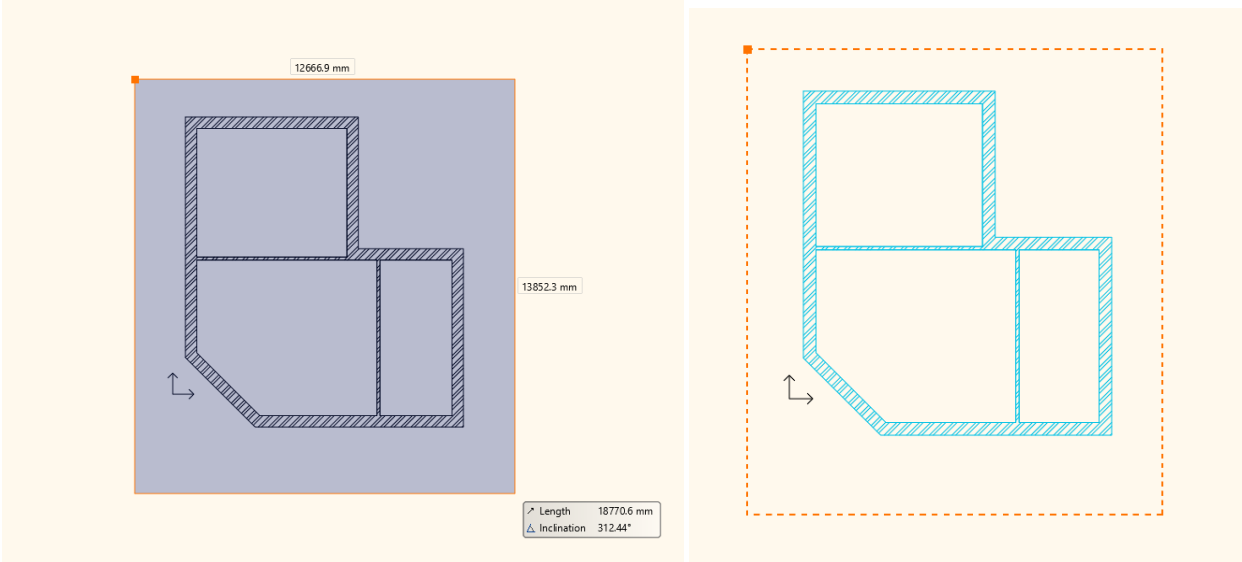
- Select the **Ribbon bar / Building / Properties / Slab** command. The Slab properties dialogue window appears.
- Check the following properties: Relative height: 0 mm; Slab thickness -300 mm, finally click OK.



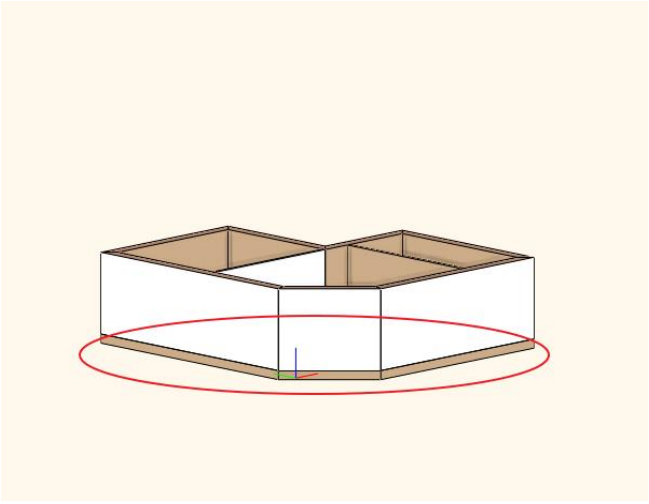
- Select the **Ribbon bar / Building / Slab / Slab by walls** tool.



Move the mouse to the top left part of the drawing area and select the entire floor plan with the selection rectangle. Press Enter.

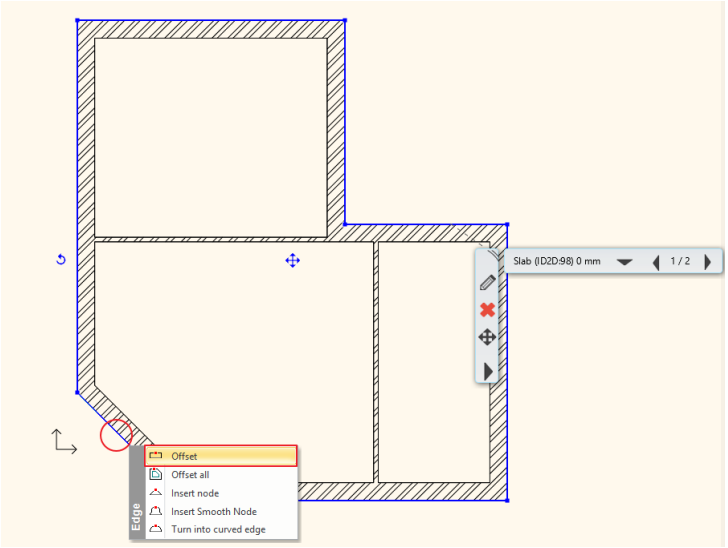


The program automatically creates the slab. The result immediately can be seen in the 3D window.

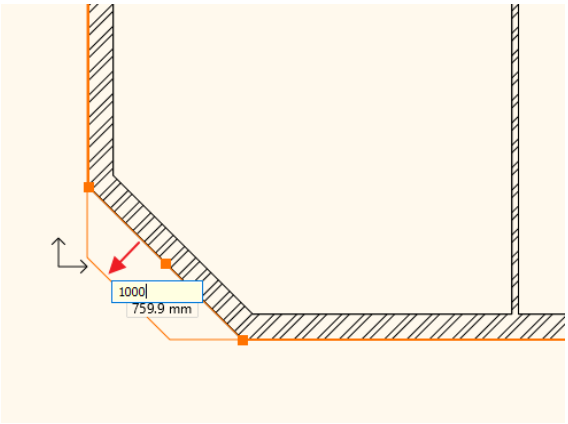


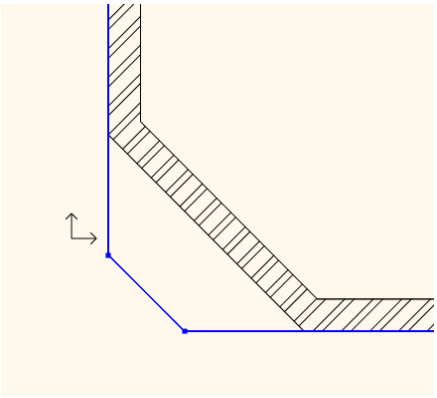
Modify the contour of the slab

Later on, the entrance door will be added to the 45-degree angle main wall. Besides, it is necessary to place a stair here, which now we will create by changing the contour of the slab.



- Select the previously created slab. To do this, click on the external contour of the main walls.



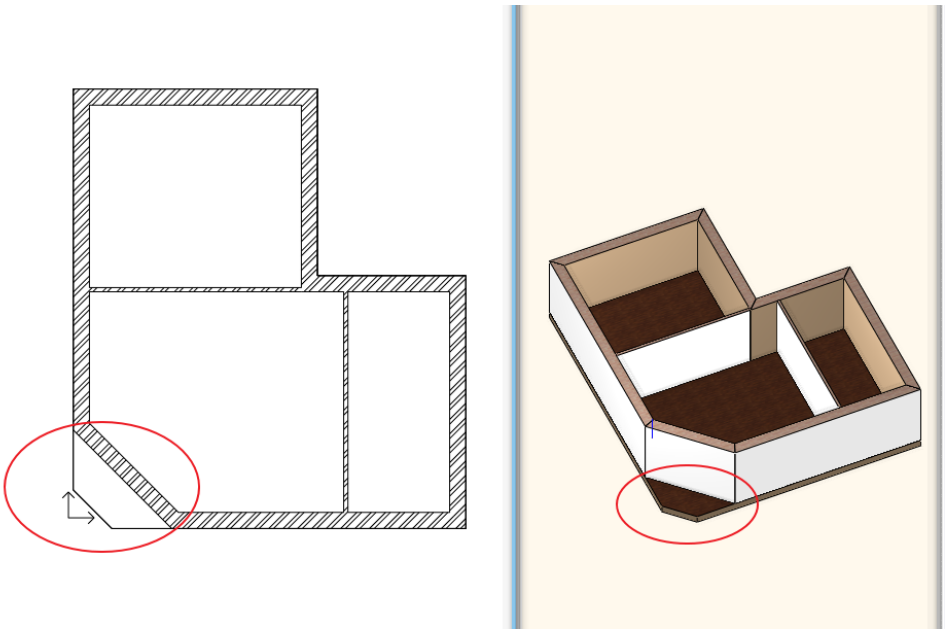


Clicking on the wall contour the wall will be selected, as this item can be found here as well. If there is more than one item at the point where you clicked, the Quick selection panel appears at the right side of the floating menu, to help you choose the proper item.

- Press the “Jump to the next item” button

on the Quick selection panel to make the slab selected. If the slab is selected, you can see the selection on the floor plan and also the text “Slab” will appear on the left side of the Quick selection panel.
- When the slab is selected, blue markers run around its edges. Click on the blue line at 45-degree angle.
- The marker menu appears. Click on the “Offset” command.
- Move the cursor down and left 45 degrees (perpendicular to the current edge) and type 1000, and then press Enter.
- Finally press the ESC key on your keyboard.

Following the previous steps, you have just created a one-step stair in front of the entrance. Using similar methods later terraces and balconies can be created.



The walls, the floor, and the staircase have been completed.

There is a full-featured Stair tool in the program which you can use to create elaborate staircases. The Stair tool is the focus of another advanced level tutorial.

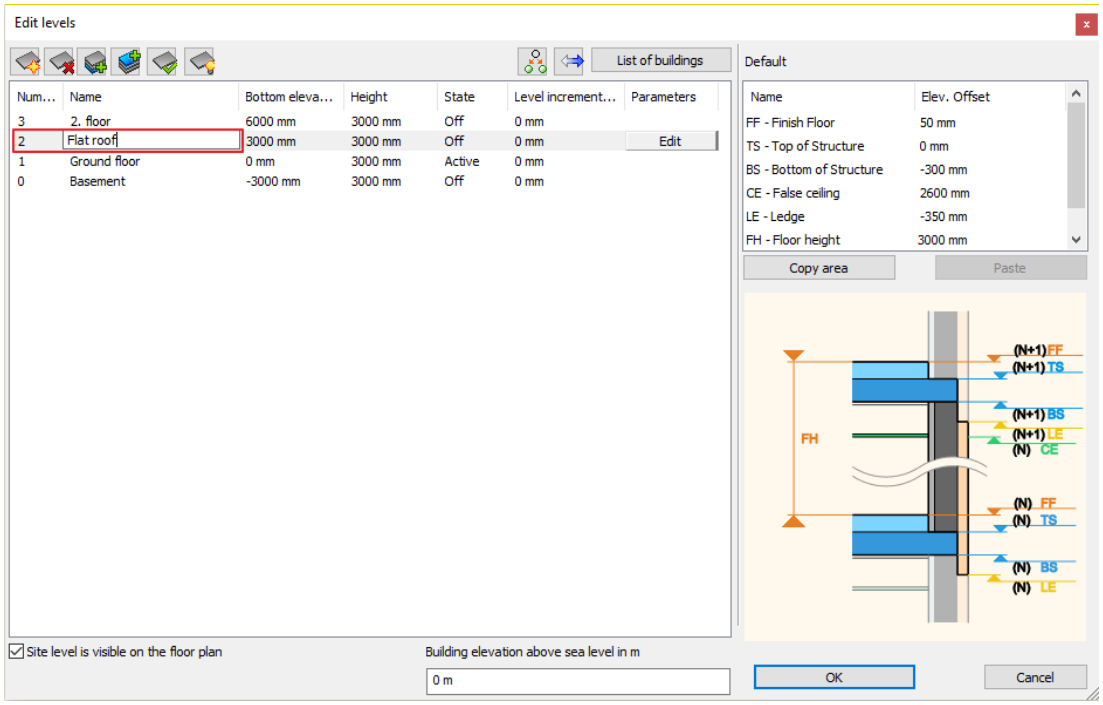
2.3.13. Floor management – Create and edit floors

With ARCHLine.XP®, you can work on complex drawings not only in the horizontal direction, but using level tools, you can also create the necessary structures in the vertical direction. The following example shows a simple task helps you learn and understand the concept of floors easily.

To create a floor level. Repeat the following steps:

Create the floor of the flat roof

- Click on the “Ground floor” button. The “Edit levels” dialogue will appear.
- In the list, there are four floors now. Now we use the Ground floor. The programme creates these floors by default whenever you start a new project.
- To rename the first floor double-click on its name. Type the following: **Flat roof,** then press Enter.
- Click, OK.

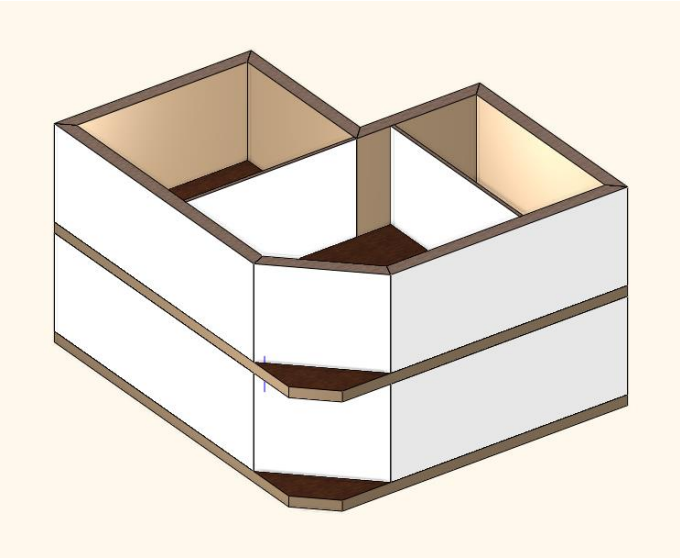


At the moment, we can see the recently created ground floor level content such as walls, slab. The building has a flat roof, which can be drawn as usual. Right now, the “copy other floor” is a hands-on tool.
Let’s learn how to use it:

Copy walls, slab to another floor:

- Select the entire floor plan with the selection rectangle.
- Press the Ground floor button. The Edit floor levels dialogue appears.
- Press the Copy objects to another floor .
- In the appearing dialogue window, select the floor named “Flat roof”. Press the OK to copy the selected items.

In the 3D window now, you can see that the full content of the ground floor is copied to the upper floor. On this level, we will create a flat roof so we will not need the partition walls, but we need to change the height of the main walls too.



Customizing the properties of the copies

- Select the partition walls on the Flat roof floor and delete them.
- Now select one of the main walls. The “Property grid” will appear on the left side of the screen.
- Click on the property in the “Property grid” on the left side and change the wall height to 1000 mm, and press Enter.

As a result of this modification, the selected wall reduced immediately on the model. With the same method, you can change the properties of more selected walls (or any other drawing elements) at the same time. However, it is good to know another tool which can be used to modify items and/or match their properties in a large number.
Next, you can learn about the “Copy properties” command.

Copy properties - optional

- Select the 1000 mm tall main wall on the floor plan.
- Click on the paintbrush icon in the top toolbar of the program. It is the “**Copy Properties”** command.

- The Wall properties dialogue box appears with all those properties that can be copied to another wall. Make sure that the Height of 1000 mm is enabled (checkbox should be ticked at the left side of this property row). Enabling or disabling property options allow the selection of properties that you would like to copy or you would like to leave unchanged.
- Press the OK button.
- By using the rectangle selection, please select the content of the entire Flat roof on the floor plan.
- Now press the Enter on the keyboard.

The result of the previous steps will be that the program will copy the properties of the selected wall (now all of them) to the selected walls. Now the height of all walls is 1000 mm. We are ready with the Flat roof.

There is an even faster solution to the previous exercise:

Select items by type:

Task: Select all walls on the level of the Flat roof and change the walls height to 1000 mm.

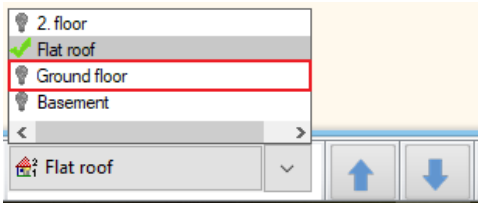
- Hold down the CTRL key on the keyboard and select walls.
- Release the CTRL key.
- Change the height of the walls to 1000 mm using the Property grid on the left side and press Enter.

All the walls on the Flat roof floor are now changed to 1000 mm tall.

Switch to the Ground floor

To that work on the Ground floor, it is necessary to jump back to that level as currently we are still working on the “Flat roof” floor.

- Click on the arrow on the right side of the Flat roof button. In the appearing list, you can see a green checkmark next to the name of the Flat roof floor indicating that this level is currently the active one.
- Click on the name of the Ground floor, and you will see the ground floor elements appearing. We will continue here by creating the doors and windows.

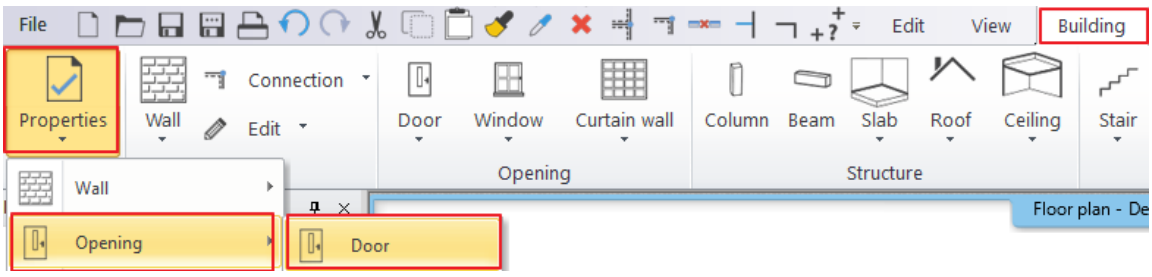


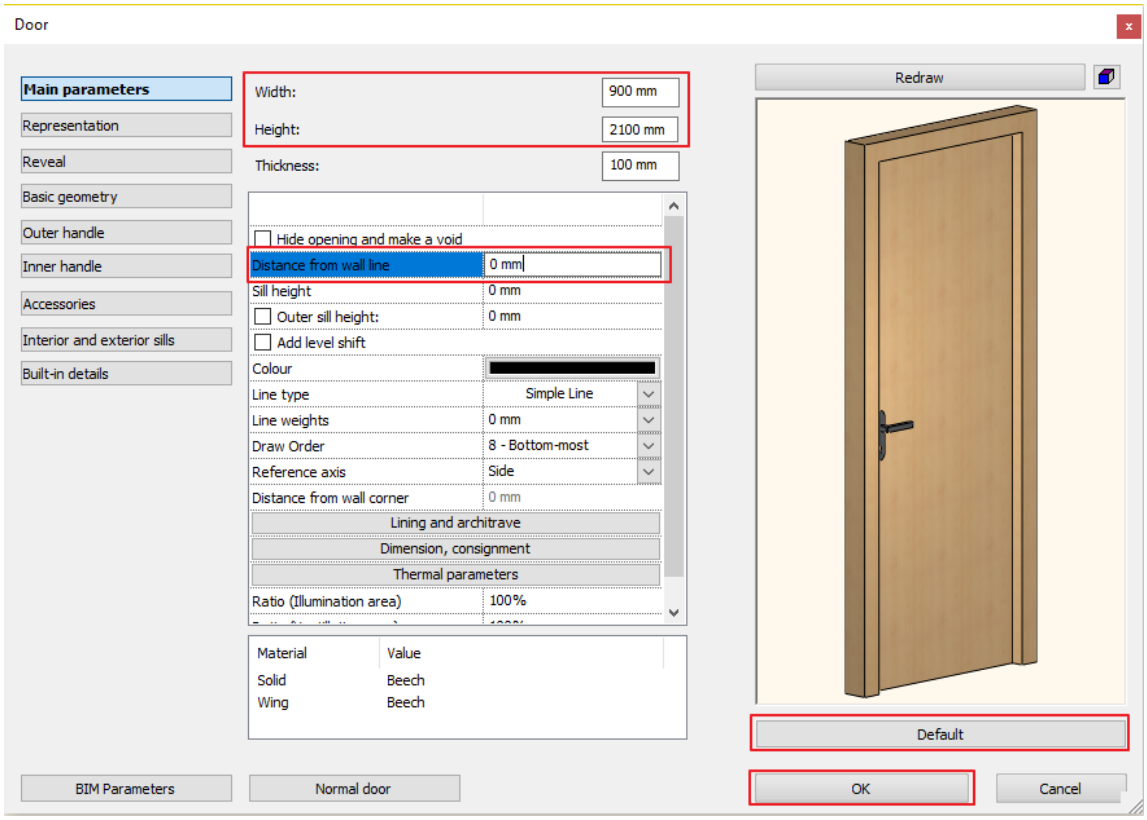
To switch between floors, you can also use the Page Up and Page Down keys on the computer keyboard. Pressing these keys, you can jump one level up or down in the floor list.

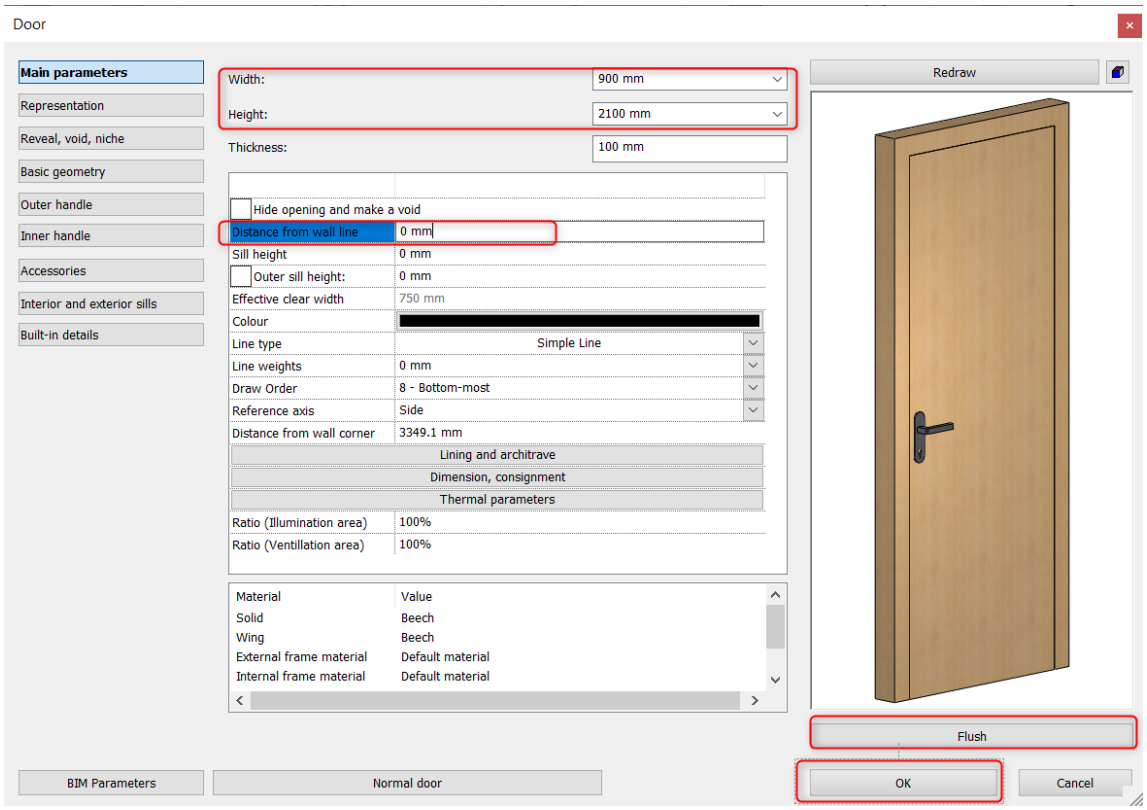
2.3.14. Creating Doors

We are going to place doors on main and partition walls. The first door will be a simple door placed into the partition wall, first we have to set the properties. Proceed as follows:

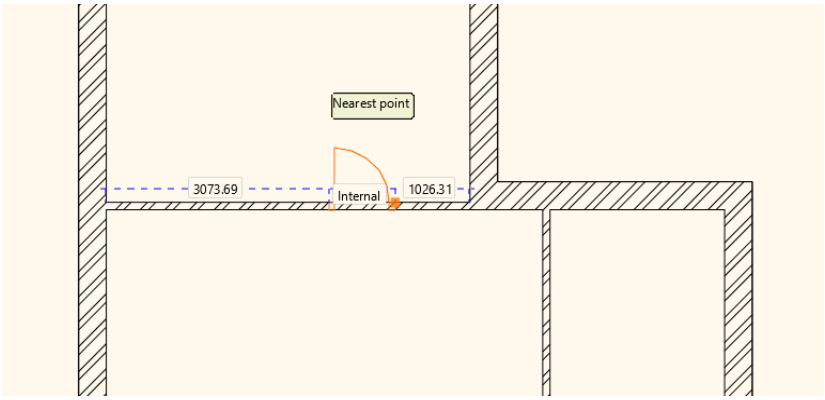
- Select the **Ribbon bar / Building / Properties / Opening / Door** command. Now the dialogue box Door properties appears.
- First two doors will be created with default settings. Door name: Flush; Width: 900 mm; Height: 2100 mm, Distance from the wall line: 0 mm.



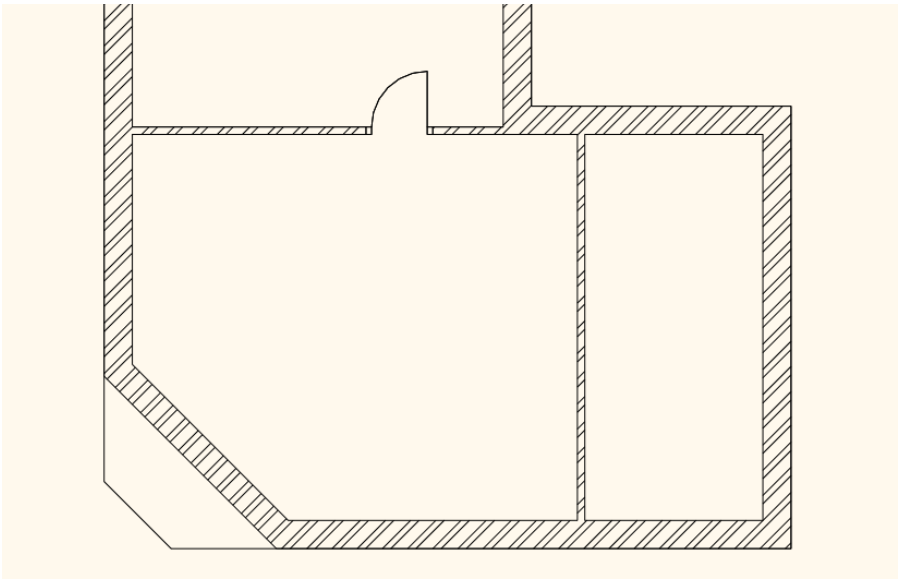




- When the settings are ready, press OK.
- This time, select the **Ribbon bar / Building / Door / Placing door** command.
- Using Door command now you can place the door with previously set properties.
- Move the cursor over the drawing area above the horizontally placed thin partition wall. While you are moving the cursor over a blank area happens nothing special. At that moment, the cursor is above the wall; it changes to an orange door symbol. With the help of this now you can define the place of the door.
- Move the cursor just above the horizontal partition wall. Now the right side of the orange door moves together with the cursor, here an orange reference point appears.

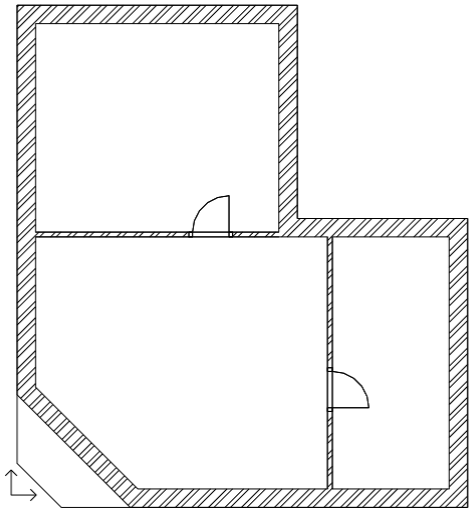


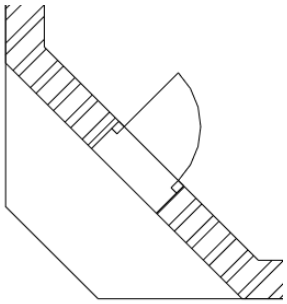
- Type the value 950, then press the key Enter. By this, you specified the distance between the orange reference point and the nearest wall corner, which is 950 mm according to the original drawing.
- Move the cursor around the placed door symbol. The door-opening direction changes. Move the cursor until the door-opening direction corresponds to the direction shown in the original floor plan, and click. Now the door is ready with the appropriate door-opening direction.



The first door is finished, next is to place a door on the vertically placed partition door. Please do the following steps:

- Move the cursor over the partition wall shown vertically on the drawing; the cursor should be on the right side of the wall.
- The orange reference point appears at the bottom of the virtual door symbol. The reference point can be changed while drawing.
- Now a couple of additional options appear at the right top corner of the Work area, this help placing doors. Select the instruction "**Next reference point"**, and move the cursor over the partition wall again. This time, the orange reference point appears at the middle of the door.
- Select the option "**Next reference point"** again, and move the cursor again over the right side of the wall. This time, the reference point appears at the top of the door. Set the distance between the marked reference point and the nearest wall corner similarly as you did for placing the first door.
- Type the value 2700 and press the key Enter. Now the door is placed on the wall.
- Set the door-opening direction by moving the cursor around the door symbol and click once. The door is now finished, and it appears in the model too.
- Press the ESC key to close the command.





2.3.15. Modifying the properties of an existing item

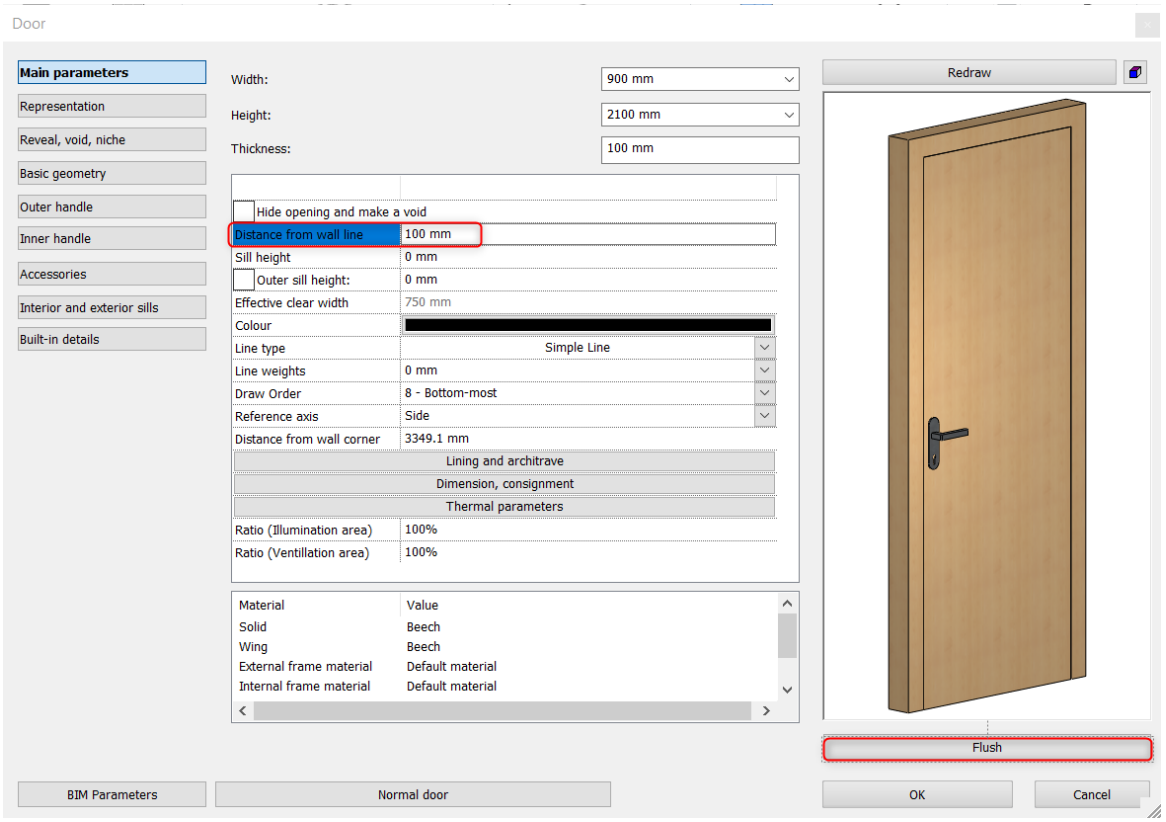
The next step is to place the entrance door. Modifying properties of an existing item can be done quickly. Now we place a “Flush” door, similarly to the internal doors, and then we modify its properties as per the original floor plan.

- Select the **Door** tool under the **Ribbon bar / Building** menu.
- Move the cursor over the angled main wall in the drawing, to the internal side of the room. The orange reference point of the “virtual door” appears at the bottom.
- Select "**Next reference point**" from the options in the right top corner, and move the cursor again on the inner side of the main wall. This time, the reference point is in the middle of the door.
- Move the cursor on the inner side of the wall towards the middle until the shape of cursor changes and the midpoint cursor appears. It means that the door reference point is grabbed and held in the middle of the wall. Click on the wall to place the door in the middle.
- Move the cursor to select the desired opening direction, then click once.
- Finally press the key ESC to close the command.

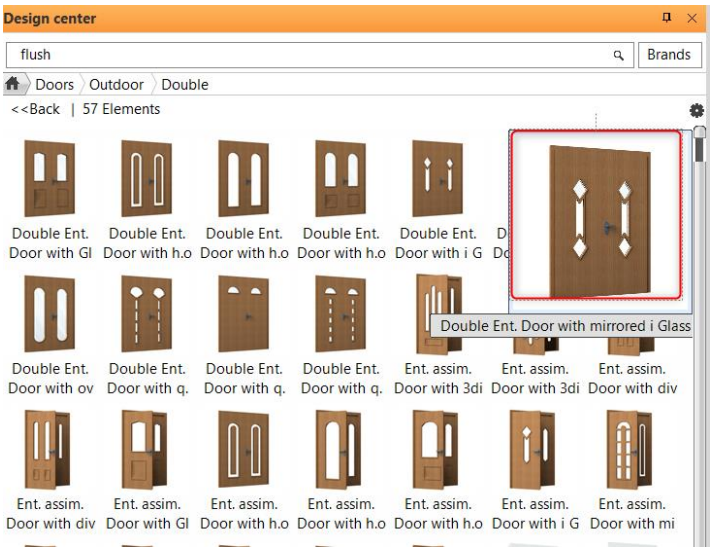
The properties of the entrance door do not match what is shown in the floor plan. Therefore, it has to be modified. Let’s do the followings:

Modification of properties

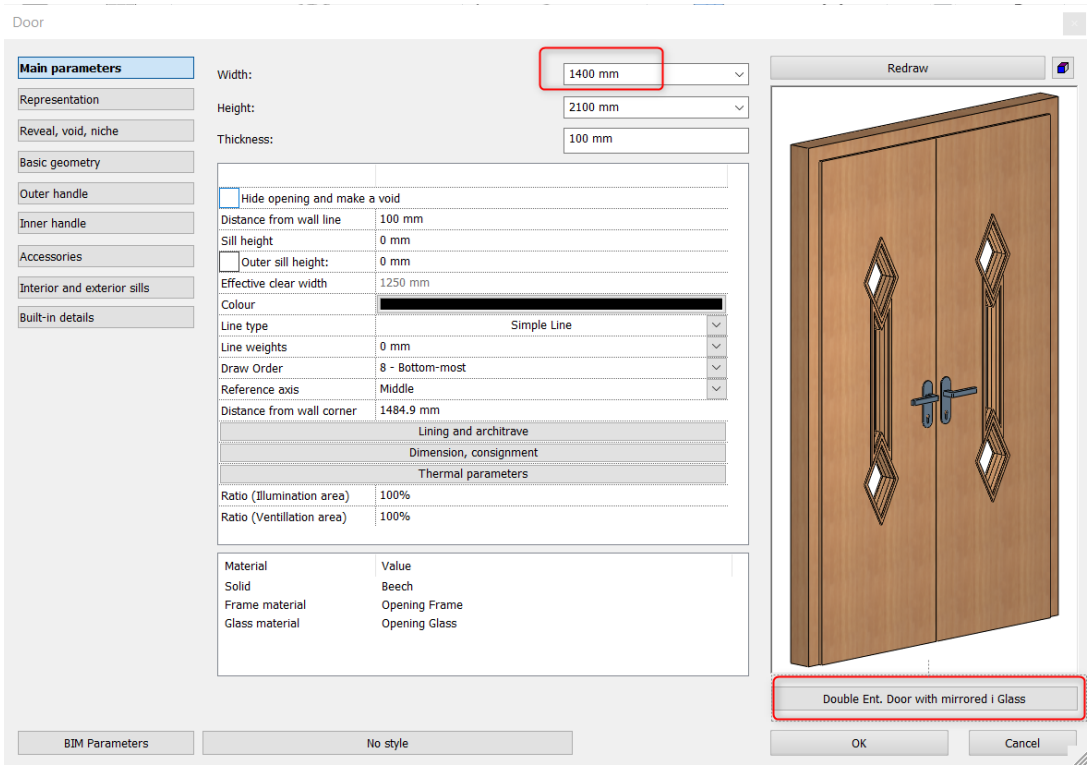
- Select the entrance door in the floor plan.
- The floating menu appears as a result of the selection; the first icon looks like a pencil . It is the "**Property icon"**. The properties of the selected item can be displayed and modified with its help.
- Click on the Property icon . Now the **Door** property dialogue window appears.
- You can see the Distance from the wall at the top right corner. Modify it to 100 mm.

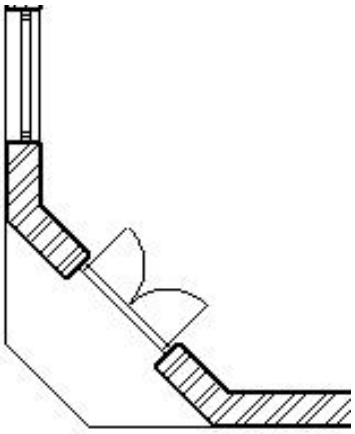


- Click on the **Flush** button**.** In the appearing dialogue click and select the double-wing door named as **“Double Ent. Door mirrored I Glass”**, and click on the OK button.



- Modify the width to 1400 mm.
- Click on the OK button. The modification is done.
- Press the key ESC.



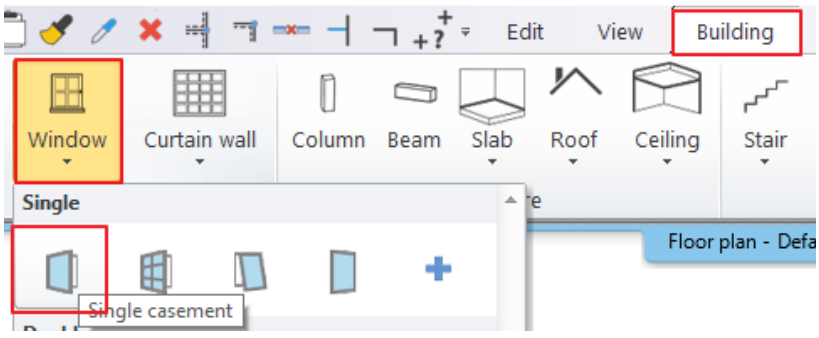


2.3.16. Creating Windows

The next task is to place windows as it is shown in the original plan.
We can set windows properties and place them as we described in the section "Creating Door".

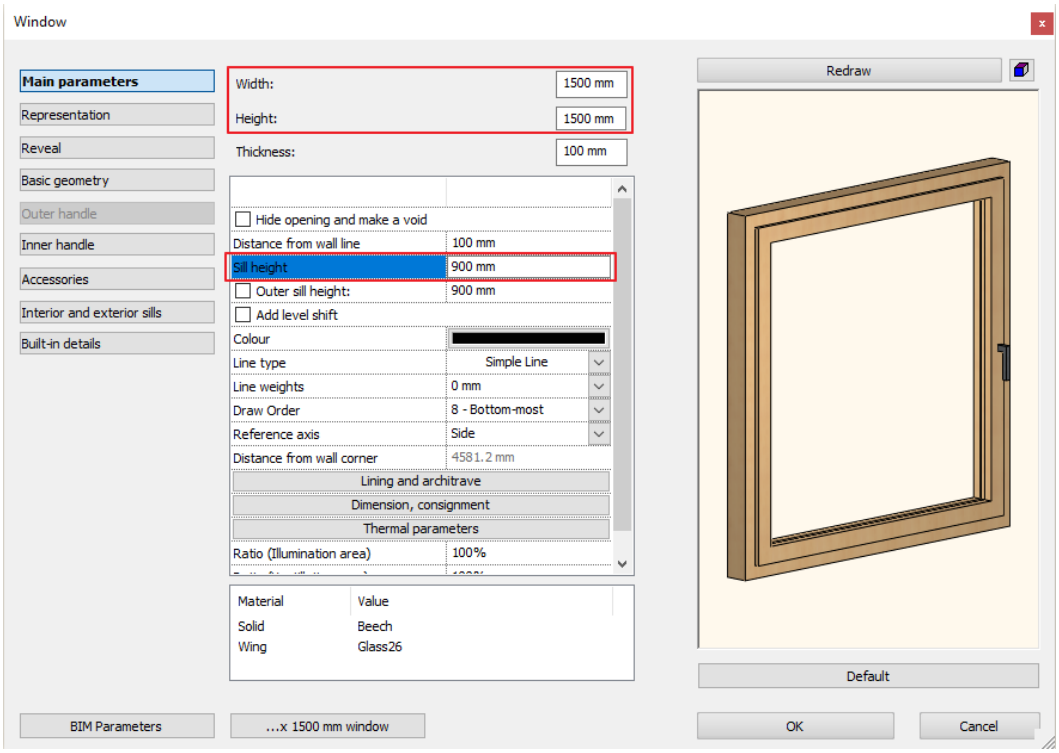
Here we will use another method:

- Click on the menu item **Ribbon bar / Building / Window / Single casement**.



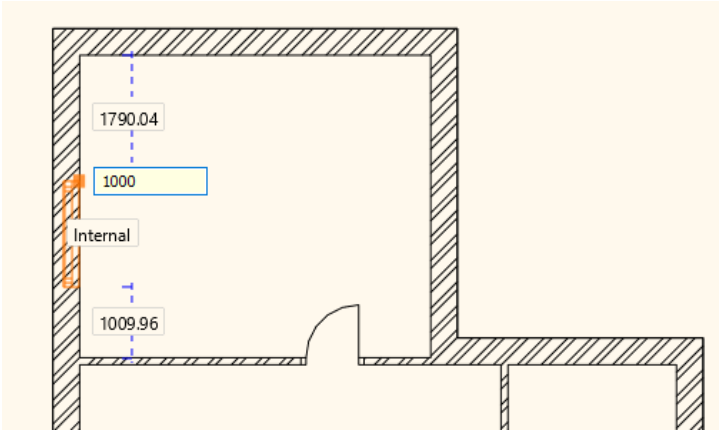
On the left side under styles will appear the single casement window.

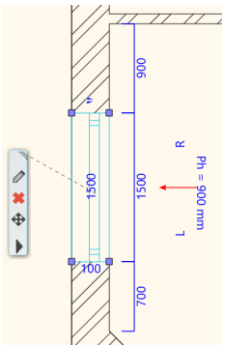
- Clicking on icon, the window property dialogue will appear.
- In the appearing dialogue window, change “Sill height” to 900 mm.
- Set the Width and Height to 1500 mm.
- Click on the OK button to accept changes.



Now we set the dimensions of the new windows to be placed:

- Move the cursor to the upper part of the left main wall. A reference point appears here as well; this helps to place the window. The reference point can be changed using the same method as we demonstrated for placing doors.
- Select the option **"Next reference point"** from the options appearing on the right side, and move the cursor again over the wall. Now the reference point can be found in the middle.
- Select the option **"Next reference point"** from the options appearing at the right side again, and move the cursor over the wall. The reference point is in the top corner point of the window.
- Type the value 1000, and press the key Enter. Now you set the distance between the reference point and the nearest corner point to 1000 mm. The window appears in the wall accordingly.





- Now move the cursor to the bottom of the left main wall.
- With the same method place the next window. The window reference point should be placed from the corner point of the main wall and partition wall. The distance should be 900 mm.
- When you finished, press the key ESC.

With the help of previously described methods, you have learnt how to place more windows with given properties in a wall.

This method can be used in case of many tools offered by ARCHLine.XP®, so the steps are:

- ❖ Modify the required properties.
- ❖ Now you can draw or place items (walls, doors, windows, lines, etc.) with the appropriate drafting tool without interruption.
- ❖ Finally, close the command by pressing the key ESC.

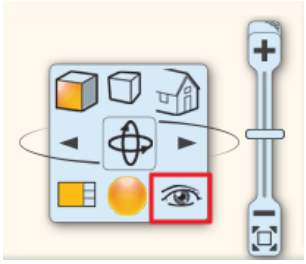
Finally place the 3rd and 4th windows on the right side of floor plan.

2.4. Furnishing and representation

2.4.1. Setting up the perspective

In this chapter, we deal with the furnishing of the rooms. Therefore, it is necessary to set up one or more perspectives besides the axonometric view of the model. Now we show how the model looks like from the inside to our clients.

Setting up and saving the perspective views

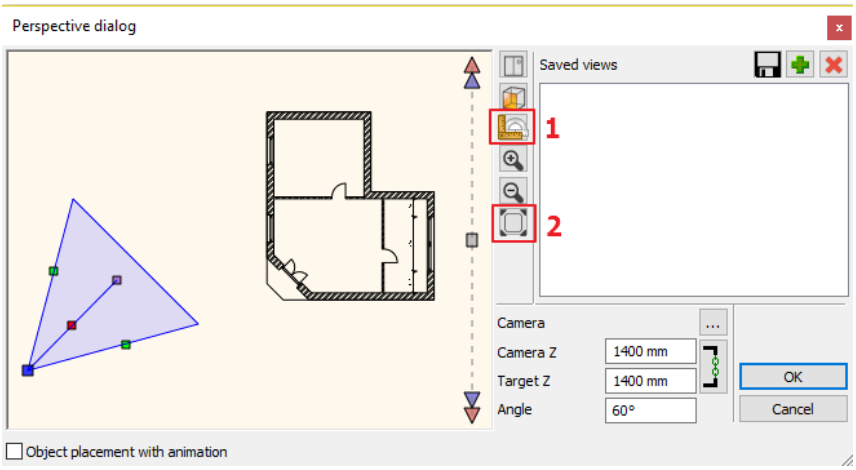


- Activate and enlarge the 3D window by using the Navibar – Magnify window tool.
- Find the eye icon at the bottom part of Navibar, and click on it.
  The "**Perspective dialog"** window appears.

- Click on the button of 2D display (1), which depicts a yellow ruler. As a result, the floor plan of the Ground level appears at the left instead of the 3D top view.
- Press the orange-blue coloured button **"Fit to window"** (2). As a result, the blue camera tool and the floor plan is displayed.
- With the help of **left button of the mouse** click on the blue marker representing a camera point and hold the mouse button down, and move it to the bottom right corner of the hall within the room. *In this dialogue box, the left mouse button should be held down!*
- With the **left button of the mouse,** click on the violet-coloured marker representing the look-to point and while holding the mouse button down, move it to the left top corner of the room.

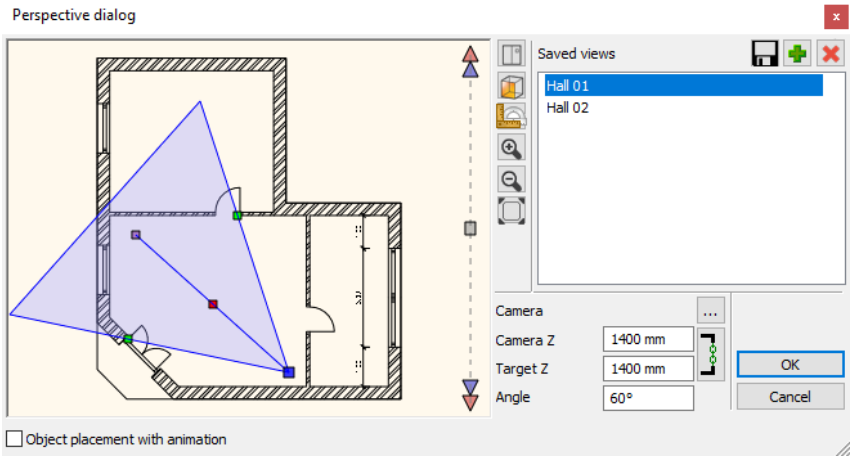
With these two steps, you defined a perspective view.

- Let's save this perspective. Click on the green cross at the top right corner of the dialogue box. Now the program saves the view under the name "View 0".
- Click twice on it, and in the appearing dialogue box type the name of the view without quotation marks: "Hall 01" instead of "View 0", then click on the button OK. This way you have renamed the previously saved view.
- Create a second view by using the steps above. This view now depicts the upper right corner of this room from the entrance door. Finally, rename it to "Hall 02".



- Select the saved view named *"Hall 01",* then click on the button OK to close the dialogue box.

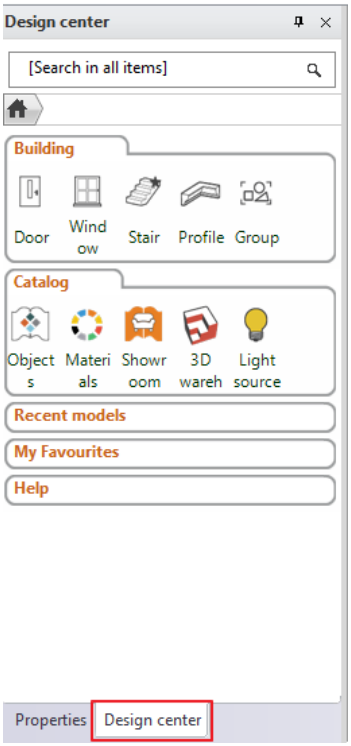
You can create and save additional views by following the previous method. A preferred view with precisely the same settings can be selected and displayed later with a single click.



When you have more saved views, then you can select any views by using the keys "Page up" or "Page down", which are used to change the levels on the floor plan also.
Please note, the previously described way to change views works only if the 3D window is active! The program in the 3D window will switch between the saved views, and not the levels.

2.4.2. Furniture items – Design Center

Working as an open system, the software ARCHLine.XP® is capable of handling furniture items having different formats and from various sources without complicated file operations, and can read and place these items into the project with a single click.



If no internet connection is available at the moment, then you can use:

- the limited number of furniture items provided by the installer,
- the furniture items used in the previously opened projects,
- the furniture items downloaded during the former internet connection,
- your own furniture items that have been created with the help of the Furniture wizard of the program, or by using other 3D modelling tools.

As soon as you are connected to the internet, you will be able to access many additional furniture items:

- from the Showroom of ARCHLine.XP® free of charge,
- with the help of the browser of the free service of Google 3D Warehouse,
- from other web sites that allow downloading freely or by payment.

From here on, we will refer to furniture items as objects.

Let us start by discussing the locations of the objects that can be accessed right after installing the program, which are ready to use. The objects can be found in the ARCHLine.XP® Design Center. Please do the following:

In the left side you can see two tabs, click on the tab "Design Center".

Now the main page of the Design Center has appeared. Within a large number of objects, you can browse, so you can find the objects that you want to work with. The Design Center contains the following items available in the program in groups:

Building: Door, Window, Stair, Profile, Group
and
Catalog: Objects, Materials, Light source

Make sure that the main page of the Design Center is active. Click on the Home button .
You will find the objects within the **Catalog / Objects** category sorted into groups. Within these groups, you can search and find those objects very quickly, which names contain the given phrase.

Follow these steps:

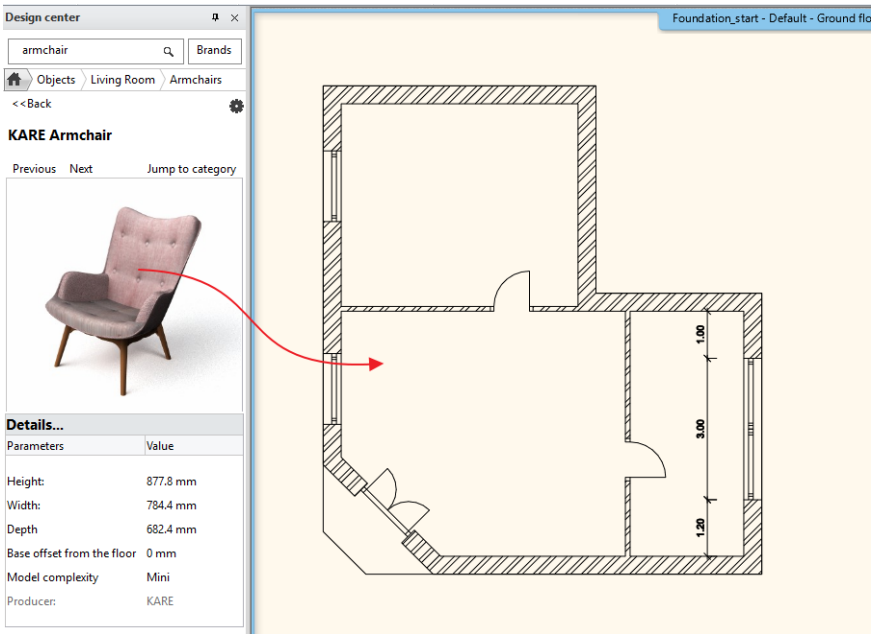
- Click on the search field of the Design Center. This is the field, where you can see the text [Search in all items] by default. Define here the expression or part of a name you want to the search for.
- Delete the text that has appeared here, and type in the word "armchair" without quotation marks, then press the Enter key on your keyboard.

- The program finds and lists all the objects immediately, which name contains the previously entered word.

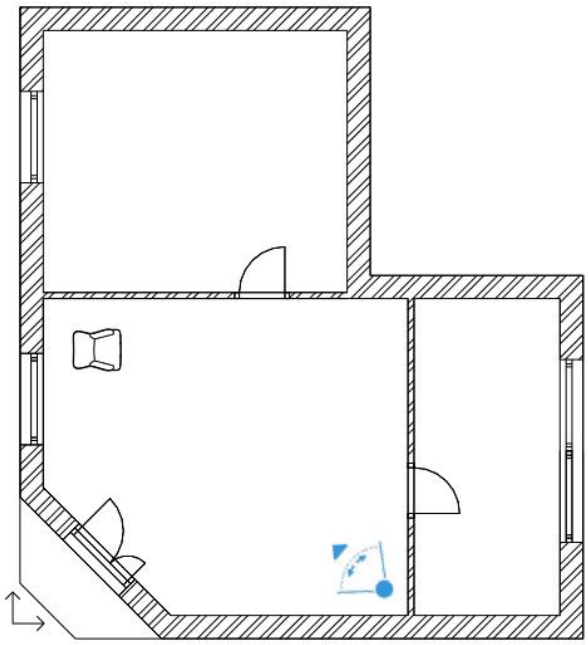
Now you can look through the listed objects, and place any of them in the currently active 2D drawing.

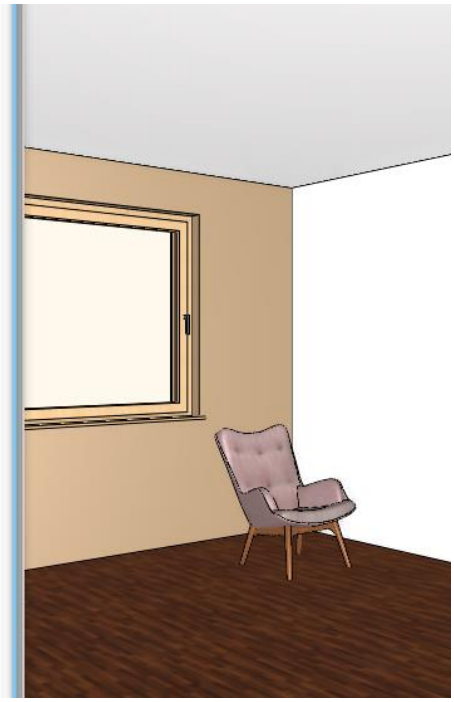
Follow these steps:

- Click on the object “KARE Armchair”, and when the large image appears, click on it and keep the mouse button down.

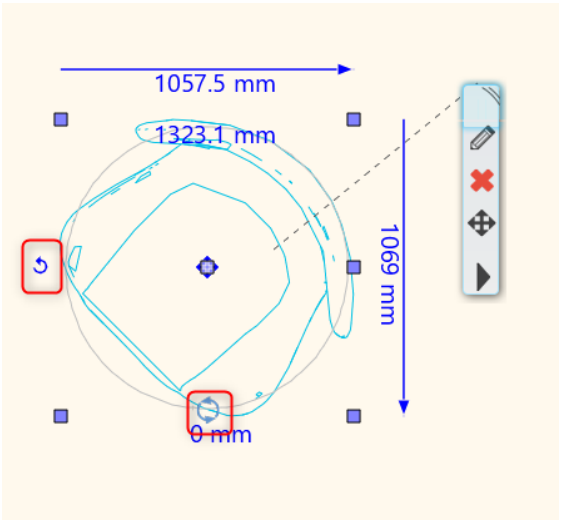


- Holding the mouse button down move the cursor over the 2D drawing area, and release the mouse button.
- Move the cursor, and now you can see that the top view of the object “KARE Armchair” is displayed with orange colour, and it follows the movement of the cursor.
- Move the armchair into the room where the entrance door is in the drawing. Place the armchair in front of the partition wall with a single click.
- Now the program offers to place another copy of the selected armchair. Press the key ESC to finish placing objects.





If the object is not in the right direction, you can now rotate it by using markers.



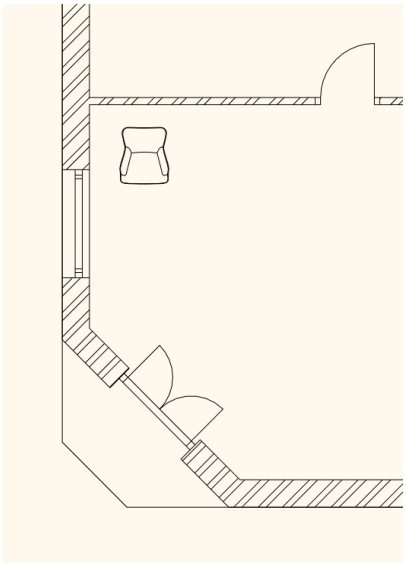
2.4.3. Move and rotate

Using markers is the simplest way to move and rotate items that already has been placed in the drawing. Markers immediately appear after selecting an item on the floor plan. Please do the following:

- Zoom in the area of the drawing, where the armchair is.
- Select the armchair on the 2D drawing.
- Many coloured markers appear on the screen. Click on the marker that depicts a deep blue round arrow. This is the Rotation marker.
- Also, the free rotation marker appears (double round arrow). You can now decide the degree to rotate the object around its own axis.

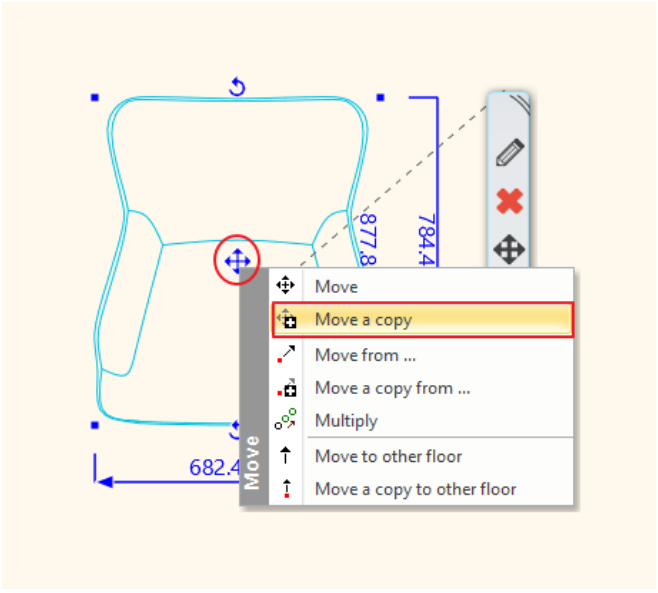
If the rotation marker does not appear during the selection, then the component is too small in the drawing. In such a case, zoom in to this part of the drawing until the rotation marker appears.

- The Rotation menu appears after you click on the Rotation marker. Select "Rotate 90 cw". Now the armchair is rotated, it faces towards the entrance door.

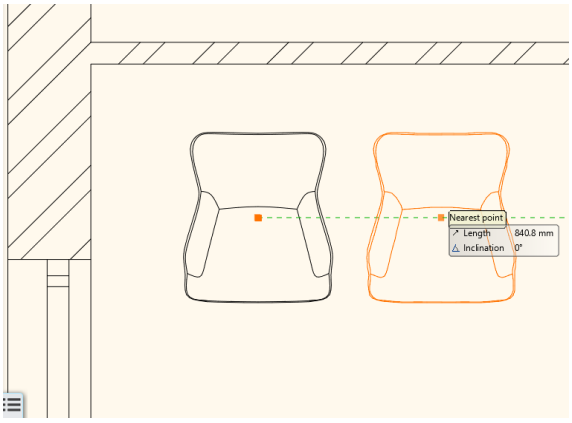


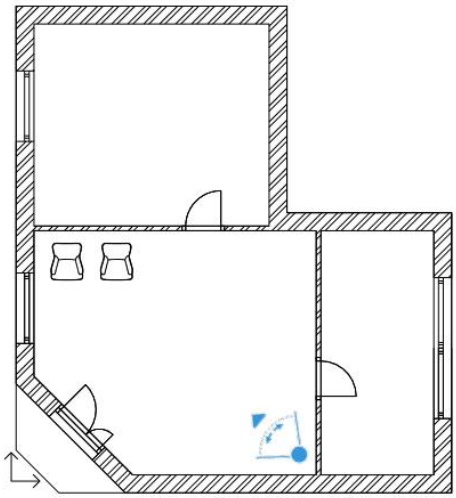
The armchair faces in the appropriate direction. Place a second copy of this armchair next to the previous one:

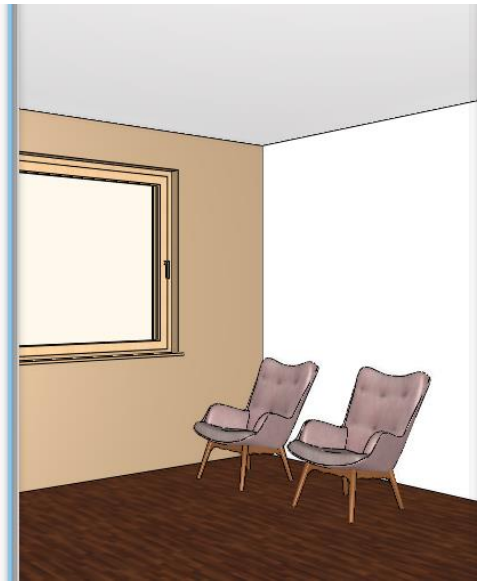
- If the armchair is not selected on the drawing, then select it now.
- Now markers appear, select the one is depicted by an arrow pointing in four directions. This is the Movement marker.
- In the appearing menu, select "Move a copy" command.



- Move the cursor, to position the virtual copy of the armchair in orange colour to the right side of the original armchair, then click to place it. Finally hit the ESC key. Now we can see two identical armchairs in the floor plan as well as in the 3D model.







If you study the Rotation and Movement tools, and you will notice the program offers various possibilities to move and rotate the selected items. Try these tools, and you will see that you can use them efficiently under different situations.

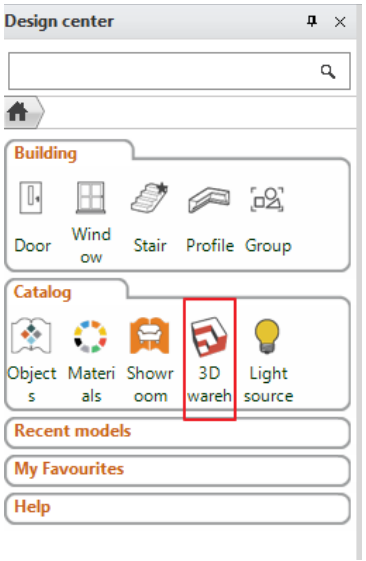
2.4.4. Furniture items – The 3D Warehouse

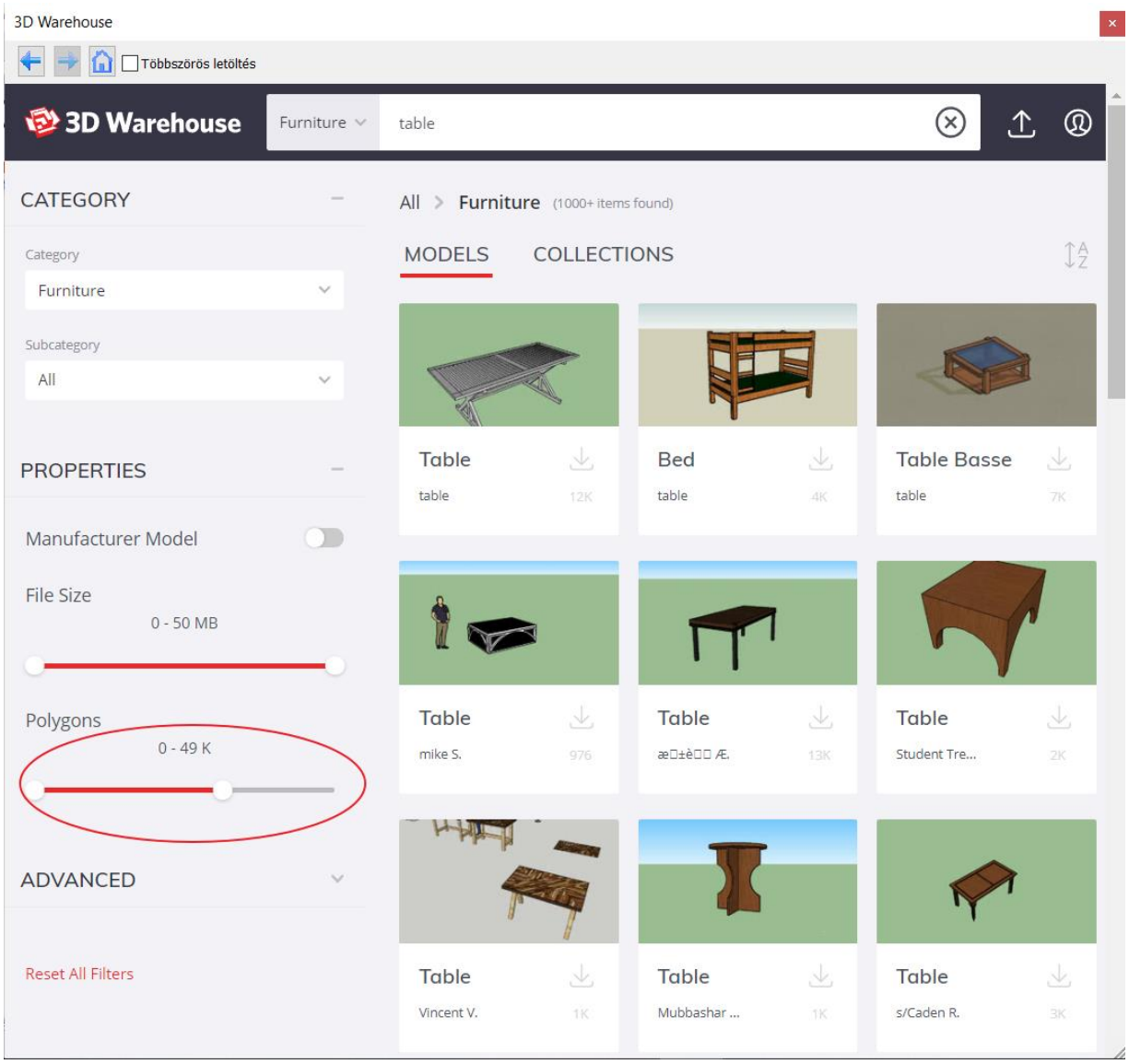
Attention: An internet connection is necessary to complete tasks in the chapter below.

We place a coffee table in front of the two armchairs in the hall. Now we search for a specific coffee table using the internet. Please do the following:

- Open the Design Center. Select **Catalog / Google 3D Warehouse** command.
- The built-in browser of ARCHLine.XP® appears shortly with the opening page of 3D Warehouse.
- Type the word "table" without quotation mark in the search field, then click on the button Search.

The browser of 3D Warehouse search through all the objects in the database very quickly, then sorts and offers the ones for which the given expression "table" is true.





Guide to 3D warehouse

It might happen the downloaded objects from 3D Warehouse are too large or contain too many materials. These objects can significantly slow down the software, so the work becomes even more difficult. The software warns us in three different cases.

- The object is too large, contains more than **50,000 polygons** (surfaces)
- The object contains too many materials: there are more than **50 materials** on the object
- The object physical extension is over **100 m.**

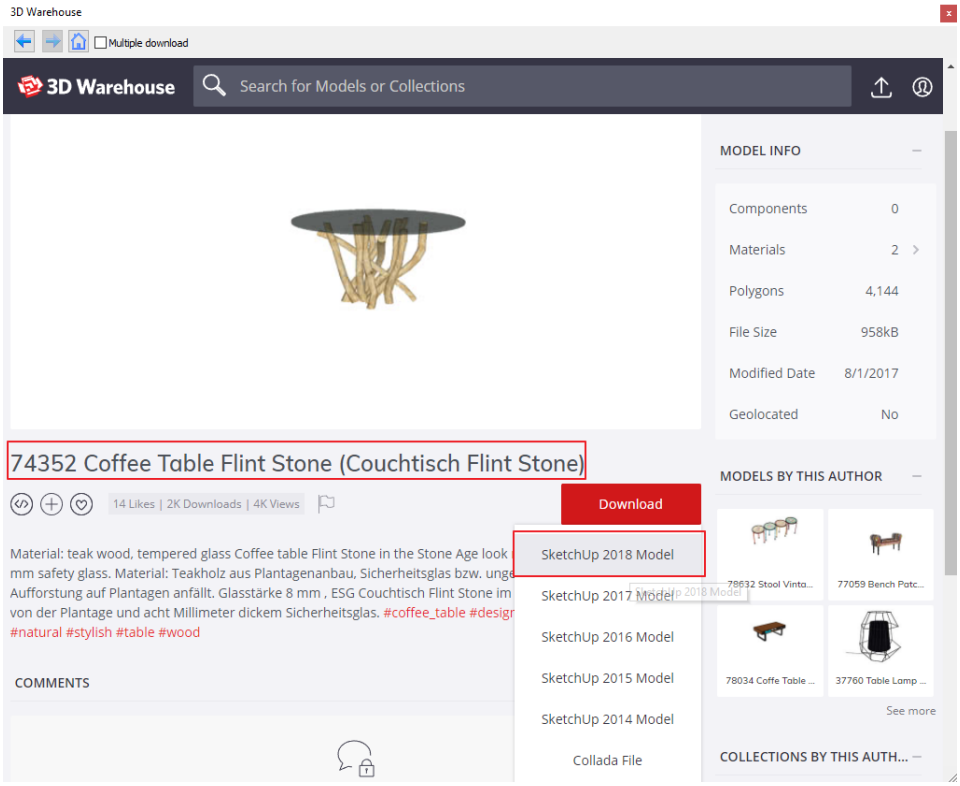
The 3D Warehouse also provides help filtering objects as well.
On the left side, you can find the filter list.

! **It is recommended to set the number of polygons to 49K. The website will only display objects doesn't exceed the maximum 49,000 polygons**. This way, unwanted too large objects which are not supported by ARCHLine.XP will not be offered to be downloaded.

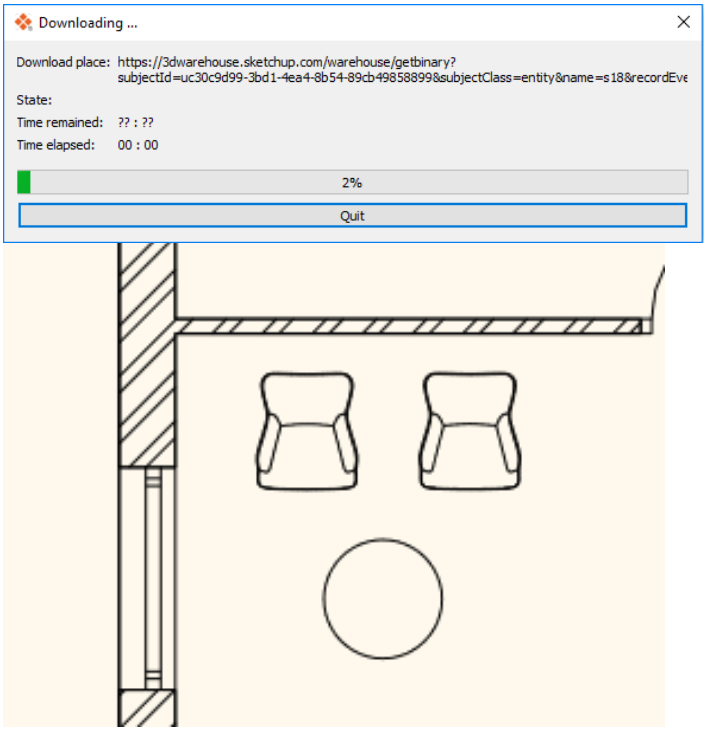
The hits can be refined, if the former simple search word is supplemented with another expression.

- Now write the expression "coffee table" in the search field instead of the word "table", then press the Search button again. Now you can see that the search result lists different types of coffee tables.
- Now try to find a product of certain manufacturer. Type the expression "kare coffee table" without quotation marks, and press the button Search.
- Select the object "KARE 74352 Coffee Table Flint..." from the list of search result. Now another page appears showing the selected object with a large image.

- Click on the "Download" button; choose the latest version from the list. Now the program starts to download the selected coffee table.



- Within a short time, the program will automatically offer to place the selected table. Move the cursor until the orange-coloured virtual top view appears, and place the table in front of the two armchairs. Select the 3D view to check the current status of the 3D model.

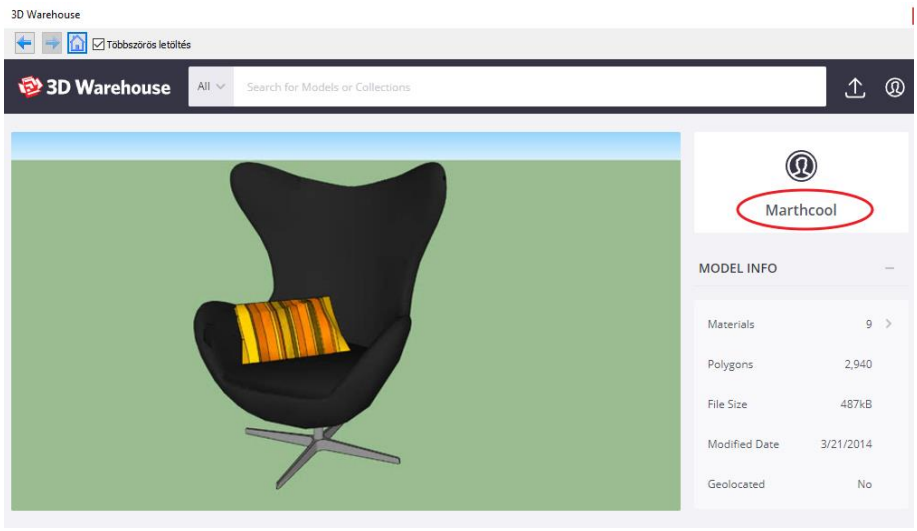


2.4.5. Modifying downloaded objects - Optional

When we search for models on the web, we often face the fact that the downloaded model contains more items than we need, for example, chair collections, beds with extra small cushions on them, etc.
In the following example, we'll show you how to edit a downloaded item if it is made up of multiple independent items.
(If it consists of only one item that the designer has uploaded as a group of multiple items, it cannot be edited.)

Download the following armchair from 3D Warehouse:

- Type in the search field: Chair Marthcool. Select from the one which is on the picture below.
- Place it on the floor plan.



There is a smaller cushion on the armchair. The armchair and the cushion compose one single item. We aim is to save the armchair in the library without the cushion. To get this result, please follow these steps:

- Choose on the **Ribbon bar / Interior / Sketch mode / Open Sketch Mode** command.
- Select with one click the editable object.
- This way, the object is separated into parts: armchair and cushion. These items can be separately moved or deleted.
- Edit: Click on the cushion and move it away from the armchair and then delete it.
- Now new armchair became 3D solids, those are not saved in the library; therefore, we have to do it.
- Go to **Interior / Sketch mode / New Object** command.
- Overwrite the old object.
- Close the sketch mode: Interior / Sketch mode / Close Sketch mode.
- Now delete the old object on the floor plan and find the new under Objects / 3D Warehouse folder and place it on the floor plan.

The “Sketch mode” command cannot be used on those objects which were uploaded by the designer as one single item.

We will not use this armchair any longer so we can delete it on the floor plan.

2.5. Layer management

A frequent task is to present a floor plan in different ways, so that we can examine the pre-planned alternatives of a furnished floor plan. Most design software usually facilitates the execution of this task with the help of the so-called layers. If you did not meet the term “layer” yet, then read the explanation below to understand the idea.

2.5.1. What are the layers?

Imagine layer as a traditional layer used for overhead projectors, or as the frequently used tracing paper. You can draft various figures on this tracing paper, including walls or armchairs and coffee tables.

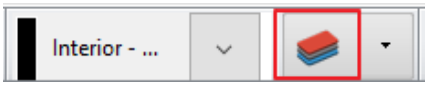
Name the tracing papers **as "Walls" and "Indoor – Hallway – Furniture 1".** If you place the tracing papers on the top of each another, then you can see the walls, as well as the furniture items placed at the hall. If you pull out the tracing paper named **"Indoor – Hallway – Furniture 1"** under "Walls" layer, then only the walls are displayed.

You may also place another tracing paper such as **"Indoor – Hallway – Furniture 2"**, and you can create a second alternative arrangement for the hall. Then you can change the tracing papers showing the 1st or the 2nd alternatives depending on what you like to display.

2.5.2. Layer Management

It is important to mention that layer structures of the floor plan and 3D view are not necessarily the same. Therefore, working with layers always has to be started from the floor plan.

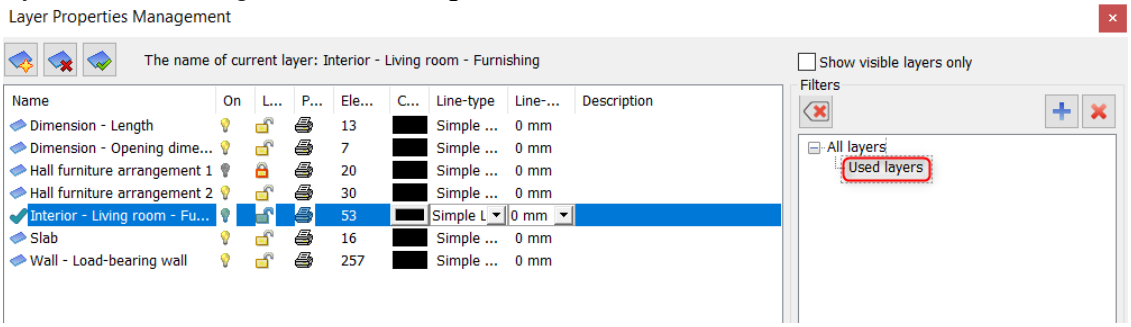
- Activate the 2D window.
- Click on the Layer icon at the bottom toolbar.



The "Layer Properties Management" dialogue appears.

Used Layers

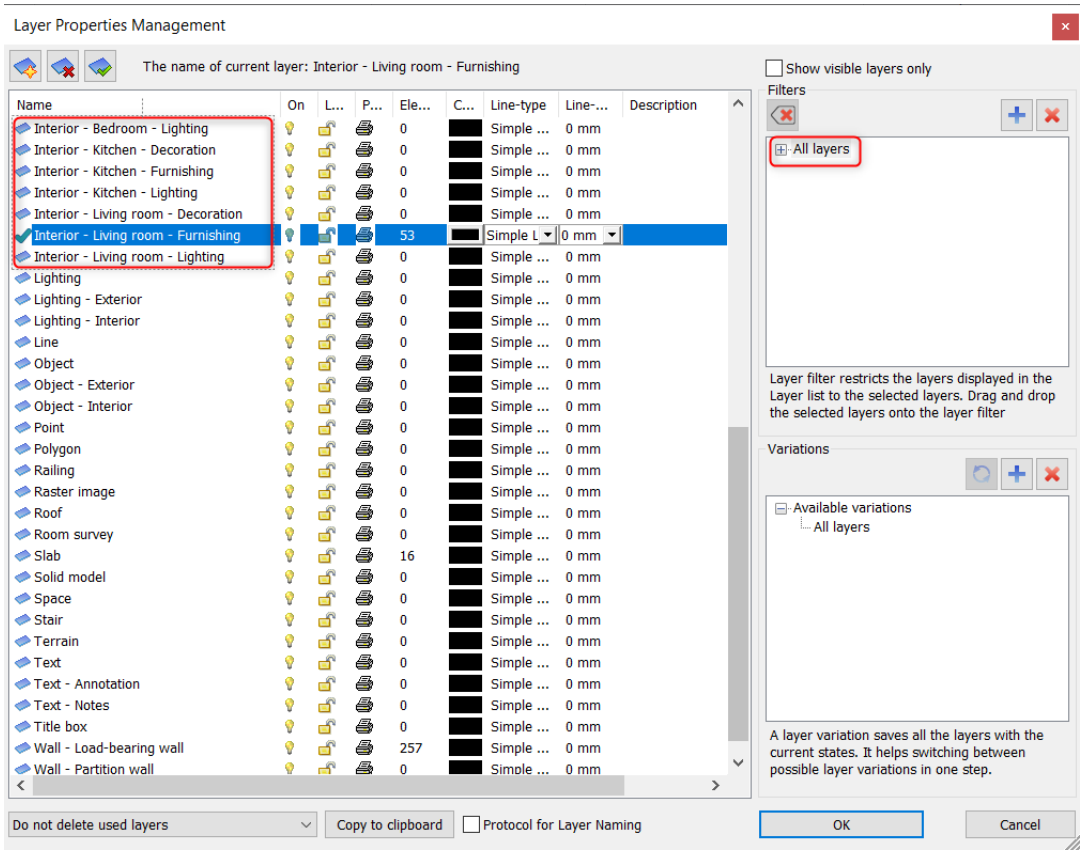
The exhibited list shows the layers, on which you have already placed components during the work on this project. It is evident from the above description that the program automatically sorts the various drawing components to different layers depending on their type. Accordingly, the walls are arranged on the layer **"Wall – Load – bearing wall",** the floor slabs are on the layer **Slab**, dimensions are on the layer **"Dimension – Length",** while the objects are arranged on the layer **"Interior - Living room - Furnishing"**.



All Layers

- Now turn on "All layers" option.

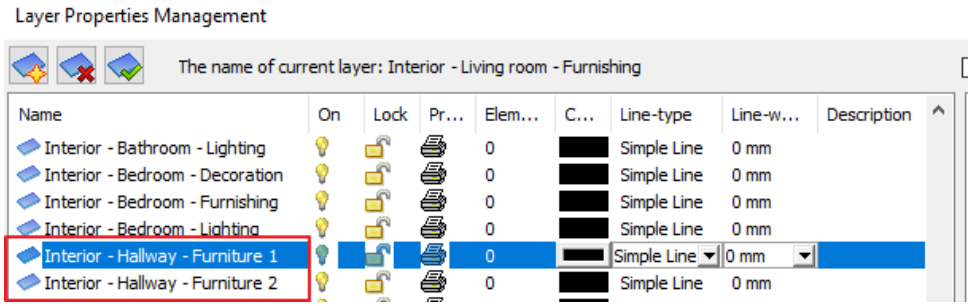
Then all the layers in the program will appear. We have prepared layers for both architectural items (these are automatically assigned to the item types) and for furniture so the designer can easily place furniture, decorative elements, lamps on a separate layer for each room. If you need an additional room that is not on the list, it's worth creating it as a new layer.



Create New Layer

According to the task, we have to make two alternatives for arranging furniture in the room. It is advisable to create new layers for each option. New layer can be created only if all layers are visible.

- To create a new layer, click on icon to add a new layer to the list. Now the “Layer n” is created.
- Double-click on the recently created new layer and rename **“Interior – Hallway – Furniture 1”.**
- Now create another layer by using “Add new layer” command.
- Double-click on the recently created new layer and rename **“Interior – Hallway – Furniture 2”.**

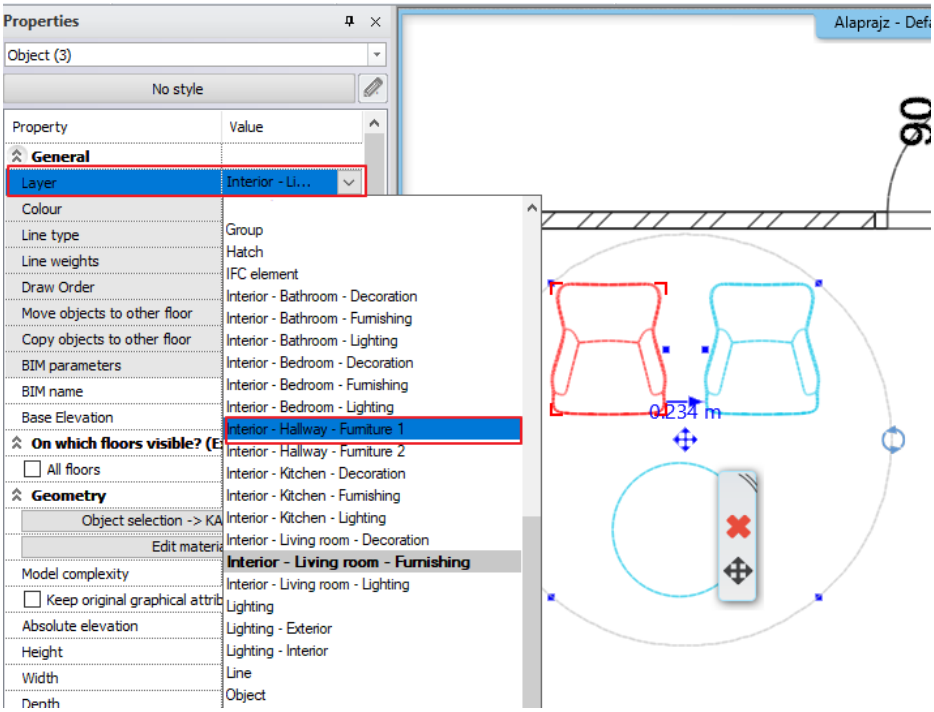


- Close the dialogue window by pressing “OK”.

! Only those layers will be created on which you place items. If you exit the program after saving the project, the new blank layers will not be saved in the project.

2.5.3. Remove items to another layer

Select two armchairs and the coffee table on the floor plan, then on the left side in Properties dialogue window, by pressing the arrow icon you can scroll down in the layer list.



These three items are on “**Interior – Living room – Furniture”** layer.

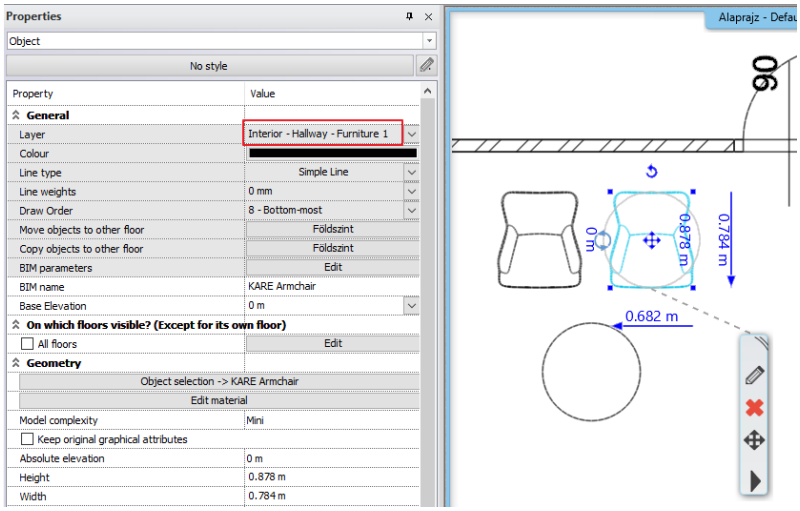
- Now click on the **“Interior – Hallway – Furniture 1”** layer on top of the list.

  The removal of these items is done.

Checking the layer properties of objects

After completing the removal, now check these items are on layer **“Interior – Hallway – Furniture 1”**

- Click on any armchairs on the floor plan.



The properties on the left side shows Layer: **“Interior – Hallway – Furniture 1**”. So, we successfully placed all three items to a new layer.

2.5.4. Drafting the second alternative arrangement

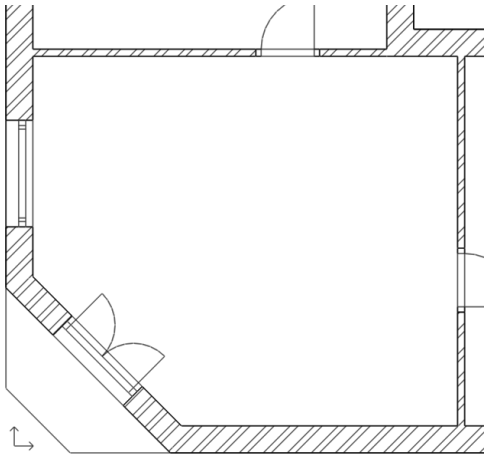
Let’s turn the visibility off the layer **“Indoor – Hallway – Furniture 1”,** so we could work on an empty room.

Switching off the visibility of layers

- Activate the floor plan window.
- Open the Layer Manager.
- Turn on “Show used layer” option.

- Click on **"Interior – Hallway – Furniture 1**", then click on the yellow bulb icon to turn the visibility off. Now the padlock is locked.

- Close the dialogue window.
  On floor plan, we can see an empty room.



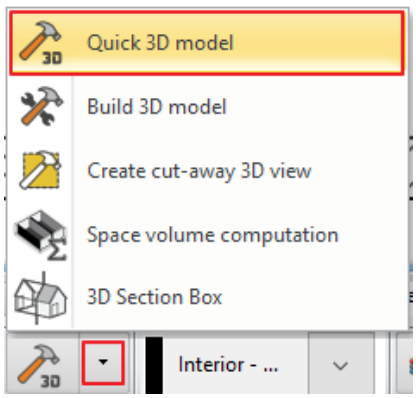
Placing furniture – second version

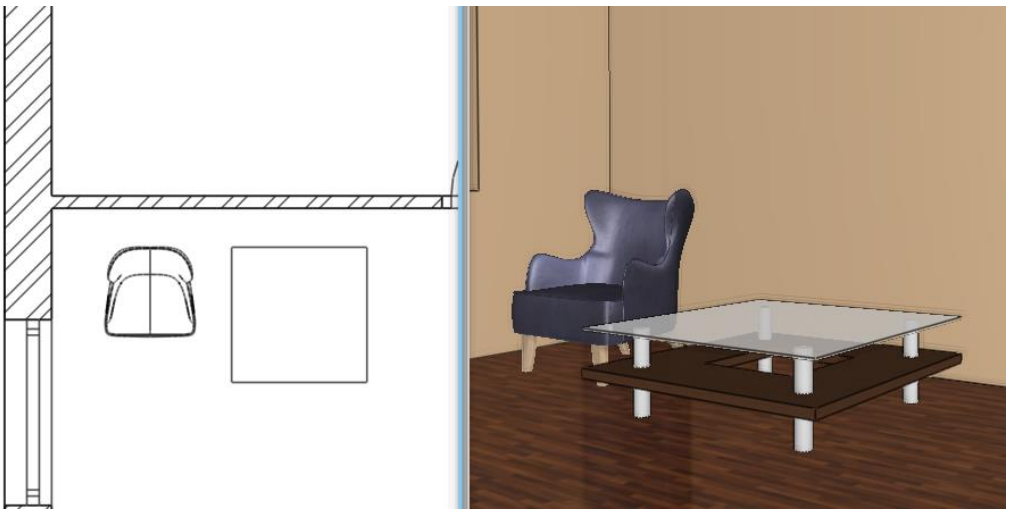
- Open the Design Center.
- Click on **Catalog / Objects / Living room / Armchair** folder, then select "KARE Lounge Chair".
- Use "drag and drop" method to place it in the hallway close to the left wall.
- Find and place the object named "Coffee table 05" also next to the armchair.
- Select both items and move them to layer "**Interior – Hallway – Furniture 2"** by using the previously described method.

Updating 3D model

At this moment, the floor plan reflects the second furniture arrangement while the 3D view shows both alternatives simultaneously. It is time now for you to learn how to display the 3D model with the content corresponding to the current floor plan.

The simplest way is to rebuild the 3D model, if you click on the hammer icon on the View Control Bar. This tool is the **fast Build 3D model** tool. Using this tool quickly builds up the 3D model based on the content of the floor plan.

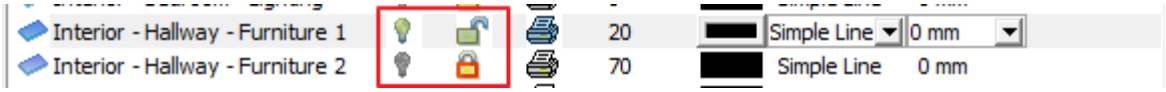




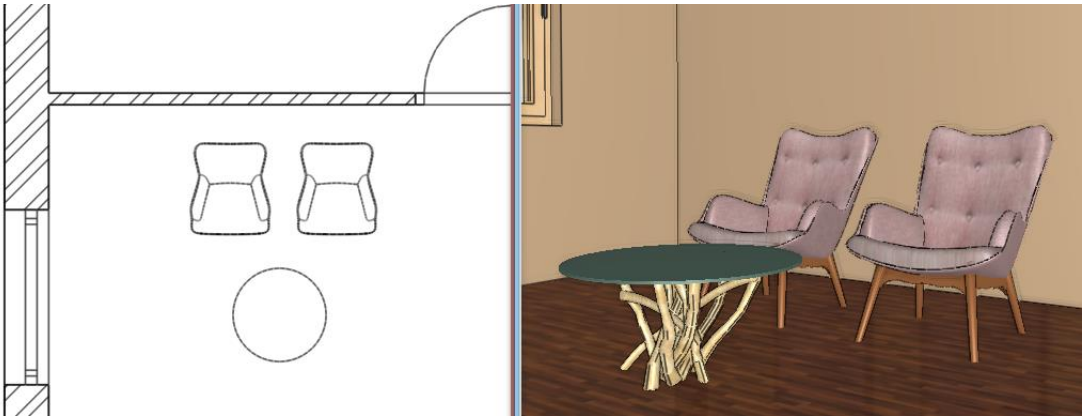
Two armchairs and coffee table disappeared, as the visibility of layer representing them had been turned off - this is same as that if we pull out tracing paper of this furniture under the other drawings.

Switching between alternatives by turning on and off layers

Activate floor plan window.
To see the first alternative arrangement in Layer Properties Management, turn on "**Indoor – Hallway – Furniture 1"** layer unlocking the padlock, while **"Indoor – Hallway – Furniture 2"** turn off the visibility by clicking on the yellow light bulb icon.



If you click on the 3D hammer icon, the first alternative furniture arrangement will appear on floor plan and 3D view as well.



2.5.5. Playing with the model – The "3D hammer" tool

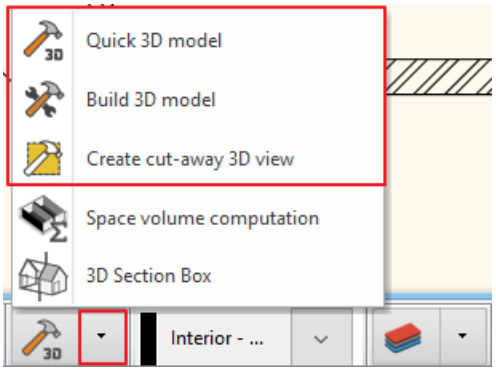
In most cases, the ARCHLine.XP® takes off the burden from the shoulder of the designer by updating the model regularly. You may have seen several examples for this feature, starting from the drawing wall, through copying the already placed walls, up to the modification of properties, and you were able to follow the changes also in the 3D screen.
In some cases, the content of the 3D view doesn't update, such as the previously mentioned example turn on / off layers.

Using basic tools on the floor plan is not followed by an update on 3D view then you have to check: **File menu / Options / Graphics / Build 3D model / Keep 3D of the project updated** dialogue window**.** The" Keep 3D of the project updated" option should be activated.

Updating the 3D model

The simplest way to rebuild the 3D model if you click on the hammer icon on the View Control Bar. This tool is the fast Build 3D model tool. In essence, using this tool quickly builds up the 3D model based on the content of the floor plan.

Displaying the active level only

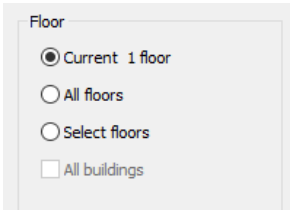


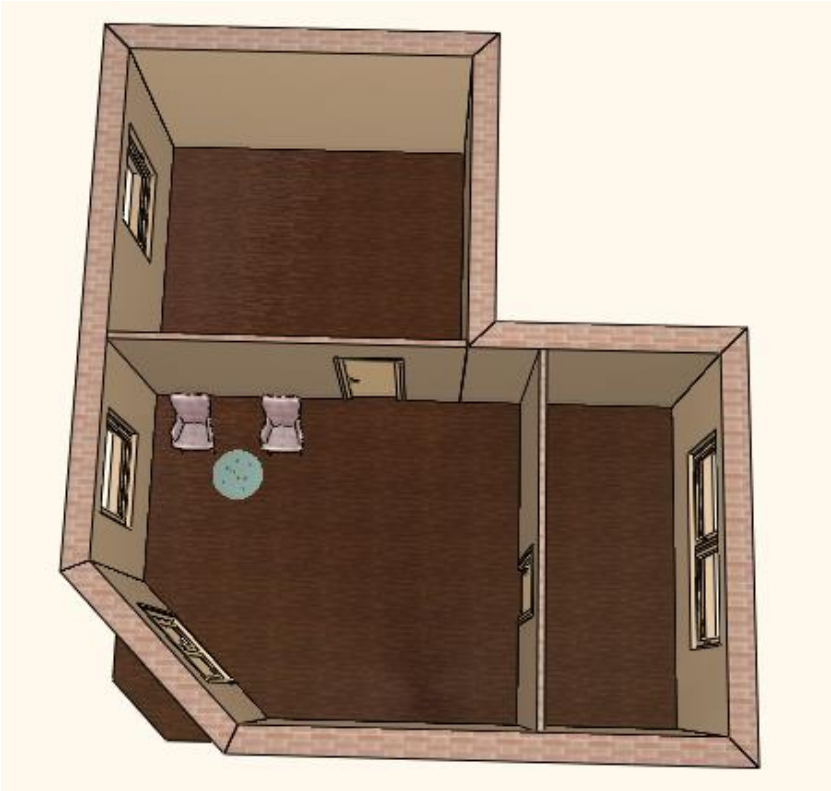
- Click on the black arrow next to "Build 3D model" (3D hammer) icon located in the bottom toolbar of the program. The dropdown menu shows all tools for 3D building.

- Click on **Build 3D model** command.

  Now the Build 3D model dialogue window appears.
- Find the "Floor" settings at the lower left quarter of the dialogue box, and change the option "All floors" to "Current 1 floor", and then press the button OK at the bottom of the dialogue box.

  Upon pressing the button OK, the program starts working and soon displays the model. Now only those items are visible, which are on the Ground floor layer on the floor plan. This representation could be an excellent tool to create a semi top view, a so-called dollhouse view of the floor plan.

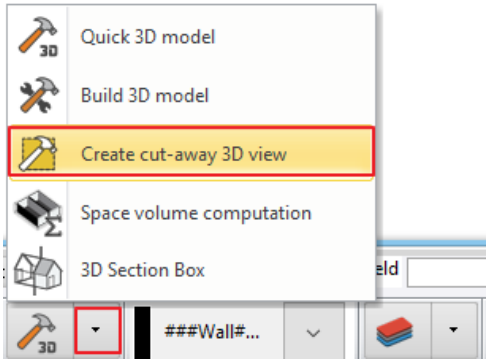




Re(building) the entire 3D model

- Click again on the icon "Build 3D model".
- The "Build 3D model" dialogue box appears. Select the option "All floors", and rebuild the entire model again by pressing the button, OK.

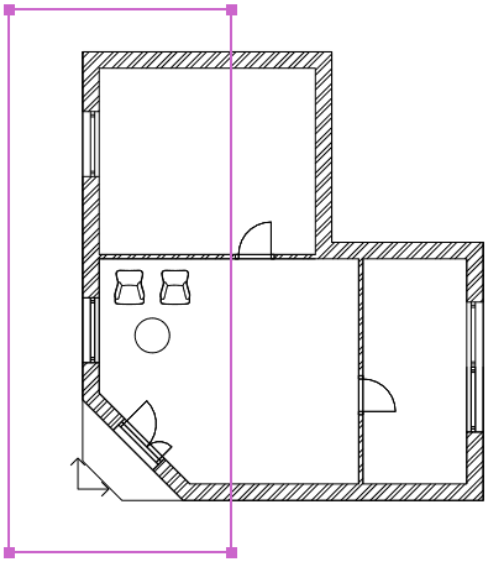
Displaying the part selected with a rectangle

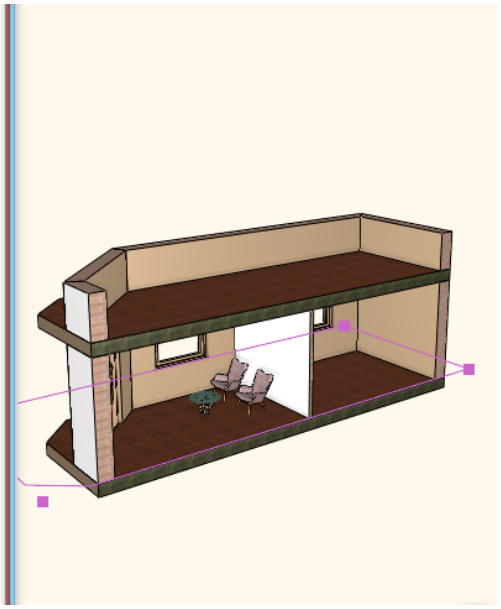


Besides the previous options, you can cut the model in half; this way an interesting 3D view can be created showing a spatial section of your design.

- Arrange the 2D drawing so that the entire floor plan is visible.
- Click on the black arrow next to 3D hammer icon.
- Click on “Create Cut-away 3D view” command.

- Move the cursor to the upper left corner of the drawing area, and click. This way, you have placed the first corner point of the rectangle.
- Now move the cursor to the right bottom corner. The coffee table and armchairs should be inside of this selection rectangle. This way the rectangle roughly cuts the model cuts in two halves.
- Finally click once.





The model that has been cut along the edges of the rectangle appears within a short period.

- Rebuild the entire model again, showing all the floors by using “Build 3D model tool.

Finally, you may learn the use of 3D filtering of selected objects, which is also very useful during the design process. In this case, the program represents only the components that are selected in the floor plan.

Display the selected components only

- In the floor plan, select the two armchairs and the coffee table placed in front of them.
- Click on the first 3D hammer.

The program displays the three selected items only in the model. This tool is particularly useful when you want to focus your attention to a well-defined small part of a complex drawing.

- Rebuild the entire model as it was shown before.

2.6. The importance of “Save as” function

It is highly recommended to save your project at different stages during the design process while working with ARCHLine.XP.
There are a number of reasons why it is beneficial to save your work at different phases. If you are working on one single file and it gets damaged or lost, you will lose everything. It would be best if you kept in mind the principle that "One file is not enough".
The high-tech data storage methods offer safer data protection, but it’s still worth if you save other copies of your project, rather than using one single file.

- Save your work under the recently used project file by clicking on Save command. This way the Foundation 01 file is overwritten. We recommend saving every 10-15 minutes.

Save project under different name

- Select the menu item **"File / Save project as ...**" in the main menu.

- The appearing dialogue box indicates that the project presently contains two drawings, the floor plan and the model. Click on the button Save at the bottom of the dialogue box.
- Type the new name "Foundation 02" in the appearing box, and save it by clicking on the button Save.

Congratulations!

You did an excellent job by meeting a serious and very useful milestone, and you have completed the training session of ARCHLine.XP dealing with the foundations!

Now you may review your work to realize that you have learnt the use of tools that can facilitate the resolution of quite complex tasks starting from the use of simple but also important and necessary tools. With the help of this training material you made acquaintance with the methods of the accurate and precise drafting.

With the knowledge you acquired so far you will be able to process complicated floor plans for your designing efforts, or you may redraw printed drawings too.

Workshop 3: Bathroom - Tiling

3. Workshop: Bathroom - Tiling

In this tutorial you will learn how to create and visualize tiling, particularly the placement of bathroom tiles in ARCHLine.XP®.
This course goes through the design of a bathroom project and provides you the following principles and basic skills both in 2D and 3D:

- Simple tiling design: Wall and floor tiling in 3D.
- Modify the tiling in 3D.
- Create and place Tiling style.
- Create Mosaic tiling.
- Tiling design in 2D layout.
- Creating a built-in mirror.
- Creating wall elevation views.
- Tiling consignation: preparing listings of used tiling.

As an example, we use Eva Ferenczi's bathroom project, and we choose from Tubadzin - House of Tones tile product family. The goal is to come up with the same result as shown on the image below:

- Please open the following playlist in your browser:

  https://www.archlinexp.com/education/video-tutorials/interior-design/tiling

3.1. Open and Save the project

Let's start by opening and working on the project, which for the moment, does not include any tiling.
First of all, download the **WORKSHOP PROJECTS - PRELIMINARY** from the website and install it. It includes all project for all preliminary workshops.

https://www.archlinexp.com/education/workshops/workshop-application-preliminary

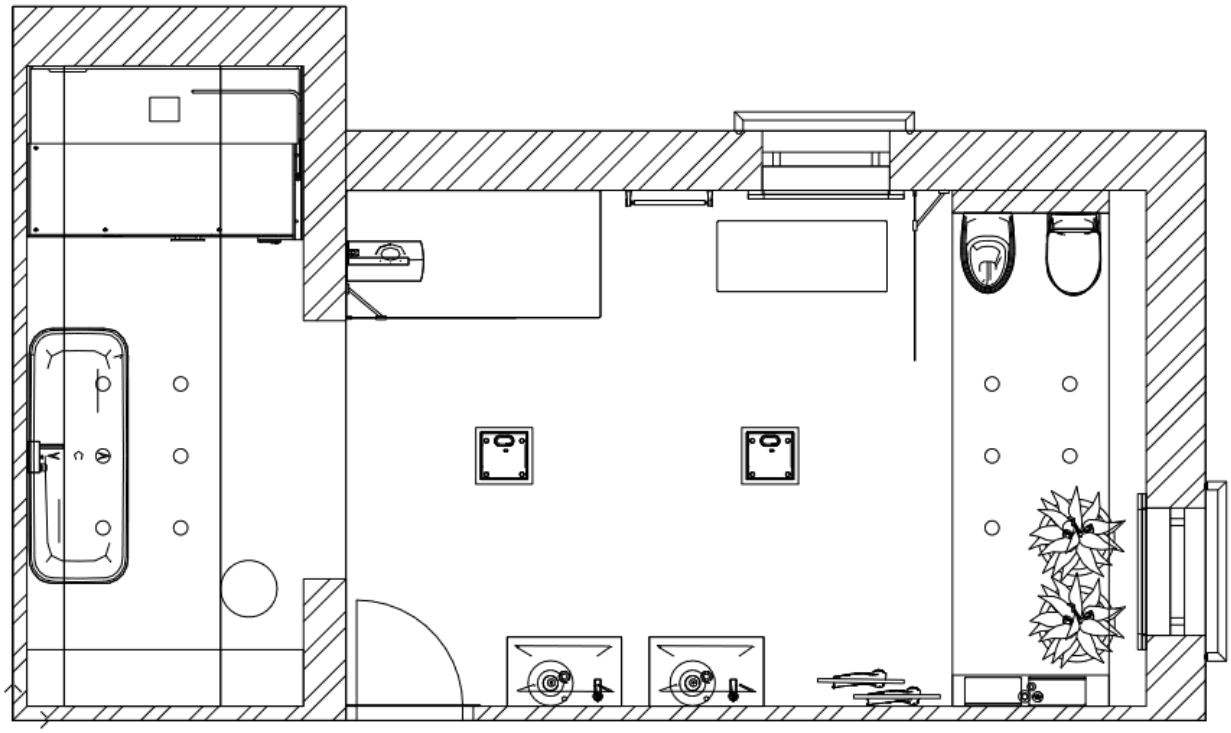
- Start ARCHLine.XP®.
- Click on the "Open Project".

and choose the:
..\Documents\ARCHLine.XP Draw\2019\Workshop - Preliminary/Bathroom-Tiling\1_Ferenczi_Eva_Furdoszoba_workshop_2020_START.pro

Save project as …

Before starting to design, it is recommended to save your project under another project name in order to avoid overwriting the original.

- Clicking on the **File menu/ "Save project as.."** command.
- Click on the *Save* button and give the project another name, and Save.



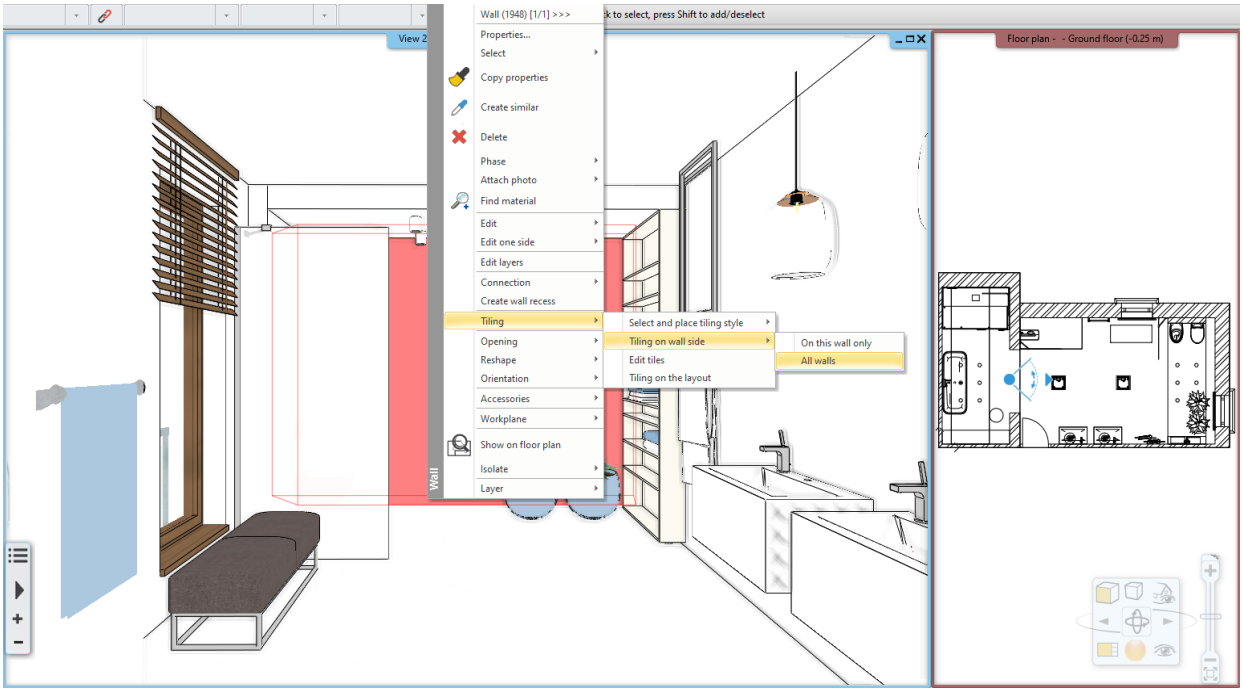
3.2. Tiling in 3D

The 3D tiling allows you to speed up the tiling style placement.
The surface can be selected with one click, a wide range of tiles can be selected and placed quickly on walls and floors.

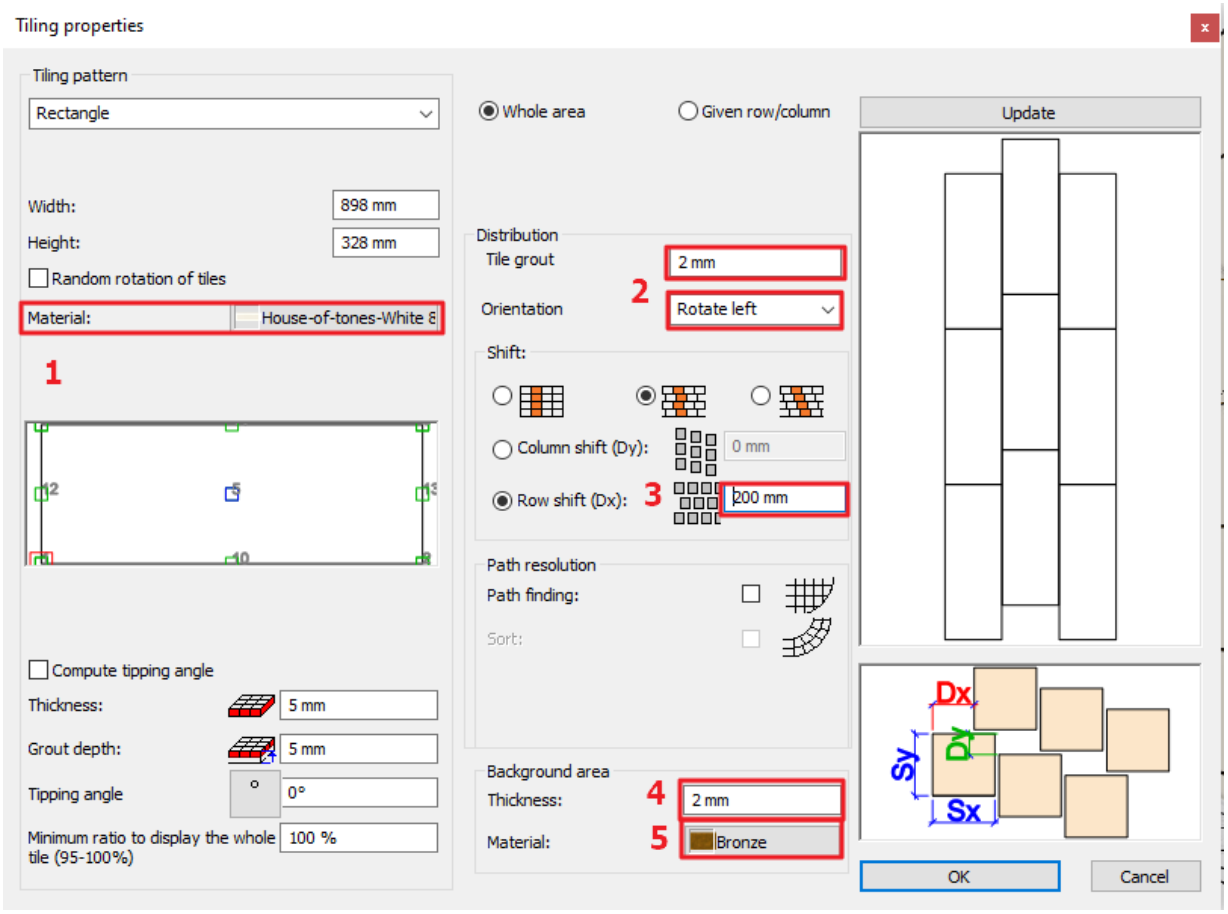
3.2.1. Wall tiling

We are going to place **Tubadzin House-of-tones-White 898x328.jpg** tiles on the whole surface of the walls (from floor up to ceiling).

- Activate the 3D window (the active window's frame turns blue). To activate the 3D window just click inside it.
- Activate the view named Bathroom_1 and choose Consistent colour as the 3D preview mode.
- Right click on the wall in the back, and select from the Local menu **Tiling / Tiling on wall side / All walls** command.



- In the appearing dialogue, click on the name of the material and select from Library: **Material / Tile / Indoor / House-of-tones-White 898x328**. (1) The tile grout is 2 mm.
- Change the orientation of the tiles to the “Rotate Left” option. (2)
- Enable row shifting and set the value to 200 mm. (3)
- The thickness of the background area is 2 mm. (4)
- The material of the background area which gives the material of the grout is: Bronze. (5)



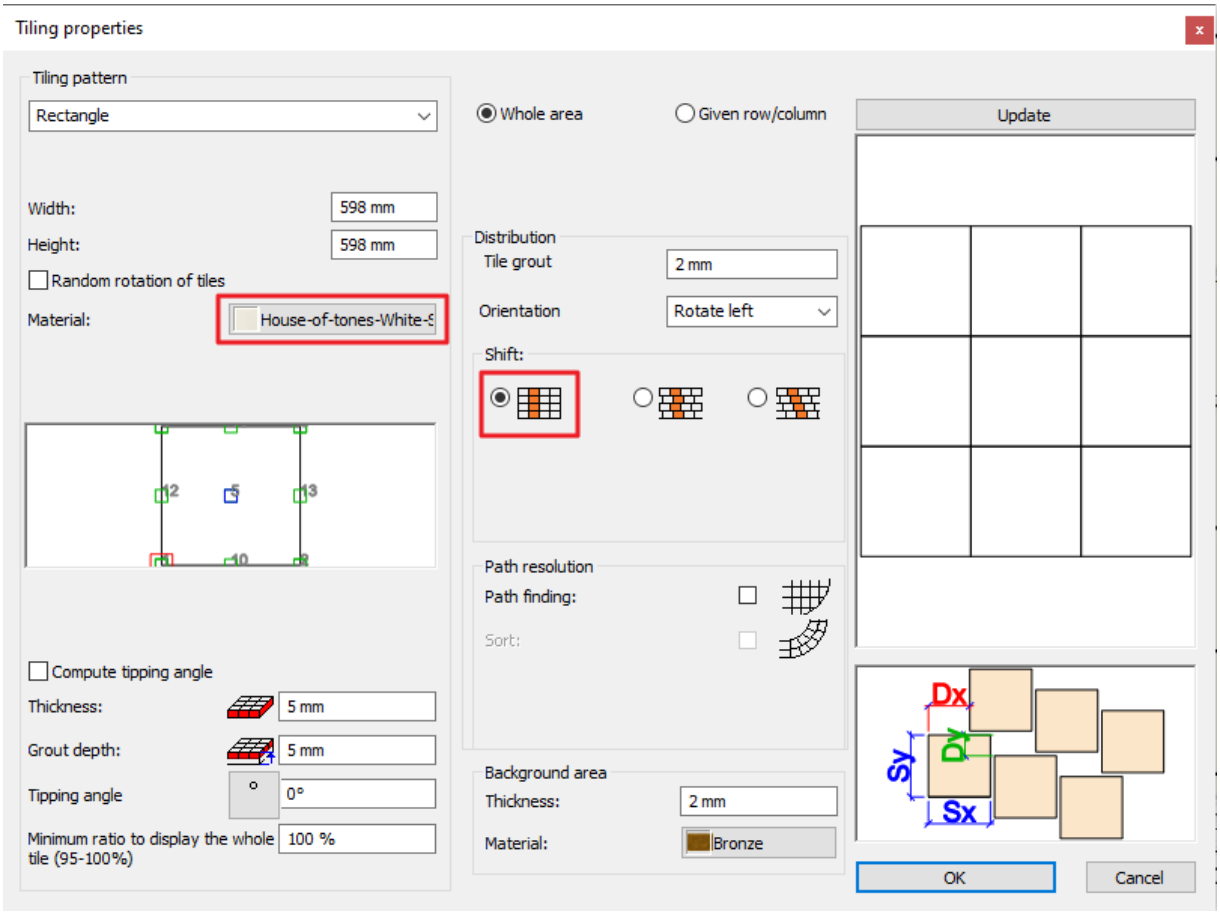
- To place the tiles, click on the OK button.
- The result can be seen immediately.

All walls of the bathroom will be tiled entirely from floor to ceiling with the chosen tile.

3.2.2. Floor tiling

In the next step we are going to tile the floor with **House-of-tones-White-STR 598x598** tiles.

- Right click on the floor in the 3D window. Select from the Local menu the **Tiling / Tiling- full area** command.



- In the appearing dialogue, click on the name of the material and select from Library **/ Material / Tile / Indoor / House-of-tones-White-STR 598x598**. (1)
- Turn off the row shift.(2) The dimensions of the grout and its colour remain the same.
- Click OK.

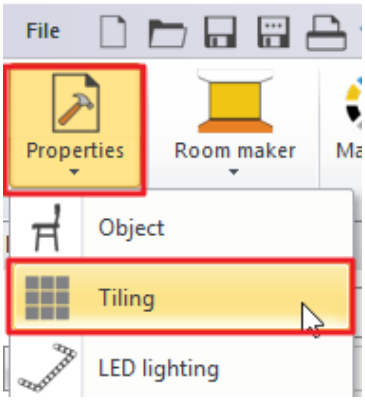
Before the program places the tiles on the floor, you should determine the direction of the tiles with the help of the orange squares. In order to position them to the exact location, place the first point on one of the blue corner points (the program finds it automatically) and then place the second point, which defines the rotation, hit ENTER so the tiling will be placed horizontally.

- After this the program creates the tiling.

Create Tiling Style

Previously we showed how to use the 3D tiling for placing the tiling quickly and easily. In the next example we would like to place the tiling up to 2650 mm height, using 4 tiles, and between 2650 mm and the ceiling we leave the white paint. To get this result we will create a Tiling style.

Click on the **Ribbon bar / Interior / Properties / Tiling** command. You can define a Tiling style in the appearing dialogue.



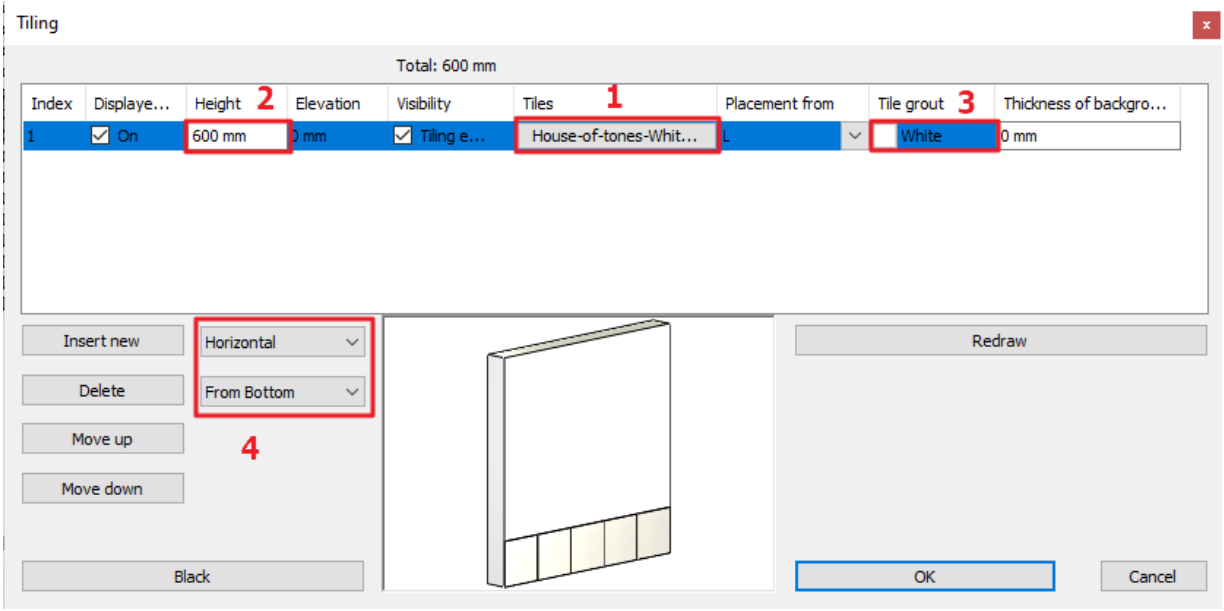
Define style: Tubadzin

Our Tiling style will include 5 rows:

Row 1: Height from 0 mm to 600 mm: **House-of-tones-White-STR 598x598**
Row 2: Height from 600 mm in a 330 mm high area: **House-of-tones-White 898x328**
Row 3: Height from 930 mm in a 23 mm high area: **steel-gold-pol-898x23_0**
Row 4: Height from 1650 mm in a 953 mm high area: **House-of-tones-White A 898x328**
Row 5: White paint from 2600 mm to the ceiling

Row 1: Tile

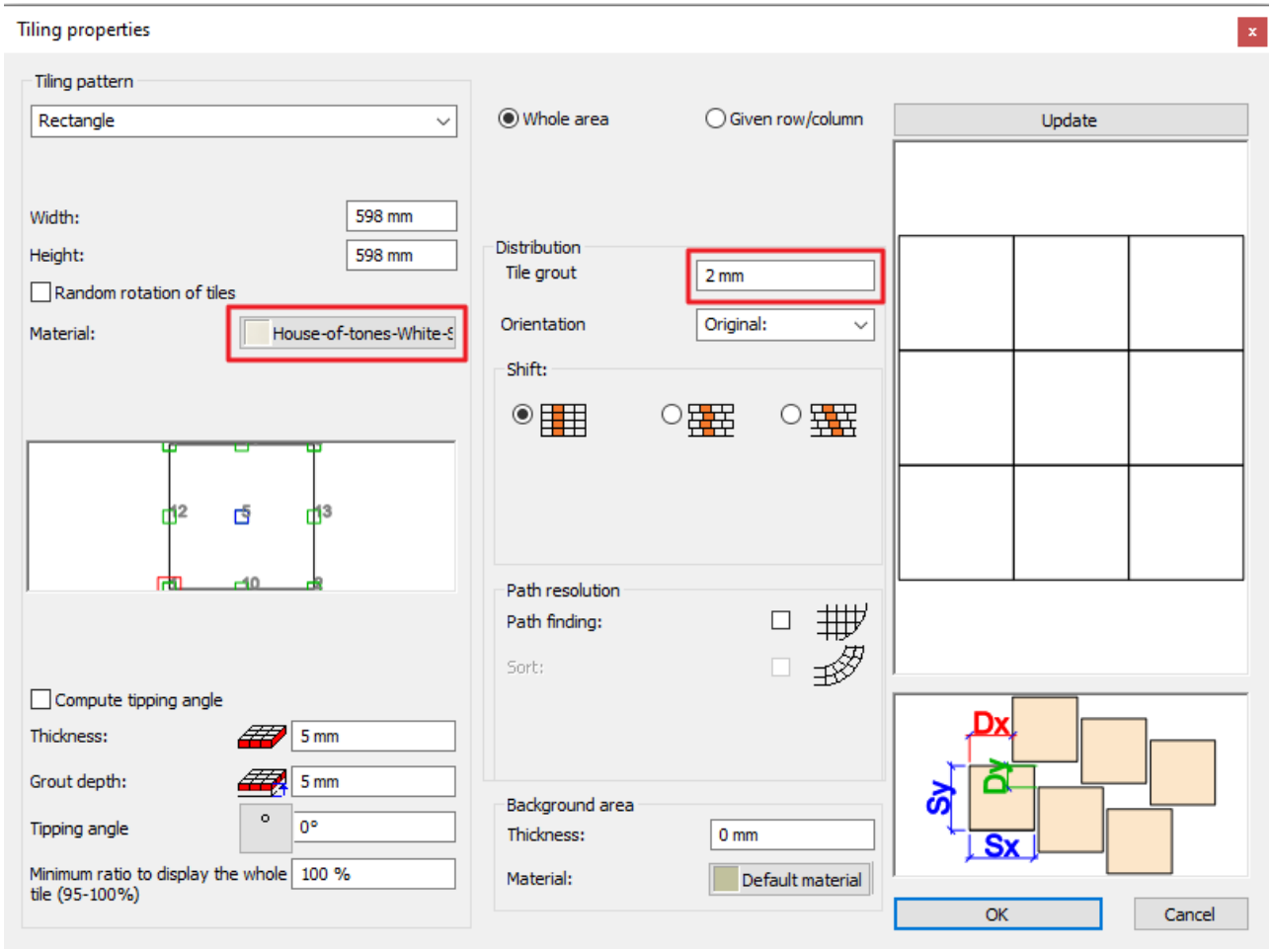
We will start with an existing style and we will modify it. Enter the following parameters in the appearing dialog:



- Click on the name of the tile to select the tile you wish to apply; in our case it is the **House-of-tones-White-STR 598x598** tile.

  The Tiling properties window appears:

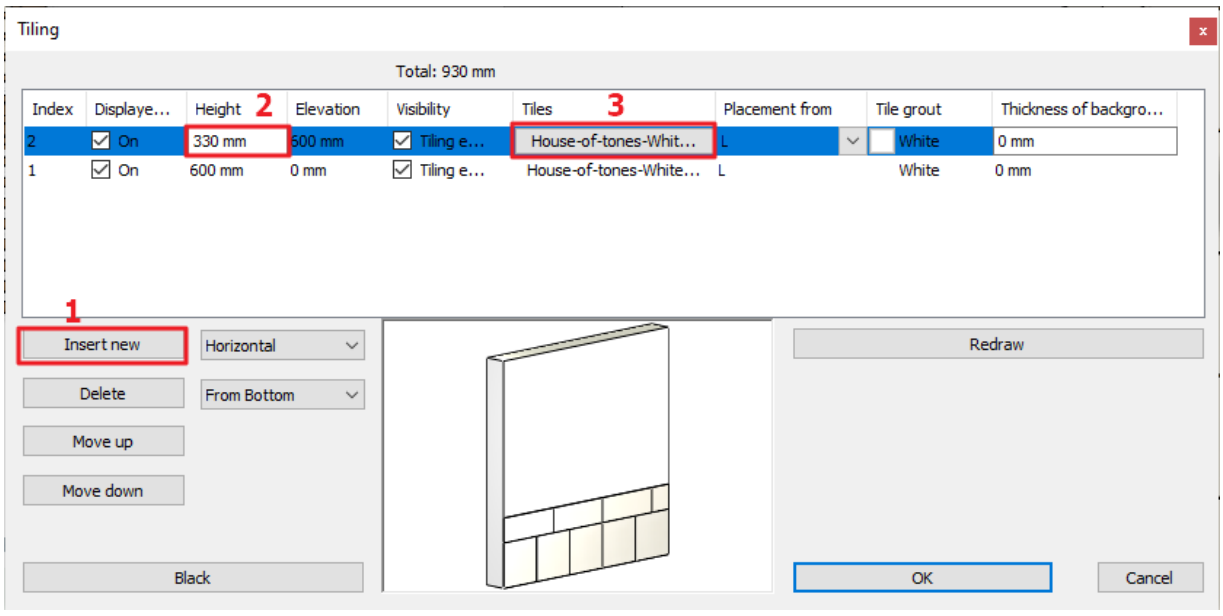
- Choose the **House-of-tones-White-STR 598x598**" tile from the Library.
- Set the grout: 2 mm.
- Click on the OK button.



- Now enter the values in the Tiling properties window:
- Total height: 600 mm.
- Grout: white.
- Rows are Horizontal and start from the bottom.

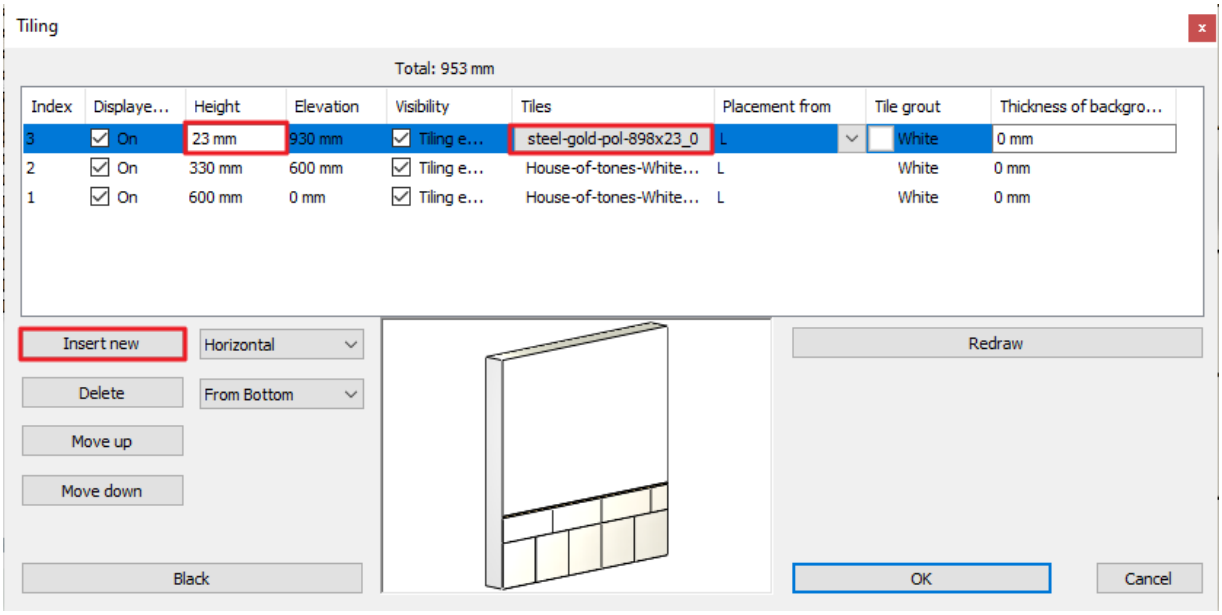
Row 2: Tile

- Click on the Insert new button to copy the first row. (1)
- The height of Row 2 is 330 mm. (2)
- The material of the tiles is **House-of-tones-White 898x328**. (3)



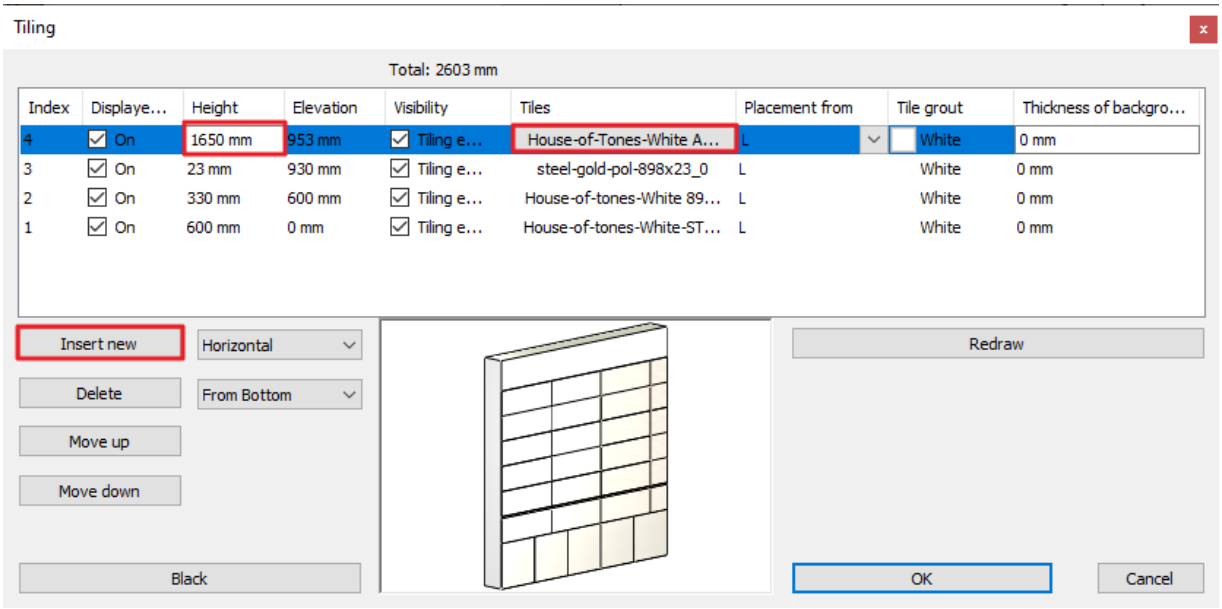
Row 3: Tile

- Click on the Insert new button to copy the second row.
- The height of Row 3 is 23 mm.
- The material of the tiles is **steel-gold-pol-898x23_0**



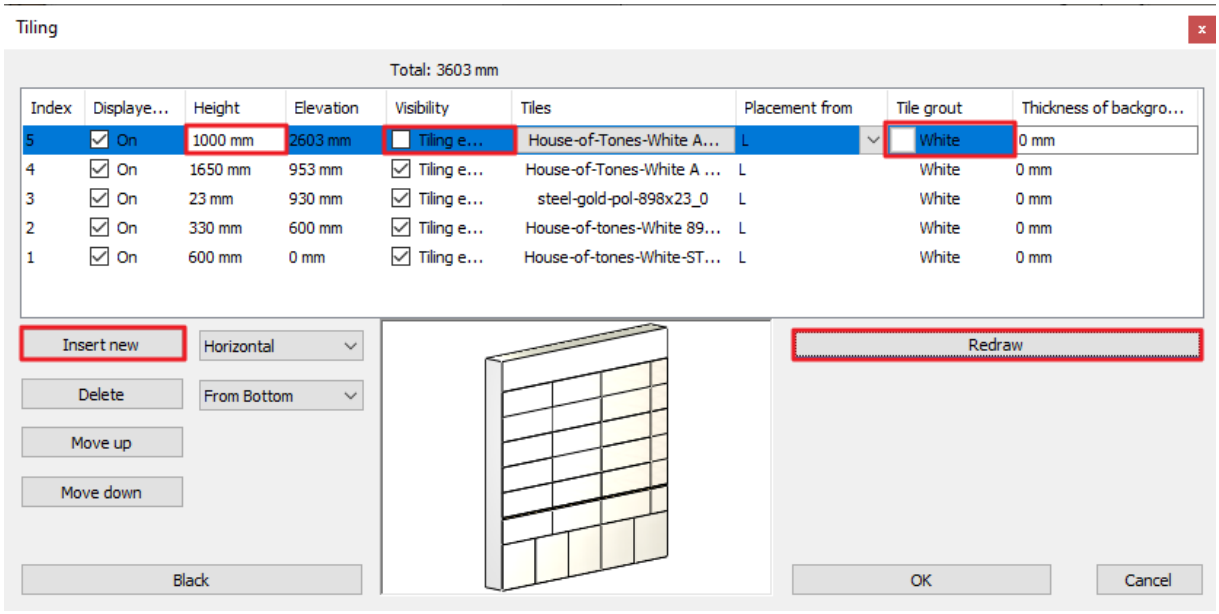
Row 4: Tile

- Click on the Insert new button to copy the third row.
- The height of the Row 4 is 1650 mm.
- The material of the tiles is **House-of-Tones-White A 898x.328**, rotated to the left.



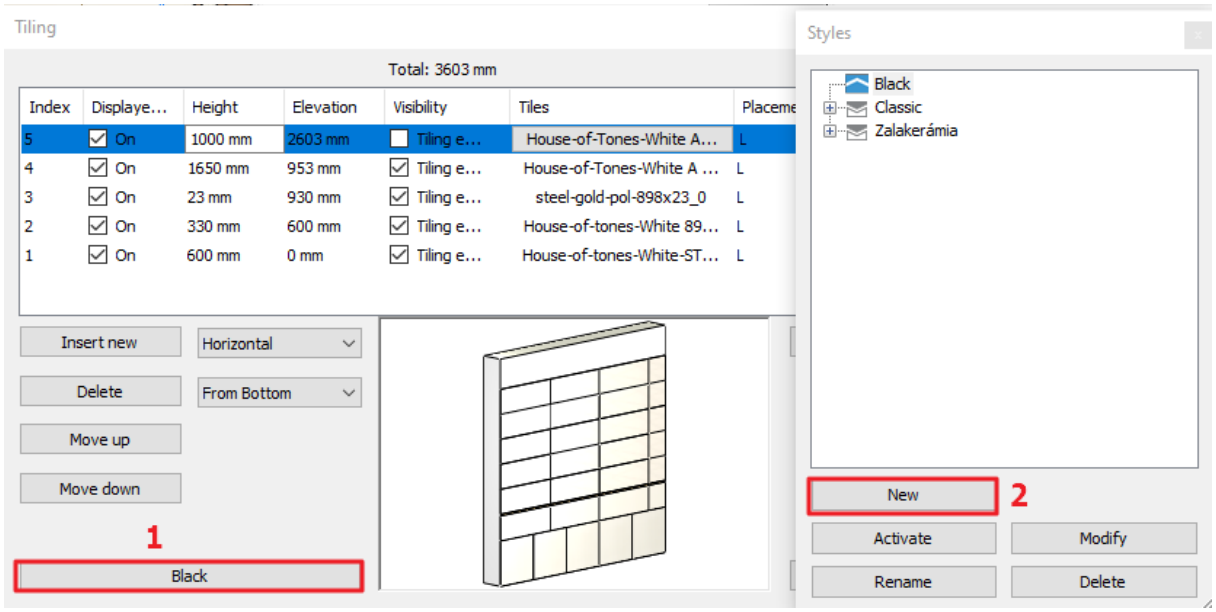
Row 5: Paint

- Click on the Insert new button to copy the fourth row.
- The height of Row 5 is 1000 mm. So, the total height of our tiling style is 3600 mm which means that we can use it on any wall that is not higher than 3600 mm.
- The material of the tile can remain the tile from the 4th row but turn off its visibility so the paint appears with the material of the grout.
- Click on the Redraw button to visualize the paint.

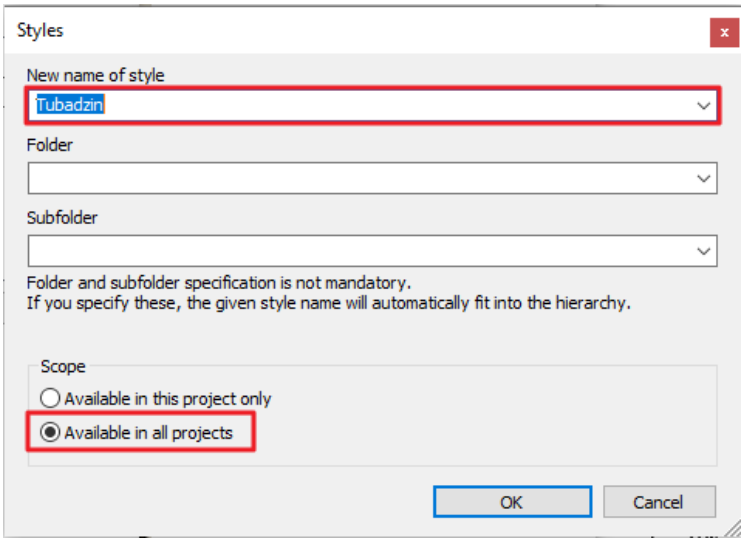


Finally, we need to save the new tiling style under the Tubadzin name.

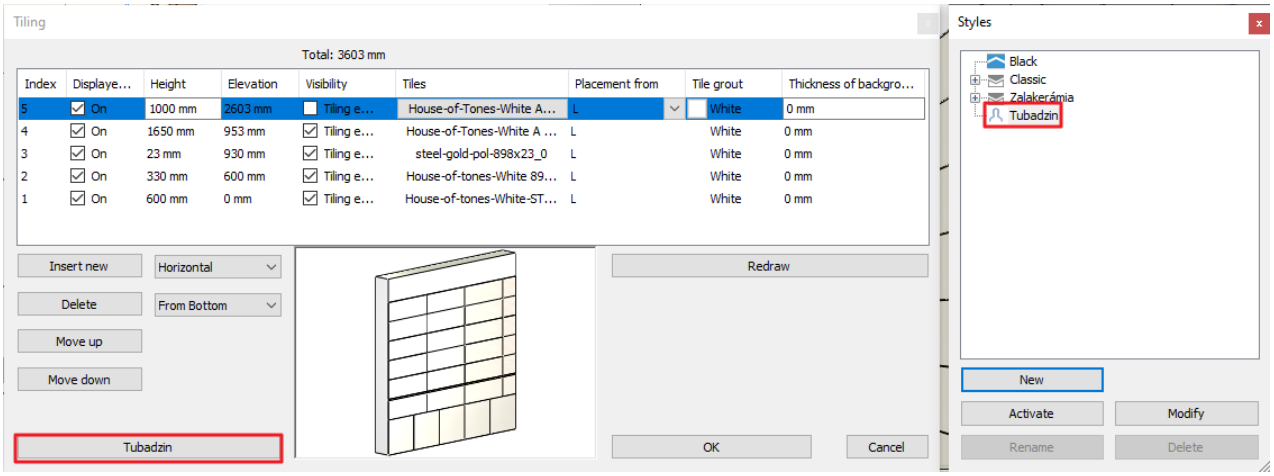
- Click on the Style name button.(1)



- Click on the New button.(2)
- Type in the name of the new style: Tubadzin. Select the Available in all projects option, so that we can use it in other projects as well.



Your screen should look as the following:

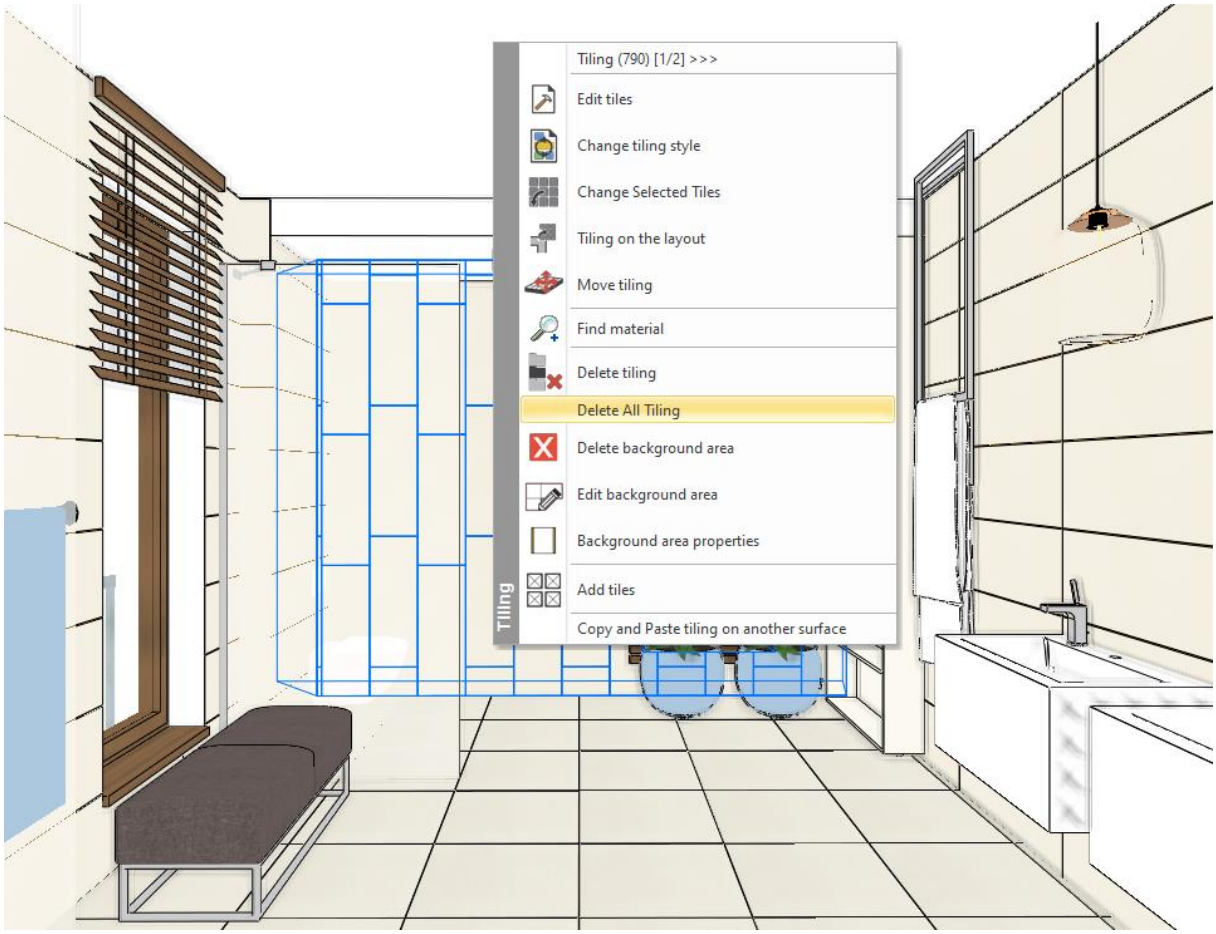


- Click on the OK button.

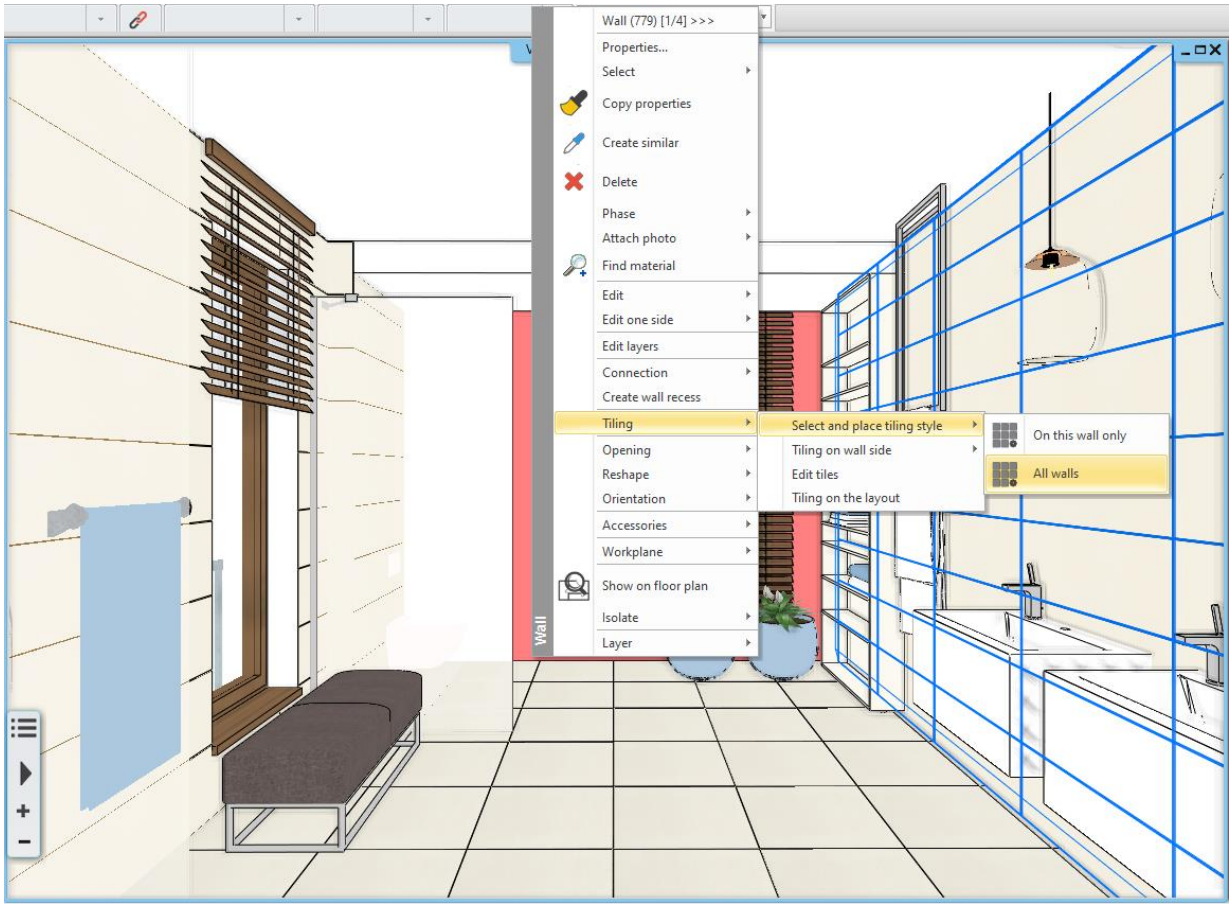
3.3. Placing Tiling Style in 3D

The created Tiling style can be placed on the walls with a few clicks.

- Right click on the wall in the back in the 3D window.
- Choose the **Delete All Tiling** command.



- Right click on one of the bare walls, and select the **Tiling / Select Place Tiling Style / All Walls** command.

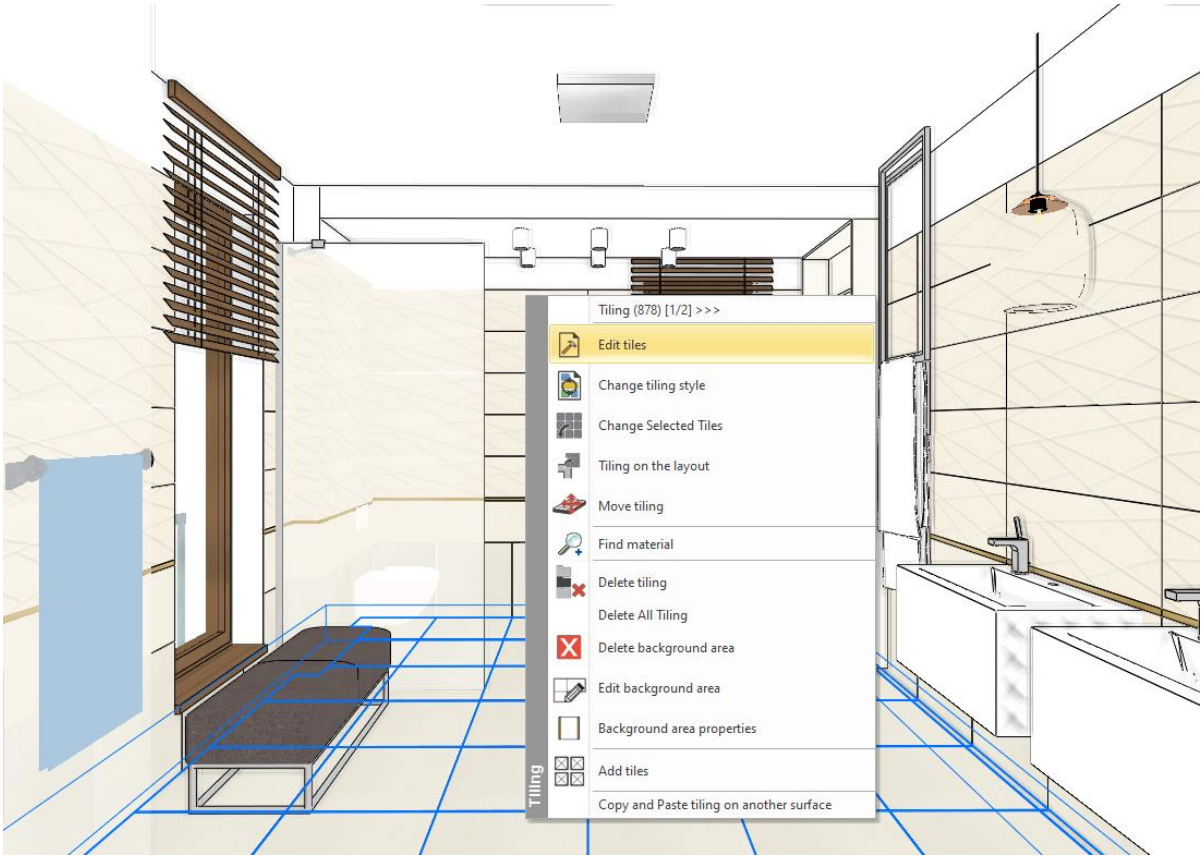


- In the appearing dialogue you need to make sure that the style Tubadzin is activated, and accept with OK.

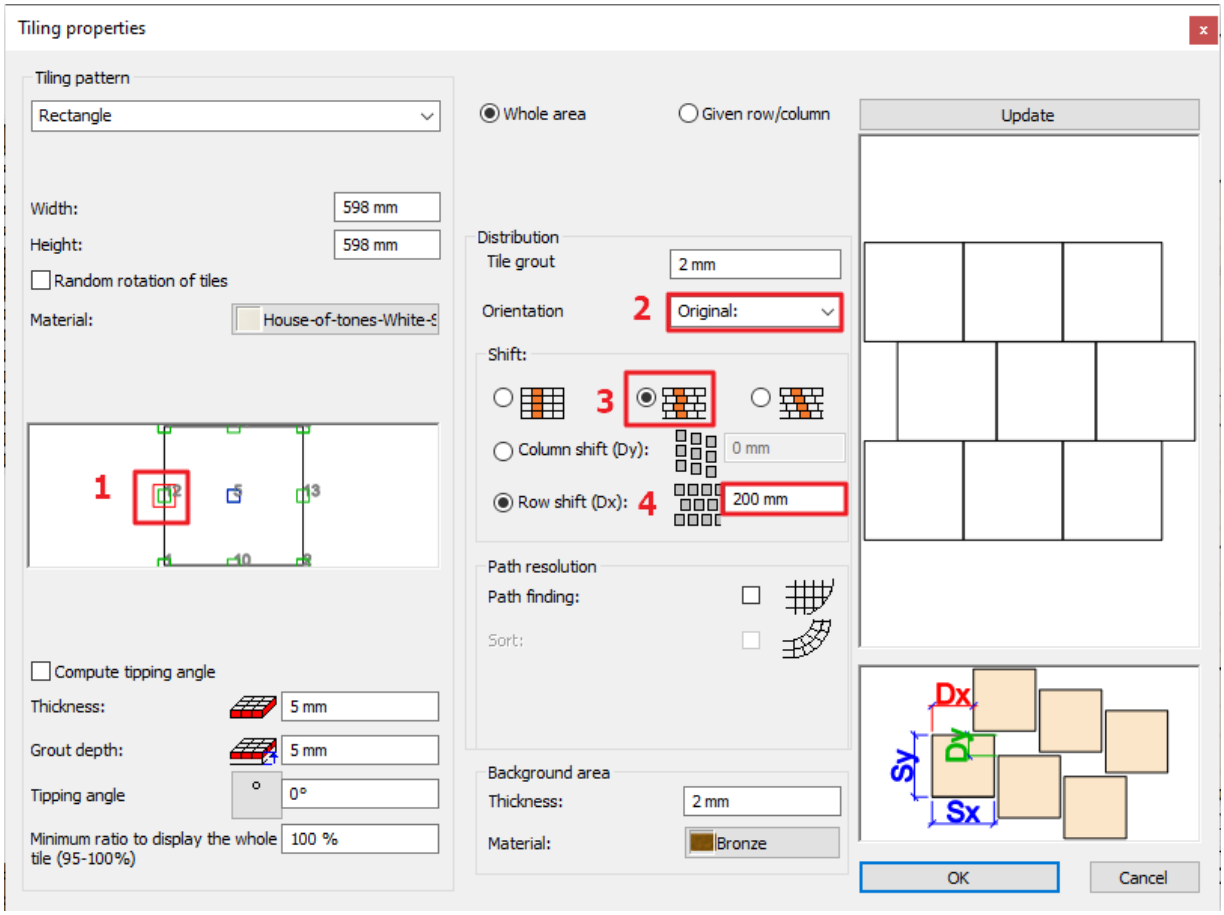
3.4. Modifying the tiling on the floor

Let’s create a more exciting final picture by shifting the floor tiles.

- Click on the floor with right mouse button and select the Edit tiles option.



- Select the middle left reference point for the tile.(1) We will place the tiling with the selected reference point.
- The orientation should remain original.(2)
- Set the row shift to 200 mm.(3, 4)



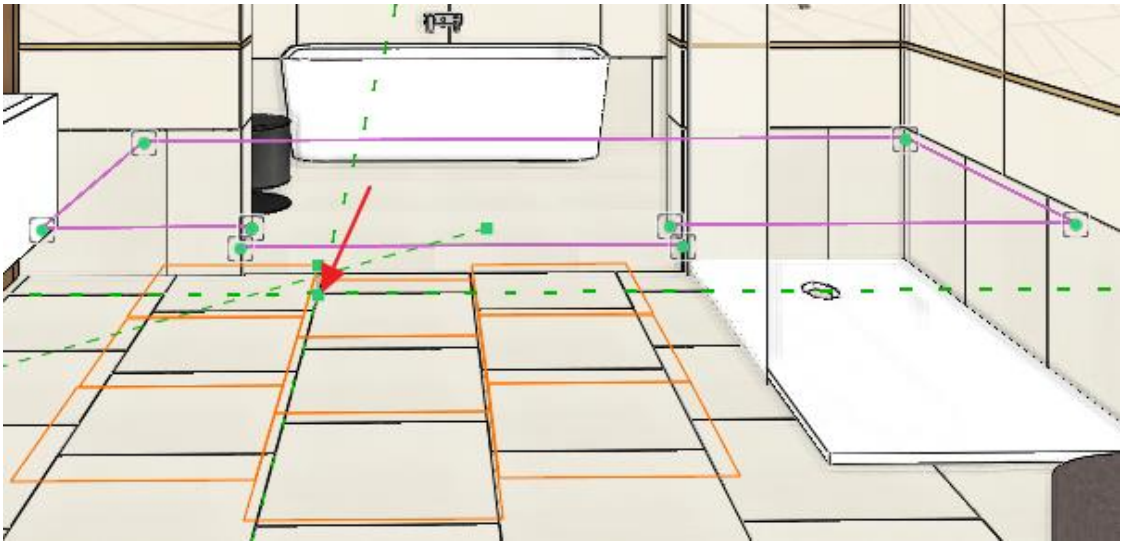
- Place the first point in the same corner point we used for the first time, then place the second point, which defines the rotation, hit ENTER so the tiling will be placed horizontally.

Tiling the slab under the bath tub - Optional

We have not tiled the slab under the bath tub. Select the Bathroom_3 view to do so.

- Tile the slab as we did it before.

  Pay attention that the reference point of the tile should be in the upper left corner point. The orientation should remain original. When placing it, you can adjust the reference point to the corner point of the tile on the previously tiled slab so the grouts will be continuous, even though the second slab is 120 mm higher.

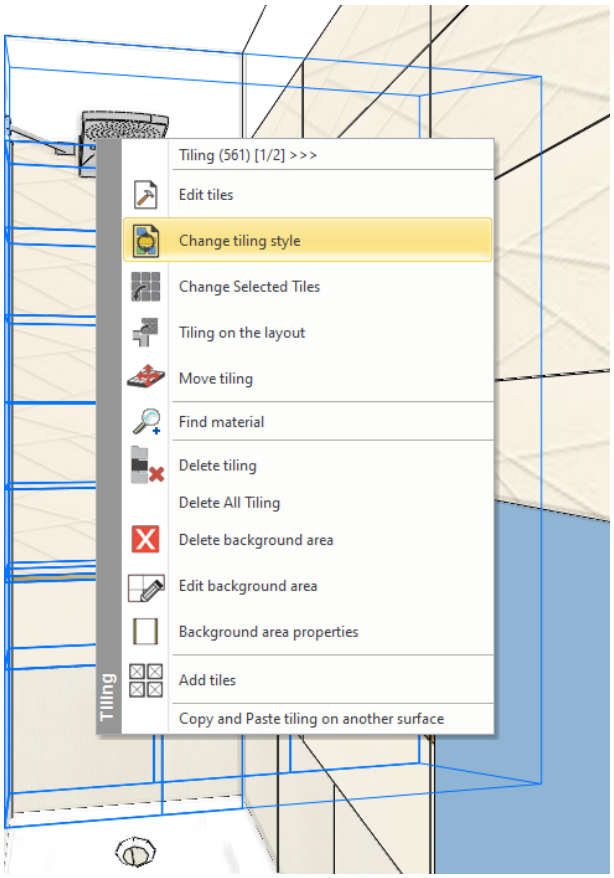


3.5. Mosaic tiling

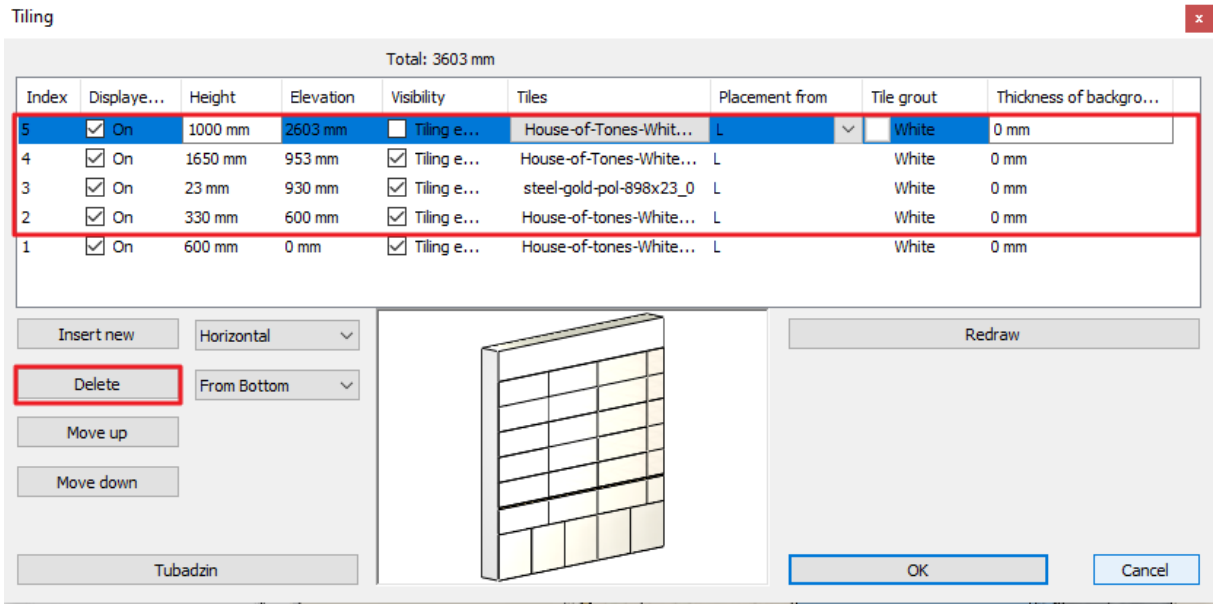
In the next step we are going to create the Mosaic tiling on the wall behind the shower. The mosaic consists of 50 mm hexagon tiles. It has four colours and they are distributed evenly to the 2600 mm height. For this, we will also create a tiling style.

- Let’s find the Bathroom_6 view with the help of the blue arrows, from where we see the wall behind the shower clearly.

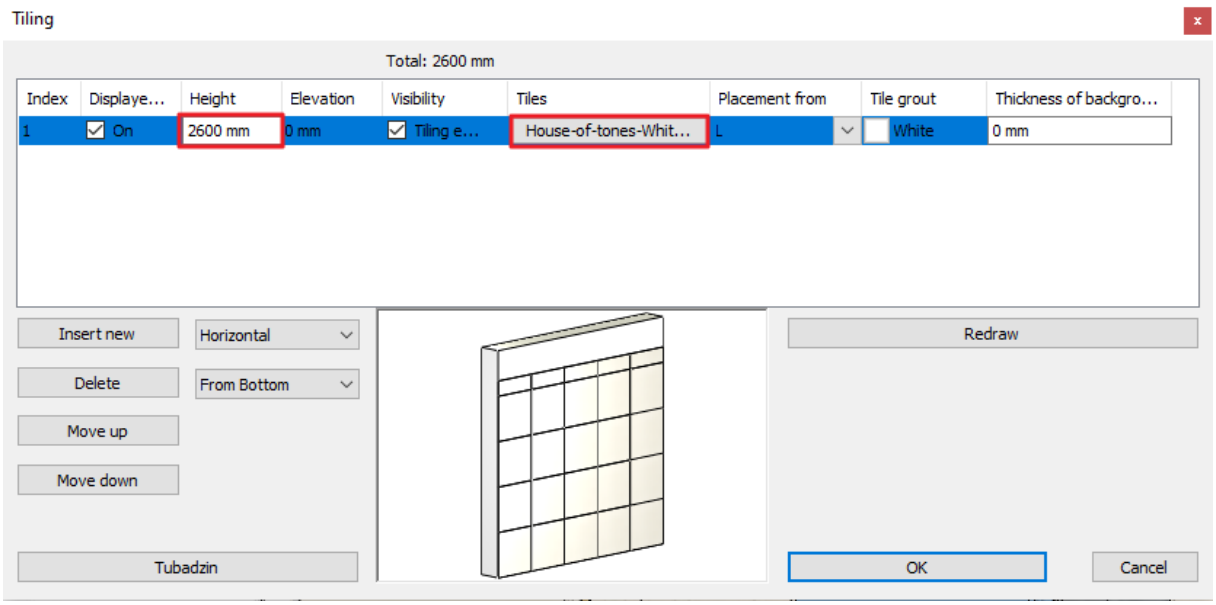
- Right click on the wall behind the shower and select the Change tiling style option.



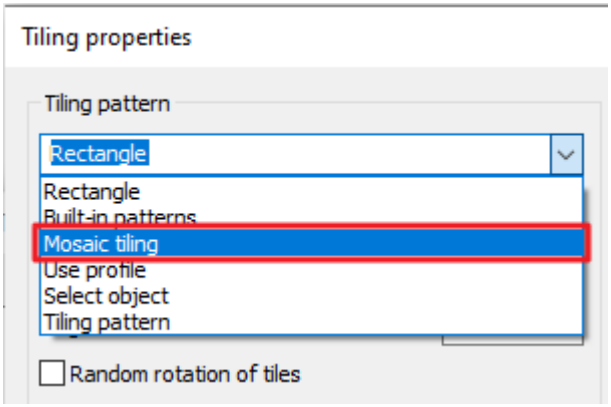
- The Tiling style dialogue appears with the Tubadzin style.

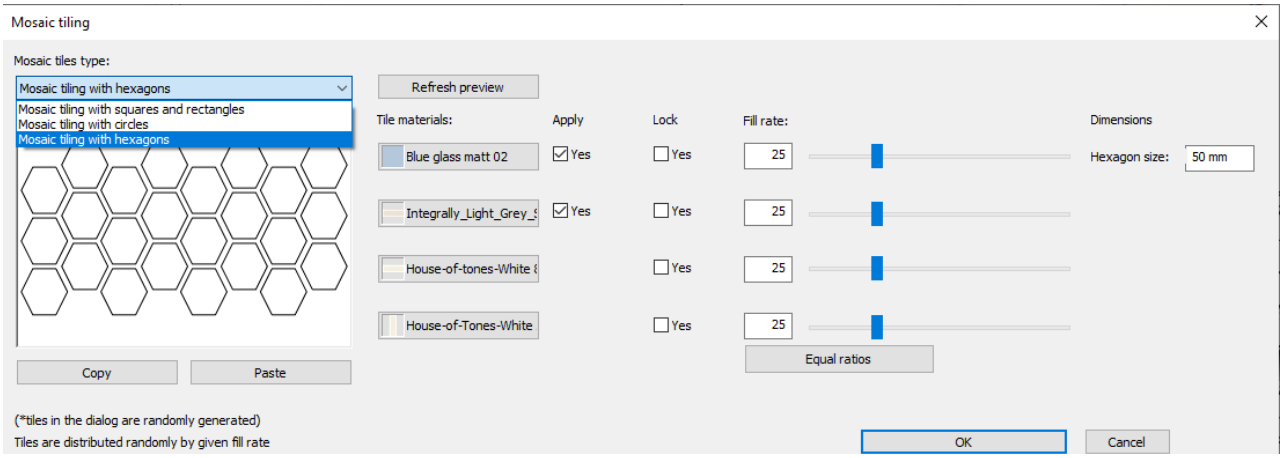


- Delete the row from 2 to 5. Rewrite the height to 2600 mm.
- Click on the tile name. We will set the mosaic tiling here.



- In the Tiling properties dialogue select the mosaic tiling.

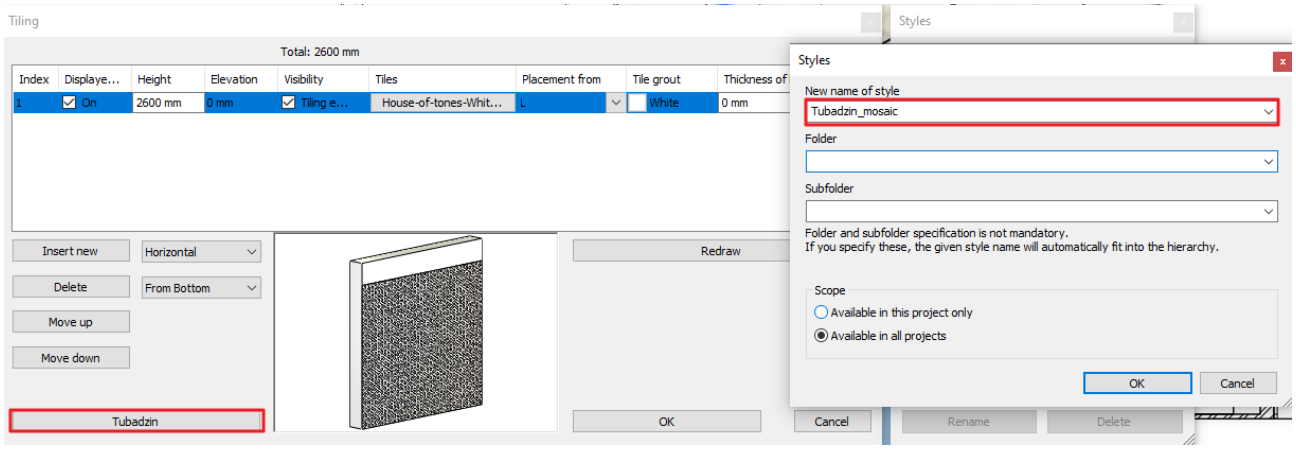


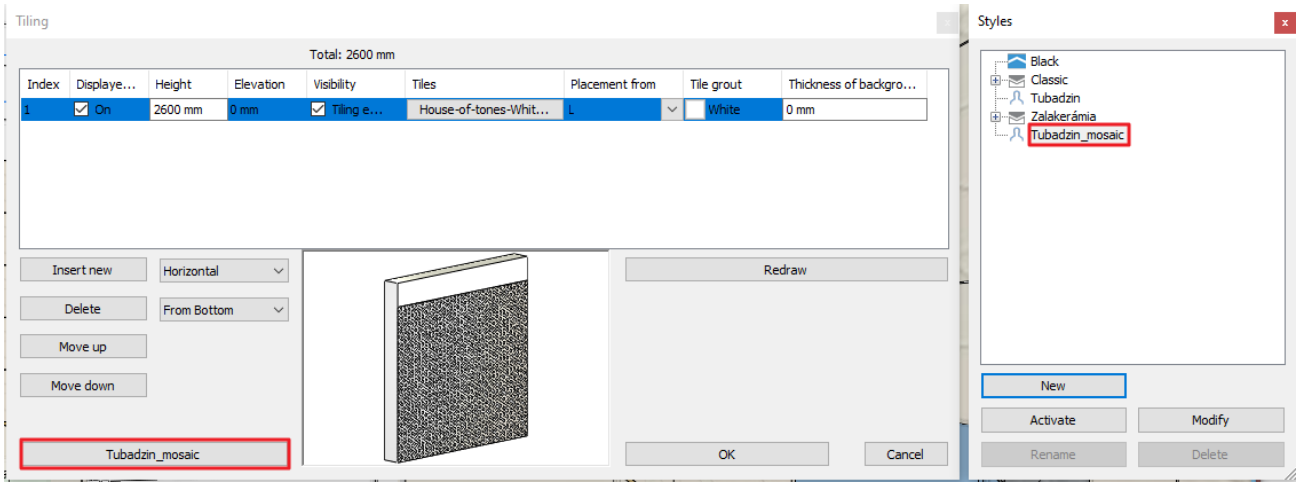


- The mosaic pattern should be *Mosaic tiling with hexagons.*
- Select the elements of the mosaic: **House-of-tones-White A 898x328, House-of-tones-White 898x328, Integrally_Light_Gray, Blue glass mat02**
- Hit OK. Then OK again.

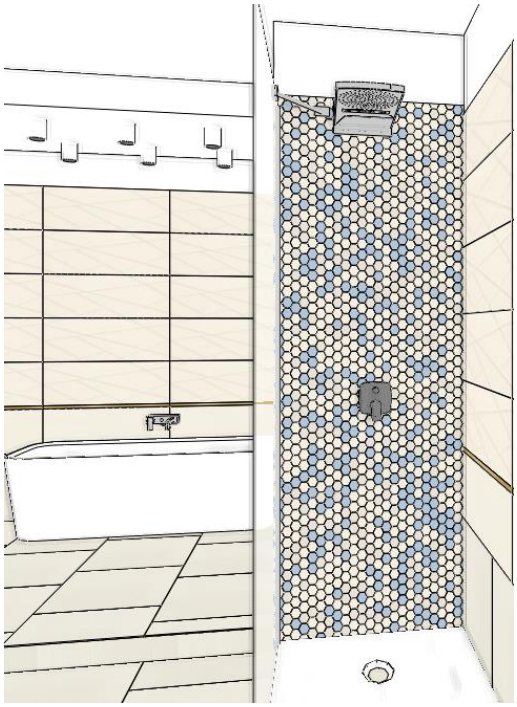
  The new tiling style is ready. Let's save it under the name of Tubadzin_mosaic.

- Click on the button with the *Tubadzin* button. Then the New button and give the name: Tubadzin_mosaic, then hit OK.





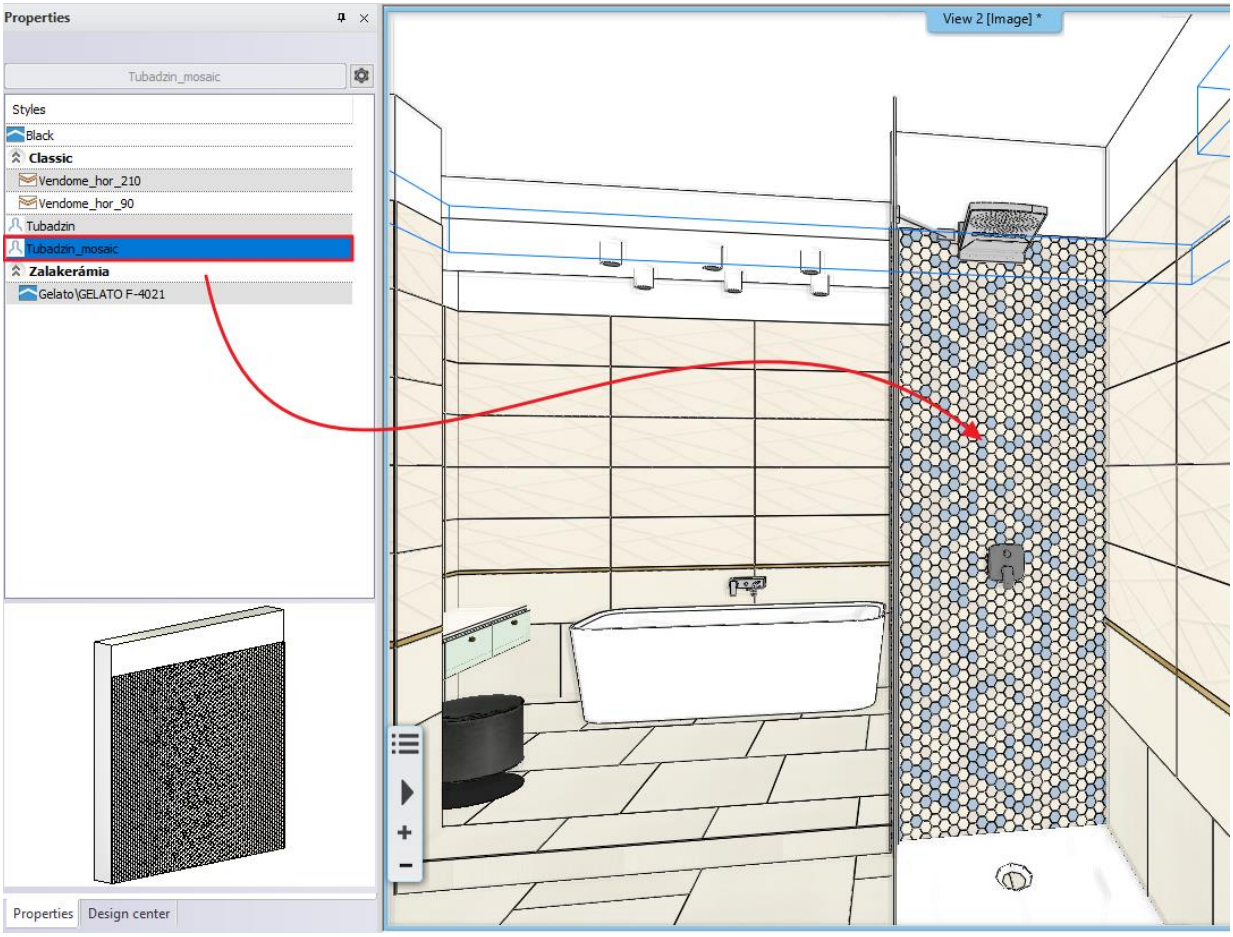
After hitting OK, the first random mosaic tiling appears on the wall.



We can have other random variations if we drag and drop the *Tubadzin_mosaic* tiling style to the mosaic wall.

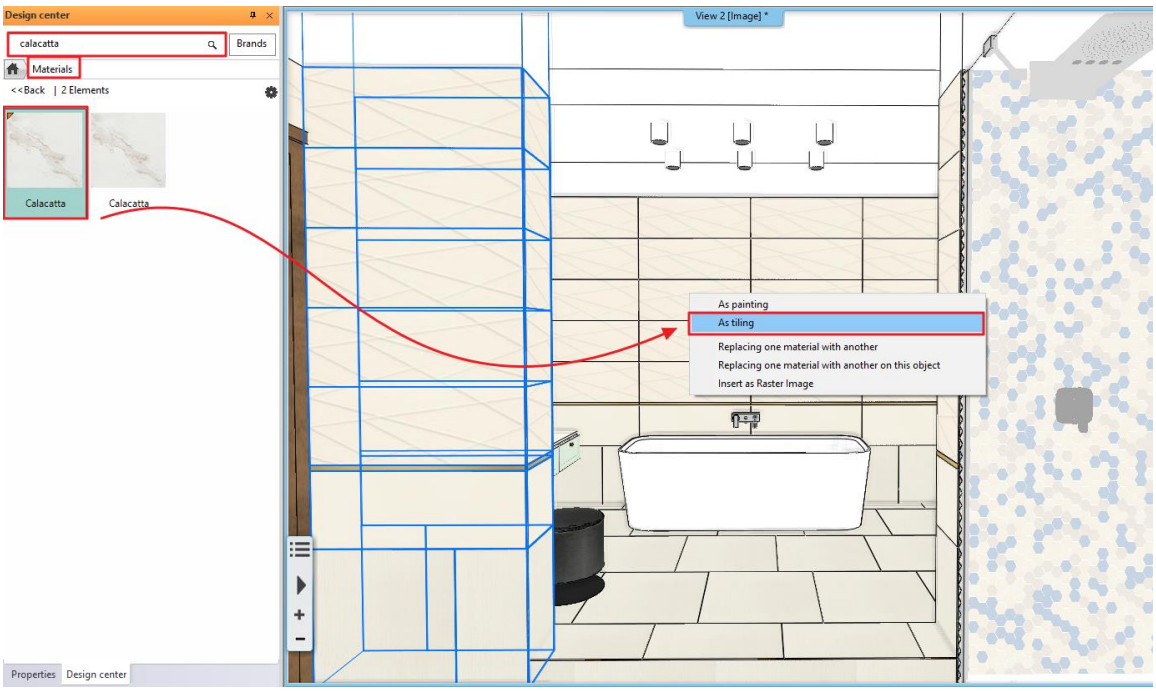
- Click on the *Interior menu – Tiling* command. The tiling styles will appear on the left.
- Drag and drop the *Tubadzin_mozaic* tiling style to the mosaic wall.

After every click a new variation will appear. This can be repeated until we get the desired layout.



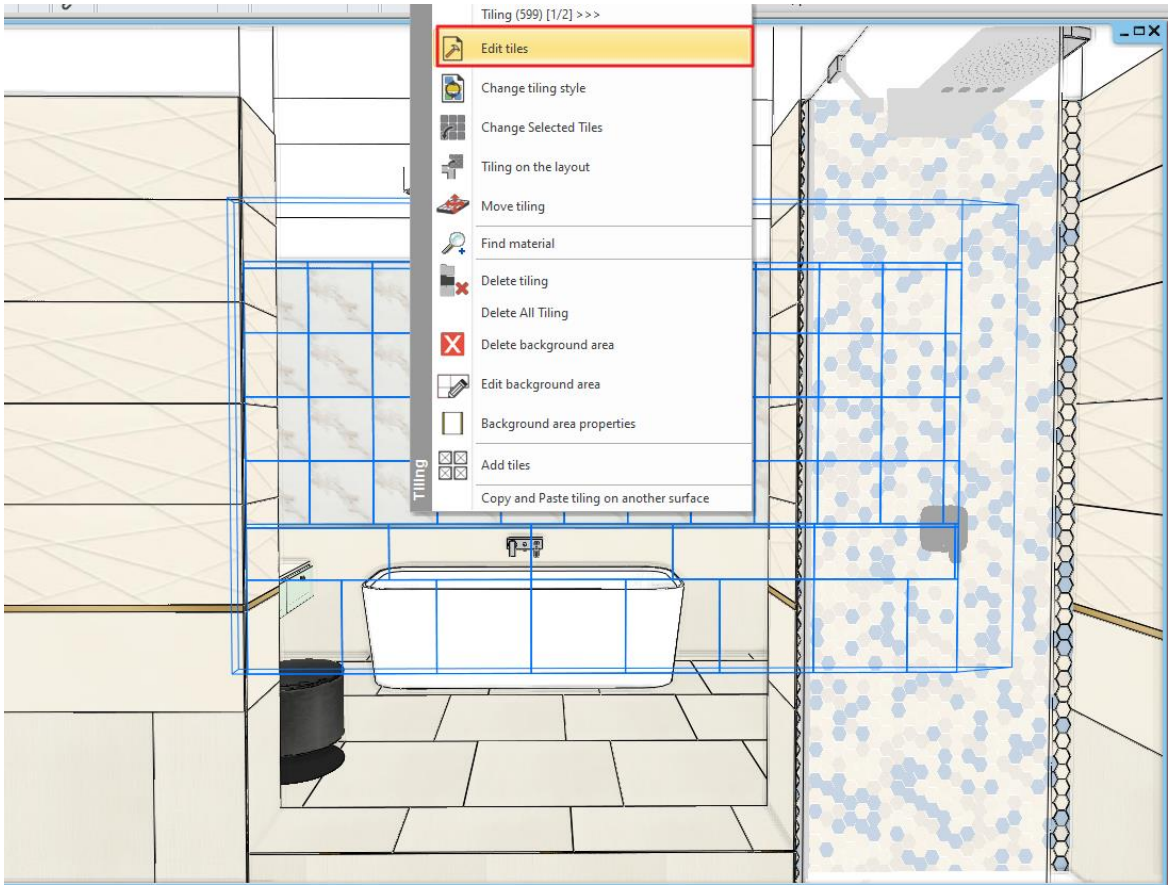
3.6. Mixing tiles - Optional

When tiling the tiler often mix the same tiles in the tiling pattern. By doing so the tiles are randomly rotated and the result will be more natural.
Let's see an example. Change the **House-of-tones-White A 898x328** tiles behind the bath tub to **Calacatta** marble.

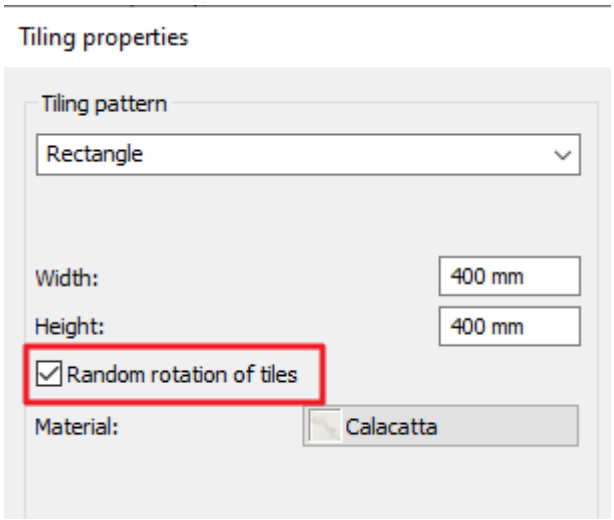


We get this regular result.

- Click on the tile with right mouse button and select the **Edit tiles** option.

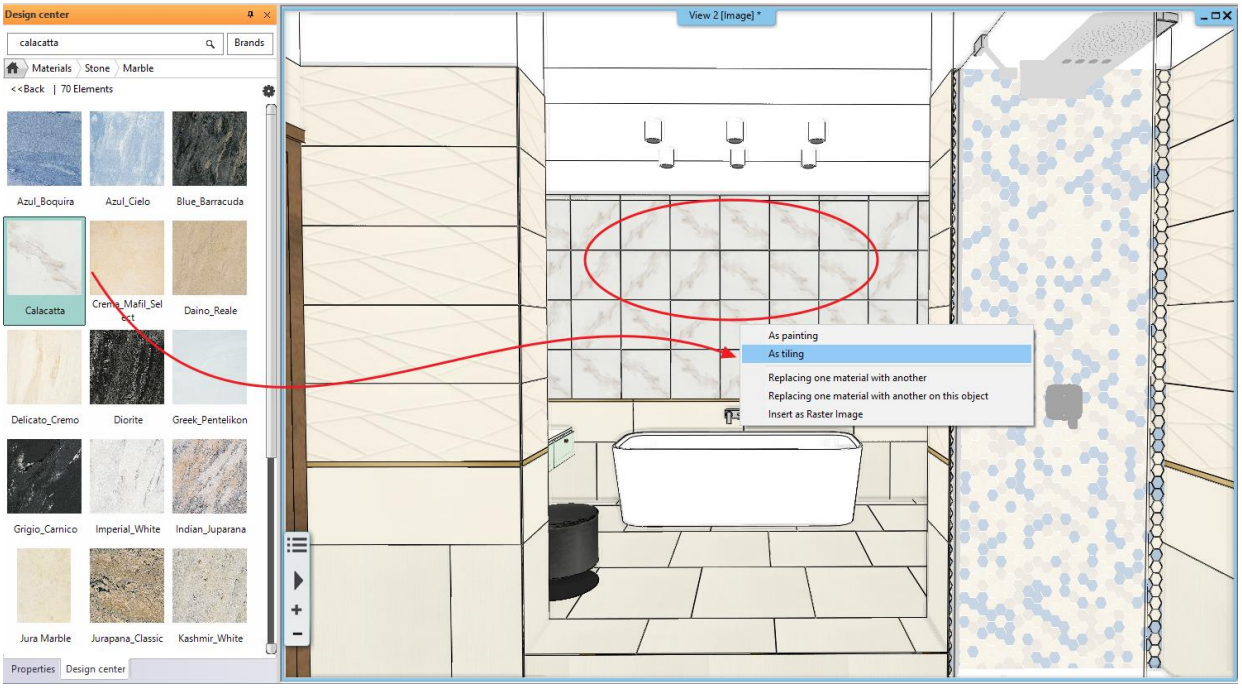


- In the Tiling properties dialogue turn on the **Random rotation of tiles** option.



- After hitting the OK button, place the tiles starting from the lower left corner.

  We get this random result.



If we drag and drop the Calacatta material form the Design Center to the wall again, we will get a different result with each click. We can do it over and over again until we get the desired result.

Let’s restore the original tiles.

- Click on the tiles with right mouse button, the select the Change tiling style option.
- Select the Tubadzin style then OK.

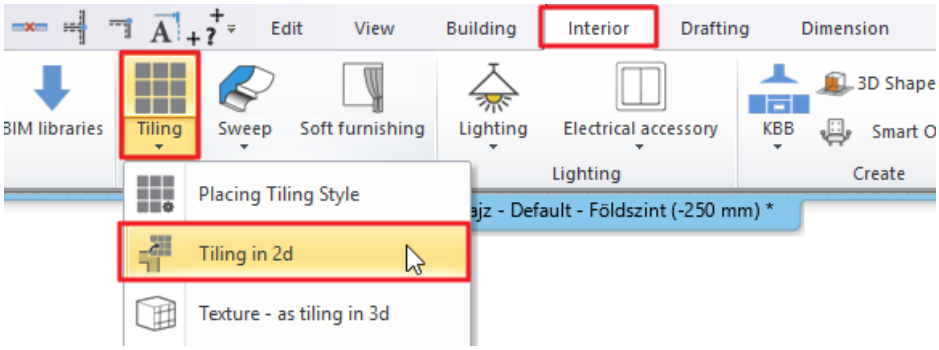
3.7. Placing mirrors as tiling

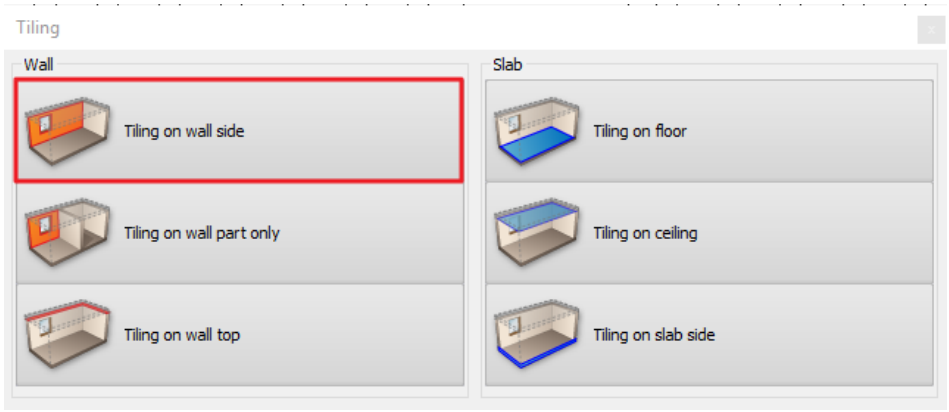
We will place a mirror above the washbasins to the left side of the door, and another one above the dressing table opposite of the shower.

3.7.1. Mirror above the washbasins

- Activate the 2D layout.

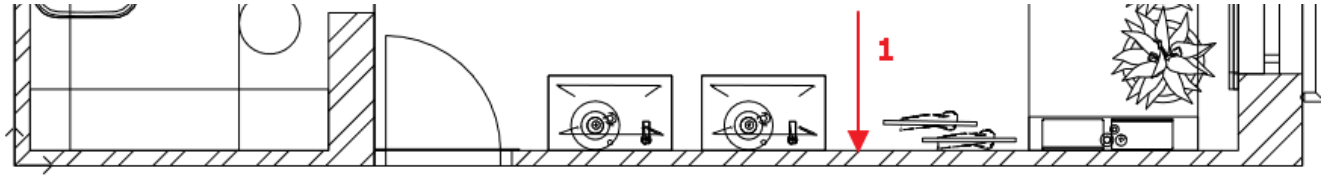
- Click on the **Ribbon bar / Interior / Tiling / Tiling in 2D** command.
- When the dialogue opens, choose the “Tiling on wall side” option.

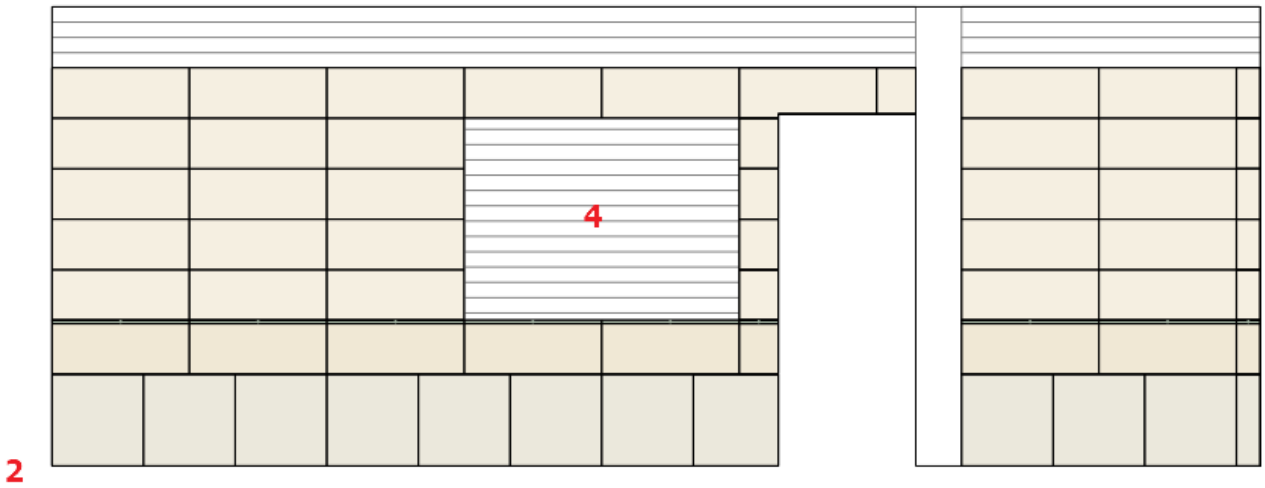




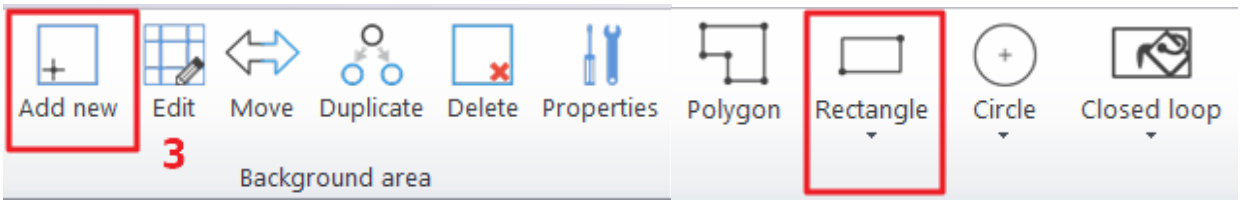
- Now, click on the internal side of the wall on the 2D plan (1) (which needs to be modified) and place the tiling layout somewhere close to the actual floor plan. (2)

“Tiling on the layout” command can be found in 3D window, right click on the wall and choose it from the appearing “Tiling” menu. As the result, the program automatically will take us back to the floor plan, and now we can position the layout to the right place with one click.

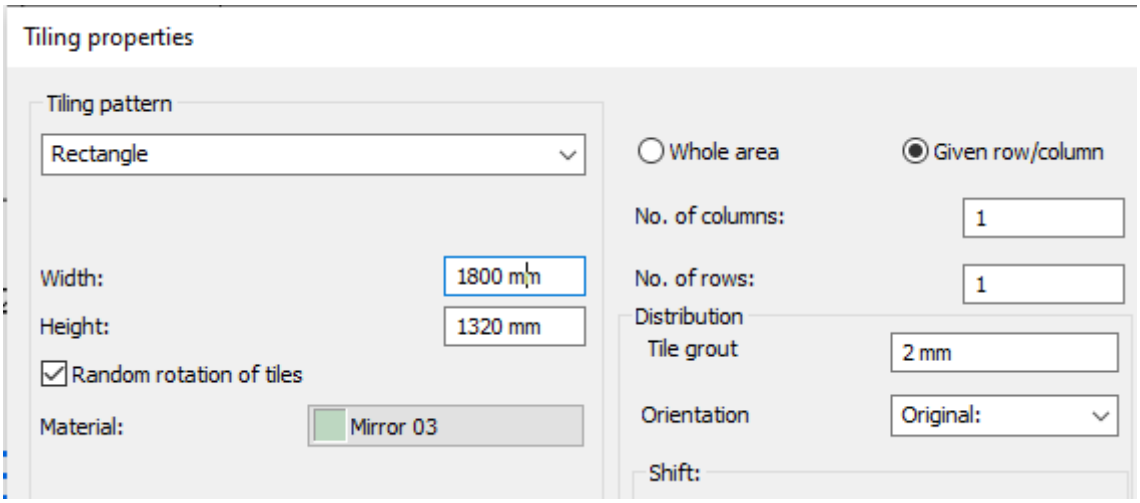




- Choose the Add New option from the drop-down Ribbon bar. And the Rectangle option. (3)



- According to the image above, draw the rectangle with its opposite corner points, which is 2x4 tile in this case. ENTER (4)
- From the appearing material library select the White material, which is the material of the grout.
- Click on the Add tiles command on the Ribbon Bar. Then select the previously created new area, because we will place a mirror on this.
  In the Tiling properties dialogue select the Mirror 03 material and set its dimensions: 1800 x 1320 mm. Then change the settings to Given row/column because we will place the mirror in one piece.



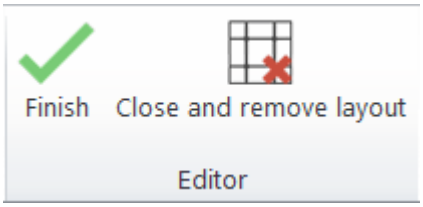
- Close the dialogue by pressing OK and place the first point of orange mirror on the new area. Then set its angle of rotation by defining the second point. Place the mirror horizontally. You can do so by pressing ENTER.

Closing the Tiling command

Close the Tiling command by pressing ENTER. ENTER has two meanings:

- Closes the command and keeps the layout or
- Closes the command and deletes the layout.

Depending on which mode did we choose in the *Tiling – Editor* menu. When running ARCHLine.XP the program remembers to these settings.

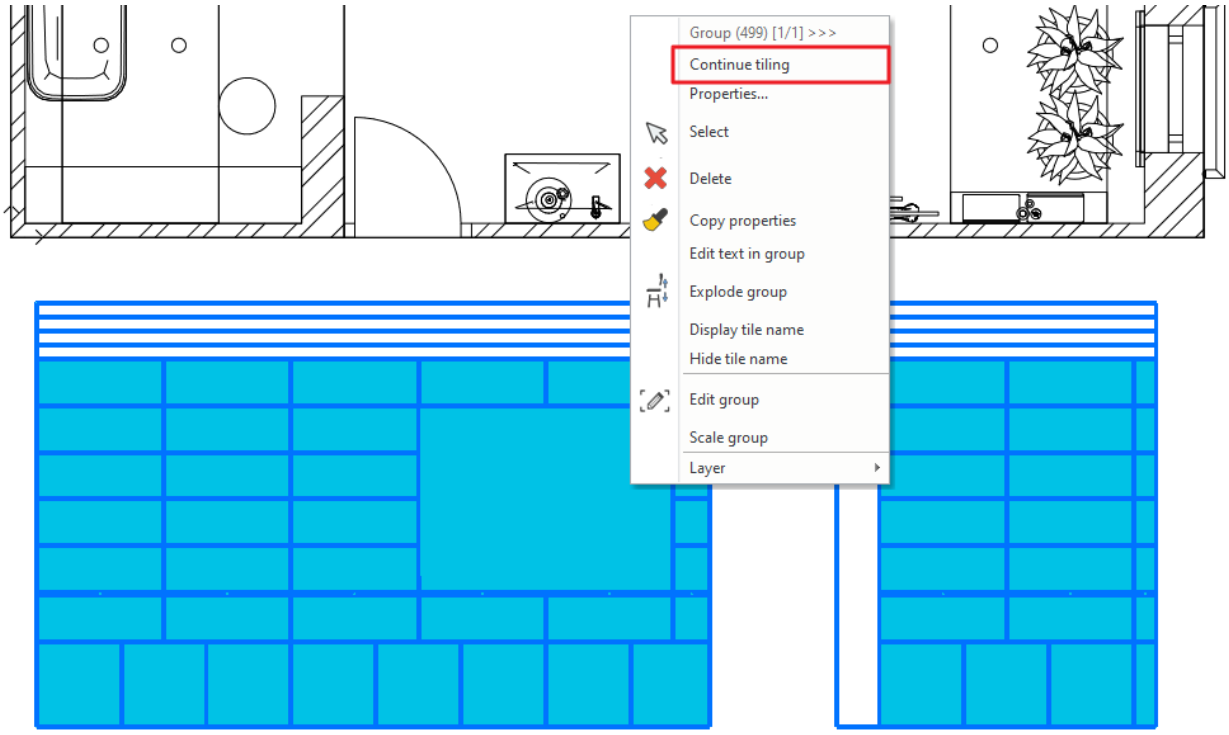


- Select the Finish option. This will keep the layout.

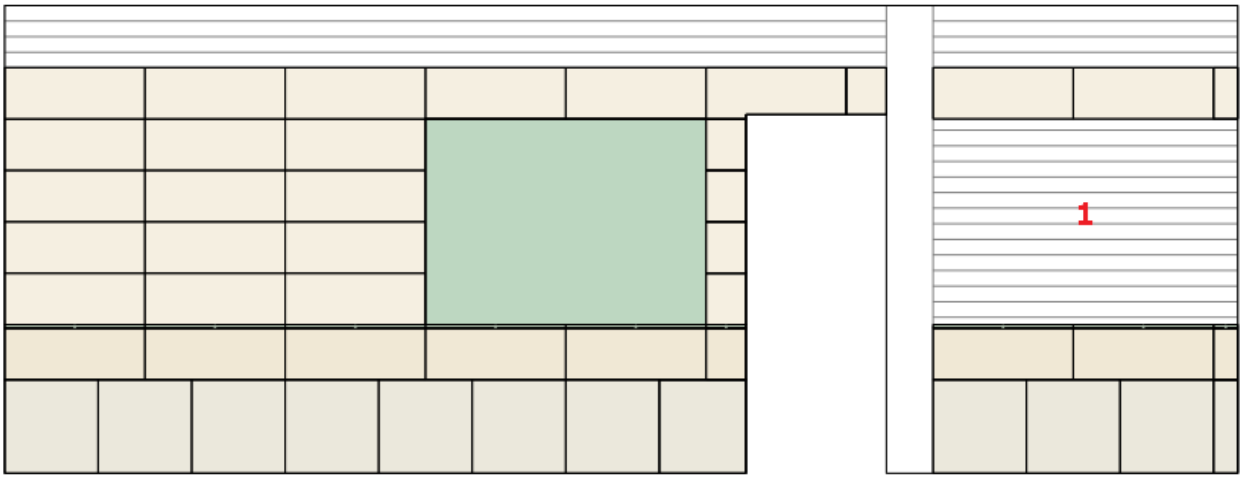
3.7.2. Mirror above the dressing table

The second mirror will be placed above the dressing table opposite to the shower. To do this you do not need a new layout, you can work on your existing one. This mirror will be created with the same method as the previous one. You can start the Tiling command from the layout.

- Right click on the layout and select Continue tiling.



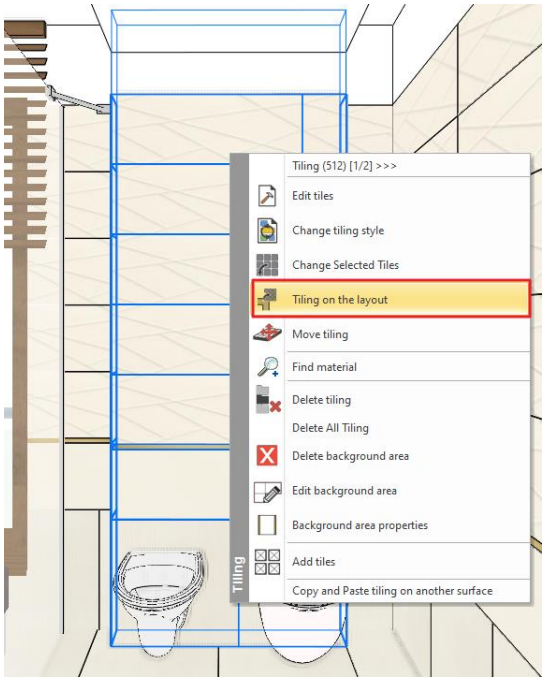
- Select Add new command from the Ribbon bar. Then the Rectangle option.
- Draw the rectangle according to the image below. (1)



- From the appearing material library select the White material, which is the material of the grout.
- Click on the Add tiles command on the Ribbon Bar. Then select the previously created new area, because we will place a mirror on this.
  In the Tiling properties dialogue select the Mirror 03 material and set its dimensions: 1960 x 1320 mm. Then change the settings to Given row/column because we will place the mirror in one piece.
- Close the dialogue by pressing OK and place the first point of orange mirror on the new area. Then set its angle of rotation by defining the second point. Place the mirror horizontally. You can do so by pressing ENTER.

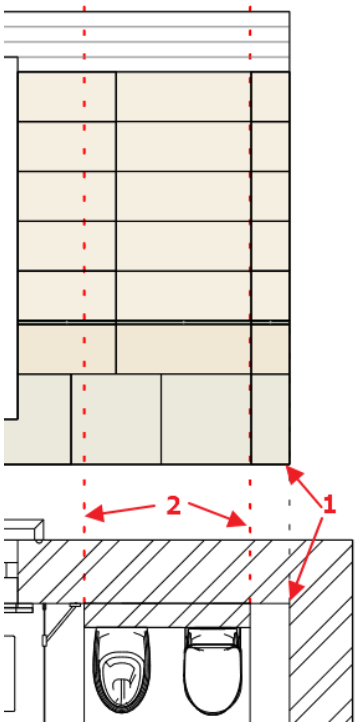
3.8. Deleting tiles on the layout

In order to have a right consignation at the end we need to delete the tiles behind the parapet wall of the toilets. To simplify it, we will only delete the whole tiles in this example.

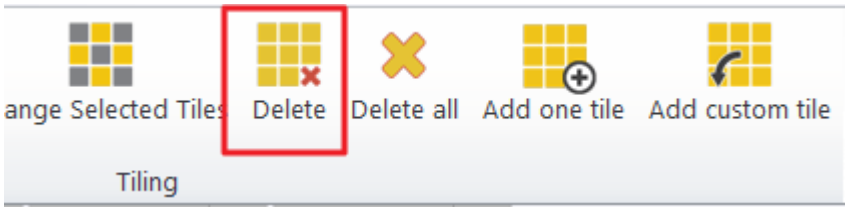


- Activate the 3D window and select the Bathrooom_5 view.
- Click on the wall behind the toilet with right mouse button and select the *Tiling on the layout* command.
- The program activates the 2D window. Place the layout so that the corner points align to the vertical projection of the wall corners. (1).

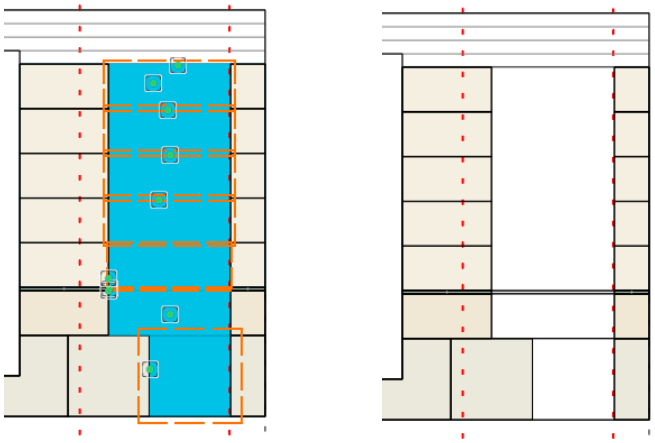
Draw the two vertical lines symbolizing the parapet wall (2) so we will be able to determine the whole tiles behind the parapet wall.



- Click on the Delete button on the Ribbon Bar.



- Select the tiles to delete.



3.9. Tiling Layouts

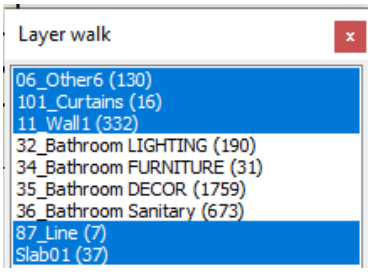
We can easily create tiling distributions if we place the tiling layouts of the walls and the floor on the floor plan. The tiling layouts can be dimensioned.

We can start the command:

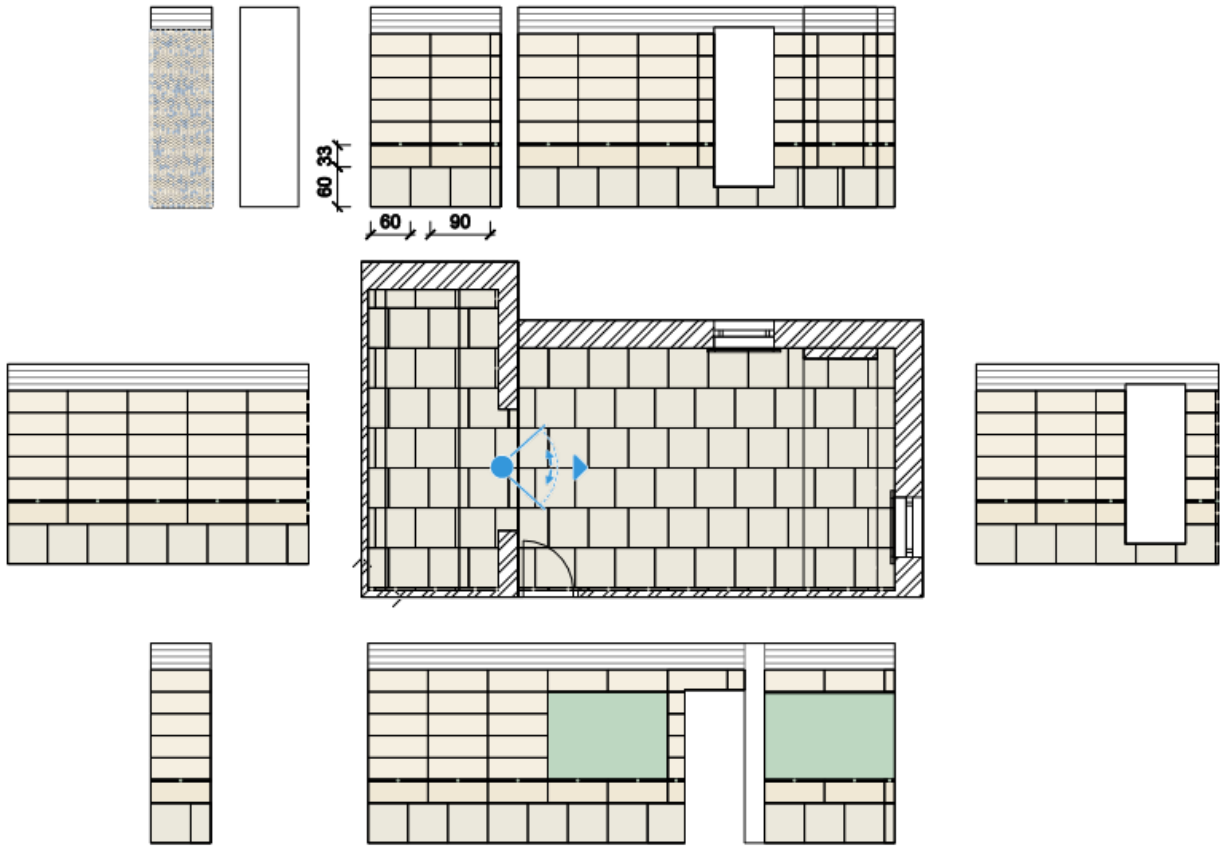
- From the 2D window using Ribbon Bar / Interior / Tiling / Tiling in 2D command or
- The 3D window by clicking on the wall or floor with right mouse button and selecting the *Tiling on the layout* command.

We can place the layout anywhere; we can move them later. In the case of the slab, if we press ENTER, the layout will be placed exactly on the slab.

Use the dimensioning commands to dimension the layouts.



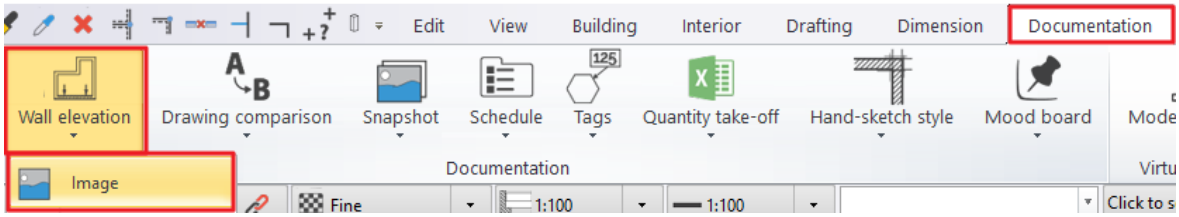
We generated the following tiling layouts. It is advised to turn off the *Bathroom* layers.

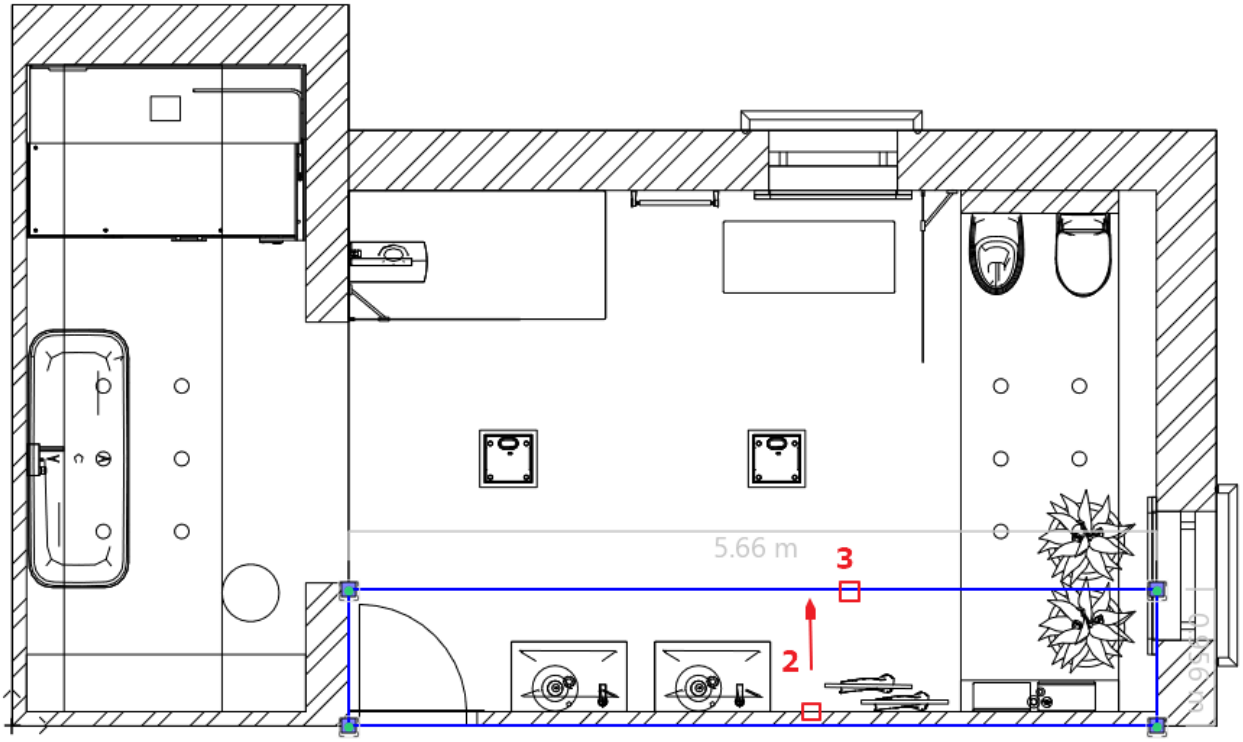


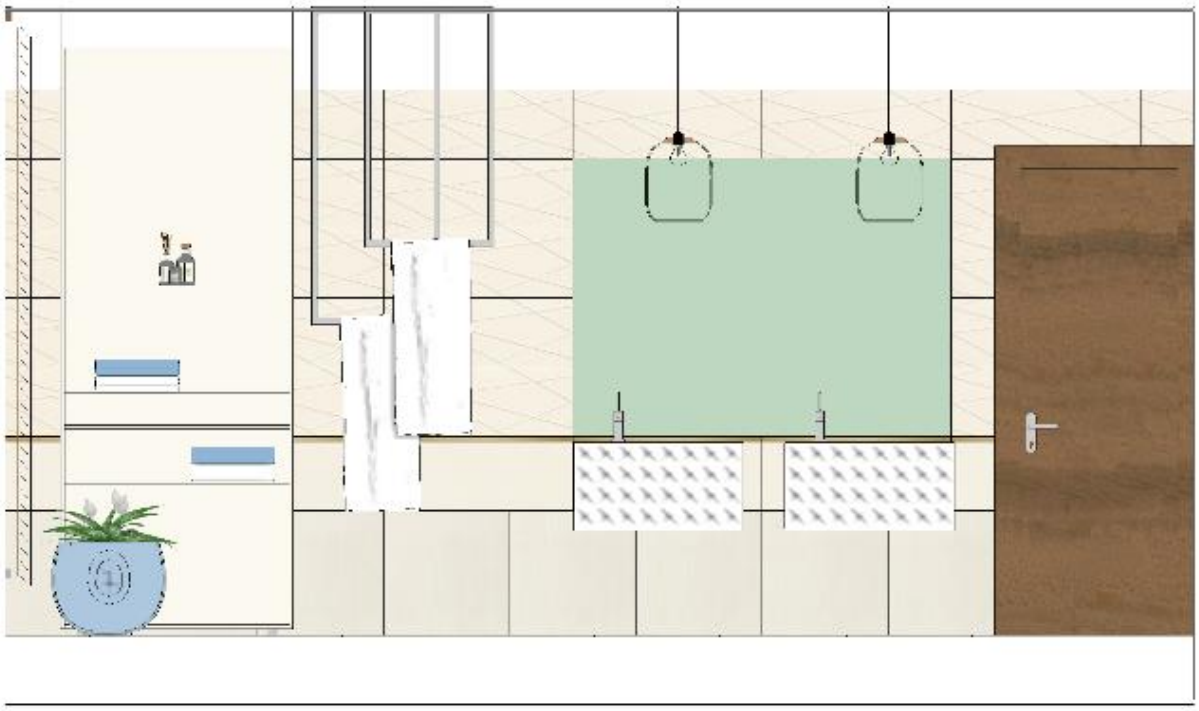
3.10. Wall elevation view

The tiling layout offers you a line drawing visualization of the tiles.
If you need a coloured visualization of the tiling, we suggest you to use the wall elevation view.

- Activate the floor plan window.
- Click on the **Ribbon bar / Documentation / Wall elevation / Image** command.(1)
- Click on the internal part of the wall. (2)
  Move the orange arrow and click on the desired point.(3) The blue rectangle appears. This shows the area which will be on the elevation view. Hit Enter.
- The Snapshot dialogue appears. Click on the Save button to save it to your computer as a jpg or click OK to place it in the project.
- The elevation view is ready. Move it to the desired place in the project.
- Repeat the previous method for all walls.
- Use the dimension command to measure them.


Edit
View
Building
Interior
Drafting
Dimension
Documentation
Wall elevation
Drawing comparison
Snapshot
Schedule
Tags
Quantity take-off
Hand-sketch style
Mood board
Image
Documentation
Fine
1:100
1:100

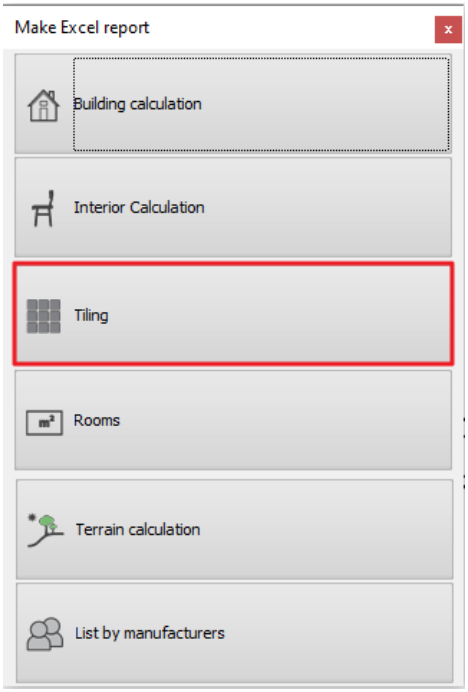

5.66 m
3
2



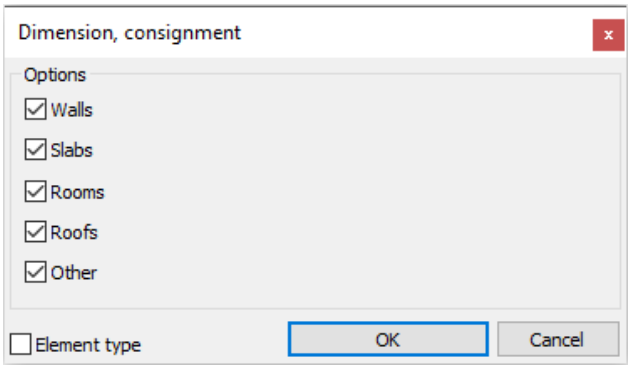
3.11. Tiling consignation

In the next example we show how to create Tiling consignation which is a list of the total number of tiles used in the project.
The tiling consignation is a quantity take off report which helps you to order the required quantities from the manufacturers.

- Click on the **Ribbon bar / Documentation / Quantity take-off / Excel list** command than choose **Tiling** option.



- In the appearing **"Dimension, consignment"** window click on OK.



- Name the Excel file.

  An Excel file opens, in which all tiles are listed by type, size, the area they cover, total number of pieces, number of full tiles and fragments.

	A	B	C	D	E	F	G	H	I
1	**Tile summary**								
2									
3	*Image*	*Name of the product **	*Producer*	*Size [mm]*	*Area [m2]*	*Total (pc)*	*Full/Part/Fragment*	*Price*	*Value*
4		House-of-tones-White-STR 598x598	tubadzin	598x598	45.83	165	(94/32/39)	0	
5									
6									
7									
8									
9		House-of-tones-White 898x328	tubadzin	898x328	8.61	40	(24/3/13)	0	
10									
11									
12									
13									
14		steel-gold-pol-898x23_0	Tubadzin	898x23	0.6	40	(24/3/13)	0	
15									
16									
17									
18									
19		House-of-Tones-White A 898x.328	tubadzin	328x898	33.58	163	(87/16/60)	0	
20									
21									
22									
23									
24		Blue glass matt 02	generic	598x598	0.55	318	(281/2/35)	0	
25									
26									
27									
28									
29		Integrally_Light_Grey_STR_32_8x89_8_csemp	tubadzin	598x598	0.56	315	(293/4/18)	0	
30									
31									
32									
33									
34		House-of-tones-White 898x328	tubadzin	598x598	0.54	315	(280/2/33)	0	

Renderings

Workshop 4: Kitchen Design

4. Workshop 4: Kitchen Design

During this workshop you can learn how to use the Kitchen and Cabinet design tool through the steps of a typical kitchen design. Using these new design techniques, you will get instant impressive results! Provides a modern, fast, pleasant solution for all designers.

- Kitchen and Cabinet design tool helps to create and modify bottom and top cabinets quickly.
- The countertop can be easily created including a cut-out sink and hob.
- Accessories can be downloaded from Trimble 3D Warehouse® make the kitchen feel homey.

As an example, we will be using Andrea Nagy's completed kitchen project.
The goal will be to come up with the same result as shown in the example:

4.1. Open and Save the Project

If you have not downloaded the **Workshop - Preliminary level project yet, please** download it from the website and install it. It includes all project for all preliminary workshops.
http://www.archlinexp.com/education/workshops/workshop-application-preliminary

Open project

- Start ARCHLine.XP® Professional.
- Click on the Open Project:
- Choose the:
- …\Documents\ARCHLine.XP Draw\2020\Workshop – Preliminary\Kitchen_design\1_Nagy_Andrea_Kitchen_workshop_Start

Save project as …

Before starting to design it is recommended to save your project with another project name. This way we can avoid to overwrite the original one.

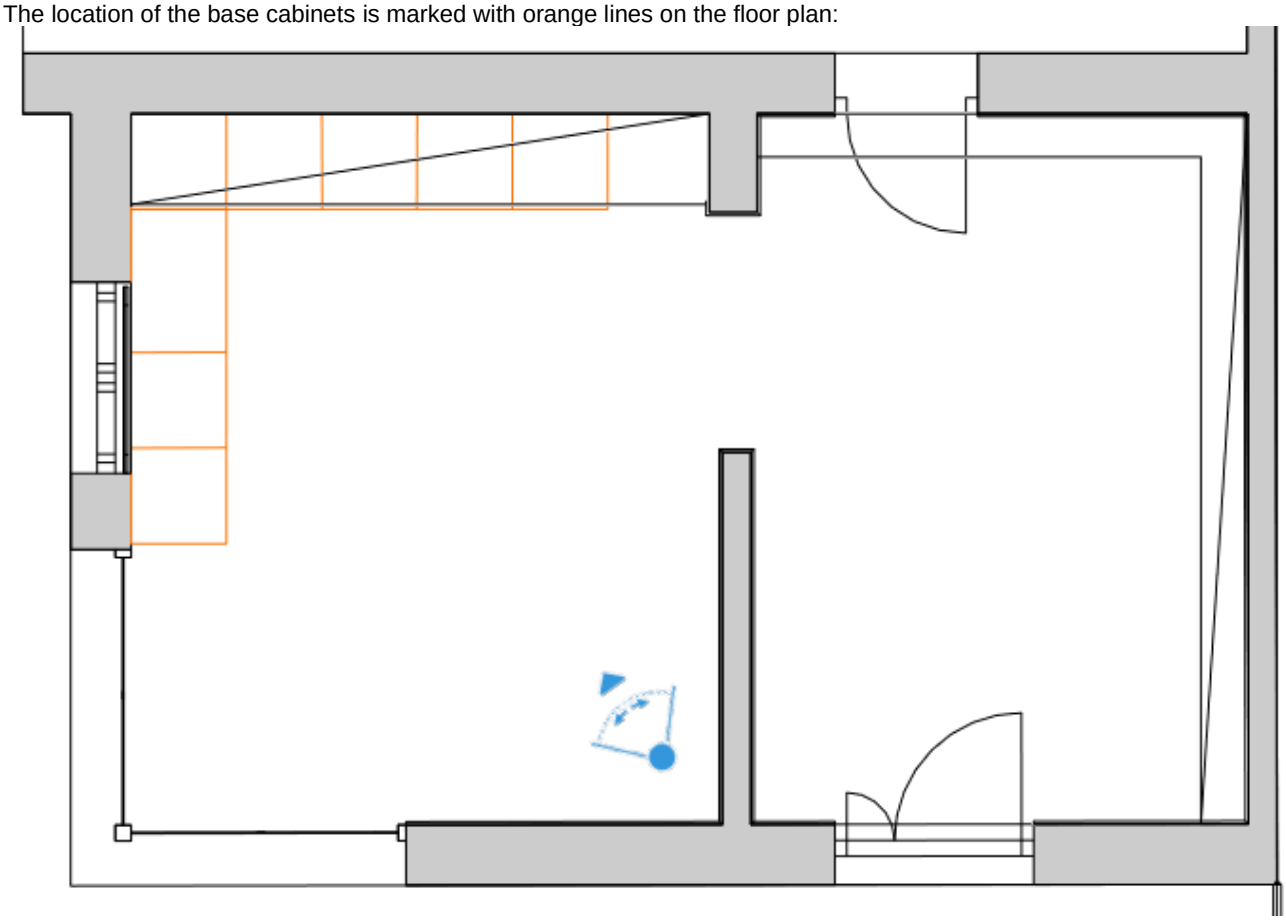
- Clicking on the **File menu / Save project as** command.
- Click on the ***Save*** button and give another name.

Furniture Library

You will find the furniture to be used in this project here: Design center: Objects \ Kitchen.

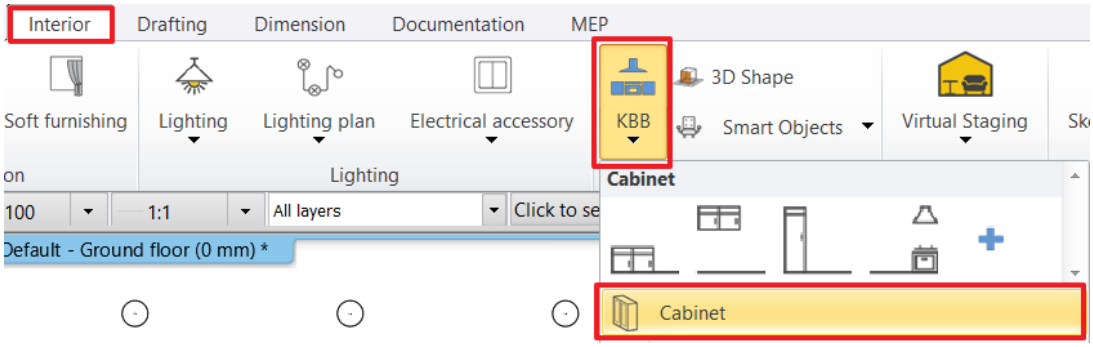
4.2. Base cabinets

The location of the base cabinets is marked with orange lines on the floor plan:



4.2.1. Creating base cabinet

- Click on the **Ribbon bar / Interior / KBB / Cabinet** icon.

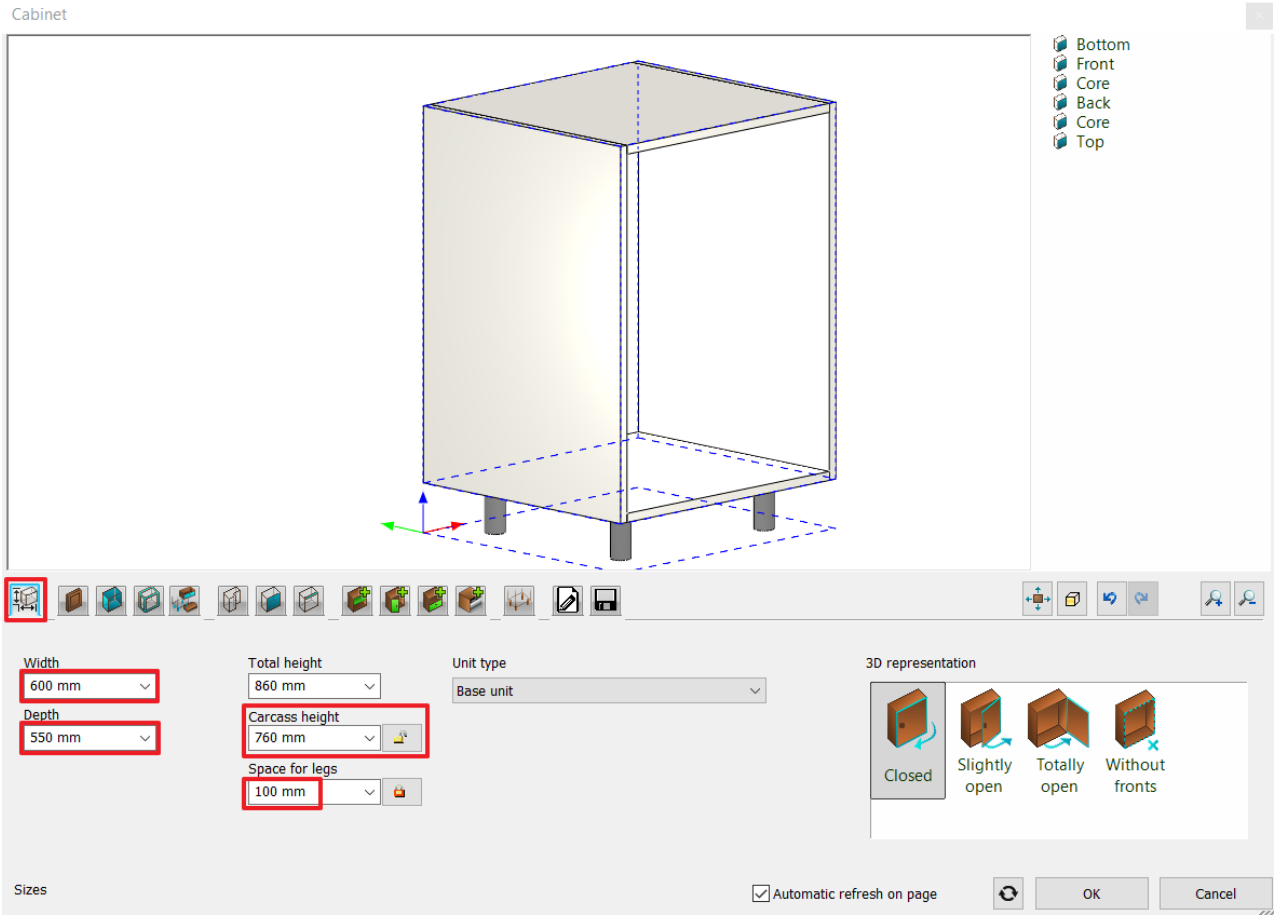


- The Cabinet properties window appears.
- Set the following properties:

Setting the global properties

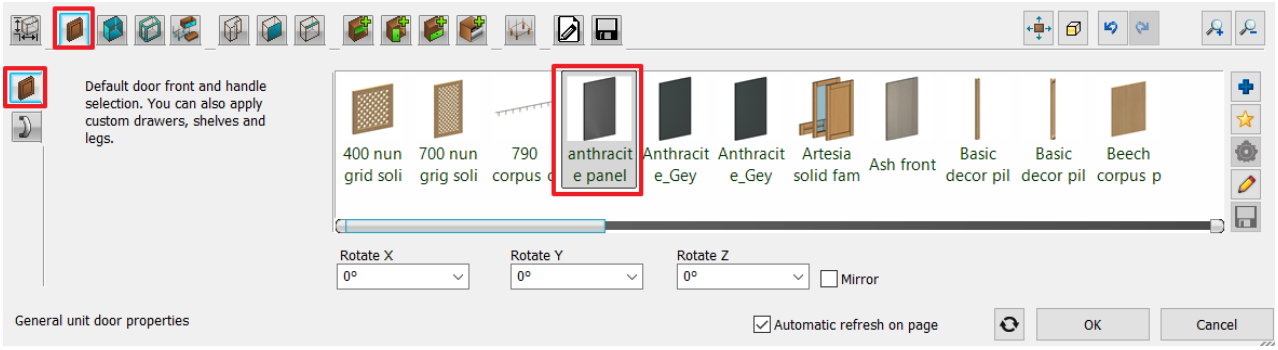
Size page

Set the *depth* to 550 mm and the width to 600 mm. Set *Carcass height* to 760 mm and lock it by pressing the button. Decrease *Space for legs* to 100 mm.

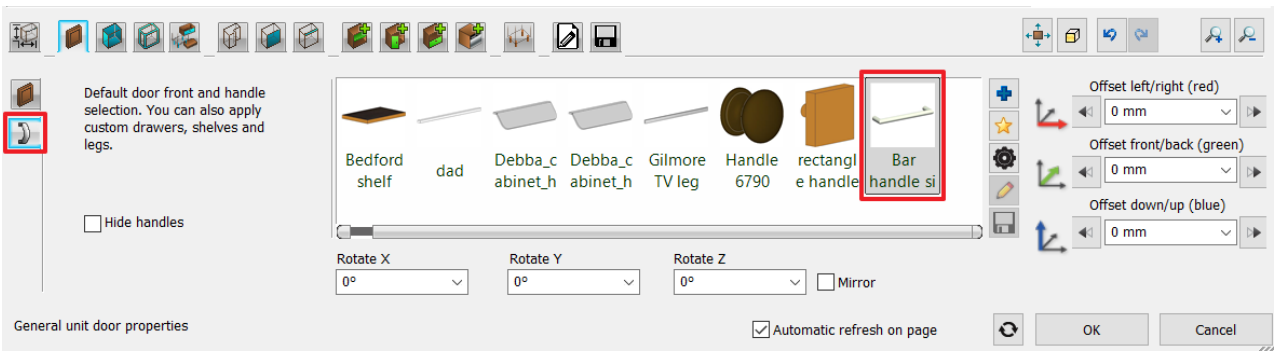


General unit door properties page

Select the "*Anthracite panel*" cabinet door family.

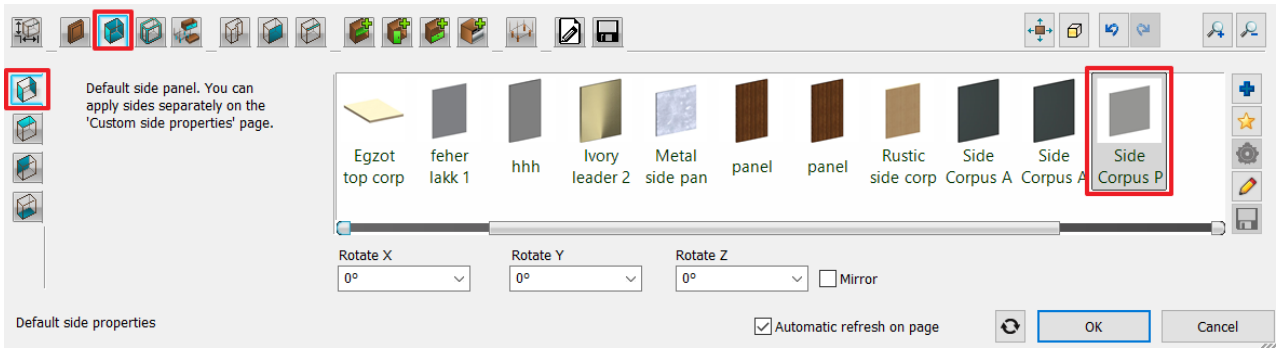


Select the "*Bar handle simple 120*" handle.

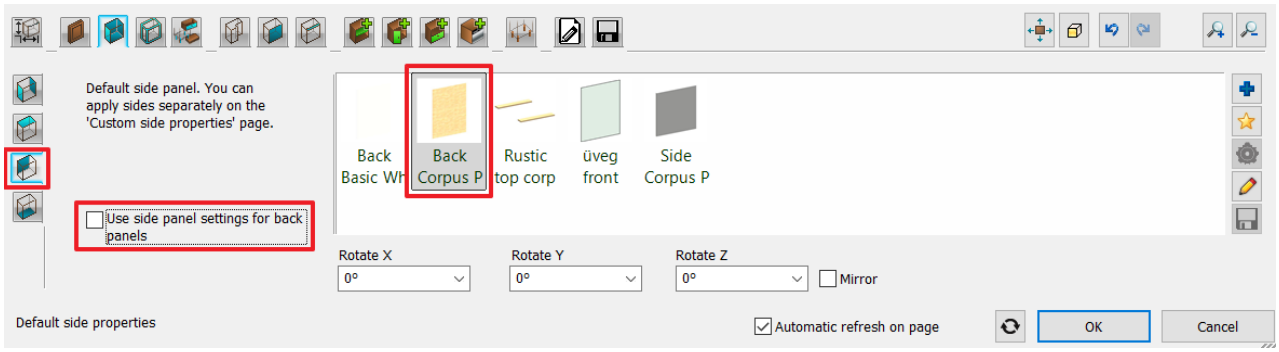


Default side properties

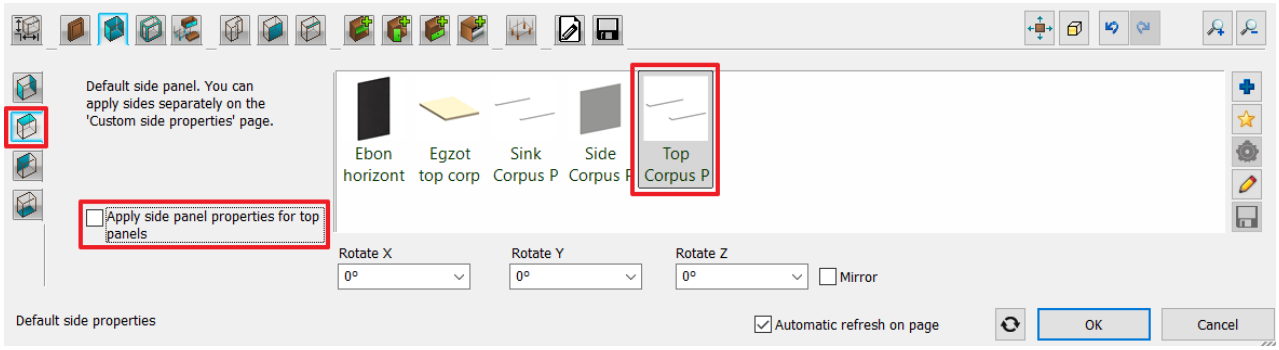
Select the *Default side properties* tab and select *Side corpus panel* side panel.



On the *Back*-tab switch “Apply side panel properties for back panels” off and select “Back corpus panel” as the default back panel.



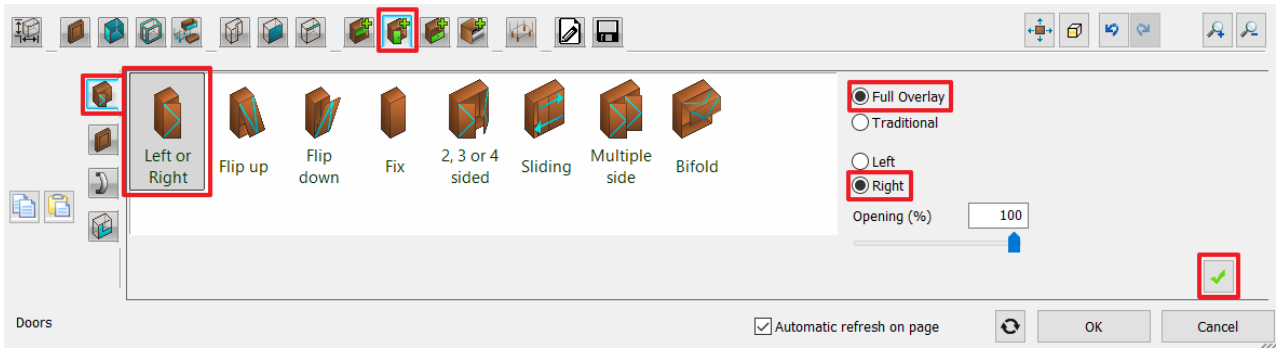
On the *Top* tab switch “Apply side panel properties for top panels” off and select “Top corpus panel”.



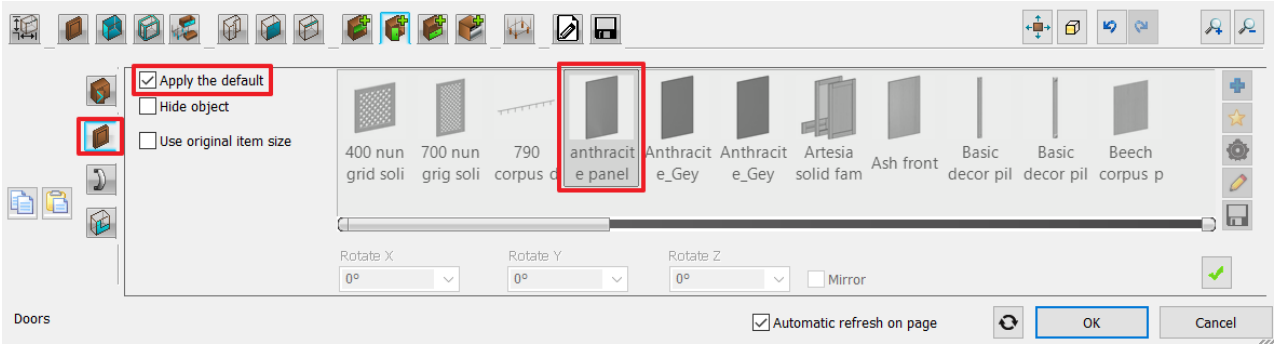
Add items – local settings

Door page

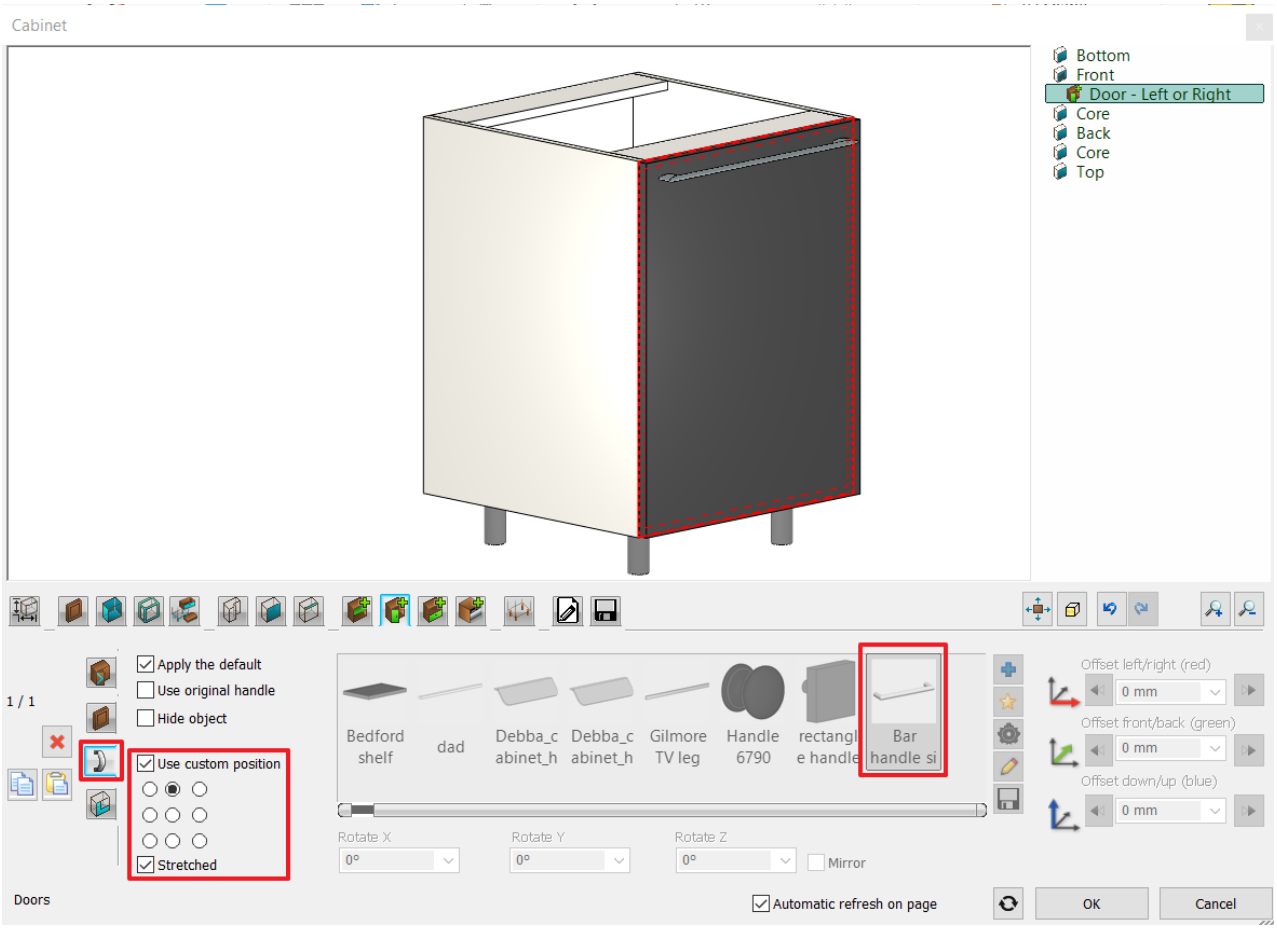
First add a new default door by pressing the button, which opens to the right side and fully overlays the cabinet.



On the next tab don't change anything, we use the previously set anthracite front panel.

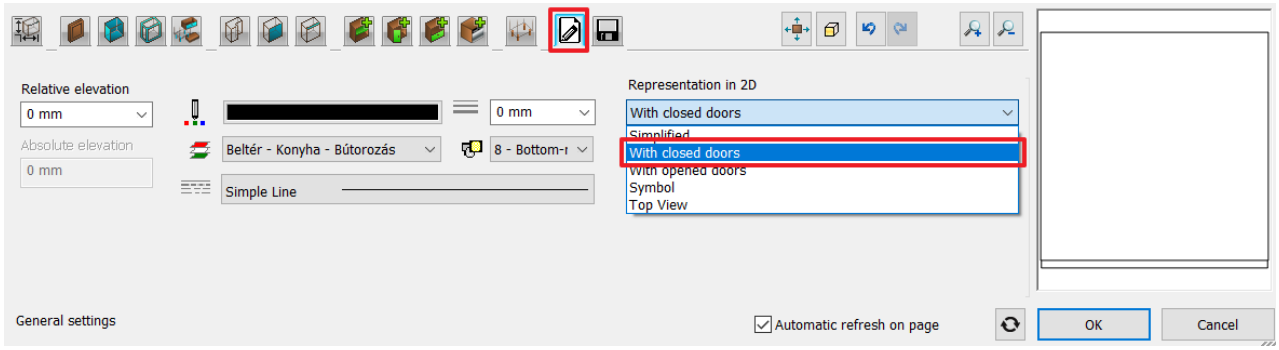


On the *Handle* tab switch *Use custom position* checkbox on and select the top-center handle position.
Also select the stretched option.



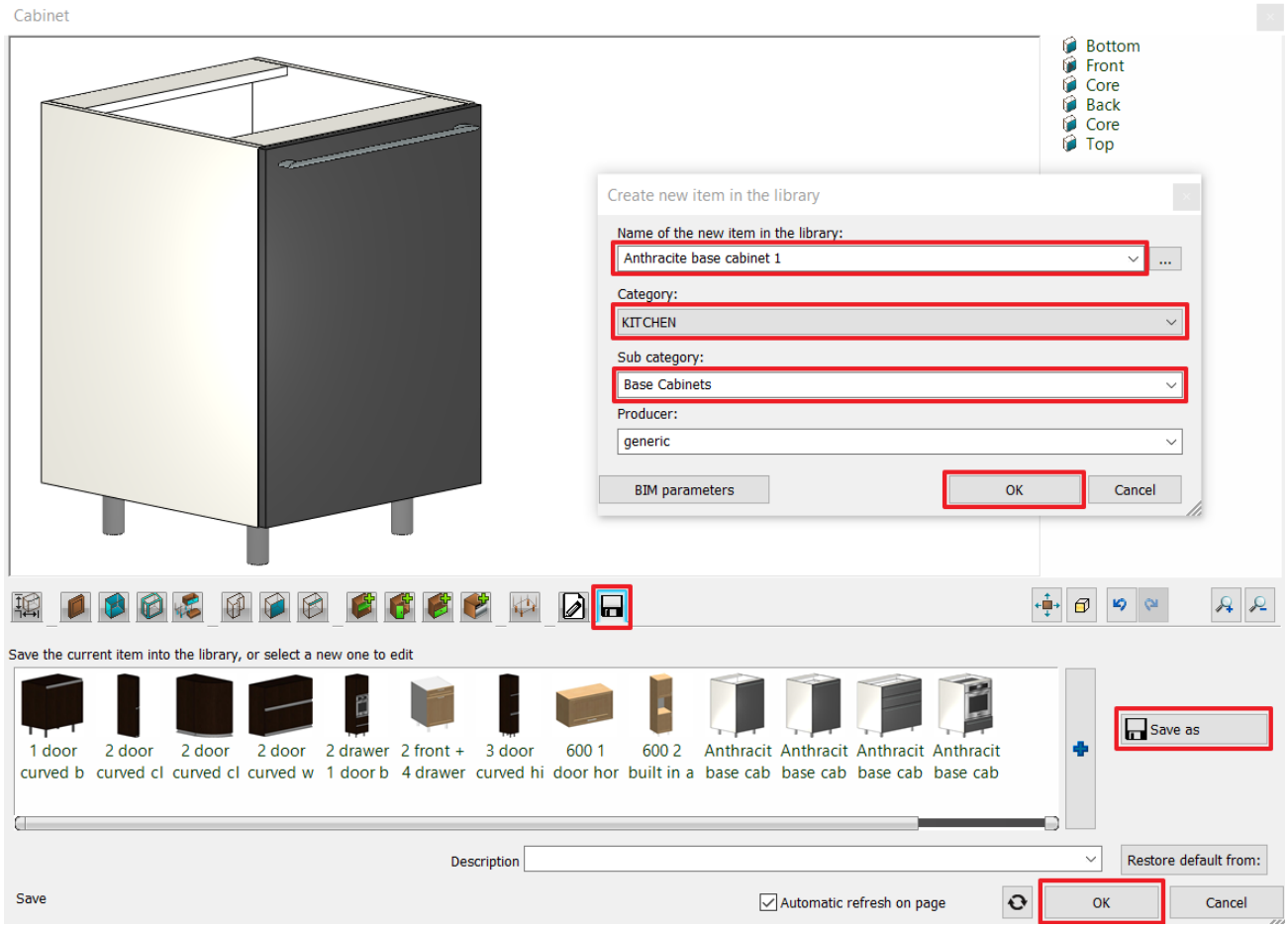
General settings

At the "Representation in 2D" select the "with closed doors" option.

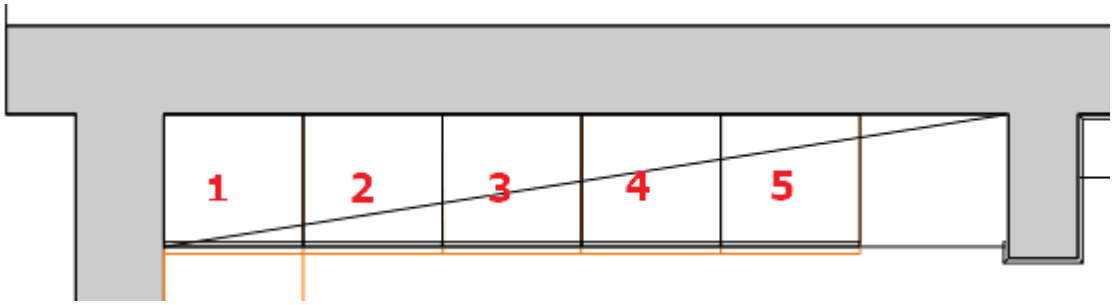


Save page

Click on “Save as” command and save the base cabinet under “Kitchen Category”, and “Base Cabinets” sub-category named “Anthracite base cabinet 1”.



Finally close the window by pressing the OK button.
Place 5 instances of the cabinet onto the drawing next to each other, starting from the top-left corner of the room.
While placing items the software pulls them to the wall and next to each other.

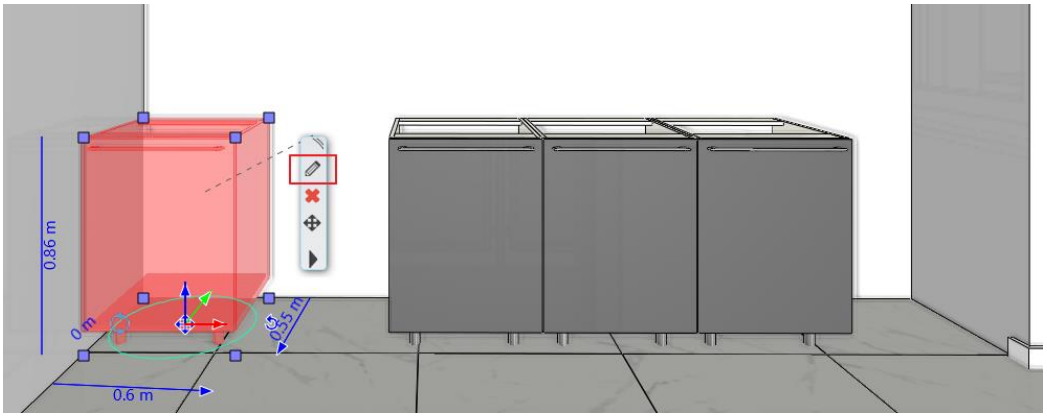


4.2.2. Creating the corner cabinet

Select the 3D window and choose the “Kitchen_2” view. We will convert the No. 1 base cabinet:

Delete the No. 2 cabinet.

Select the No. 1 cabinet and click on the properties button.

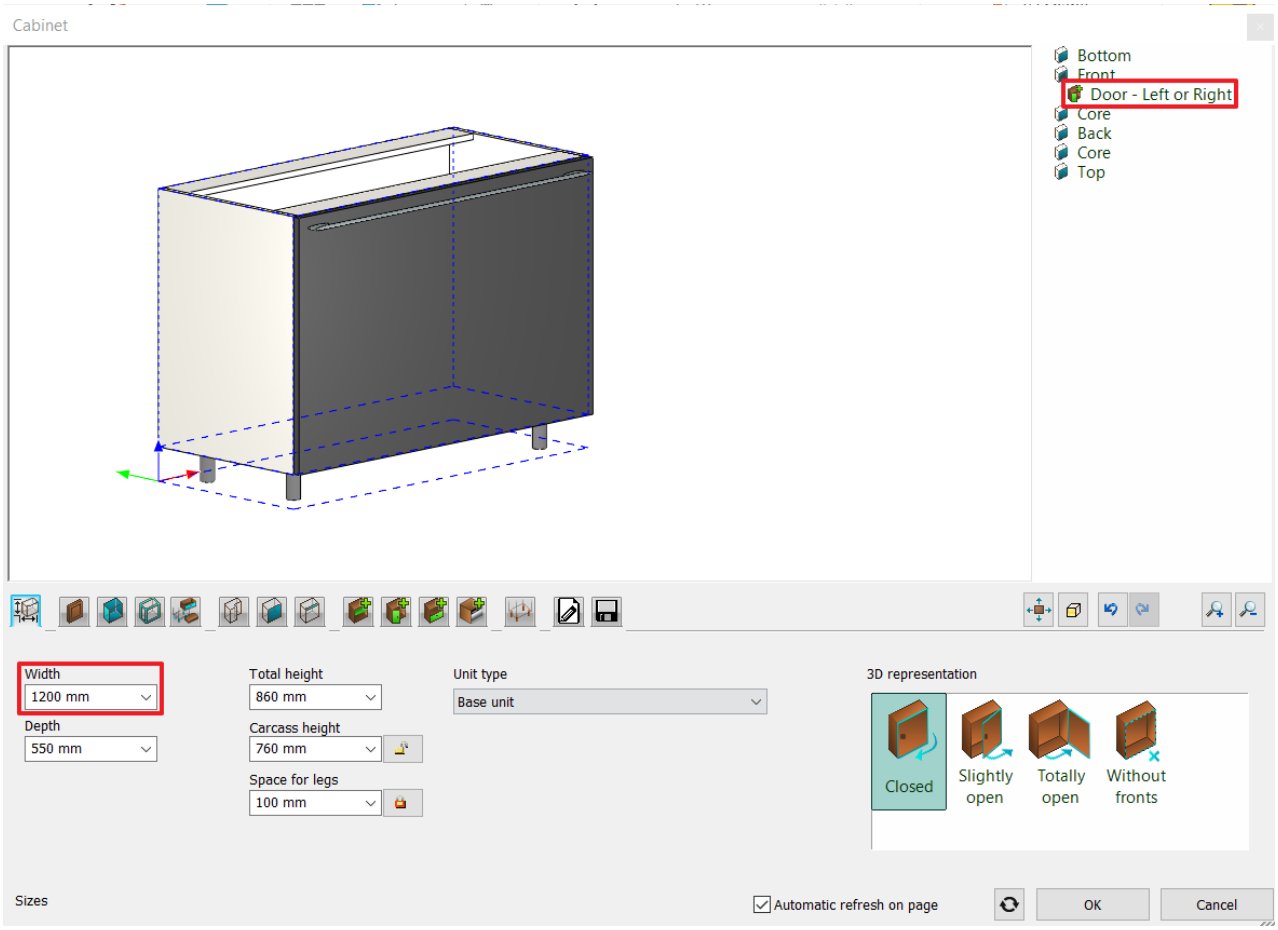


The corpus window appears.

Sizes tab

Change the width of the element to 1200 mm, then on the right side select the Front – Door – Left or Right option.

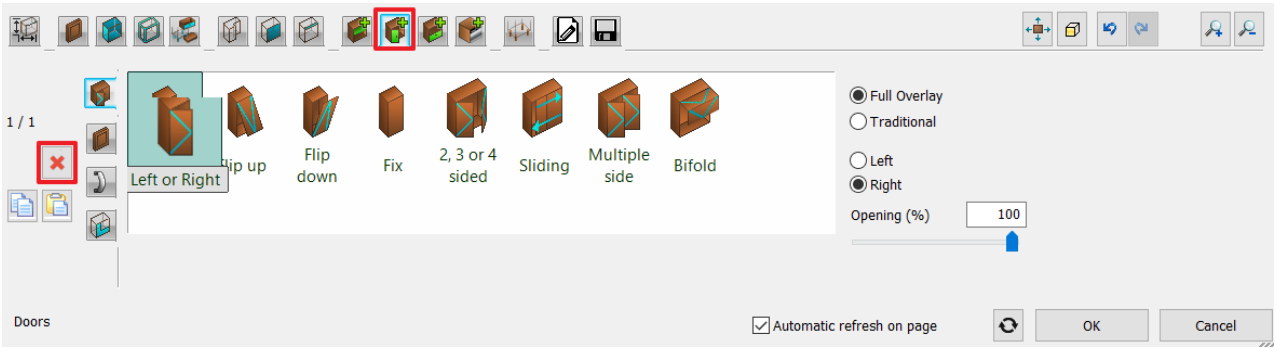
You can also select the Door settings by pressing Alt while clicking on the door.



Doors tab

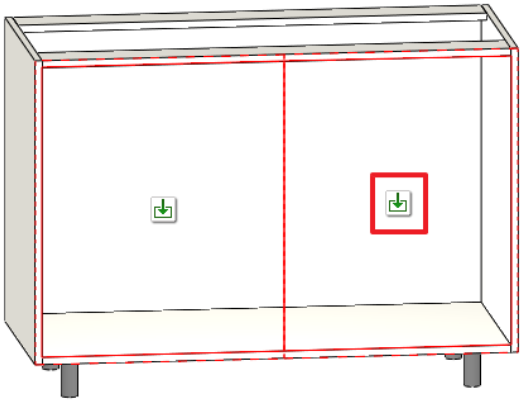
Now the *Doors* tab appears.

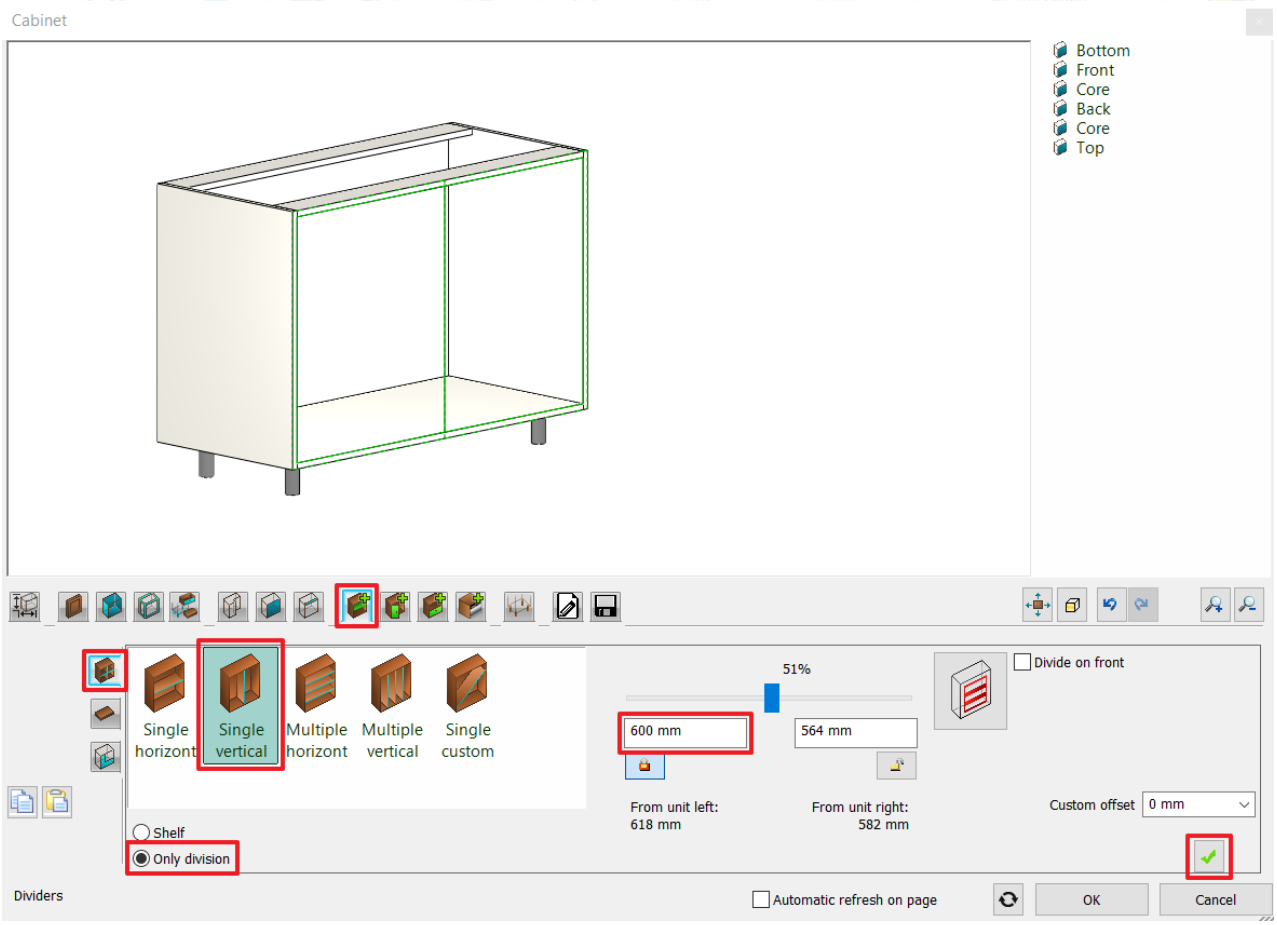
Delete the selected door by pressing the button.



Dividers tab

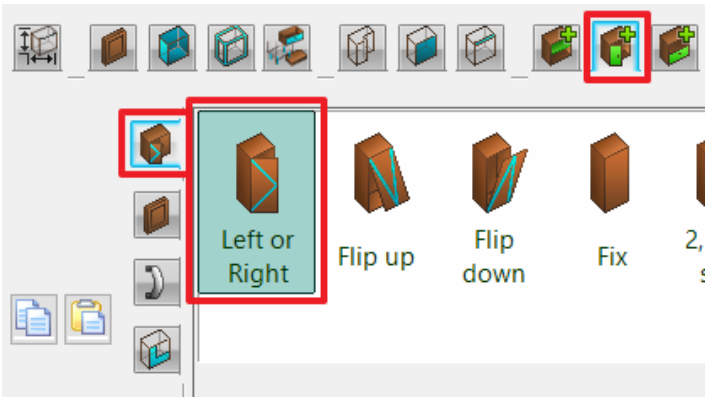
On the dividers tab select the ”Single vertical” divider and set it to ”Only division”. Set the left side distance to 600 mm, then place it by pressing the button.



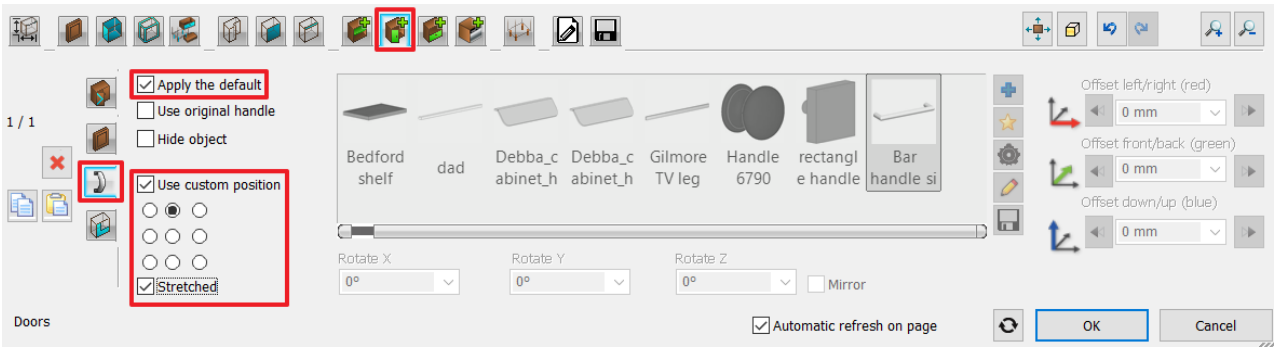

Cabinet
Bottom
Front
Core
Back
Core
Top
Single horizont
Single vertical
Multiple horizont
Multiple vertical
Single custom
51%
600 mm
564 mm
Divide on front
From unit left:
618 mm
From unit right:
582 mm
Custom offset
0 mm
Shelf
Only division
Dividers
Automatic refresh on page
OK
Cancel

We divided the front of the cabinet into two sections. The left side is a fix one, while the right side is openable: On the right side of the cabinet preview click on the icon.

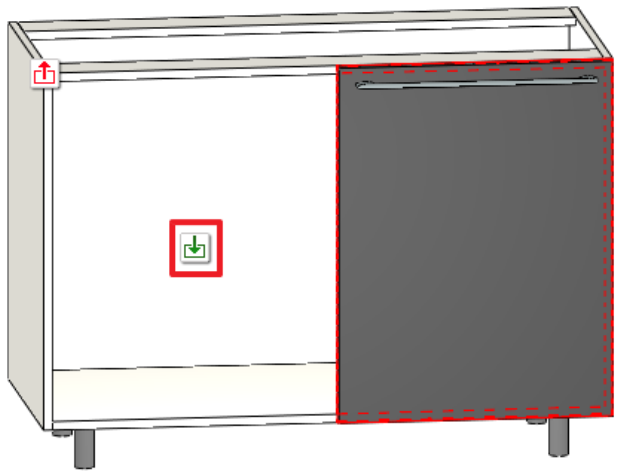
Select the doors tab and place a Left or Right door by pressing the button.



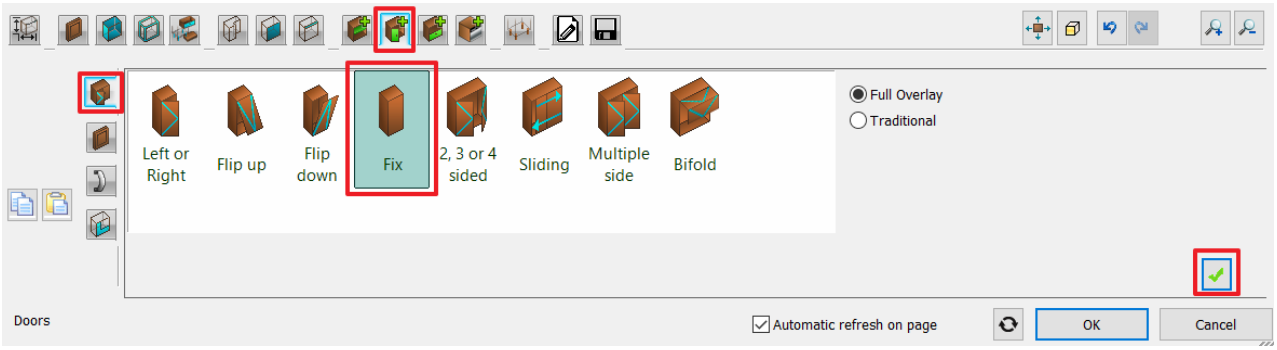
When the door is ready, select the *Handle* tab and activate the Use custom position. Place the handle on the top center part of the door and stretch it.



On the cabinet preview click on the left side button.

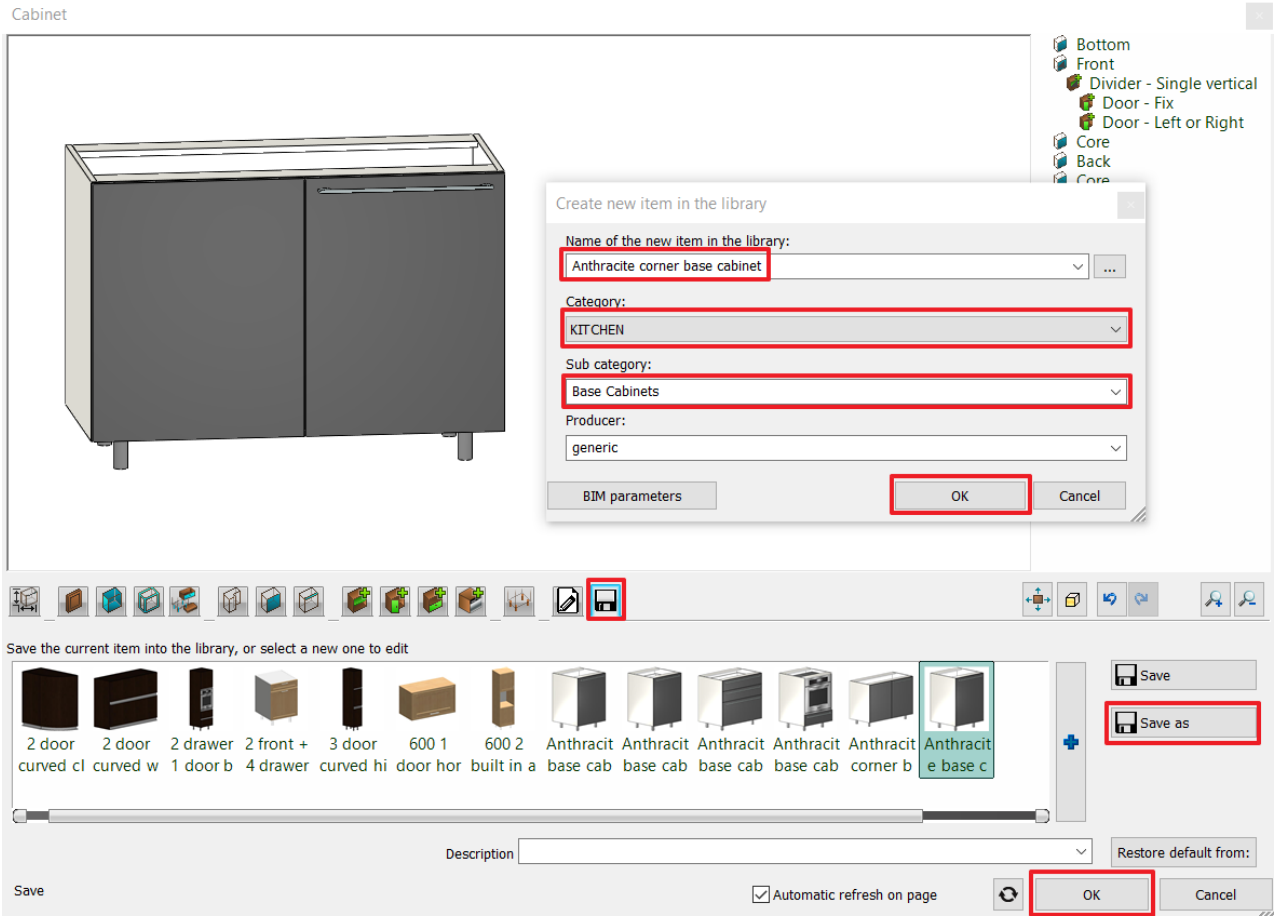


Select the Fix door and place it by pressing the button.

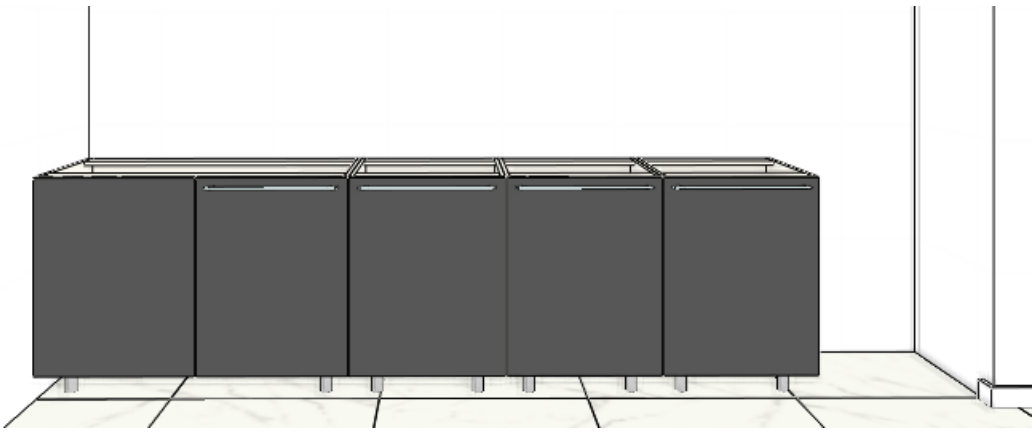


Save tab

Click on the Save as button and save this new cabinet in the *Kitchen* category, base cabinet subcategory named *Anthracite corner base cabinet*. OK.



Close the window by clicking on OK.



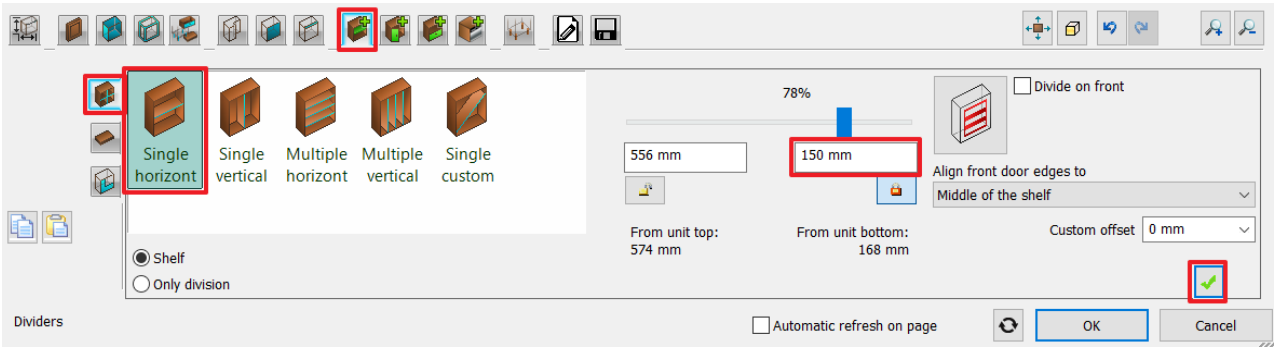
4.2.3. Placing the oven

In the No. 3 cabinet place the oven with a drawer under it.

Select the No. 3 cabinet and click on the properties button. The corpus window appears.
With Alt + left click select the door and delete it.

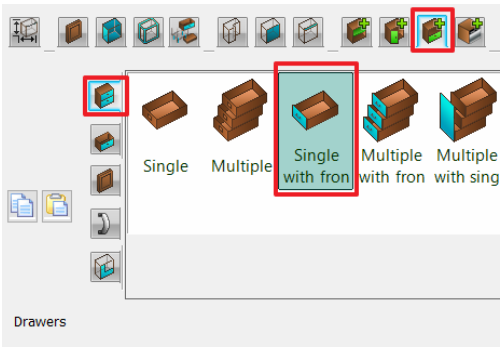
Divider tab – placing a shelf

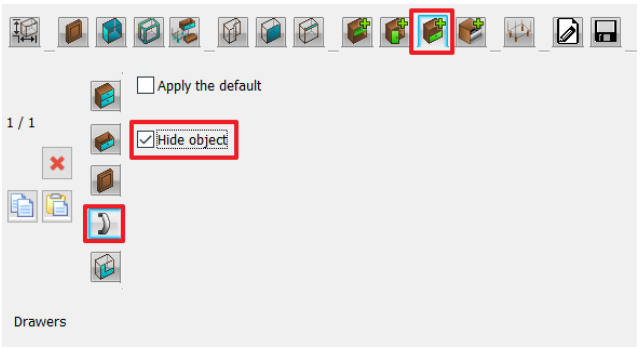
Select the *Single horizontal divider* and click on the *Shelf* option. Set the Right side distance to 150 mm and place it by clicking on the button.

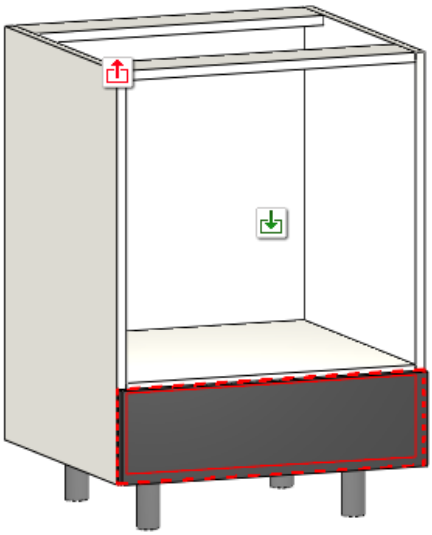


On the cabinet preview click on the lower button.

Select the drawers tab and place a single drawer with a front by pressing the button.
On the *Handle* tab hide the handle.

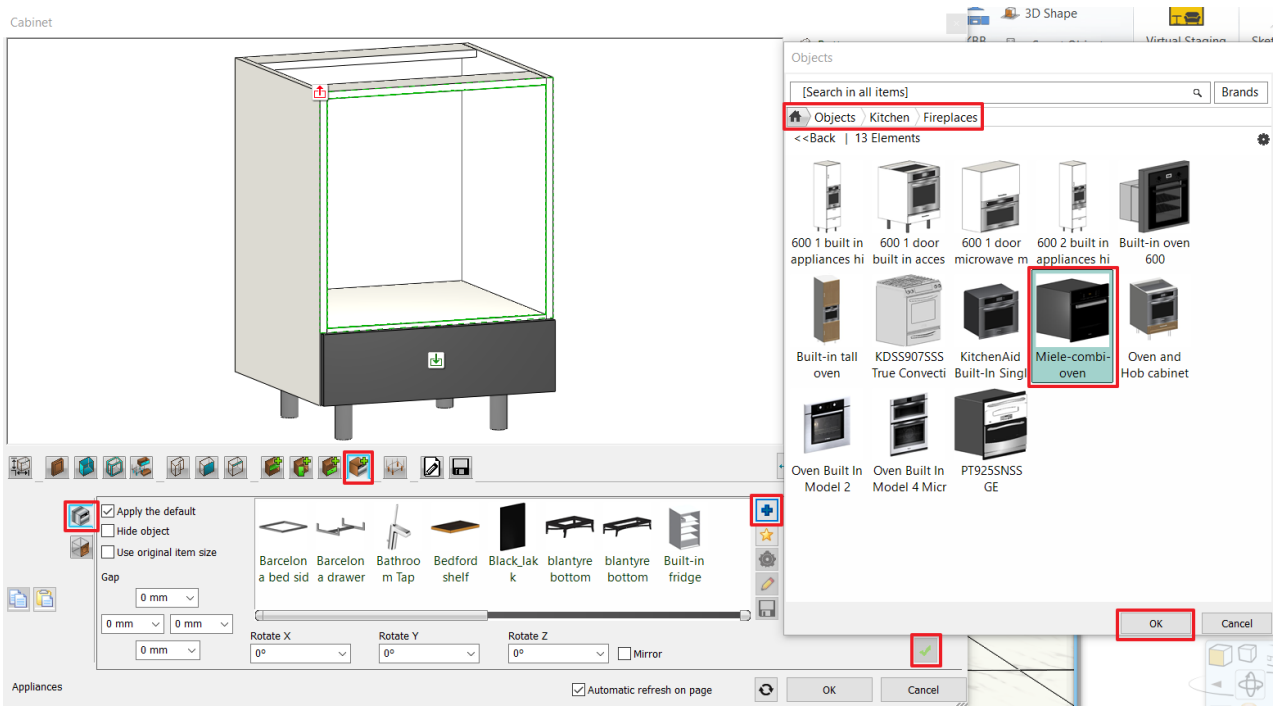




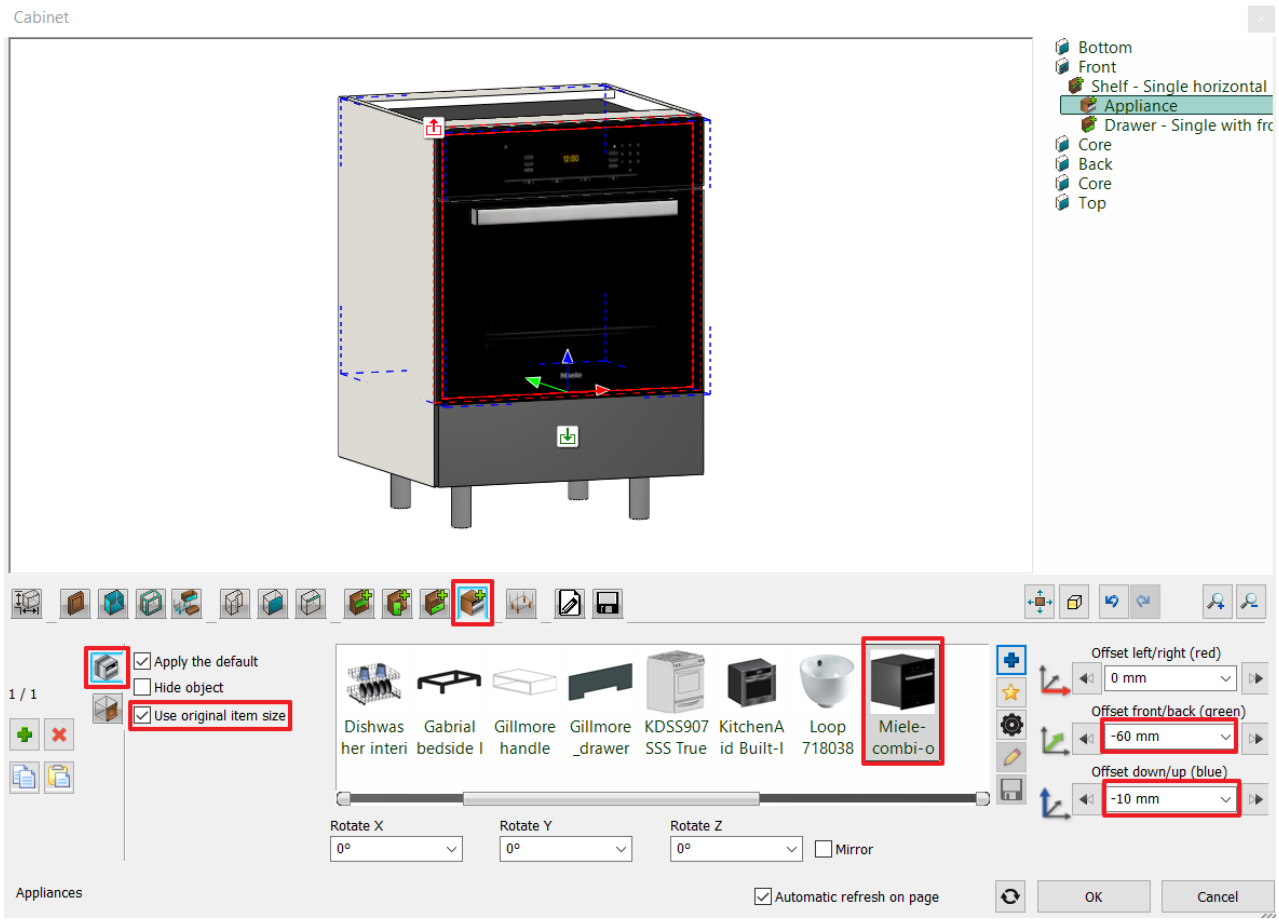


On the cabinet preview click on the button.

Select the appliances tab and click on the button. Select the Miele-combi-oven.



Place the oven by pressing the button.
Switch on the *Use original item size* option and change the offset values as in the picture below.



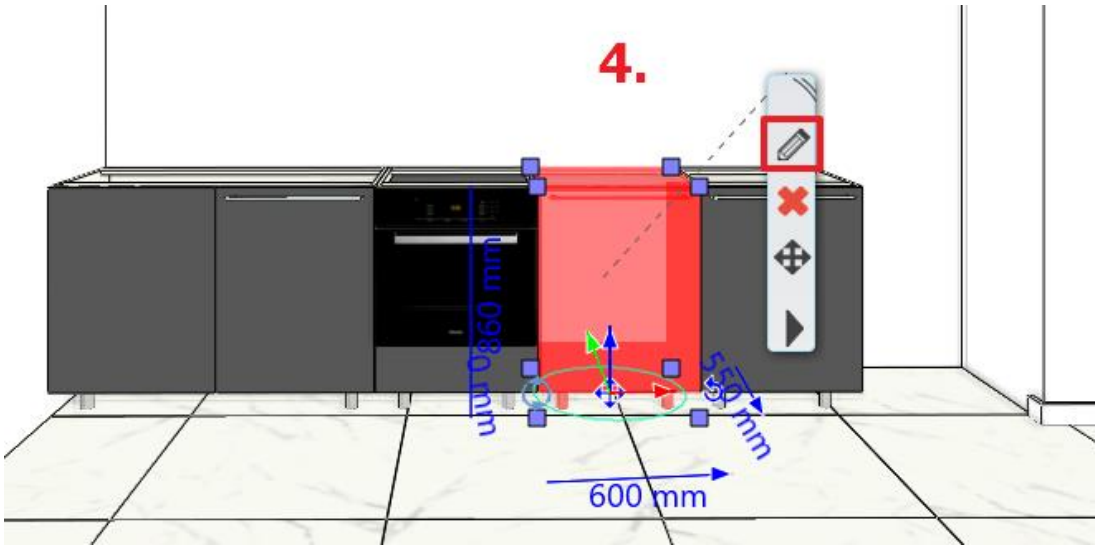
Save tab

Click on the *Save as* button and save it in the Kitchen category, base Cabinets subcategory with the name ”Anthracite base cabinet with oven”.
Close the window by clicking on OK.

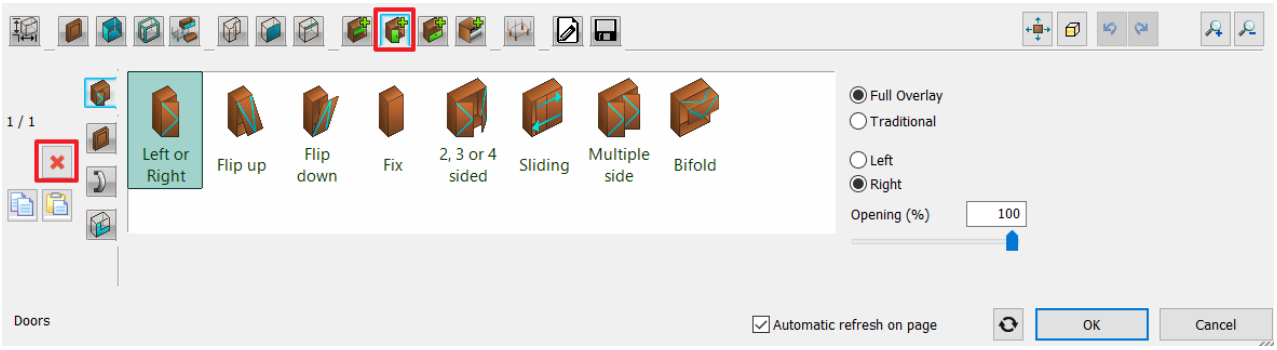
4.2.4. Drawer cabinet

Now we will modify the No. 4 cabinet to a drawer cabinet.

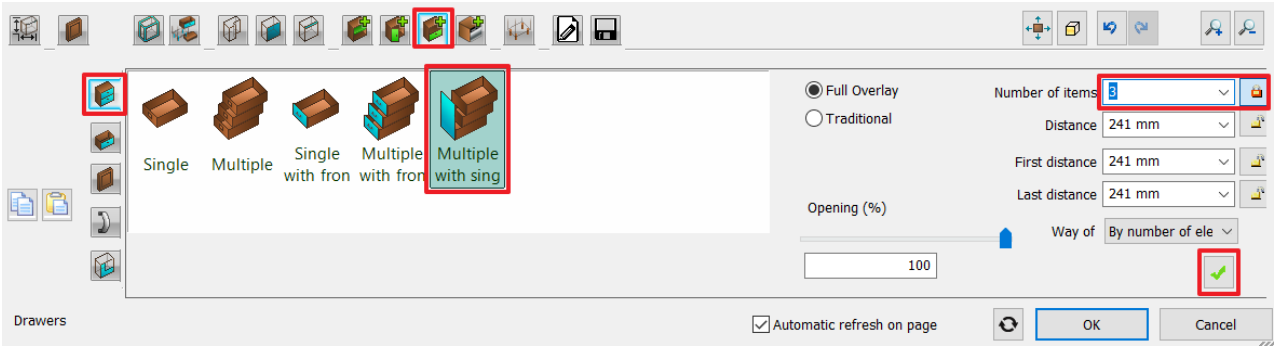
- Select the cabinet and click on the properties:



- Select the door: ALT + Click on it (or turn to the Doors page). Delete the selected door clicking on the marker.



- On the drawer page select the option “Multiple with single”, set the number of drawers to 3, finally insert the drawers by pressing the button.



Save tab

Click on *Save as* command and save the base cabinet under Kitchen category, and “Base Cabinets” subcategory named “Anthracite base cabinet with hidden drawers”.

4.2.5. Wide drawer cabinet

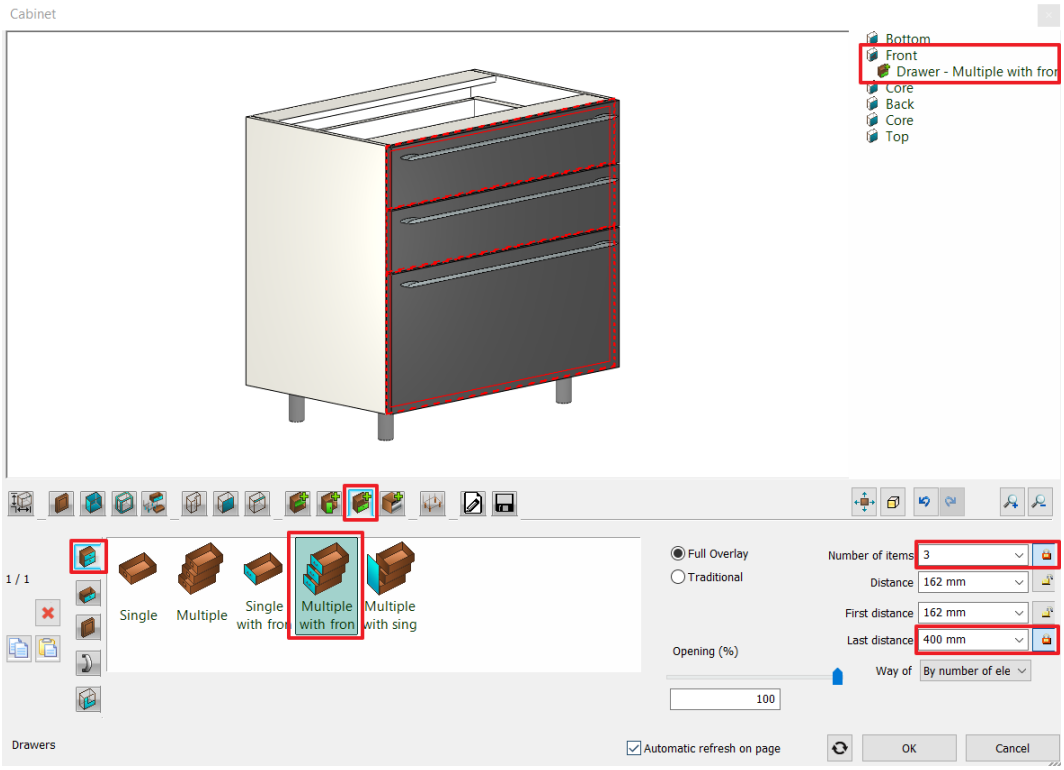
On the left-hand side wall place 3 base cabinets with white fronts. The first cabinet in the corner has drawers.

- Click on the **Ribbon bar / Interior / KBB / Cabinet** icon.

  Save tab – load the previously saved drawer cabinet.

  Sizes tab – Set the width to 900 mm.

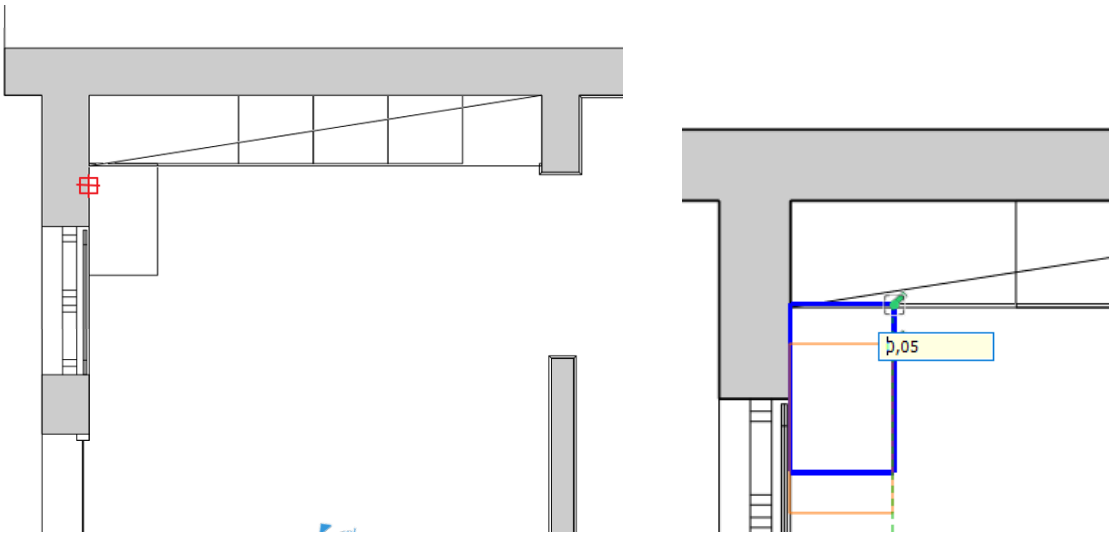
- Select the drawer: ALT+Click the drawer (or turn to the Drawers page). Change the type of the drawer to *Multiple with front* and set the height of the lowest drawer to 400 mm.



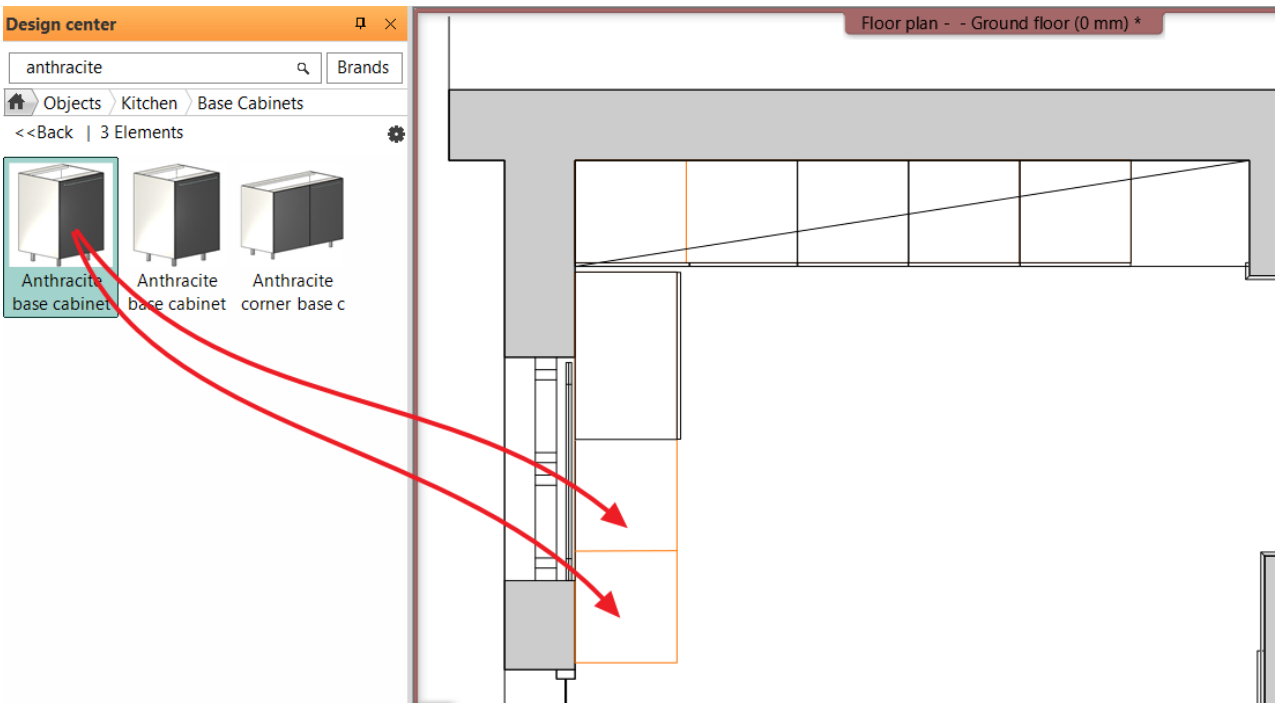
Save tab

Click the *Save As* button and save the item to the Kitchen category, then to the Base Cabinet subcategory as *Anthracite Base Cabinet with Drawer*.

- Close the dialogue and place the wide drawer cabinet onto the wall on the left side, next to the corner cabinet. Move the cabinet 50 mm downwards, making space for opening the doors and drawers. You can move it to the orange line too.



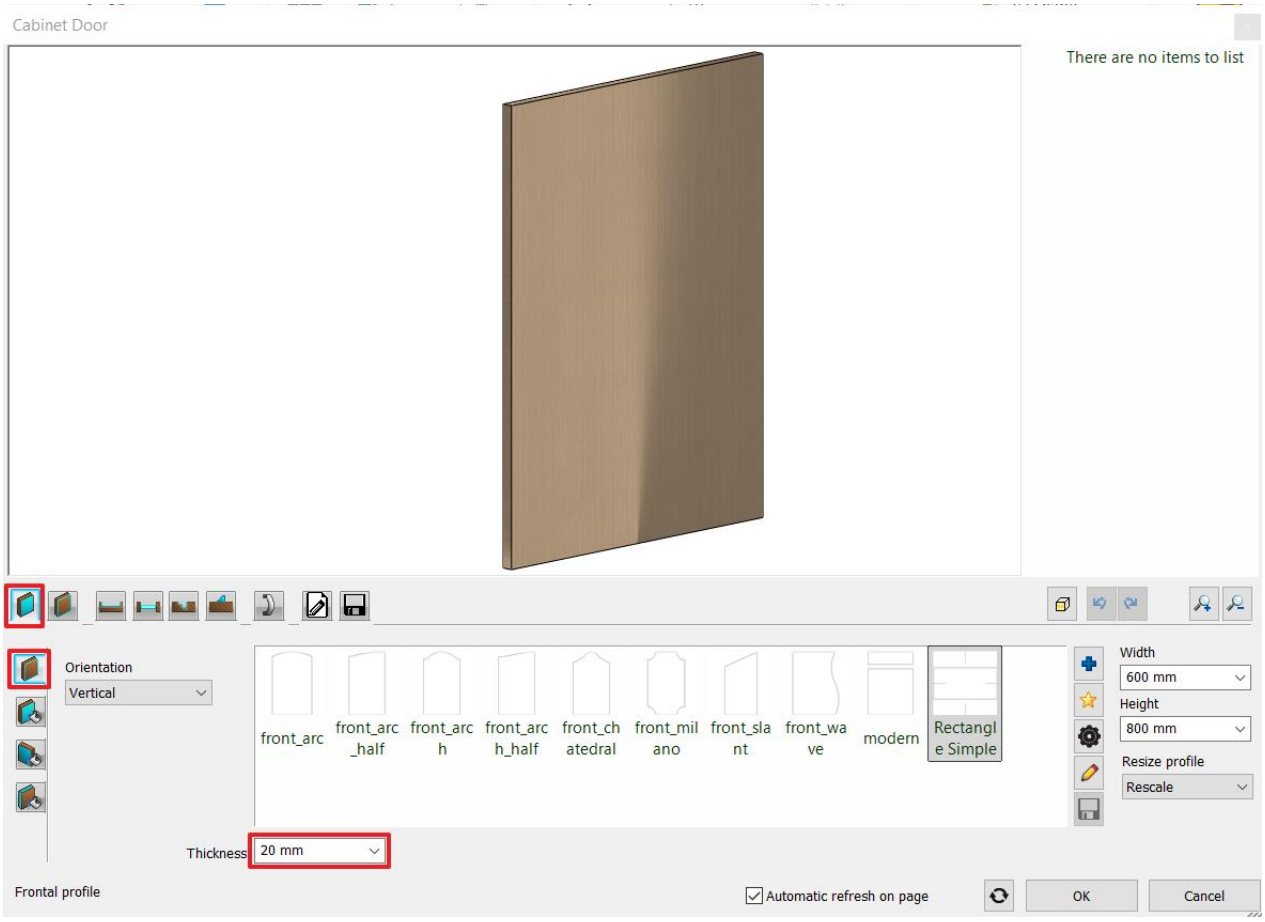
Open the **Objects / Kitchen / Base cabinets** category in the **Design center**. Write the word “anthracite” in the search bar. Drag and drop the *Anthracite base cabinet 1* on the two remaining places marked by orange lines.



4.3. Creating new front panel

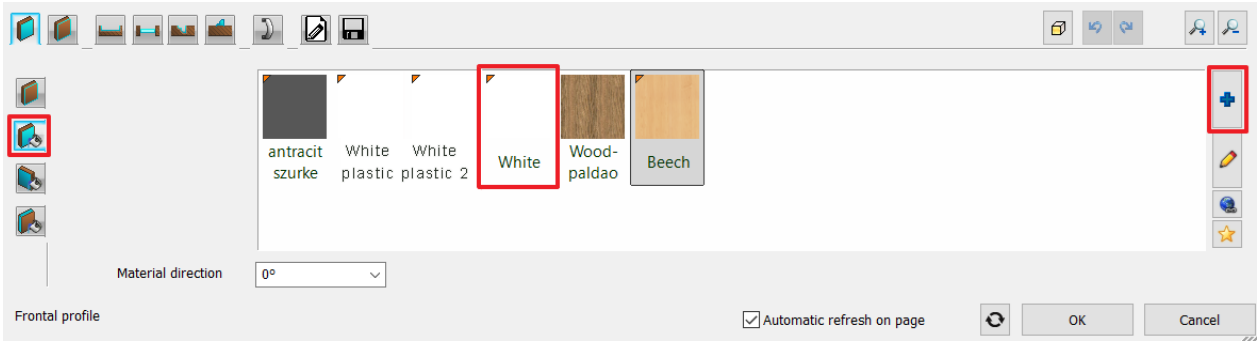
Create a 20 mm thick matte white front panel, and change the existing ones with it.

- Click on the Ribbon bar / Interior / KBB / Cabinet door option.

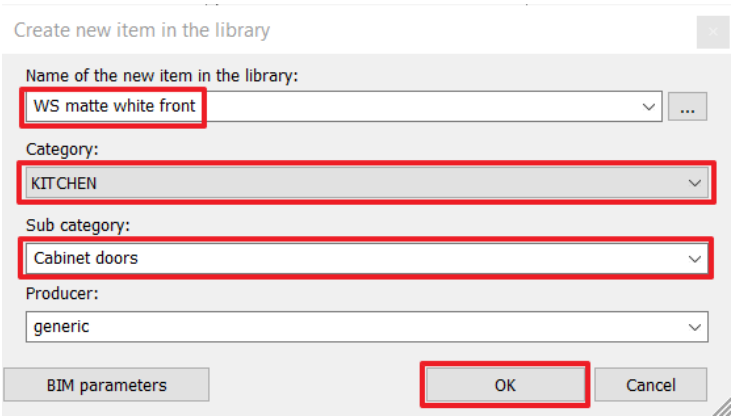


Set the thickness to 20 mm.

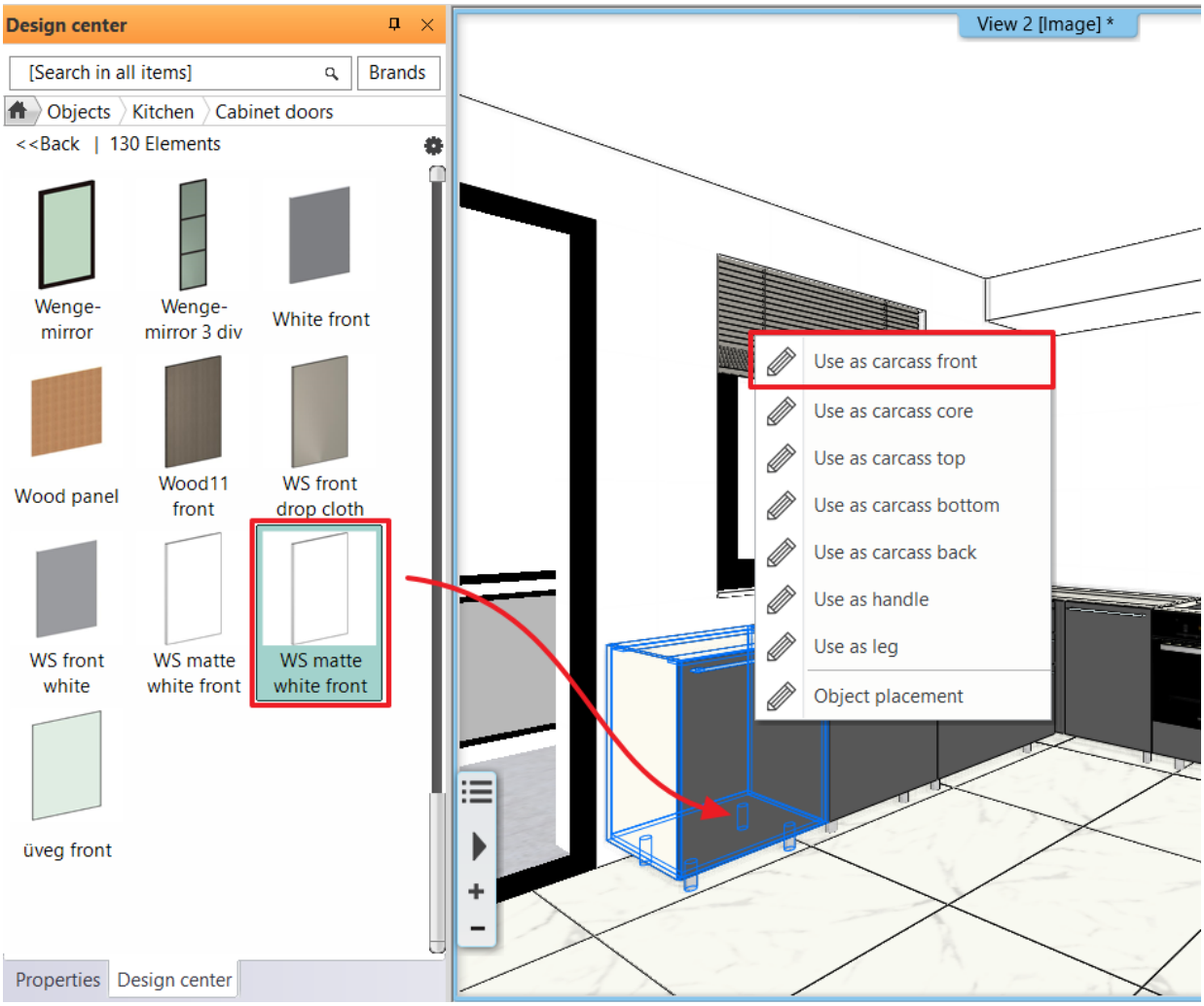
Click on the Front material tab and select the *Matte white 2* material.



Save page – Click on the Save as button and save this item to the Kitchen category, Cabinet door subcategory with the name *WS matte white front*.
Click on OK to close the window.
Don't place the front door, only press Enter.



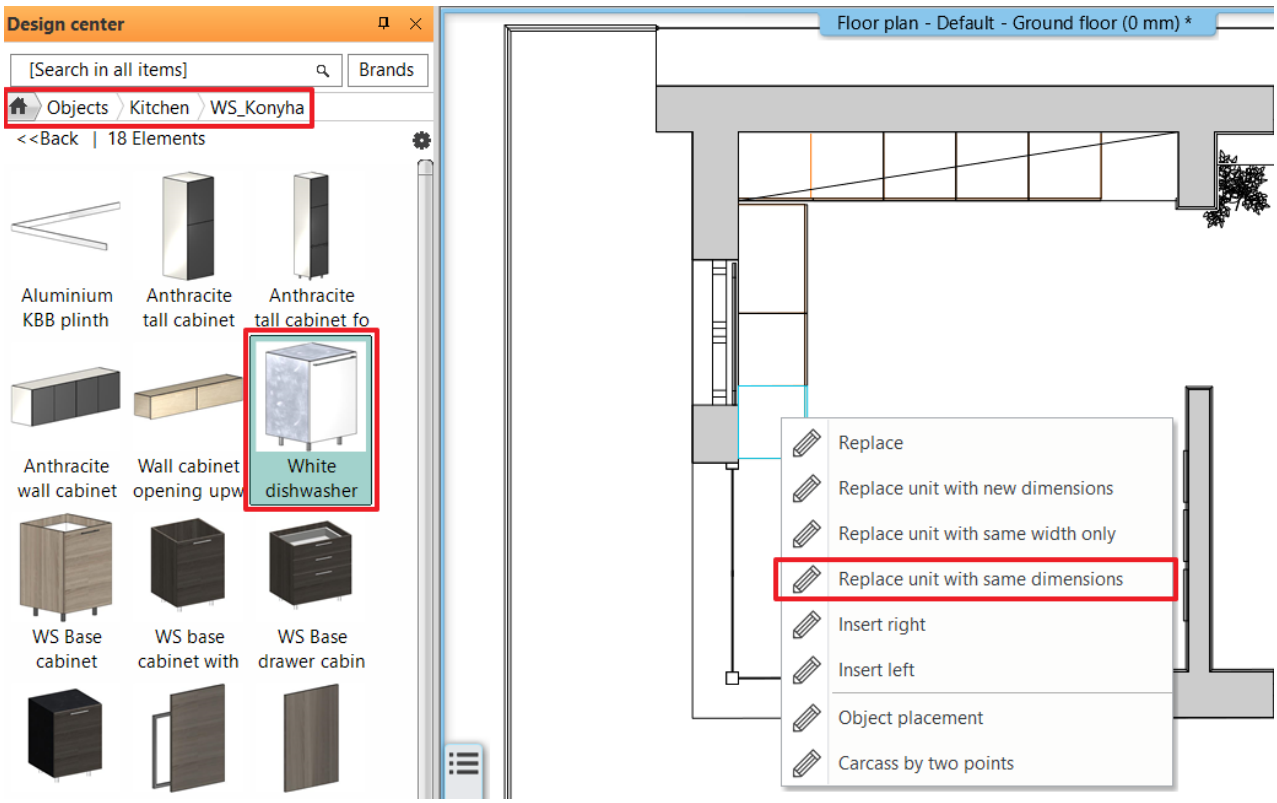
Search the front panel in the **Design center / Objects / Kitchen / Front doors** and drag and drop it on the first cabinet from the left side. Select the *Use as carcass front* option. Repeat it with the other two cabinets on this side.



4.3.1. Dishwasher

Change the outermost cabinet to a dishwasher:

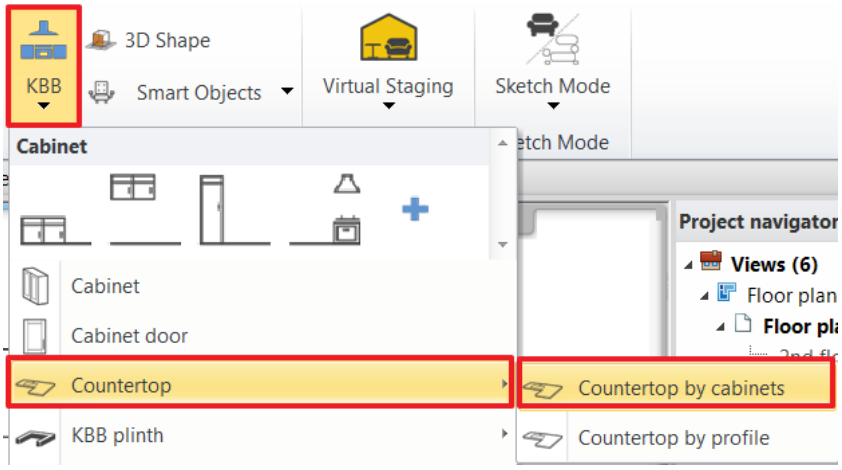
Open the **Design center / Objects / Kitchen / WS_Kitchen** category. Drag and drop the *White dishwasher* on the outermost cabinet and select the *Replace unit with same dimensions* option in the pop-up menu.



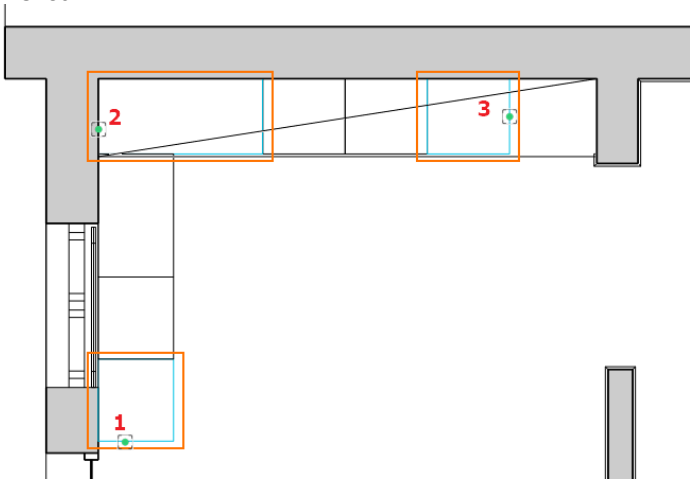
4.4. Create Countertop

You can set the contour of the countertop two ways: you can select the corpuses or you can draw its back side with a polyline where it connects to the wall. Now do it the second way.

- Click on the **Ribbon bar / Interior / KBB / Countertop / Countertop by** cabinets icon.



- Select the corpora. It is enough to select corpora on the ends and the one in the corner as in the picture. Hit Enter when finished.

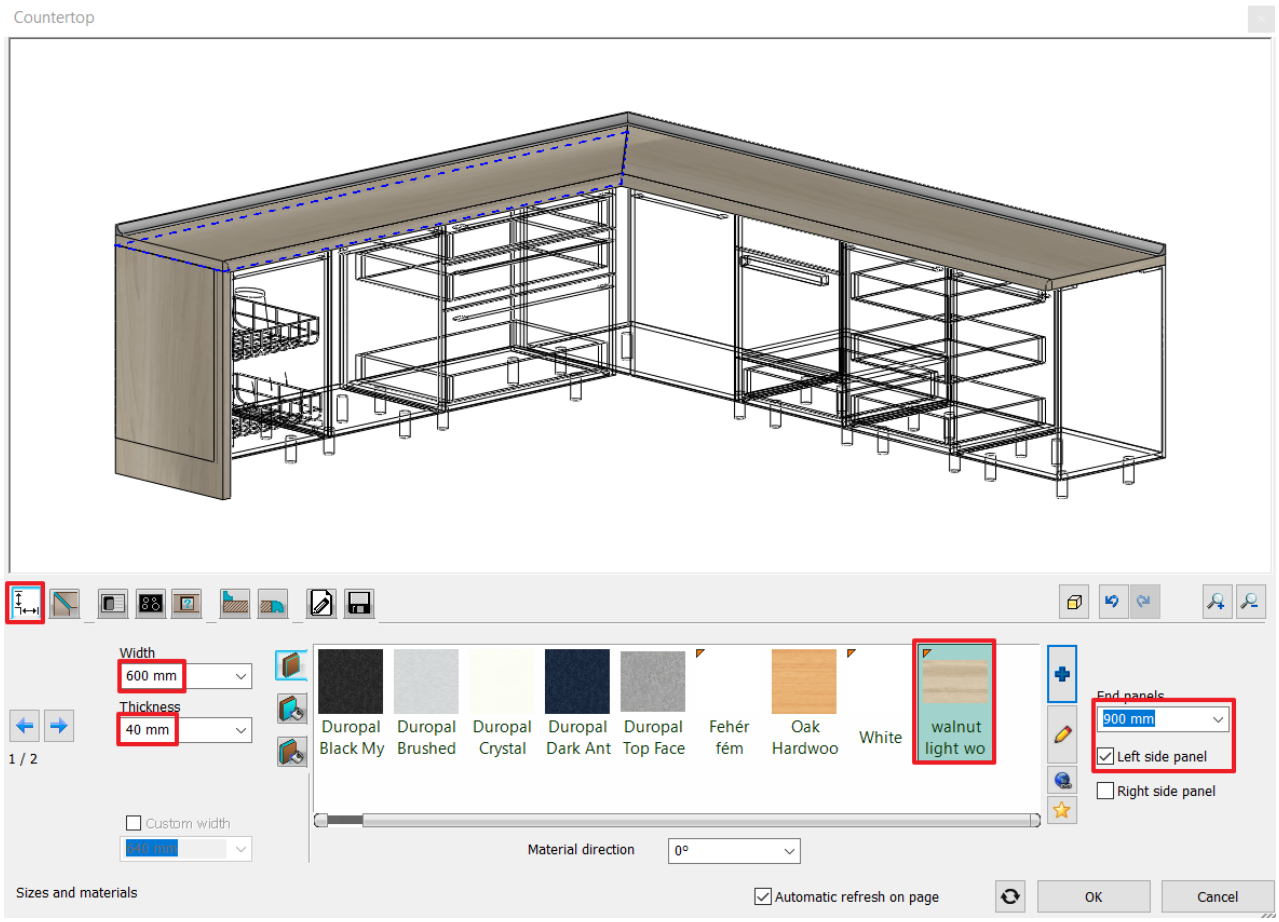


Set the following properties:

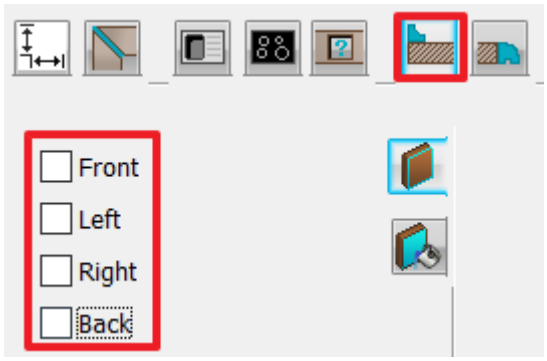
Sizes and materials page

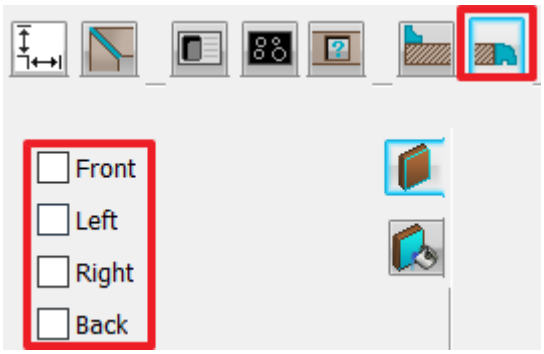
The width of the countertop is 600 mm, the thickness is 40 mm.
Activate the left side panel and set its height to 900 mm.

Select the *walnut light wood fine* material. If you can't find the selected material within Favourites then click on icon and find it in the Material Library.



Wall strip and ***Countertop edge tab***

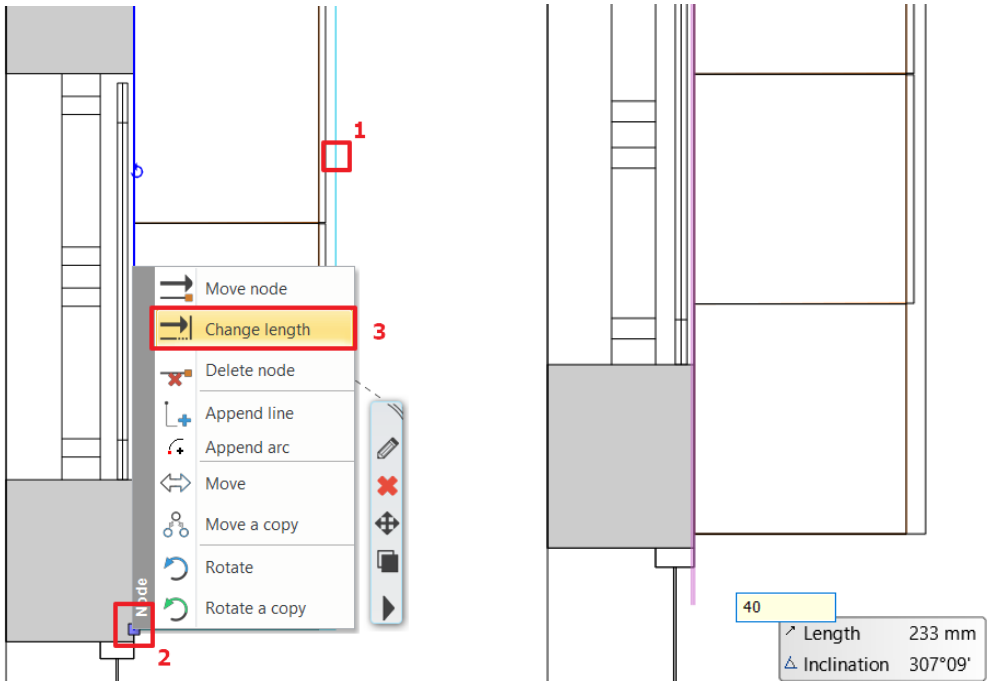




Click on OK to close the window.

On the picture above you can see that the countertop is interfering with the corpus. Extend the countertop with 40 mm.

Select the countertop in 2D view (1).
Click on the endpoint (2) then select the Change length option.
Pull the cursor downward and type in: 40 mm.

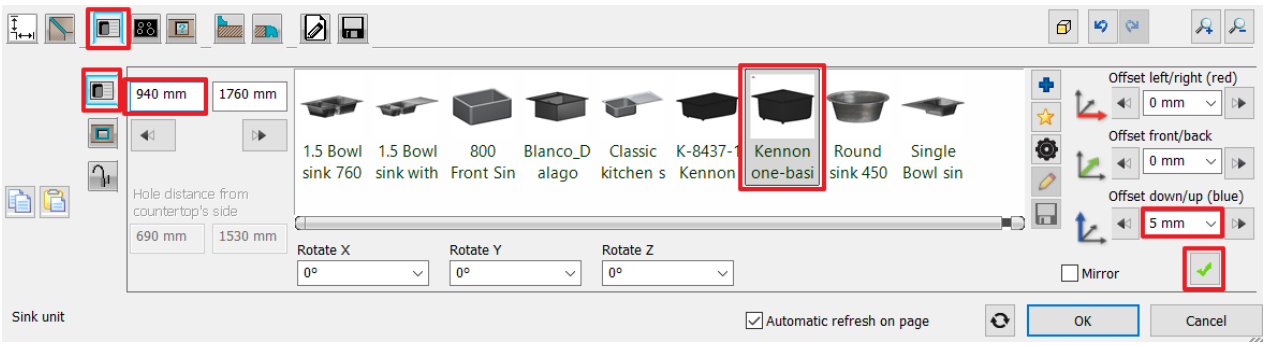


Placing the sink and the hob

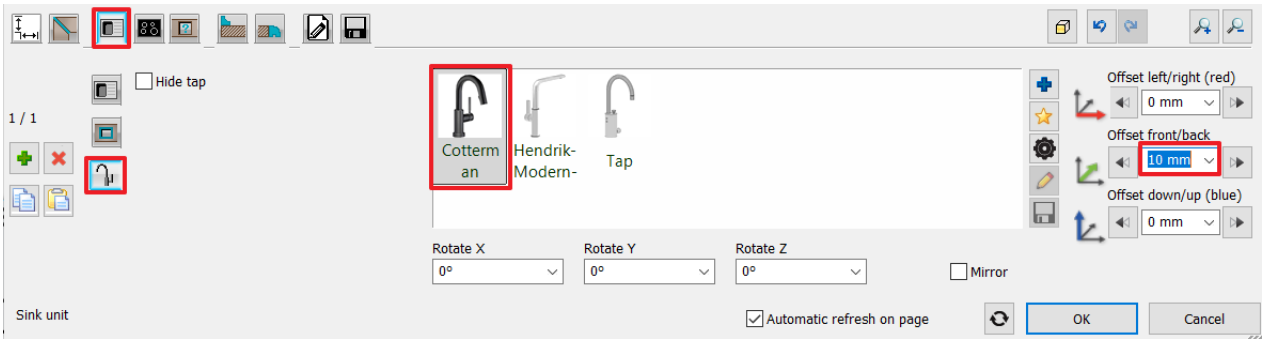
Further modifications:

Sink tab

Select the sink called *Kennon one-basin sink*, set the distance from the left side to 940 mm, finally create the sink by pressing the button.

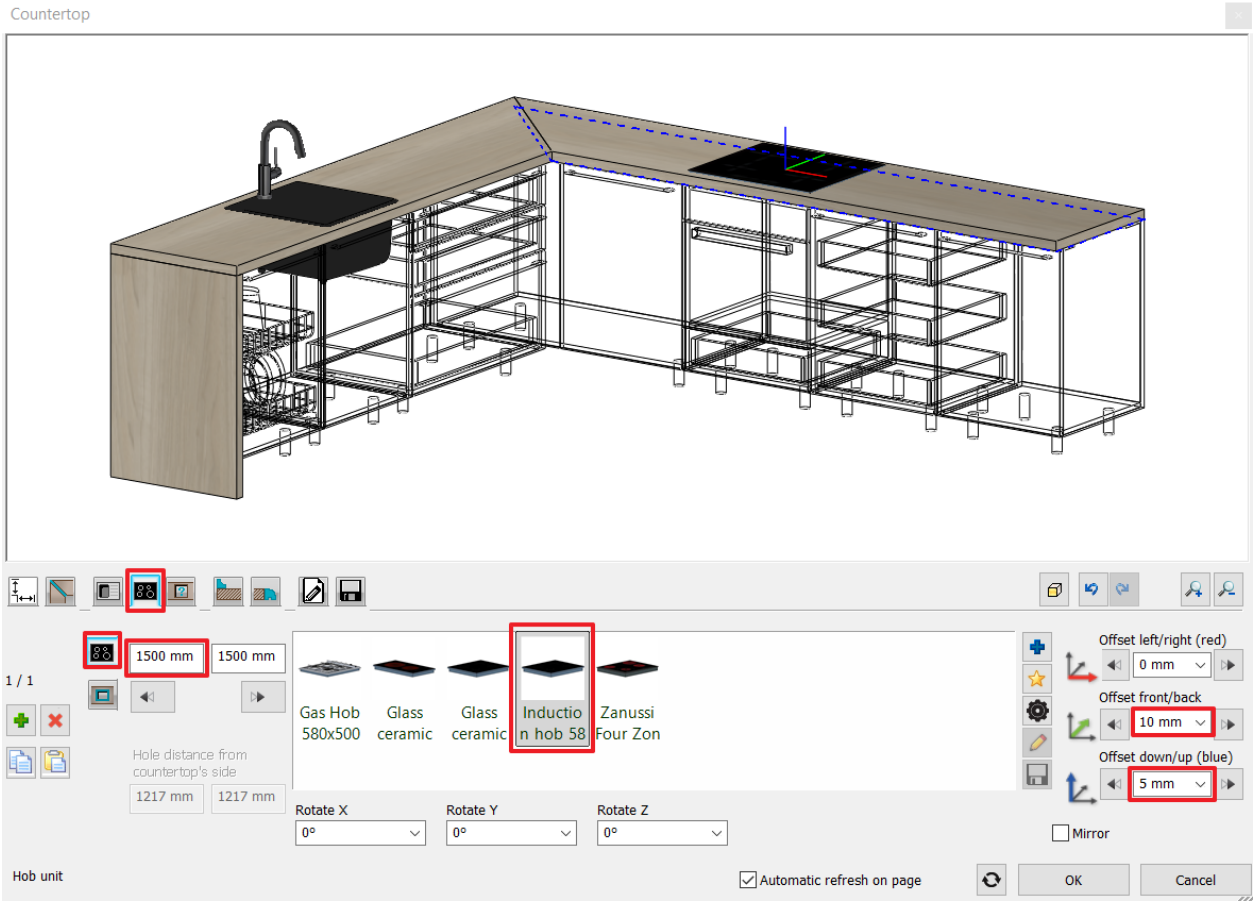


Click on the **"Tap" tab** , select *Cotterman* tap and move it to the appropriate position: Offset front/back +10 mm.



Hob tab

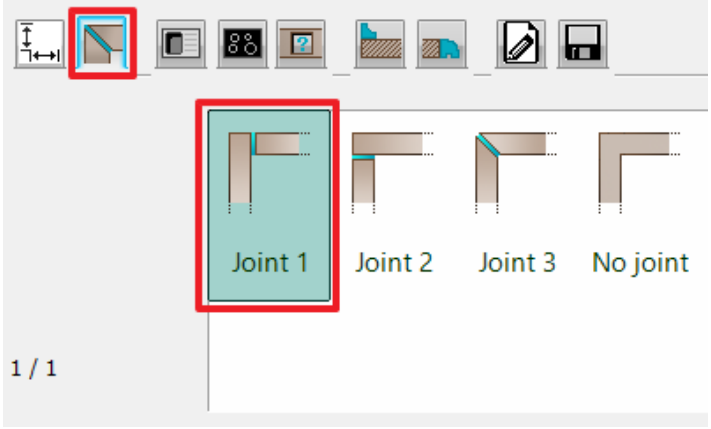
Click on the other side of the kitchen furniture. We will place the hob over the oven.
Select “Induction hob 580x510”, set the distance from the left side to 1500 mm, Offset front/back +10 mm and then create the hob by pressing the button.



Close the dialogue window by pressing OK.

Joints tab

Select joint 1.



Save tab

Click on the Save as tab and save the item to the Kitchen category, Countertop subcategory named WS countertop.

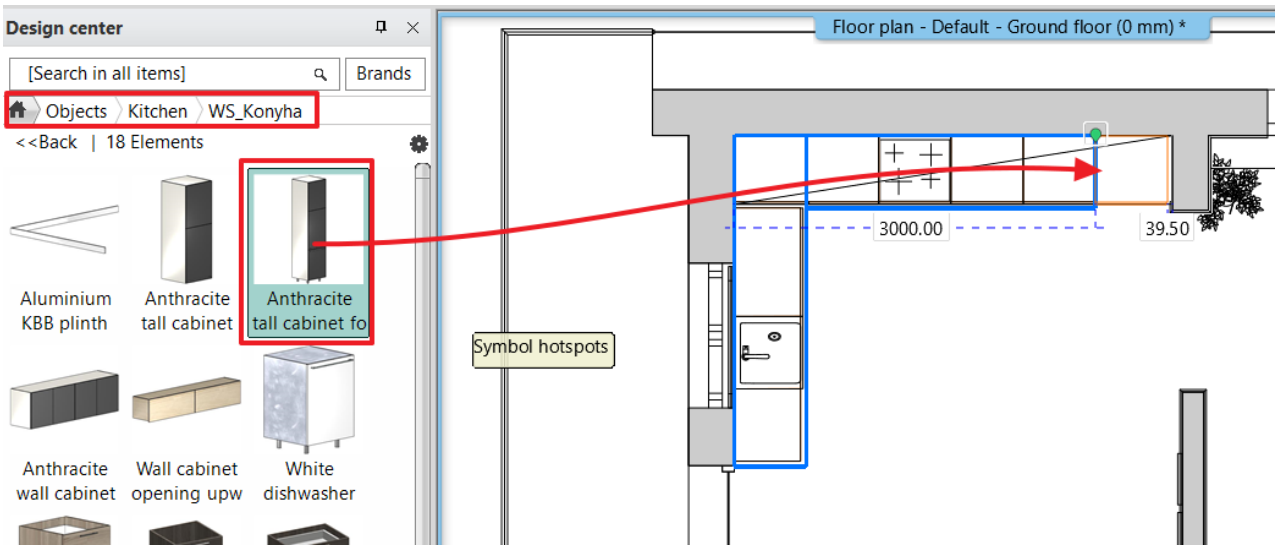
Close the dialogue by pressing OK.

4.5. Adding Cabinets

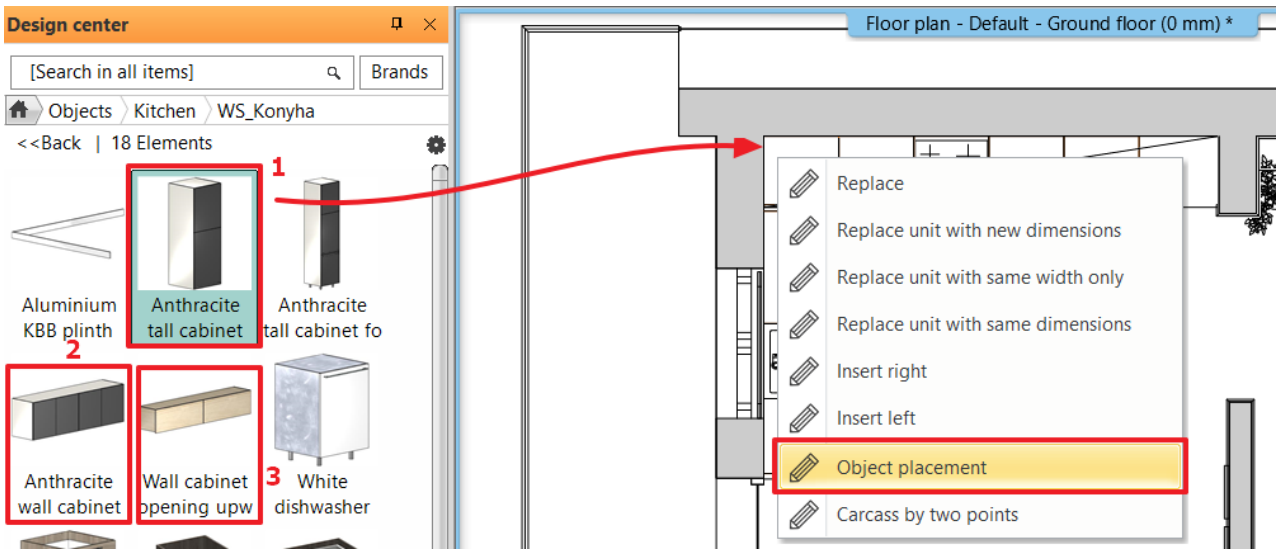
4.5.1. Add high cabinets

We are placing the rest of the cabinets from the design center.
These cabinets were made the same way we just created the base cabinets.

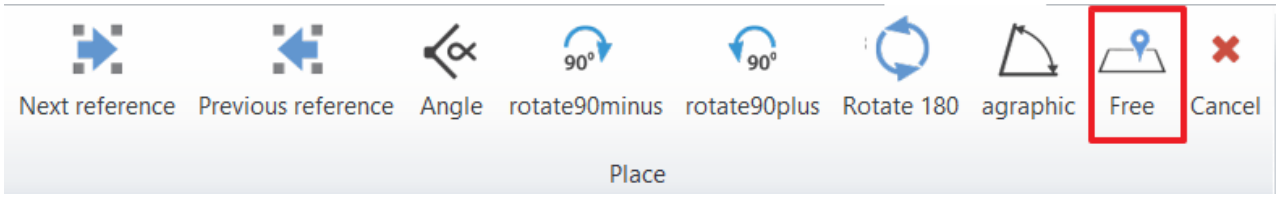
- Open the **Objects / Kitchen / WS Kitchen** category in the Design Center.
- Drag the ***Anthracite tall cabinet for fridge*** and drop it next to the last piece on the right side.



- Drag and drop the "**Anthracite tall cabinet**" (1) and place it in the corner onto the base cabinet. Select the Object placement option from the pop-up menu. The relative height of the cabinet is 900 mm so the tall cabinet will be on the top of the base cabinet.
- Place the "**Anthracite wall cabinet"** (2) and the "the same way as the tall cabinet.
- Move the last one 20 mm to the right side to be in the center.



When placing an object, the program automatically monitors their placement, this way we can place them precisely. When an issue occurs, it alerts you: "!".
This function can be switched off with the *Place menu / Free option*.

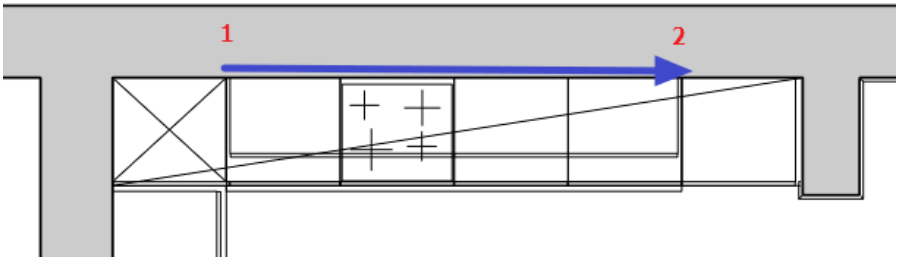


The result is the following:

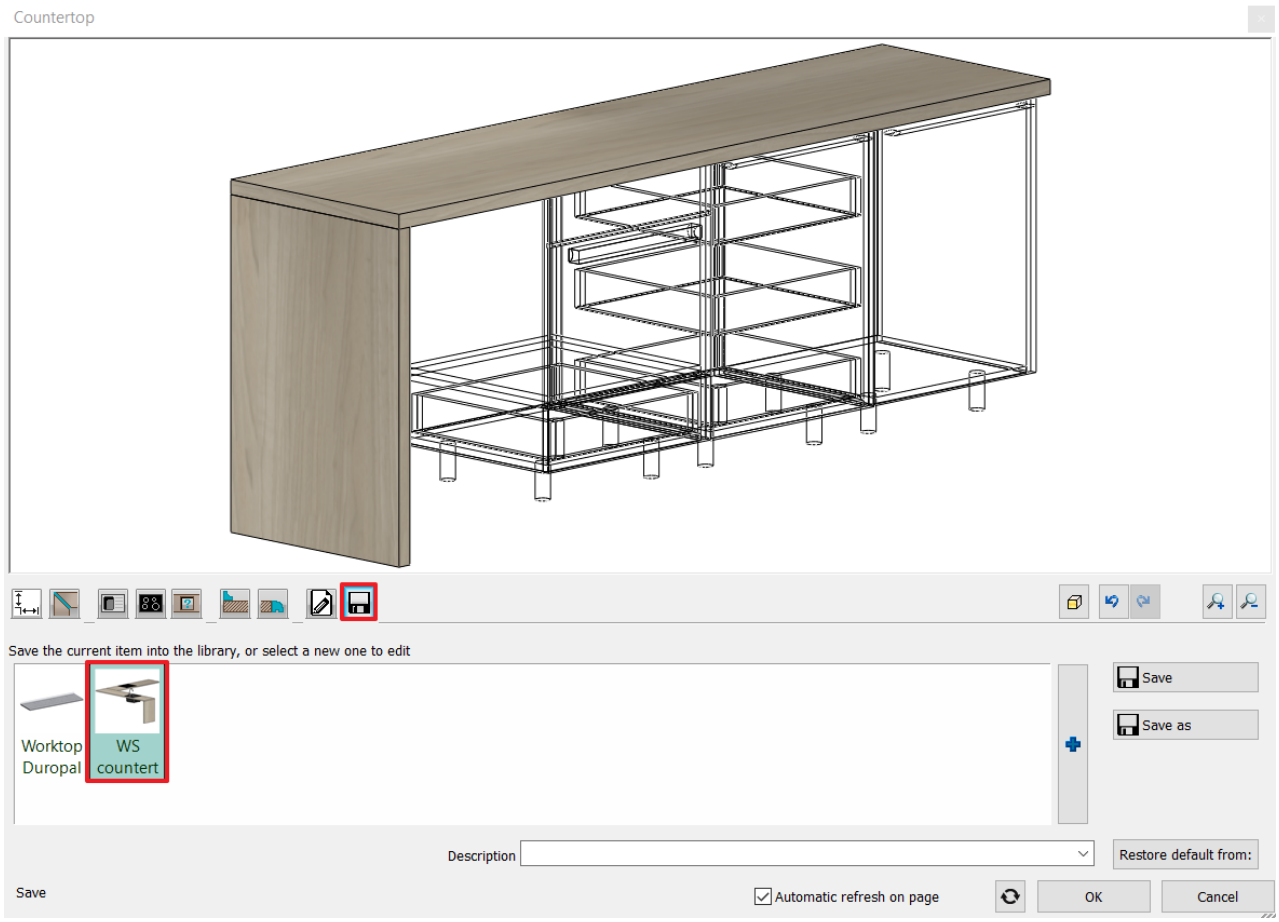
4.5.2. Creating the “box” with countertop

Now we are creating a box around the previously placed cabinet with countertop.

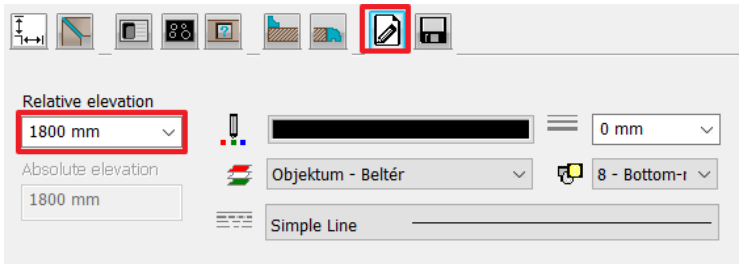
- Open the Interior / KBB / Countertop / Countertop by profile category.
- Enter the start and endpoints of the piece: (1), (2), Enter.



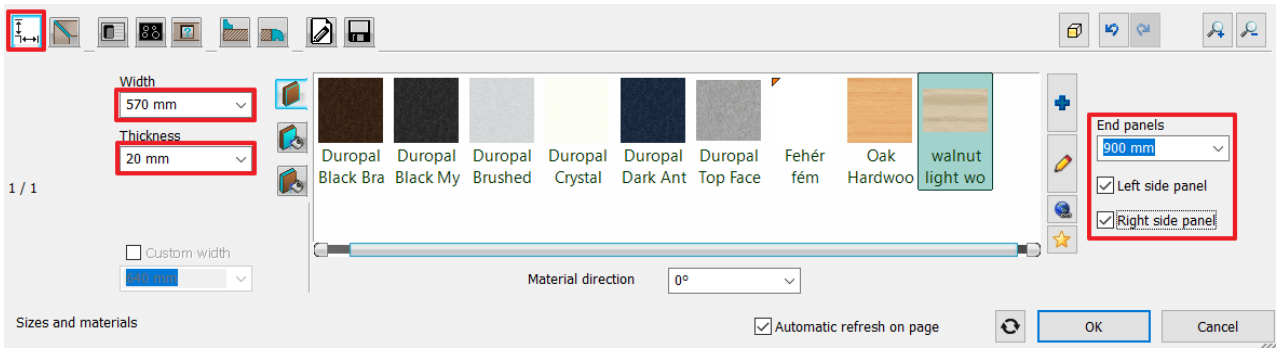
- In the countertop window select the *Save* tab and select the previously created WS countertop. Now it appears with the already set parameters.



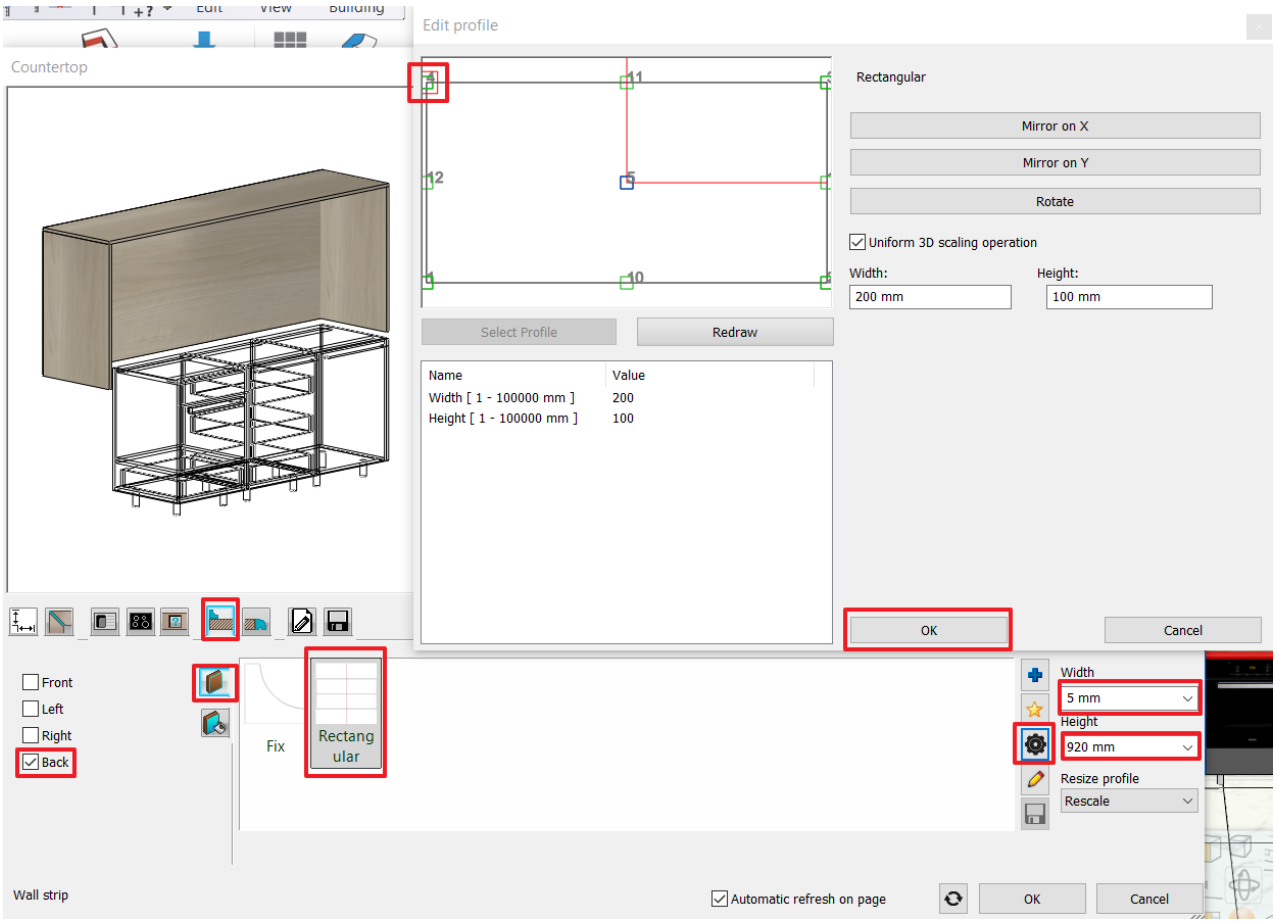
- In the General settings set the relative height to 1800 mm:



- In the Sizes and materials tab set its width to 570 mm, the thickness to 20 mm and activate the right-side panel.

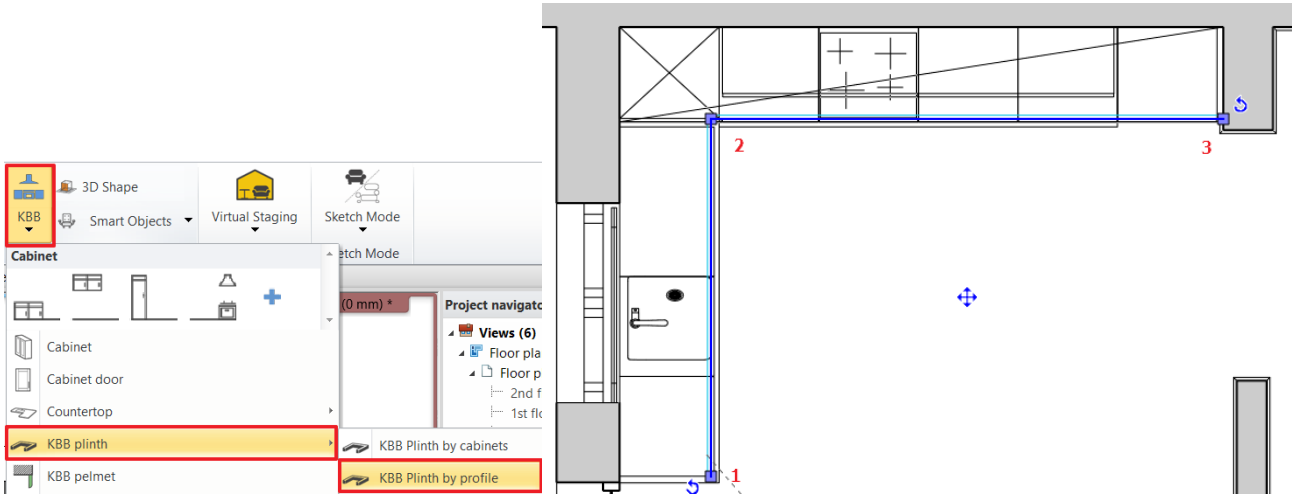


On the Wall strip tab activate the back and select the rectangular profile. Width: 5 mm, height: 920 mm, *settings (gear icon)*: reference point is the upper left corner.

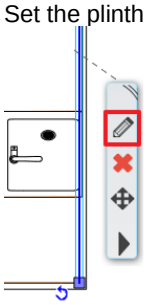


4.6. Edit Plinth

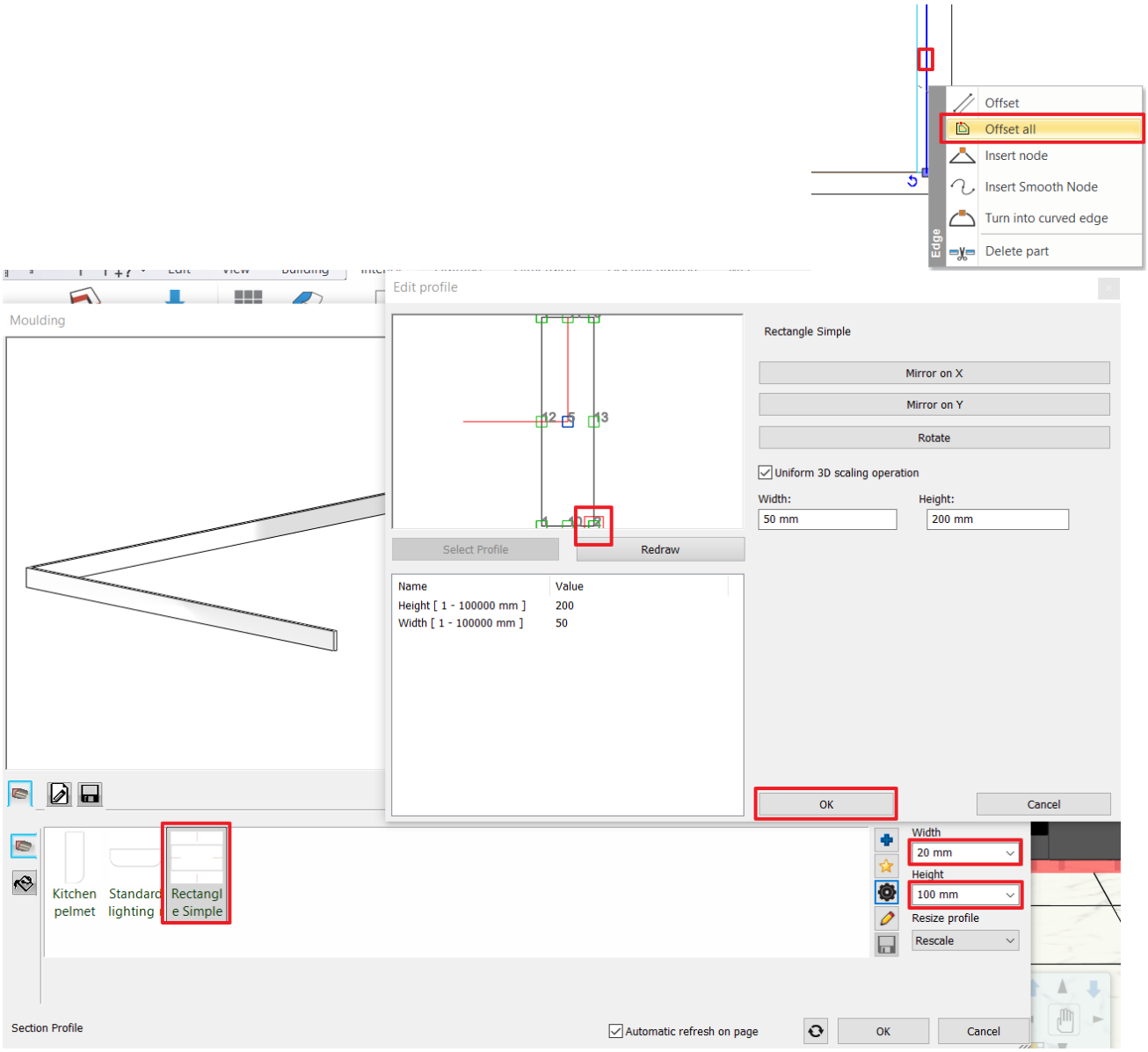
- Select **Ribbon bar / Interior / KBB / KBB plinth / KBB plinth by profile**.
- Draw the reference line of the plinth: (1, 2, 3), then hit Enter.



- Set the plinth properties:



On the first page set the Section Profile properties - rectangle.
Clicking on the gear icon first set the reference point of the profile which the bottom right corner will be.



Set the width of the rectangle to 20 mm, the height to 100 mm.
Material: Aluminium.

Press OK to quit the settings.

Move the plinth 50 mm closer to the walls.

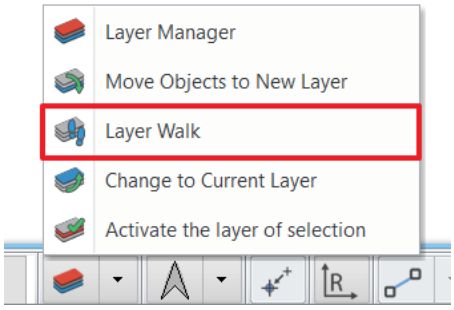
- Select the plinth on the floor plan.
- Now click on " Offset All" command and move it towards the wall by 50 mm.

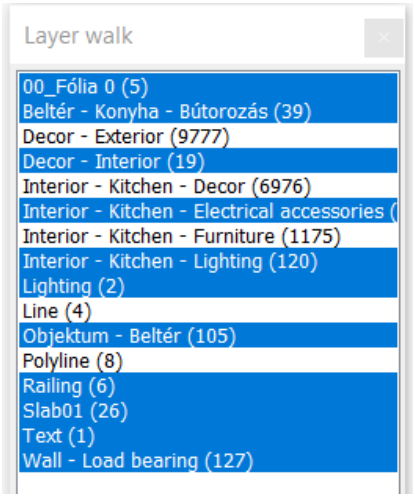
In case you couldn't follow all the steps, save your progress and load the 4_Nagy_Andrea_Kitchen_workshop_FINAL.pro file. This project contains the finished kitchen.

4.7. Display the whole plan

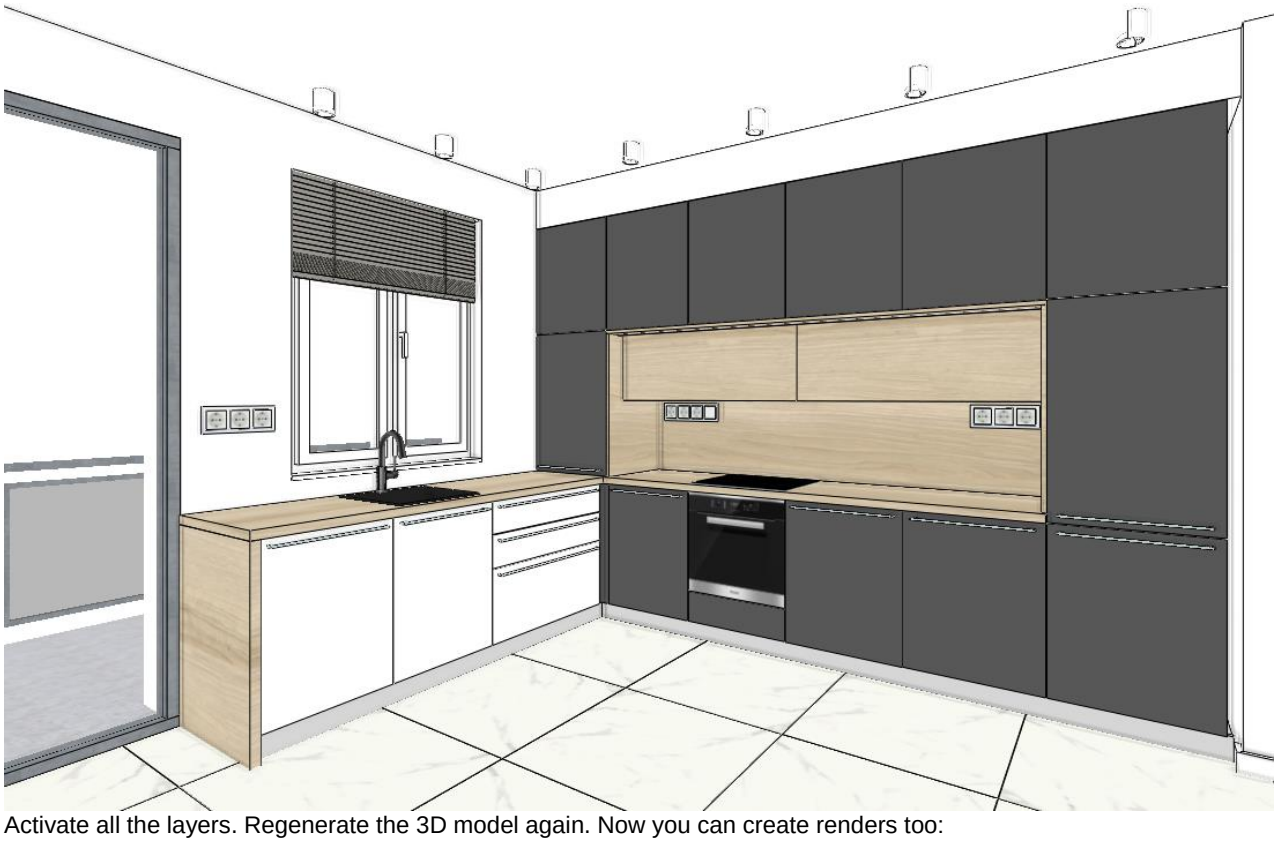
There are some more objects in the project. These are on layers, that are not visible. Switch them on so that all the objects will appear.

- Activate the 2D window. Select the Layer walk option.
- Activate the following layers:





- Click on the 3D hammer icon and regenerate the 3D model. On the screen you will see a similar solution:



Activate all the layers. Regenerate the 3D model again. Now you can create renders too:

BREAD

Rome

Workshop 5: Documentation

5. Workshop: Documentation

The topic of this tutorial is how to create documentation for your clients and other professionals from a completed project in ARCHLine.XP. Based on the reception room project which had been created in the “First lesson”, here we show the preparation of documentation.

- Mood board
- Snapshot
- Architectural floor plan
- Coloured floor plan
- Wall elevation views
- Plot layout

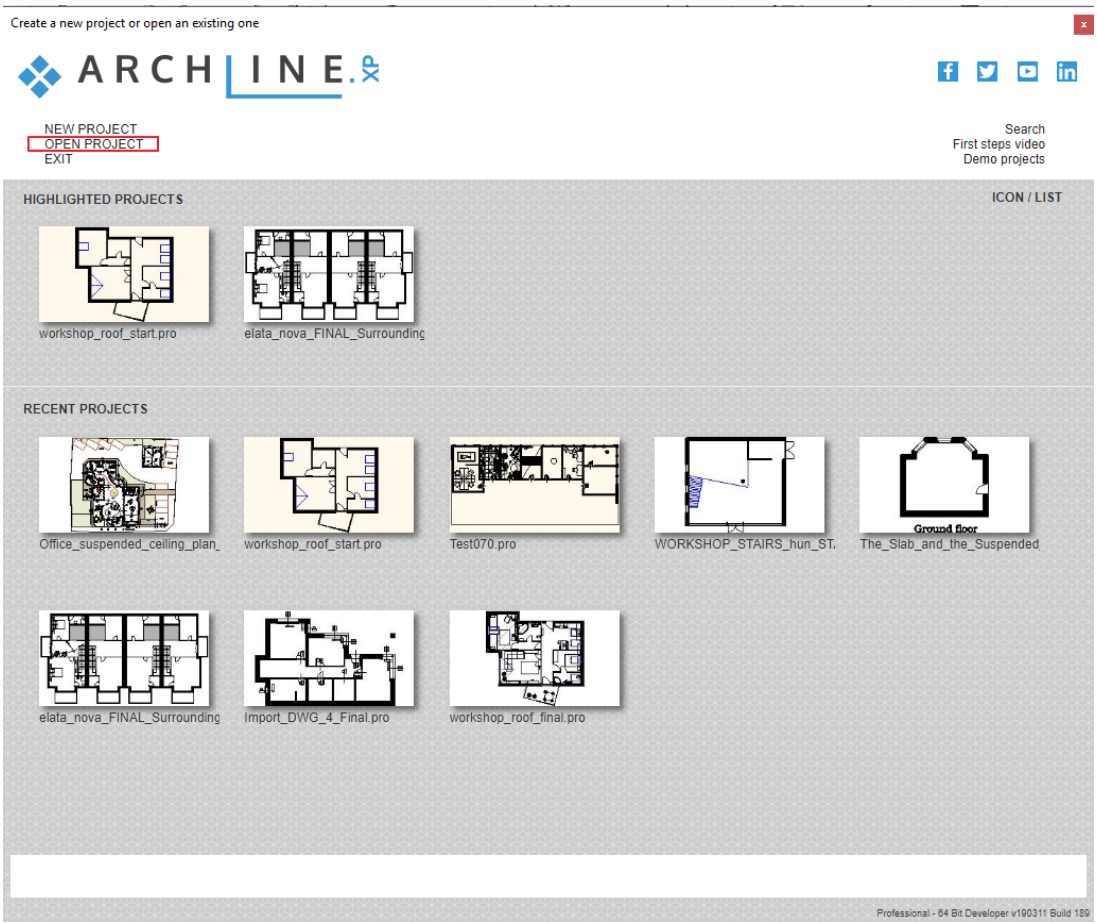
- Open the following video
  https://www.archlinexp.com/education/workshops/workshop-application-preliminary

5.1. Open and save project

Let’s open the Reception room project, which includes a furnished room. We will work on this project.

Please download **Workshop - Preliminary level project** from our website and install it. It includes all projects for all preliminary workshops.
https://www.archlinexp.com/education/workshops/workshop-application-preliminary

- Start ARCHLine.XP® Professional.
- Click on the Open Project:



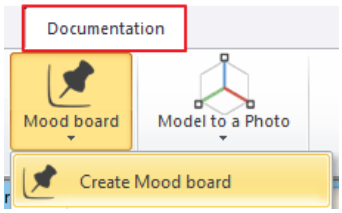
And choose:
…\Documents\ARCHLine.XP Draw\2020\Workshop - Preliminary\Reception_room\ 1_Receptionroom_workshop_furnished.pro

5.2. Creating Mood board

The ARCHLine.XP Mood board feature is an easy-to-use tool to create collage by using the images of the colours, materials, and furniture of the project, helping the communication between designer and customer.

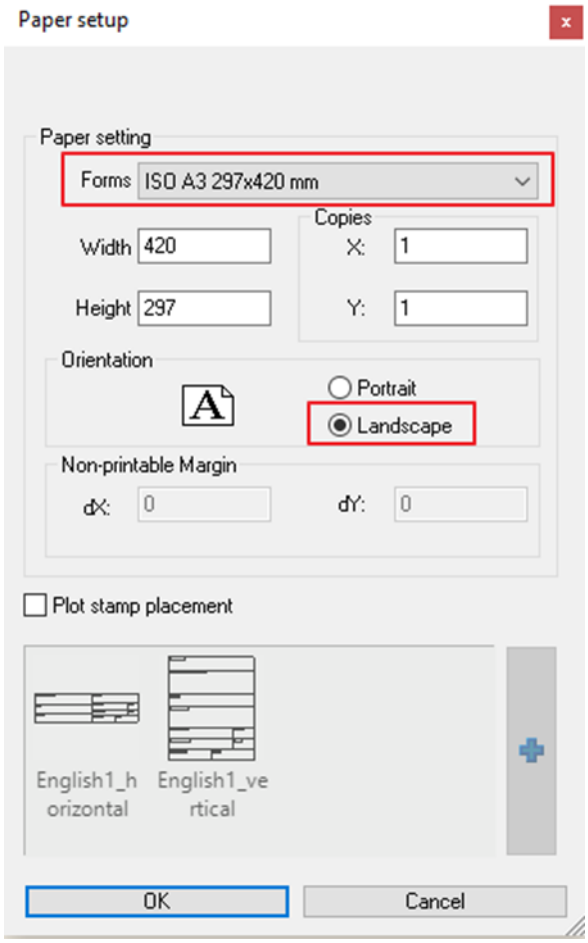
5.2.1. Open mood board

- Click on the Ribbon bar / Documentation / Mood board and choose the Create Mood board command.



5.2.2. Paper setup

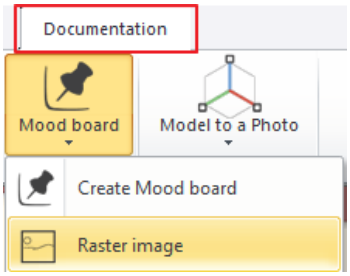
- In the paper setup dialogue window set the following properties:
  Forms: ISO A3 297x420 mm
  Orientation: Landscape
- Click on OK button.



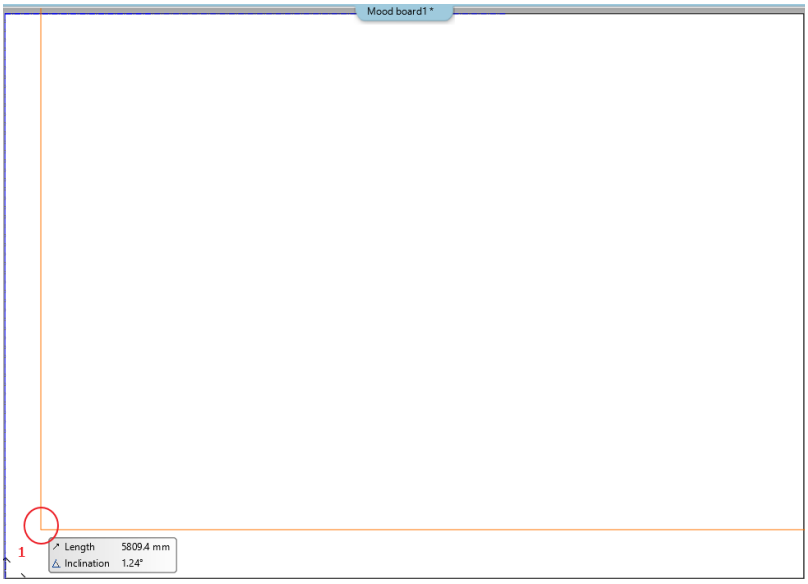
Also, you can place plot stamp on the document by ticking the checkbox.
An empty page with the selected properties is created, on which you can optionally place images in the following way:

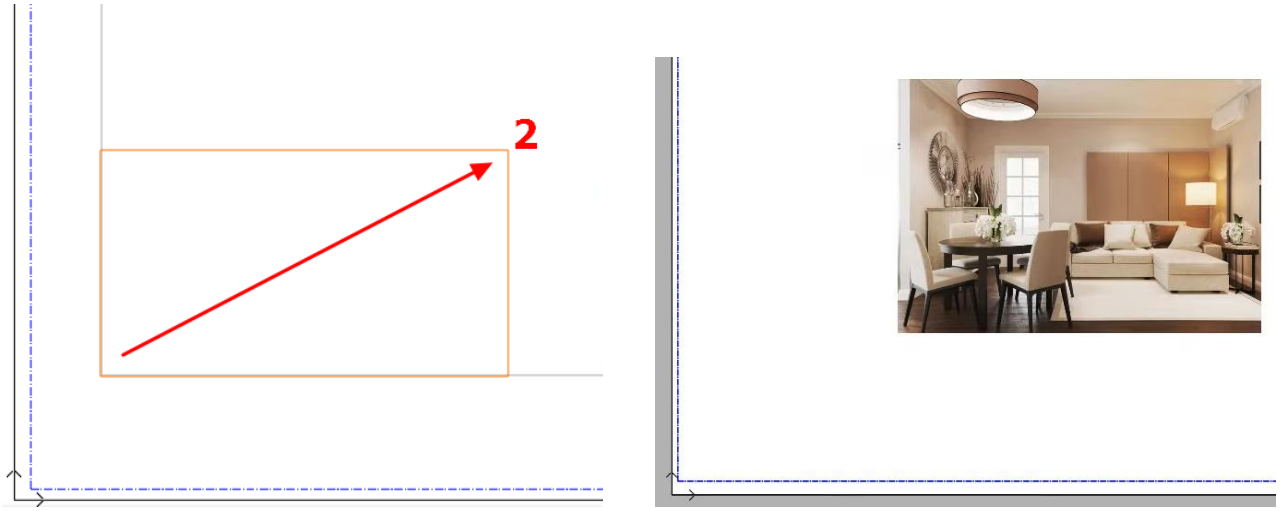
5.2.3. Place images

Choose the **Ribbon bar / Documentation / Mood board / Raster image** command, so you can select the images to be placed.



- Find the folder where images are saved: Documents\ARCHlineXP DRAW\2020 \Preliminary_course\5_Documentation\Pictures
- Click on “Reception_room_ws_1”, then click on Open. In the Image dialogue window just click on OK button. An orange borderline appears above the plot layout indicating the selected image.
- To place the image, click anywhere on the page (1),
- Then move the mouse to define the other point (2) of the rectangle around the image, finally click to place the image. (The size of the image can be modified later.)

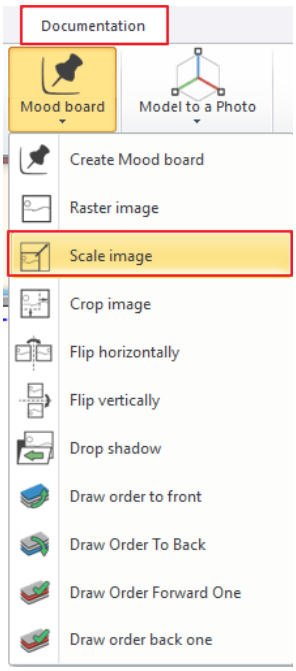




- Place 4-5 additional images from the previous folder in the same way.

5.2.4. Modify images

The image editing and modifying options can be found under the Mood board command.



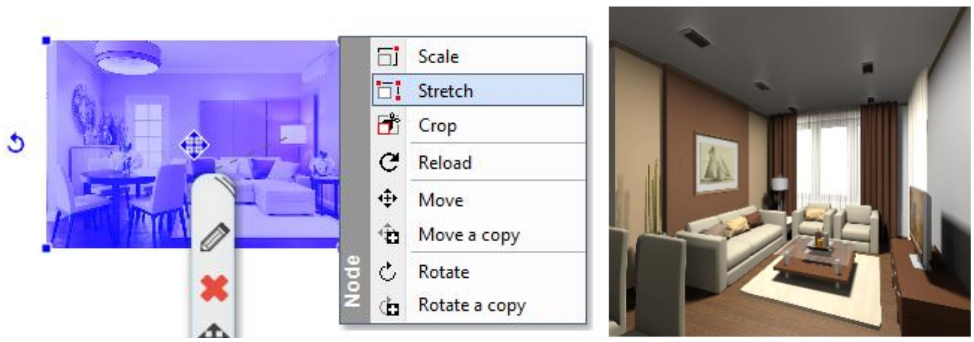
Resizing images

After selecting this command, click on the image you want to change. An orange line appears as borderline of the picture, which can be modified by moving the cursor to get the right size., You can finalize the right image size by clicking once.

Please note: Resizing does not keep the original aspect ratio!

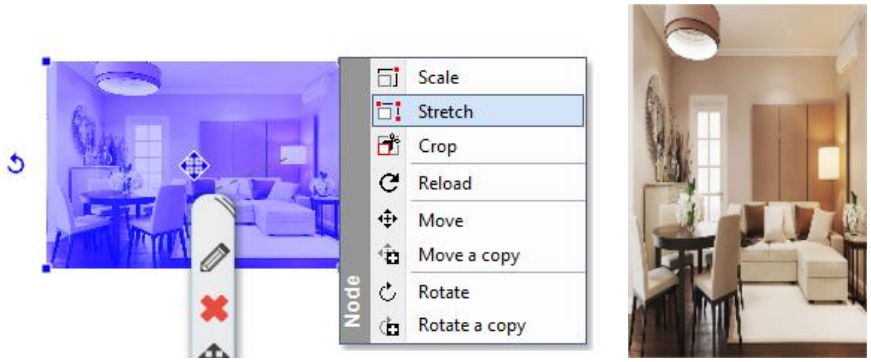
Scale image

The command is accessible by clicking on any reference points of the selected image. Using Scale image command, you can resize the image proportionally to the original.



Stretch image

The command is accessible by clicking on any reference points of the selected image. Using Stretch command, you can resize the image, but not proportionally to the original.

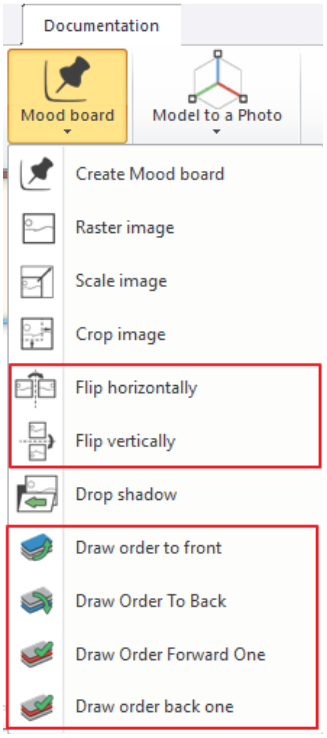


Order of image

While sorting pictures, you can specify their order. You can decide which is placed at the front or back.
On the **Ribbon bar / Documentation / Mood board / Draw order** menu, you can easily adjust the desired positioning of the images.

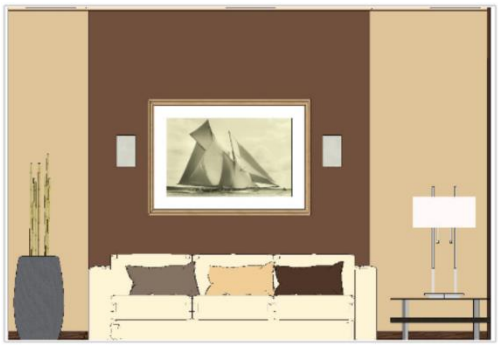
Flip image

Choose the **Ribbon bar / Documentation / Mood board / Flip horizontally** or **Flip vertically** command and click on one of the pictures to mirror it.



Corp image

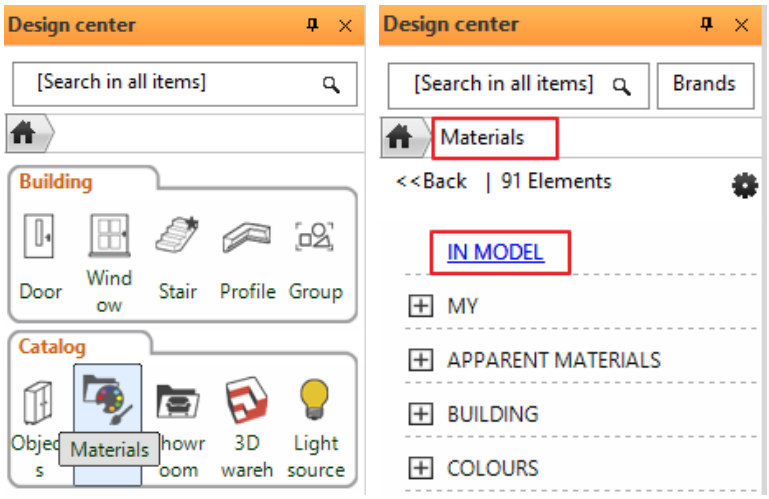
Start the **Ribbon bar / Documentation / Mood board / Crop image** command, and choose the position of the wall elevation view and cut its edges. Click on any part of the selected orange borderline, move this line parallel in order to cut off that area you don't need. Press ENTER to finish the command.



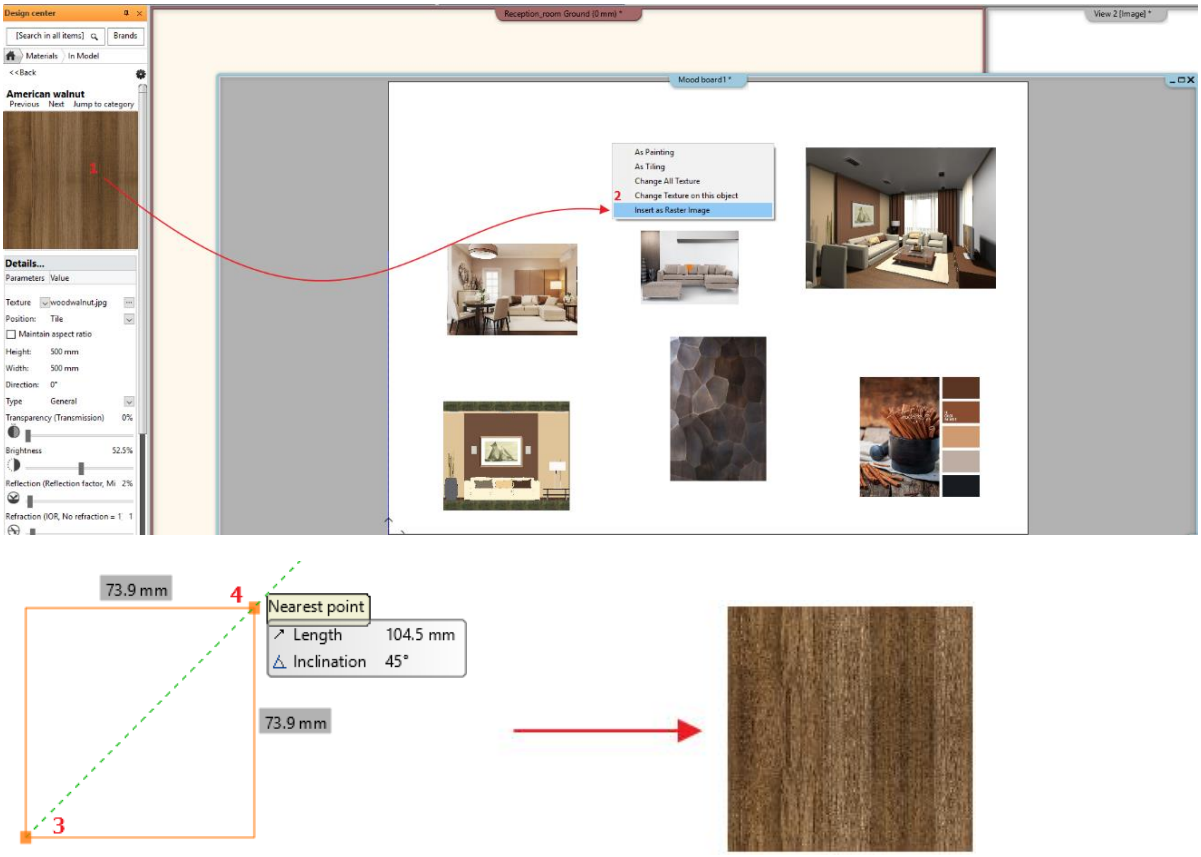
The crop command can be accessed by clicking on any reference points on the selected image. Obviously, the images can be also rotated and moved.

5.2.5. Place materials in same size

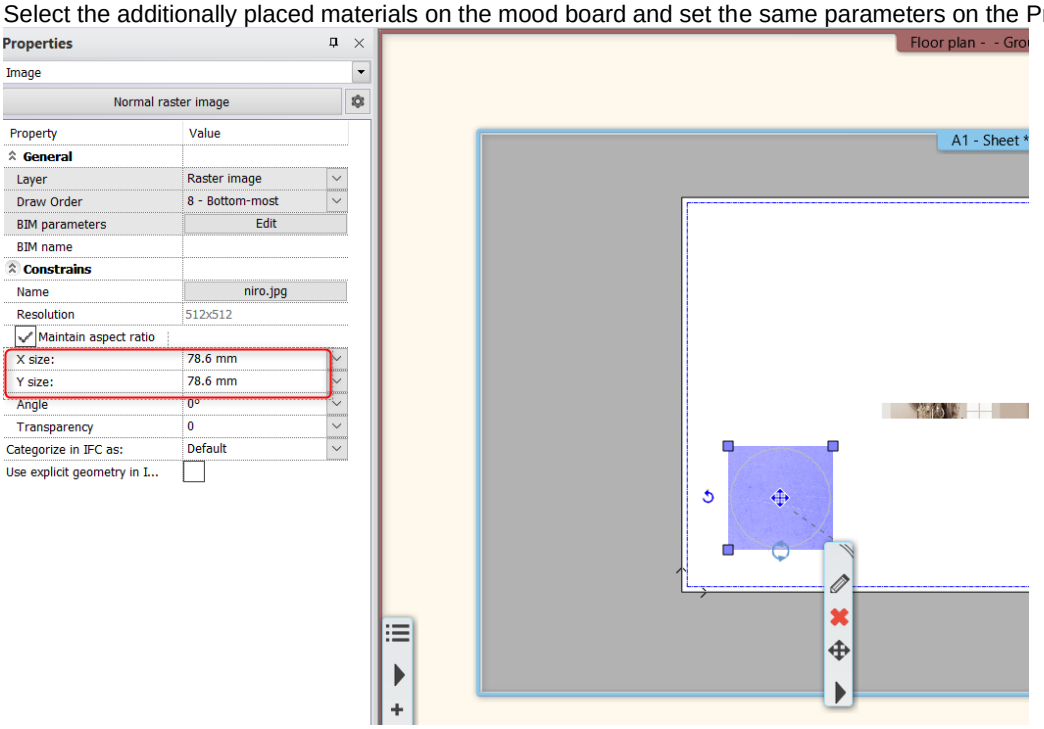
In the Mood Board you can place materials, fabrics, wallpapers which already had been used in the project. Under the **Design Center / Materials category** in the IN MODEL folder you can find the materials of the recent project.



- Find the material you want to place on the mood board (1) and simply use “Drag and Drop” method. Click on the material, hold the left mouse button down and move to the area where you want to place the material and then release the mouse button.
- From the pop-up dialogue menu select the “Insert as Raster Image” command (2).
- The orange borderline appears then you can place the snap point with a single click (3) on the page.
- The image size can be modified after placing the first corner point by moving the mouse.
  When you reached the ideal size (4) of the image you can place it by a single click (5). If it is necessary, the size of the inserted image can be modified later.



The simplest way is to place additional materials with the same size (e.g. in the same width) if you select the previously placed material on the mood board an on the left side under Properties check the image size.
Select the additionally placed materials on the mood board and set the same parameters on the Properties tab.



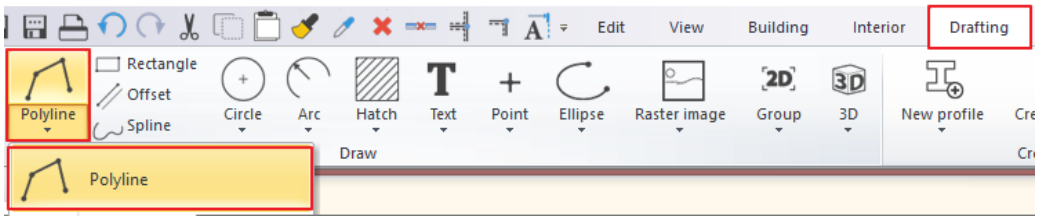
After placing the image, you can easily move it to the desired position so they don't cover each other.

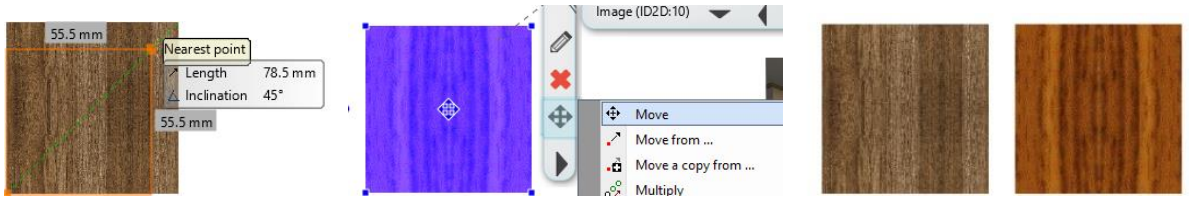
5.2.6. Place colours with hatch

Within project materials there are some which can't be moved directly to the mood board, these are the colours.
A material is considered to be a colour, when "Insert as Raster Image" command is not offered by the pop-up menu at the time of placing. Colours can be displayed in mood board by hatching, which means that we have to fill a closed shape with a colour. The process is the following:

Define the area and shape

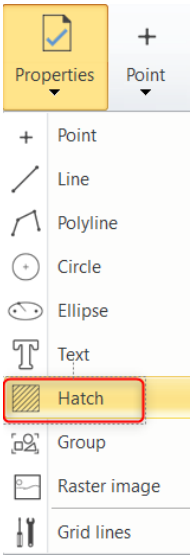
- Draw a rectangle using the same size as the previous materials. Use the drawing tools (e.g. **Ribbon bar / Drafting / Polyline / Polyline**) to define the contours of the area (draw the borderline of the previous material and then move the contour).



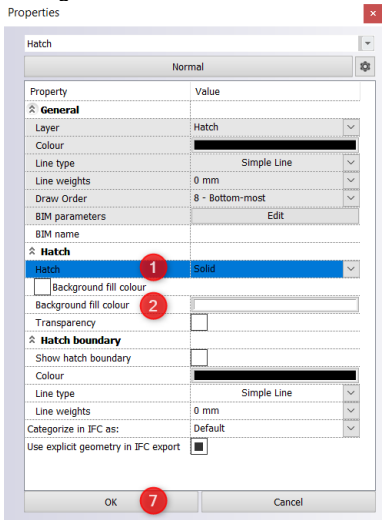


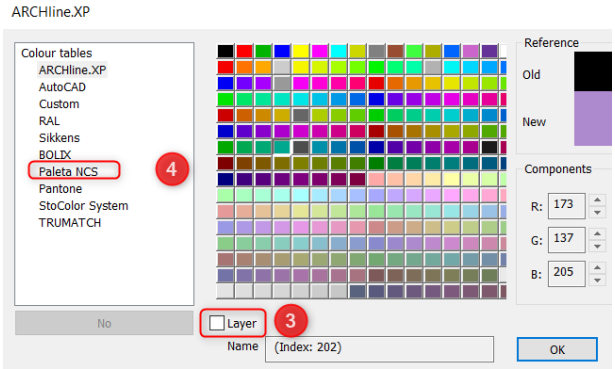
Define the properties of the solid area, as hatching

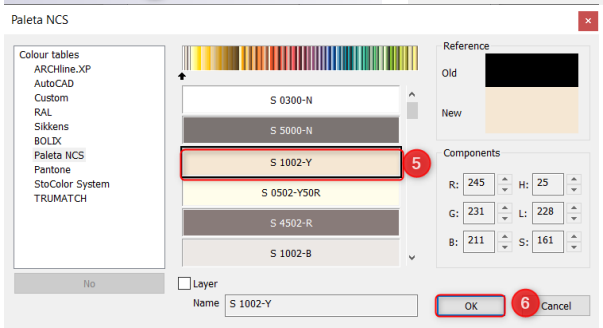
The applicable hatch properties can be specified in the **Ribbon bar / Drafting / Properties / Hatch** menu.



In the pop-up dialogue window, in Hatch, change the Pattern property to "Solid" (1) and with that the background colour is activated (2), so now it can be modified as desired. In the window opening, double-click on the Layer Marker box (3) to activate the colour palette. Select the Paleta NCS (4) from the left of the colour charts, then the corresponding colours appear in the middle. Find a brown or beige colour that fits into our project (5). OK (6). The colour you set above appears next to the Background Colour. Close the window with OK button (7).







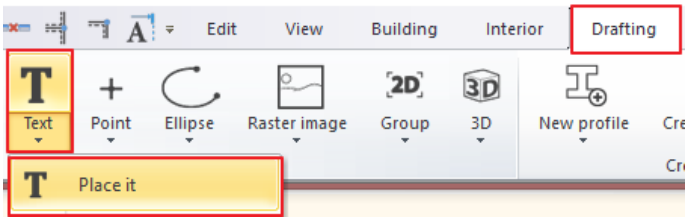
Placing the hatch

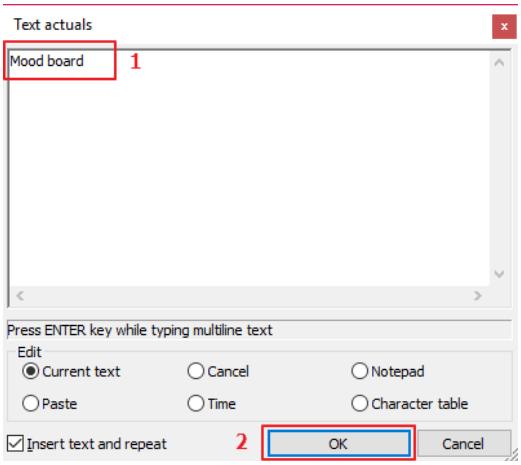
- On the **Ribbon bar / Drafting / Hatch / Hatch – pick point** command, click inside of the drawn rectangle, and press the ENTER. The selected colour fills out the rectangle.

- The hatch can be changed later by selecting the rectangle and you can change the background colour.

5.2.7. Place text

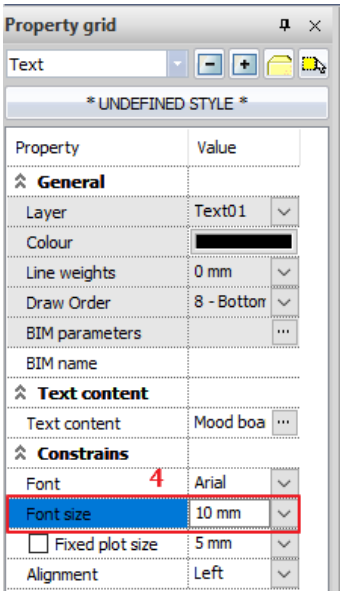
Place text on the mood board by **Ribbon bar / Drafting / Text / Place it** command. In the pop-up Text actual window type the content that you want to place (1) and hit OK (2).





The orange contour of the textbox appears and one of the corner points is snapped by the cursor. Using this corner point, you can place the text on anywhere on the drawing by clicking once. Now the text is placed, the Text Actual window appears again, and close the window by clicking on the Cancel button.

If the size of the inserted text is not appropriate, it can be changed: Click on the text to select it (3) and on the Properties tab change the Font size parameter from 200 mm to 10 mm (4).



(You can also set text parameters in the **Ribbon bar / Drafting / Properties / Text** menu before placing them.)

The default text height is 200 mm because it appears at the optimal size of 1:50 or 1:100 on a scale with respect to drawing content. In case of mood board, however, the composition is made in a ratio of 1:1, so it is necessary to modify the text height afterwards.

Other properties of the text, e.g. colour, font, etc. can be modified as if it is required.

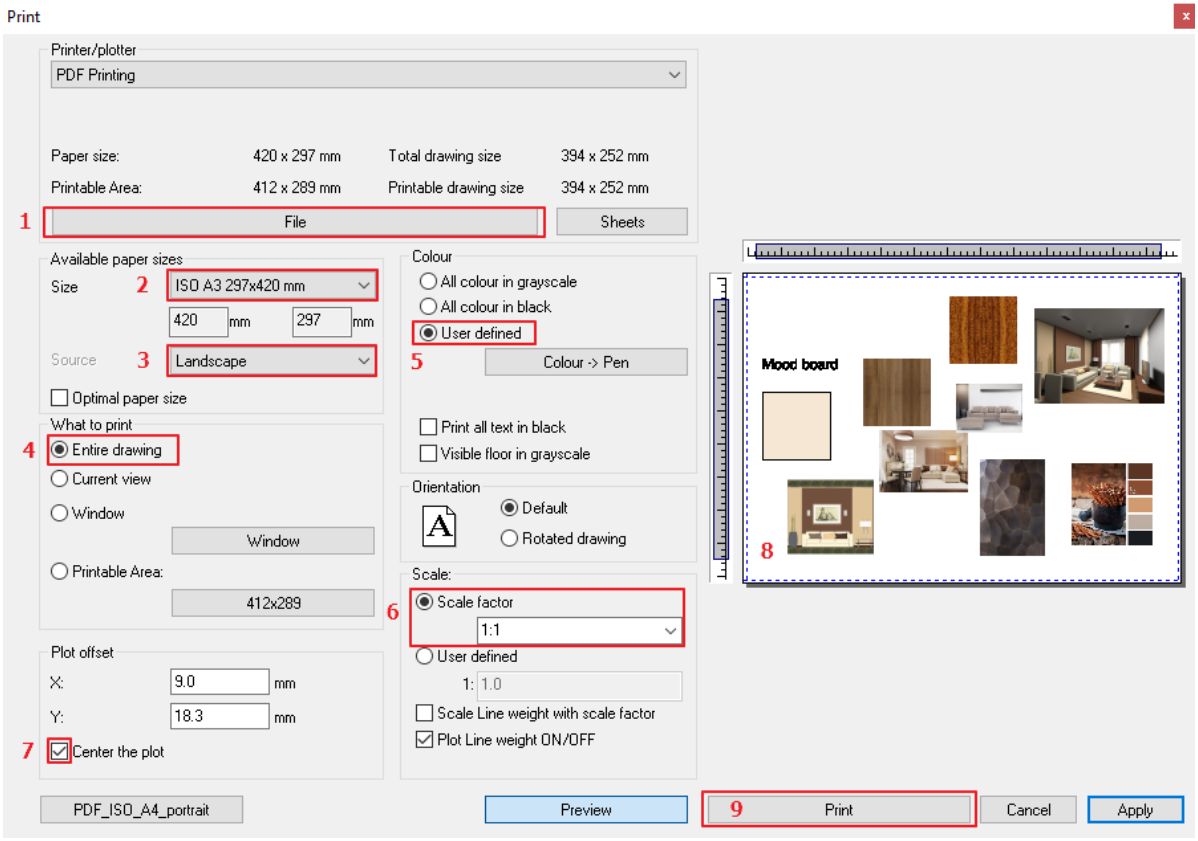
5.2.8. Print to PDF

Convert the completed mood board to a PDF file.

Choose the **Ribbon menu / File menu - Print to PDF** command and set the following properties in the dialogue window:

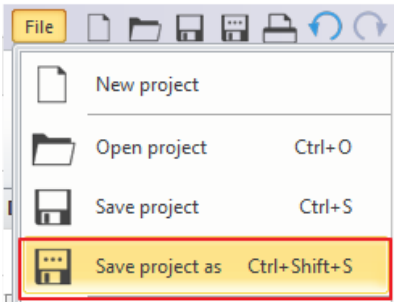
- **File:** Here you can specify the folder under the PDF will be saved and give name to the file. (1)
- **Available paper sizes:**
  Size: A3 (2)
  Source: Landscape (3)
- **What to print:** Entire drawing (4)
- **Colour:** User defined (5)
- **Scale:** Scale factor 1:1 (6)
- **Plot offset:** Center the plot (7)

If the desired result appears in the preview window (8), click the Print button to create the PDF (9).



Save your project

- Save the project under the requested project name.
- Choose File menu – “Save project as” command and type the file name to save the project.
- It is recommended that you regularly save the project during the work.

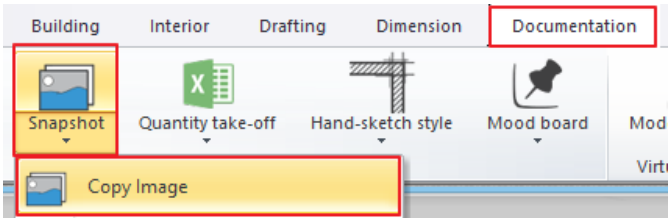


5.3. Create snapshot

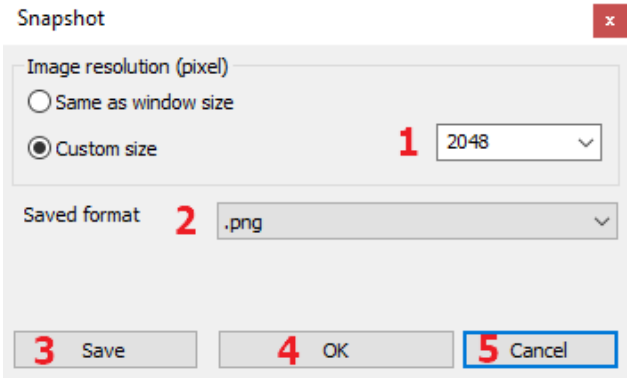
You can create a snapshot of any details, views of the model. This is not the same as the rendered, photorealistic image.

- Activate the 3D window to create snapshot.
- Select the saved view or set the model in the position you want to see on the final image.

- Click on the **Ribbon bar / Documentation / Snapshot / Copy image** command. The Snapshot dialogue window appears, now set the followings:



Selecting this feature appears a dialogue called Snapshot, where you can personalize the following settings:



- Image Resolution: You can specify the snapshot size (1).
- Saved format: You can specify the format of the created image file (2).
- Save: You can also save the result of Snapshot as an image file (3). In the Save as... dialogue box, here you can define the folder and name of the image file.
- OK: When you press this button, a snapshot is created, which is located on the floor plan window (4).
- Cancel: Close the dialogue without placing a snapshot on the floor plan window (5).

- Now save a snapshot of the set view in 2048 resolution in ".jpg" format. If you don't want the snapshot to be placed on the drawing sheet, click on Cancel button to quit.

5.4. Create architectural floor plan

The architectural floor plan is an indispensable part of the documentation. This floor plan does not include for example, furniture, shades, electrical markings, etc. In the actual project, a furnished floor plan can be easily transformed into an architectural floor plan by using the layers.

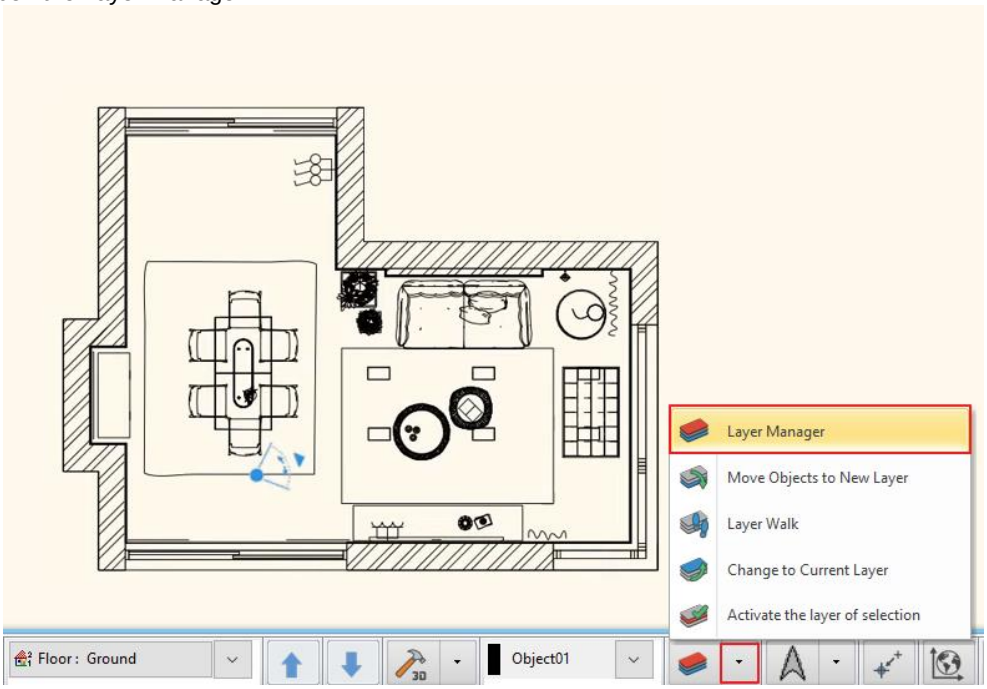
5.4.1. Layer properties management

The layers are served to group used items in the project, see in 2.5. Chapter. The different groups of items are placed on a separate layer, it is possible to modify them simply together. Without deleting items (such as furniture), you can create an architectural floor plan by turning off the unnecessary layers of objects or groups. With the help of Layer visibility groups, we can save different stages of the project. This way we can easily switch between Furnished floor plan and Architectural floor plan without having to step into Layer Properties Management and change the setup of layers one by one.

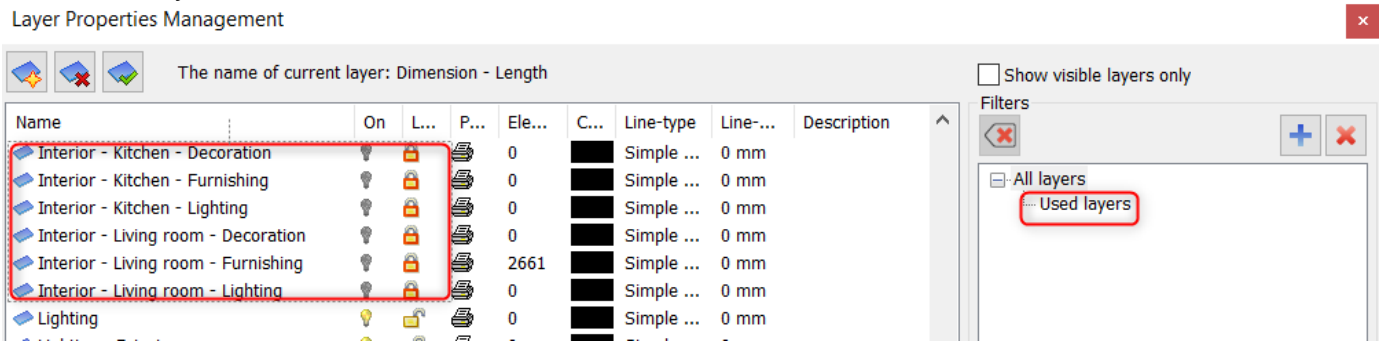
Switch off layers and create new layer groups

Turn off all layers that contains elements that we don't show on the architectural floor plan (e.g. layers of objects where the furniture is) and save two different stages of the project.

- The floor plan window should be activated.
- Open the Layer manager

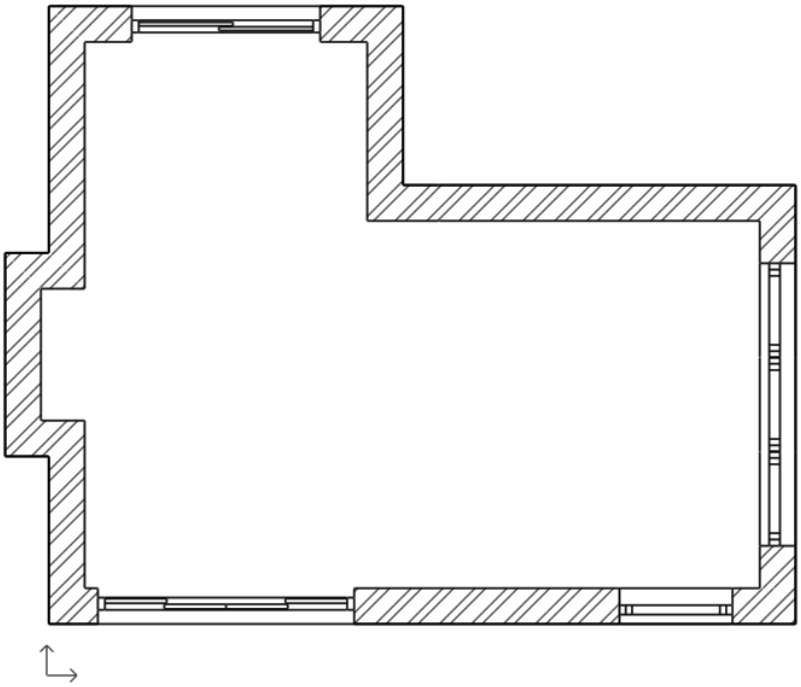


- Click on Used layers.



- Next to all "Interior" layers click on the light bulb icon to change it from yellow to grey. At the same time, the lock on the light bulb closes, so it is not visible and can't be modified on the floor plan.

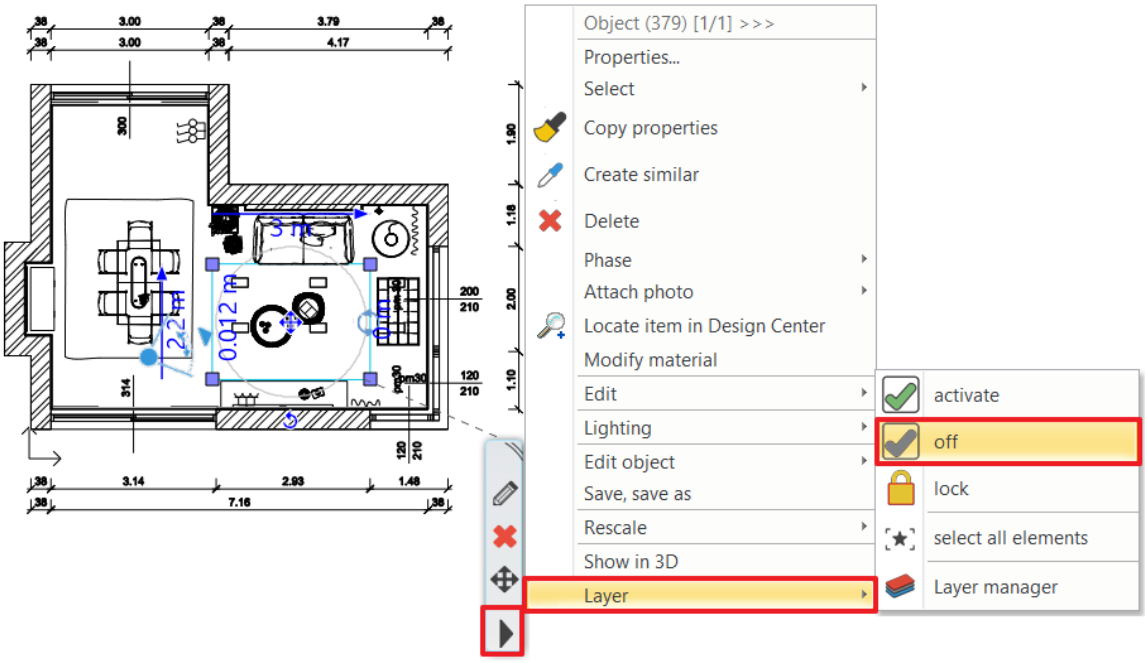
- When you finished removing the visibility of the layers, press OK.
- This is the result you should see on floor plan window:



! *The active layer can't be switch off or locked. If you want to change the status of the currently activated layer, first you must activate another layer.*

Another way to switch off layers is to right-click on the item on the floor plan and select **Layer / Off** from the list.

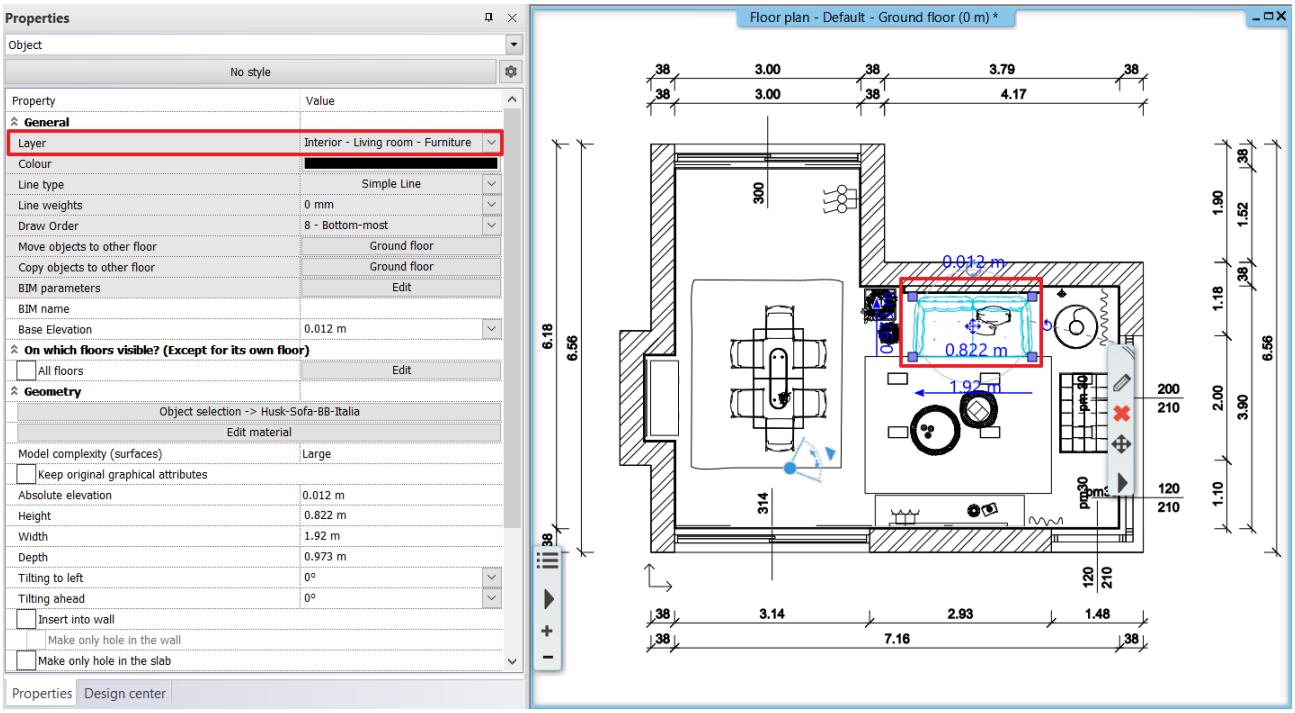
At this time, the entire content of that layer becomes invisible where the selected item is located.



! *Please note:*
If you can't find Switch Off, Activate, or Lock commands, the currently selected item is on the active layer. In this case, you must first activate another layer after that you can make changes.

Which layer has the element?

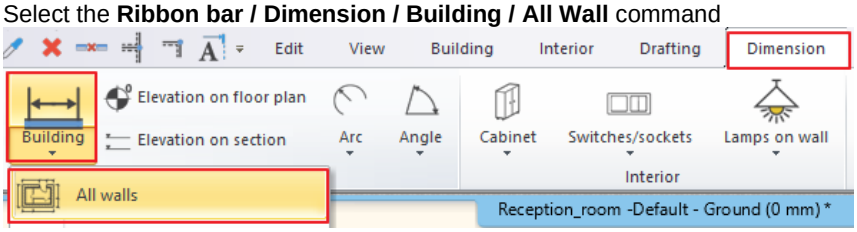
When you select an element on the floor plan, its properties appear on Properties tab. The first feature is the layer where the selected item is placed.
You can easily move the selected item to another layer by selecting from the list.



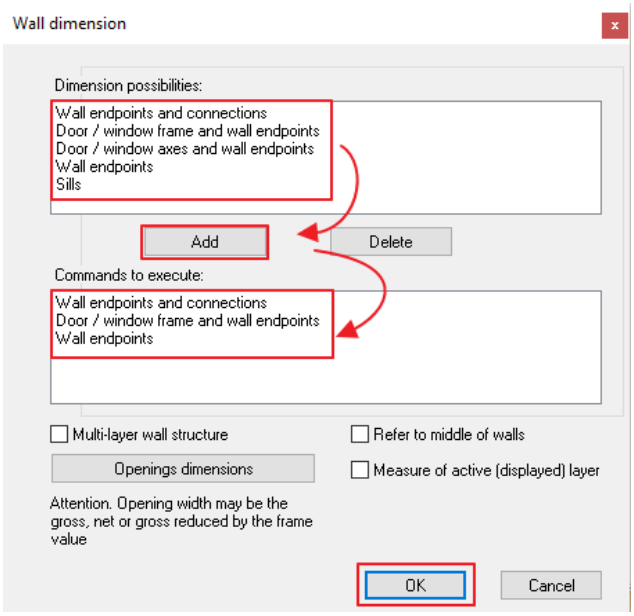
5.4.2. Dimension

Now we place dimensions for all openings on the whole plan.

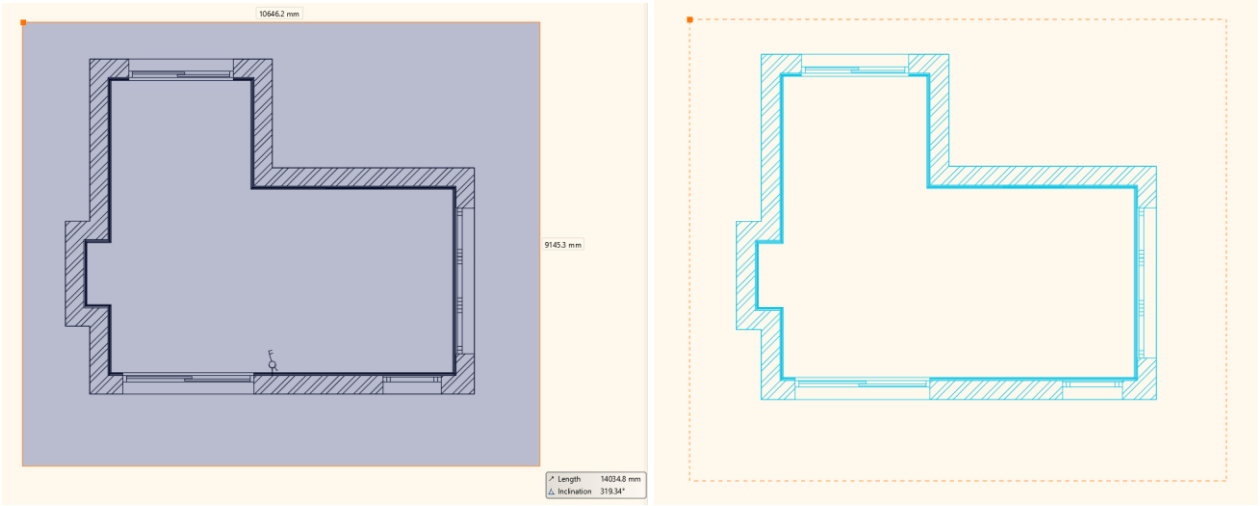
- Select the **Ribbon bar / Dimension / Building / All Wall** command



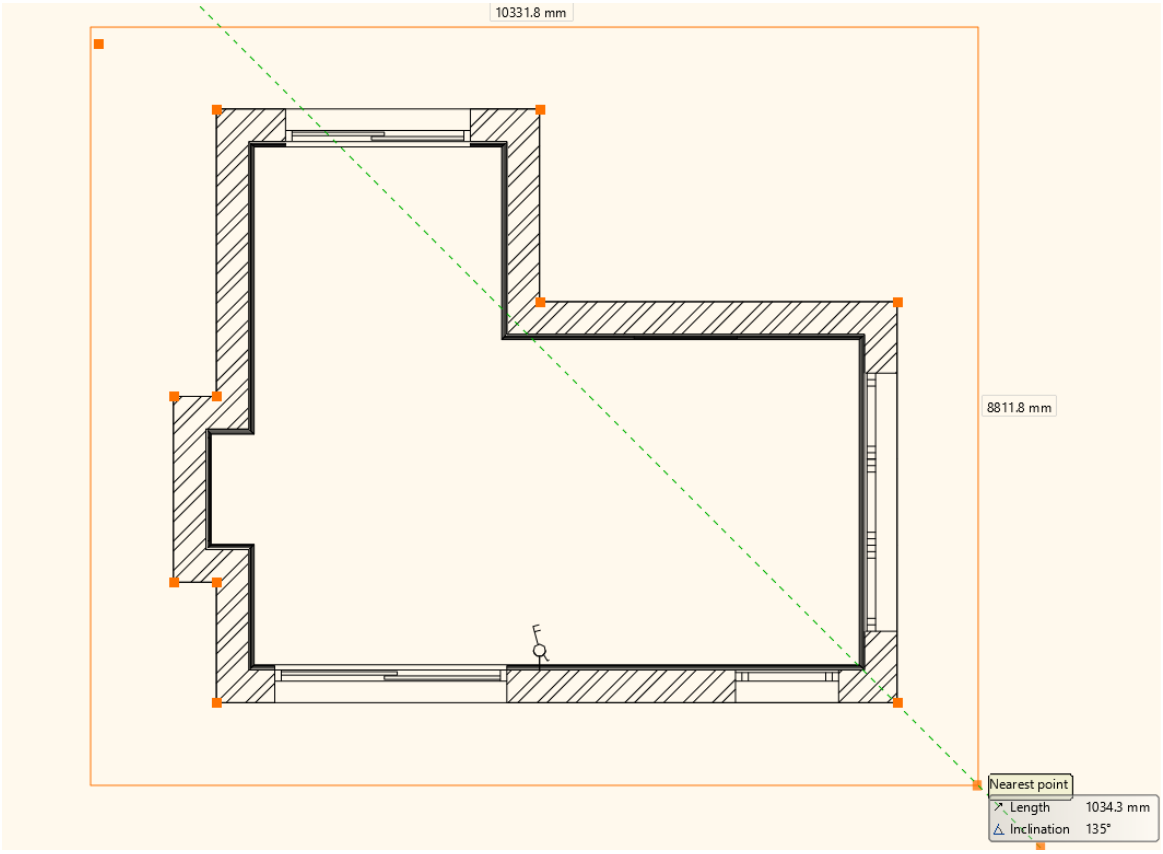
- Select the Dimension options.
- Add the desired dimensions to the list as shown on the picture.
- The order of the dimensions is important!
- Then click on the OK to confirm.

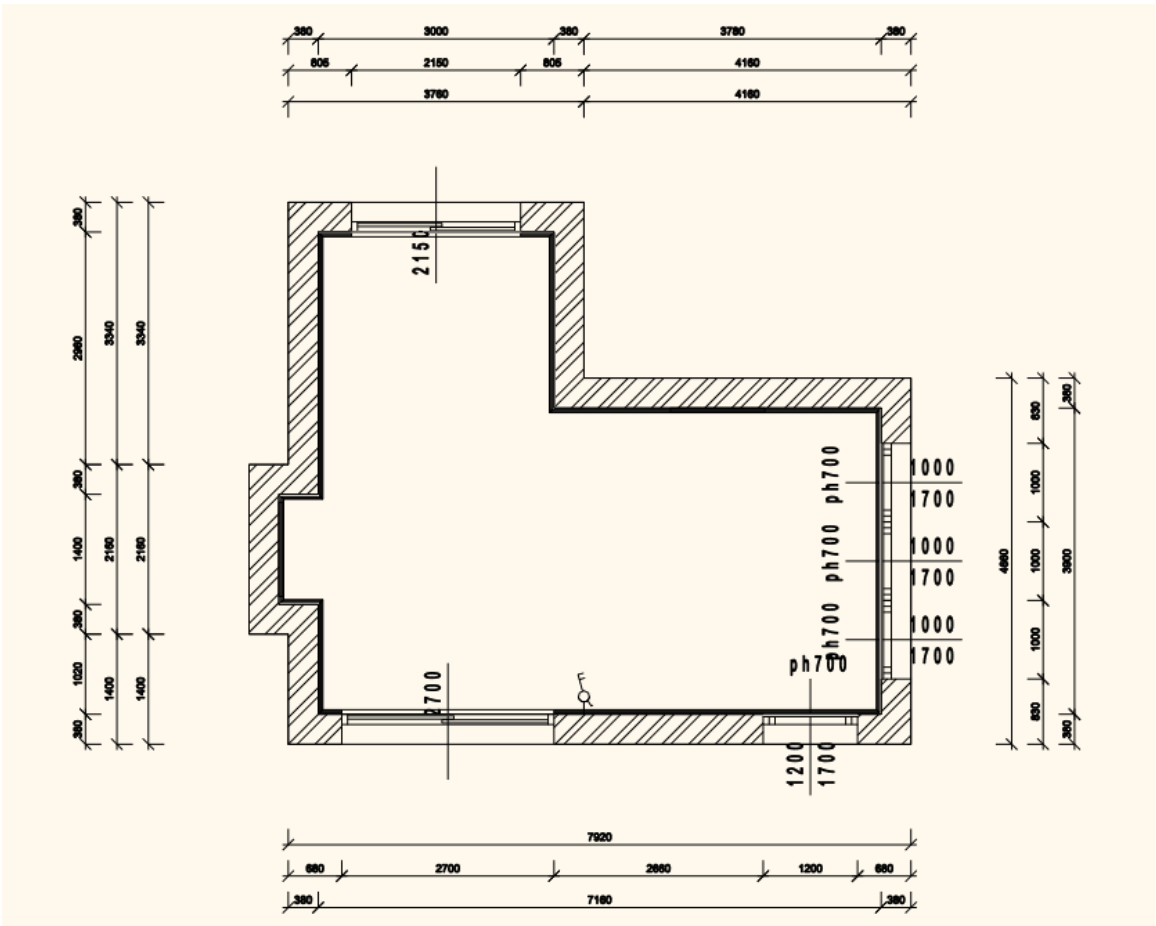


- After closing the window, you can define the area where you want to place dimensions. Draw a selection rectangle from the top left corner, the colour of the selected area changes to light blue.



- Press ENTER then the contour of the room is selected automatically.
- Move the mouse to the first point of dimensional chain and click one.

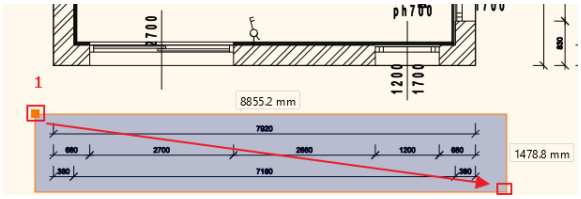


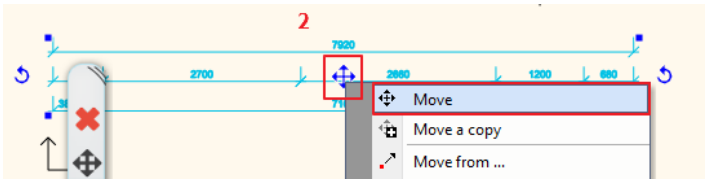


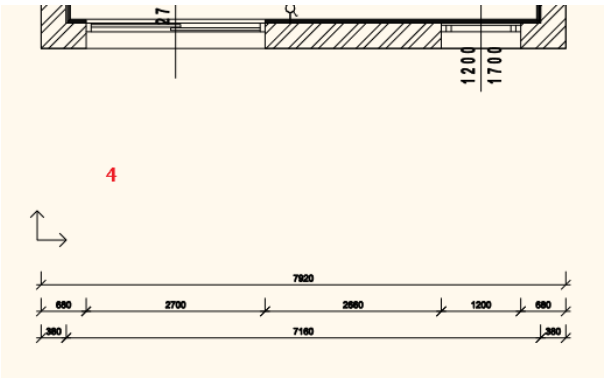
The dimensions will follow the changes of the drawing. You can add new ones to the current or delete existing ones. You can also move dimensions in groups later in case the location is incorrect. This method is as it follows:

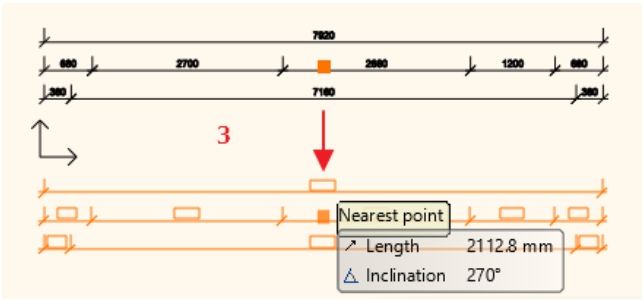
- Select the dimension lines to move (1).

- In the Move Marker shortcut menu, select Move command (2).









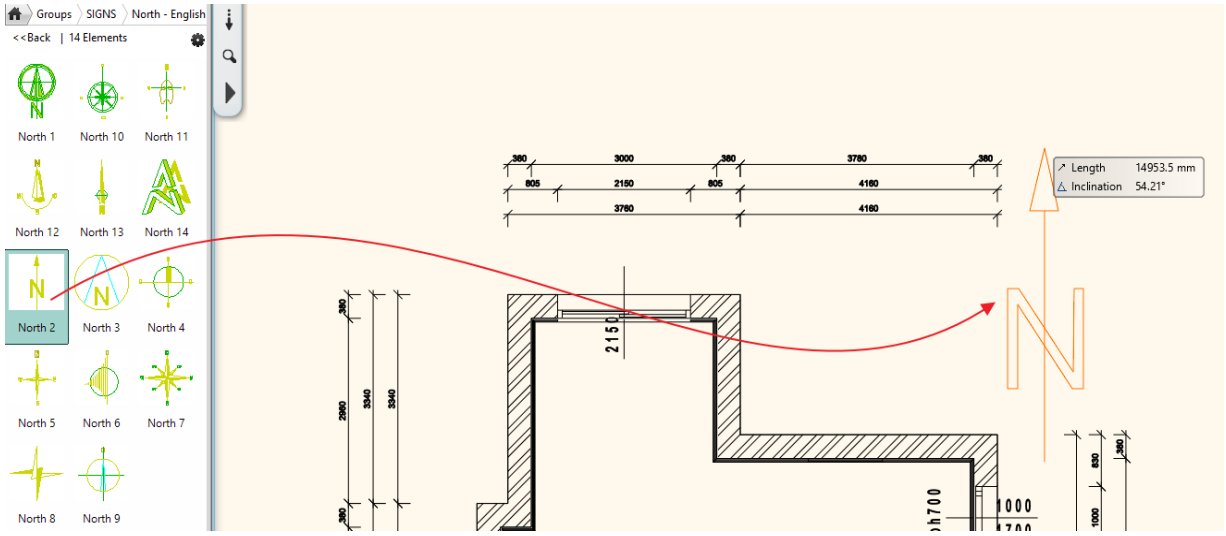
- Move the dimension lines to the desired position, ensuring that the values don't slip away from the dimensioned elements and then click on the ideal position (3).
- The dimension lines involved in the move will be placed to the selected location (4).

5.4.3. 2D symbols

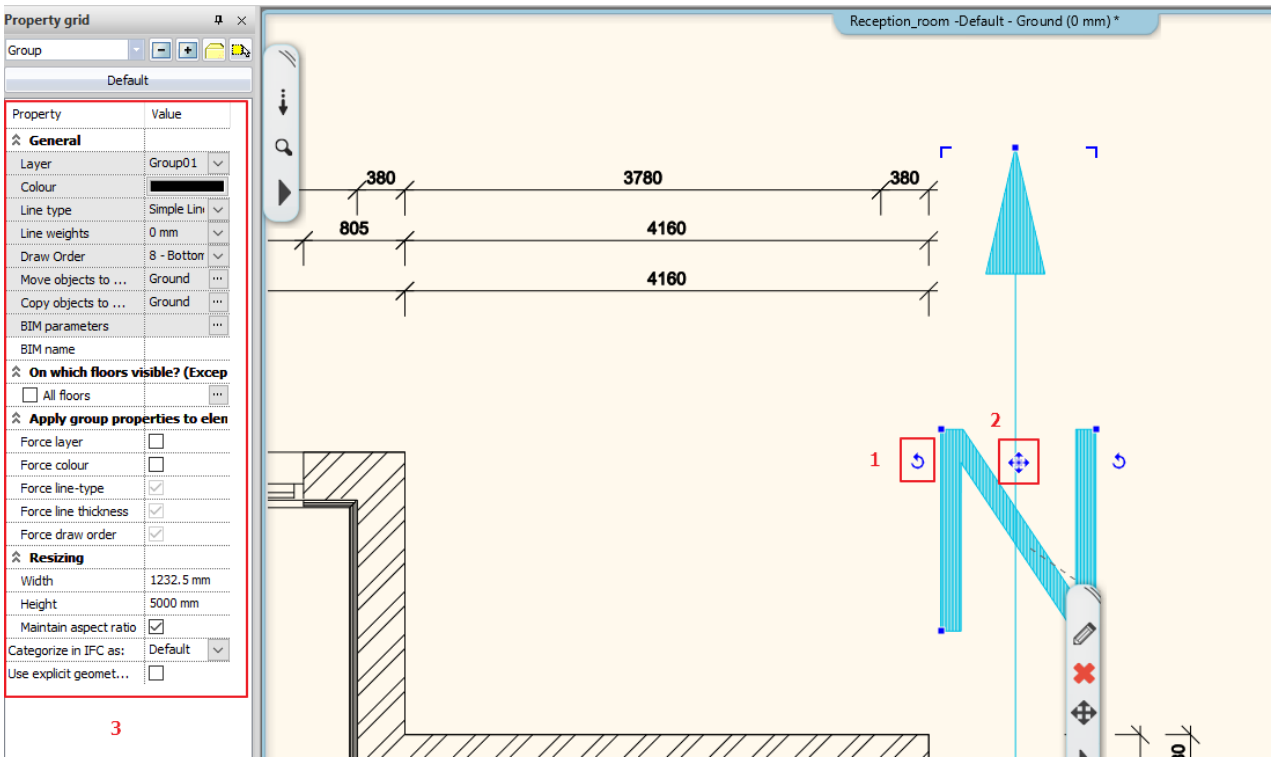
Creating architectural floor plans other symbols are needed on the floor plan, such as the marking the entrance, the North direction or the Elevation. Most markings can be found under the **Design Center / Building / Group** category. Place on the floor plan the following ones:

North direction

- Select **Design Center / Building / Group / Signs / North - English** category, select one sign and simply drag and drop to the floor plan.

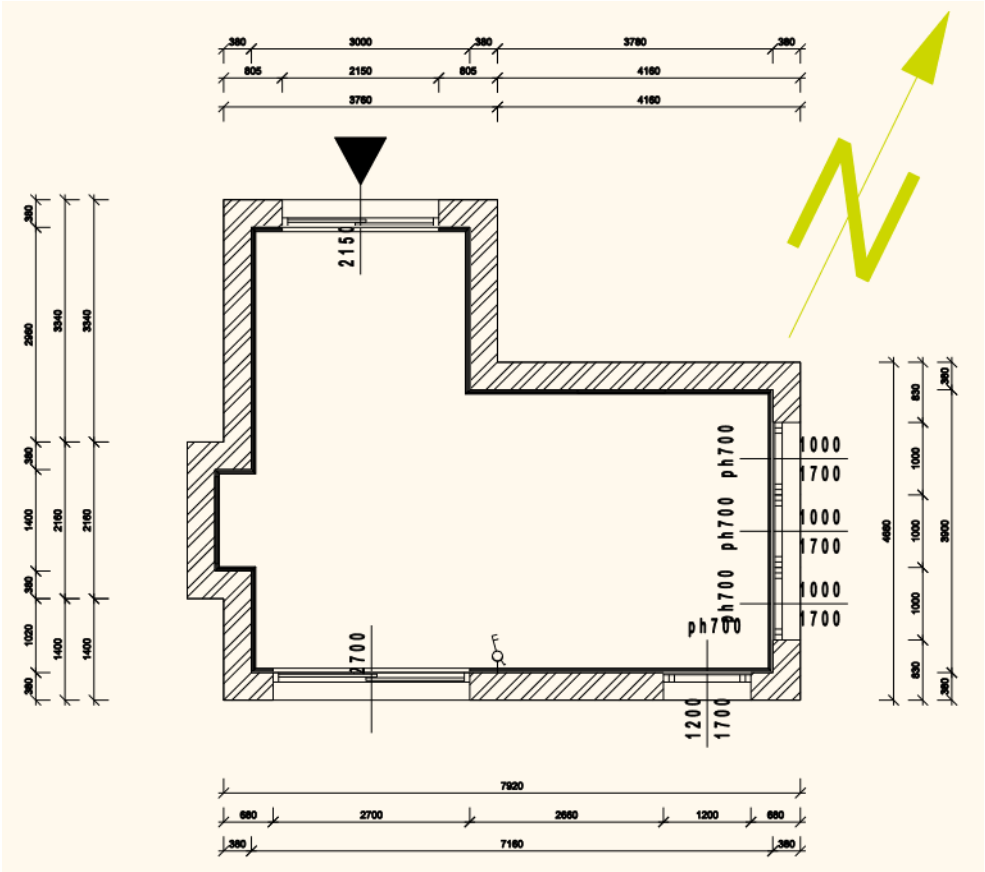


If you want to modify the position of the previously placed sign (North direction), then select it and use the rotation and move commands. Other the properties can be changed on the Properties tab.



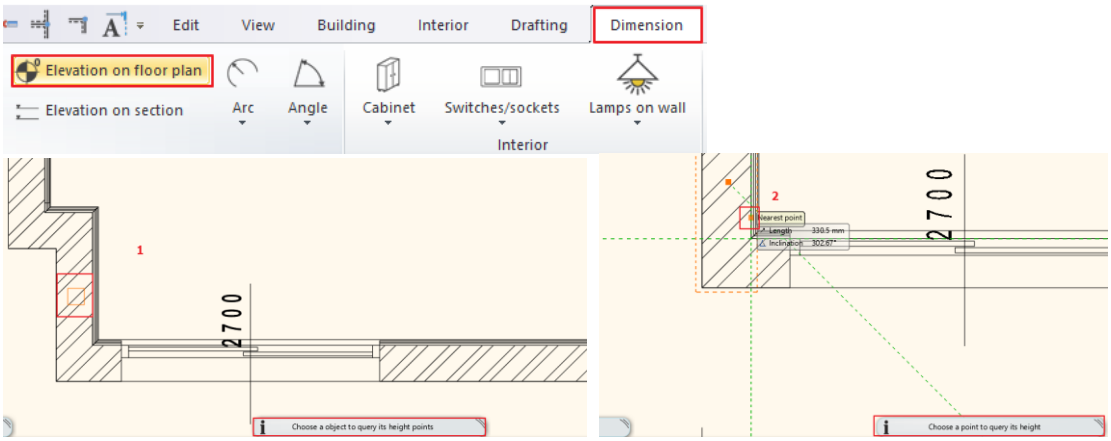
Entrance

- Now select an arrow from the Signs / Arrows category, and place it to the entrance.
- The above-mentioned modifications (such as size, position) can be made in the same way as it was described in the previous example.



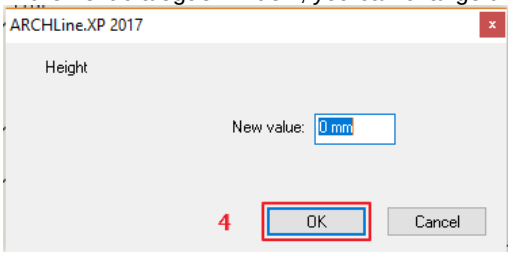
Elevation

- Choose from the Ribbon bar / Dimension menu the Elevation on floor plan command.

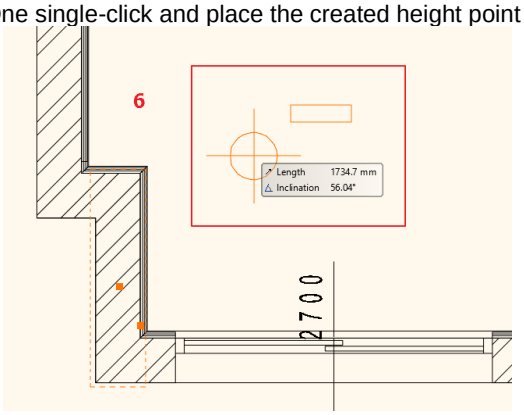


- To determine the elevation on the floor plan you must define an object and its one point (e.g. a wall) (1) with a single click (2).
- In the appearing top right menu, choose where the height point is located on the bottom or top flap (3).
- A dialogue box appears with the starting height (4) which can be changed if it is needed. Click on OK to continue.

- In the next dialogue window, you can change the Elevation (5) and OK.



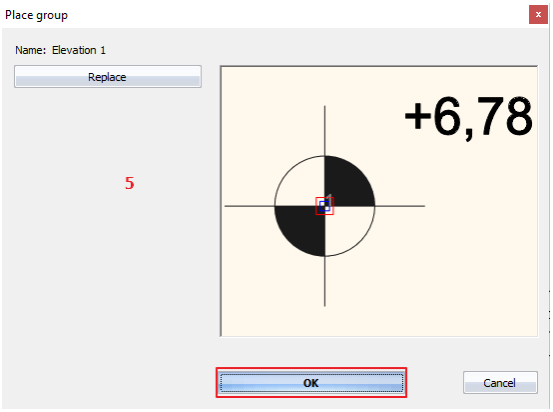
- One single-click and place the created height point on the floor plan (6).

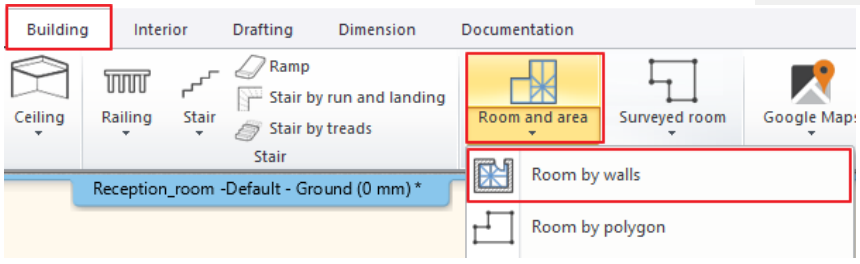


The dimension and the 3 previously mentioned signs were placed on the floor plan.

5.4.4. Room stamp

You can read more important information about the floor plan by using the room stamp therefore it is indispensable to indicate them.
Room stamps command are under **Ribbon menu / Building / Room and Area**.
There are basically two ways how to define the area of the plot stamp on the floor plan.



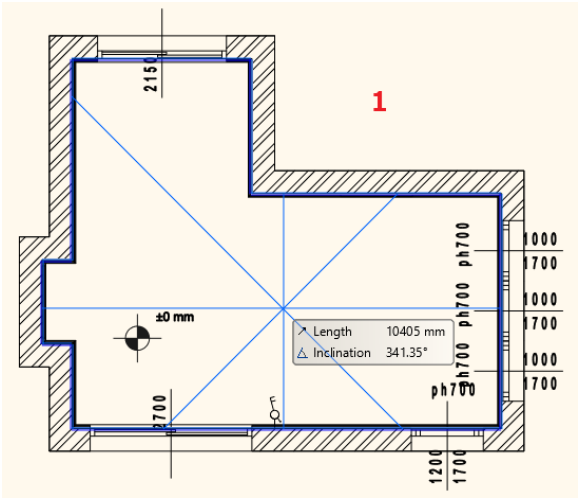


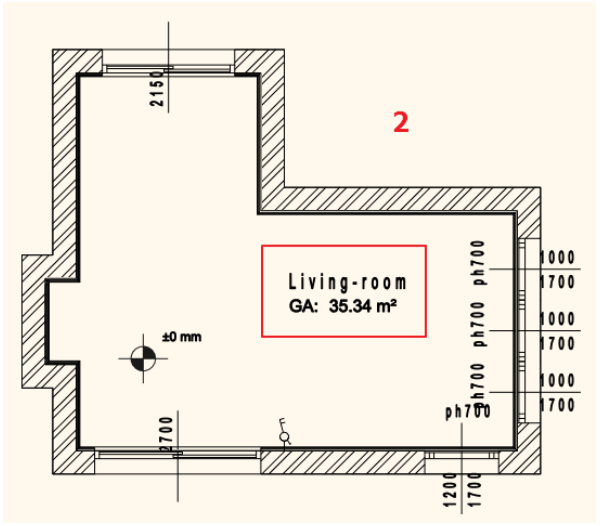
Room by walls

In case the room is surrounded by walls, we recommend to use the **Room By Walls command**. It has the advantage that clicking inside of the room creates a room stamp based on the closed contour by walls. There is no need to draw the contour of room. This means that the room stamp is connected to the walls, changes on the walls are followed by the calculations.

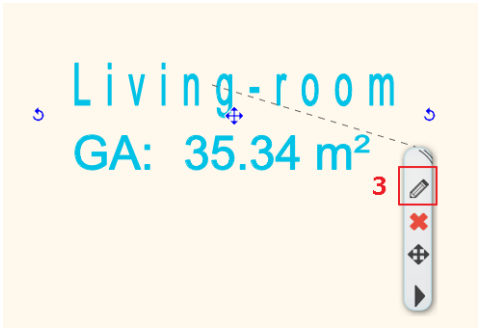
- Select the **Room by walls** tool.
- Click on a room that is surrounded by walls (1).

- (In the popup dialogue we can the name and number the room. This can be modified later)
- The room stamp is placed in the room (2).



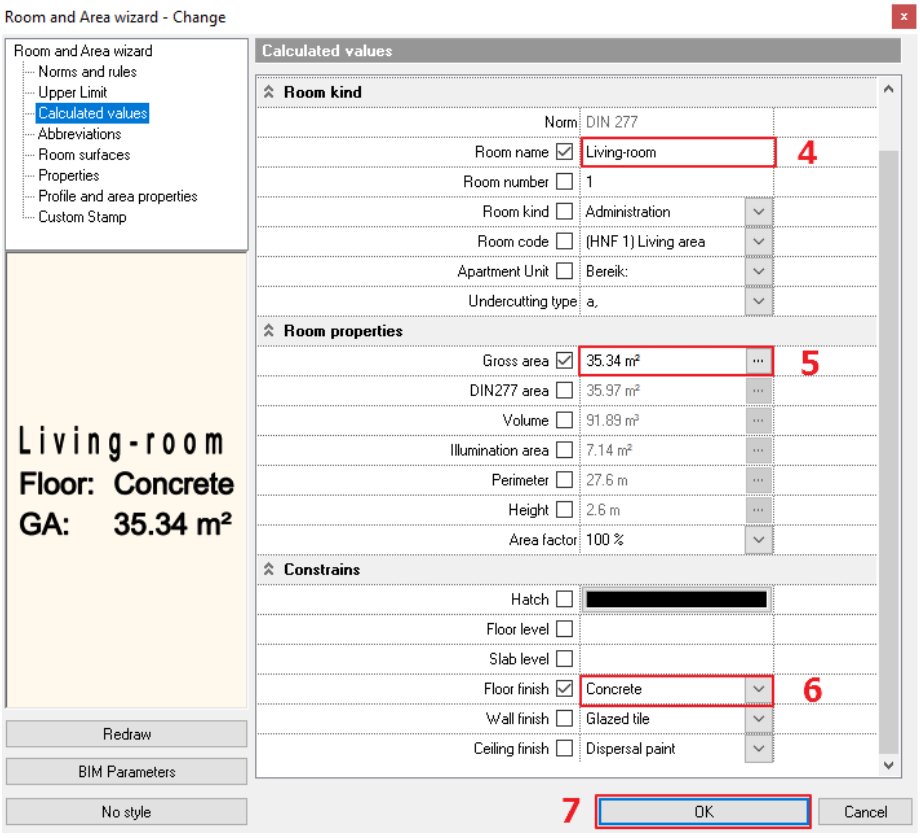


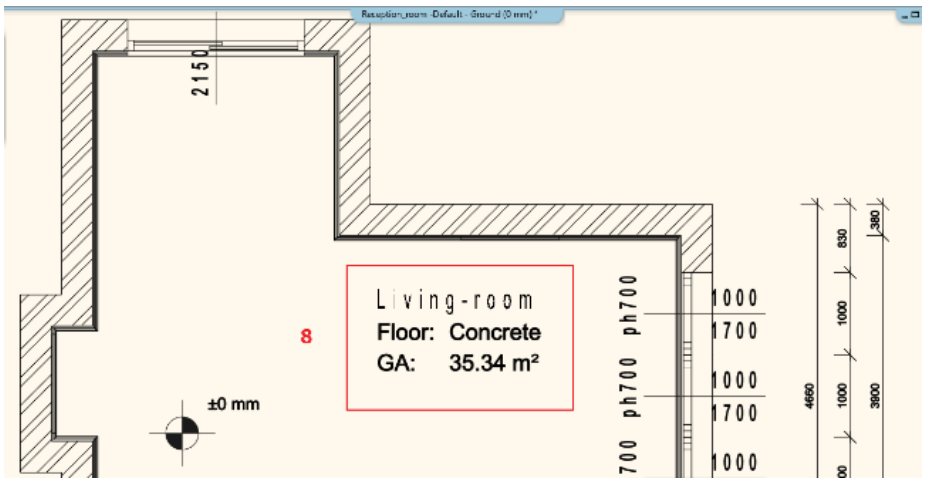
- We can change the appearing content on the room stamp within its properties.
- Click on the already placed text in order to select it and then choose the pencil icon (3).



In our example, there are 3 basic data. We can modify them as follows:

- Room Name: It can be renamed to the name that you want to appear (e.g. Living - room).
- Gross area: indicates the area of the room. (Except for the pre-existing tick sign, this data does not appear as part of the room stamp.)
- Floor finish: Choose one from the list of materials or enter other materials (e.g. Parquet).
- When changes are completed, press the OK button.
- The changes also appear on the floor plan.

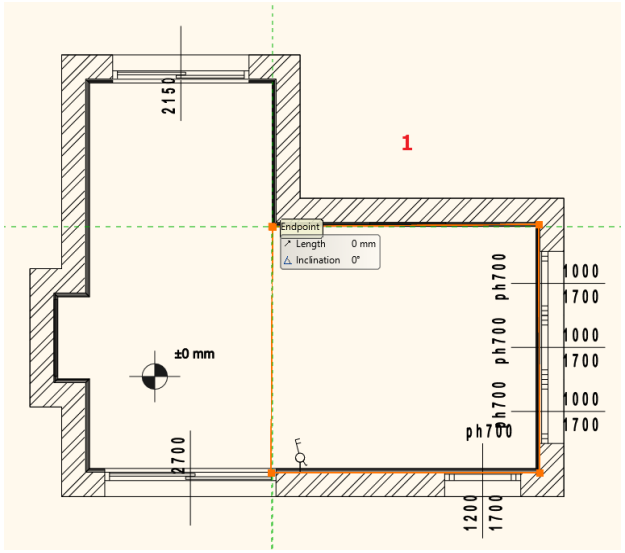


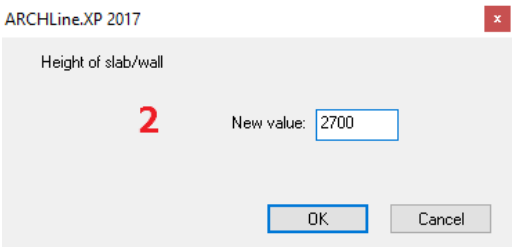


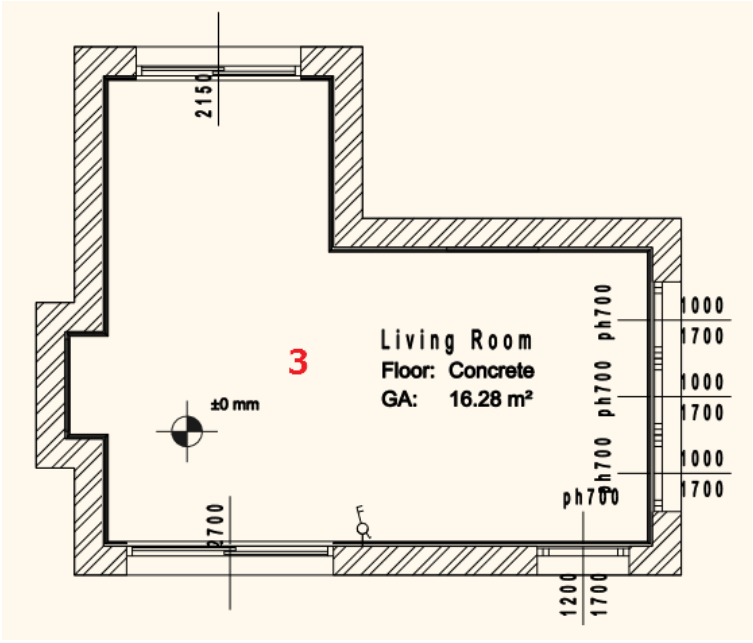
Room by polygon

This function is used when more than one functions appear in a room (e.g., a living-dining room) or we use different floor materials.

- Select the **Room by polygon** command.
- Draw the room around by following the inner side of the room where you want to place the room stamp (1).



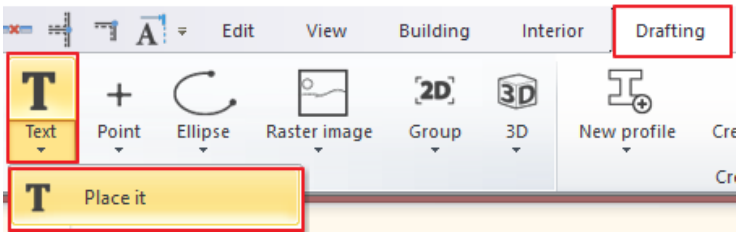




- Type the wall / ceiling height (2) in the dialogue box appears.
- The room stamp is ready (3), which you can modify afterwards as described above.

5.4.5. Place text

Place text on the architectural floor plan by using the **Ribbon bar / Drafting / Text / Place it** command. In the pop up "Text actuals" dialogue window, type the text to place (for example, "Living room floor plan M=1:50"), and then click OK.



The orange contour of the text appears, one of the corners is grabbed by the cursor. With this corner point, you can place the text on the drawing sheet anywhere you like. Now the text is placed, the Actual Text Window re-appears, and close the window by clicking on Cancel button. The default text height is 200 mm, so they are ideal for displaying designs at a 1:50 or 1:100 scale compared to drawing content.

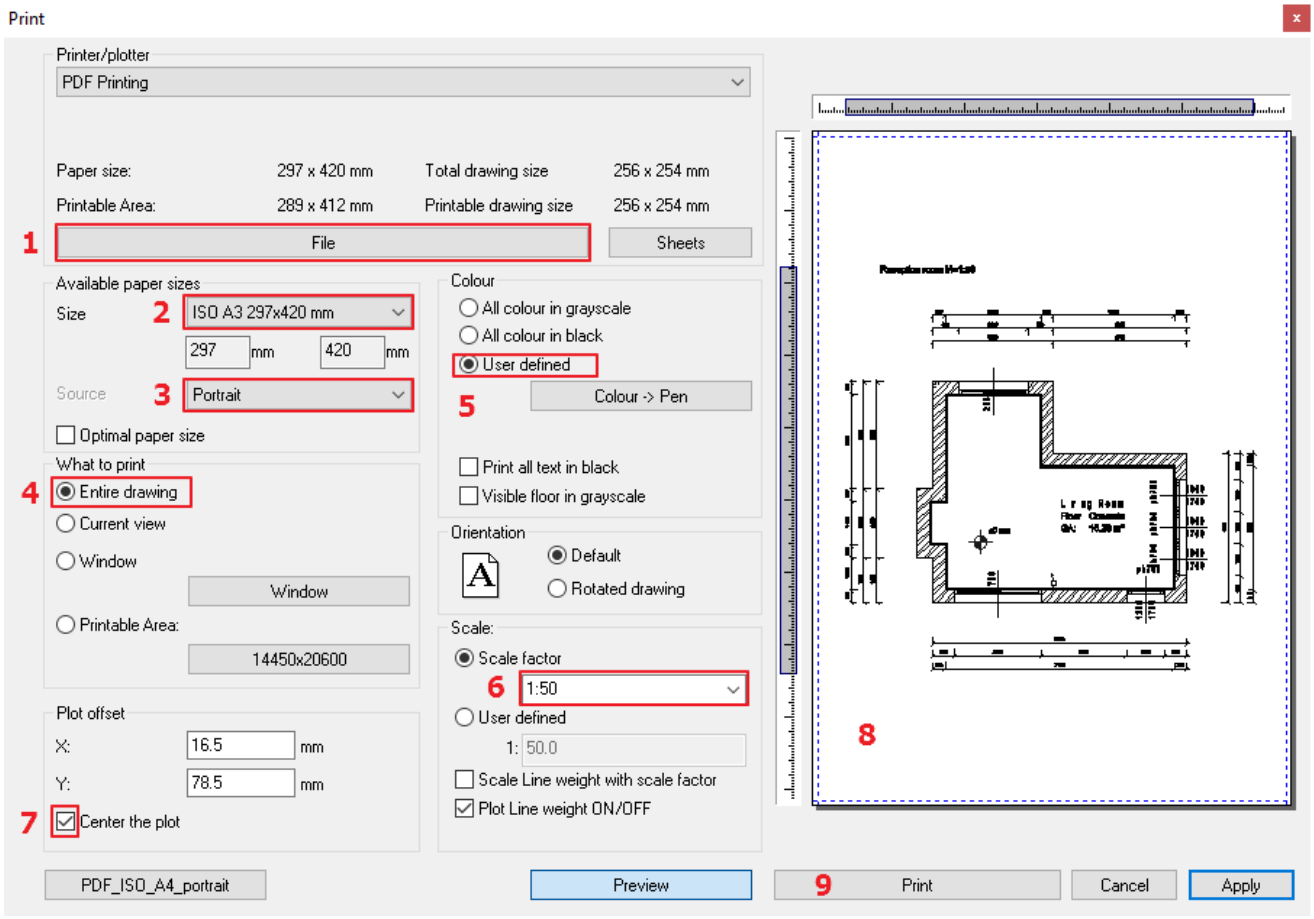
5.4.6. Print to PDF

Create a PDF file from the completed project.

- Choose the **Ribbon menu / File menu - Print to PDF** command and set the following properties in the dialogue window:

- **File:** Here you can specify the folder under which the PDF is being printed and what name it will be saved. (1)
- **Available paper sizes:**
  Size: A3 (The same paper size as our mood board) (2)
  Source: Portrait (3)
- **What to print:** Entire drawing (4)
- **Colour:** User defined (5)
- **Scale:** Scale factor 1:50 (6)
- **Plot offset:** Center the plot (7)

- If the desired result appears on the preview window (8), click the Print button to create the PDF (9).



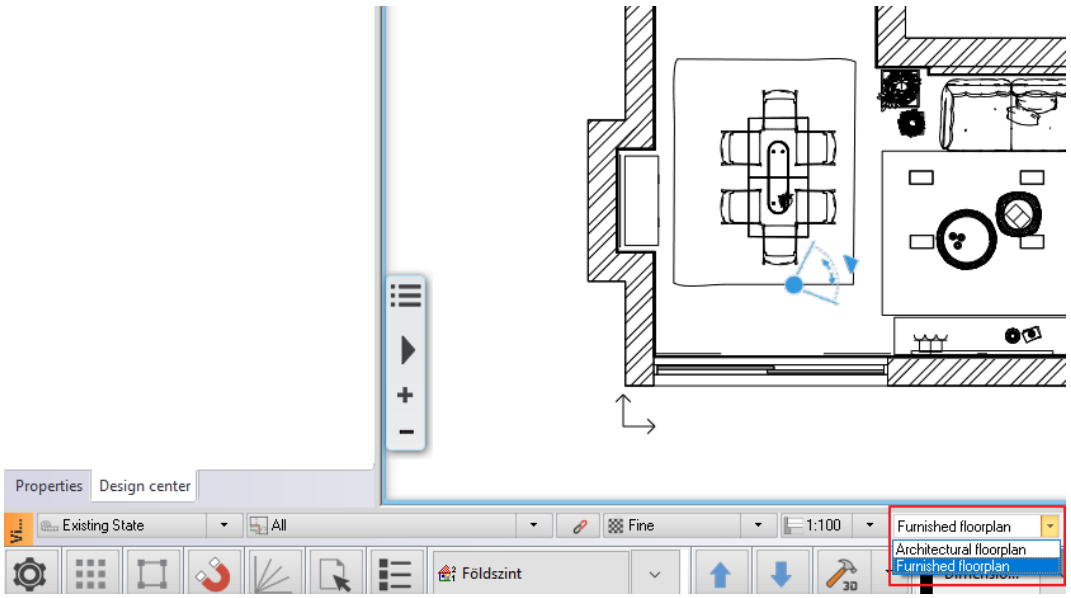
PDF is created in the predefined folder under the specified name.

5.5. Create coloured floor plan

5.5.1. Preparation

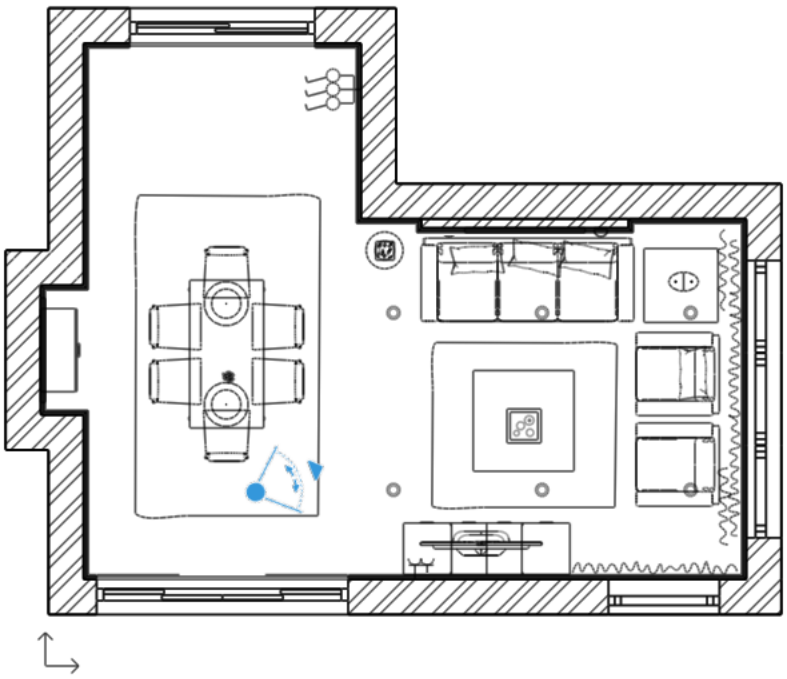
To create a coloured floor plan first you must switch to Furnished floor plan.

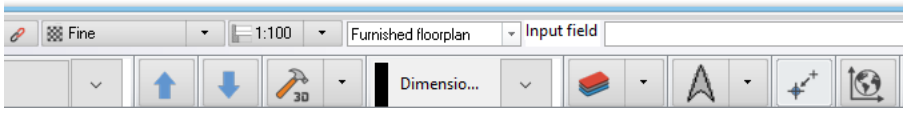
- On Statusbar switch to Furnished floor plan.
- On the floor plan window, you should see the following result: Dimensions and groups are still visible.



- In Layer Property Management activate “Furnished floor plan” layer group.
- then Switch off “Group and Dimension” layers.
- Click on refresh button to update the settings of “Furnished Floor plan” group.

The result is the following:

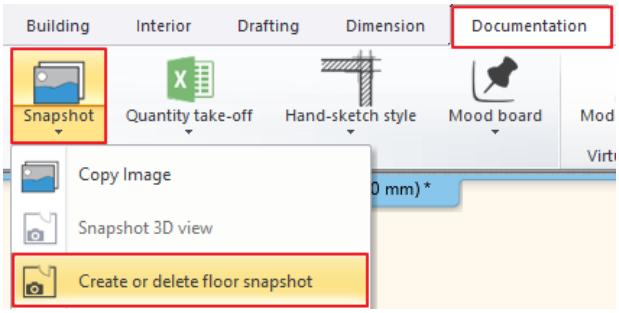


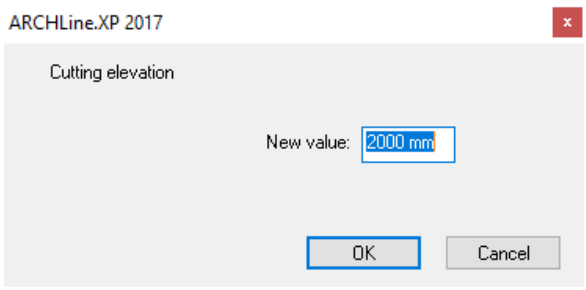


Delete the inserted text. Instead of this, you can add later a new name to this new project.

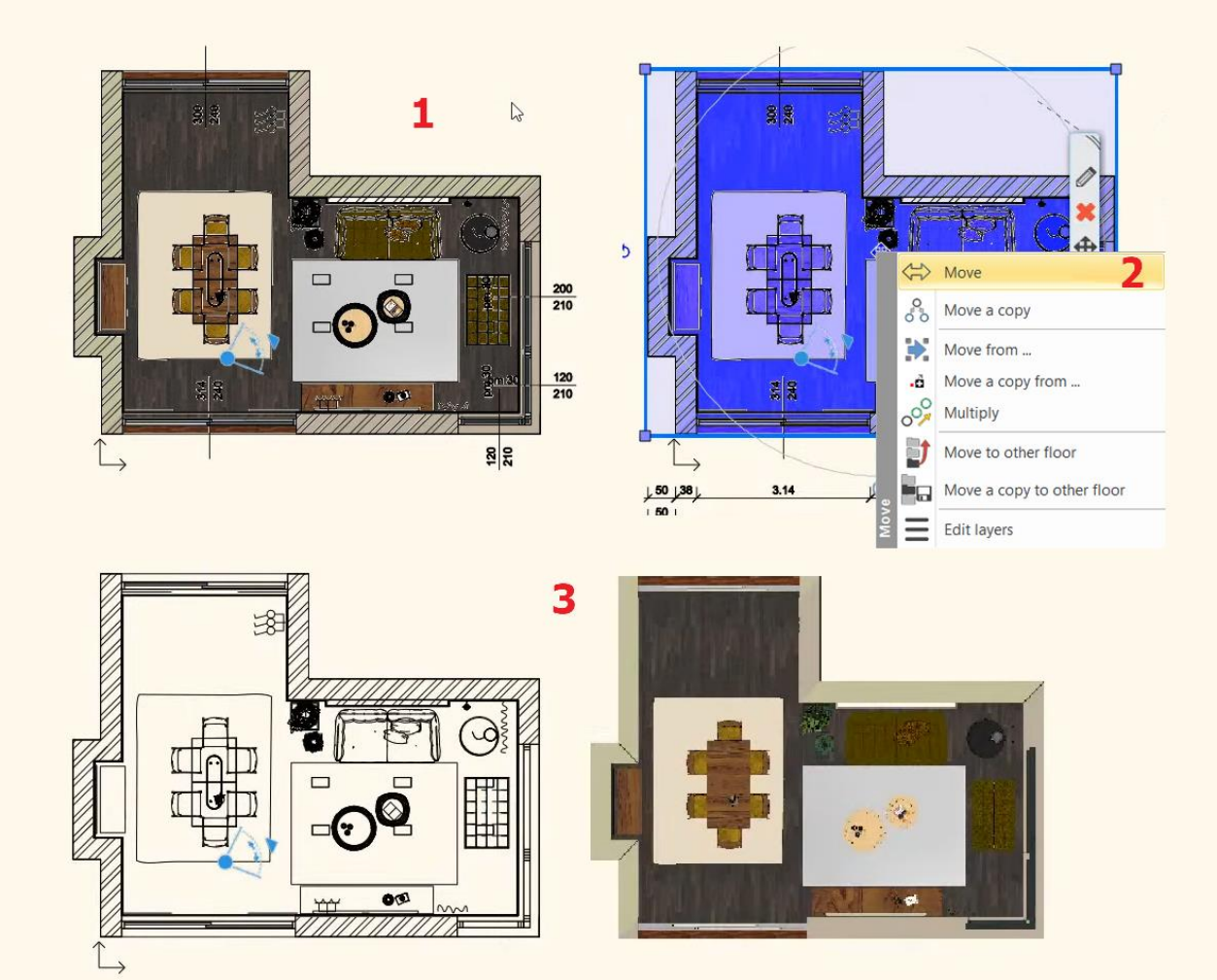
5.5.2. Create floor snapshot

You can create a coloured floor plan by using the **Create floor snapshot** command, located in the **Ribbon bar / Documentation** menu.
When you start the command, you can set the value of the cutting elevation in the pop-up dialogue window, this is the height where you cut off the model.



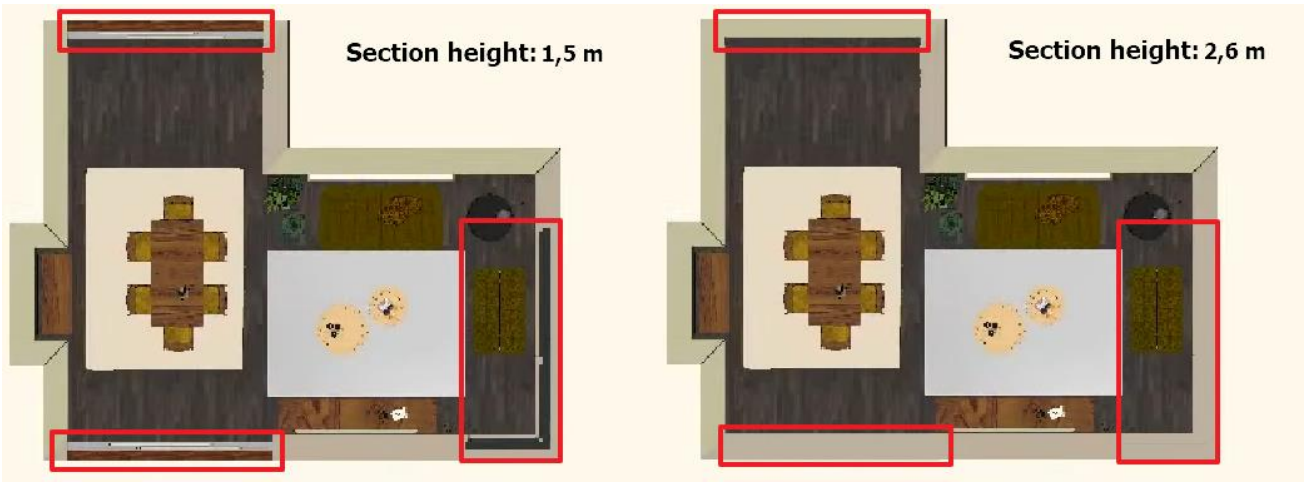


After entering the desired height, press OK, the coloured floor plan view will appear on the original floor plan (1).
The snapshot is a raster image that can be easily moved away from the floor plan and placed next to it (2; 3).



Attention!

Choose the proper height from where the openings can be seen on the snapshot too. If you choose lower or higher point the openings will not appear on the snapshot, only the wall becomes visible.



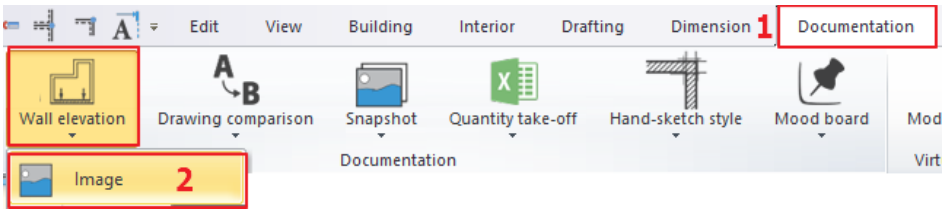
The finished coloured floor plan, can be printed to PDF as it is described in Chapter 5.4.6.

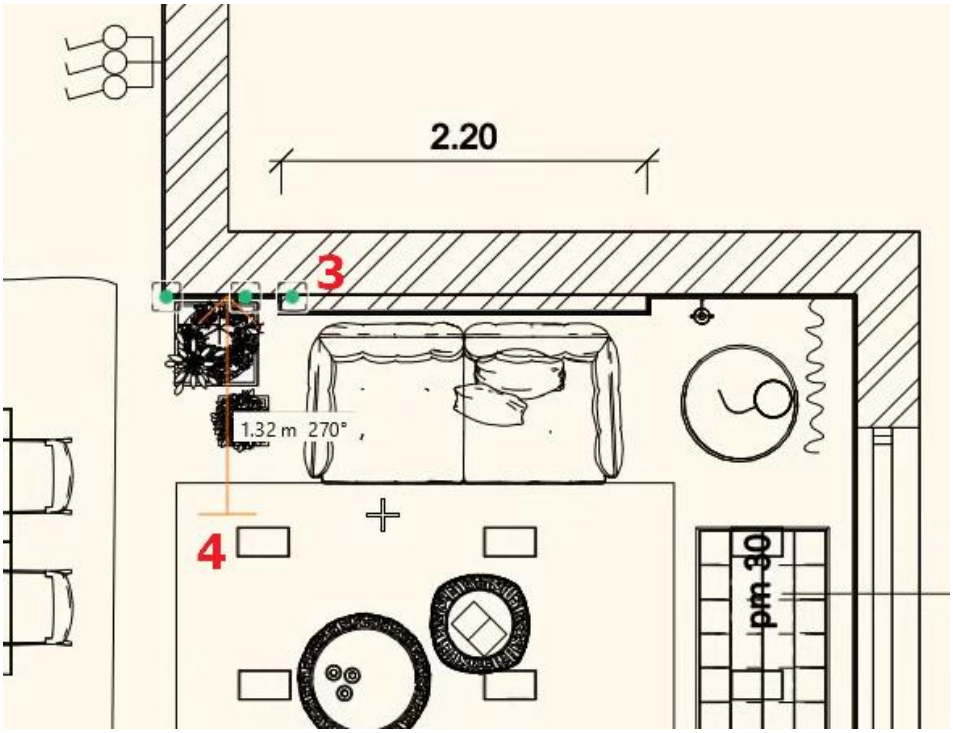
5.6. Creating wall elevation views

Prepare textured wall elevation views in order to dimension them.

- Make the floor plan window active.
- Select the **Ribbon bar / Documentation / Wall elevation / Image** command (1) (2).

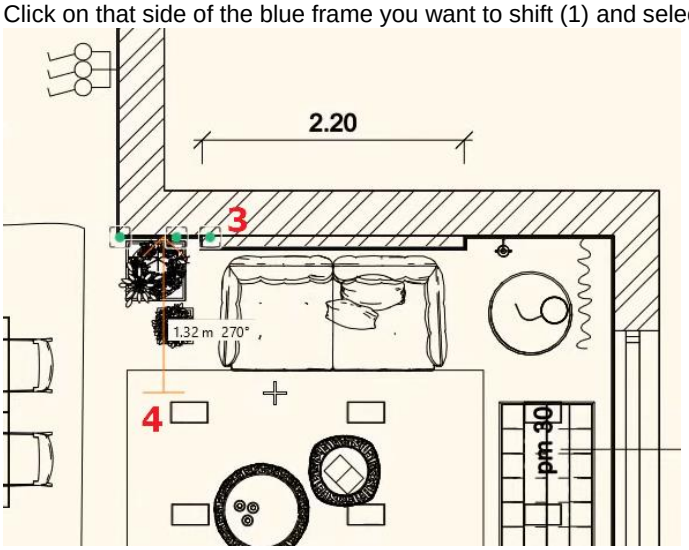
- Click inside of the wall (to make the wall elevation view) (3).
- Move the orange arrow to the desired distance (you can determine the distance by using the length of the arrow from where the wall view will be created) (4). This area will get a blue frame.

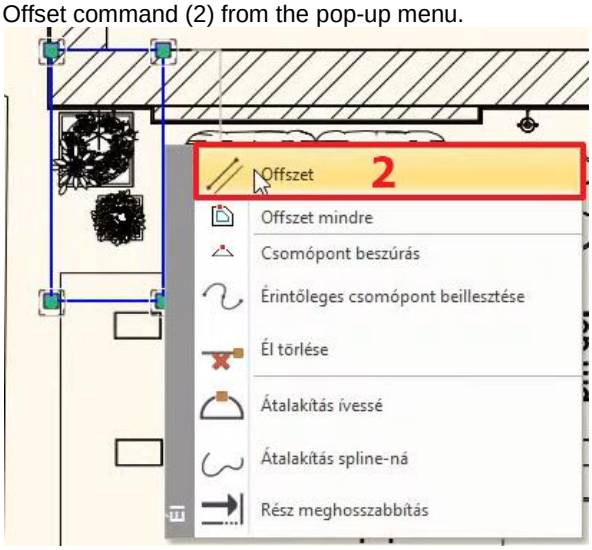




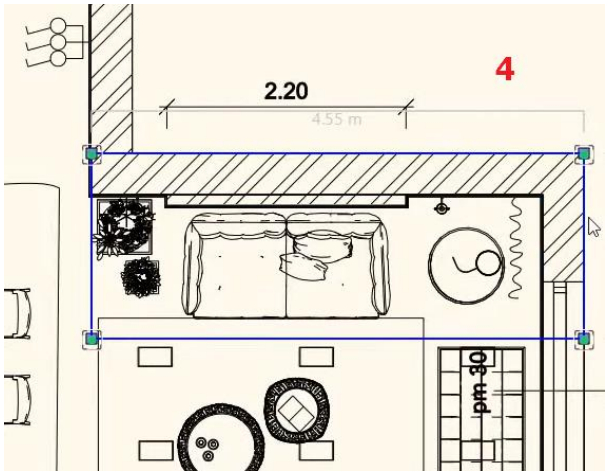
Before creating a wall, elevation view it is also possible to select a part of the highlighted wall to be used for the snapshot:

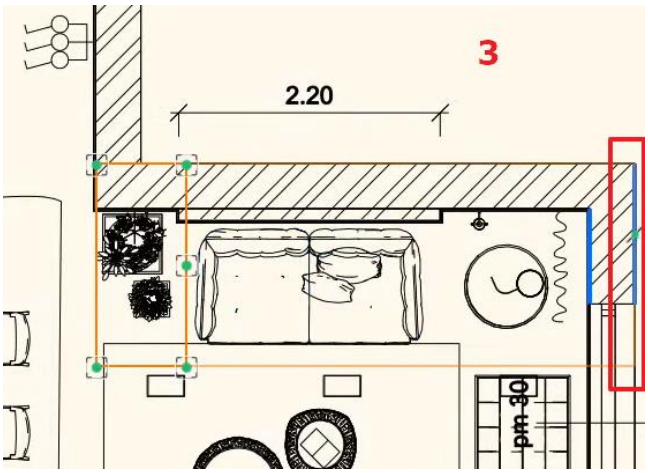
- Click on that side of the blue frame you want to shift (1) and select Offset command (2) from the pop-up menu.





- Move the selected pages one by one to the desired position (3), then press Enter.
- On Ribbon menu will appear editing tools. If there is no need for further changes, click on green tick, or press ENTER and the wall snapshot will be ready.



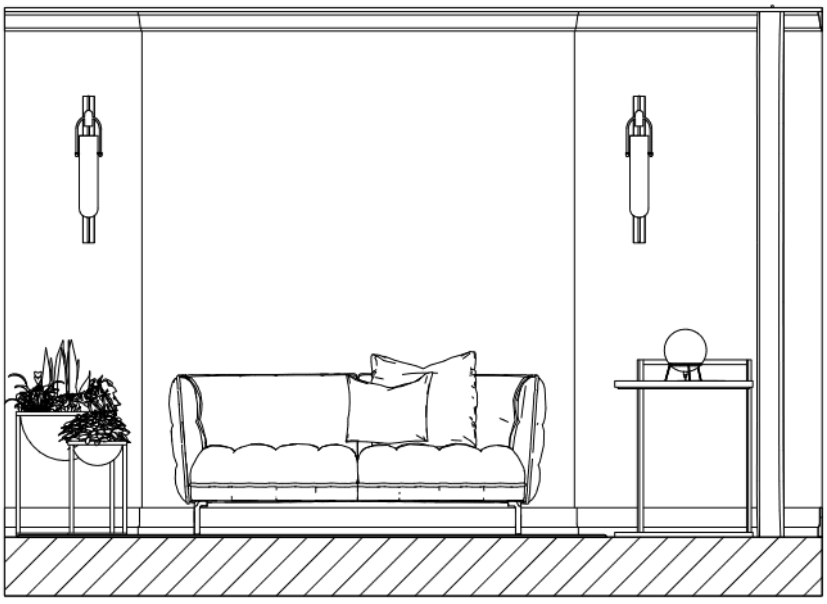


- The Snapshot dialogue window appears. Click the **OK**.
- By clicking on Save button you can save the image on your PC.

  When the Snapshot window is closed, the wall elevation view is placed on the floor plan.
  By clicking on the edge of the image you can move it to the desired location.

- Repeat these steps on selected walls.

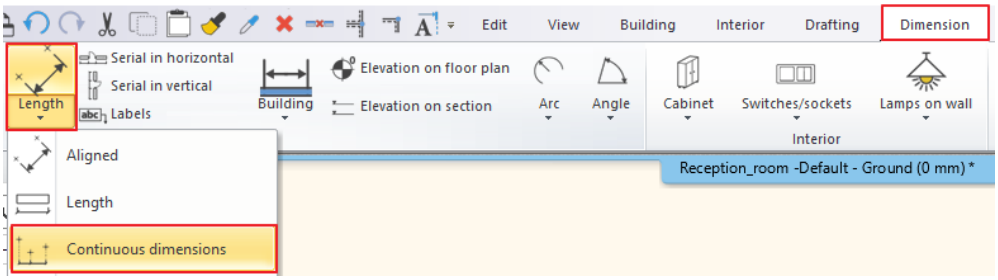
Use **Ribbon menu / Wall elevation / Drawing** command to create frontal view of the selected wall.



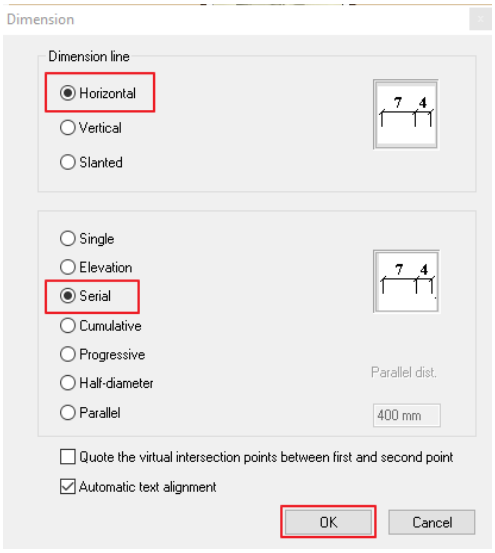
5.6.1. Dimensioning Length

In this example, only the architectural elements will be scaled on the wall elevation view.

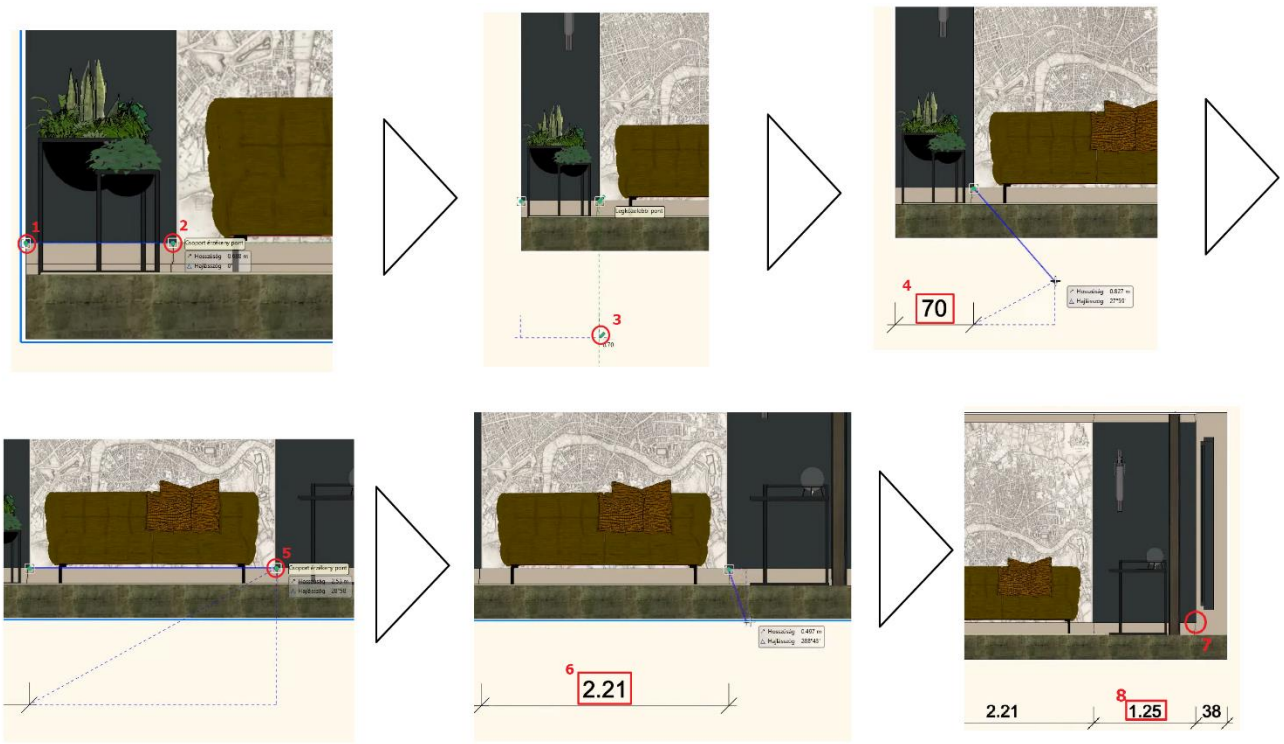
- Select the Ribbon bar / Dimension / Length / Continuous dimensions command.
  In the pop-up dialogue window, you can adjust the dimensioning properties, for example: the orientation.



Set the dimension line horizontally, and the dimension is serial and then OK.



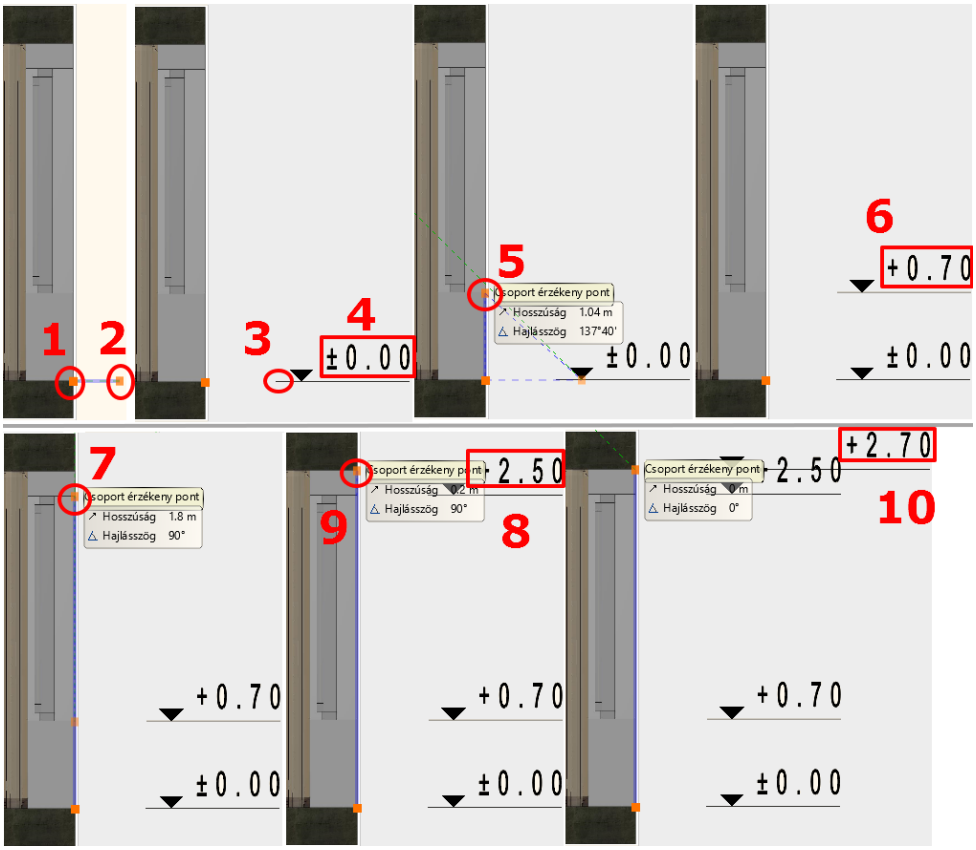
- Click on the first point on the wall elevation view to start the dimensioning (1).
- Click on the second point to get its distance from the first point (2).
- The horizontal projection of the distance appears with a dotted line which can be placed at any distance from the wall elevation view (3, 4).
- Due to the “serial “setting the dimensioning is continuous.
- This means that the second point of the previous distance (2) and the first point of the following distance we are overlapping each other, therefore we have to give second point only (5).
- The horizontal distance between the previous two points appears on a new dimension line alongside with the previous ones (6).
- Give the second point of the next measured distance (7).
- It also appears on the dimension line (8).
- When finished the dimension, press ENTER.
  (In this case, the values of the given dimension line will be created, further scaling is possible without re-selecting the command.)



5.6.2. Elevation on section

The Elevation is located in the Ribbon bar / Dimension / Elevation on section command.
In this example we will measure the wall with window on the right side of the wall view.
The dimensioning process is the following:

- Open the command from the path above mentioned then mark the starting height on the wall elevation view by clicking on the connection between the slab and wall (1).
- To get the value 0, click again at the same point or at the same height (2)
- then determine the position of the dimensioning next to the wall elevation view. Click on the preferred position (3), so the first height value of 0.00 will appear next to the wall elevation view at the desired location (4).
- Additional points should be determined with just one click and the height value for that distance will be displayed immediately next to the wall elevation view.
- As a next step, click on the window sill (5) and the corresponding value (6) will be displayed.
- The window header height is given the same way (7,8).
- The last point there, where the wall and ceiling are the joining together (9, 10).
- Now we specified the height values for the wall and the associated door.



5.7. Create plot layout

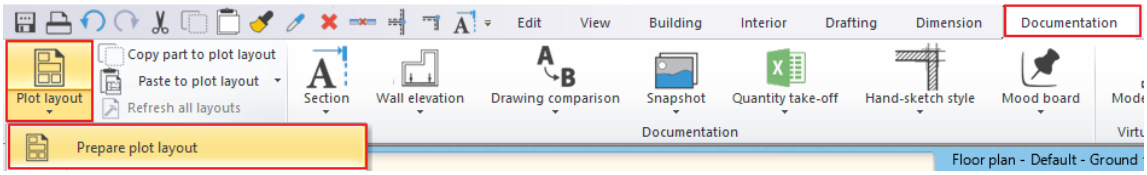
In order to record differently scaled plans to the corresponding project it is beneficial to create plot layouts.
It is also recommended to use them as they provide neat, precise look.

Do a practice before creating the plot layout, set the under Furnished layer group visible the dimension and group layers:

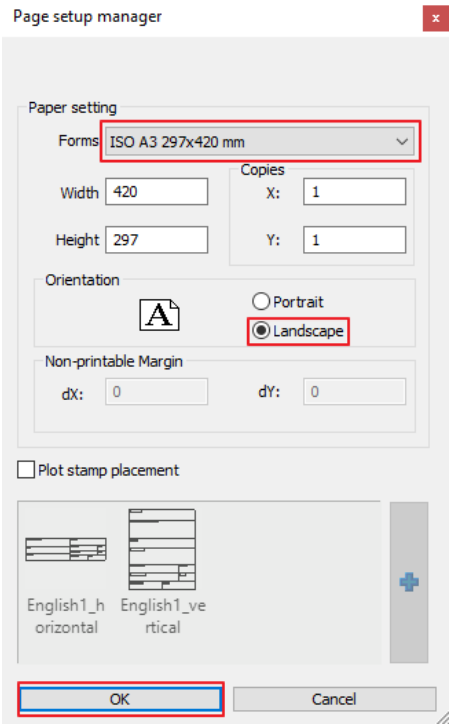
- Activate Furnished floor plan group in Layer Properties Management dialogue window
  then switch on Group and dimension layers
- Click on refresh to update the Furnished floor plan group settings.
- Now on the floor plan, besides the furniture, the dimensioning, the northern sign, etc. can also be seen.

5.7.1. Prepare plot layout

The Prepare plot layout command is available under the Ribbon bar / Documentation / Plot layout menu item.
First you need to set the paper size and orientation in the pop-up dialogue window, then press OK to open the empty page.



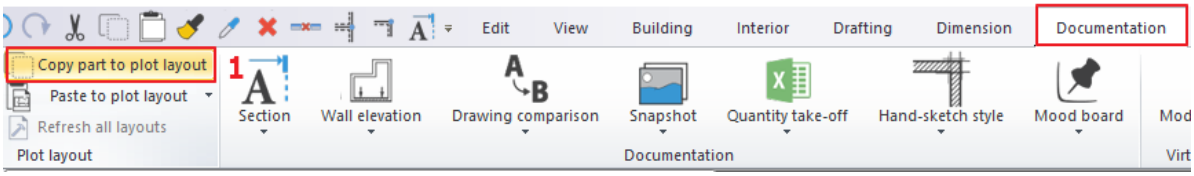
In the appearing dialogue window, you can set the properties of the Plot layout, also you can place **plot stamp** to display project details on a pot layout. (Designer, Customer, Address, Date, etc.)



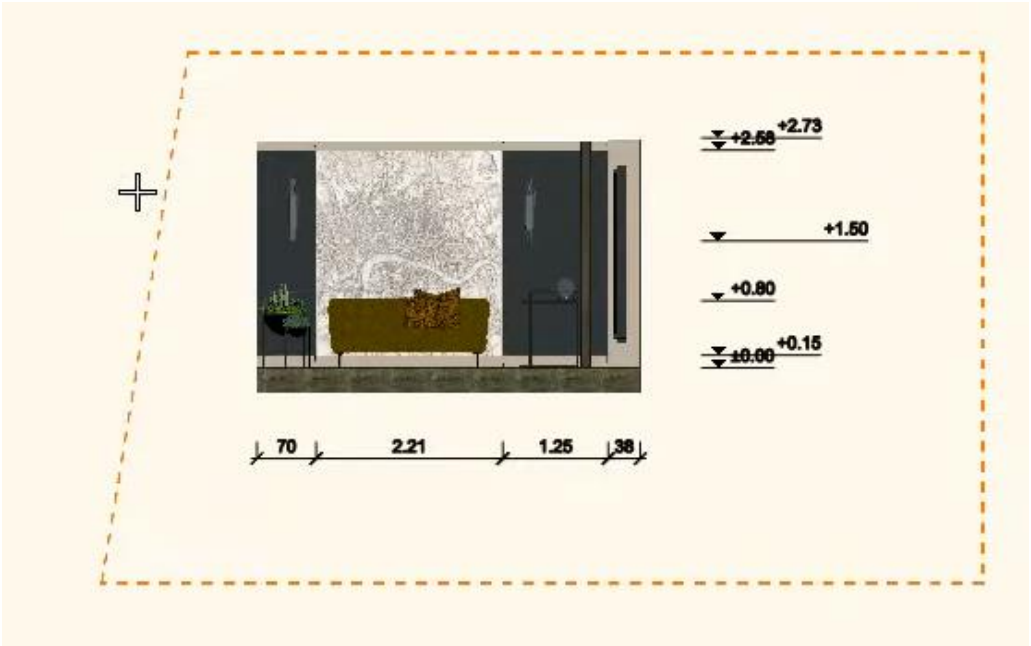
5.7.2. Copy to plot layout

Next, from the records of the existing floor plan with a given scale factor, we will paste its details to the empty page. Please follow these steps:

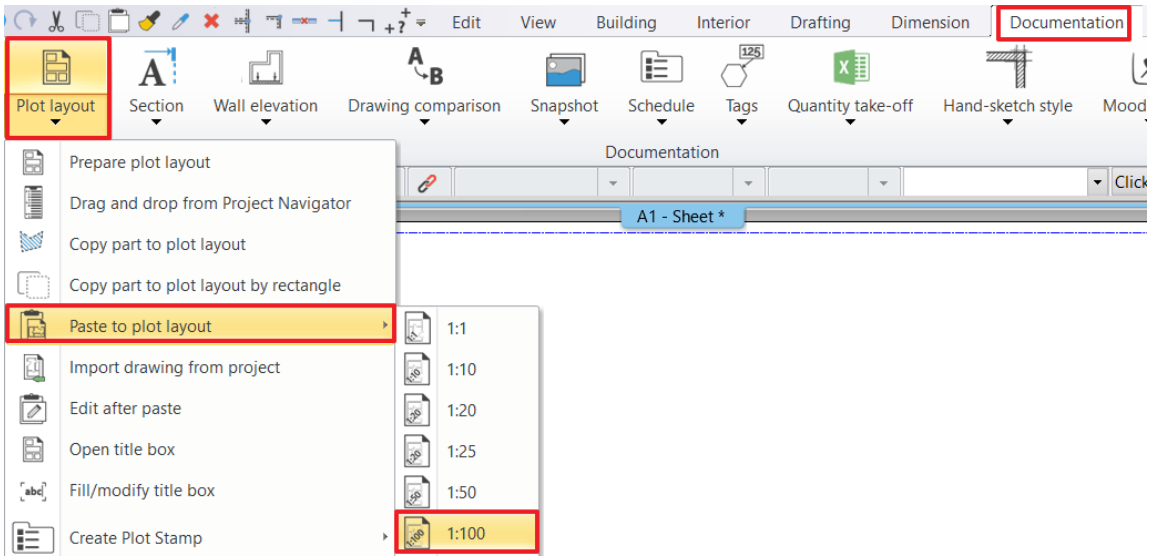
- Activate the window from you want to copy the content (in this example, this is the floor plan window).
- Choose **Ribbon bar / Documentation / Copy part to plot layout**.

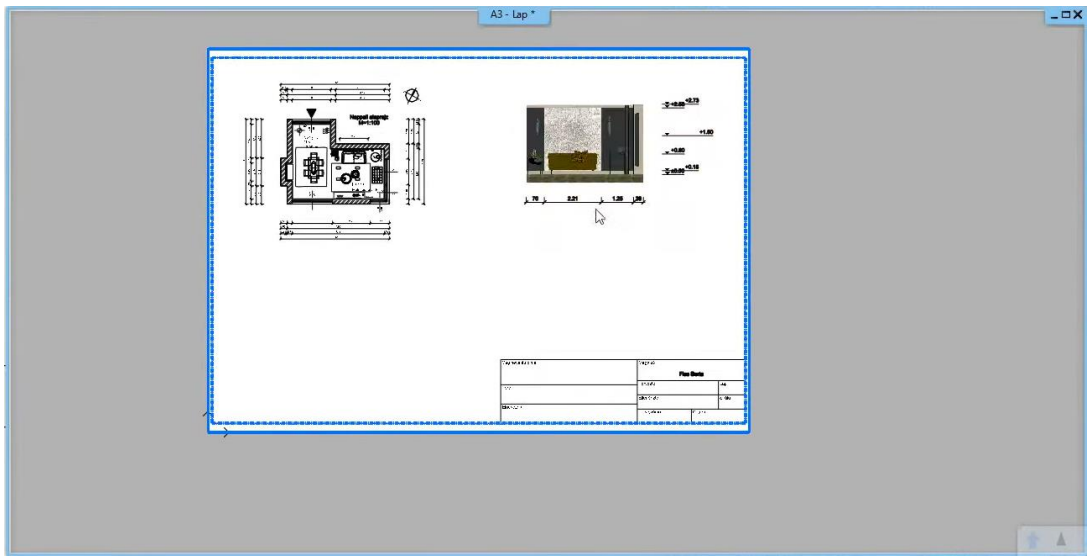


- Select the part you want to copy.
- Give a starting point which you want to grab for placing the selected portion.

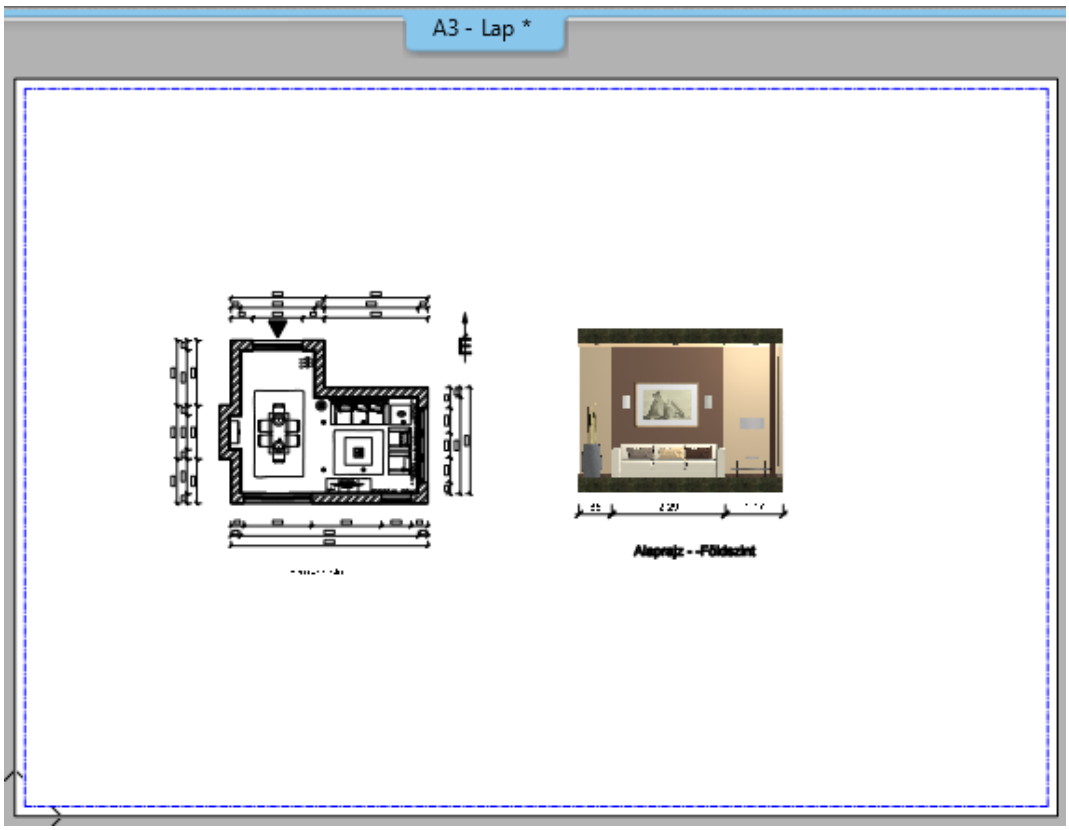


- Activate the plot layout (print layout).
- Select **Paste to plot layout** command from the **Ribbon bar / Documentation** menu and specify the scale to which you want to place the drawing on the page.
- Place the drawing.





As described above, you can copy the dimensioned wall elevation view on the page by 1:50 scale factor. This way it is possible to place drawings in different dimensions on a plot layout.

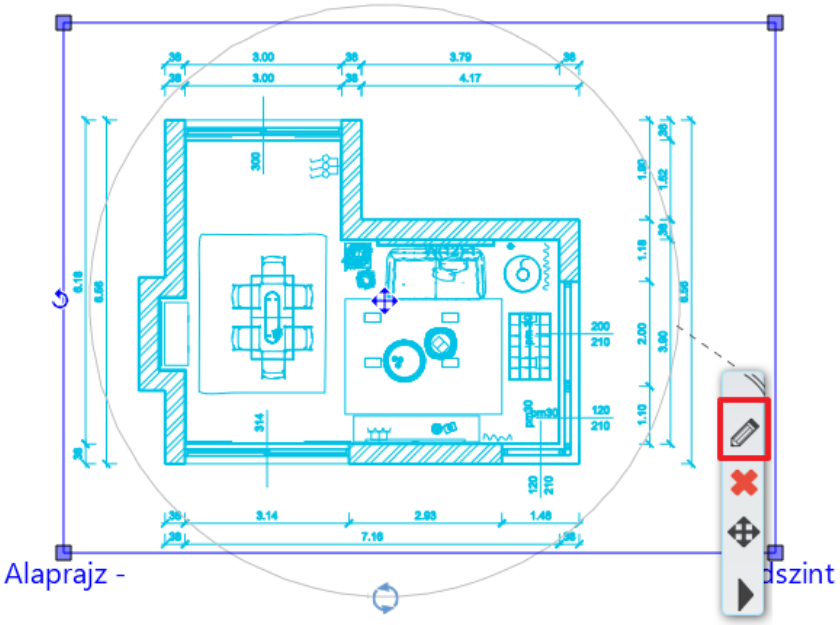


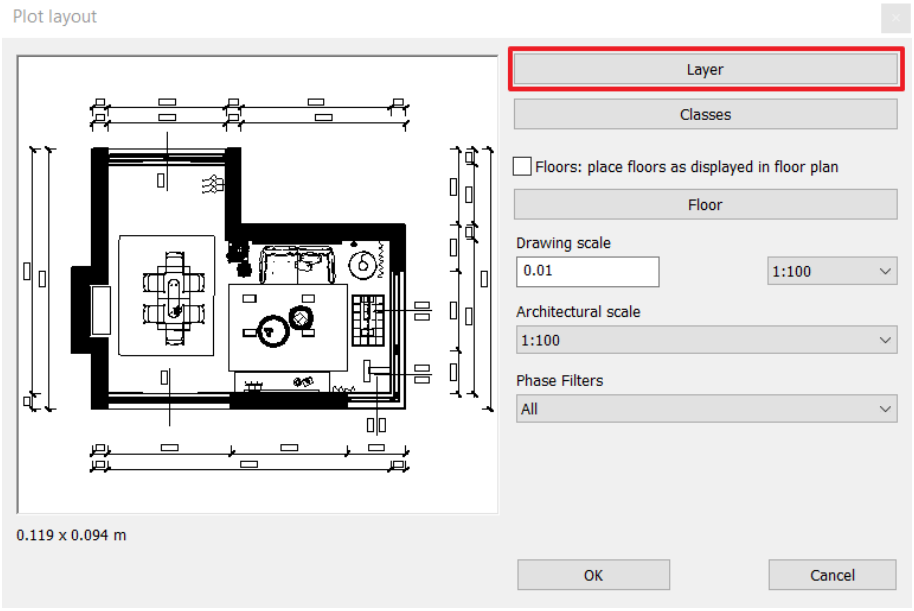
5.7.3. Using layers on plot layout

Furnished Floor plan

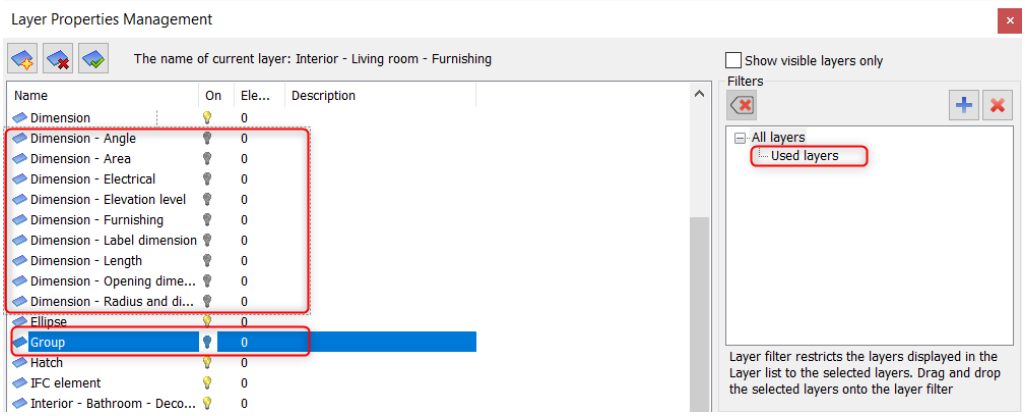
Now on the floor plan, besides the furniture, the dimensioning, the northern sign, etc. can also be seen. The aim is to display on this plot layout the Furnished floor plan without dimension and northern sign.

- Select the floor plan on the plot layout, and click on the local menu represented by the pencil icon.
- In the appearing dialogue window, click on Layer button to open the Layer Property Management window.

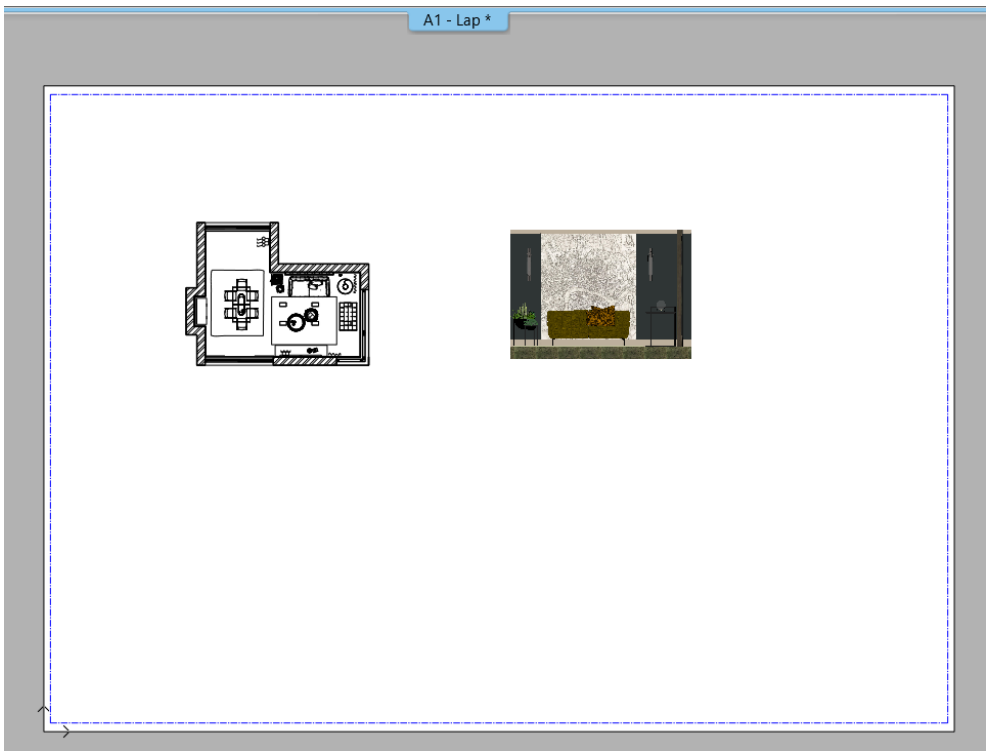




- Activate the Used layers filter.
- Switch off Group, Plot stamp and Dimension layers.



The plot layout will appear following modifications:



5.7.4. Refresh drawing on the plot layout

Modify the wall elevation view and snapshot

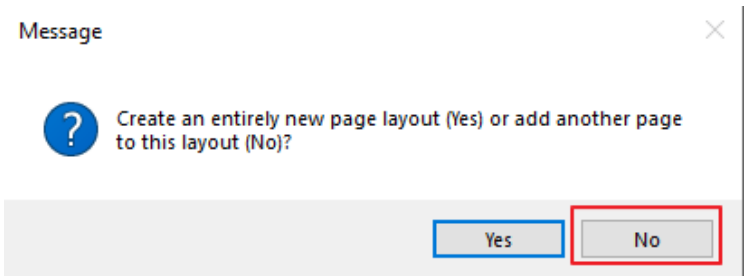
It is also possible to present changes on the 3D model, on the wall elevation view on the page, or on the 3D snapshot. The process of the modification is similar to the previously described:

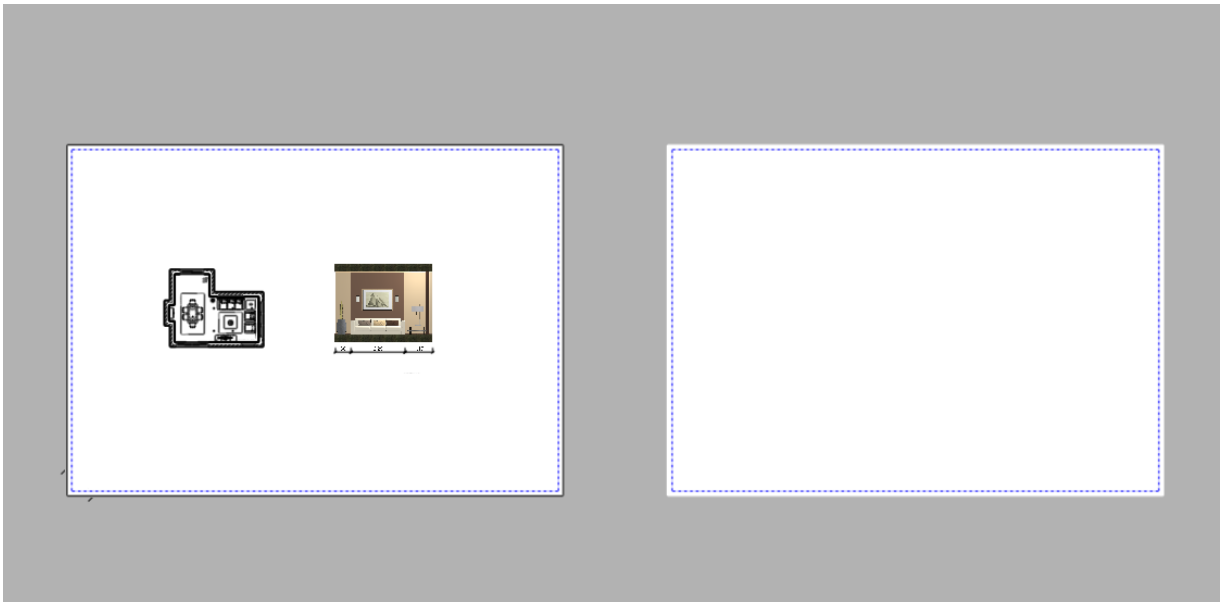
- Activate the 3D window.
- Make the desired modification on the model (e.g. change the wall material).
- Activate the floor plan window.
- Select the **Snapshot / Refresh** command from the Local menu.
- The content of the wall elevation view changes accordingly.
- Activate the Plot Layout.
- In the Local menu of the wall elevation view, select **Refresh this** command.
- This drawing will be also updated based on the wall elevation view in the floor plan window.

5.7.5. Using more plot layouts

If you have to present a plan in several ways, such as an interior design and architectural plan, then you need to create more plot layouts.

Activate the Print Layout, then create a new plot layout (Ribbon bar / Documentation / Plot layout / Prepare plot layout). In the appearing dialogue box, you have to choose whether to place the second plot layout on the same page or another window. This way two or more plot layouts could be placed on one page.
In this case we place it on the same page therefore click on “No”.



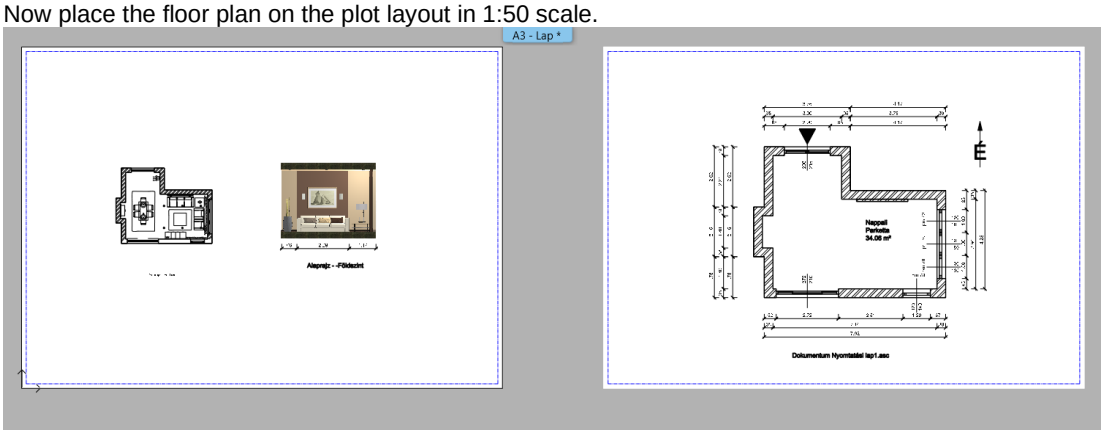


Architectural floor plan

On this plot layout will place the architectural floor plan.

On the floor plan from the View Control Bar select the architectural layer visibility group
(On the architectural floor plan layer group switch on Plot stamp layer and refresh the group.)

- Now place the floor plan on the plot layout in 1:50 scale.



Summary:

If you have to present your plan in many ways such as interior design plan and architectural plan, then the method is the following:

- Create two plot layouts
- Place on both the same floor plan in the same scale.
- At the first switch on Interior layers visibility group, and turn off the section, dimension, plot stamp layers.
- In case of the other plan, do the opposite as described above.

This way you can handle two different versions of the same plan within one project, and you can exhibit them without making any changes on the plan itself.

5.7.6. Create, save, modify and use the plot stamp - optional

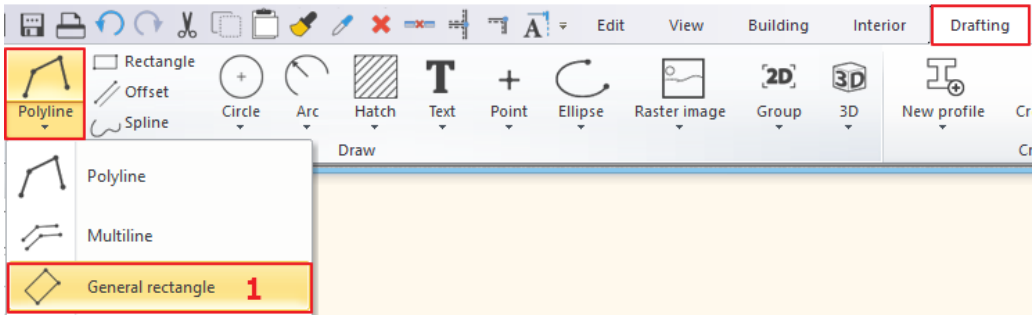
Documentation can be formally unified with the use of the plot stamp, which provides a suitable framework for the presented plans. It is possible to create a plot stamp that can be saved later on the plot layout. It is desirable to draw a plot stamp in different sizes (A3, A4), as well as in portrait and landscape positions, which you can use afterwards.

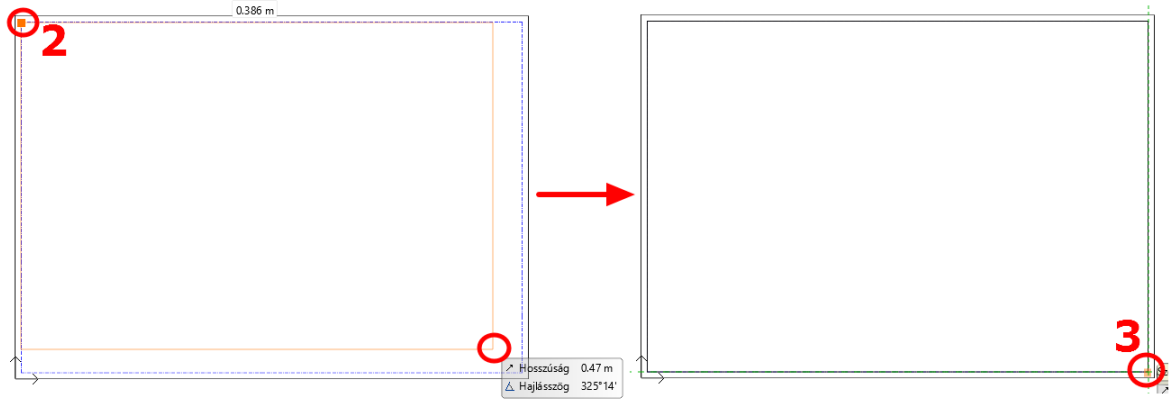
Create plot stamp

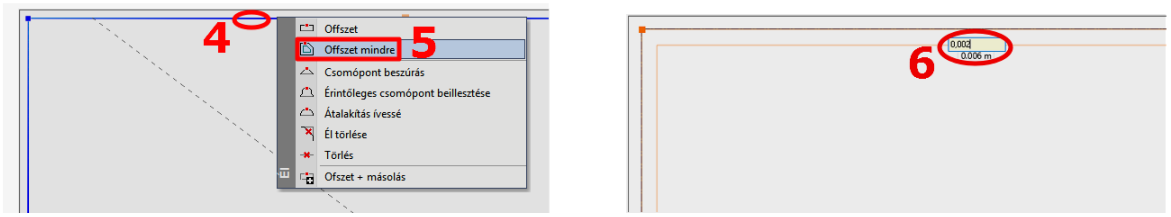
The plot stamp is created by drawing tools as following:

- Create a new plot layout following as it described in Chapter 5.7.1.
- Make the plot stamp frame.

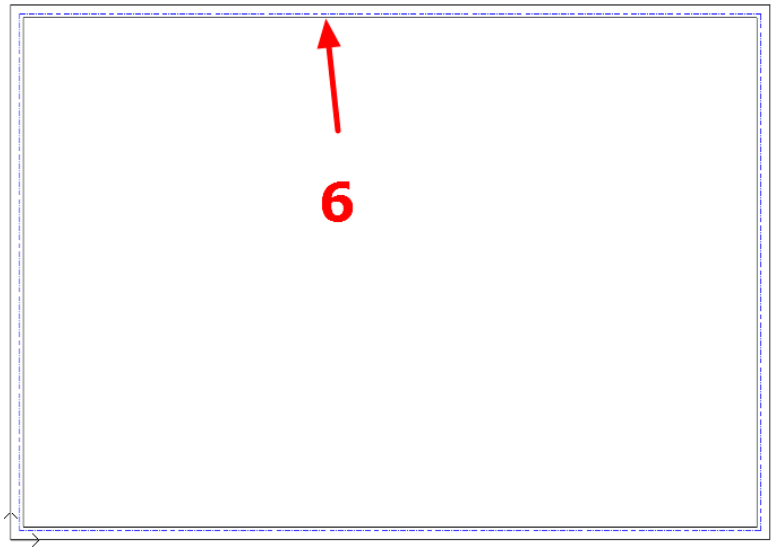
The simplest way is to draw a border line along the print range (blue dotted line) (2,3) by using the **Ribbon bar / Drafting / Polyline / General rectangle** command (1).
After placement, select Offset All command in the Local menu (5) and move by 2 mm (4) towards the center of the plot layout (6).



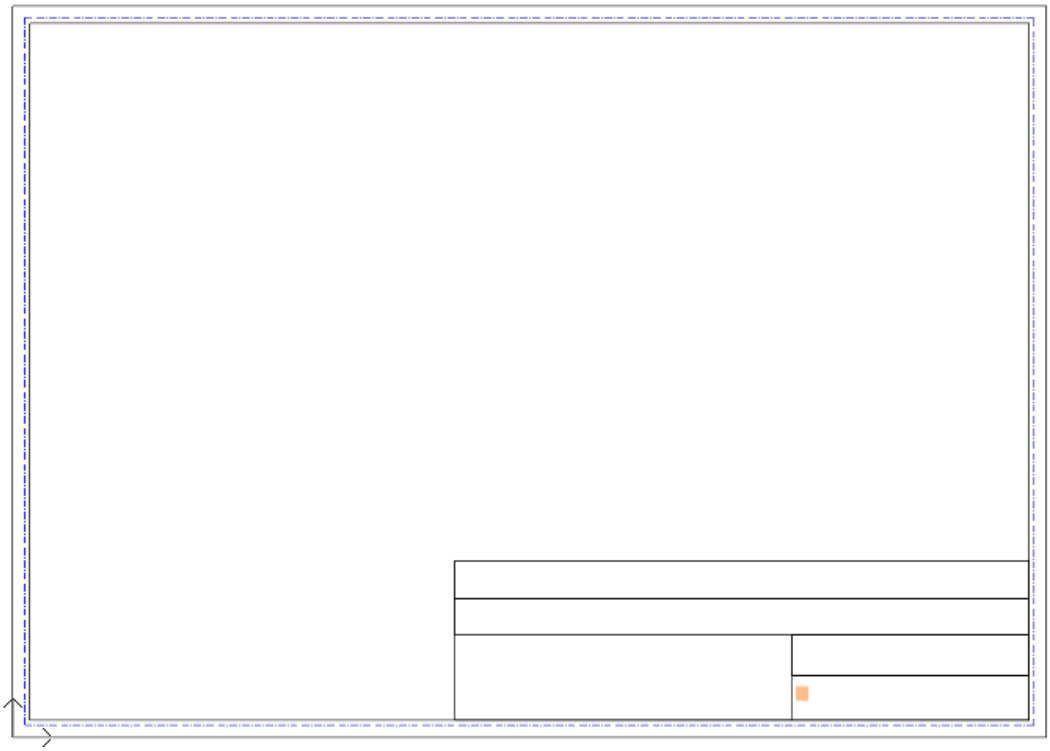




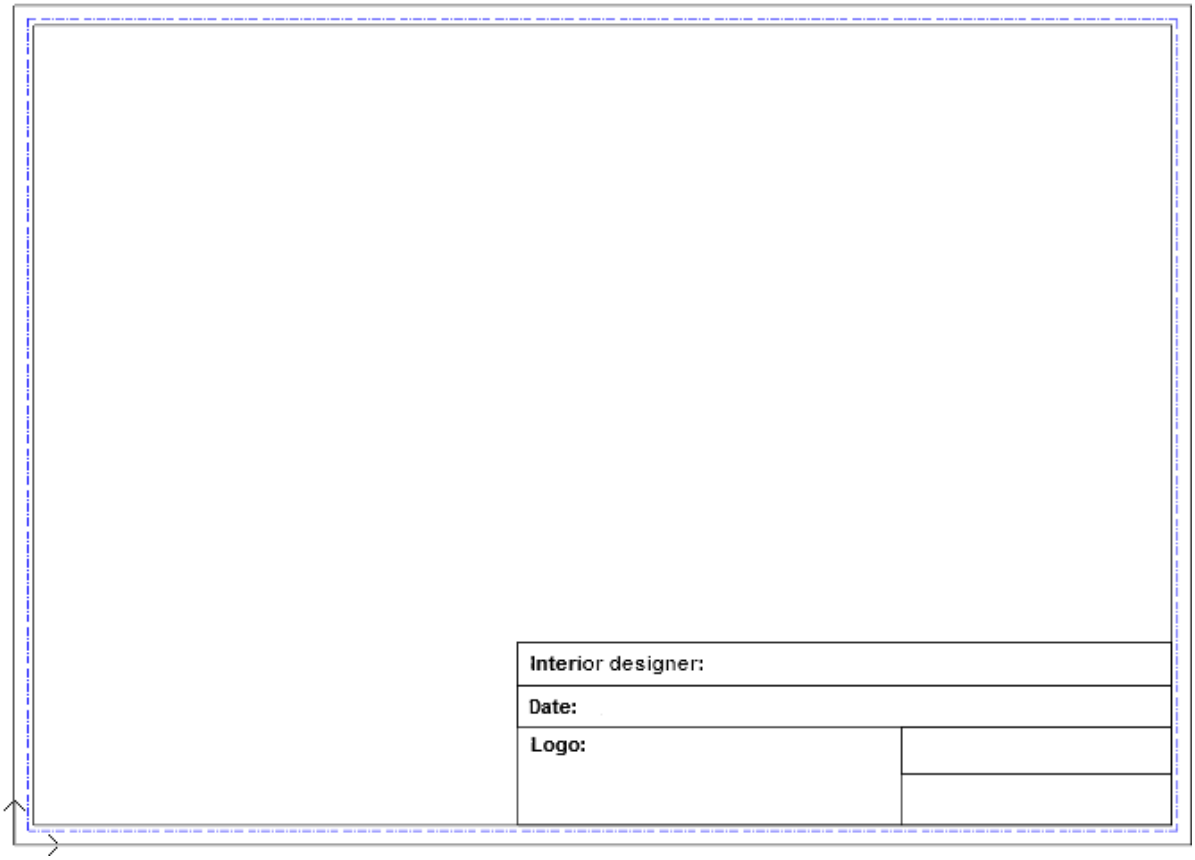
The offset is needed in case the contour of the plot stamp and the border line of the printing area are overlapping each other; therefore, it won't be visible in printing.



- Using additional rectangles in the plot layout you can create the final layout of the stamp as it is shown below:



- Insert a label (e.g., customer, designer, name of plan, scale, date, logo, etc.) by using the **Ribbon bar / Drafting / Text / Place it** command in the plot stamp.
- Depending on the most recently used settings, change the text size to 5-10 mm to fit in the columns.

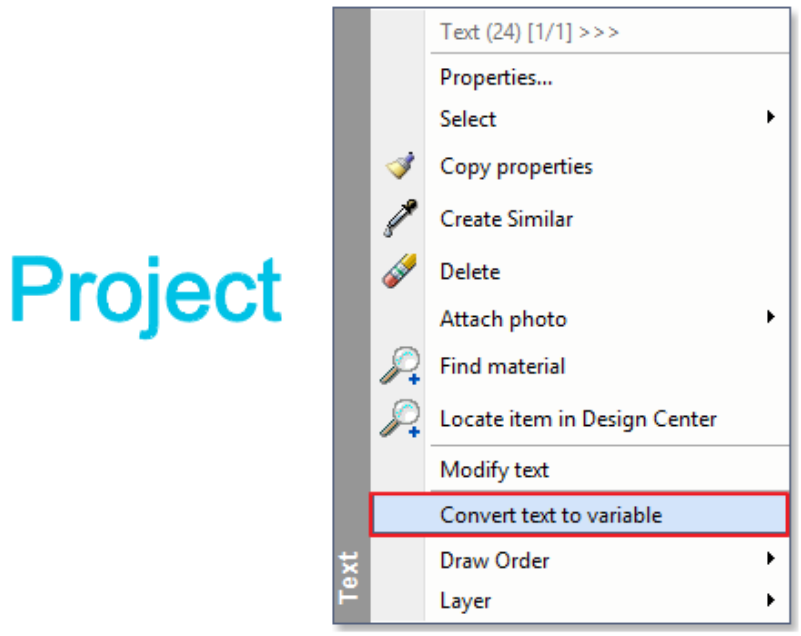


- If you want to place a logo / image in the plot stamp, you can do the same way like in the mood board, follow the steps as it is described in Chapter 5.2.3.

Convert text to variable

When all constant texts are placed, then assign variable text to it, which could be filled individually after placement. These parametric texts could be the sample texts shown in the following example: "Family Home", "Stephen Smith", etc., or general texts, e.g. "Plan Type", "Client Name", etc. Choose the solution that you can work with more easily.

- Under **Ribbon bar / Drafting / Text** use **Place it command** to fill the plot stamp. It is important that the text should not contain any special characters (dots, commas etc).
- Now set the proper height of the text, then right click on it and select “Convert **to variable**” command option.

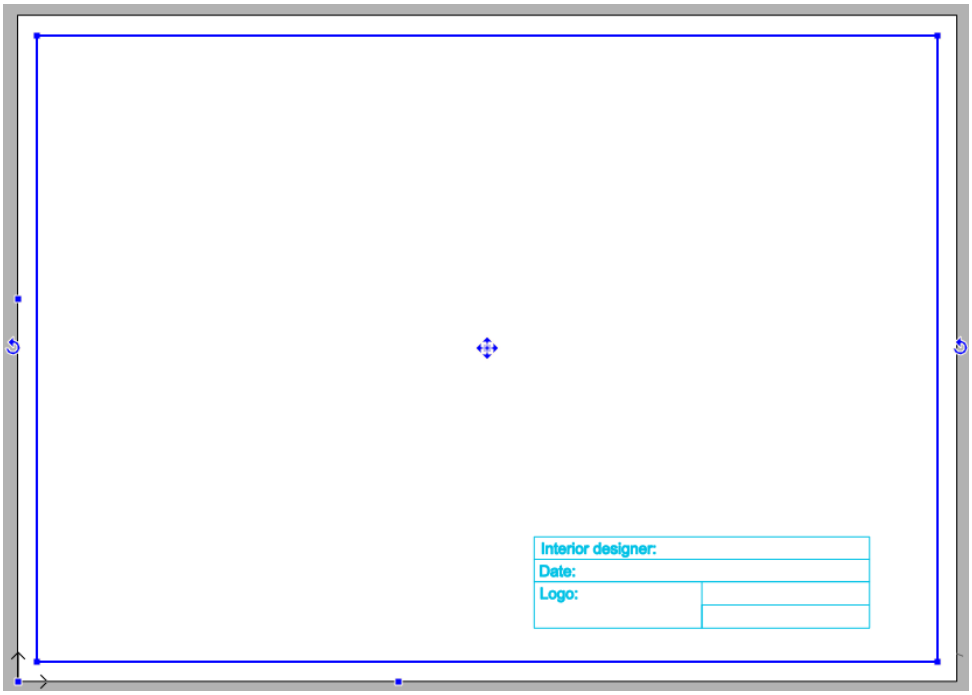


- Now the text is converted to variable which is indicated by the $ sign.

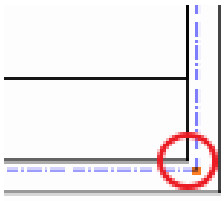
Save the plot stamp

When you have finished setting up content, it is recommended to save the plot stamp. It will be available later and make easier the documentation.

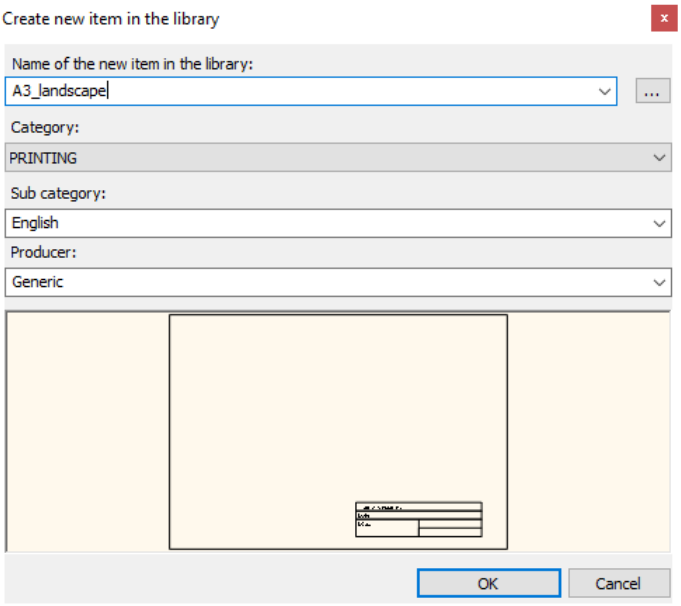
- Select all elements of the plot stamp, but make sure that the plot layout is not in the included. The simplest way of this, to select the entire page and its contents with a rectangle. Then press SHIFT down and click on the side of the page, now its colour will change to black, while the contents of the stamp remain blue.



- Select Ribbon bar / Drafting / Group / Create group in library command.
- Specify the reference points of the plot stamp, which you will be used for placing it later. As a reference point it is useful to select the corners of the printing area. This way when you place it later, the plot stamp will always be within the print range.



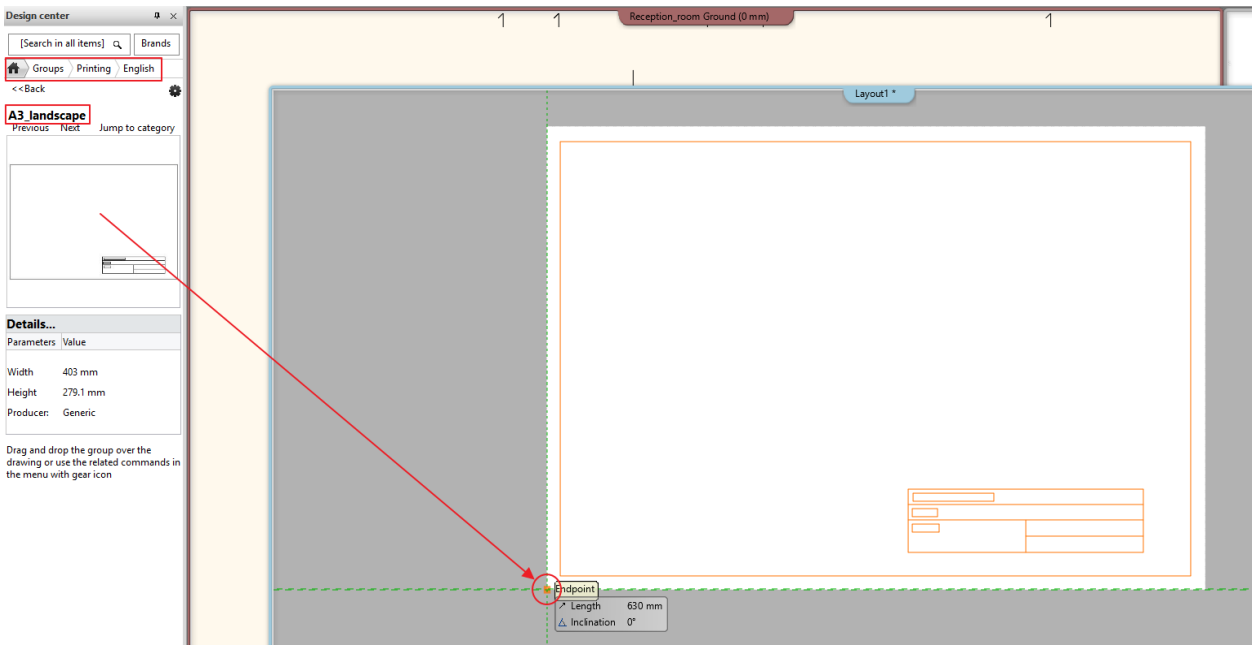
- Press ENTER and the "Create new item on the library" window appears.
- Type the name of the library element (e.g. A3_landscape).
- Define the category and subcategory of the item (e.g. PRINTING / English), and then click OK.



Use the plot stamp

You can always use the saved plot stamp as a group and place it on the plot layout at any time:

- Open another empty plot layout.
- The plot stamp is located in the **Design Center / Building / Group** category, where it had been saved before (Printing /English). Find it in the library.

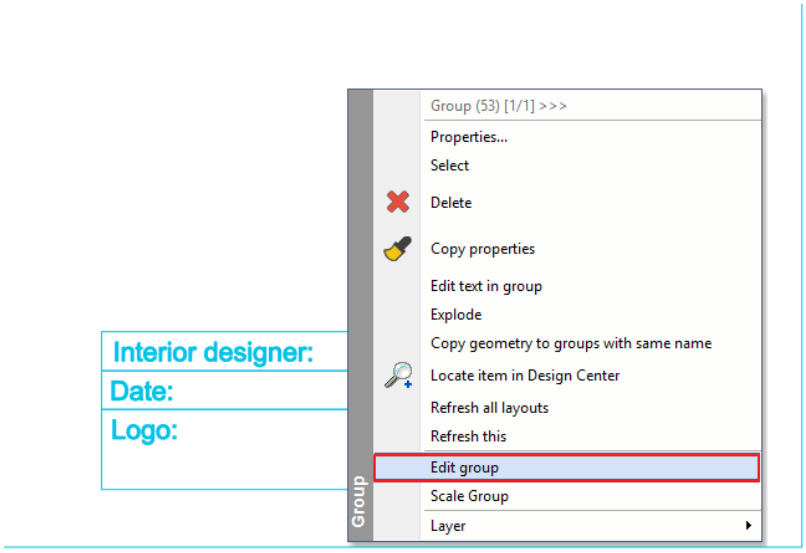


- Simply use “drag and drop” method and place it on the empty plot layout in the bottom left corner.
- In the appearing table you can enter all parameters marked with grey colour, which are different in each project. This will only appear on the stamp only if the second column is also filled. Static texts are below and marked with white. These are also on the stamp and can be modified here as well.
- The stamp can be filled in the table or after placement select the plot stamp and click on the variables.
- Right clicking on the side of the plot stamp and choose “**Edit text in group**” command you can open the table if you want to fill the plot stamp details there.
- You can copy details to the plot layout by using the method described in Chapter 5.7.2.

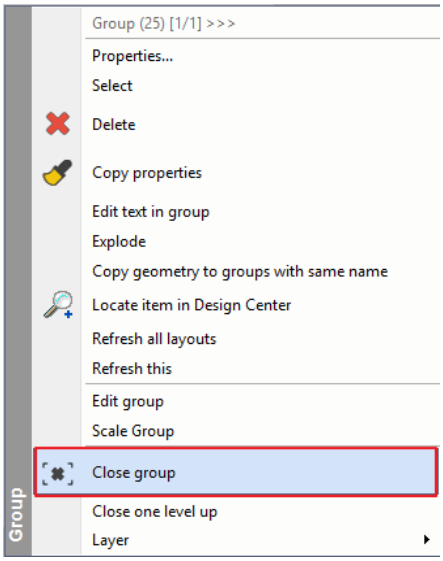
Modify the plot stamp

If it is necessary the saved plot stamp can be also modified after placing it:

- Select the plot stamp and choose Edit group from the Local menu, the contents of the plot layout turn grey.



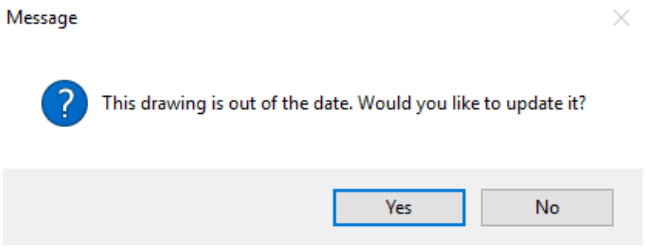
- Then you can modify the elements of group (text, lines).
- After making the changes, make sure to close the group by using the Close group command in the Local menu. (3)



5.7.7. Other modification options

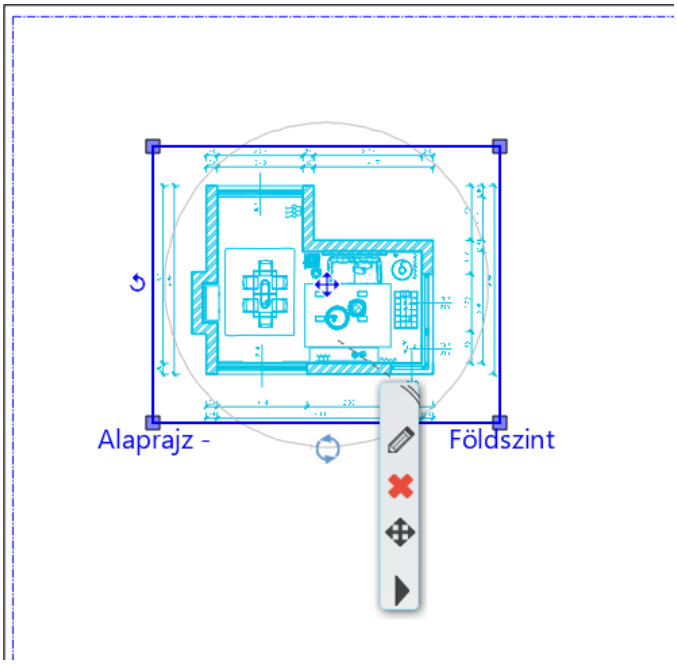
Update Drawing

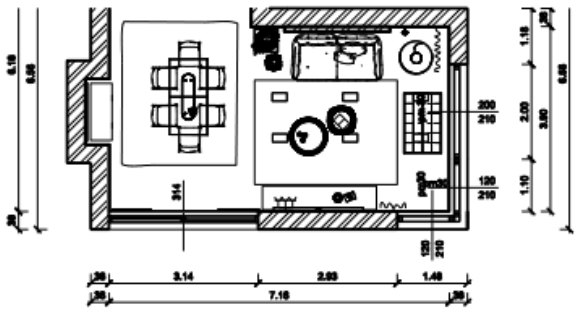
If we continue the work on the floor plan, and make adjustments on it, after we saved this project a new message appears on the plot layout by clicking on the floor plan. This reminds us that our drawing is out of date and needs to be updated.



Cut off from plan

The next modification option is the cutting plan function. Clicking on the plan, a blue frame appears which can be used to change the plan. You can now edit by using the Offset command. With this option these will not be permanently cut off from the plan, it will be only hidden, which can be restored at any time.



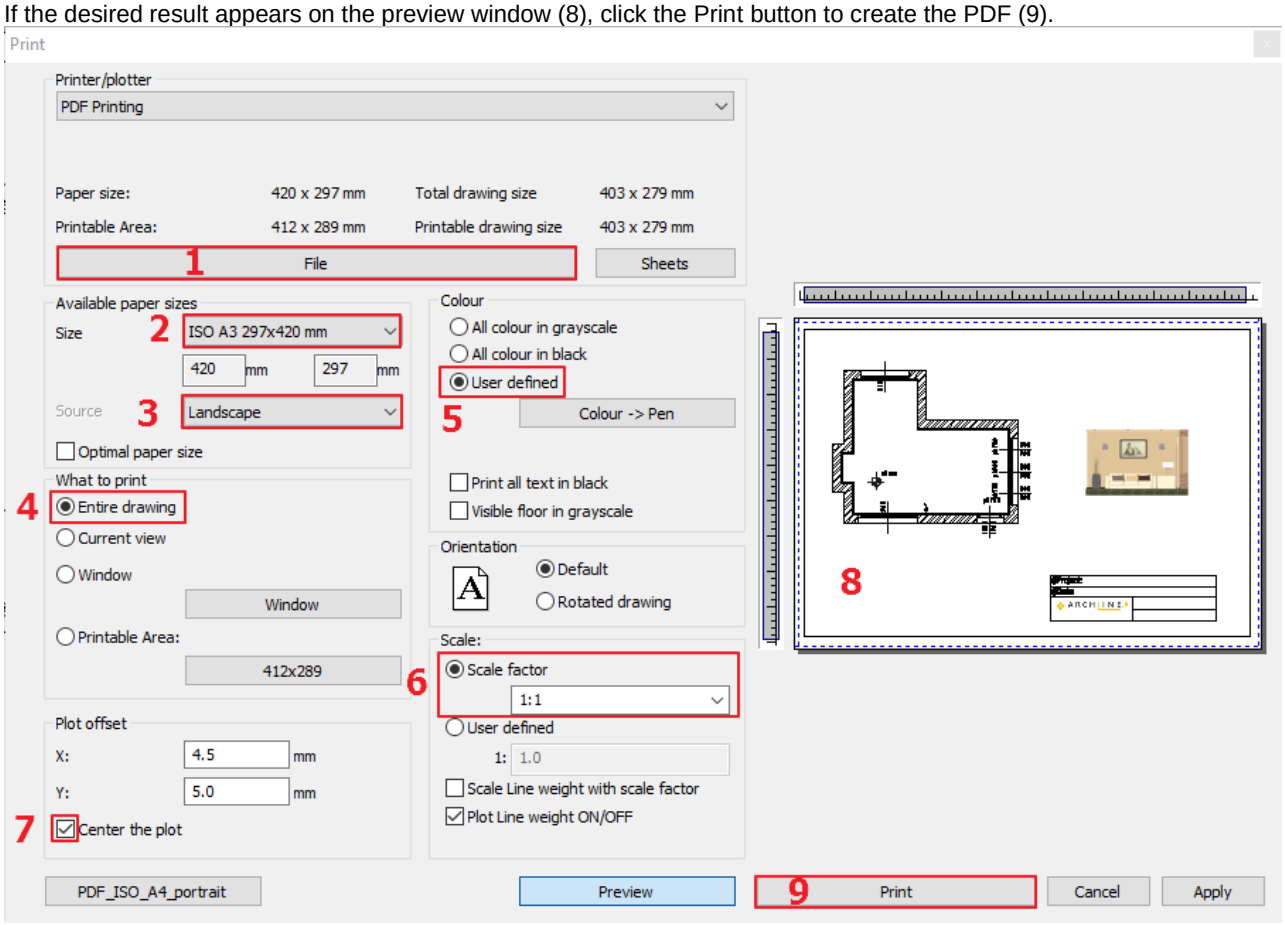


5.7.8. Print to PDF

Printing the plot layout into PDF format happens the same way as it was shown in case of the mood board. These are the followings:
Choose the **File menu - Print to PDF** command and set the following properties in the dialogue window:

- **File:** Here you can specify the folder under the PDF will be saved and the give name of the file. (1)
- **Available paper sizes:**
  Size: A3 (The same paper size as the plot layout) (2)
  Source: Landscape (3)
- **What to print:** You can choose to print your entire plot layout, or just one of the pages. In this case, you can change the "Window" option. (4)
- **Colour:** User defined (5)
- **Scale:** Scale factor 1:1 (6)
- **Plot offset:** Center the plot (7)

If the desired result appears on the preview window (8), click the Print button to create the PDF (9).



PDF is created in the predefined folder under the specified name.

Workshop 6: Lights

6. Workshop: Lights

During this lesson you can learn about the following topics:

- Placing lamps from the library
- Placing and modifying recessed spot lamps
- Creating a new lamp, adding light sources, saving it to the library
- Modifying the directions of sport lamps
- LED strips
- Luminous text

- Please open the following playlist in your browser:
  https://www.archlinexp.com/education/workshops/workshop-application-preliminary

Please download **Workshop - Preliminary level project** from our website and install it. It includes all projects for all preliminary workshops.
https://www.archlinexp.com/education/workshops/workshop-application-preliminary

Start

- Start ARCHLine.XP.
- Click on the **Open project** button.
- Open the following project: *Documents\ARCHlineXP DRAW\2020\Workshop - Preliminary\Lights\1_Lighting_workshop_START* file.

Saving the project

- Before starting, we recommend to save the project with a different name, not to overwrite the original project. Select the **File / Save project as** command, then give the name of the new project and the place where you want to save it.

Before starting, it is essential to discuss the following definitions:

Light source: A special point, line or area from where light beams start and spread in the space.

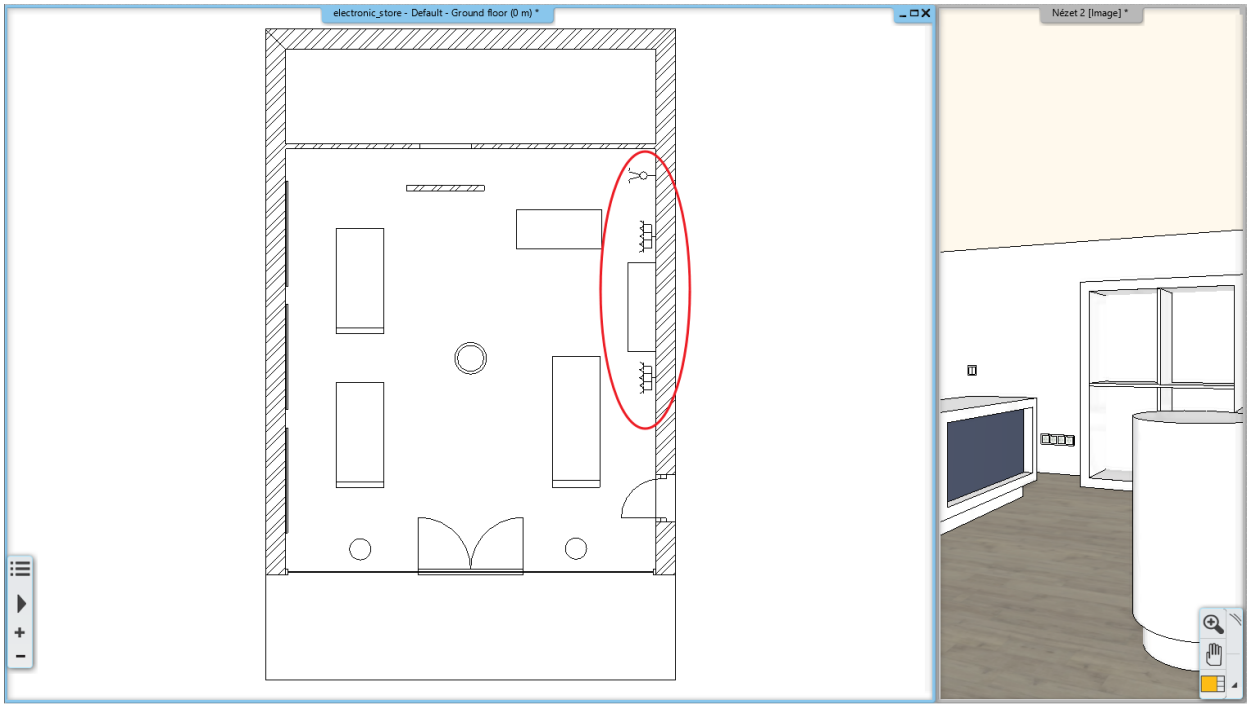
Lamp: This is an object with one or more light sources.

6.1. Placing lamps from the library

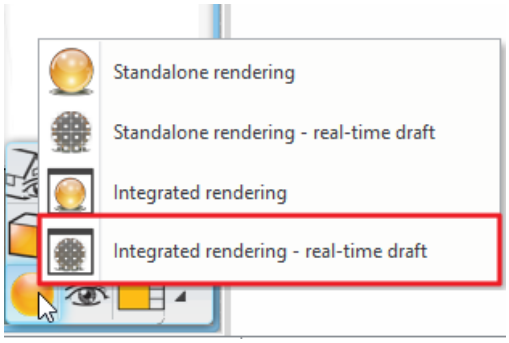
Let's place two wall lamps in the project from ARCHLine.XP Design Center.

6.1.1. Placing lamp on the floor plan

- Activate the 2D window. In the 3D window select a perspective view, from where the right wall is visible and lamps will be placed on.

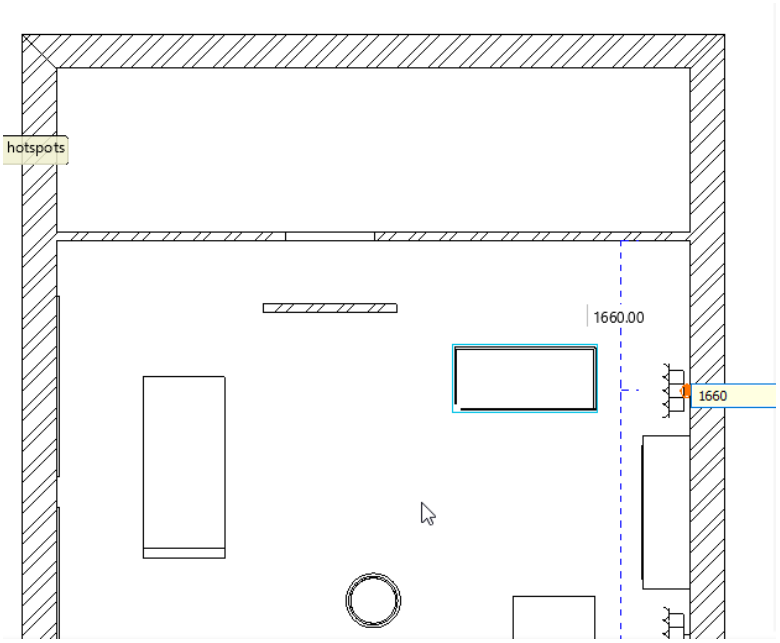


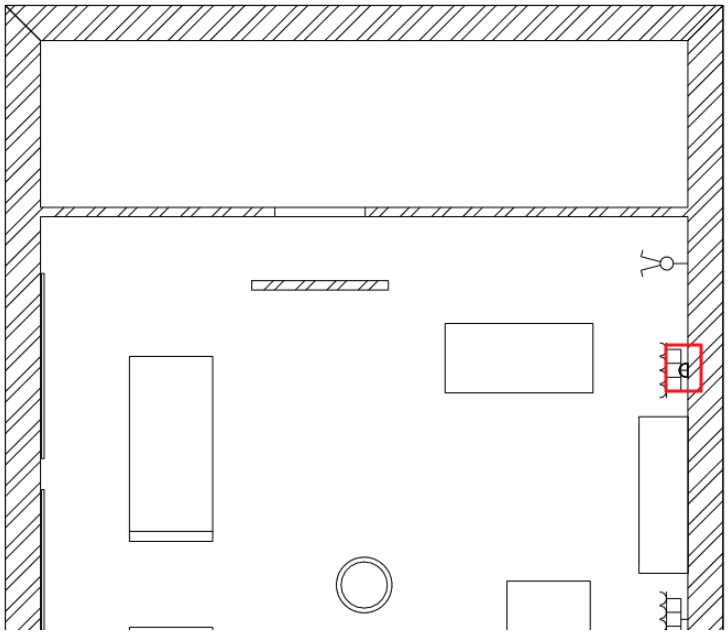
Before placing the lamps, start an Integrated rendering – real-time draft, so you can follow the change of lights in the project during work.



- Zoom in the upper corner of the right wall on the floor plan.
- Select from the **Design Center / Catalog / Objects / Lighting / Wall lamps** library the object named “Wall lamp 3”. Click on it.
- Before placing the lamp, modify its base offset from the floor to 1600 mm, then hit Enter.

- With the “Drag and drop” method drag the lamp into the project and place it to 1660 mm from the upper corner. Just type in the value and hit Enter.
- Hit ESC to close the command.
  With this method you can place any lamp from the Design Center to the layout.

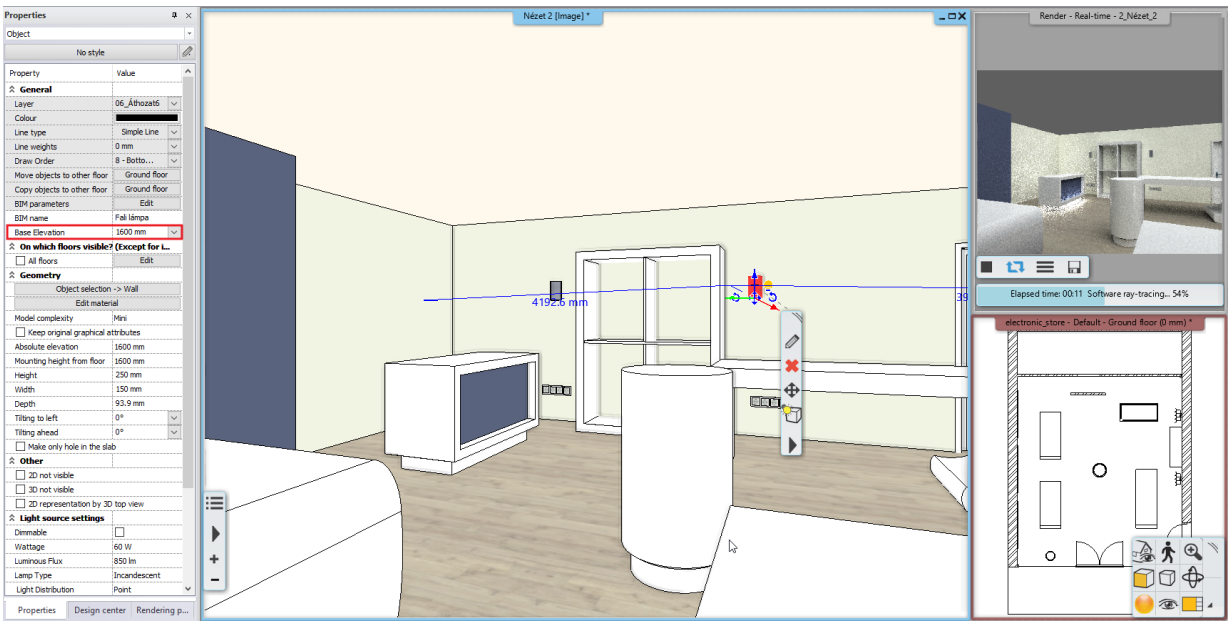




6.1.2. Placing lamp in 3D

- Activate the 3D window.
- In Design Center click on the wall lamp and drag and drop it on the floor plan next to the cupboard.
- After placing it, select it and rewrite its Base Elevation to 1600 mm on the Properties panel on the left side.

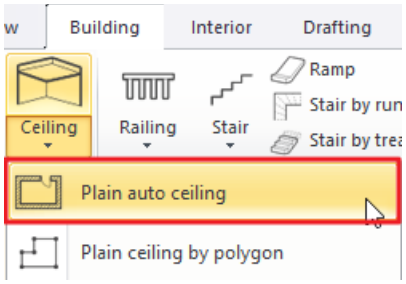
  This is how you can modify posteriorly an already placed lamp.



6.2. Recessed spot lamps

Let's place spot lamps on the ceiling. First, we have to create the ceiling of the store.

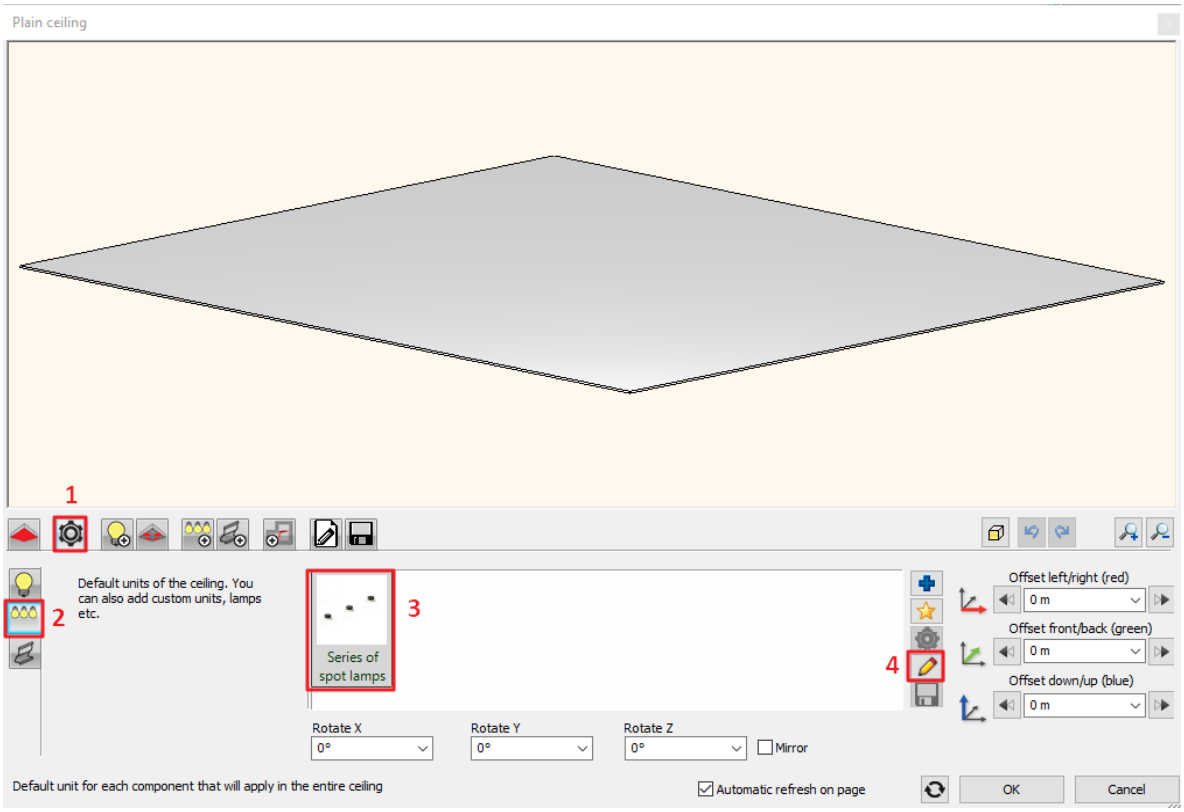
- Activate the 2D window.
- Click on the **Ribbon Bar / Building / Ceiling / Plain auto ceiling** command. When clicking into the room the ceiling is automatically created.



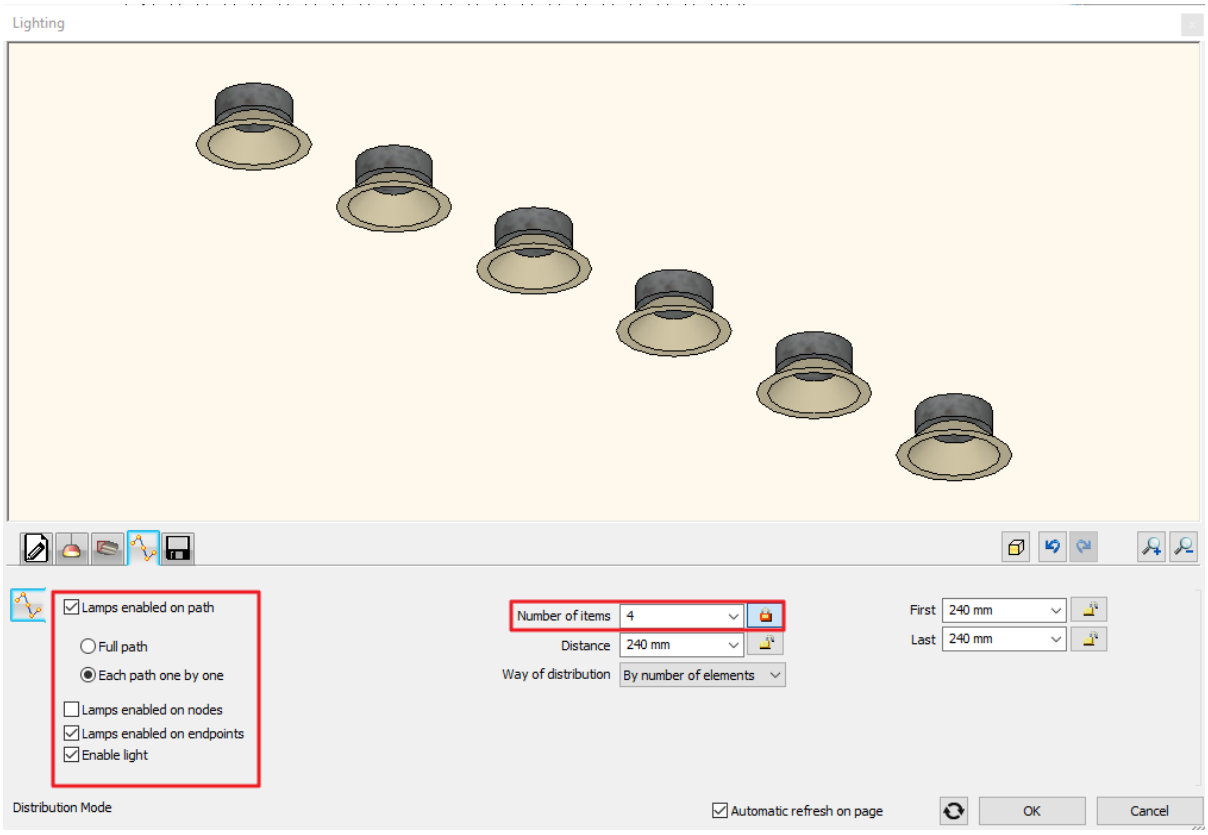
- Modify the base offset of the ceiling. Select the ceiling and rewrite its Base Elevation to 2680 mm on the Properties panel on the left side.
- Open the properties of the ceiling by selecting it and clicking on the pencil icon on the appearing Local menu.

We will place 4 rows of spot lamps into the ceiling, with 6 spots in each row. First, we set the global properties of the lamp groups.

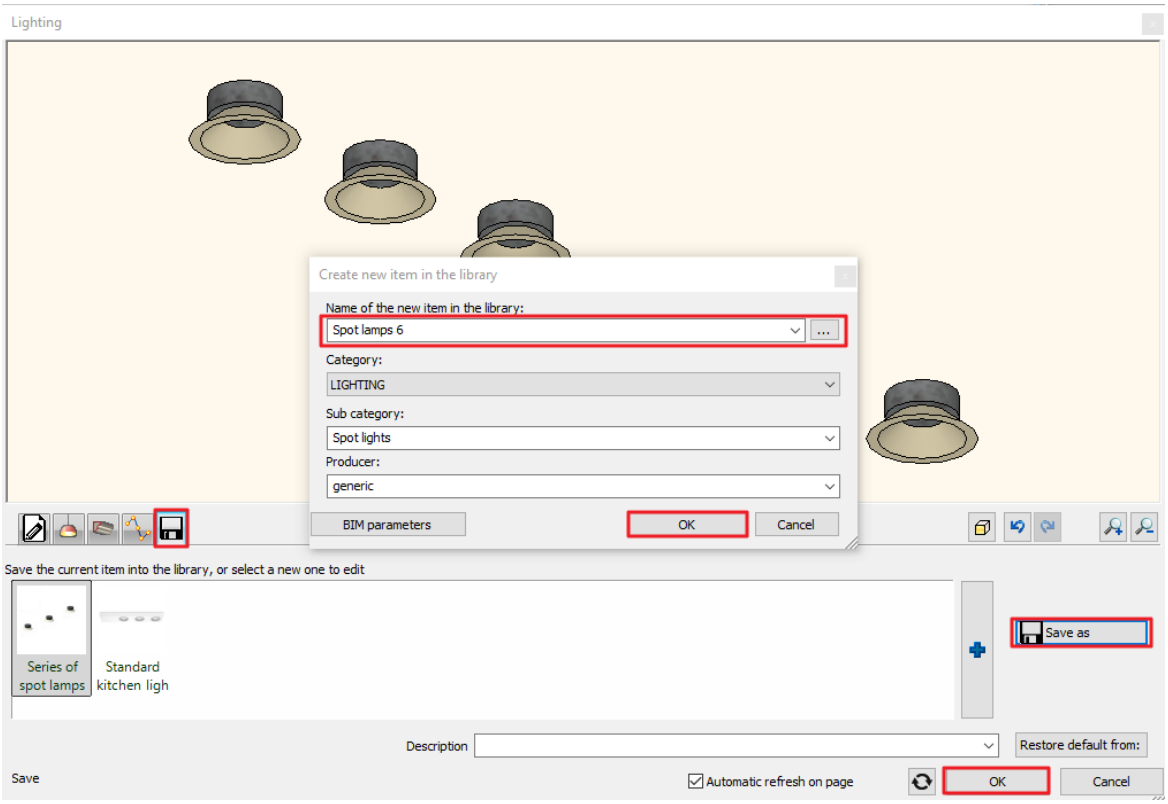
- Select the tab with the cogwheel icon (1). From the Lighting tab (2) select the lamp named "Series of spot lamps 600 mm" (3).
- By clicking on the pencil icon, you can further modify the selected element (4).



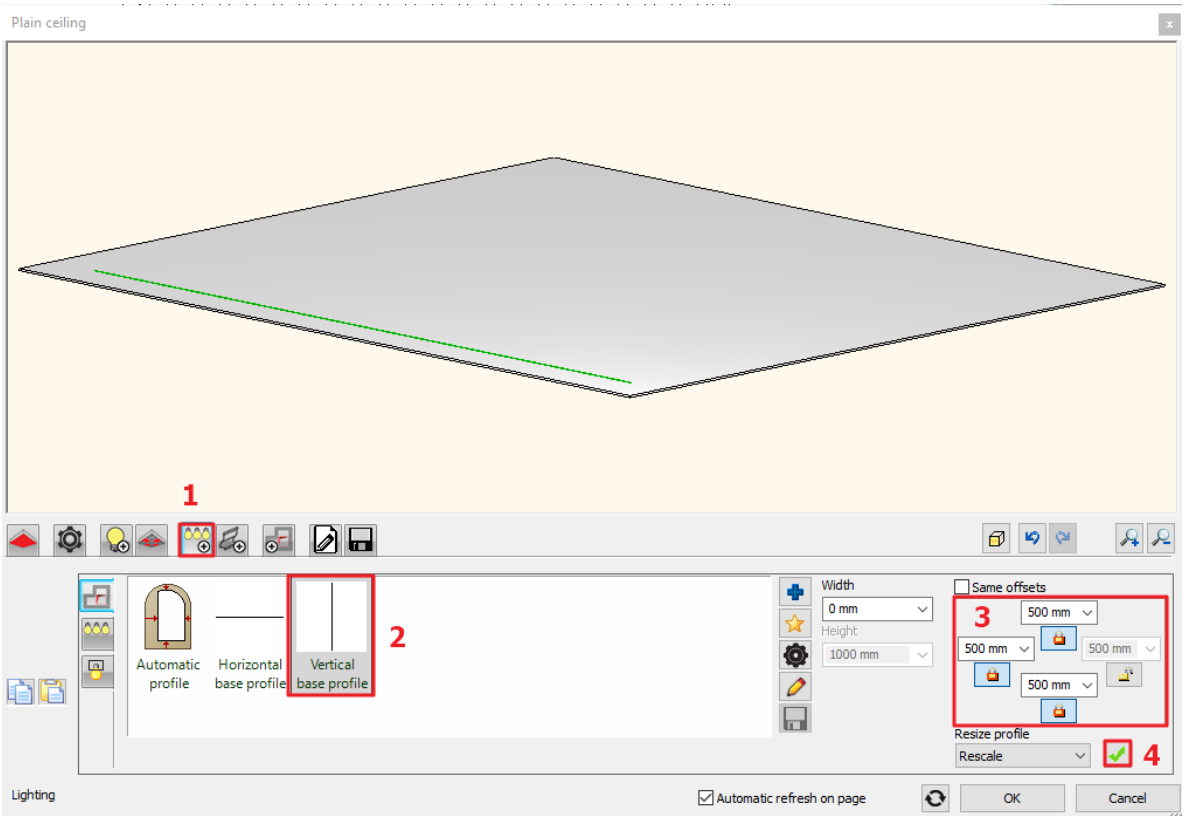
- On the Distribution Mode tab left the **Lamps enabled on path option** on, and below that activate the **Each path one by one** option.
- Switch off the **Lamps enabled on nodes** option.
- Left the **Lamps enabled on endpoints** option on and rewrite the **Number of elements** to 4. Left the other options on the default settings.



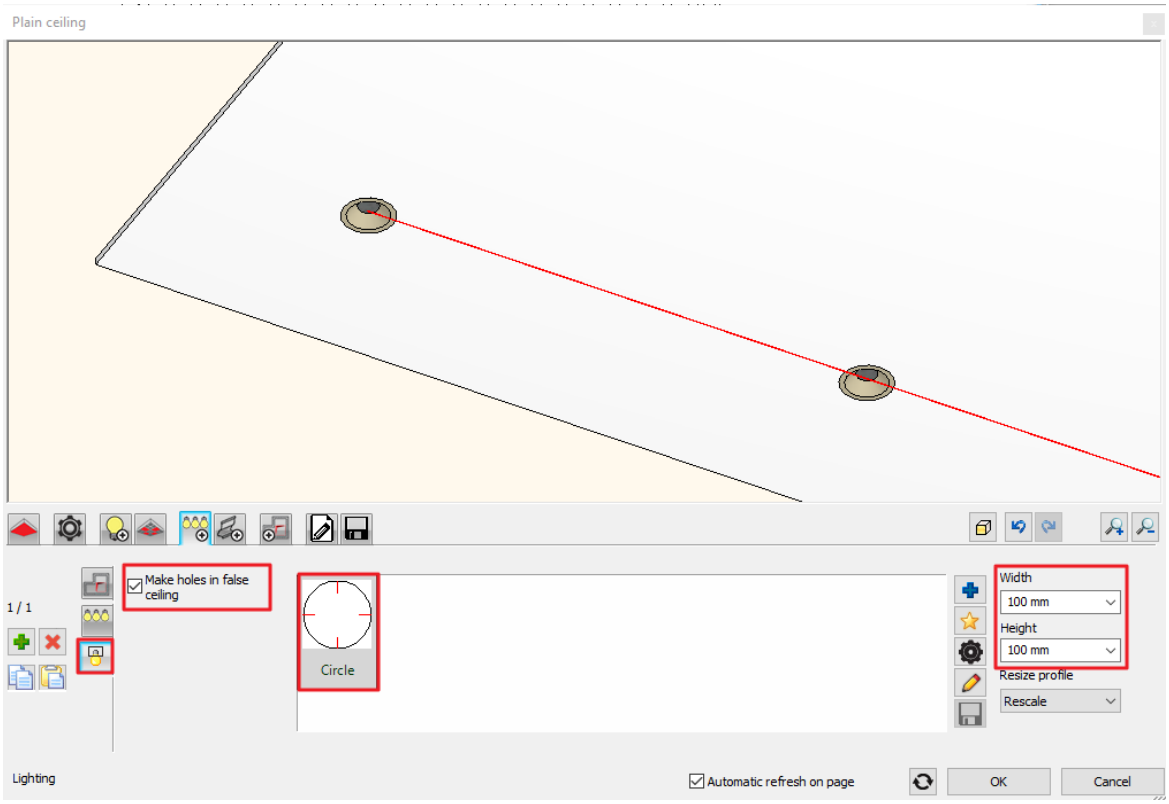
- Save the lamp group on the Save tab as “Spot lamps 6” then return to the ceiling by clicking on the OK button.



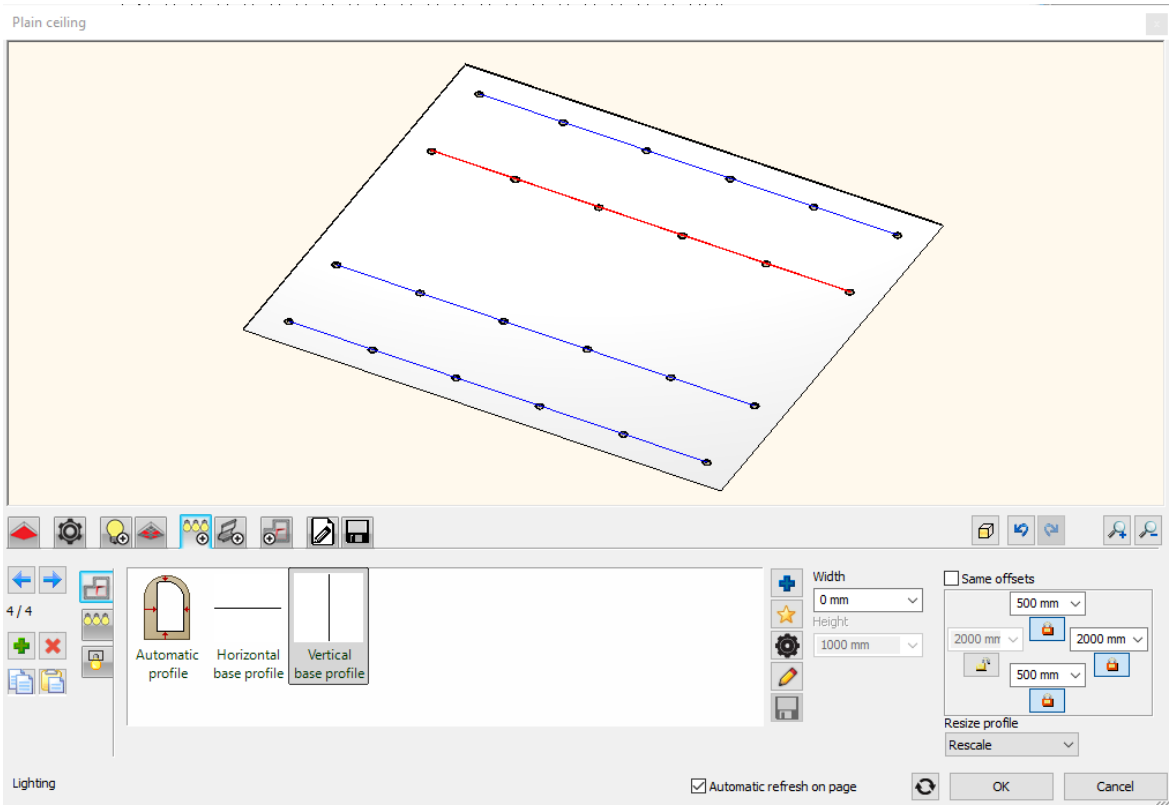
- Let's sink the spot lamps **40 mm** into the ceiling. Rewrite the value of **Offset down / up** to **40 mm**.
- Let's go to the Lighting tab (1).
- The path of the lamp group will be a straight line. Select the profile named "Vertical base profile" (2).
- The first and the last lamp should be 500 mm from the edge of the ceiling, and the path should also be 500 mm from the left edge of the ceiling. Rewrite the values (3), then with the green tick place the first lamp group (4).



- On the Cut tab activate the **Make holes in false ceiling** option.
- Modify the parameters of the cut. Select the Circle profile, rewrite the Width and Height values to 100 mm.



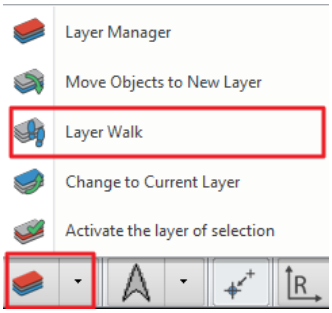
- Let’s go back to the Moulding path tab.
- Click on the green plus to add the second row 2000 mm from the left edge of the ceiling using the previously set values. After that place the third and the fourth row to the right side, mirroring the first and second rows.
- With the OK button close the dialogue.

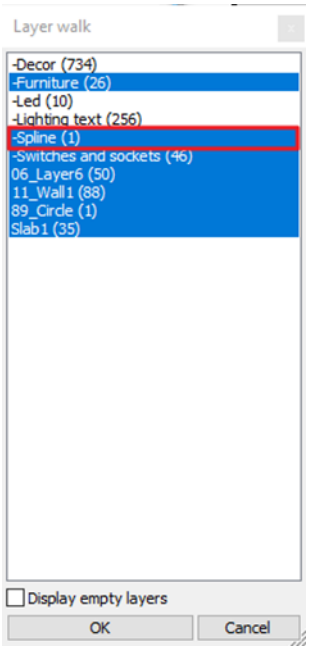


6.2.1. Placing spots to a given profile - optional

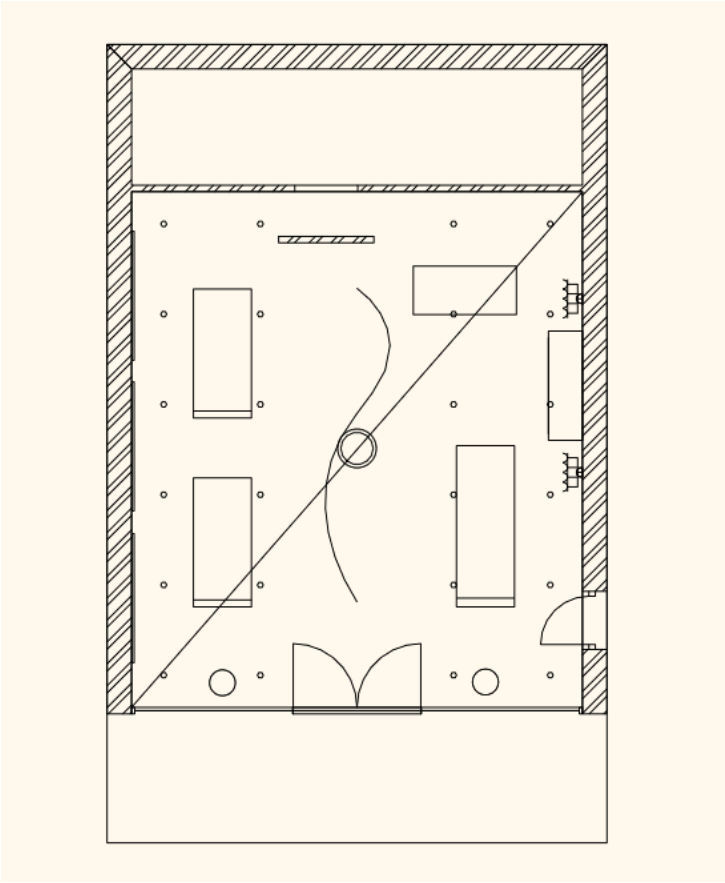
The next step is to place 10 spot lamps to a previously drawn arc in the middle of the ceiling. Allocate to the plain ceiling 5 lamps, then define its path on the floor plan.

- Activate the 2D window.
- Select the previously drawn profile by clicking on the Layer walk icon and while holding the CTRL key, activate the Spline layer.





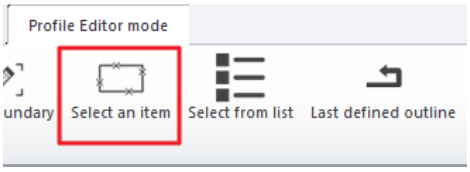
- With the OK button close the Layer walk and the arc appears.



- Open the properties of the ceiling again.

Go to the Lighting tab and add a new profile by clicking on the green plus icon. This will not be a simple straight line so click on the Define profile button. .

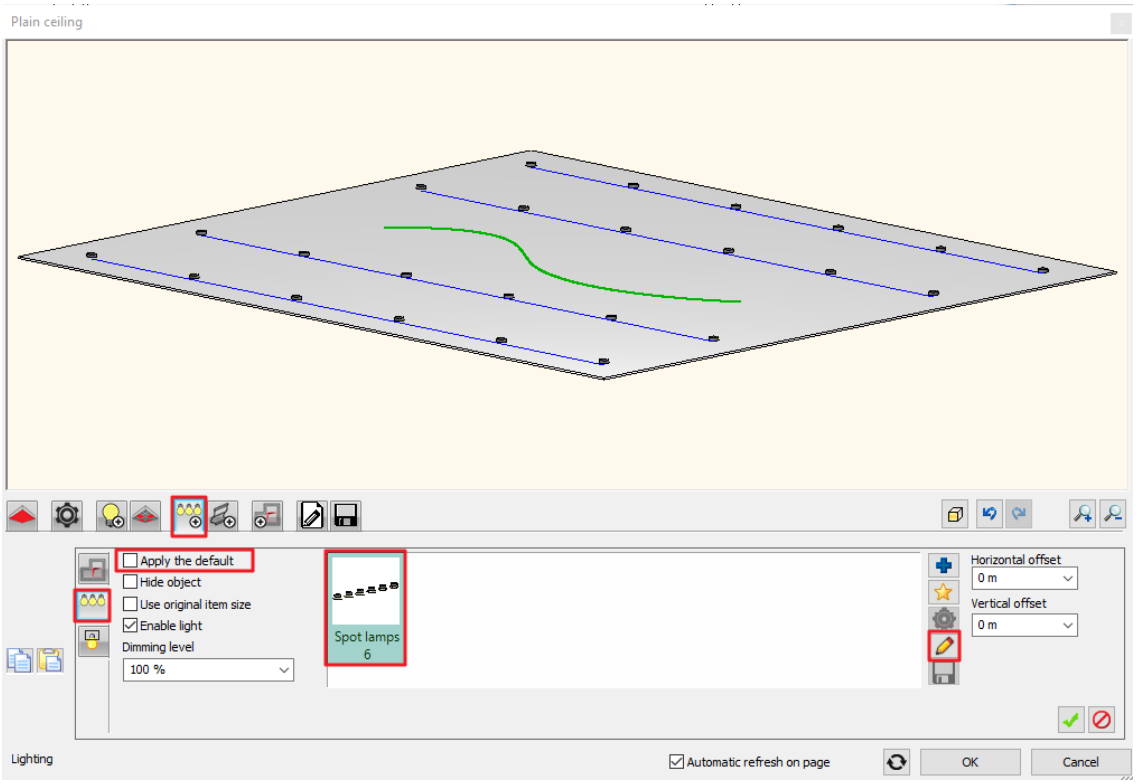
- Chose the **Select an item** option from the Ribbon Bar.



- Click on one point of the previously drawn arc.

  Do not use the “Spot lamps 6” lamp group here.

- Go to the Lighting / Pattern tab and untick the default settings.
- Select the “Spot lamps 6” lamp group and click on the pencil icon.

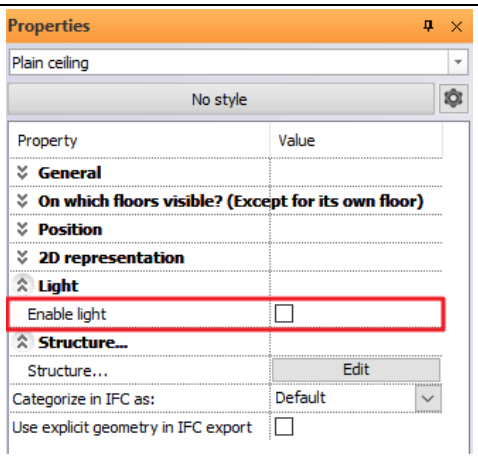


- On the Pattern tab set the **Number of elements** to 8 and tick the **Full path** option.
- Left the other settings unchanged. Close the dialogue with the OK button. Click on Yes in the appearing dialogue.
- Sink the spot lamps 40 mm into the ceiling here as well. Rewrite the value of the Offset down / up to **40 mm**.
- Click on the green tick to create the lamps and close the dialogue with the OK button.

  You will see the changes in the render window.

Turn off the ceiling light.

- Click on the plain ceiling.
  Under properties switch “Enable light” option off.



6.3. Creating new lamp

When (for example) we download an object from 3D Warehouse, it has no light source automatically attached, so it will not have light and will not be a lamp on our renders. To have this effect, we need to add light sources to this object, then save it to the library including the light sources.

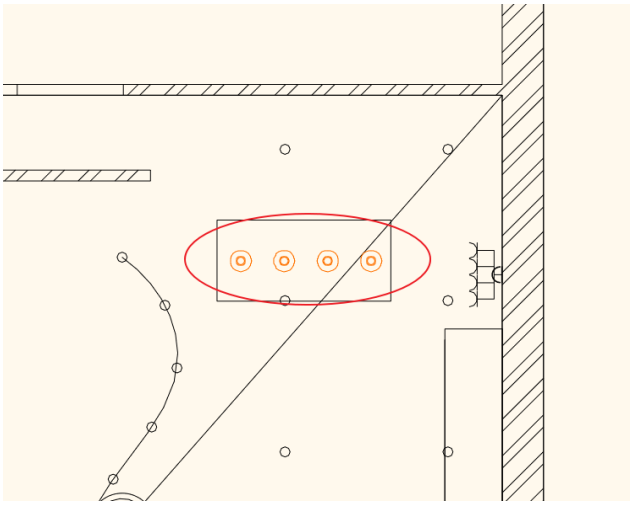
The saved object now can be used as a lamp and its light can be switched on and off in the project. (However, it is IMPORTANT to know that object whose name includes words which are related to lamps (e.g.: lamp, chandelier, light etc…) are downloaded in such a way that a light source is automatically added to them. However, this almost always needed to be modified afterwards since the program always places the light source to the lower middle point of the object).

(The lamps downloaded from the 3D Warehouse, to which the program automatically ordered a light source are not in the 3D Warehouse / Other folder but in the Lighting / 3D Warehouse folder).

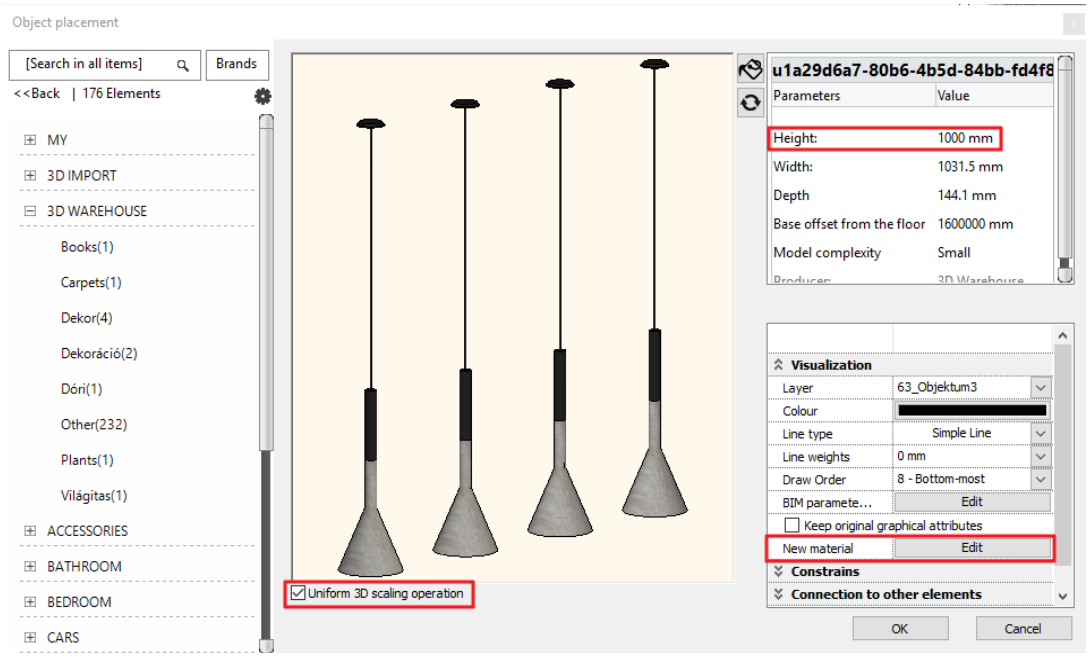
Let’s see the process of creating a new lamp.

- Click on the **Design Center / Catalog / 3D Warehouse** icon and download the object named the following: “Concrete ceiling lamp”.

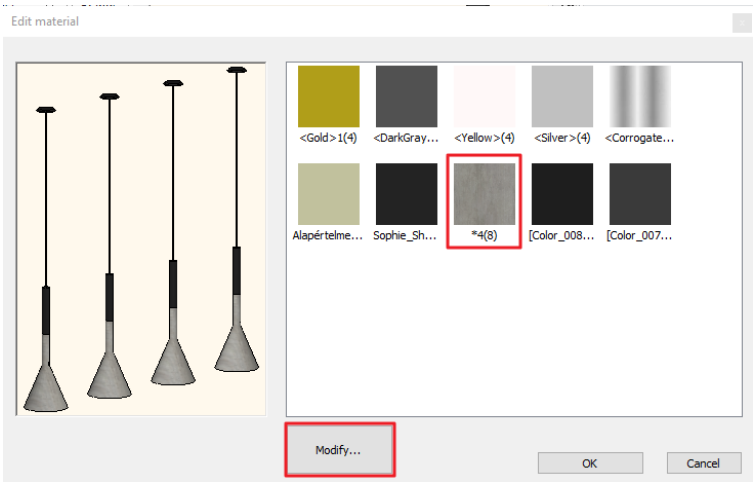
- After download, place the new object near to the right corner of the store.

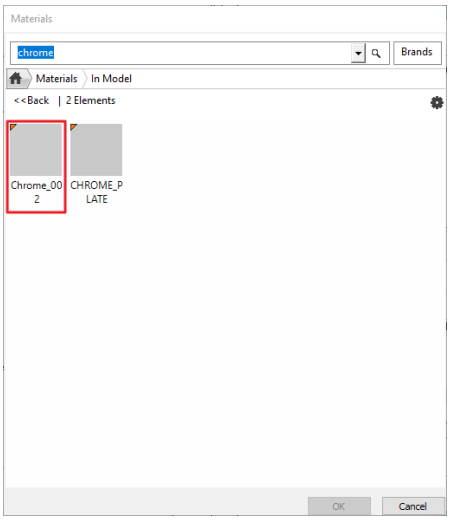


- After placing it, you can modify the object.
- Select it, then open its properties by clicking on the pencil icon.
- Before modifying any of the values, tick the **Uniform 3D scaling operation** option below the preview of the lamp.
- Rewrite the height to 1000 mm.
- Modify the material of the lamps, Click on the Edit button in the New material row.



- Click on one of the lamps on the preview window, and modify its material by clicking on the Modify button.





- Select the “Chrome_002” material from the Material library.
- Close the dialogues with the OK button.

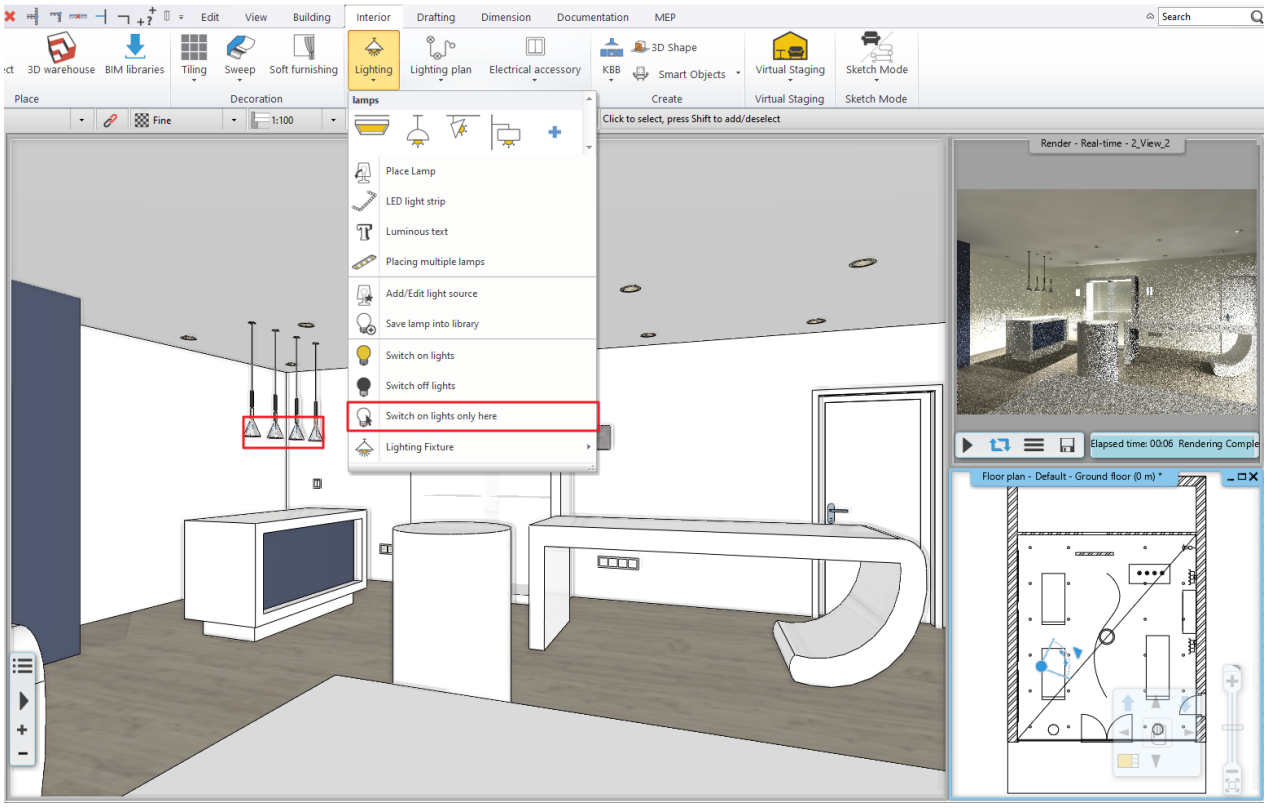
The material of the lamp has been modified but the lamp is not at the right place yet.

- Select the lamp again and rewrite its Base Elevation to 1680 mm on the Properties panel appearing on the left, then replace it above the desk.

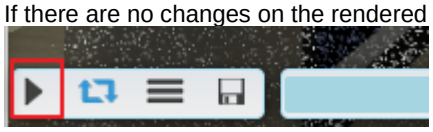
Switch off all the lamps in the store, except the previously placed one.

- Select “**Switch on lights only here**” command under **Ribbon menu / Interior / Lights**.
- Click on the recently placed light.

Follow the changes in the render window the wall lamps are switched off while the ceiling lamp is brightly lights.

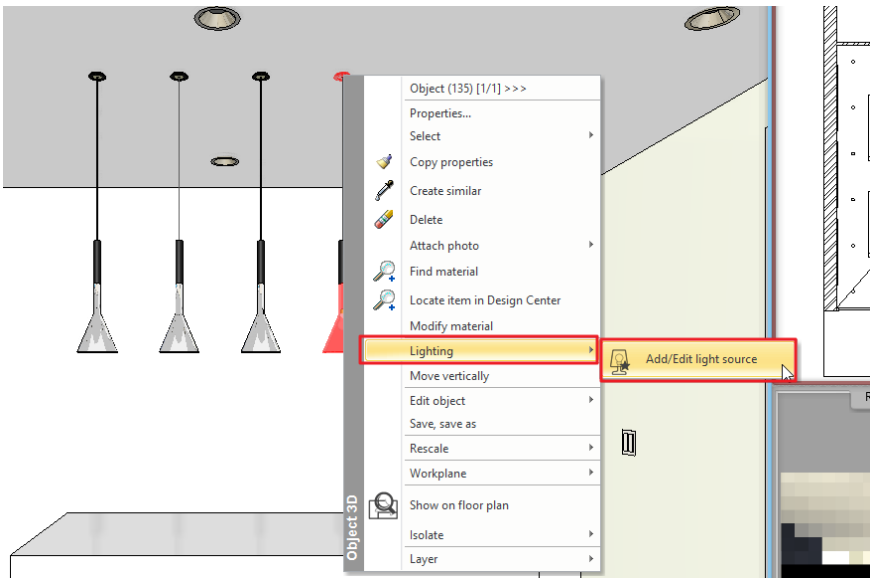


If there are no changes on the rendered image, then it worth to refresh the rendered image by pressing the play button.

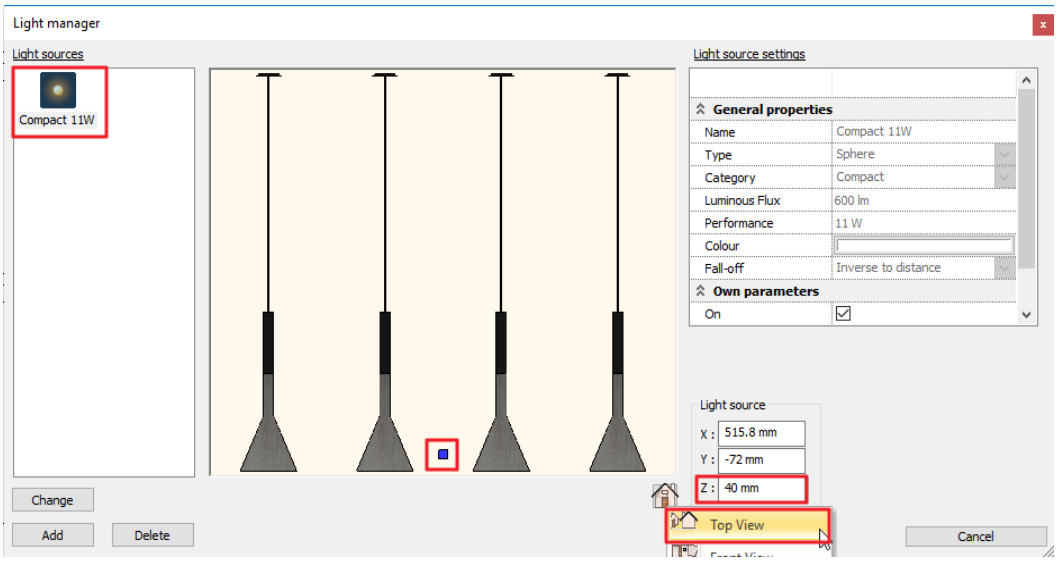


6.3.1. Adding light source

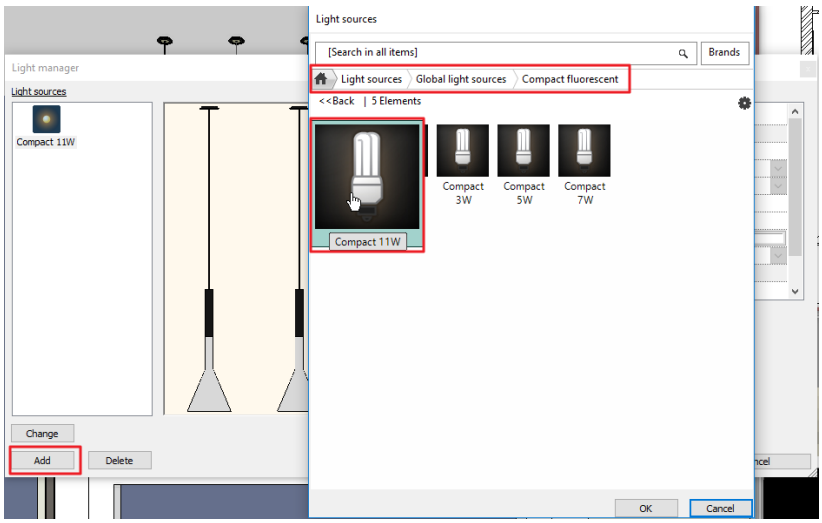
The name of the downloaded object contained the “lamp” word; therefore, the program automatically added a light source to the bottom centre point. This is visible now on the picture. Obviously, it is not on the right place, therefore we have to add three more light sources.

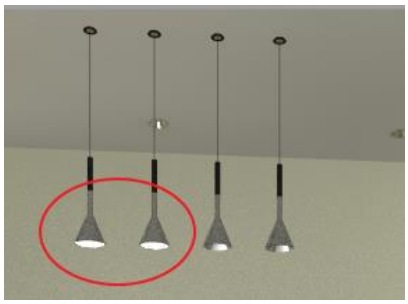


- Activate the 3D window.
- Select the lamp and from its Local menu select the **Lighting / Add / Edit light source** command.
- The Light manager appears. At the moment there is only one light source added to the lamp, but it is not at the right place.
- Rewrite the Z value to 40 mm and select the Top view.



- In this view the light source could be adjusted exactly to the middle of the lamp.
- Add 1 more light sources to the lamp by clicking on the Add button. From the library select the **Global light sources / Compact fluorescent / Compact 11W** light source.





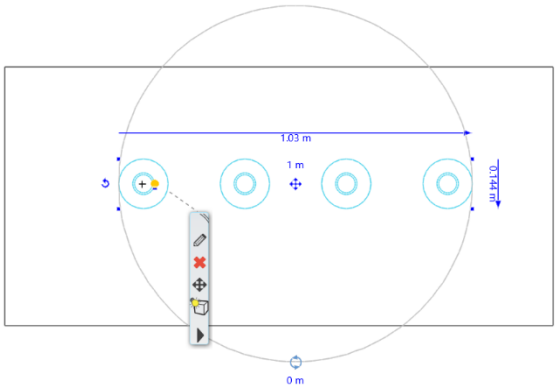
- Rewrite the Z value to 40 mm at the second light source from left and relocate it using the Top view. Close the dialogue with the OK button when you are finished.

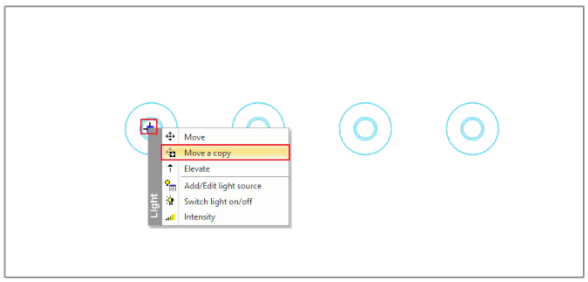
  Check the modifications in the render window as well. Now the first two lamps from left are turned on.

Copy light sources on floor plan

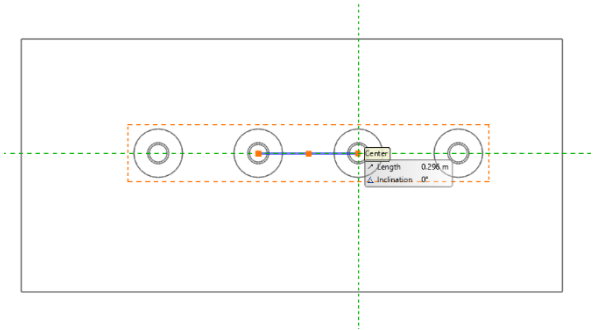
The missing lights sources will be copied from the existing lampshades.

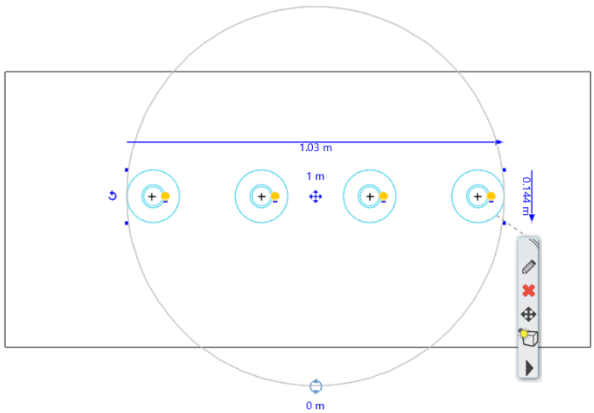
- Select the ceiling lights on the floor plan.
- Click on the second light sources.
- Click on the blue markers and choose "**Move a copy from**" command.





- Click in the middle of the third lampshade.

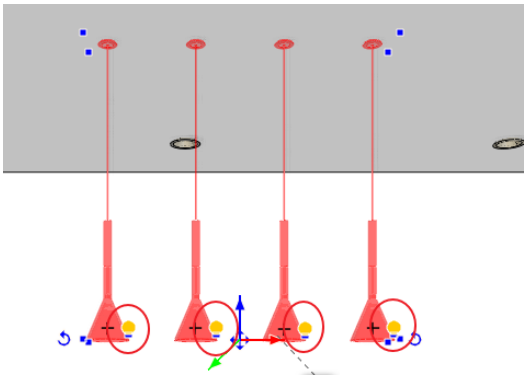




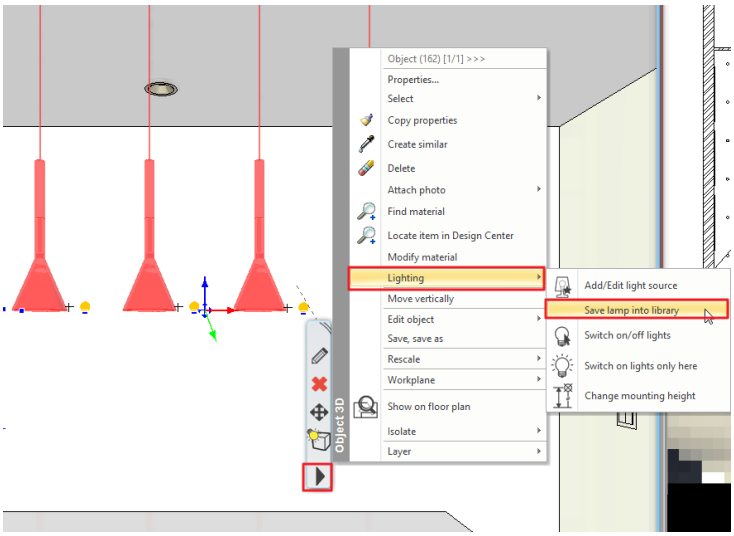
- Repeat the same on the last lampshade.

6.3.2. Save lamp to Design Center

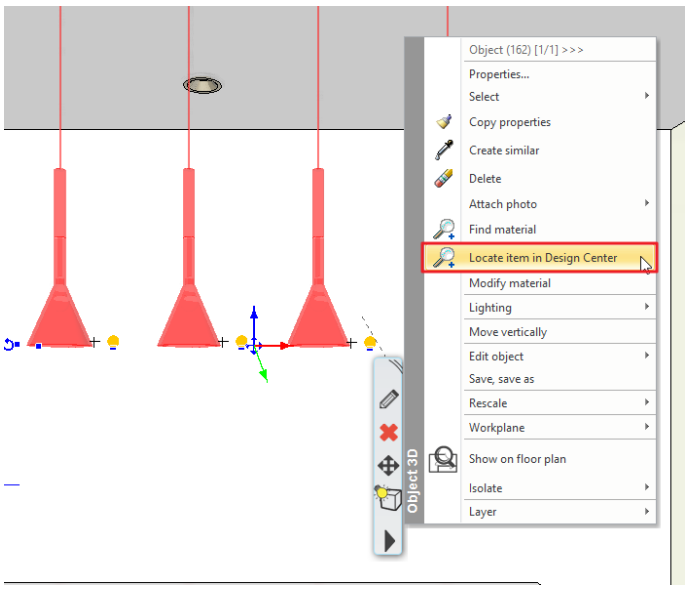
- Select the lamp. 4 yellow light bulbs appear next to the lamps. These indicate the light sources.



- To save the lamp to the library select the **Lighting / Save lamp to the library** command from the Local menu.

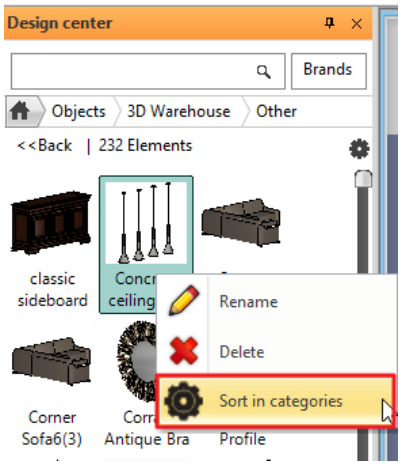


- The program asks whether you want to overwrite the original object. Click on Yes.
- The next question is about the original 2D view. Here, click on No.
- Search for the saved lamp in the Design Center. The quickest way to do it is to select the object and from its Local menu, select the **Locate item in Design Center** option.

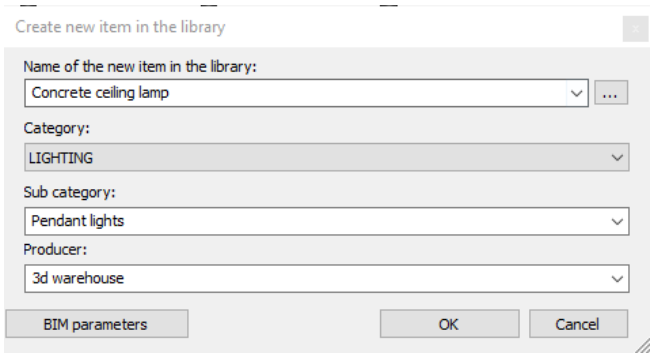


The object appears on the left with its properties. On the top, next to the house icon its path can be seen. Let's relocate it to the right category.

- Click on the cogwheel icon. Select the Sort in categories command from the appearing menu.



- You can rename the lamp. Select LIGHTING as the main category and Pendant Lights as the sub category. The producer could remain the 3D Warehouse but you can type in individual categories as well.

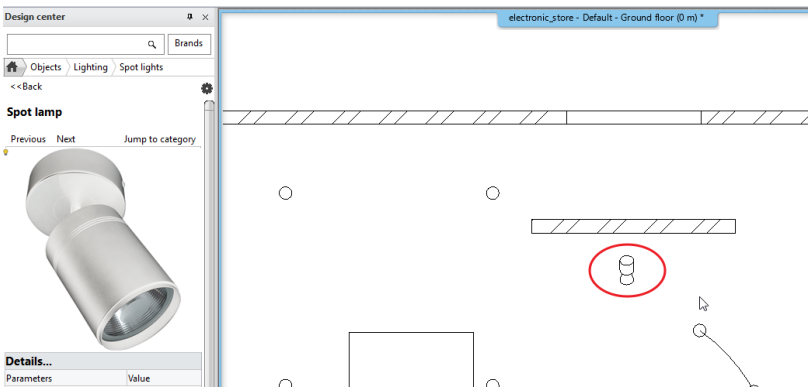


This lamp is accessible from this folder for future projects as well.

6.4. Changing direction of spot lights

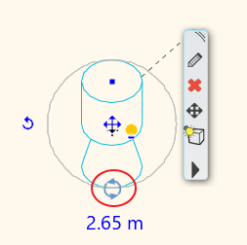
In the ARCHLine.XP program you can change the direction of light of an already placed spot lamp.

- Activate the 2D layout and place the object named "Spot light" from the Objects / Lighting / Spot lights folder before the wall that is standing alone.



- Select the placed object and on the Properties panel appearing on the left rewrite the value of Base elevation to 2650 mm.
- At the moment the spot lamp is facing the middle of the store. Select and rotate it to face the wall.

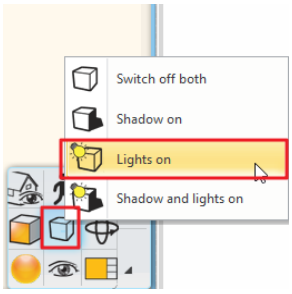
  The change is visible in the render window.



Optional:

- Activate the 3D window and click on the Shadows icon on the Navibar. Activate the **Lights on** option.

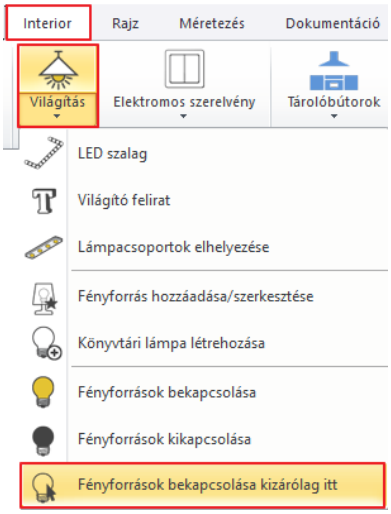
  The light effect will appear on 3D view. (This option is only available when using DirectX 11)



You can skip the previous optional step. If you can check changes of the spot light direction on the rendered image.

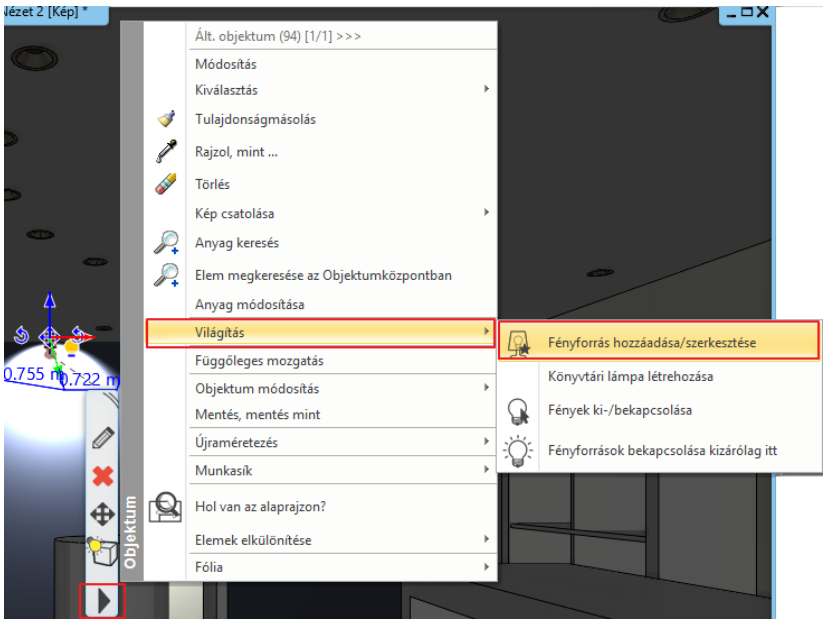
Now all the lamps are lighting. In order to switch only the spot lamp on do the following.

- Go to **Ribbon bar / Interior / Lighting** and select the **Switch on lights only here** command.
- Select the spot lamp. This is the result:

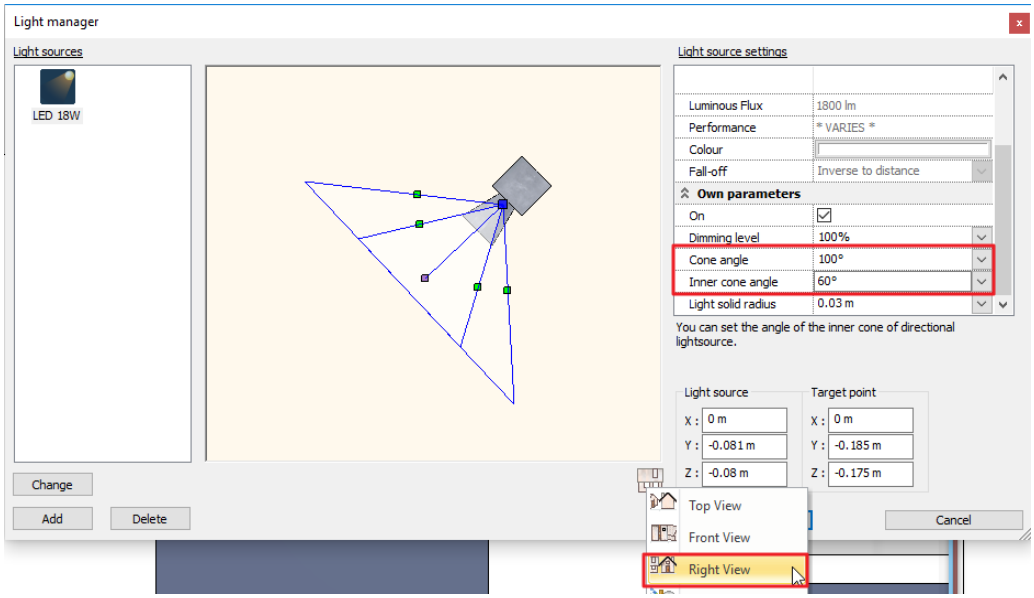


Let's change the direction of light.

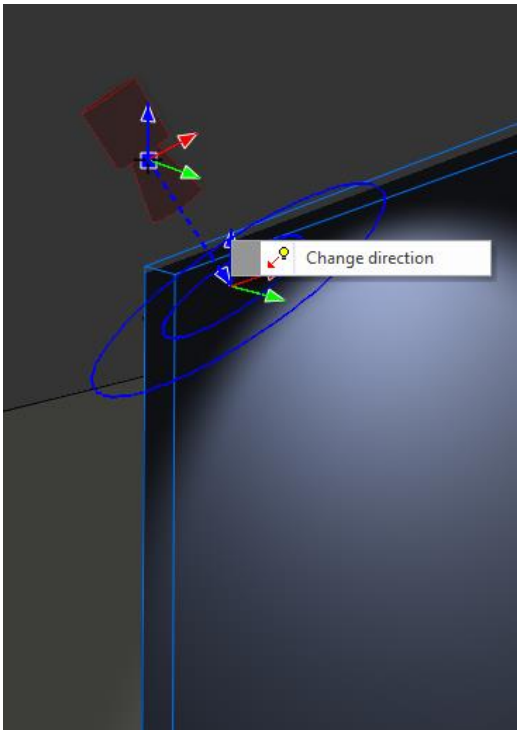
- Select the spot lamp and from the Local menu select **Lighting / Add / Edit light source** command.



- The Light manager appears. The light source and its direction are visible.
- Select the Right View so both the inner and outer light cones are visible. Rewrite the Cone angle to 100° and the Inner cone angle to 60° at the Own parameters.

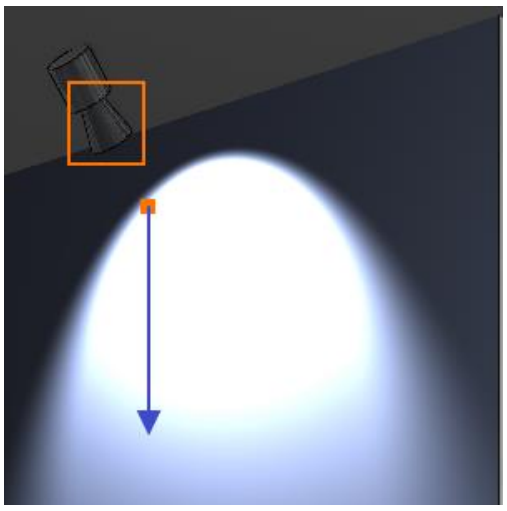


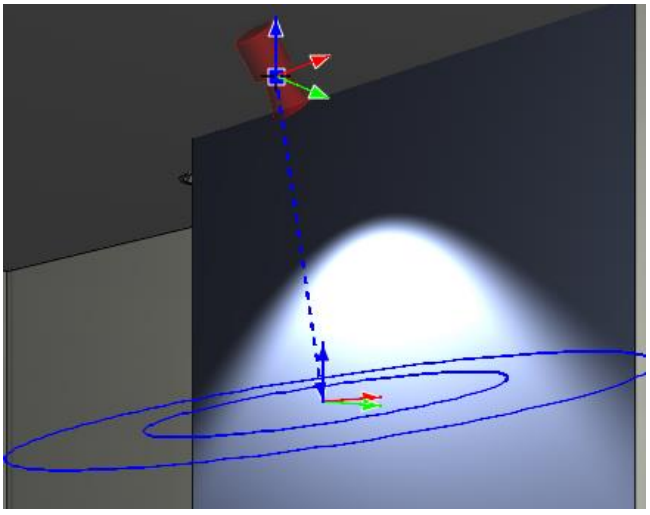
- With the OK button close the dialogue.
- Select the spot lamp and click on the yellow light bulb icon. Now modify the direction of light with the appearing arrows.
- Click on the blue arrow pointing downwards, then the change direction icon.



- With the help of the appearing orange point pull the arrow lower.

  This way the light on the wall is moved lower.





Finally select the **Switch off both** option from the Shadows icon on the Navibar.

6.5. LED strips

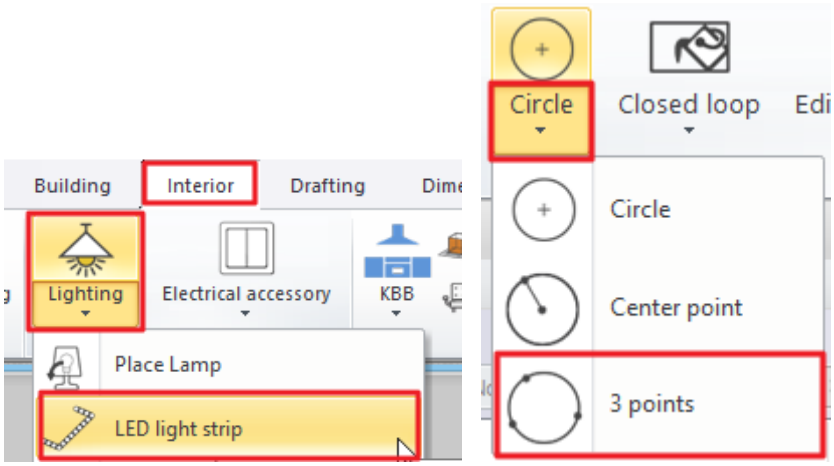
Let’s place LED strip to the bottom of the cylindrical desk on the floor plan.

Before placing LED strips, it is recommended to open the ceiling properties and on the General settings tab select a Top view under Representation in 2D. This way the mark of the plain ceiling will not appear on the floor plan.

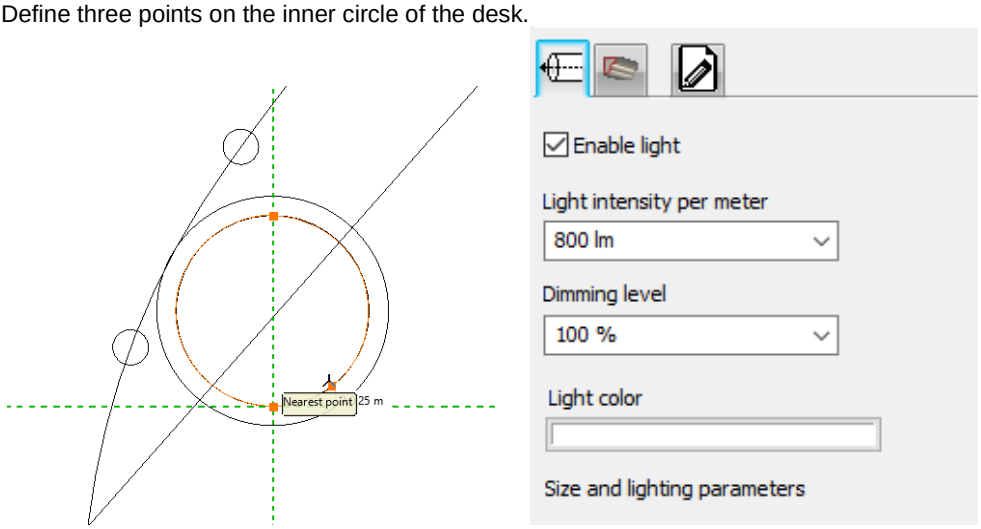
- Activate the 2D layout. In the 3D window select a perspective view from where the cylinder-shaped desk is visible.
- In the 2D window zoom it in, then start the **LED light strip** command from **Ribbon bar / Interior / Lighting**.

  The LED stripe path will be given by a circle passing through three points.

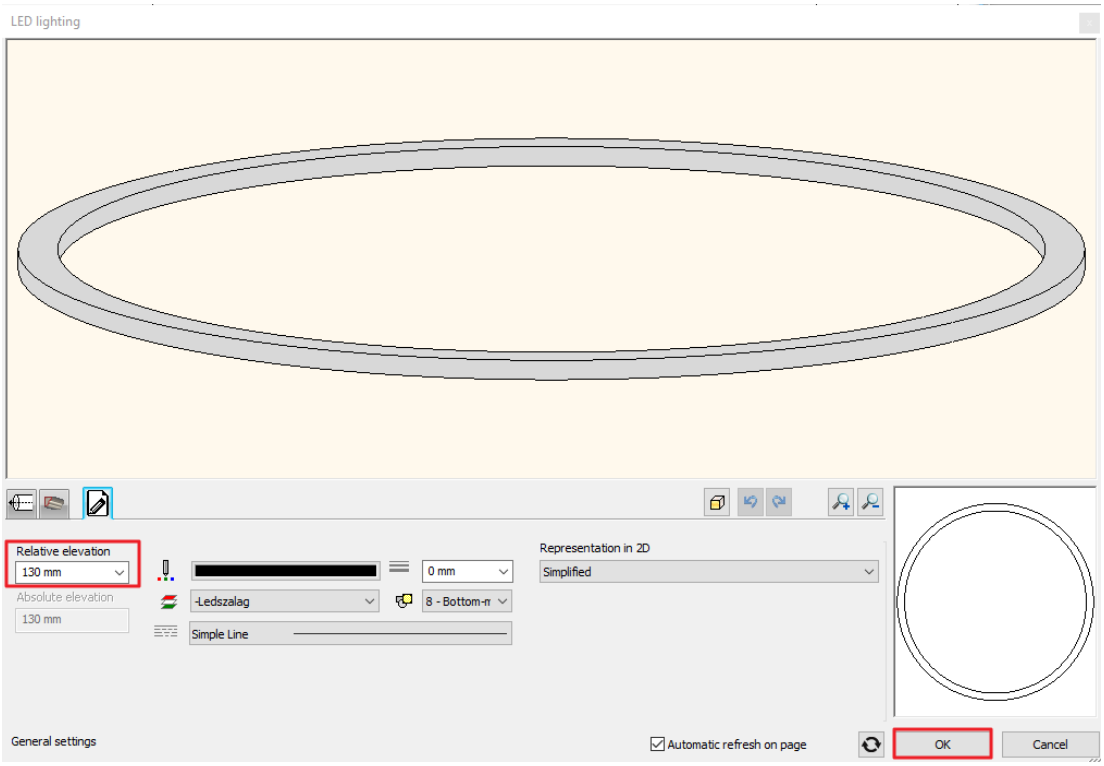
- From the appearing menu select Circle - 3 points command.



- Define three points on the inner circle of the desk.



- After placing the LED strip, the LED lighting dialogue appears.
- The light properties can be given on the **Size and Lighting parameters** tab.
- Go to the General settings tab.
- Set the value of Relative elevation to 130 mm, so the LED strip will be just below the desk, then with the OK button close the dialogue.



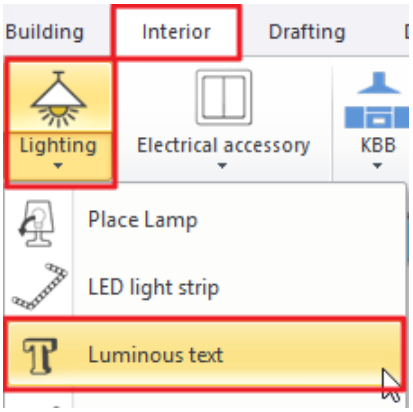
Close the integrated rendering window and start a stand-alone rendering. When the process is over, the result is clearly visible:

6.6. Luminous text

Let’s place luminous text on rear walls in the project.

eDesign sign

- Select in 3D window that view from where we can see the top part of the entrance from outside.
- Select **Ribbon bar / Interior / Lighting / Luminous text** command.

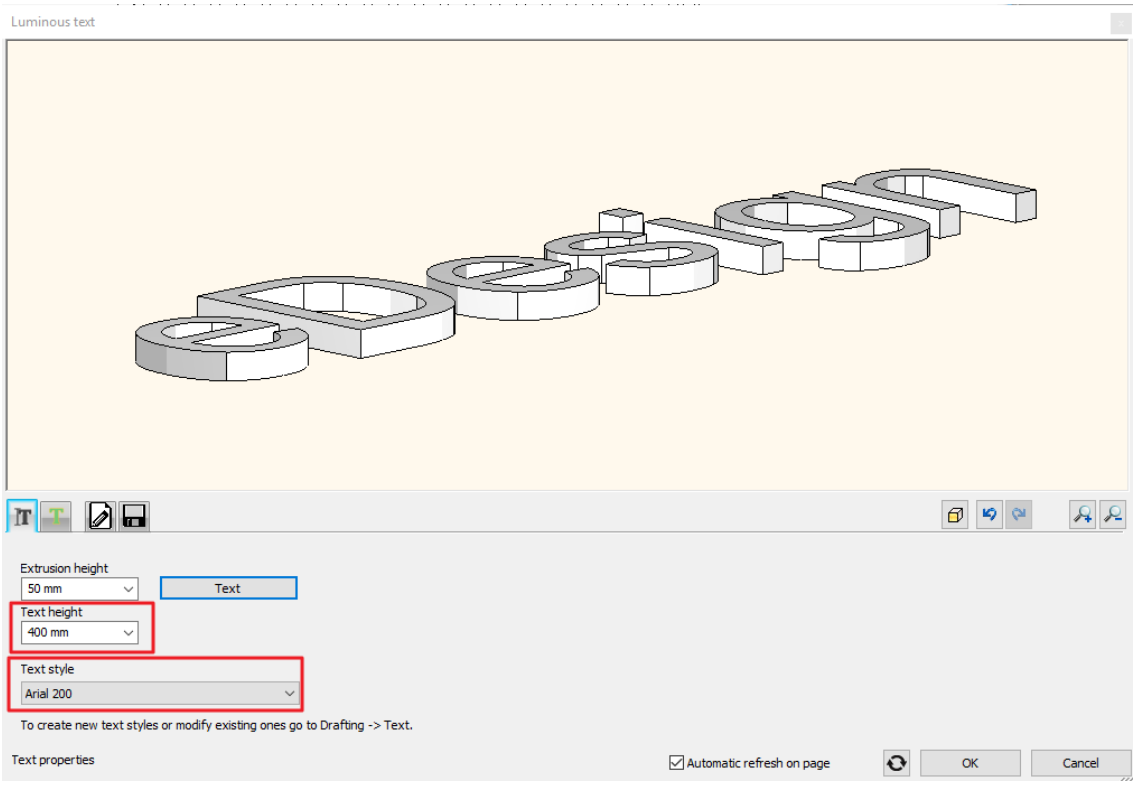


- In the appearing window type the text: “eDesign”. Hit OK to close the dialogue.
- Select the surface, next select where you want to place the text, then with a third point determine its direction.

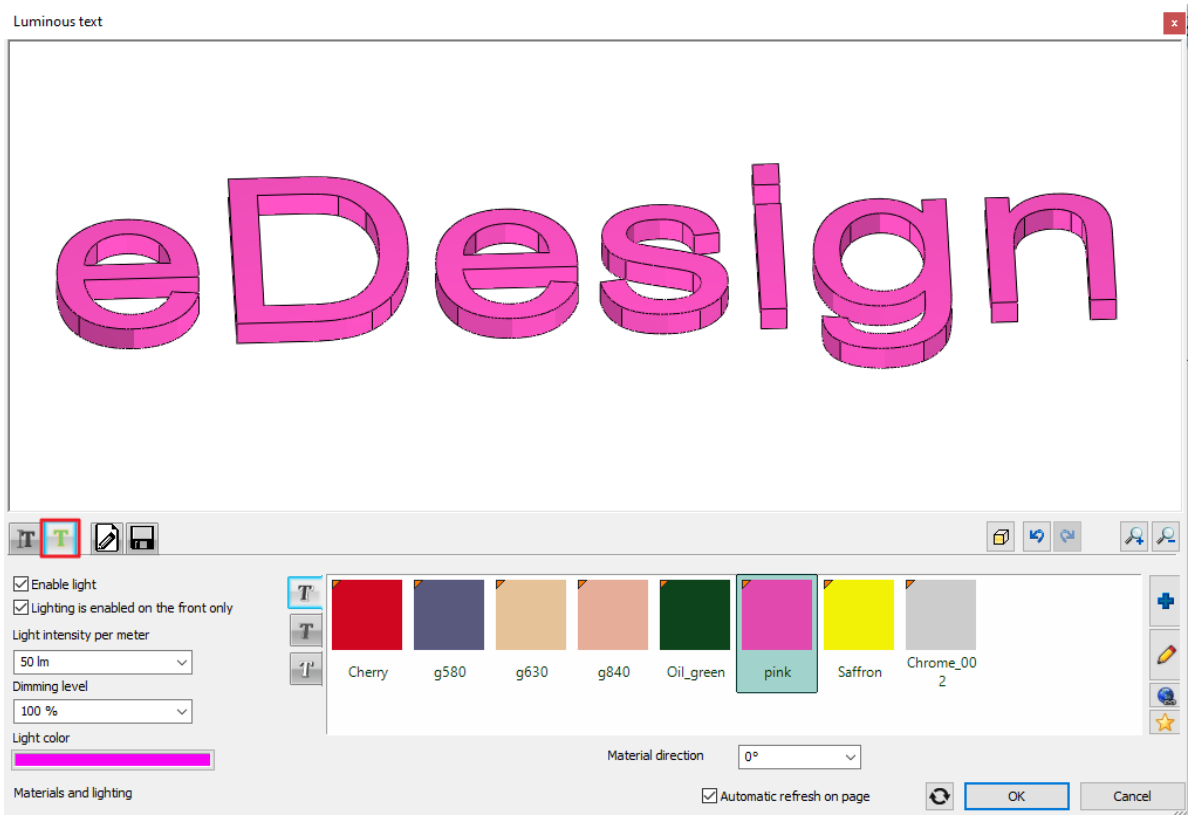
In the appearing properties dialogue set the following:

- Set the extrusion height.
- Set the height of the text to 400 mm.
- Under Text style you can select the font type.

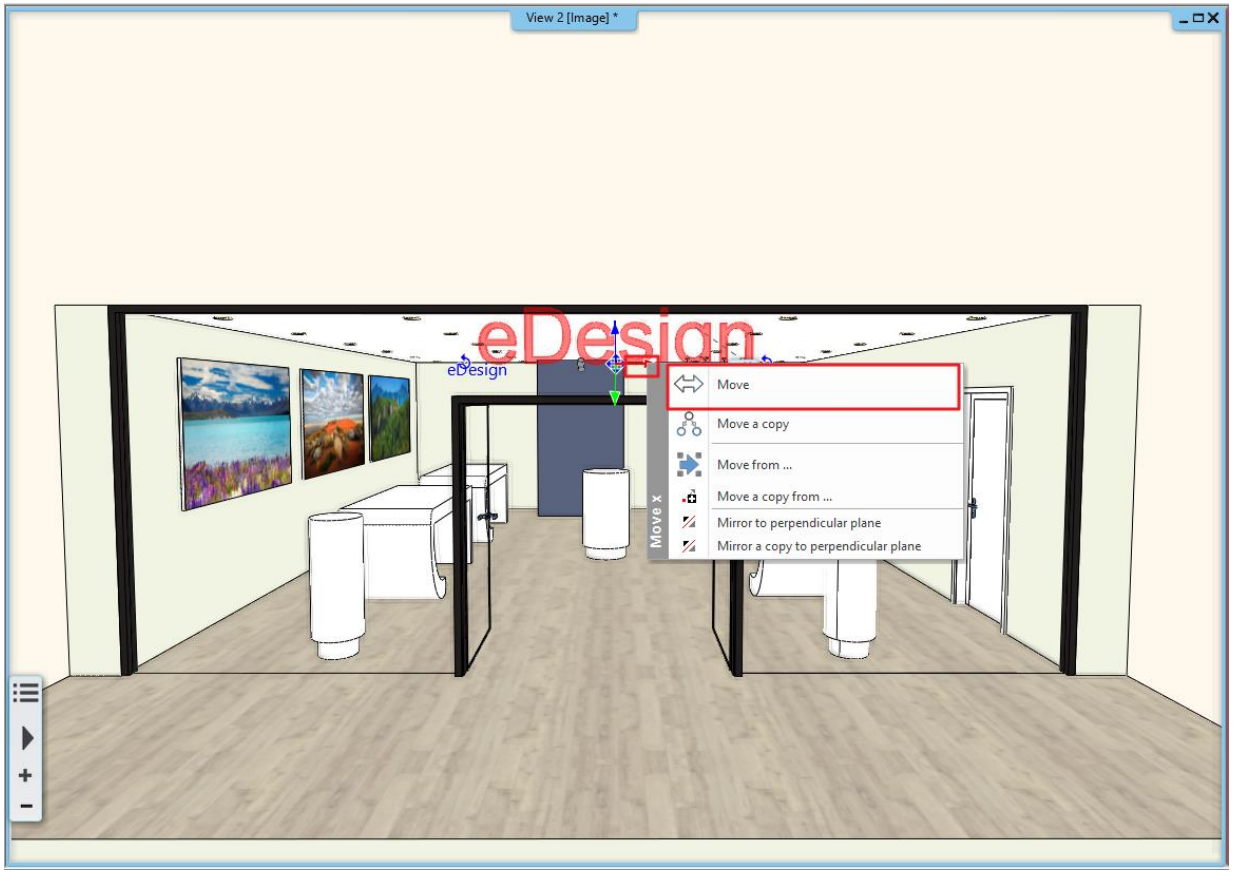
Here you can only choose predefined text styles. New style can be created under Draft / Properties / Text.



- Go to the Materials and lighting tab.
- Activate the **Enable light** and **Lighting is enabled on the front only** options.
- Modify the colour of the light to “purple”. (By clicking on the stripe under Light colour you can choose any from the colour palette.)
- For the text colour select Pink.
- Close the dialogue with the OK button.



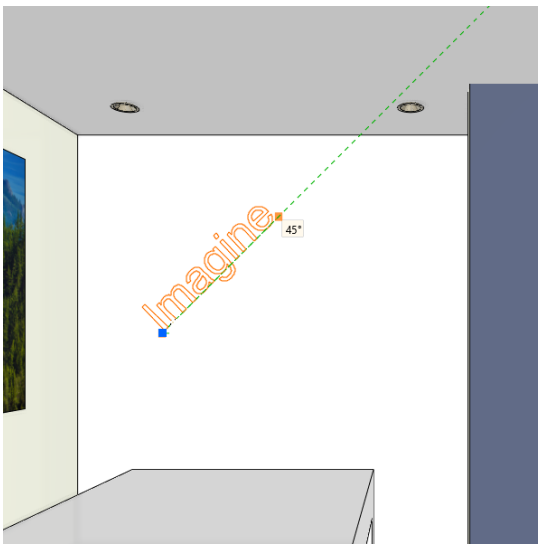
If the text is not at the right place, it can be moved afterwards with the markers or arrows or under Properties on the left side.


View 2 [Image] *
eDesign
eDesign
Move
Move a copy
Move from ...
Move a copy from ...
Mirror to perpendicular plane
Mirror a copy to perpendicular plane
Move x

Nézet 2 [Kép] *
eDesign

"imagine" sign

The next step is to place more luminous text to the bare wall at the back of the store.



Delete the lamp and the spot placed during the work.

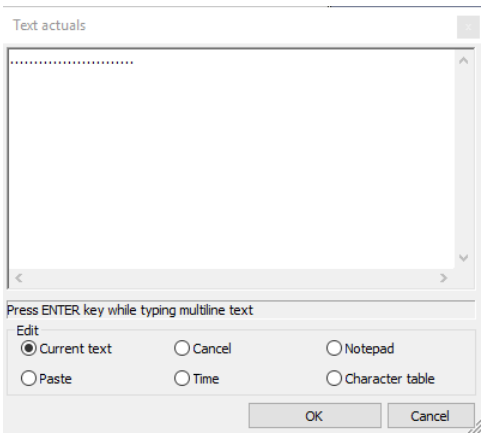
- Activate the 3D window and select a perspective view so the wall we want to work on is visible.
- Select **Ribbon bar / Interior / Lighting / Luminous text** command again.
- Type in a word and place it diagonally, not horizontally this time.
- In the appearing property window set its height to 200 mm.
- Set the extrusion height to 20 mm.
- Go to the Materials and lighting tab.
- Activate the **Enable light** and **Lighting is enabled on the front only** options and choose a colour to the text.
- Hit OK to close the dialogue and place more texts in any direction.

The result should be similar to this image:

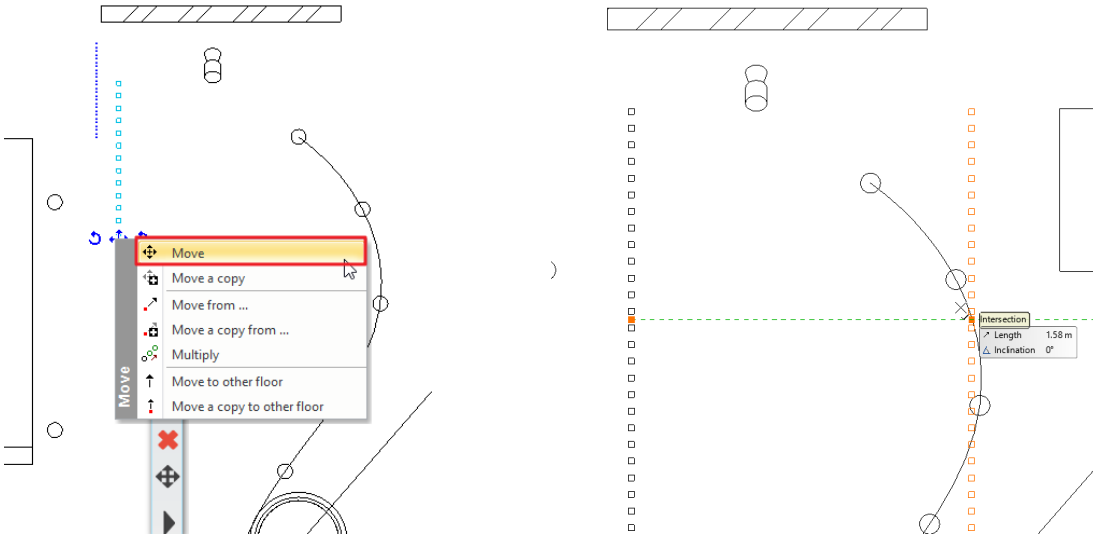
Luminous decorative strips on the floor

Let's place decorative strips on the floor with the Luminous text command.

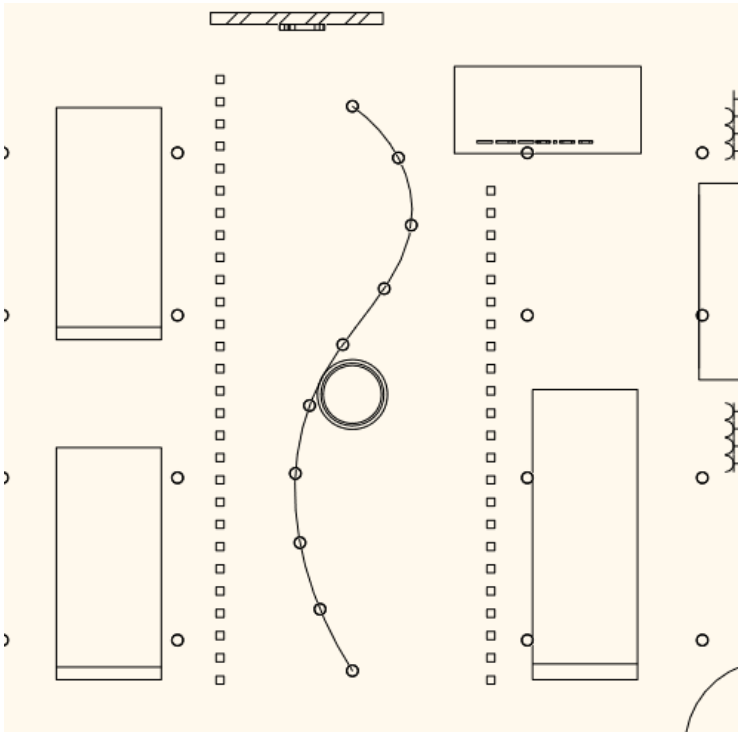
- After starting the command type in points and not text to the appearing window.



- Select the floor and define the starting point and direction of the luminous strips.
- Set the extrusion height to 5 mm and the text height to 500 mm.
- Activate the **Enable light** and **Lighting is enabled on the front only** options on the materials and lighting tab.
- If the light strip has shifted to a wrong place during the modifications just move it to the right place.
- To do so activate the 2D layout and relocate it with the Move marker.
- Place another light strip parallel to the first one with the Move a copy command.



- The light strip can be modified after placement. Open the second strip properties and delete as many points as needed.



With this tool any luminous text, decorative strip or from can be placed in the project.

Turn on the layers named “Decor” and “Led” and rebuild the 3D. The project is finished:

imagine
dream
design
inspire
create
enjoy
fascinate
eDesign

Workshop 7: Rendering

7. Workshop: Rendering

During this workshop you will learn those technical conditions and render settings which makes you capable of creating good interior and exterior visuals of your project. During the workshop we will discuss the following topics:

- Project settings
- Render settings
- Render styles
- Render effects
- Render list
- The outdoor render

- Please open the following playlist in your browser:
  https://www.archlinexp.com/education/workshops/workshop-application-preliminary

Start

- Start ARCHLine.XP.
- Click on **Open project.**

Open the following project:
Documents\ARCHlineXP DRAW\2020\Workshop - Preliminary\Rendering\eDesign_Shop_1_START file.

Save project

- Before starting, we recommend to save the project with a different name, not to overwrite the original project. Select the **File / Save project as** command, then give the name of the new project and the place where you want to save it.

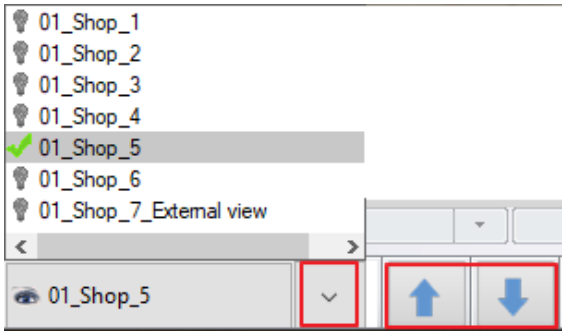
7.1. Default settings

Before starting the work, let's get to know the project.

7.1.1. Perspectives

Let's look through the perspective views.

In order to navigate between the already set up views, click on the black arrow next to the name of the actual view. The saved views appear. You can activate a view by clicking on it or you can switch between them using the blue arrows.



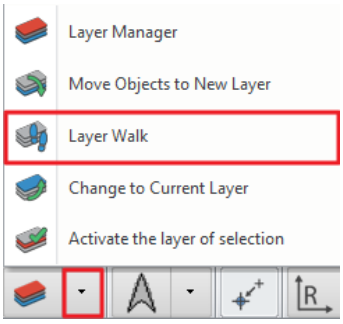
It is recommended to set up the views in a room clockwise so they are traceable and understandable to everyone. Create more views in a room and when naming them, first type in the name of the room then the number of the view (e.g.: Kitchen_01). If we have a multi-storey building, type in the number of the storey before the name of the room (e.g.: 01_Kitchen_01). if you follow this method your views will be easily understandable.

Select the perspective view named "01_Shop_5".

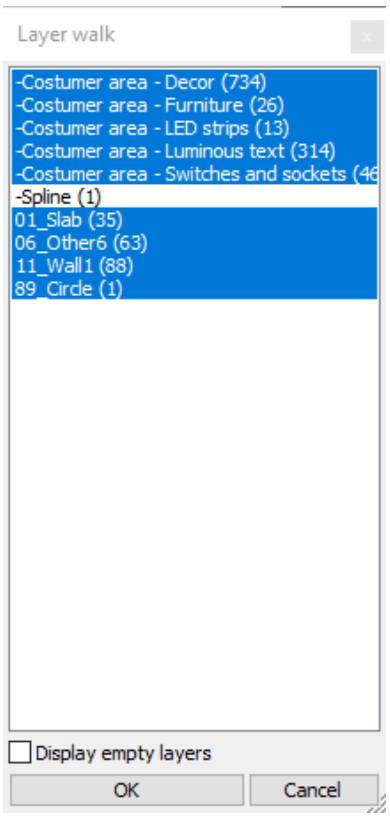
7.1.2. Layers

The view also has a floor plan. The project has a costumer area and a storage area. We will work in the costumer area. Let's look at the layers of the project.

The Layer manager can be found on the Status bar. Click on the arrow next to the Layer Manager icon and select the Layer walk icon.



A window appears with the layers. You can see that the names of the layers are grouped in the following way. There is a room, which is now the "Customer Area", and for this space different layers were created:



- ❖ a layer for furniture
- ❖ a layer for décor
- ❖ a layer for switches and sockets
- ❖ a layer for the LED strips
- ❖ and finally, one layer for the luminous texts

When creating your layers, it is recommended to use this grouping method, because, for example, you can easily display the project without decorating. Simply enter the Layer Manager and turn off the "decor" layer from the Used layers. This can be turned on at any time later.

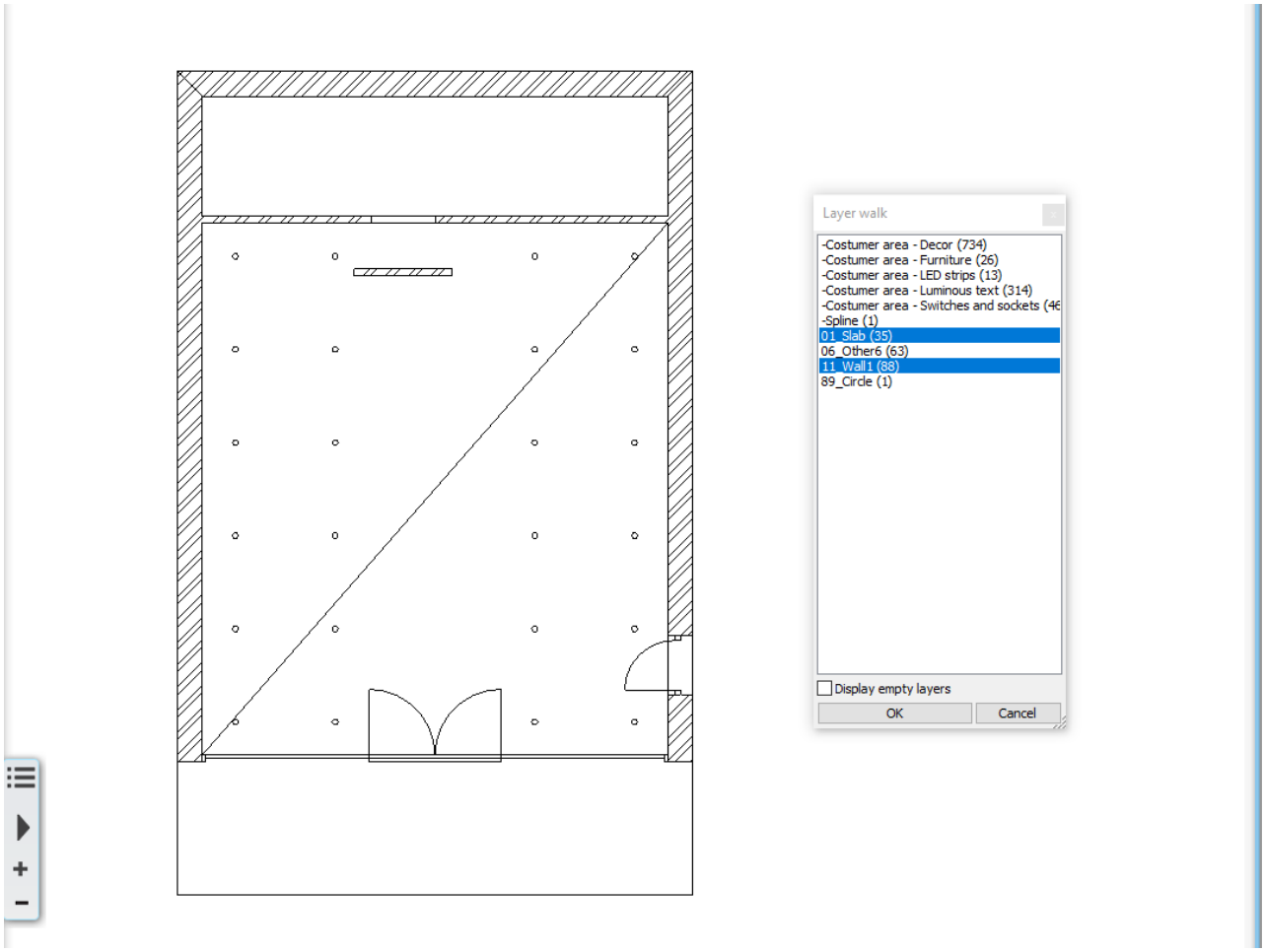
To summarize, it is recommended to create layers similarly when dealing with an interior design plan. Type in the name of the room and create a lone layer for the furniture, for the décor and for the lighting. These are elements that need to be turned on at the final rendering, but it will speed up the workflow if you can turn them off.

If you do not deal with a layer (do not create a new layer) during the work (e.g.: walls, slabs), the program automatically places these items on a pre-created layer. You can also turn them off and on.

! Attention! The 3D and the 2D can have different layer lists so we always create the 3D from the 2D.

Let's simplify the model for the work

- Activate the 2D window.
- Click on the Layer walk icon and select the layer of the slab and while holding the CTRL key select the layers of the wall too.
- Close the dialogue with the OK button.



- The 2d layout has been changed accordingly to our choice. Let's generate the right 3D view from the 2D by clicking on the 3D hammer.

7.2. Render settings

7.2.1. Render time

Which factors define the render time?

1. The computer you are working on (processor speed, memory size).
2. Project size (number of surfaces).
3. The complexity of the materials.
4. The complexity of the lights.
5. The render settings.

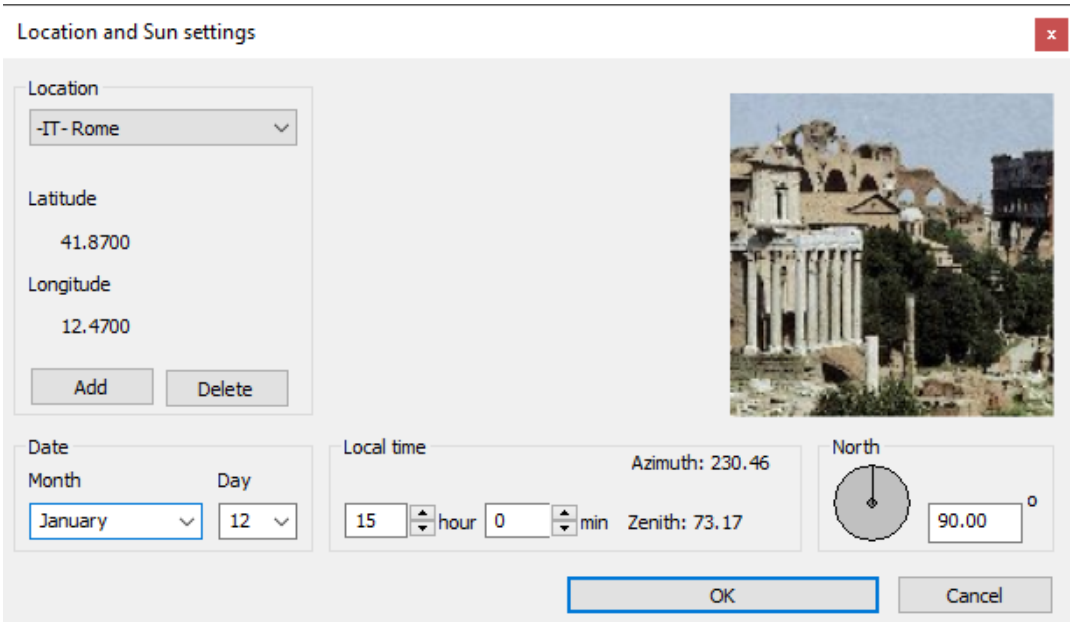
When rendering, it is recommended to turn off all the details of other rooms, except from the room currently being rendered. This will save you a considerable amount of render time, as the program does not need to calculate items that are not displayed in the final result.

It is helpful to filter the model within a selected room. According to this the rendering workflow is divided into 3 phases:
Phase 1:
With the help of layers, now we only display the architectural items together with the lighting, we start to render them. The render is quickly done. Then we can make the necessary changes.
Phase 2
Switch on the furniture layer too, now on the rendered image the furniture will be also displayed beside walls, slab and lighting. The render time will increase, the rendered image is still ready quickly. Then we can make the necessary changes.
Phase 3:
Switch on the décor and other layers too. Now all details are displayed on the image. Depending on the complexity of the model the render time can increase significantly.

7.2.2. Sun settings, shadows

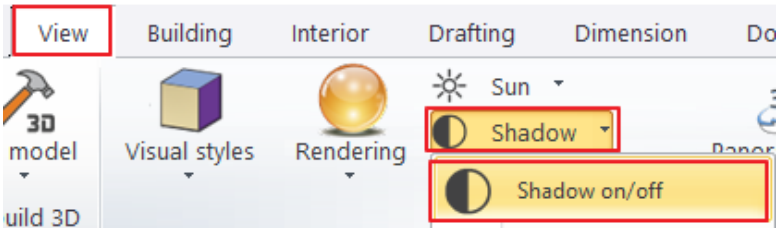
Set sunlight (shading) and the North direction for natural lighting. The geolocation is also important basic setting for the right light effects, so let's start with it.

- Activate the 3D window.
- Select **Ribbon bar / View / Sun / Sun position** command.
- In the appearing dialogue window choose "IT-Rome" for location and set date and time e.g. January early afternoon.
- Here you can also set the North direction in relation to the floor plan. Now we don't modify it. Close the dialogue by pressing".

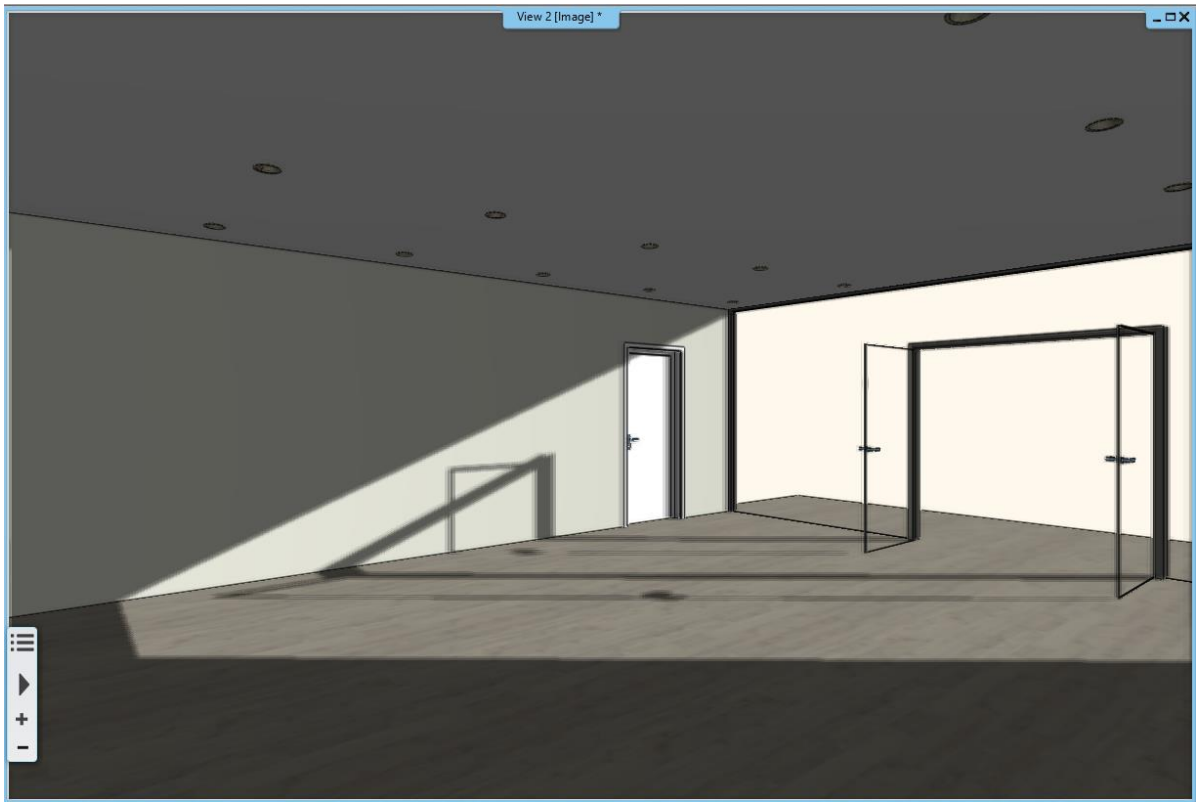


We had defined the location on Earth with orientation as we want to see the sunlight effect on a specific date and time. We can display the sunlight and shadows with proper settings and then we can adjust the sunlight effect periodically by changing the date and time.

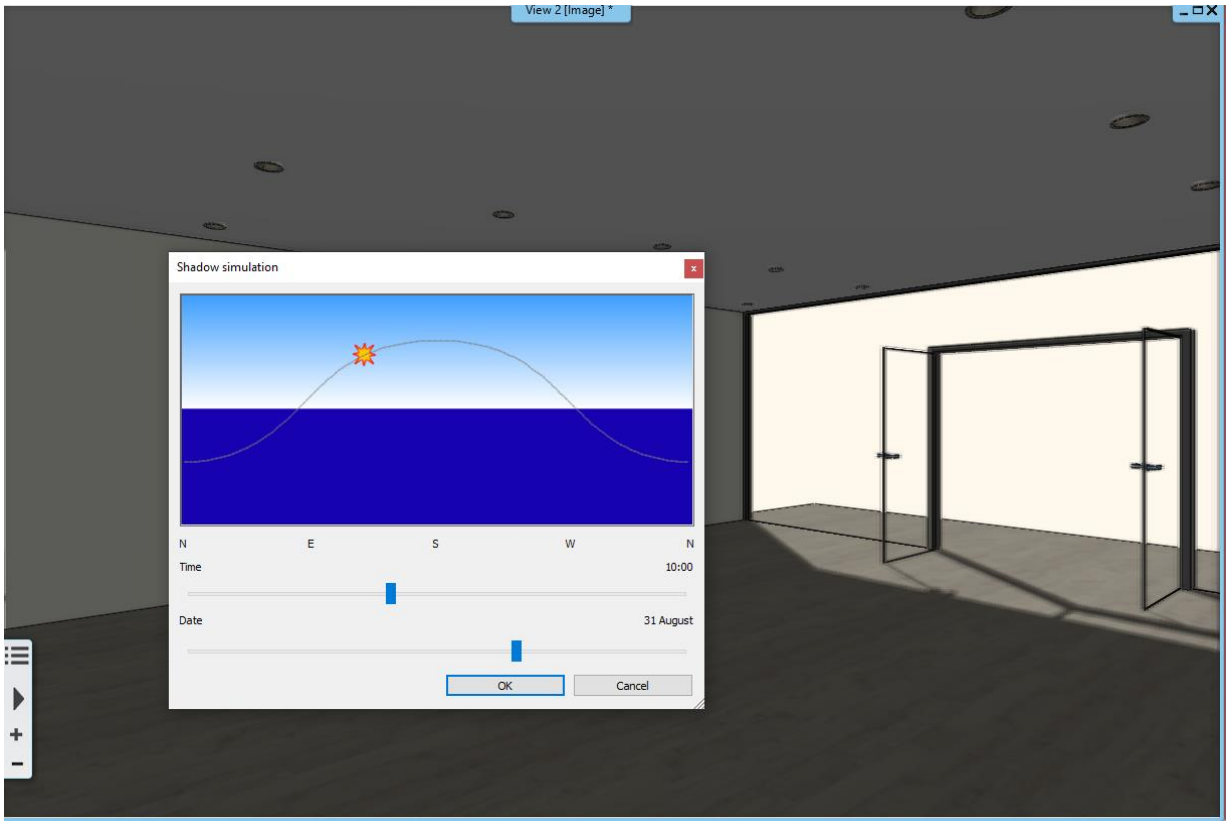
- Activate 3d window.
- Go to **Ribbon bar / View / Shadow** and click on **Shadow on/off** command to display shadows.



- Select the view named "01_Shop_3" to see the light through the glass portal.



- To see the shadow simulation, click on **Ribbon bar / View / Shadow simulation** command. In the appearing window you can select the date and time of the displayed shadows.



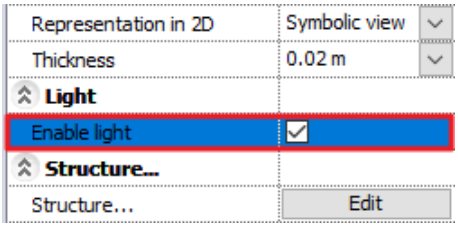
- If you have set the right date and time and the most advantageous view, click OK and the sun setting is ready.

There are multiple possibilities in the program to set the sun. Using them you can focus on an artistic approach or on an accurate geographical.

We do not need the shadows for further work so select on **Ribbon bar / Shadow / Shadow on/off** command select the view named “01_Shop_5”.

Check that the spots on the ceiling are switched on.

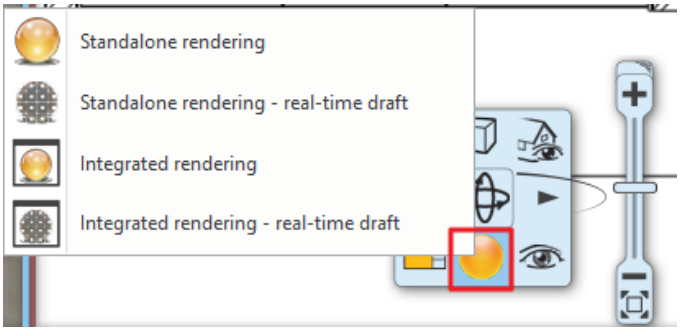
Click on a spot lamp on the ceiling and check if the Enable light option is active on the appearing Properties panel on the left side.



If this option is turned on the spots will have lights on the renders.

7.2.3. Main settings

To start the rendering click on the yellow orbit icon on the Navibar or **Ribbon bar / View / Rendering**.



You have two main choices: you can start a standalone or an integrated rendering.

The **Integrated rendering** appears as a drawing in the project and you can handle it as the drawing windows.

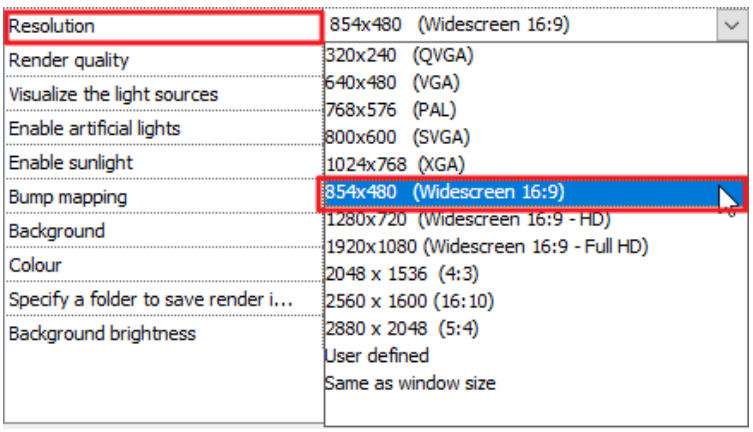
The **Standalone rendering** opens an application which is in close connection with the program but runs separately.

You can start these two modes as real-time draft, which are in a live connection with the content of the 3D window and can react immediately to several modifications, and display the draft of the result in a short time.

Click on the **Integrated rendering – real-time draft** and check its settings.

Resolution

The first important setting is the **Resolution**. You can select from the list or define an individual resolution.

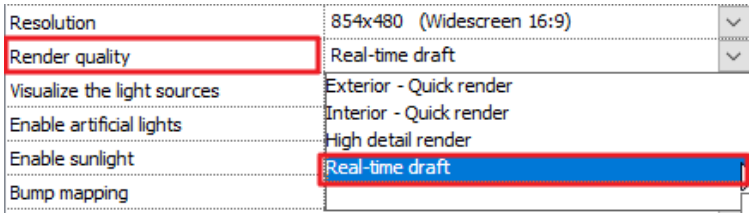


Among the predefined options there are low-resolution, so-called work sizes, and there are higher-resolutions that can be presented to the client.

The render quality

The next setting is the **Render quality**.

- **Real-time draft**
  Currently a real-time draft can be seen here, as we started the render in draft mode. This mode will give a quick but not a presentable result. The light conditions appear roughly, the surface becomes blurry. Yet, due to its speed, it is worthwhile to make" try-out" renders. Refining material settings with is render mode you can save time.



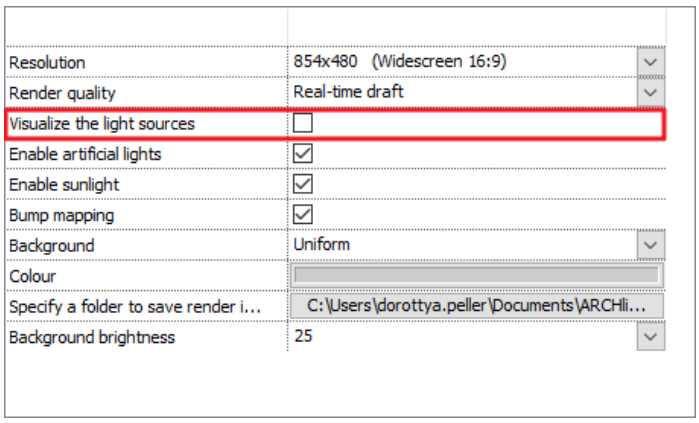
If you want to create a presentable render for your client, you have to choose from the following options:

- **Exterior – Quick render:** For exteriors and well-lit interiors.
- **Interior – Quick render:** For images that are not clear enough using the exterior render. (Most probably when there is not enough direct light).
- **High detail render:** More details are displayed compared to other settings; the blur and grainy rendered image now becomes clearer and noiseless but it will take more time.

Therefore, it is not advisable to make the final image routinely with the High detail render, only in justifiable cases, since it is obvious from the facts mentioned above that the rendering can be created in high quality in a number of cases with using only the **Quick Render** settings. When the Quick render is clear and noiseless, the High detail render will not give you a different result either.

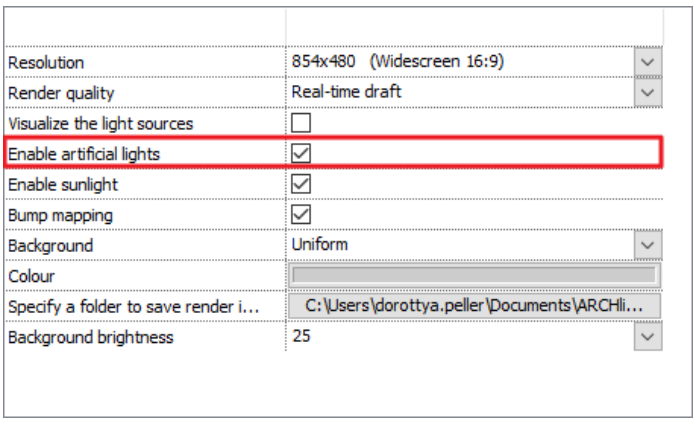
Visualize the light sources

Using this option, you can turn on a simulation which visualize the light sources of the project as light bulbs. This option is recommended when the light sources are not directly visible. Usually this option should be **turned off** because the light is seen without it too.



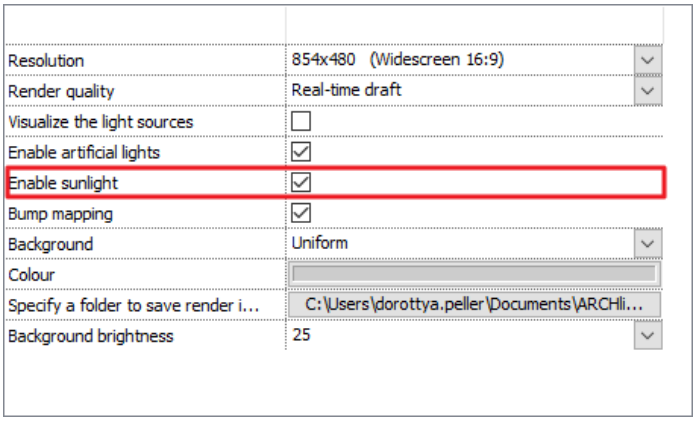
Enable artificial light:

This option switches on and off the lights of the lamps in the project. This option should be turned on now.



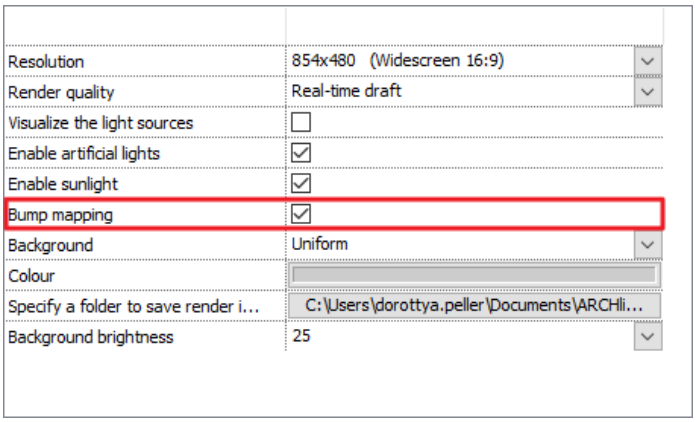
Enable sunlight

Turns on and off the direct sunlight. (It does not mean that we will have a night time render, if this option is turned off, the result will only be a cloudy scene.) This option should be turned on now.



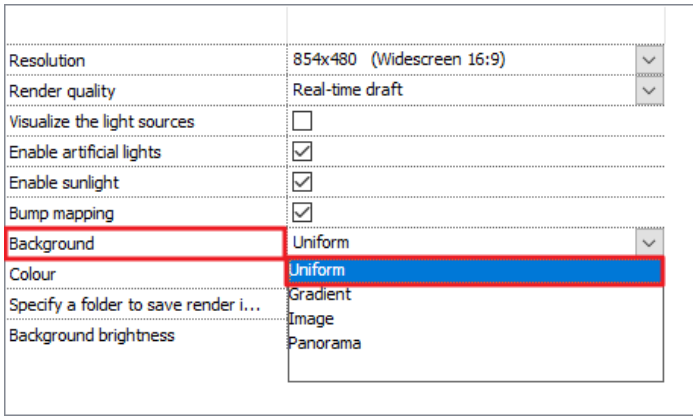
Bump mapping:

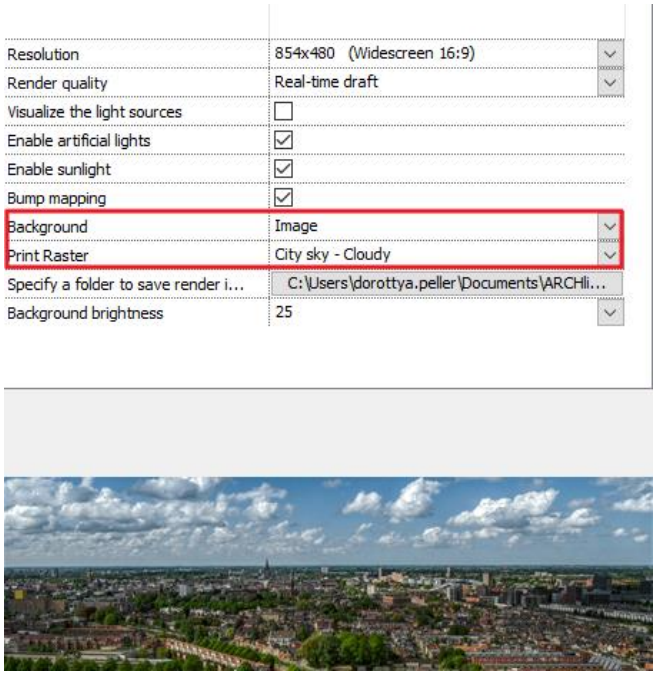
Different surfaces can be rough or smooth according to the pattern of the texture. If we activate this option the surfaces will be actually visible in the picture. This option should be turned on. The surface roughness appears on each surface if the material settings allow it. Later we will learn more about it.



Background

You can choose a colour or an image as background. There are default images in the program but you can import your own background. You can also select a panorama as a background or import your own. (The panorama images completely surround the model).





For the current work select the Image option and the **City sky – Cloudy** background from the list.

Specify a folder to save render images

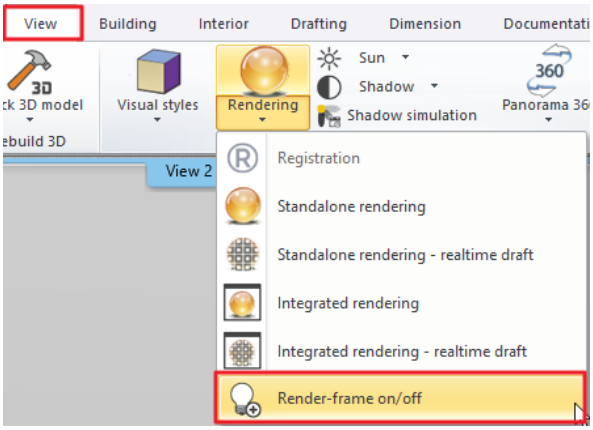
This is basically a back-up save path, where the program creates a back-up of the last state of each image.

Background brightness

The brightness of backgrounds from different sources are not the same. You can adjust it here if necessary.

Accept the settings and close the dialogue.

The render command can be also accessed from the **Ribbon bar**. Click on the **View tab Rendering** icon. Now the rendering commands which are also available on the Navibar appear. However, here an extra option, the **Render-frame on/off** can be found.



Set the 3D window to the maximum size by pressing the rectangle icon in the top left corner.
Activate the render frame. A grey area appears on the left and on the right. This shows the details of the image which will not be in the final picture. The scene inside the dashed line will be the content of the final image.

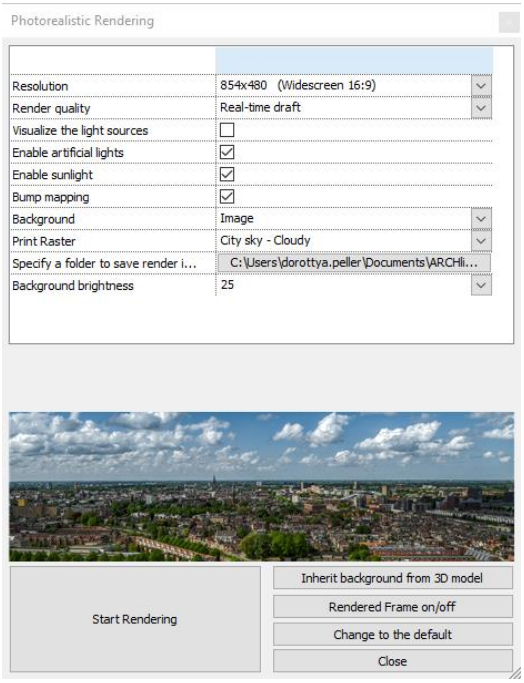
This function is useful to set the perspectives precisely, because you can define exactly which will be visible in the final render.

Turn off the frame.

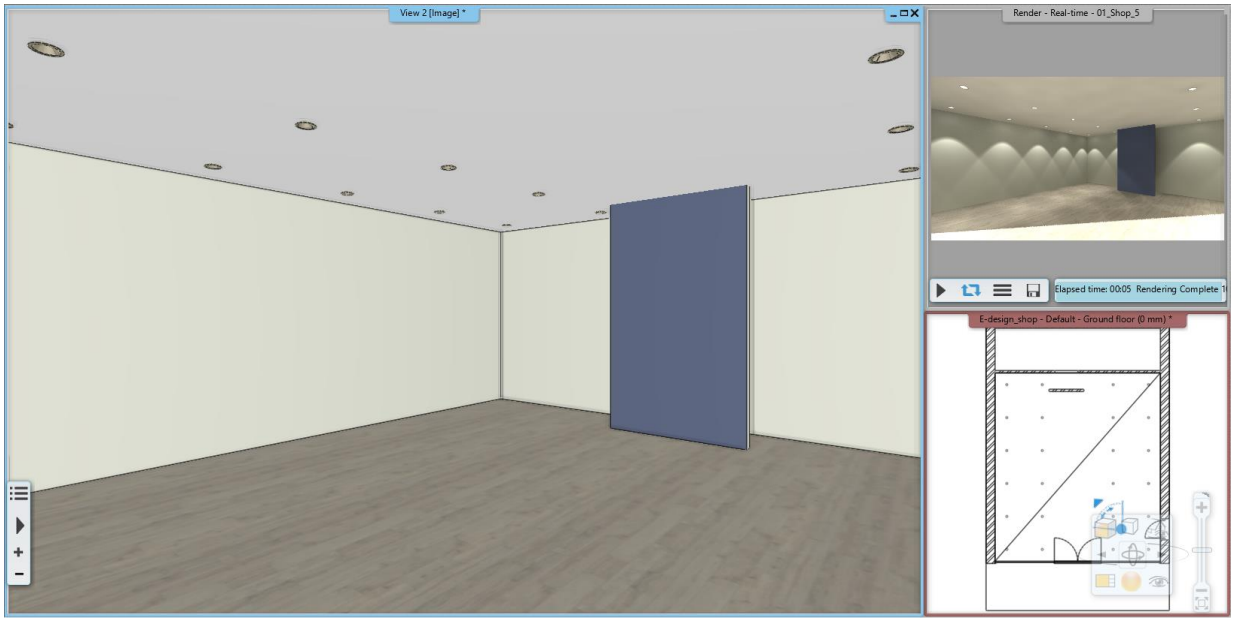
7.2.4. Create the first rendered image

Currently we are in Phase 1. According to the layers setting only the architectural and lighting layers are switched on. After reviewing the different render settings, start an **Integrated render – real-time draft.**

Here you can see those render settings which we discussed above and set previously.



- Click on the Start rendering button.

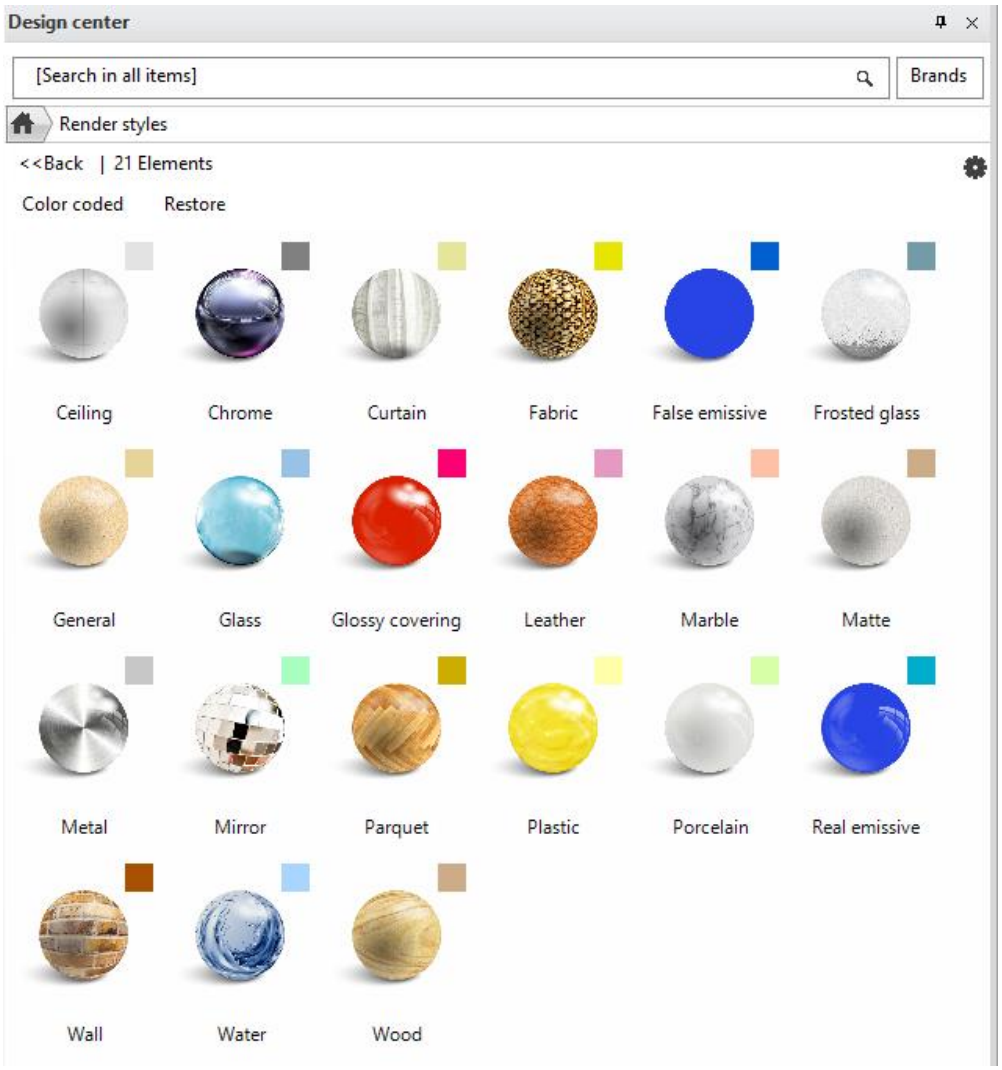


As you can see the sunlight infiltrates too deeply into the interior, so it is quite contrasting. Since you've launched a real-time rendering, you can easily modify it.

- Activate the 3D window.
- Click on the **Ribbon bar / View / Shadow simulation** button and with the slides, modify the date and time, so that it does not infiltrate into the room so deeply.
- Hit OK to accept the changes. During this workshop the rendered result are based on time setting: 12th of July, 3.00 pm.

7.3. Render styles

To create a high-quality, lifelike photo-realistic image, it is essential to set the materials correctly used in the project. Setting up materials is not always easy and often a time-consuming process.
Using Render styles can simplify and shorten this process.
We have categorized different types of materials such as metal, glass, brick, mirror etc. into different groups. And set their most characteristic properties. That's how we created 21 different Render styles. These are the following:



Features of Render Styles:

- ❖ Can be assigned to any material.
- ❖ Available from the Design Center. From here, you can "Drag and Drop" to the selected surface in the 3D view. The effect is shown in the internal Rendering application.
- ❖ Do not change the size and texture of the materials, only change the material properties.
- ❖ After using the style, a customized style setting can be created.

Taking this into account we recommend the following method for the ideal material settings.

1. Assign the appropriate Render style to the different types of materials in the project.
2. Create a test render.
3. Refine the material settings depending on the result.

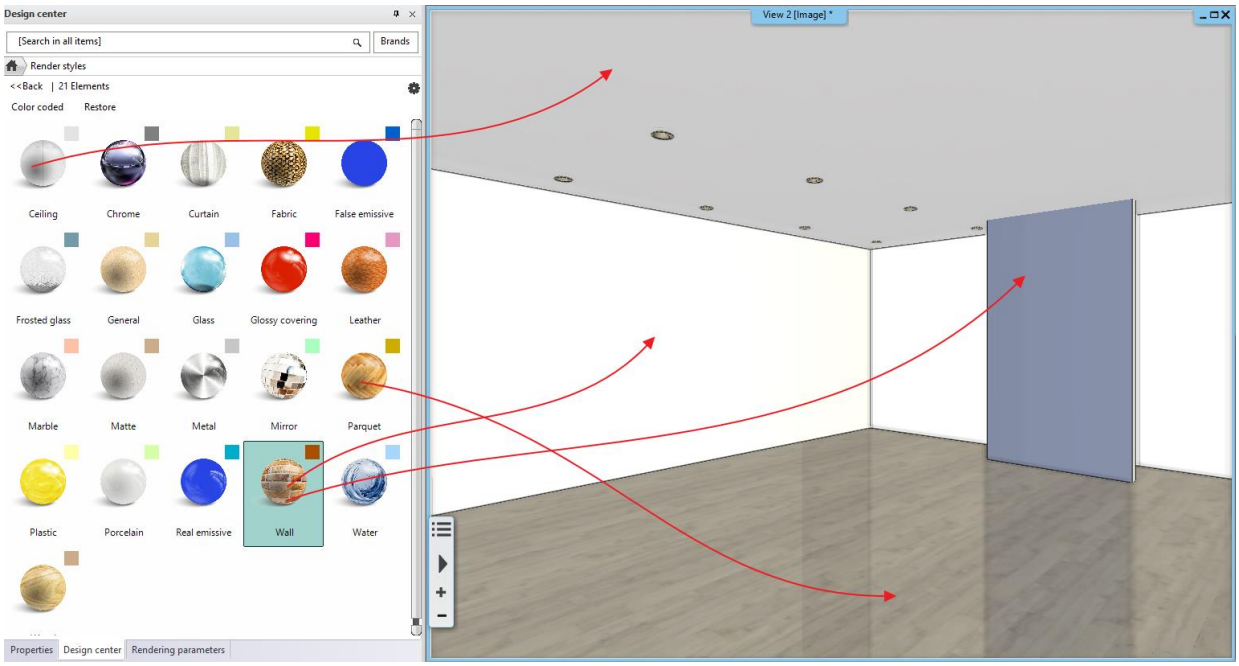
7.3.1. Use render styles

In our example, for better understanding, we set Matt property to materials.
In the render image made earlier, only matt materials appear on the floor, walls and ceiling.

Then, we'll focus on adjusting the floor, walls, and ceiling settings:

1st step

As a first step we will drag and drop from Design Center to these surfaces the proper render styles
From the appearing list drag and drop “Parquet” material onto the floor, the “Ceiling” render style to the ceiling.



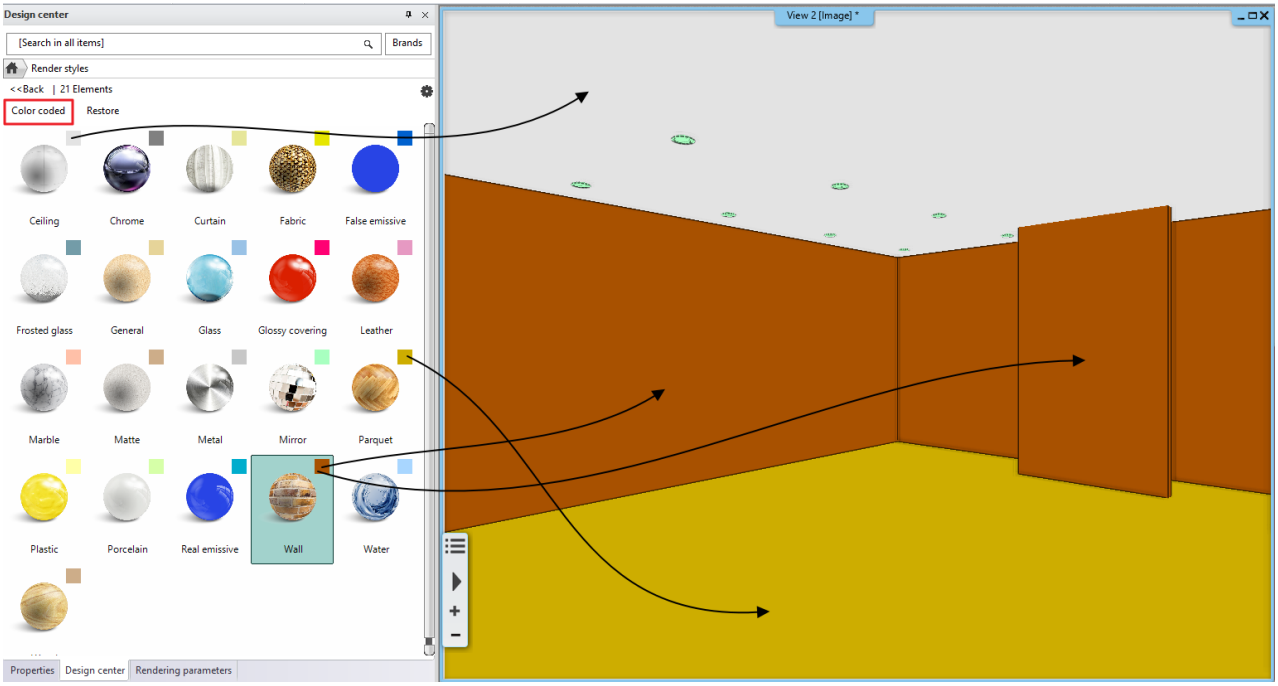
On 3D model using “Colour code” representation mode we can quickly check if we didn't leave any surface out.

Colour coded representation

The colour-coded view allows you to display the render styles in a classified way. The assigned colour codes are shown on the top right corner of the render style icons.
Clicking on “**Colour coded”** word in Design Center the model appears in the colours assigned to the different render styles.

This way we can easily check the currently assigned render styles through colours.

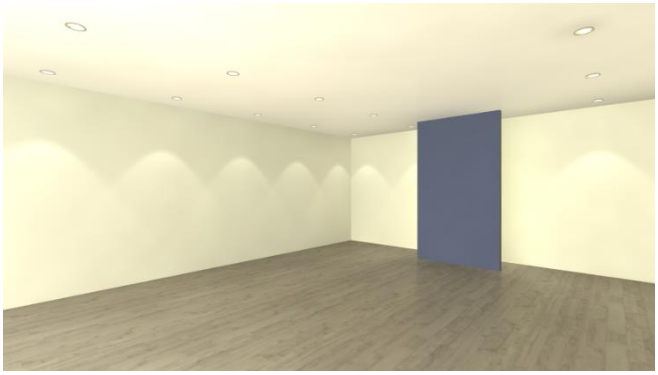
- Click on the word “**Colour coded”**. On 3D view surfaces appear in clear colours assigned to render styles.



- Click on “Restore” to view the original representation mode.

2nd Step Render Test

On the interactive draft render we can see the result of the second rendering.
Let’s compare it to the first one.
The ceiling is whiter, the wall is brighter, the floor is slightly reflected.



1. Render

2. Render

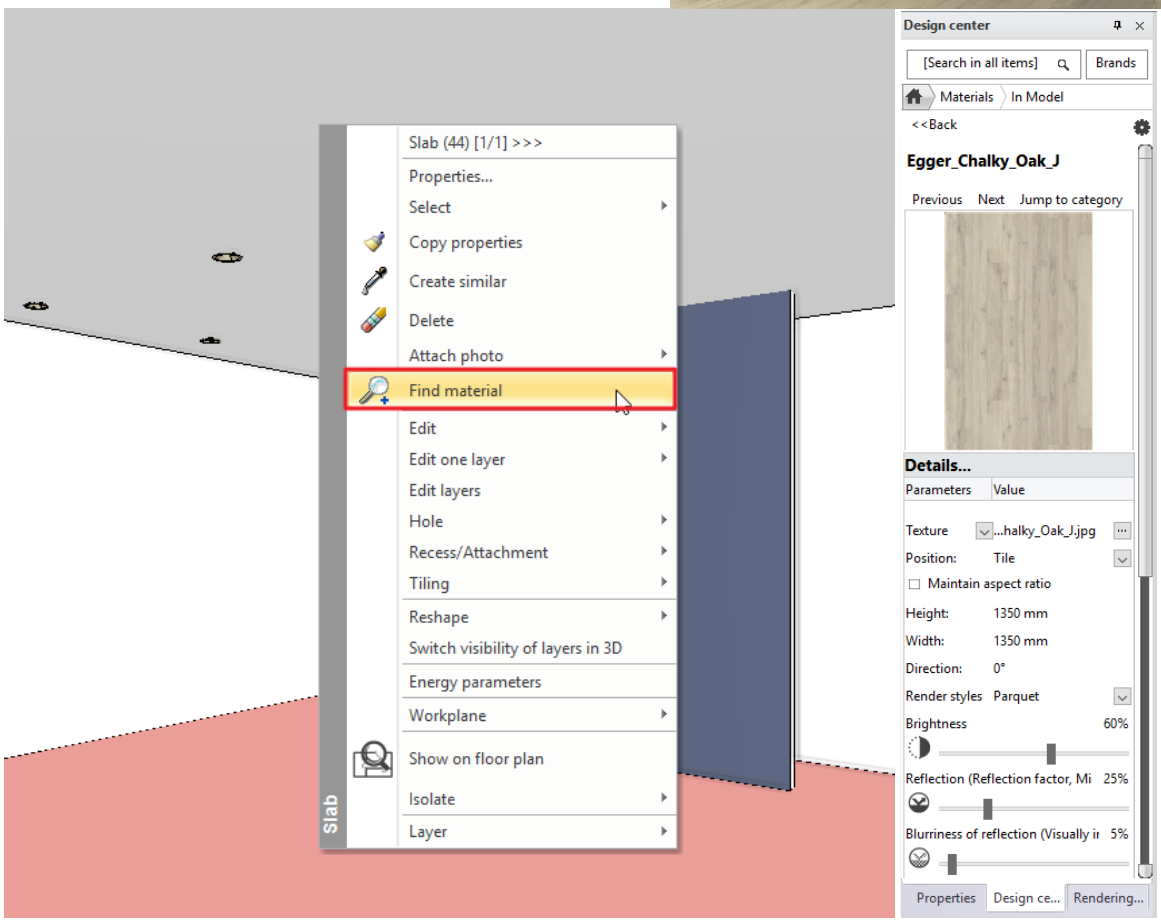
3rd step: Refine material settings

Let’s discuss the material settings first on the floor.

As we have seen, the floor has changed in some way, the blue wall is reflected in it.
In the example, the floor we use is brighter and more reflective in real life. So, we need to change the floor settings.
Please do the following:

- Activate the 3D window.

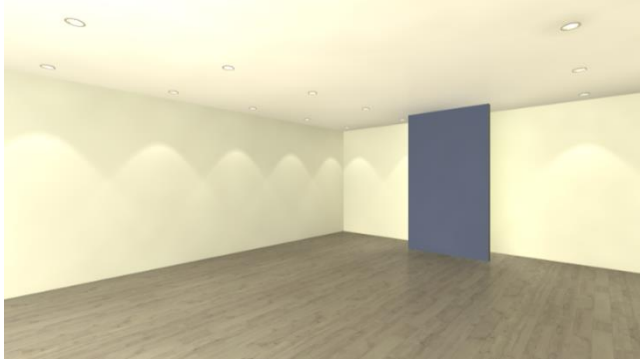
- Click on the floor with right mouse button.
- Select the **Find material** option from the Local menu.



- The Egger floor material appears on the left side with its properties, which can be modified here.

- Let's increase the **Reflection** to 70%. and check the result on the rendered image.
- The next step is to decrease the **Blurriness of reflection** to almost 0. The reflection on the floor is sharper now.

This will be the third render image. Let's compare it to the second one.



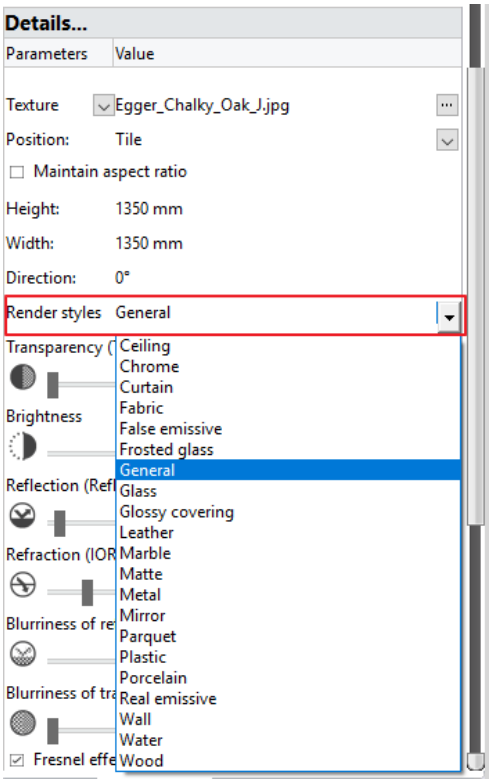
2. Render 3. Render

- As a final solution try Reflection 70% and Blurriness of reflection 20% combination.
  Keep this setting.

  The materials have additional properties depending on their type and render style. Later, when you have more practice in rendering images, you should get to know how they work and interact with each other. In the meantime, only use the settings provided by the render styles.

More material settings - optional

Here we gathered the most important information about material properties:



Transparency
The left side of **Transparency** slider is where the material is not transparent at all, while we set it to 100% the material almost disappears.

Brightness
*5*0% of **Brightness** is the starting state. If we decrease this value the material will be darker, and if we increase it the material will be brighter.

Refraction
It is depending on the type of material we have chosen.

Bump amplitude
For some materials, you can set a bump amplitude which is depending on the nature of its texture. It is recommended to smooth it a little afterwards (**Bump softness**).

General type

If you need material setting that doesn't appear within the properties of any render styles, then use the **General render style**. In this case to modify the materials all the necessary settings will appear. Based on this is a universal style any other styles can be created. Render Styles are also available on the Material properties tab:

7.3.2. Display Furniture

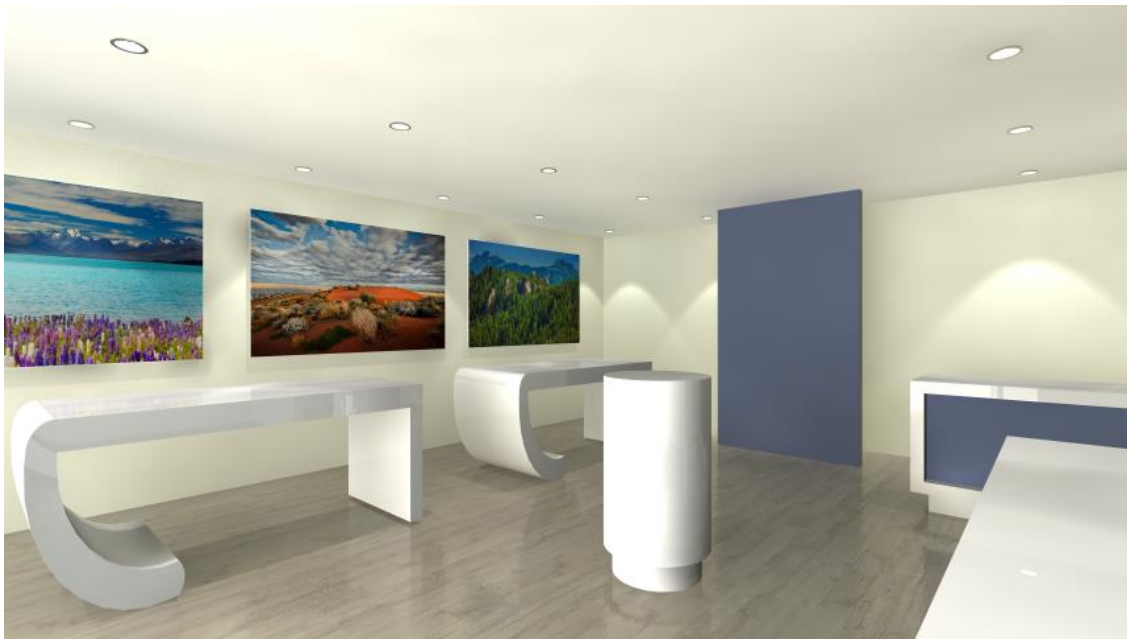
So far, only the architectural items have been displayed on the render image.
If we are satisfied with the settings so far, we can enter Phase 2 where we are going to deal with the settings of furniture materials.

- Activate the 2D layout and with the help of "Layer walk" command turn on the layer "Customer area – furniture".
- Rebuild the 3D model.

Try different render styles on furniture:

- Select the Metal, Plastic, and Marble Render styles and drop them on the surface one of the furniture which previously had been turned on. On the rendered image you can track the changes as well.

- It's worth playing a bit with the Render styles. You can also try other styles on furniture. On the “Integrated rendering - realtime draft” you can always see the changes. Finally, using the Marble style, we get the following result:

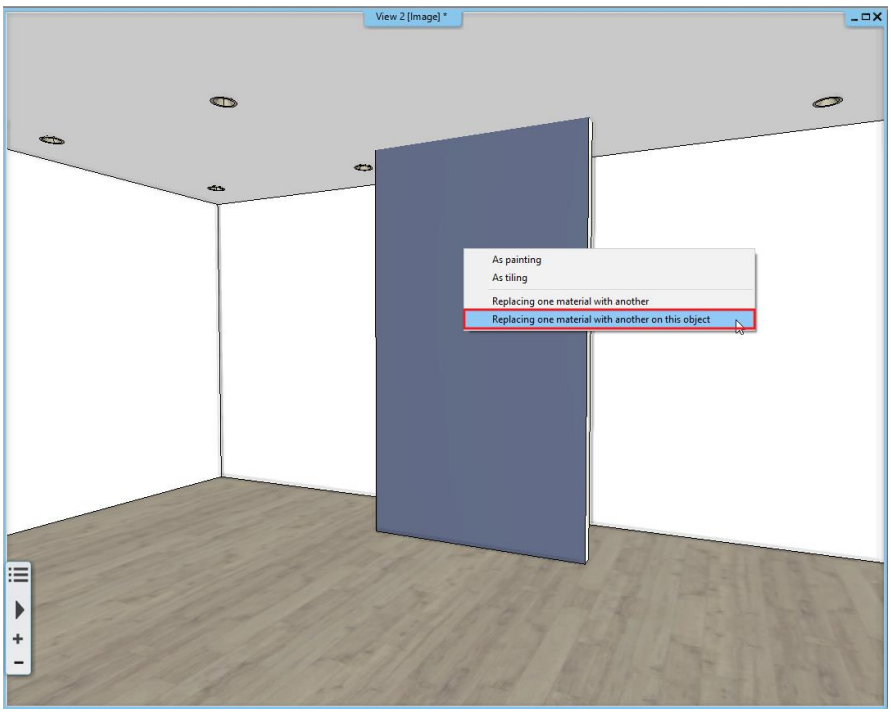


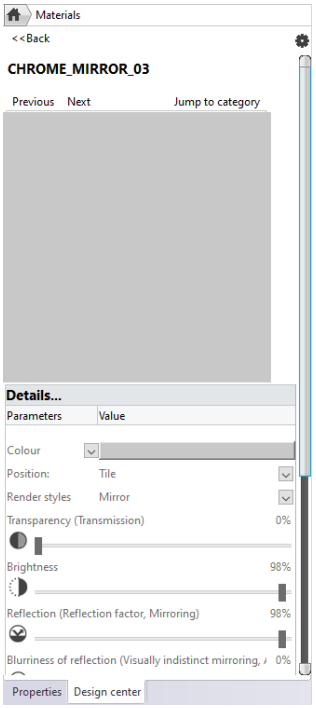
4. Render

7.3.3. Replace material

Let’s see another example of modifying a material. We will replace an existing material to another one.

- Open the Main page of the Design Center
- Type in to the Search field at the top of the side bar: mirror. (Be sure that the search is started from the start page of the Design Center).
- Select the CHROME_MIRROR_03 from the appearing results.
- Using the “drag and drop” method place it on the dark grey wall. From the appearing menu select the “Replacing one material with another on this object” option.





- Click on the wall surface. Change to the render window and check the results.

  This is how you can easily change one, already placed material to another one on an object or element.

5. Render

- Undo this last step and activate the 2D layout.

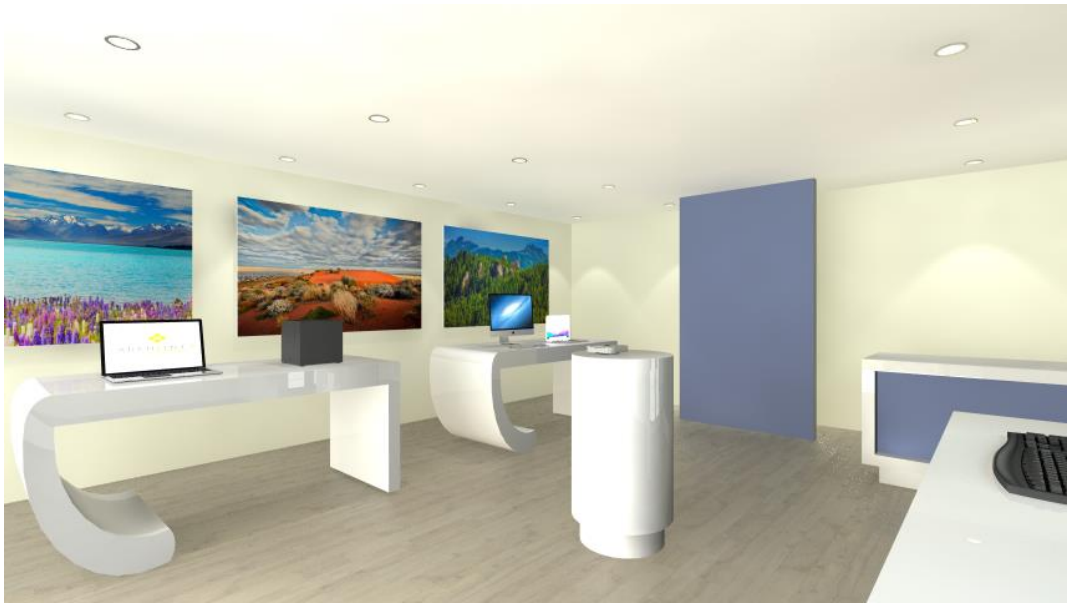
7.3.4. Display decoration

Until now, only the architectural items and furniture have been shown on the rendered image. If we are satisfied with the settings so far, we can enter Phase 3, we will display additional elements, e.g. the decorative items.

These are usually smaller, but more complicated elements with higher surface numbers (e.g. ornaments, plants). Therefore, they can slow down the rendering, but don't have the same effect on the quality of the rendered image as the larger furniture.
However, they need to be dealt with. In the following example, we will turn on the computer screens, such as we assign light to them.

- Switch on "Customer area – decoration" layer as well.
- Rebuild the 3D model.

- Drop the “Real emissive” render style on screens.
- Try Plastic, Chrome, Metal render style on computers and screens.

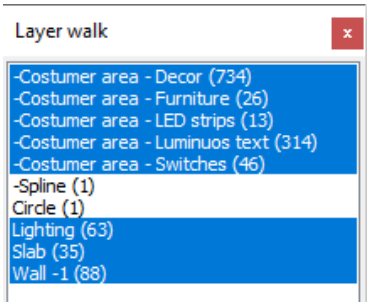


6. Render

7.3.5. Display other details of the model

As discussed previously the process of creating rendered images is divided into several phases.
In Phase 1, we only deal with the dominant surfaces of the project (floor, ceiling, walls).
In Phase 2, we displayed furniture, while in Phase 3 the decoration was exhibited, but we can also add all other accessories.

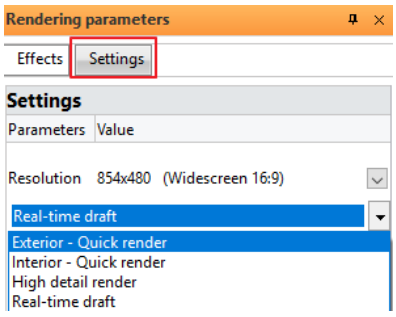
The advantage of this progressive workflow is that the tiny accessories are set at the end of the workflow - often enough to deal with the materials that really affect the visuals, which can save you a lot of time.

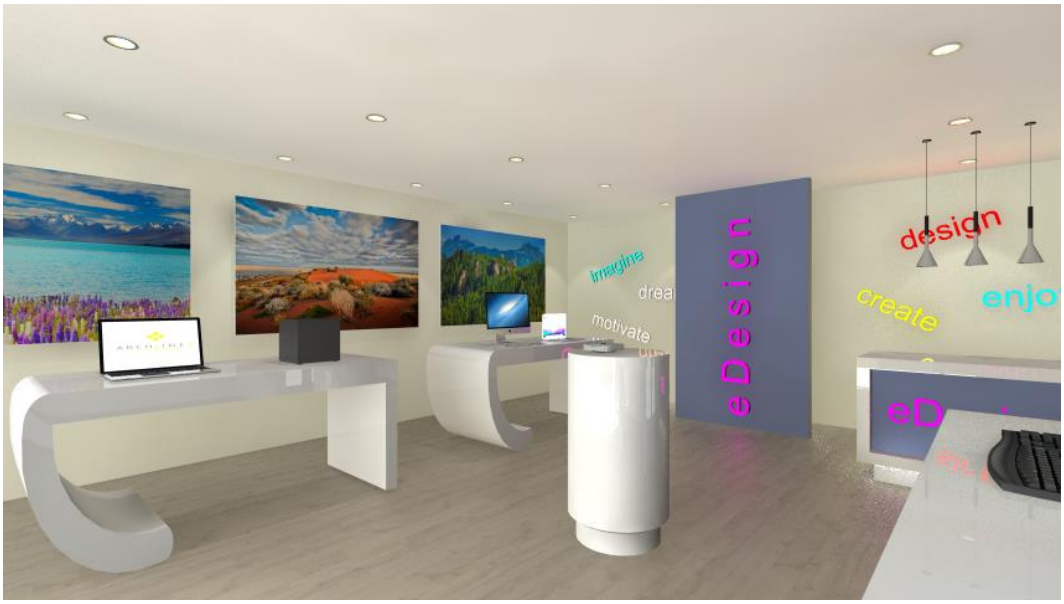


- Activate 2D layout.
- Click on the Layer walk icon and turn all the layers except the –“Spline” and the “89_Circle” layers. With the OK button close the window.
- Rebuild the 3D model from the layout using the 3D hammer.
- Activate the render window, now you still have an option to make further changes before starting the final render.

Let's check how our work so far appears in a better quality representation. For now, in the integrated rendering.

- On the left side under Rendering parameters click on Settings tab there you can see the parameters. Select the **Exterior – Quick render** type from the options.





7. Render

Now it can be seen that the hasty parts of the image became more detailed, not patchy, and not grainy, as we have seen in the draft.
This image is close to the final version, and we will change only a few effects. The price of better quality in rendering is the increased time.

7.4. Render effects

The final part of this tutorial we will learn about the Standalone rendering. This solution is very useful when a second monitor is connected to the computer and if you want to use the rendering list discussed at the end of the tutorial.

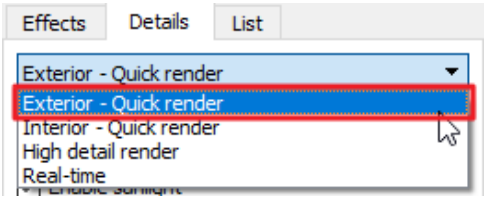
- Close the Integrated render window.
- Activate 3D window.
- Click on View / Rendering / Standalone rendering -realtime draft command.
- After checking the settings click on Start Rendering button.

As you can see the rendering process is the same as before, but this time the renderer runs as a standalone application independent of the ARCHLine.XP design program.

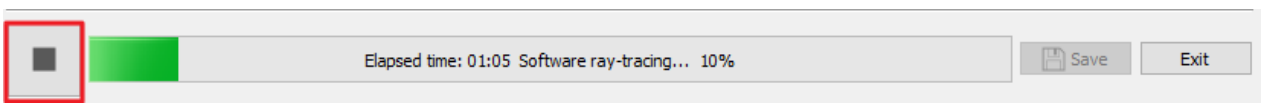
The quality of rendering

If you want to create a final image from a rendering started as a real-time draft, you have to do the following:

- Activate the render window.
- Go to the **Details** tab. Here can be found the settings with which you have originally started the work.
- Select the **Exterior – Quick render** type from the options and the program automatically changes to normal render. In this case it will take a bit longer to complete the render.

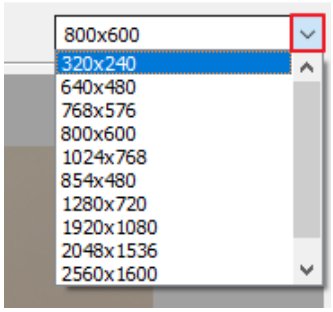


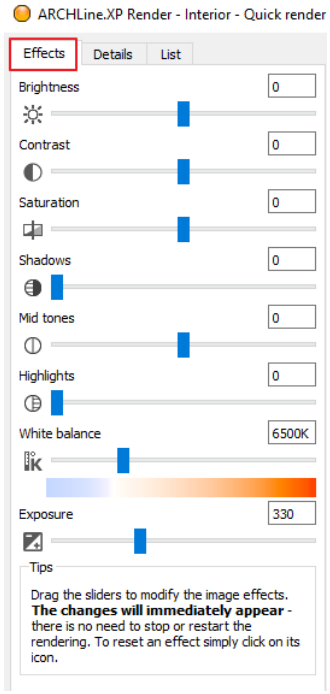
The quality should only be increased if the details you see in the final image are not sharp and noiseless.
The rendering can be stopped anytime with the Stop button seen in the picture below, then can be started again from zero using the start button.



Resolution

If you want to modify the resolution, click on the Stop button. Modify the resolution is the top right corner, then restart the render.





Effects

While the program is rendering, all the setting which are influencing the brightness, contrast and other settings of the final image can be modified on the **Effects** tab. These settings can be modified on the final result as well.

It is recommended to set the **Exposure** first, so that the white colours are right. This modification is visible immediately.

Be careful using these effects, because setting them too high or low can result in an undesirable final image

If you want to get back to the default value at any of the settings, you just have to click on the icon of the setting next to the slider.
If you want to reset all the values, click on the **Reset all** button at the bottom of the tab.

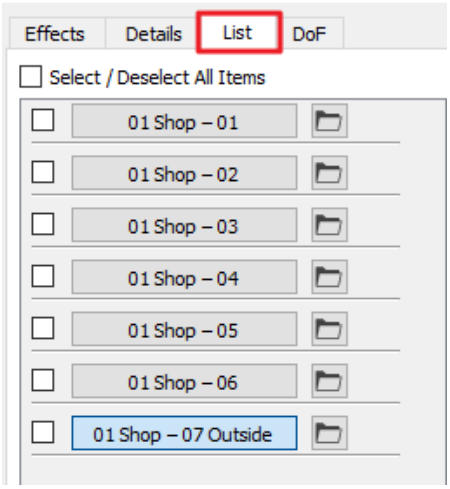
The final image can be saved by clicking on the Save button with a new name to a folder selected by you. You can save multiple images with the different settings and render phases. You can also select its format before saving it. It is recommended to choose JPG if you want to send it to your client.

Final render

7.5. Render list

There is a third tab in the render window, the Render list. Creating the final images is a long process per image, and it is time consuming to save images and to switch to new ones, then launching a new rendering. Essentially, this process is automated by the rendering list.

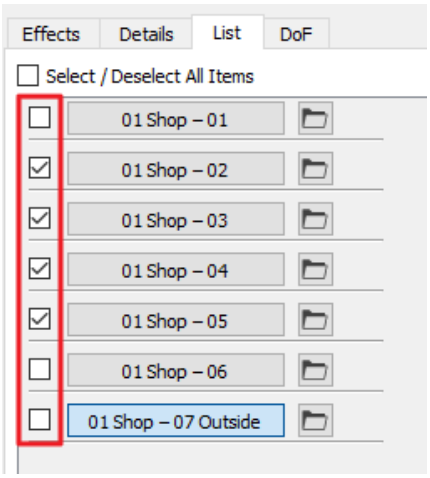
- Click on the **List** tab, this is a render list.
- The previously saved perspective views appear here.



- If you click on another view the program starts to render it with the current settings.
- If you go back to the **Effects** tab, you can change the settings of the current image.
- If you click on previously completed image the program only displays it with the previous settings, not renders it again. Here you can modify the settings or change its resolution, then click on the Start button and render it again.

It is important to know that each given setting on Effects and Details pages and the image resolution can be independently defined for each view. Therefore, you can set different backgrounds or exposure; likewise, to real photography due to different materials and light conditions that might be necessary.

In the Render list you can select multiple views, after setting the effects, resolution and other parameters. You just have to tick the square before the name of the view, then click on the Start button below.



The selected images are rendered with the settings and resolution previously selected at each image.

Tip: It is recommended to leave the computer “alone” after starting the final render list. No other programs should be run during the rendering because it will increase the render time.

7.6. The specialities of the outdoor render

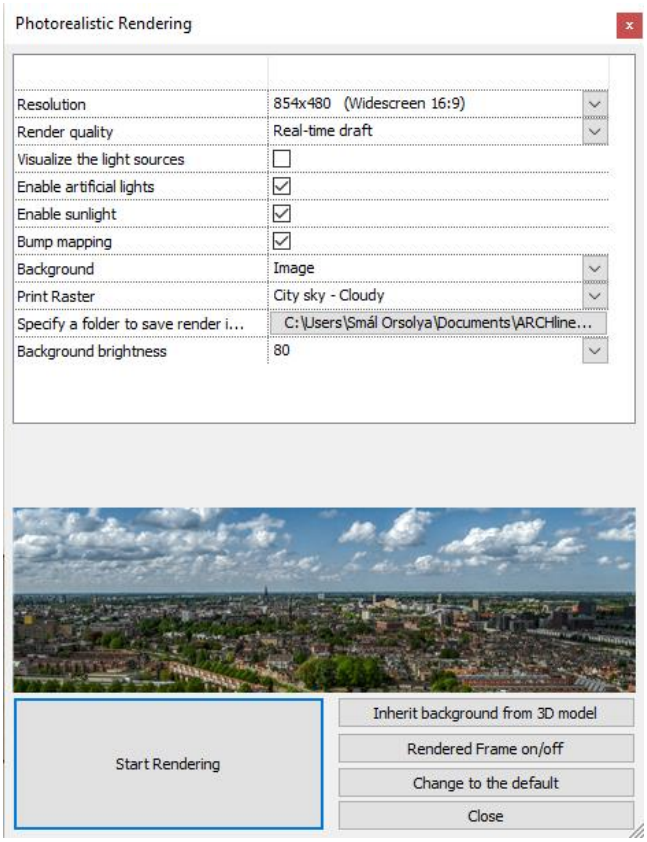
Now let’s discuss the specialties of the outdoor render.

Although now we are discussing the rendering of interiors, in these cases it is possible that the visible content actually corresponds to the outdoor light conditions, for example, we render an open space (for example, a semi or fully open terrace) or a special representation of the model.

To start the rendering, click on the Standalone rendering or Integrated rendering on the Navibar or on the Ribbon bar.

Close any other previously created rendering.

- Activate the view “01_Shop_07_Outside”
- Start the rendering, click on the **Standalone render – Real-time draft**
- In the appearing window, the previously mentioned settings are available which were used to render the interior.
- The **Enable sunlight** option is usually necessary when we render an outdoor space which was created in the daytime. So, this should be activated.
- Activate the **Bump mapping** option, so the exterior stone surface’s effect is stronger.
- The **Background** will be more dominant because it will surround the model. We can select an image, a colour or a panorama as background.
- The most important difference from the interior render is the **Background brightness**. On an exterior render, the normal background brightness value should be set higher, so it will be adjusted to the outdoor lighting conditions.



If you click on the Start rendering button, the render will start and the settings could be changed in the previously mentioned way.
An important difference is the setting of **Exposure**. Here it should not be increased, like for the interior render, because the model is already lit by intensive direct light. Usually it should be increased only slightly or even decreased in some cases.

For both exterior and interior renders, it is important that the surfaces that are set to matte are quickly rendered, but less likely to look like real materials.

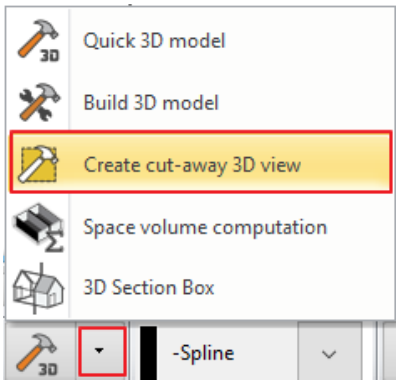
Particular attention should be paid to the appearance of the glass and the different reflective surfaces when using exterior render. It is also recommended to set them to be lifelike, sufficiently reflective and transparent.

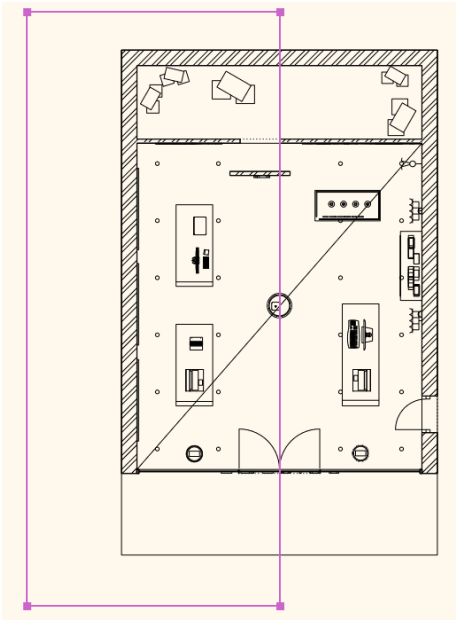
Change the background to match better our current goals.

- Click on Details tab and choose “Background- single colour” option.
Click on “Browse” and find grey on the colour palette.
The most frequently used special representation mode is when we render the perspective or wall view of a cut away 3D model.
Let's see how to do that:

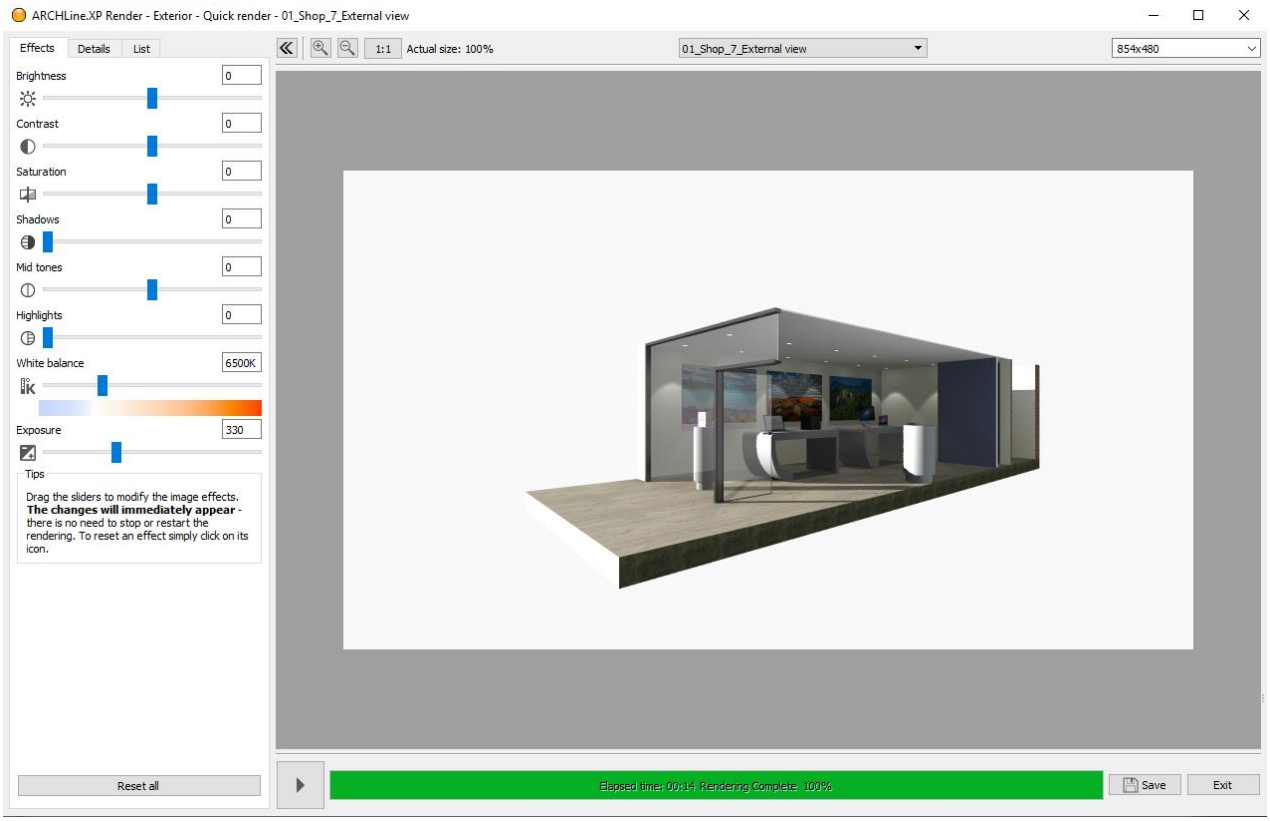
- Switch to ARCHline.XP. Do not close the Render window as it responds to changes immediately you so you can get instant feedback.
- Activate 2D window.
- Select from 3D hammer local menu the “Create cut-away 3D view” command.

- Now we will pull a rectangle over the floor plan, therefore denote its top left and bottom right corner point, when it is done wait until the 3D model is updated.





Now you can see the result in the Render window:



Finally set the side view of the model and wait for rendering.

- Go back to ARCHLine.XP without closing the Render.
- Activate the 3D content and from the window header choose Side view / Right option.
- Wait until Render updates the final result. If it is necessary decrease the Background brightness to visualize better the side view.

Much higher resolution renderings can be used documentation purposes.