ARCHLine.XP® 2024

Windows

PRELIMINARY COURSE

Interior Design Tutorial

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

Contents

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 remodeled 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 centered 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/enrollments/courses/preliminary-course/downloads

Workshop 1: Foundation

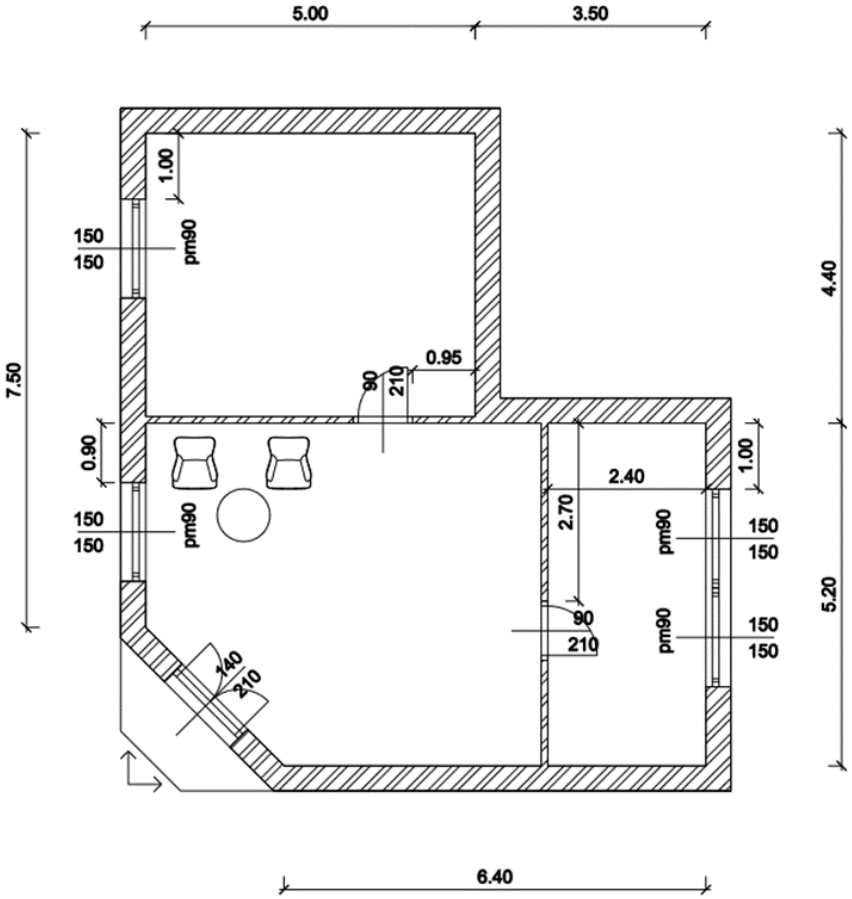
1. Workshop: Foundation

1.1. Introduction

This tutorial will introduce the fundamental basics of ARCHLine.XP®. It aims to provide an easy-to-follow and logical course to learn the everyday tools and concepts needed for general work.

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.

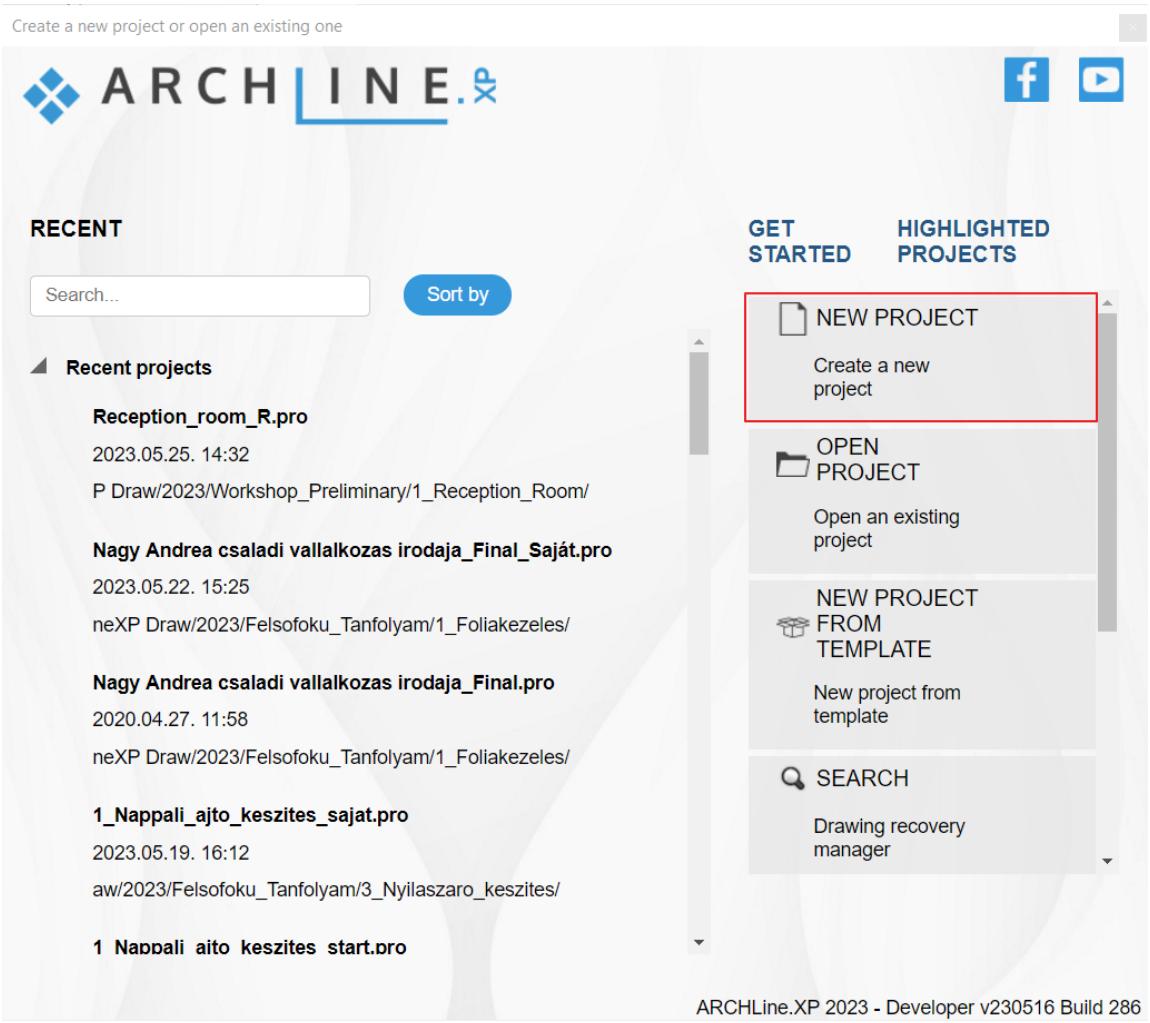
In this tutorial, we will create the following layout:



- Open your internet browser and watch ARCHLine.XP Foundation video tutorials: https://www.archlinexp.com/enrollments/courses/preliminary-course

1.1.1. 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

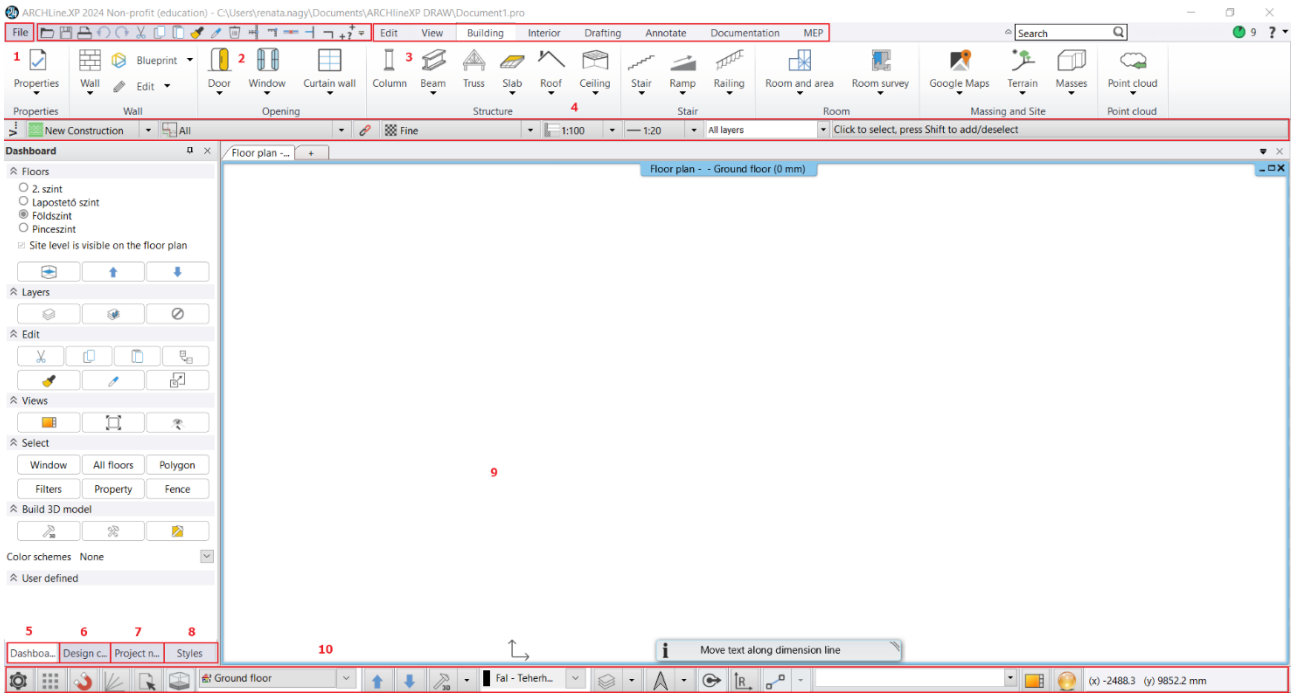
- Click on the **New project** button in the Welcome dialogue box.
- This will create a new blank project with an empty floor plan here you can begin your work.

1.1.2. 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.

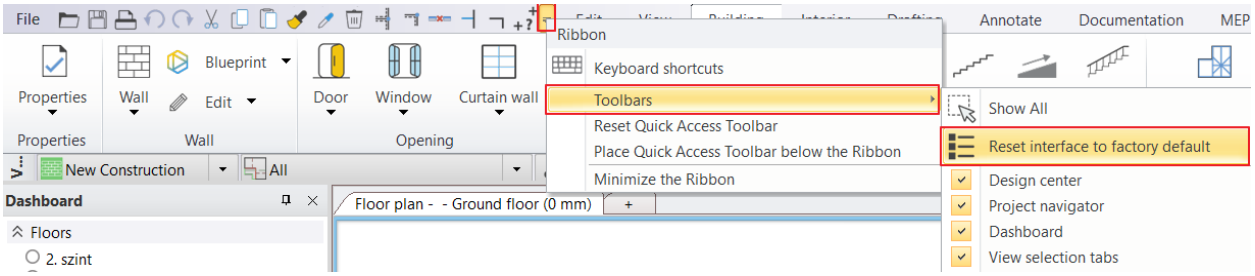
The ARCHLine.XP® interface has the following main parts:

- File menu (1), Quick Access Toolbar (2), Ribbon bar (3),
- View Control bar (4),
- Side menu: Dashboard (5), Design center (6), Project navigator (7), Styles (8),
- Drawing area (9),
- Coordinate bar (Status bar) (10).



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

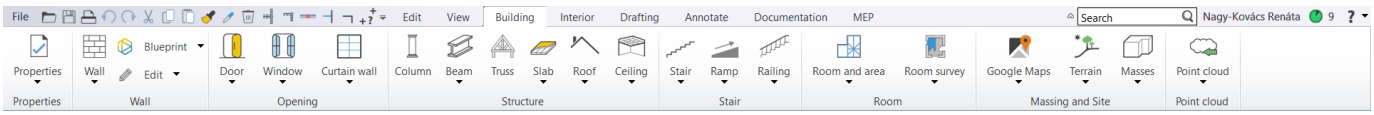
If the interface is other than the default layout, click on the arrow at the end of the Toolbar. Opening the dropdown menu please use the **Toolbars / Reset interface to factory default** command. This way the default toolbar position will be restored.



Working with ARCHLine.XP®, the Side menu, 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.



Dashboard

The dashboard is a clear collection of the most frequently used commands related to the given view, which can be supplemented with your own command collection.

The advantage is that any command placed on the dashboard that can be found in the ribbon menu is available here with one click. In addition, frequently used styles can also be selected and a unique icon can be assigned, thus facilitating quick recognition.

1.2. Basic Drafting tools

1.2.1. 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.
Next, using the Line tool, we will create two drawing elements.

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

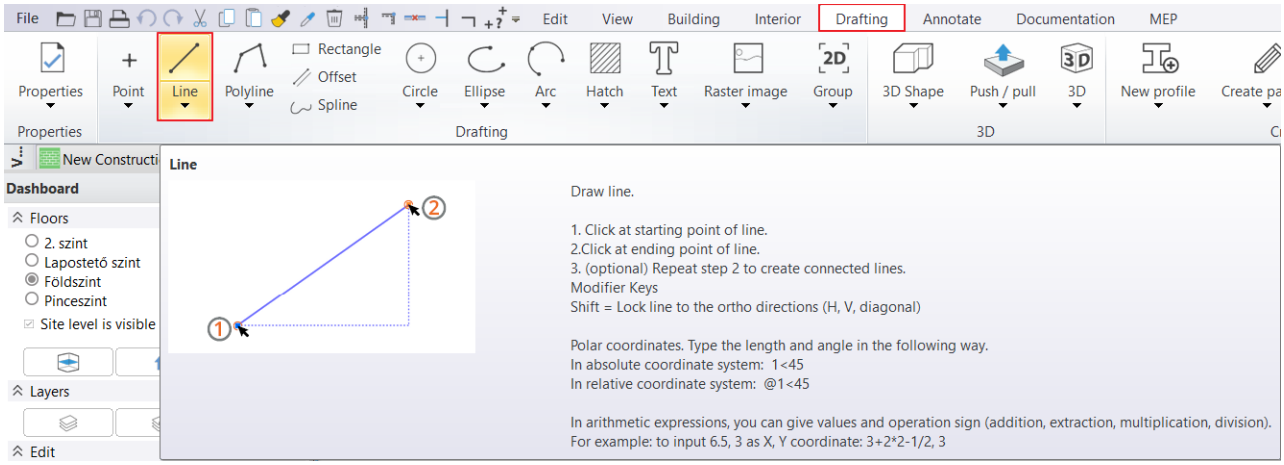
Before starting, we have to clarify the meaning of a “Click” in the tutorial – and generally in the software.
A click is defined as**:**

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

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

Drafting lines:

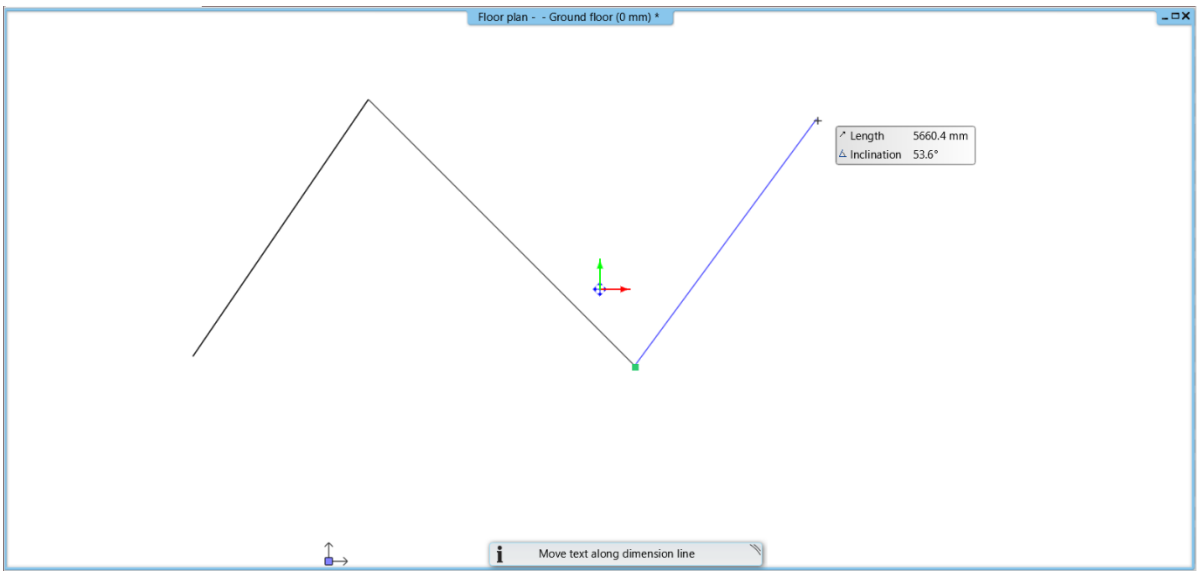
- Choose Line command under Ribbon bar / Drafting.



- 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 a third line has started to be drawn.

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. There are two solutions:

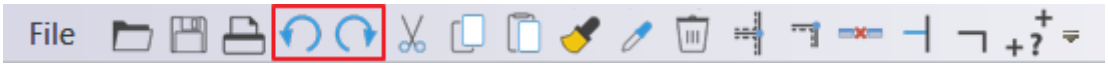
- Pressing Enter completes the line chain drawing. You can start drawing a new polyline, or press Enter again to complete the drawing.
  or
- Press the ESC on the keyboard. It will end the command.

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.

1.2.2. 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 Quick Access 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 color 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.

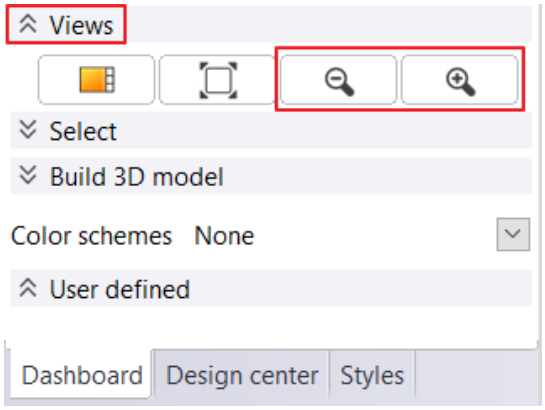
The “Redo” command next to the “Undo” on the Toolbar

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.

1.2.3. Zoom in, Zoom out and Optimal zoom

The drawing can be zoomed in and out using the magnifiers on the **Dashboard**:
The first magnifier zooms the drawing out to 70%.
The second magnifier allows you to select a part of the drawing and enlarge it to the entire drawing area.



There are quicker ways to zoom in and out of the drawing in the workspace than using Magnifiers. 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.

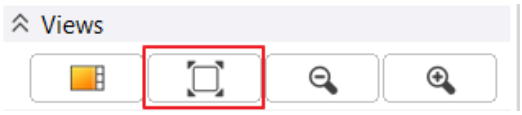
Zooming out with mouse wheel.

- 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

This command is located in the Dashboard - Views section. Clicking on the icon will optimally fill the drawing area.



Optimal Zoom with mouse wheel

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

  The full 2D drawing is now visible in the drawing window, filling it optimally.

  Finally, let's go back a little more to the "wander" that occurs when zooming in.
  This phenomenon is caused by the fact that when you start zooming in on the drawing (scrolling upwards), the program also takes into account exactly where the cursor is located, as the center of zoom is the cursor position.

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

Zoom in 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 in 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 in again. The program will zoom in 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.

1.2.4. 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.

Panning with mouse wheel.

- Move the mouse over the drawing.
- Press down and keep pressing the mouse wheel.
- While you are holding down the 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.

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.**

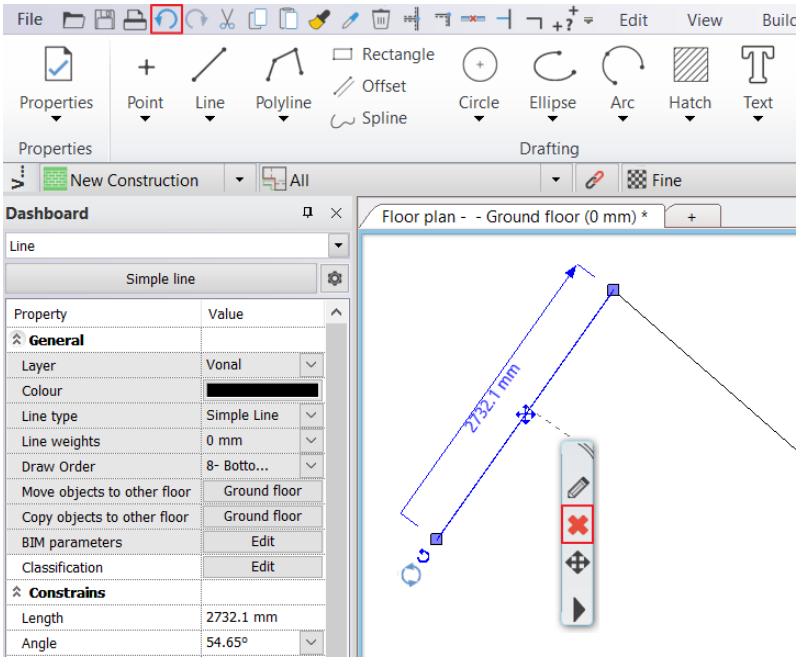
1.2.5. Simple selection and delete

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.

Simple selection

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

The program represents the selection by highlighting the chosen element and drawing various colored icons around it. These are called **markers**. With markers, you can execute the most important commands on a selected item without having to search for these tools in menus and toolbars. There is also a so-called floating icon menu, which allows further operations to be performed, such as property modification or deletion. The properties of the item are displayed on the Dashboard.



Delete

- Click on the delete icon in the floating icon menu and the line disappears.

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.

1.2.6. 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.

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 ✖.

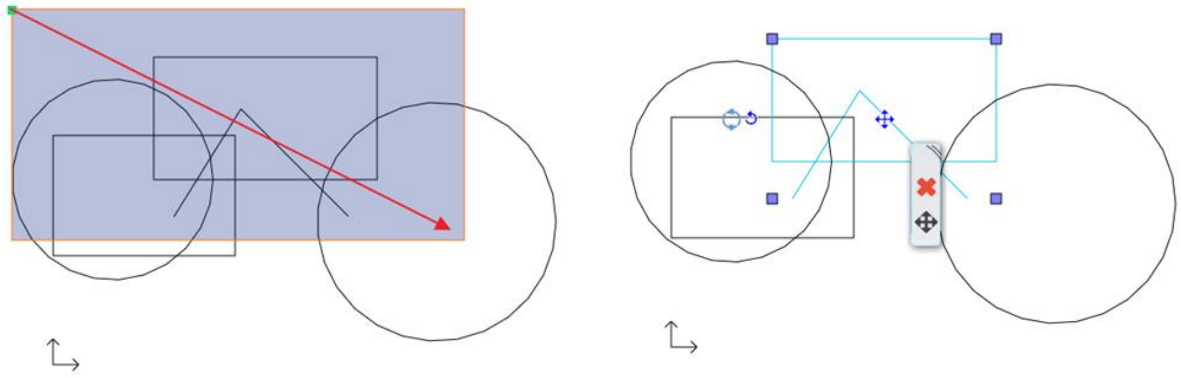
1.2.7. Selection by rectangle

- Draw some more elements on the drawing: line, rectangle, circle, etc.

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

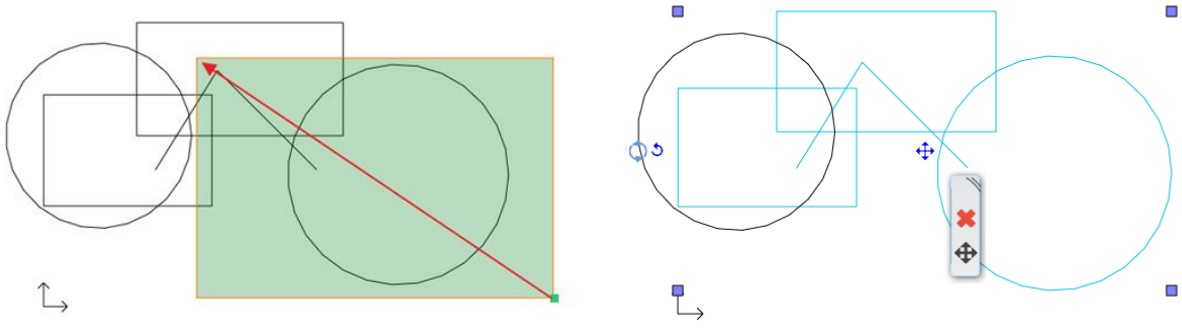
- If you are currently in a command, please press ESC to close it.
- Move the mouse to the upper left corner of the drawing area and click on the blank field.
- Move the mouse down to the right so that the resulting semi-transparent blue rectangle partially covers the elements, and make sure that there are elements 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 elements 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 elements, and make sure that there are elements 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 color of the selection rectangle is BLUE.
  The program selects only those elements which are completely within the selection rectangle.

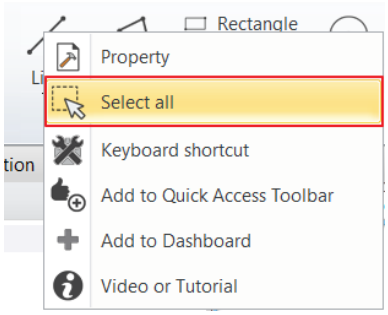
Selection by rectangle from right to left:

- The selection rectangle should be drawn from right to left.
- The color 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.

1.2.8. 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:

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.

1.2.9. Direction enforcement – Angular attraction – Shift

In a graphical editing command, Ortho Mode determines the placement of the second point relative to the first point. The second point is attracted to the nearest fixed angle.
The default directions are 0, 45, 90, 135, 180, 225, 270, 315.

The easiest way to use ortho mode is to press the Shift key. Holding down the Shift key moves the cursor to the nearest predefined direction. Once you have selected the desired direction, you can continue the command. The most common use of the Shift key is vertical, horizontal direction constraint.

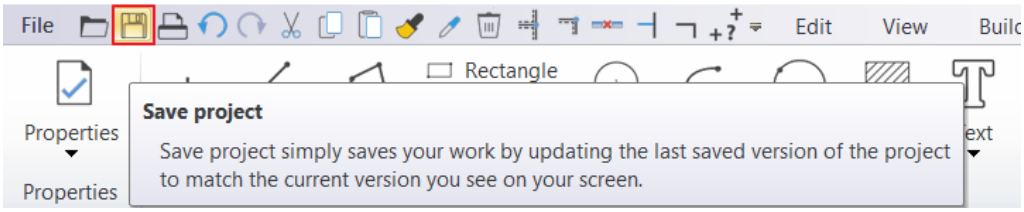
1.3. Design

1.3.1. 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

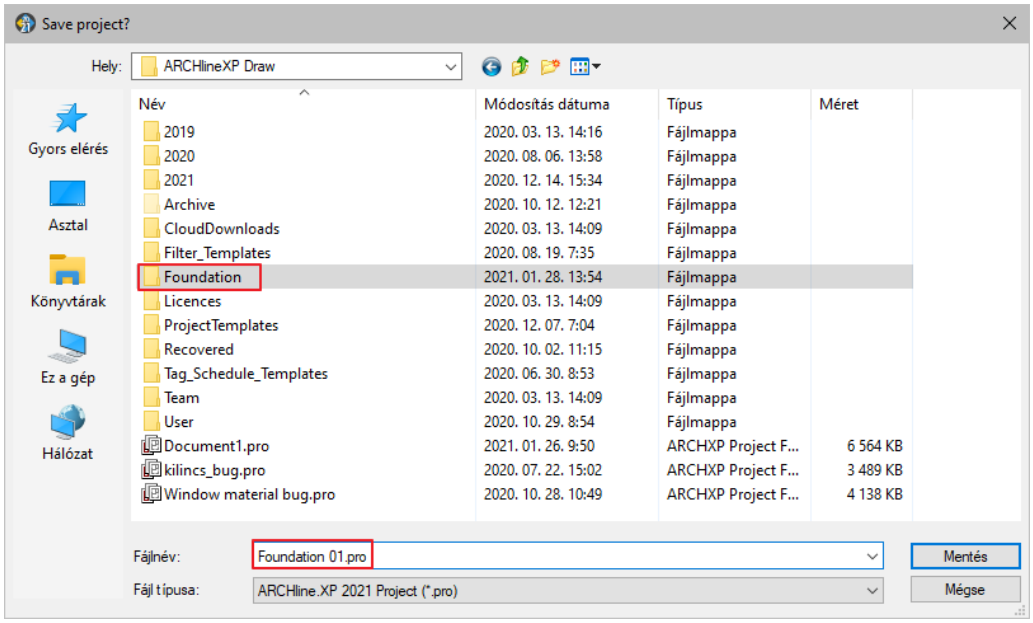
- Select the Save project command from the Quick Access Toolbar.



This is the first time we save the project; the program 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 ARCHLine.XP 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.

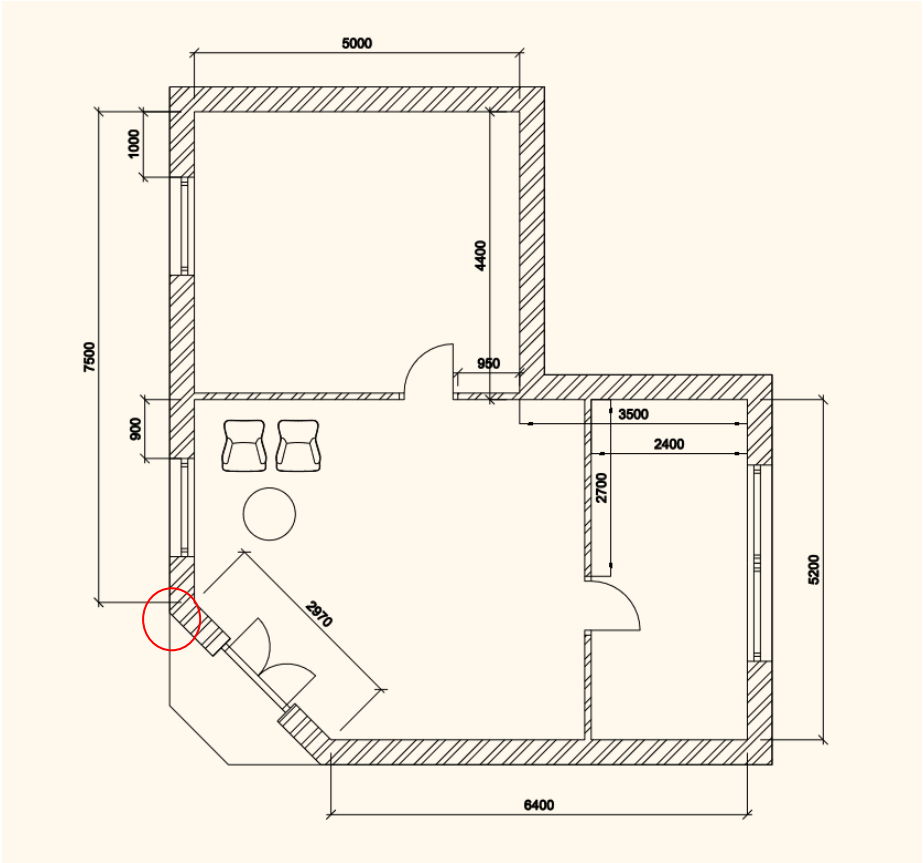
We suggest you to save your projects quite frequently (e.g. every 10 -15 minutes).

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

1.3.2. Creating walls

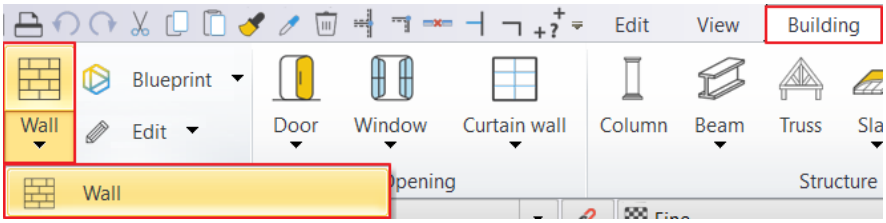
We will start with a simple floor plan. Similar to the way you can create simple lines, you can create much more complex drawings by using other tools. This time we will create walls with known lengths. We will create the following floor plan:

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.



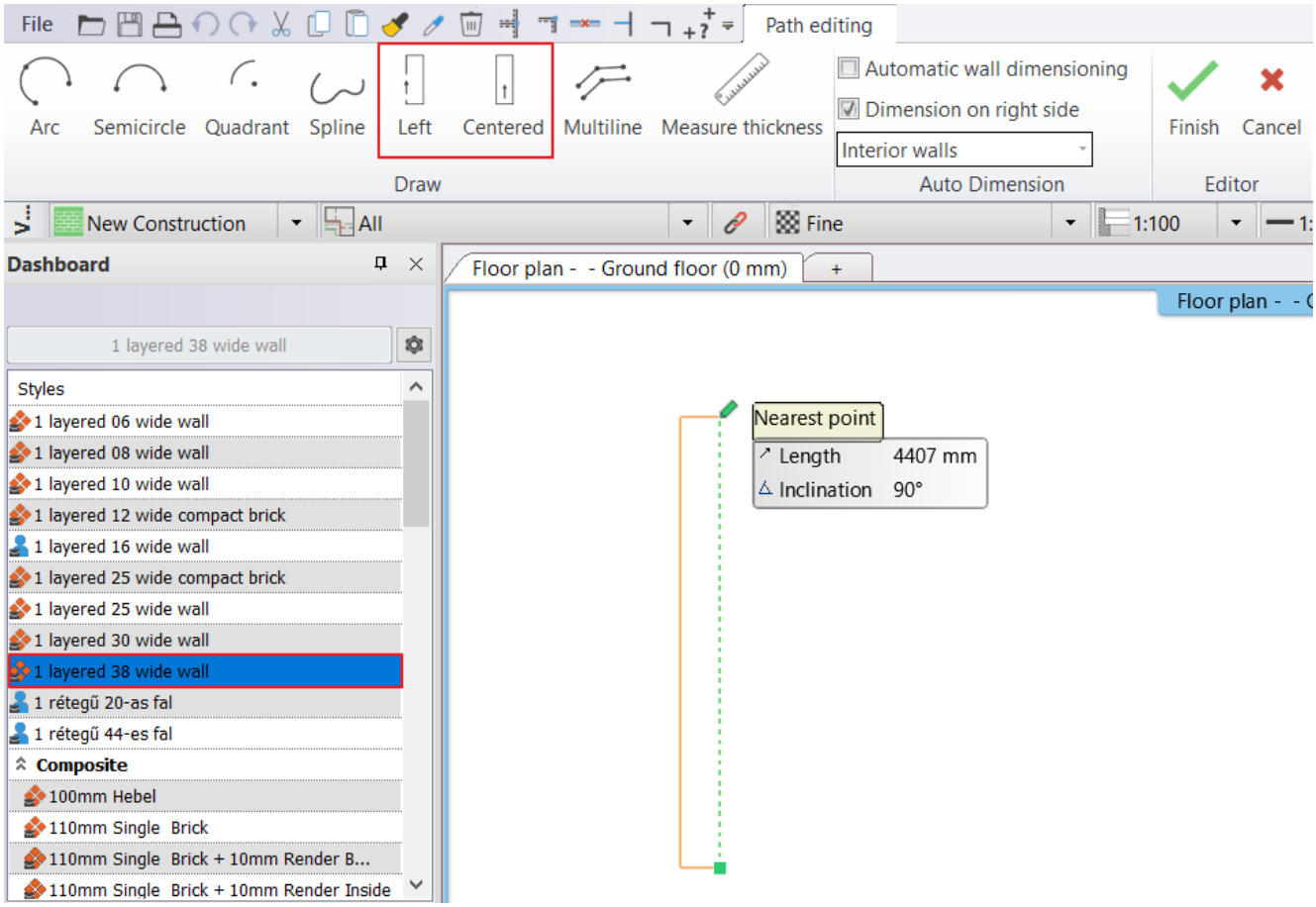
Creating wall by a known length

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, which means that you started a drawing task. Click near the drawing origin.
- Move the mouse up vertically from the first click.

In the styles, you can see that the wall drawing is made with the default **1 layered 38 wide wall**.
The wall can be drawn using the blue reference line, which changes color depending on which notable direction it is facing. For verticals, it changes to a dashed green color. The green pencil at the end of the reference line represents the end point of the wall you are drawing, and the orange line represents the thickness of the wall.



The reference line can be on both the left and the right side of the wall. To select the best position, you have several options:

- From the draw menu bar: *Left – Centered – Right*
- *F5* key
- *Space* bar

In the example the reference line is on the right side of the wall, thus you can draw the inner side values of the wall. Try changing the reference line.

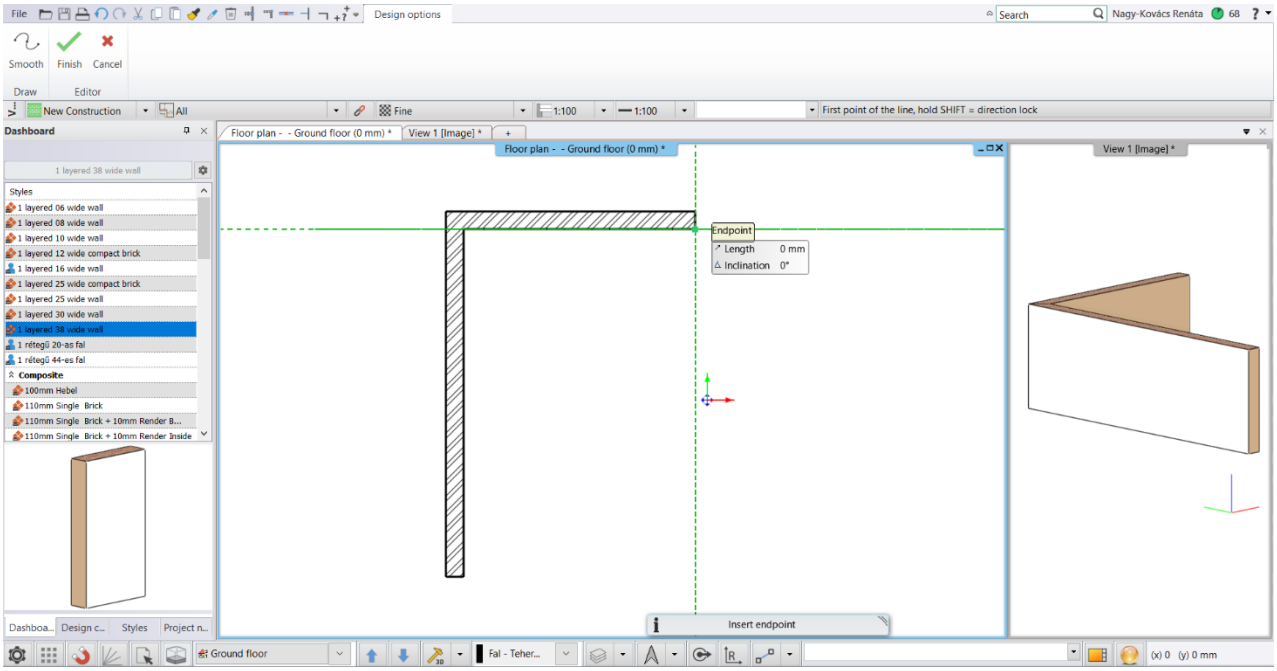
- The wall will be 7500 mm long, so type the 7500 on the keyboard. The value is also displayed on the screen.
- Press the Enter on the keyboard to accept the value.

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 favored 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.

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.

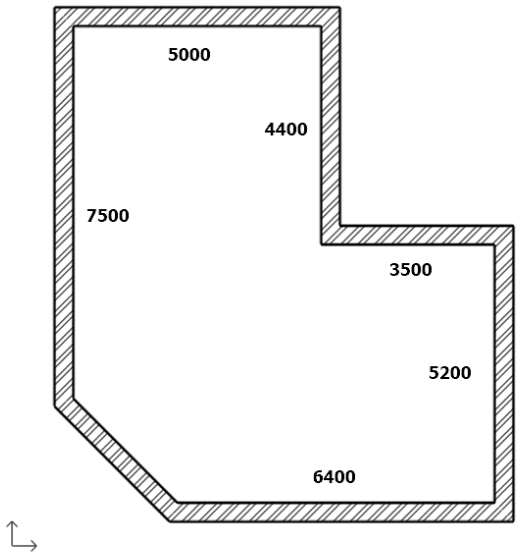


Now a perpendicular second wall is created linked to the first wall. It might happen that we cannot see the endpoint of the second wall. To solve this problem, use the pan and zoom techniques shown before.

- 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.

Continue creating walls

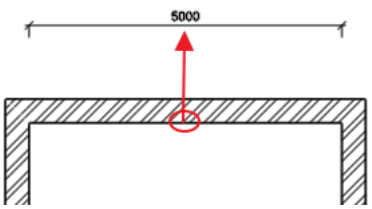
- Move the mouse vertically down and type **4400** and hit **Enter**. When the Enter key is pressed, the third wall is created.
- Move the mouse horizontally to the right and type **3500** and press the **Enter** key on your keyboard.
  Don't forget that you can zoom in / out and pan drawing at any time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



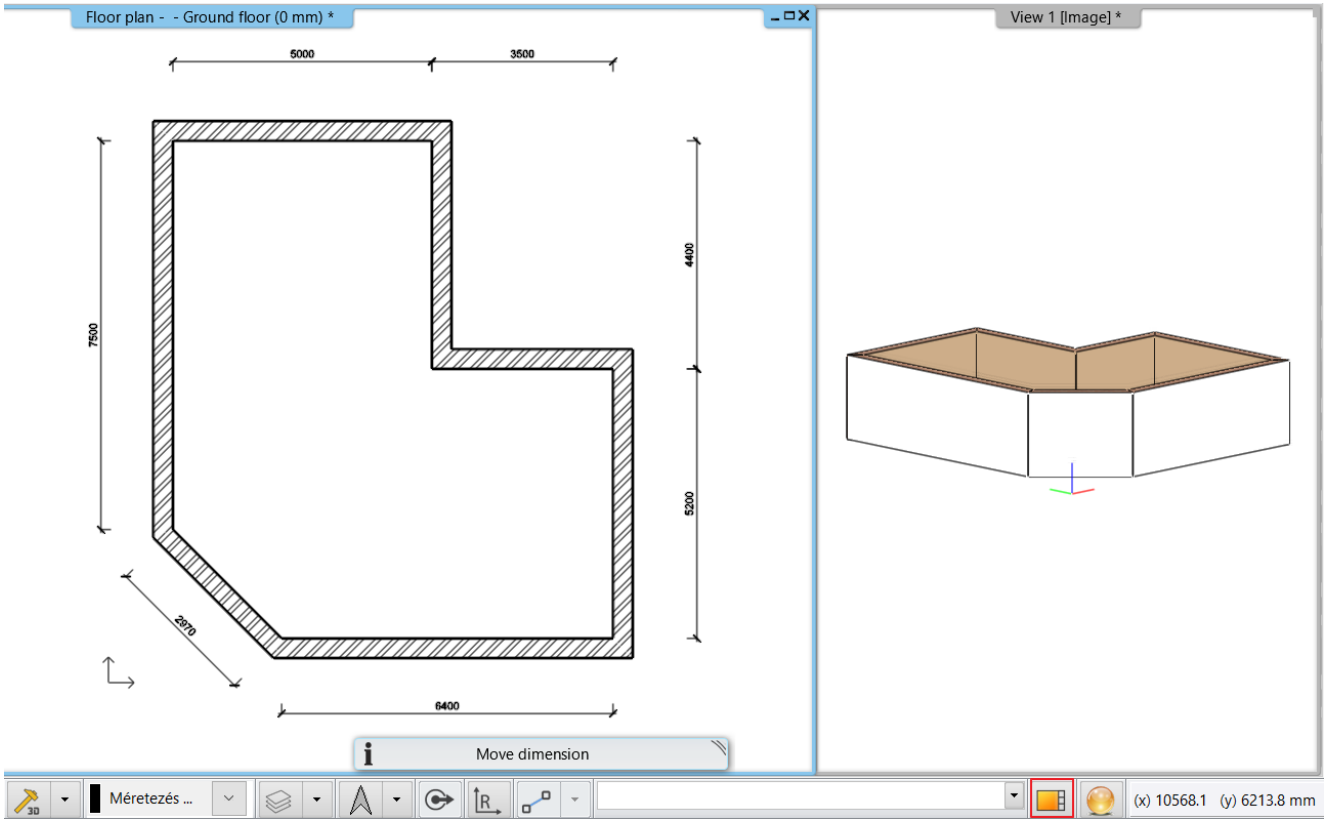
If you haven't worked yet with design software, you may find it difficult at first to deal with everything, as you often need to zoom in and pan the drawing to see the correct detail. Don't worry, it's completely natural. Soon you will discover that you start combining these instructions efficiently,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

1.3.3. 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 **Annotate / 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.



1.3.4. 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.

You can swap the 2D and 3D windows. To do this, click the Magnify View icon on the Status bar.

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 view” 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.

1.3.5. Manage 3D View

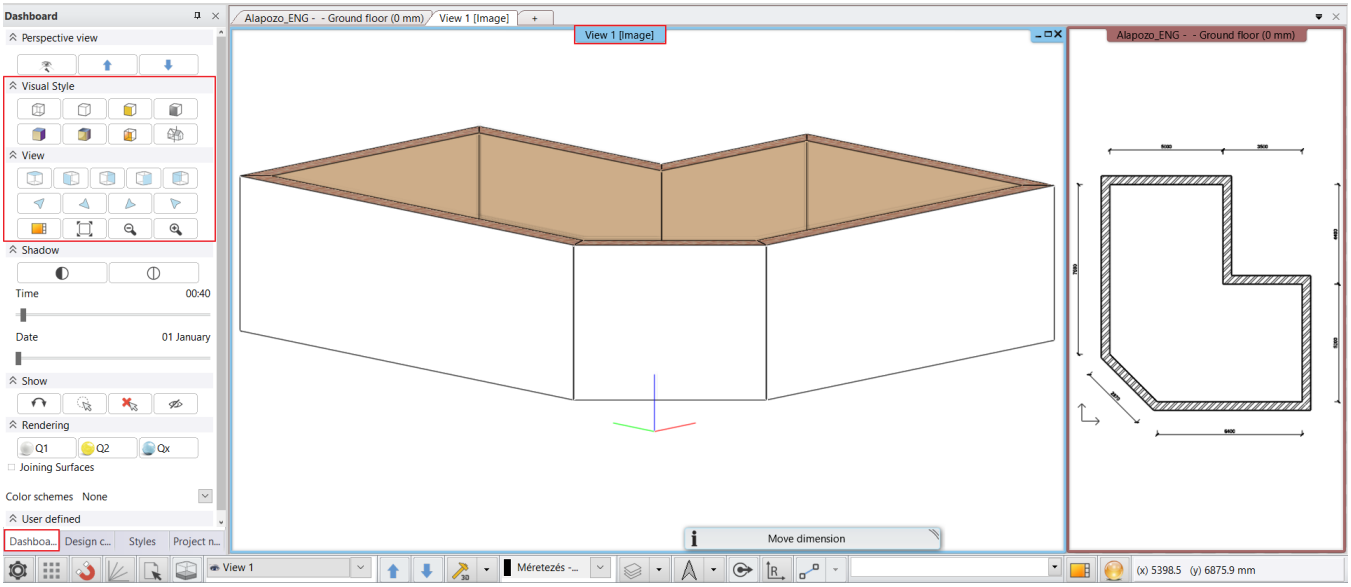
Working in the 3D, just as on the 2D drawing, you can zoom in and zoom out and pan the content.
Obviously, you may want to view the 3D view from different directions and rotate the model around.

Rotate the 3D view with the right mouse button in axonometry

- Move your mouse over the model in the 3D window.
- Press and hold down the mouse right button and start to move the mouse.
  The point where you press the right button will be the center of rotation. This is indicated by a small colored coordinate system.
- When you want to complete the rotation, release the mouse right button.
- 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.

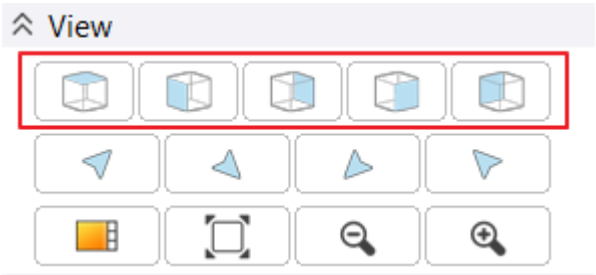
1.3.6. The 3D representation modes

When the 3D window is the active window and no item is selected, the **Dashboard** displays the instructions for that window.
We will now look at the **Views** and the **Visual Style**.



Notable views and Axonometry

- Try the different notable views one by one:
  Top view, Left view, Right view, Front view, Back view



- Try one by one the axonometric views, which display the model from different directions:
  Southwest, Northwest, Northeast, Southeast

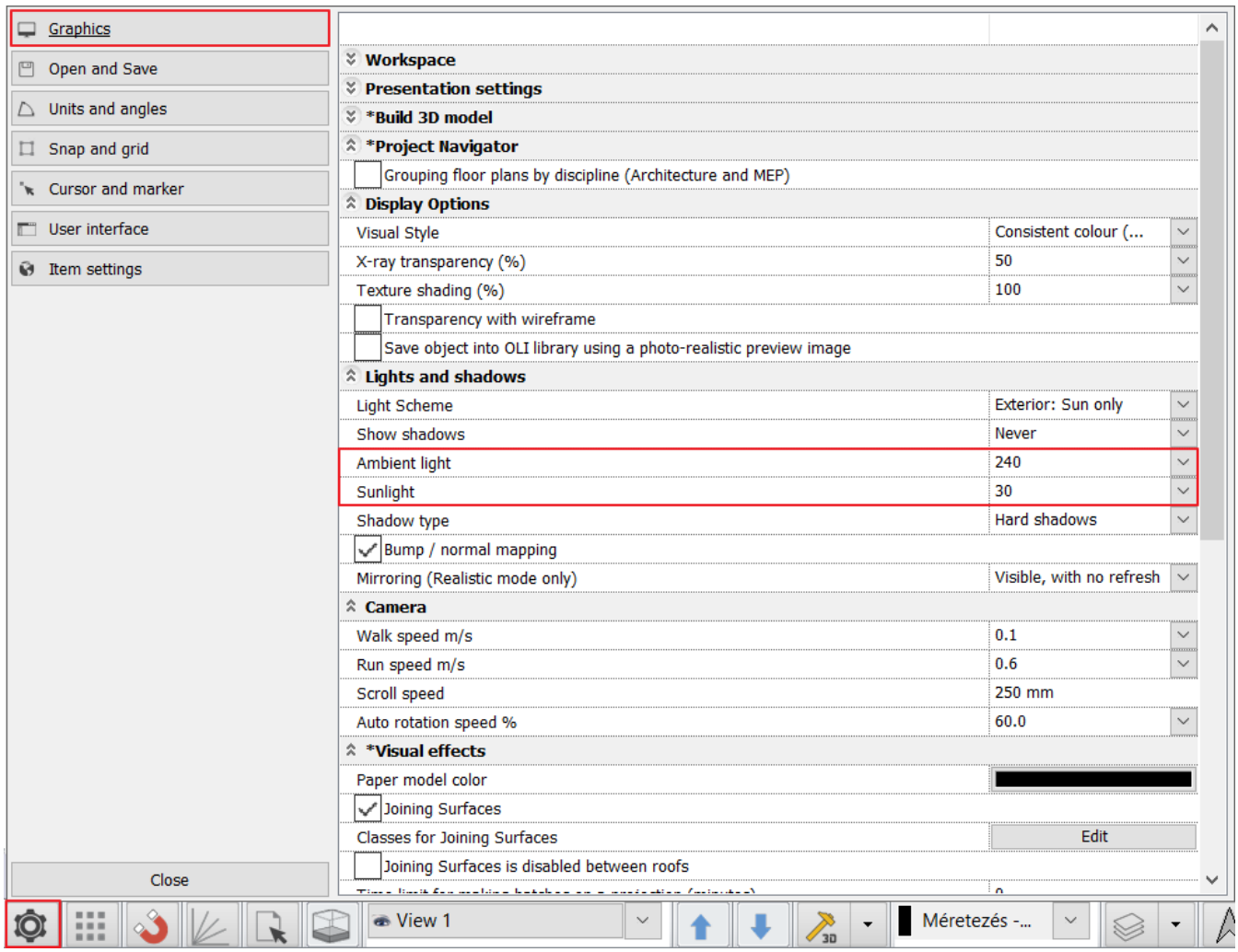
- Rotate the axonometric view to get a slightly better view from above.

Visual types - Styles of display

- Try the different display styles one by one and observe how the model display changes:
  Wireframe, Hidden line, Colored, Greyscale,
  Consistent color mode, Realistic, X-ray, Dynamic cutting plane

- Finally, select **Realistic representation** mode.

The *Realistic representation* mode can be too dark or too light, depending on the project and the settings. You can change this in the **Options** by changing *Camera Light* and *Daylight*:



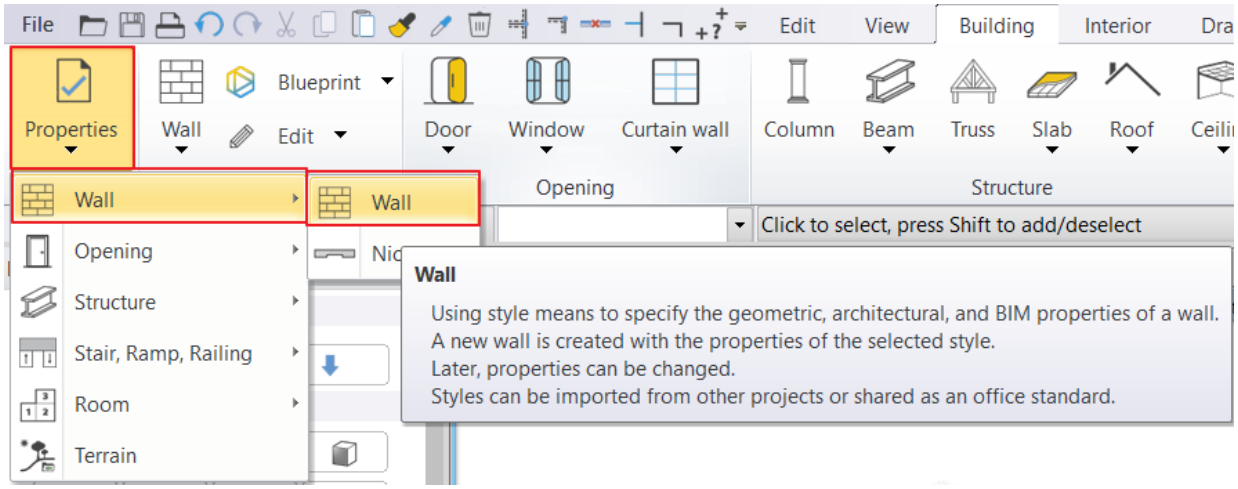
1.3.7. Creating partition walls

Specifying settings

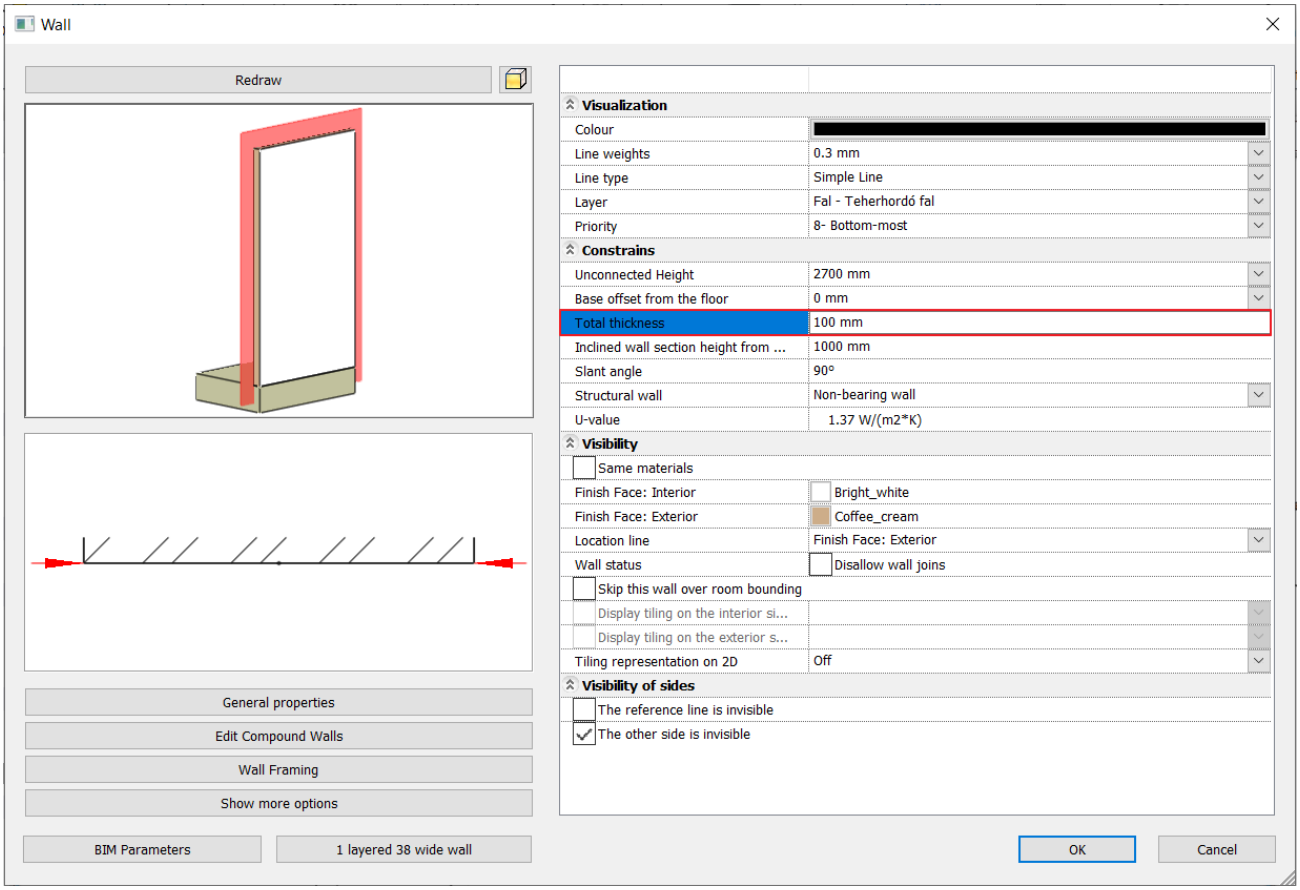
The main walls are ready. Let's continue working on the partition walls. Before starting, please activate the 2D window and enlarge its content. If we kept drawing the partition walls, then those would have the same properties as before.
To draw the partition walls, we have to change the properties (e.g.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



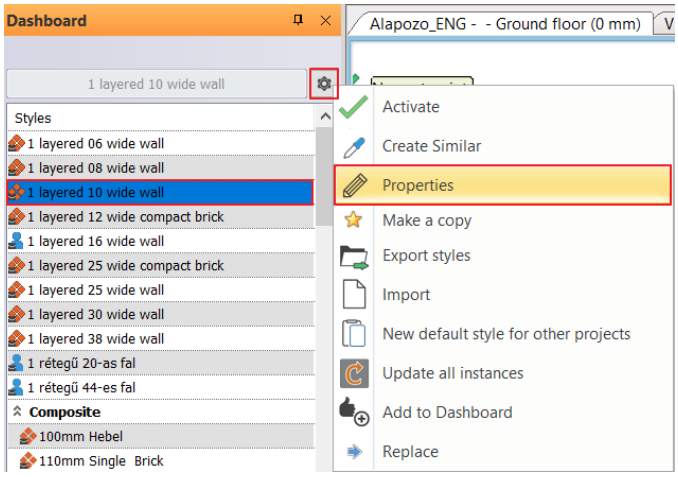
We use millimeters as units, but you can use other units as well. You can modify it under File / Options and choose Units and angles page.

In the drawing, nothing has changed, but from now on, when you create a new wall, its thickness will be 100 mm.

Method 2: Using Styles

When you click on **Ribbon bar / Building / Wall** command, the Dashboard 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.

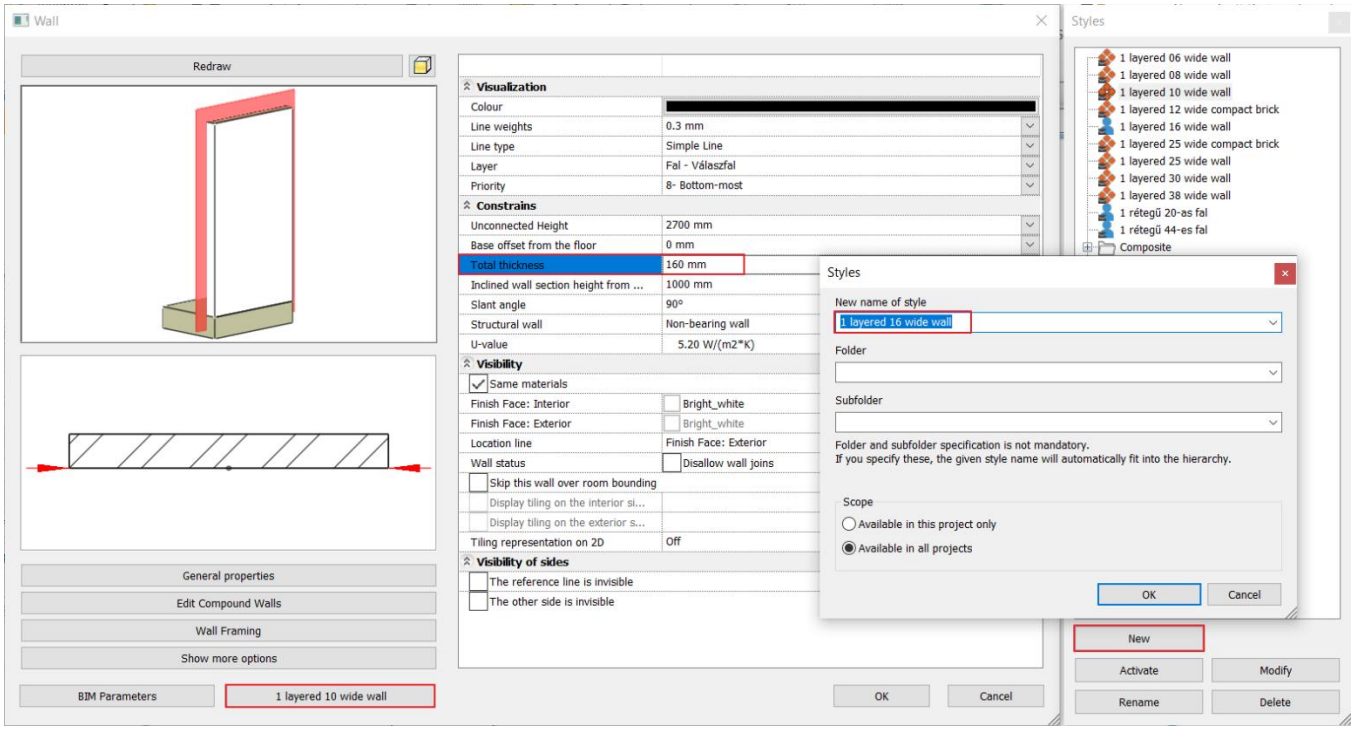
- Select the "**1 layered 10 wide wall**" style. As soon as you select it and start drawing the wall properties will change.



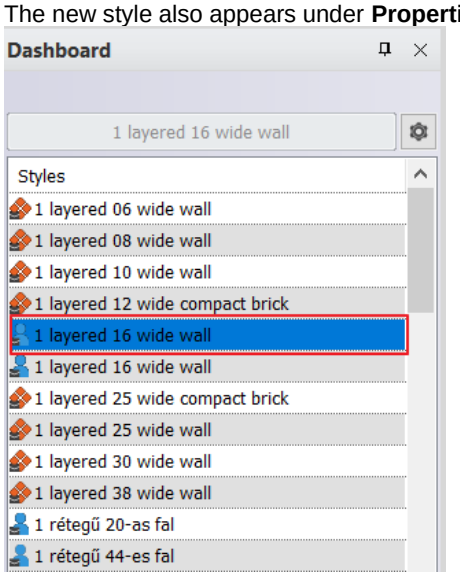
Create a new wall style - Optional

- After starting the wall command, in Styles, click  Manage styles - Properties.
- Set the properties of the wall in the dialogue window. E.g. Total thickness: 160 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.



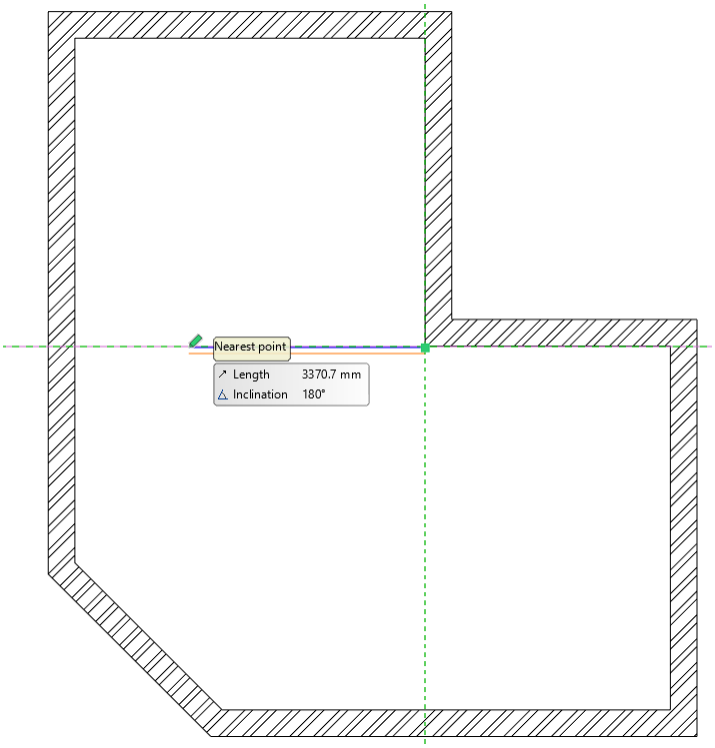
The new style also appears under **Properties / Styles**: “1 layered 16 wide wall”.



Drawing a partition wall

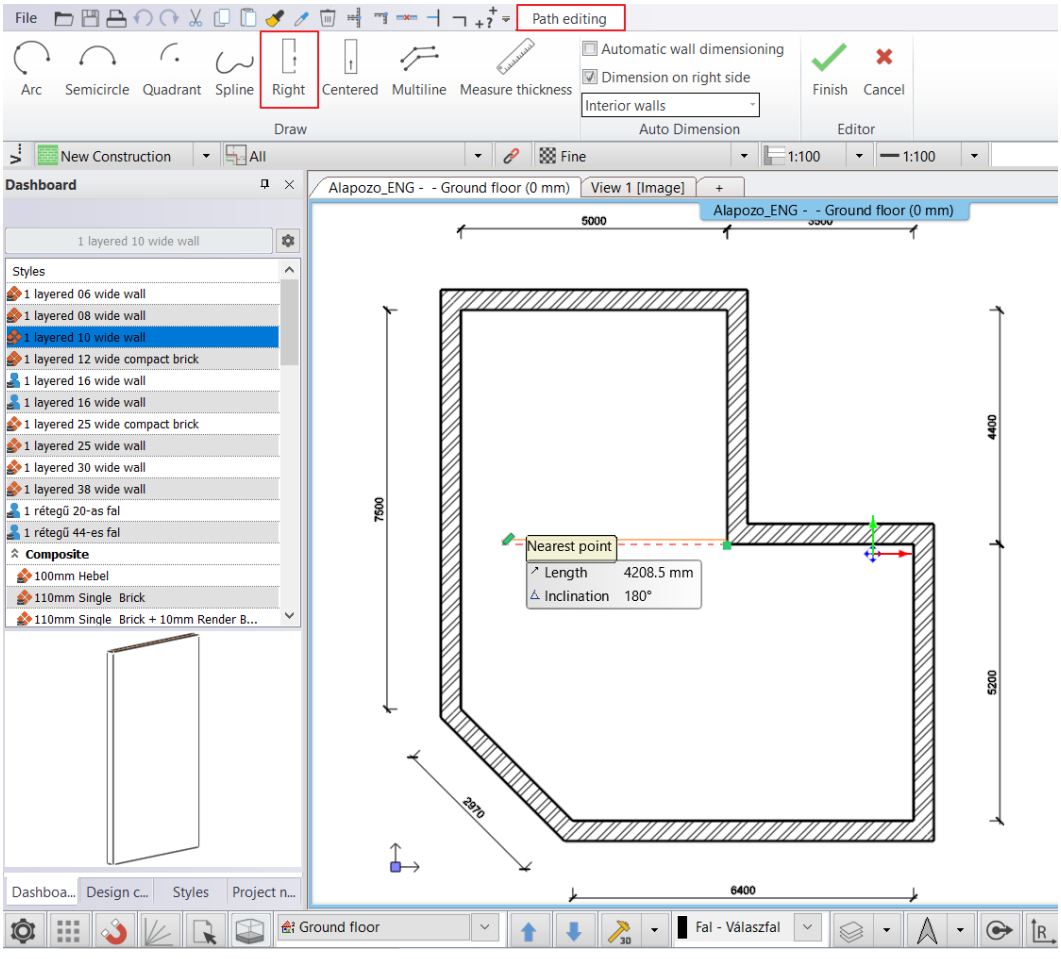
- Start the Wall command again, select the **1 layered 10 wide wall** from the Styles, and continue drawing the partition.
- Click on the inner corner point of the L-shaped floor plan that you have created, this will be the starting point of the partition.

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.

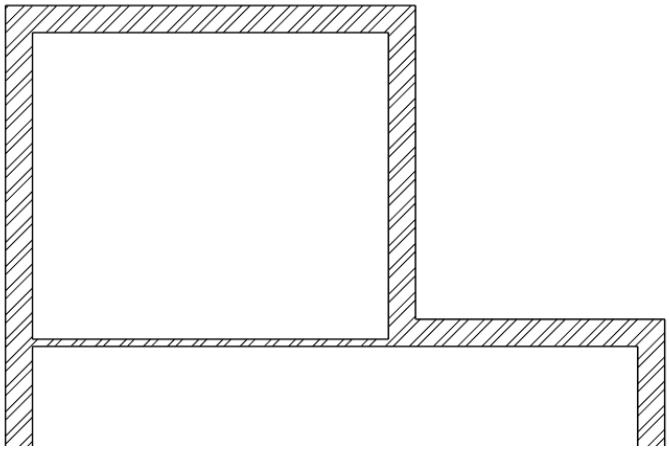


- Move the mouse to the left horizontally. Now check the appearing virtual wall represented by an orange and blue line.

  If the wall were to be drawn as currently shown, the thickness of the wall would fall below the so-called reference line shown in blue, as shown by the orange line.
  In this case, however, the wall thickness must fall above the blue reference line so that the main wall and the partition are in line. So, we have to switch the reference line. This can be accessed from the *Path editing* option menu in the Ribbon menu.



- Now click on the “Left 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.

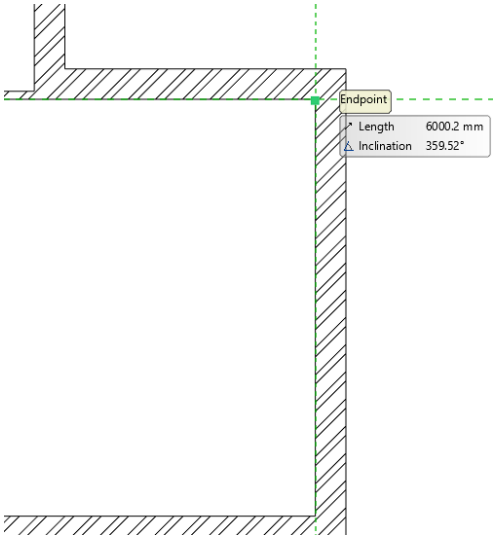


The program will not create the next partition wall starting from the previously placed wall endpoint. Now you can define a new starting point.

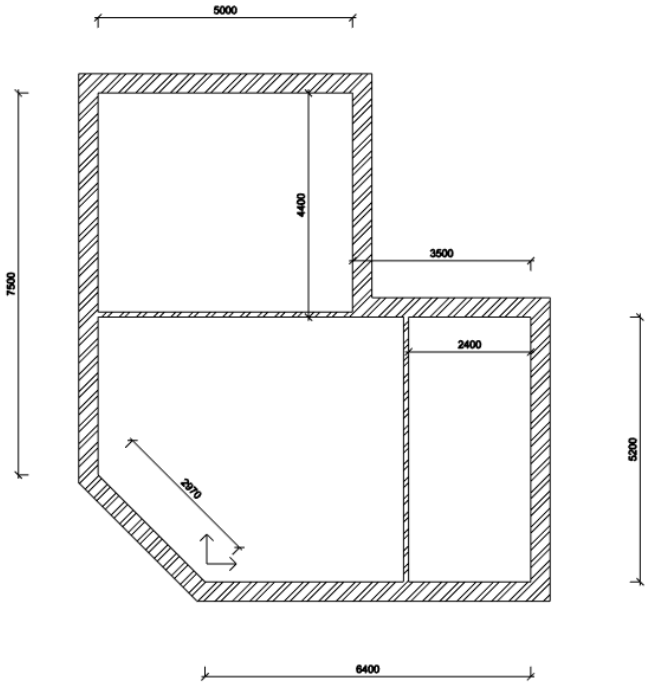
We draw the next partition wall at a given distance from the corner of the main wall.
To do this, we will need to place a temporary reference point in a corner and measure a distance from there.

We are in the Wall command, so the program is waiting for you to specify the starting point of the wall:

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 recognizes it, click once.
- Move the mouse horizontally to the left and type 2400, and press Enter. The program 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 recognized 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.



Once the partitions have been created, the internal wall dimensions will automatically follow the changes.

1.3.8. Using T and L wall connections

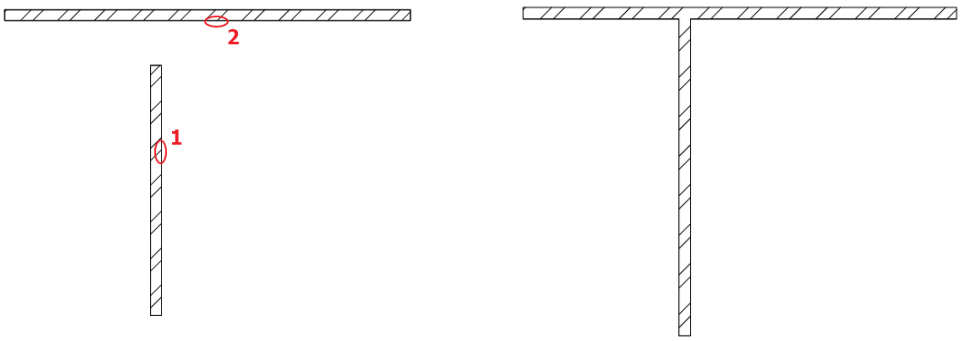
If the endpoint of the wall falls into another wall, the program automatically connects them with a T connection.
When the main and partition walls are ready, the connections between walls might be inadequate. Let’s see examples of how to use T and L connections to join walls.

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.

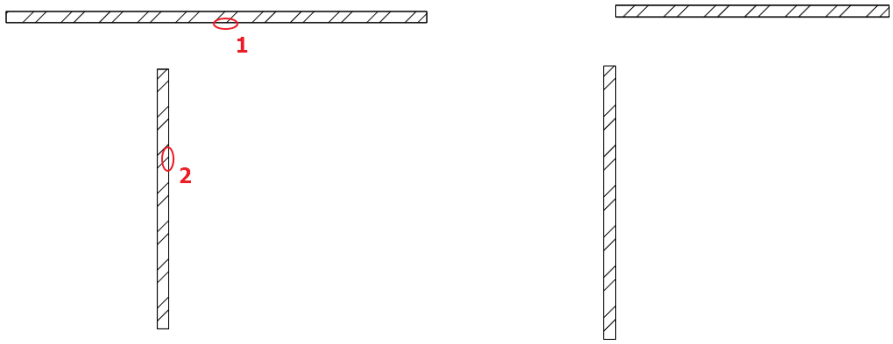
Now let's see that case when T connection adjusts the missing wall segment relative to the intersection with the second wall.

- Draw two walls in an empty part of the drawing area 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.

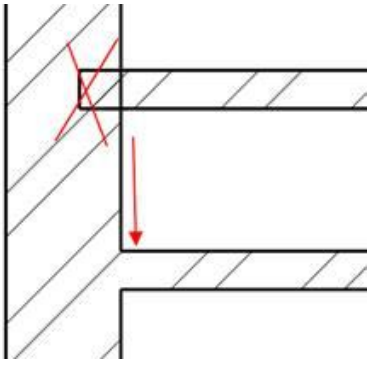


The wall segment which extends over the intersection will be modified.

- Undo this action by pressing  icon.

Automatic T connection

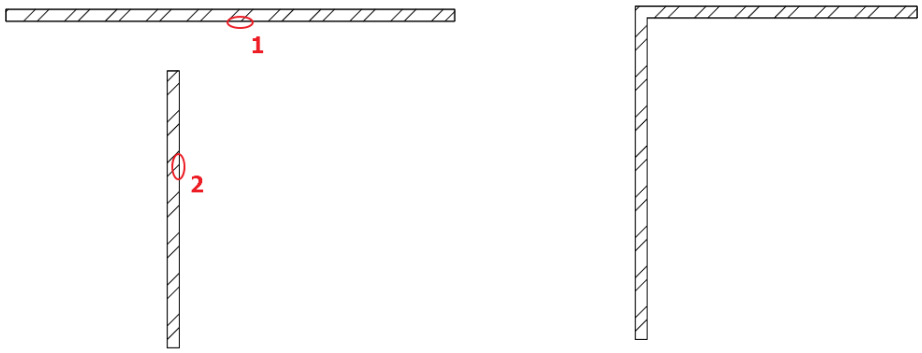
If the end point of a wall falls into another wall, the program automatically connects them with a T-connection. Try it!



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.

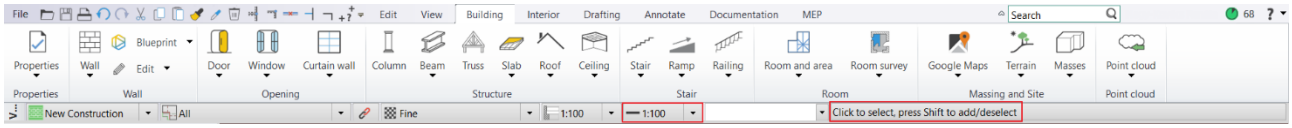
- Click on  icon (representing L connection) on Toolbar then with a single-click to select the first wall, then the second wall.



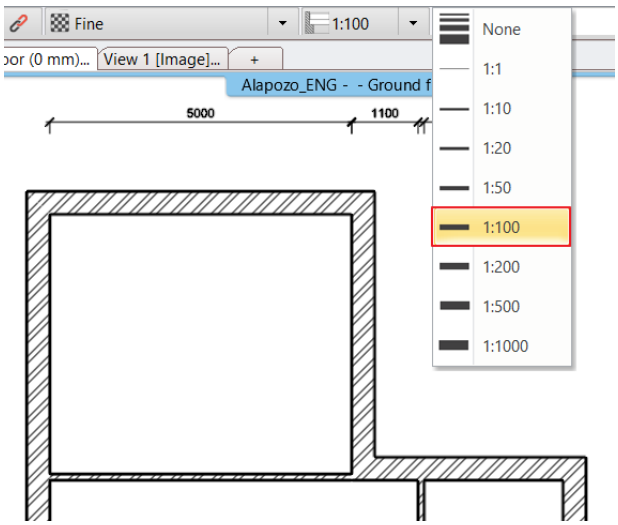
L connection is created between walls.

1.3.9. View Control Bar – Line weight

By default, the View Control Bar appears above the Drawing Area.
Here you can find e.g. the commands for Phases, Drawing representation style, Layer Groups and the field "*Click to select, press Shift to add/deselect* " to help you with the current command. It is worth paying attention to its contents while executing the commands.

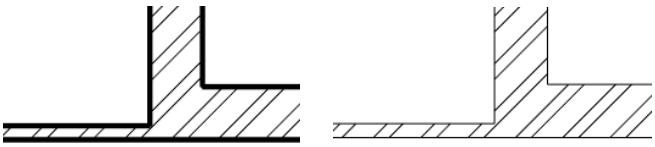


Click the Line weights scale list to select from a variety of lineweight scales. Adjusting the lineweight scale applies to the screen and does not affect print settings.
For example, if you want to print the plan at a scale of 1:100 later and want to see the corresponding line thickness on the screen, select a scale of 1:100.



“None” lineweight

“None” lineweight means that the line thickness is displayed on the screen with the smallest thickness of 1 pixel, i.e. the lineweight is switched off. This setting is especially useful for floor plan edits because the clear visibility of endpoints and other special points makes accurate editing easier.



1:100 None

We recommend the 1: 100 scale for architects and the None for interior designers.

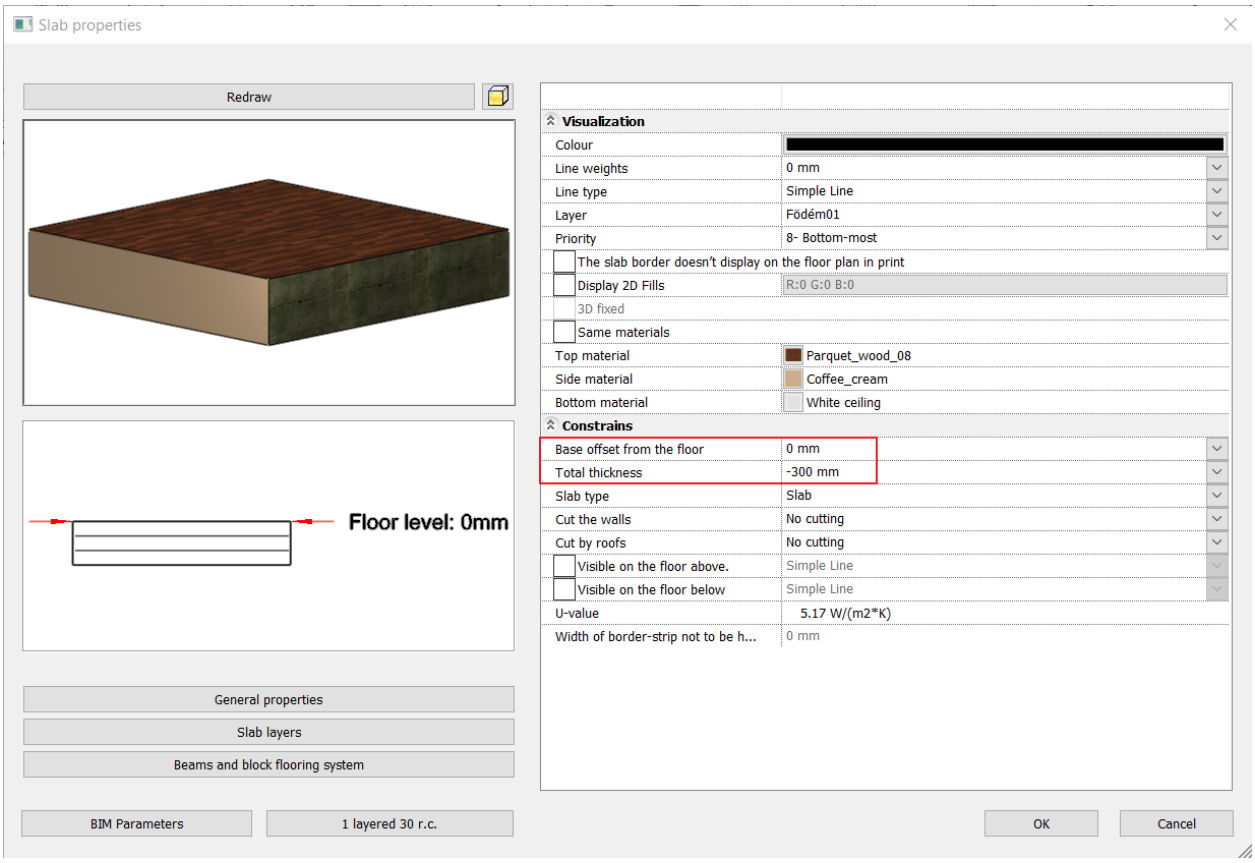
1.3.10. Slab tool – Create floor

It is recommended that you save every 10-15 minutes, so click the Save Project icon now: 

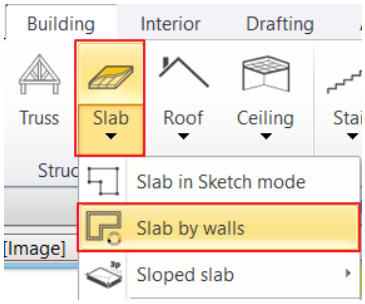
Along wall contours, you can easily create a floor by using the Slab tool. Similarly, to Wall tool, before using the Slab tool, you can check and set its properties. Please do the following:

Creating slab

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

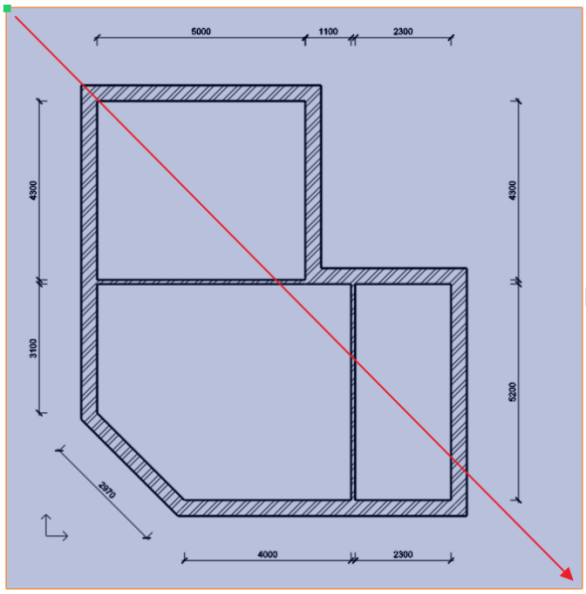


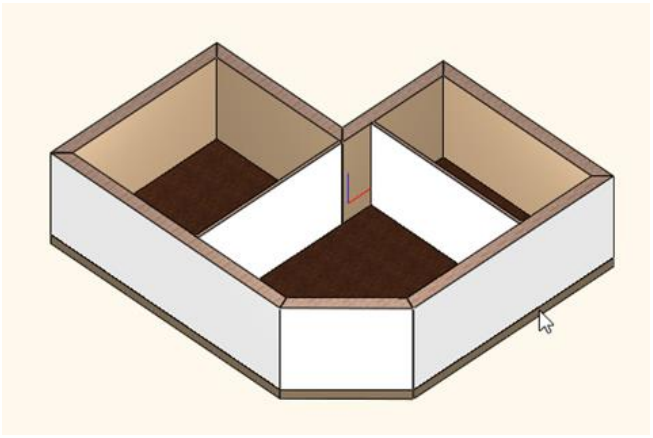
- Select the **Ribbon bar / Building / Slab / Slab by walls** tool.



Move the mouse to the top left part of the drawing area and select the entire floor plan with the selection rectangle. To complete the selection, click and then press Enter.

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





Modify the contour of the slab (optional)

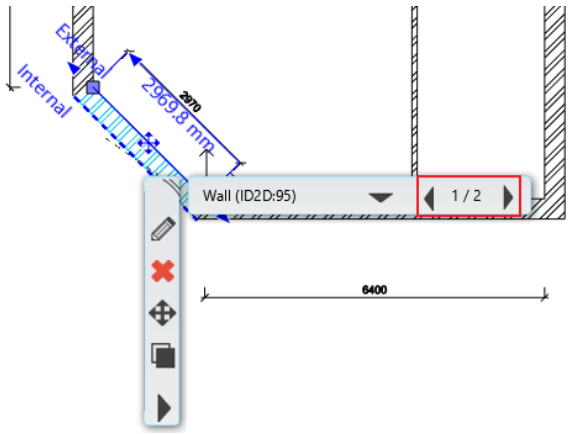
Later on, the entrance door will be added to the 45-degree angle main wall. Besides, it is necessary to place a stair here, which now we will create by changing the contour of the slab.

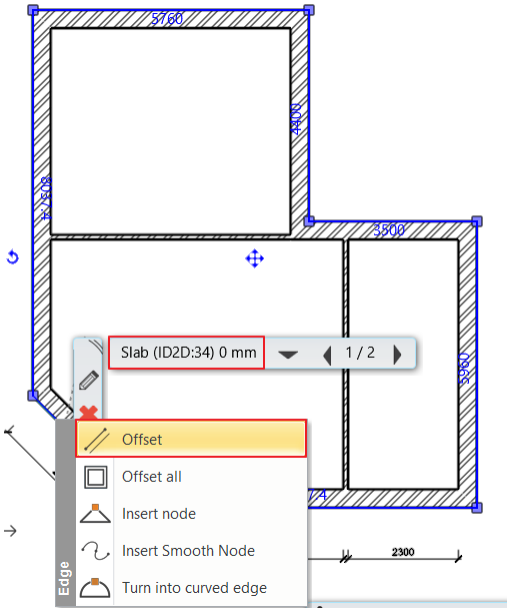
- Select the previously created slab. To do this, click on the external contour of the main walls.

  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 

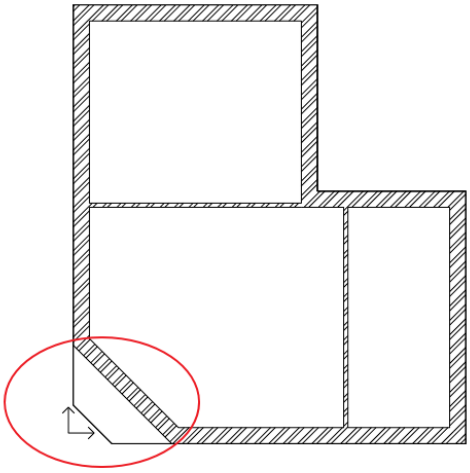
on the Quick selection panel to make the slab selected. If the slab is selected, you can see the selection on the floor plan and also the text “Slab” will appear on the left side of the Quick selection panel.

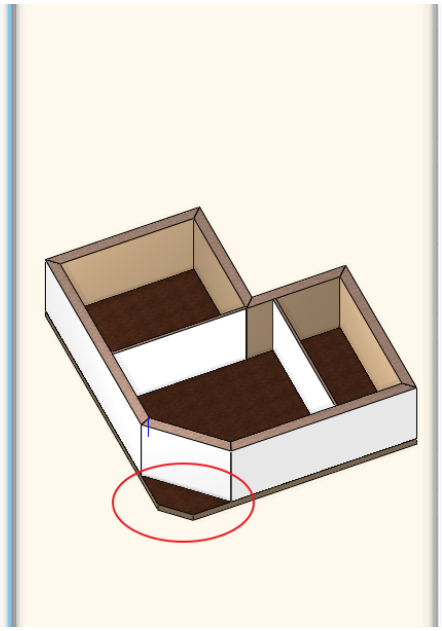




- When the slab is selected, blue markers run around its edges. Click on the blue line at 45-degree angle.
- The marker menu appears. Click on the “Offset” command.
- Move the cursor down and left 45 degrees (perpendicular to the current edge) and type 1000, and then press Enter.
- Finally press the 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 front porch have been completed.

1.3.11. Floor management – Create and edit levels

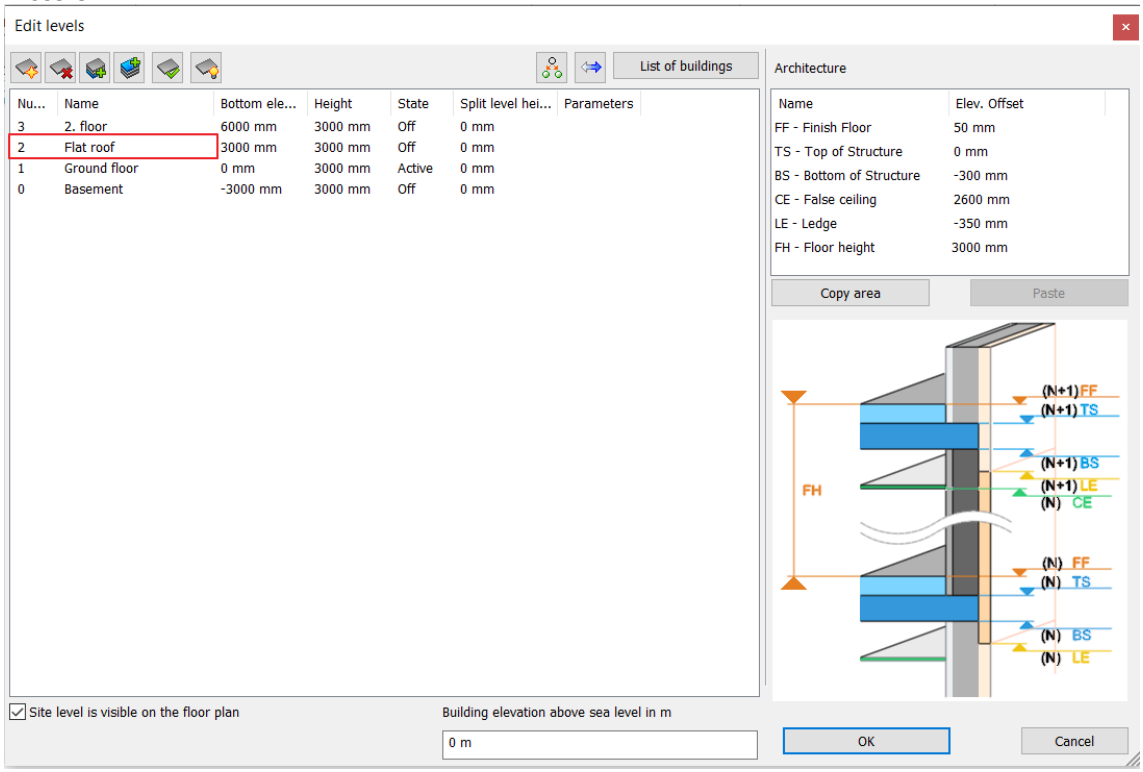
The Level corresponds to the architectural meaning of the floor. Floors are horizontal planes to which the height of placed elements such as walls, columns, roofs, floors and ceilings is defined.

As in reality a building is made up of floors, the plan can be drawn up floor by floor. Opening a new project automatically creates four floors. The additional floors must be added by the designer according to the plan. Design is accelerated by copying elements from one level to another. This can be useful, for example, when creating main walls on several floors, as their layout is mostly the same on different floors.

ARCHLine.XP floors form a logical unit, not a physical boundary. Thus, an element placed on a level belongs to the level, but its geometry is not affected by the properties of the level (level height and height). This means that the element placed on the level does not have to be physically within the boundaries of the level, it can "hang out". This is necessary, for example, in the case of split-level buildings.
In the example, we create a floor level.

Create the floor of the flat roof

- Make the Floor plan window active. Click on the button labelled Ground floor at the bottom of the program. A dialog box called “Edit levels” will appear.
- The Edit levels dialog currently shows 4 levels. Of these, we will use the ground level, the other 3 virtual levels can be used later. These 4 levels are created by the program each time a new project is created, so that the designer has at least 4 levels available.
- Double click on the name of the 1st floor to make it editable. Enter the following name: **Flat roof**. Enter.
- Press OK.

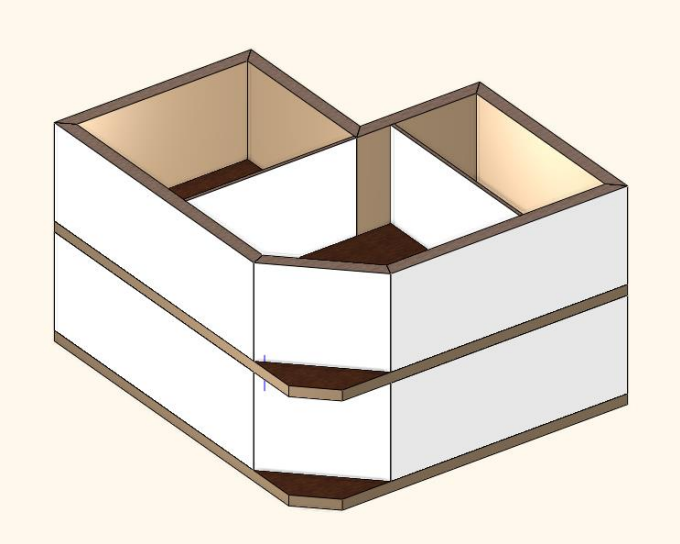


At the moment, we can see the recently created ground floor level content such as walls, slab. The building has a flat roof, which can be drawn as usual. Right now, the “copy other floor” is a hands-on tool.
Let’s learn how to use it:

Copy walls, *slab to another floor:*

- Select the entire floor plan with the selection rectangle.
- Press the Ground floor button. The Edit levels dialogue appears.
- Press the **Copy objects to another floor** button  .
- 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.



The appearance of the two levels is currently still the same

Creating the flat roof

- Select the partition walls on the Flat roof and delete them.
- Now select one of the main walls. The “Properties” will appear on the left side of the screen.
- In the property manager on the left, click on the wall Height value and change it to 1000 mm, then 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 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 the **Copy properties** icon in the Quick Access toolbar.
- The Wall properties dialogue box appears, listing the properties that can be copied to other walls. By default, all properties are selected. It is also possible to copy just one property between walls - for example, the height of the wall, yes, but not the thickness.
- 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.

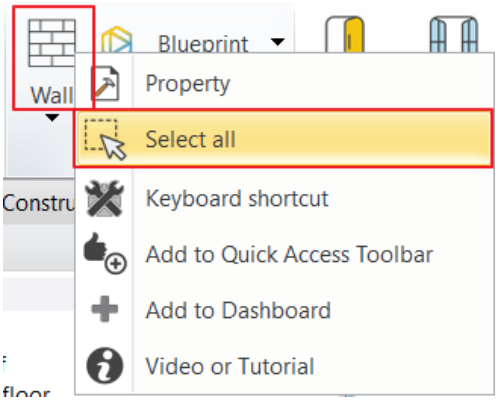
There is an even faster solution to the previous exercise:

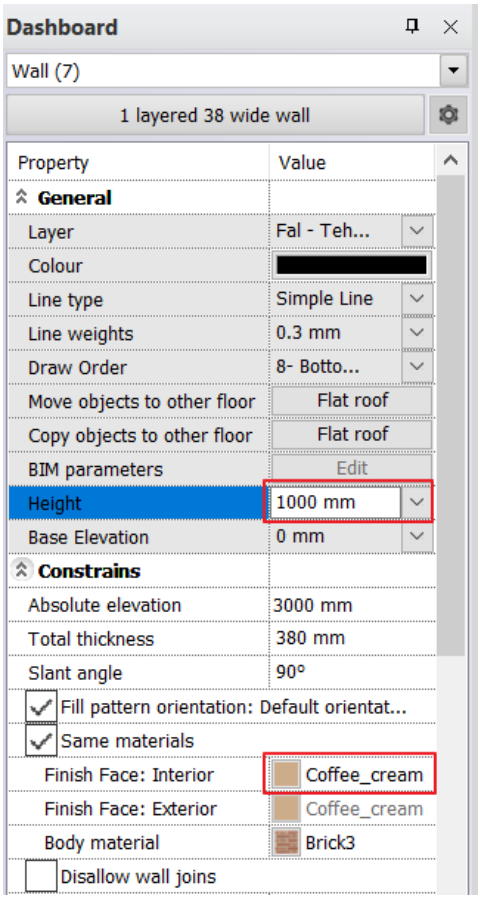
Select items by type:

Go back two steps in the sequence of instructions to reset the height of each wall to 2700 mm.

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

- Click with the right mouse button on the Wall tool, then select the Select all option. All walls will be selected on this floor.



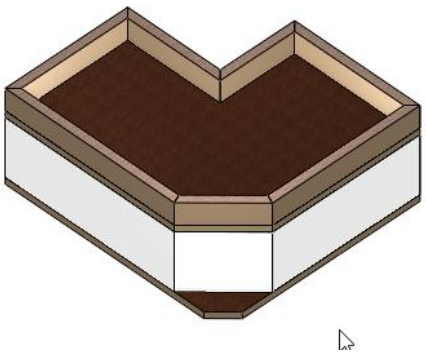


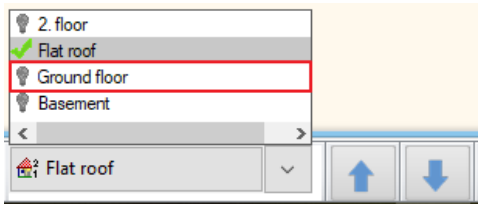
- Change the height of the walls to 1000 mm using the Property grid on the left side and press Enter.
  All the walls on the Flat roof floor are now changed to 1000 mm.
- Set both sides of all walls to Coffee cream color.
- Pull back the protrusion of the slab as previously described.

Switch to the Ground floor

Since we have been working above Ground Floor, it is necessary to go back down to Ground Floor to continue working there.

- 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.



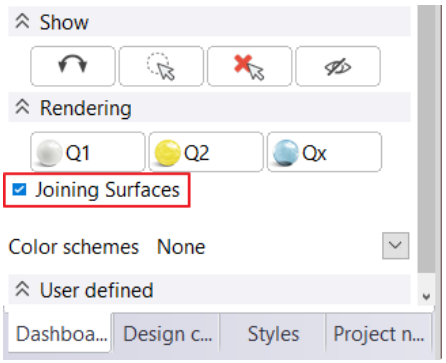


To switch between floors, you can also use the Page Up and Page Down keys on the computer keyboard. Pressing these keys, you can jump one level up or down in the floor list. You can also use both the blue arrows next to the Floor button for this purpose.

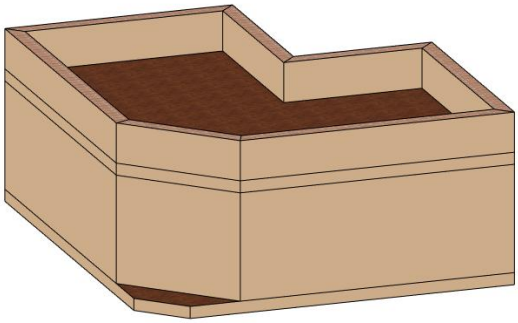
Set both sides of all walls to Coffee cream color on the Ground floor too. The sides of the slab were also coffee cream.

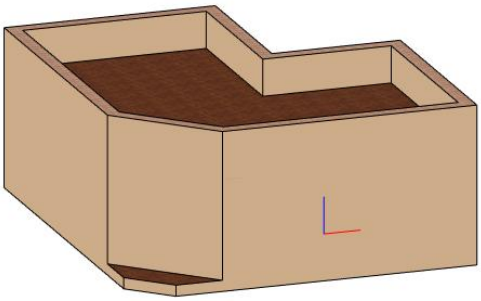
Joining surfaces

The goal is to keep the line of the slab between the levels invisible. This requires that the surfaces be in one plane, have the same material, and the *Joining Surfaces* option is turned on.
Here the first two conditions are met. Let's check the third:



- Make the 3D window active. Press the Esc key so that no item is selected. Make sure that the *Joining Surfaces* option on the Dashboard is enabled.
- Now rebuild the 3D view with the 3D hammer icon.





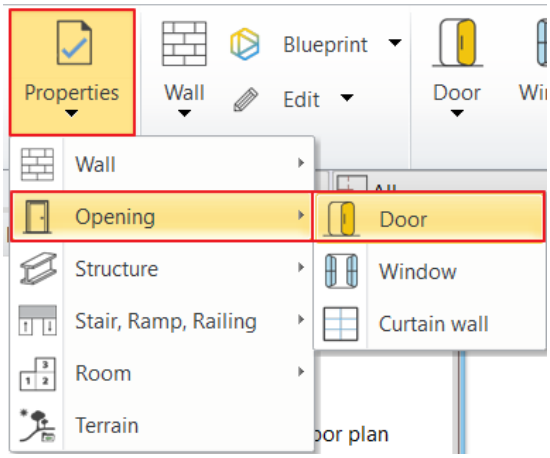
In case you modify any of these elements (walls, slabs), the lines separating the surfaces will appear again. You only need to rebuild the 3D model by clicking on the Quick 3D model icon.

In case you modify any of these elements (walls, slabs), the lines separating the surfaces will appear again. You only need to rebuild the 3D model by clicking on the 3D hammer icon.

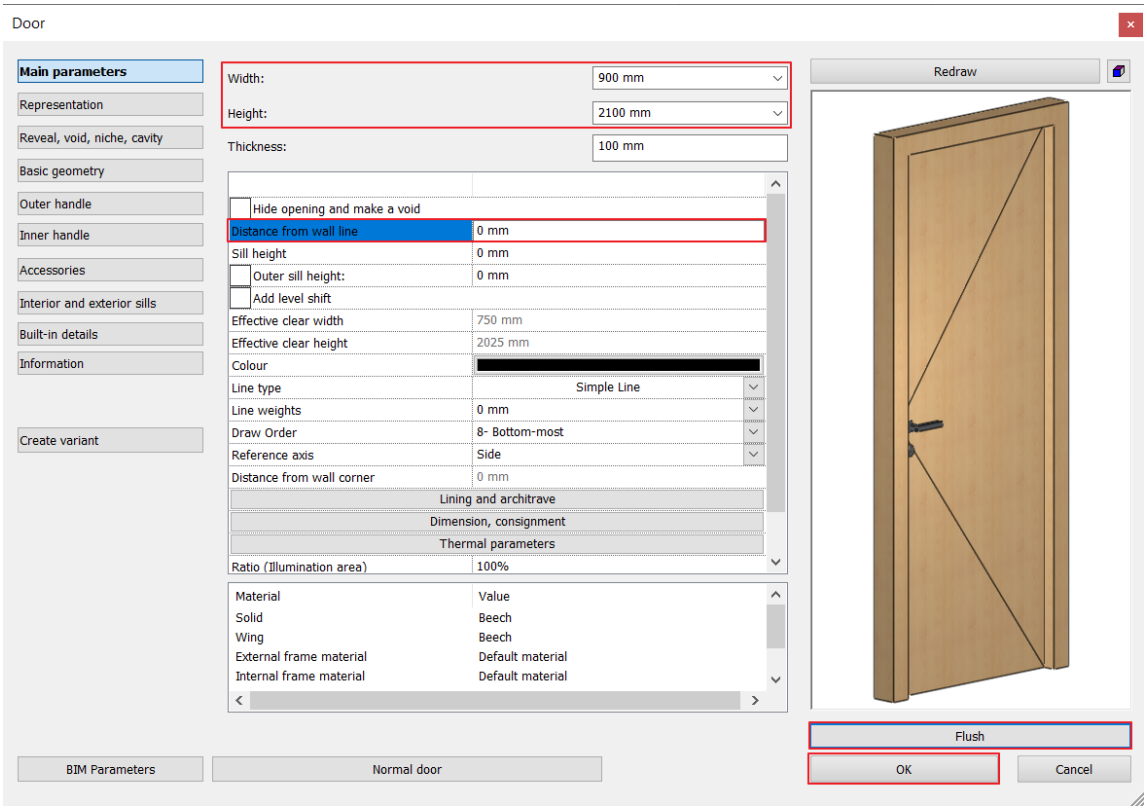
1.3.12. Creating Doors

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:

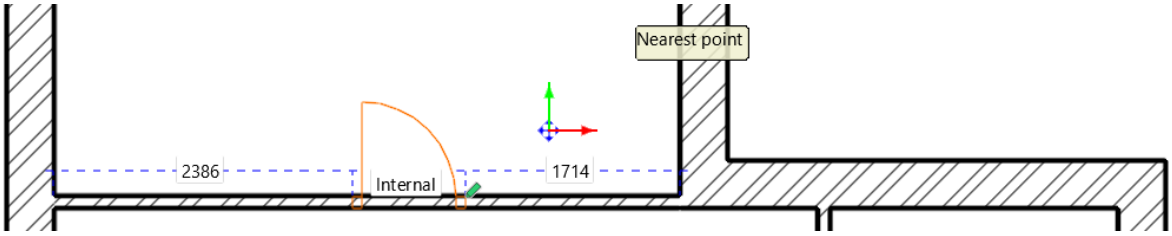
- Make the Floor plan window active.
- Select the **Ribbon bar / Building / Properties / Opening / Door** command. Now the dialogue box Door properties appears.



- 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 this 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 the cursor will be in the shape of an exclamation mark.
  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 a green pencil appears.



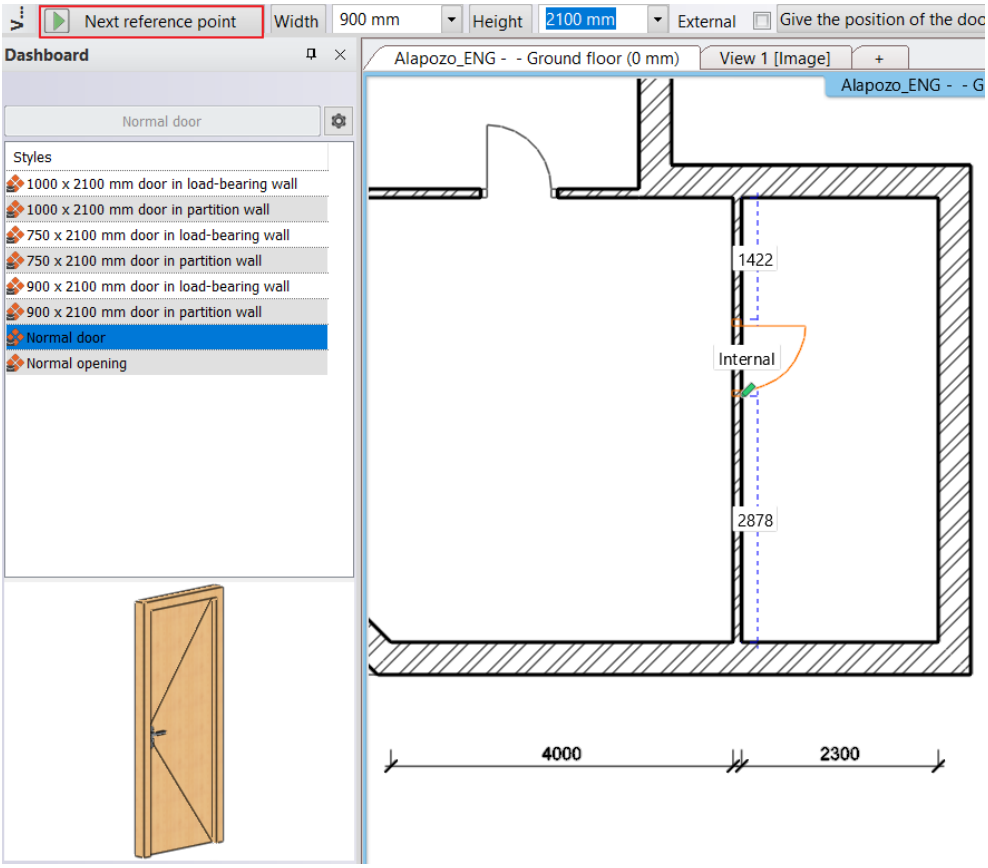
- Type the value 950, then press the key Enter. By this, you specified the distance between the green pencil and the nearest wall corner, which is 950 mm according to the original drawing.
- Move the cursor around the placed door symbol. The door-opening direction changes. Move the cursor until the door-opening 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.

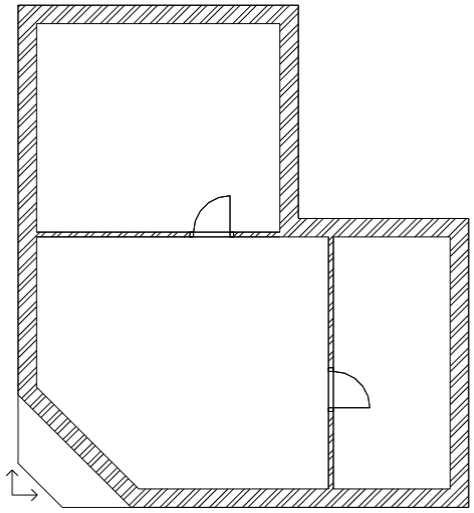
Reference point of doors and windows

- Move the cursor over the partition wall shown vertically on the drawing; the cursor should be on the right side of the wall.
- The green pencil appears at the bottom of the virtual door symbol as a reference point. The reference point can be changed while drawing. It has 3 positions: the two sides of the door and its middle. The reference point can be changed 3 ways:

❖ On the View Control Bar – **Next reference point** command
❖ *F5* key
❖ *Space* bar



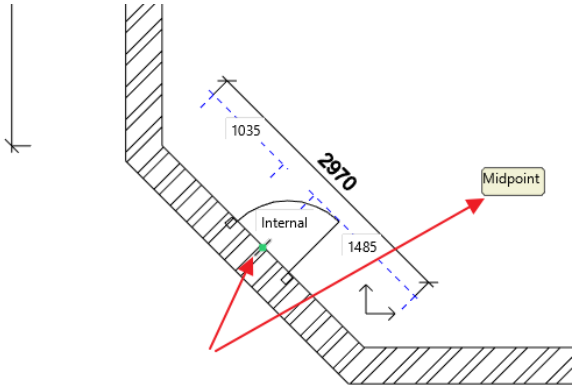
- Now a couple of additional options appear in the top left corner of the Work area, this helps placing doors. Select the instruction "**Next reference point"**, and move the cursor over the partition wall again. This time, the green reference point appears at the middle of the door.
- Select the option "**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.

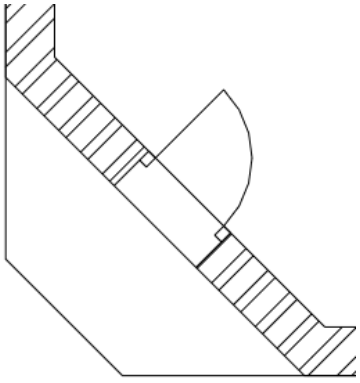


1.3.13. Positioning of the entrance door

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.
- Select "**Next reference point**" from the options in the top left 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.

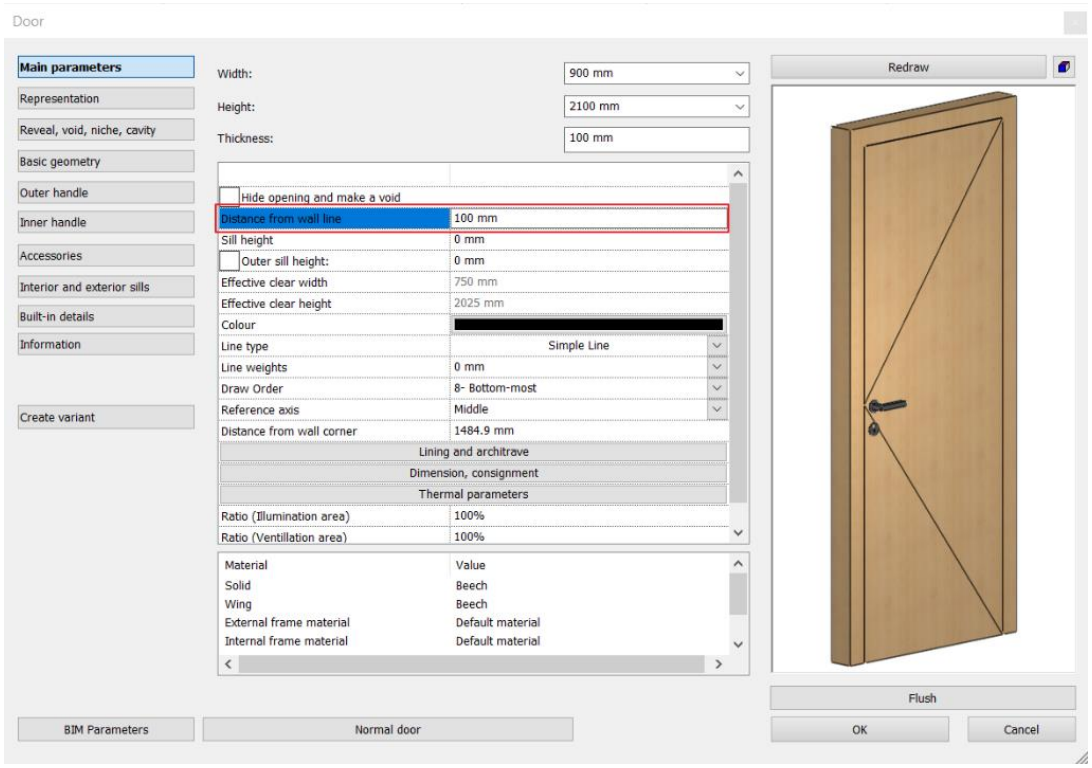
The type, width and position of the entrance door in the wall does not currently match what you see on the original floor plan. Therefore, it has to be modified. Let’s do the followings:

Modification of properties

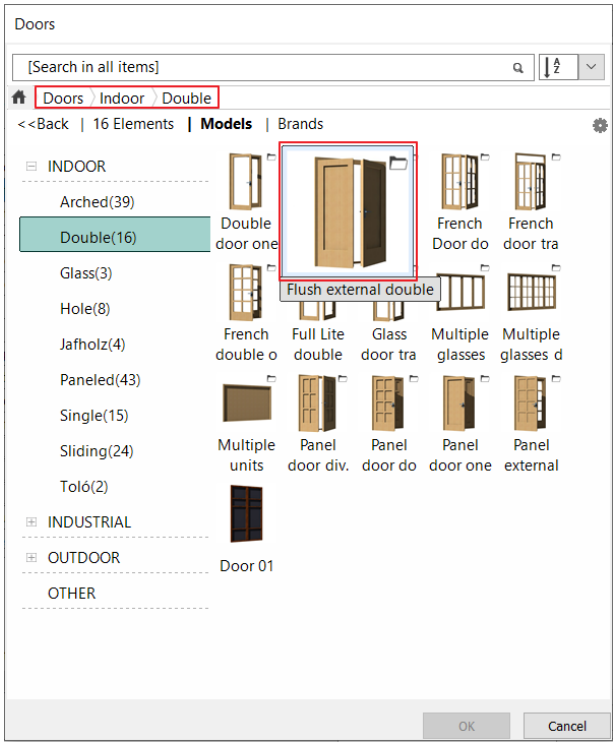
- Select the entrance door in the floor plan.

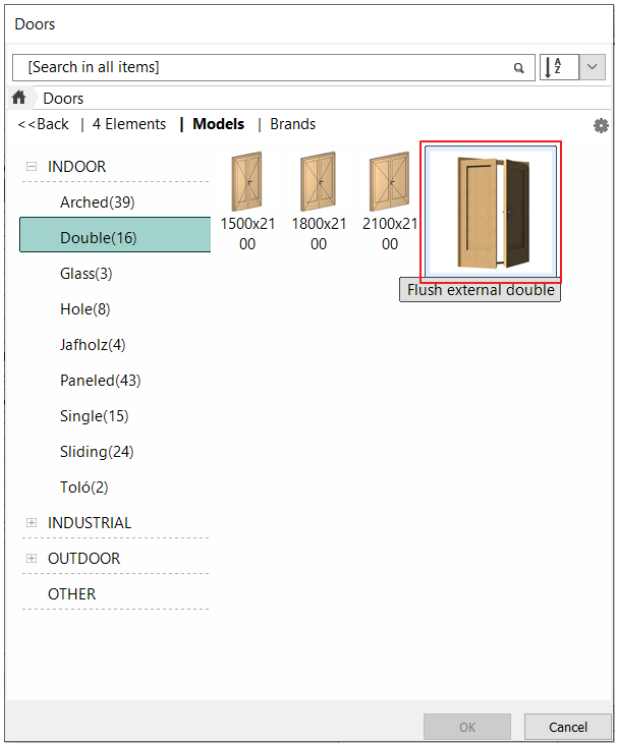
  The floating menu appears as a result of the selection; the first icon looks like a pencil  . It is the "**Property icon**". The properties of the selected item can be displayed and modified with its help.

- Click on the Property icon  . Now the **Door** property dialogue window appears.
- You can see the *Distance from wall line* at the top right corner. Modify it to 100 mm.

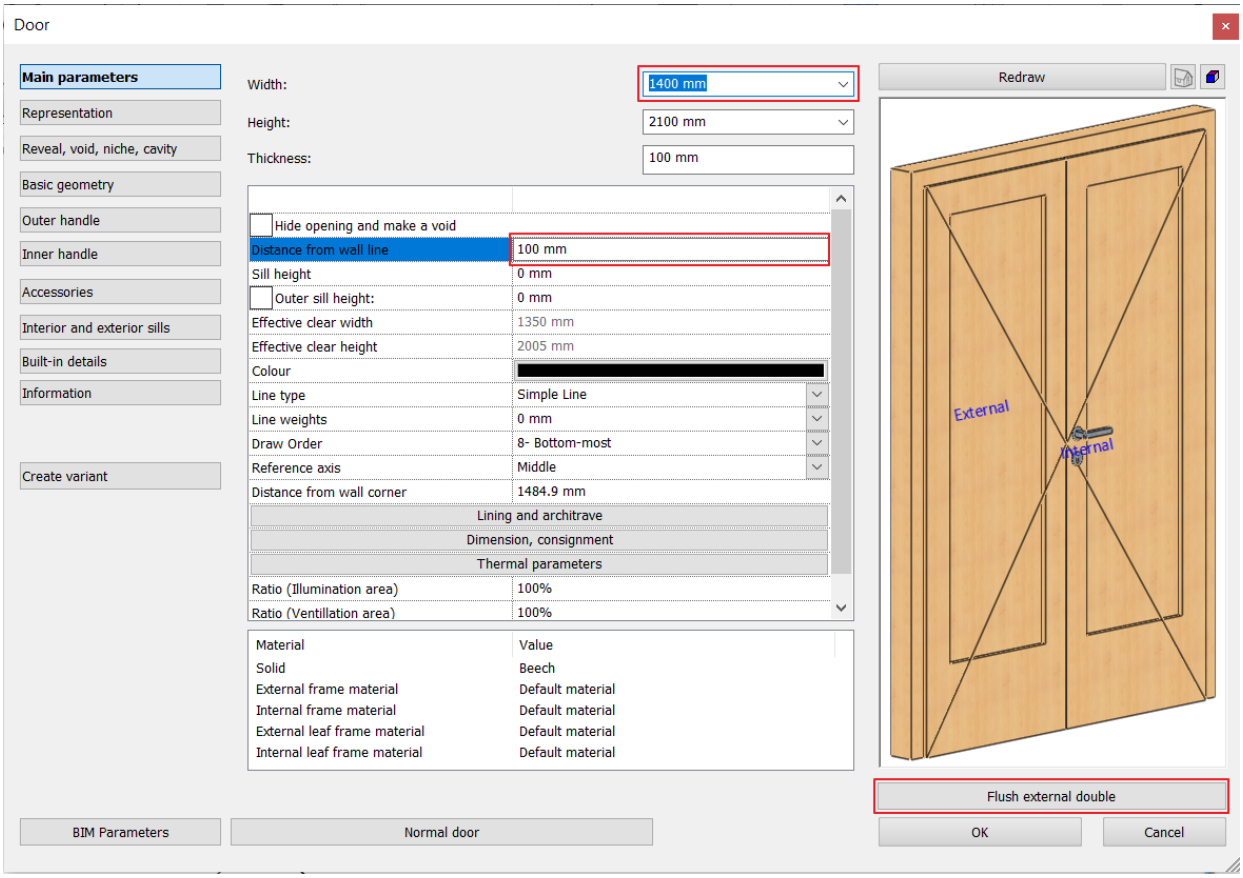


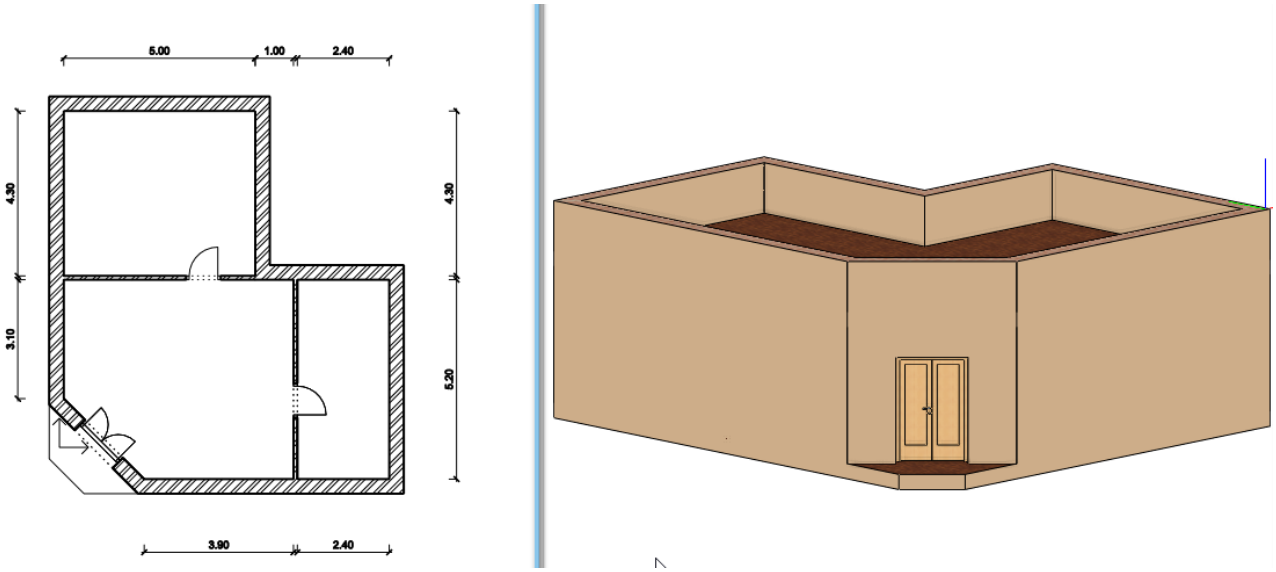
- Click on the **Flush** button below the door preview**.** In the appearing dialogue click and select a double-wing door, and click on the OK button.
  Don't keep the previously set dimensions of the door.





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

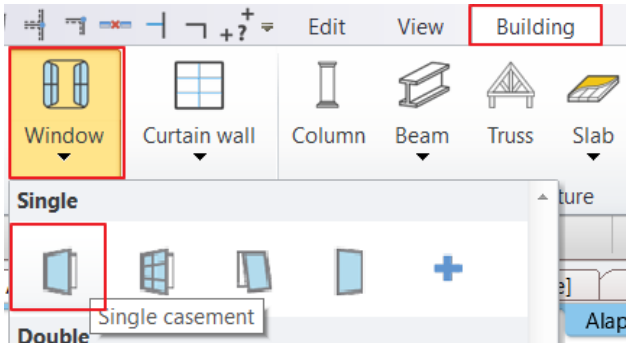




1.3.14. Creating Windows

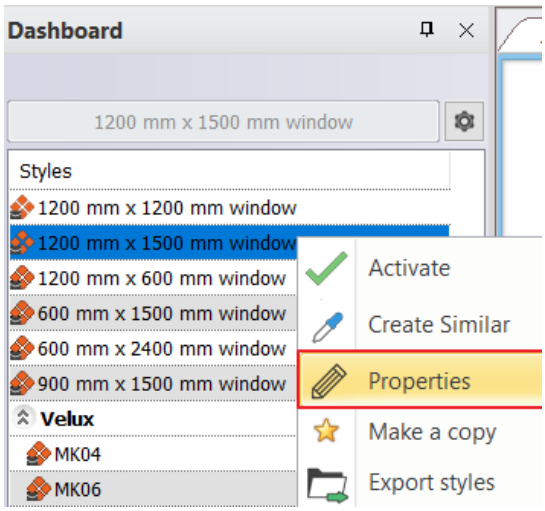
The next task is to place windows as it is shown in the original plan.
We can set windows properties and place them as we described in the section "Creating Door".
Here we will use another method:

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

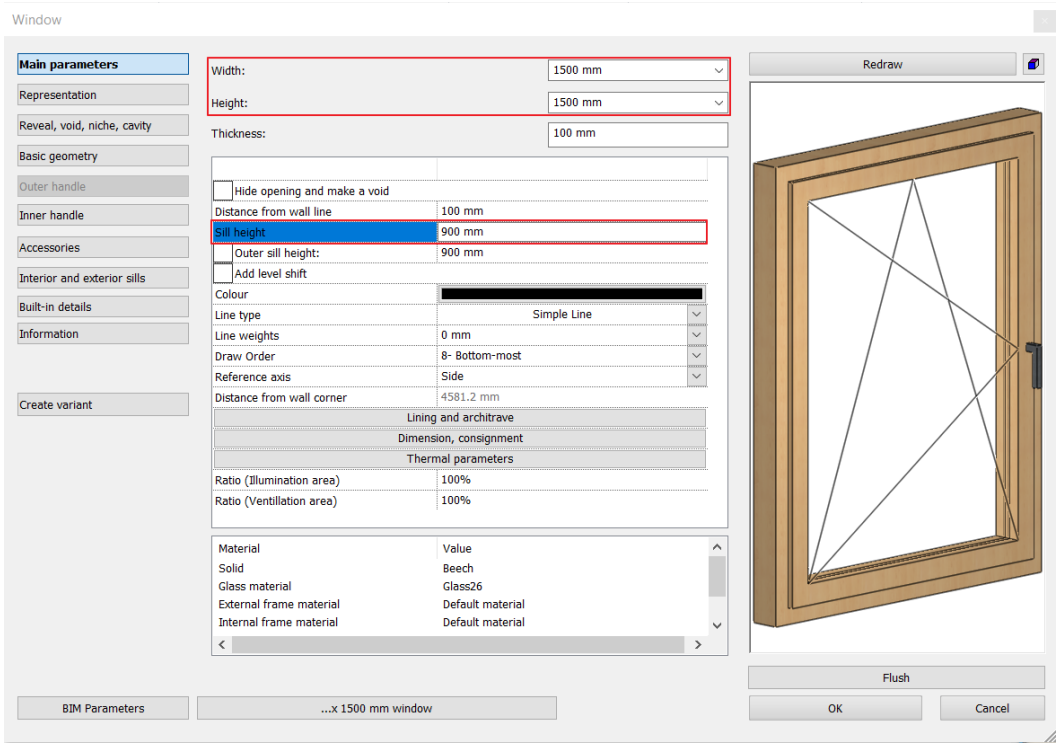


On the left side under styles will appear the single casement window.

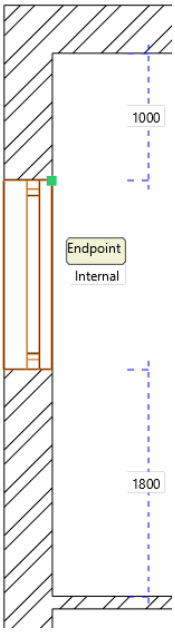
- Right-click the window style and select Properties  , and the Window Properties dialog box appears.



- In the appearing dialogue window, check the “Sill height” value: 900 mm.
- Set the Width and Height to 1500 mm.
- Click on the OK button to accept changes.



1. placing a window



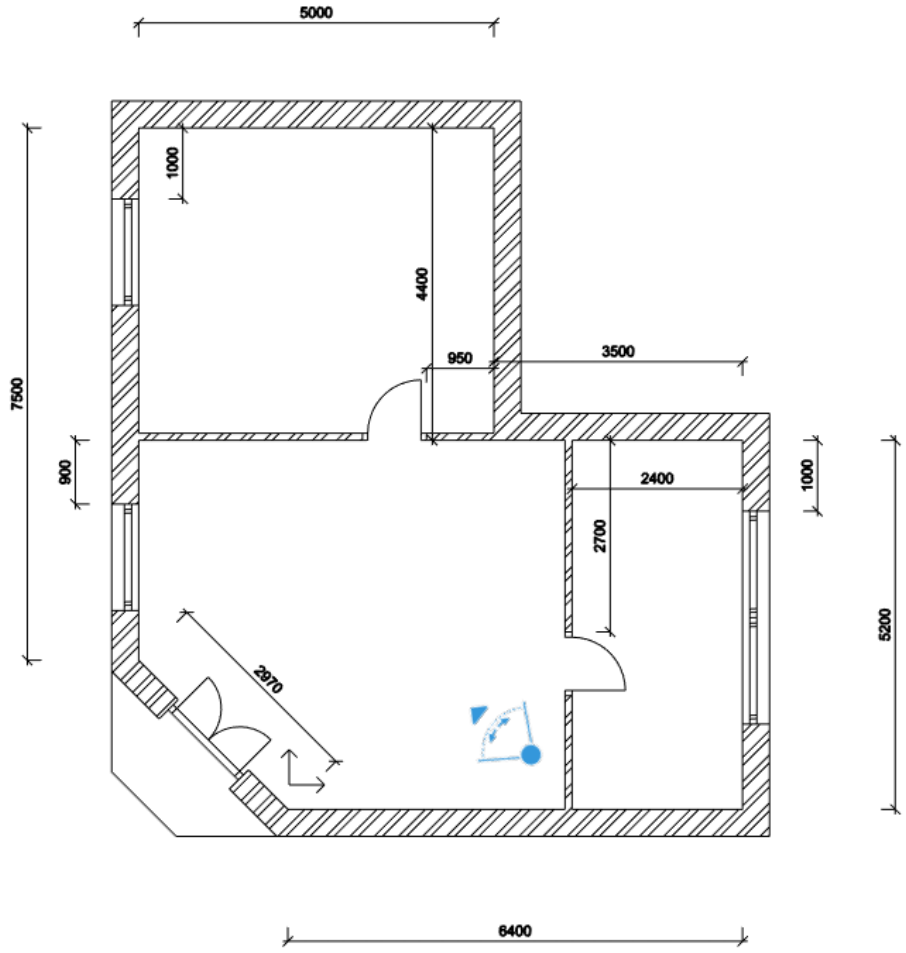
In the previous few steps, you have determined the size of the new windows that will be created. Place the window on the inside of the upper room on the left main wall of the floor plan, 1000 mm from the upper wall corner:

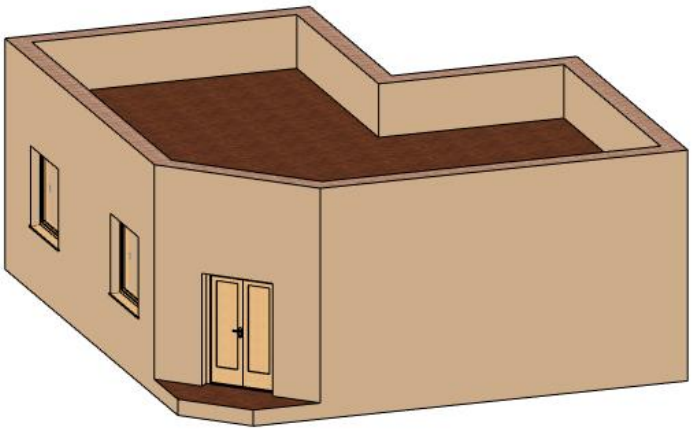
- Move the cursor to the inside of the wall.
- Adjust the window reference point so that the green pencil is in the upper left corner. This means a change of two reference points. We recommend that you press the *Space* key twice now.
- On the keyboard, type 1000 and press Enter. This specifies that the distance between the reference point and the nearest corner point is 1000 millimeters. The window will appear in the wall accordingly.

Placing new windows

- 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.
- Position the last 2 windows on the wall of the right-hand room, so that the first window is 1000 mm from the corner of the wall. The second window should be directly connected to the first. The latter can be achieved by clicking on the connected corner point of the first window when placing it.
- When you finished, press the key ESC.

By following these steps, you have learned how to place a window with a specific property in the desired wall section and how to place several windows in a row without having to restart the window command. This method of working can be applied in the same way to most of the tools offered by ARCHLine.XP®, i.e. you can set the appropriate properties, then use the appropriate drawing tool to draw more and more elements (walls, doors, windows, lines, etc.) without interruption, and finally exit the drawing mode by pressing ESC.





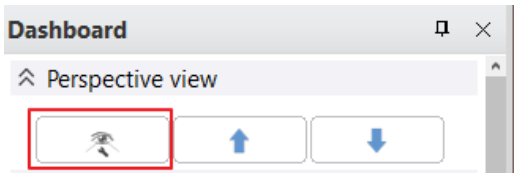
1.4. Furnishing and representation

1.4.1. 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.

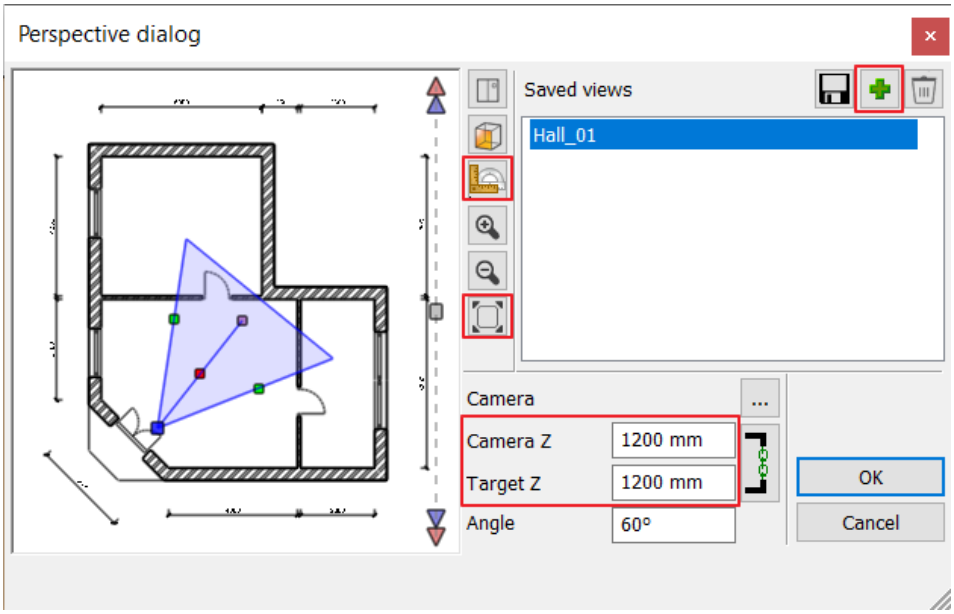
Setting up and saving the perspective views

- Activate and enlarge the 3D window by using the  Magnify view tool in the Status bar.
- No item should be selected.
- In the Dashboard, click the Perspective icon representing the eye.



The "**Perspective dialog"** window appears.

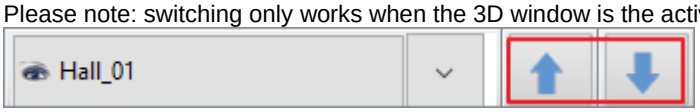
- Click on the button of *2D View*. As a result, the floor plan of the Ground level appears at the left instead of the 3D top view.
- Press the *Fit to view* button in the last position. As a result, the blue camera tool and the floor plan is displayed.
- With the help of **left button of the mouse** 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!
- **Left-click** and hold the purple marker representing the point you are looking at, while dragging it to a point near the connection between the window of the entrance room and the partition wall near it.
- Set the camera and target height to e.g. 1200 mm.
  With these 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_00".
- 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".



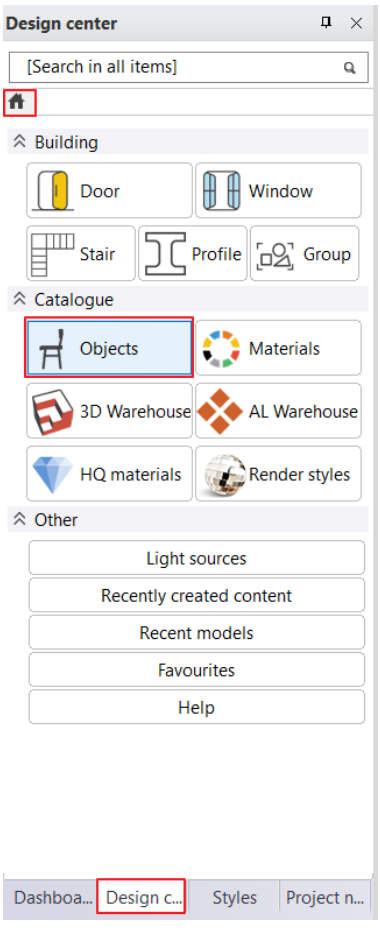
- Select the saved view named *"Hall_01",* then click on the button OK to close the dialogue box.

  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 than one saved view, you can also use the “PageUp” and “PageDown” buttons to switch between views, or the blue arrows from the Status bar
Please note: switching only works when the 3D window is the active window!



1.4.2. Furniture items – Design Center



Working as an open system, the software ARCHLine.XP® is capable of handling furniture items having different formats (.skp, .obj, .3DS) and from various sources without complicated file operations, and can read and place these items into the project with a single click.

You can access many additional furniture items:

- from the program's library, which is available from the Design Center and contains a limited number of items,
- from the ARCHLine.XP® Warehouse for free,
- with the help of the browser of the free service of 3D Warehouse,
- from other websites that allow downloading freely or by payment. It is recommended to type “*3D model free download*” in the search bar of your browser. Here you need to pay attention to the file format. Most recommended formats: .skp, .obj, .3DS

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

Let’s 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 menu, click on the "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 items available in the program in groups.

Make sure that the main page of the Design Center is active. Click on the Home button  .

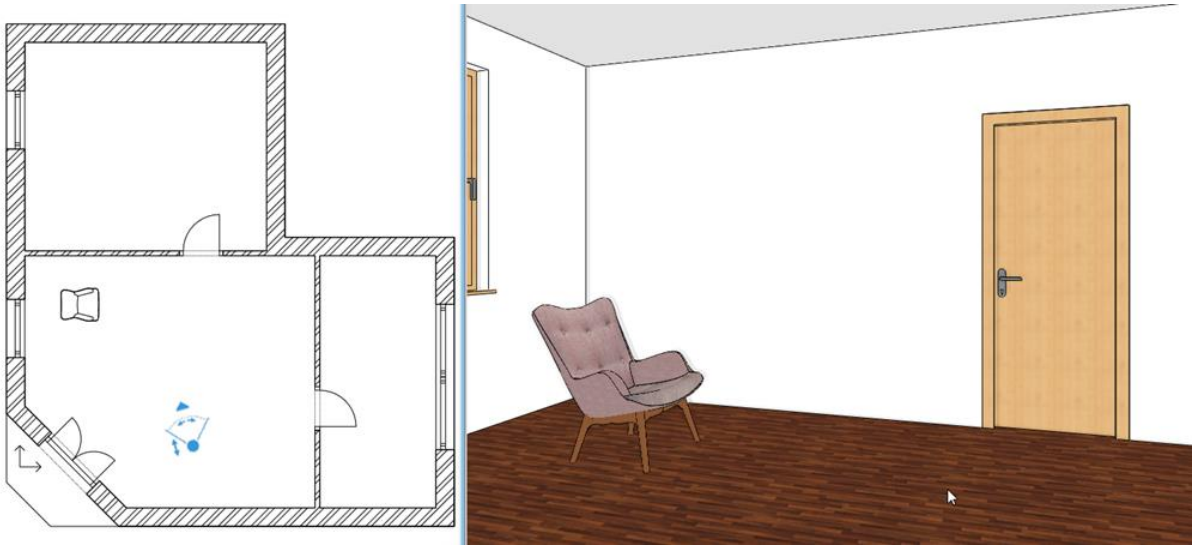
You will find the objects within the **Objects** category sorted into 22 main groups. The name and the number of these main groups cannot be changed. Each main category has subcategories. You can create as many new subcategories as you like at any time.
Within these groups, you can search and find those objects very quickly, which names contain the given phrase.

Placing an armchair

In this example we will search the “armchair” named object and place it on the floor plan.

- Click on the search field of the Design Center. Type in the word *armchair*, 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.

- 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 color, 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.

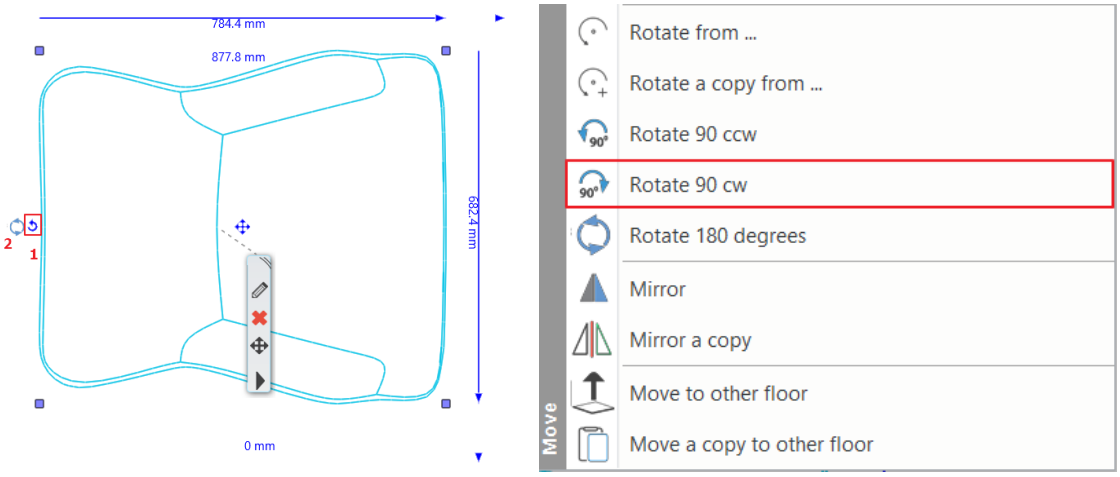


If the object is not in the right direction, you can now rotate it by using markers.

1.4.3. Move and rotate

The easiest way to move or rotate elements already placed on the drawing, such as lines, walls, openings or an armchair, is to use markers, which appear immediately after selecting the element you want to move, rotate or modify, as we have already seen. Please do the following:

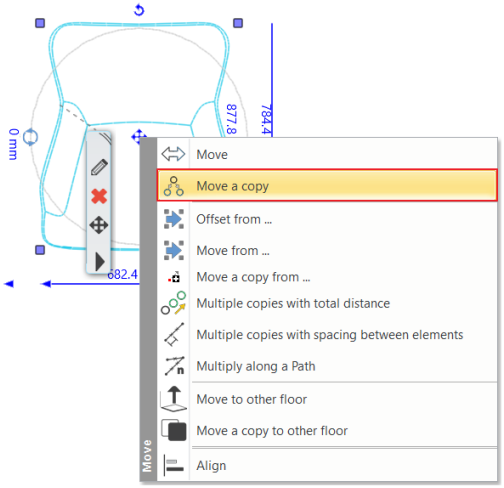
- Zoom in the area of the drawing, where the armchair is.
- Select the armchair on the 2D drawing.
- From the colored markers that appear, click on the Rotate marker (1).
- You will also see a so-called Free Rotation marker (2). This tool allows you to define the angle at which you want to move the object by rotating it around its axis.



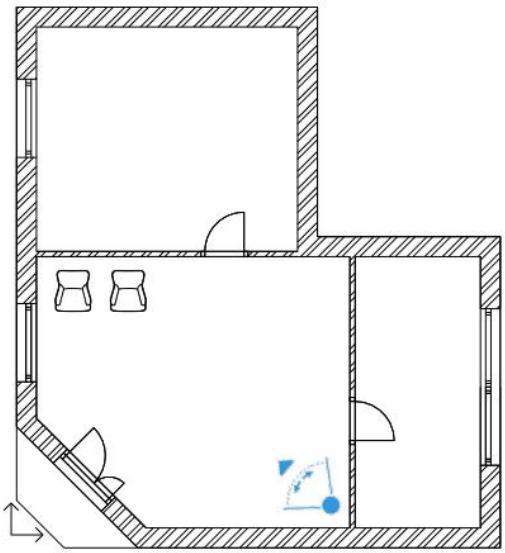
If the rotation marker does not appear during the selection, then the component is too small in the drawing. In such a case, zoom in to this part of the drawing until the rotation marker appears.

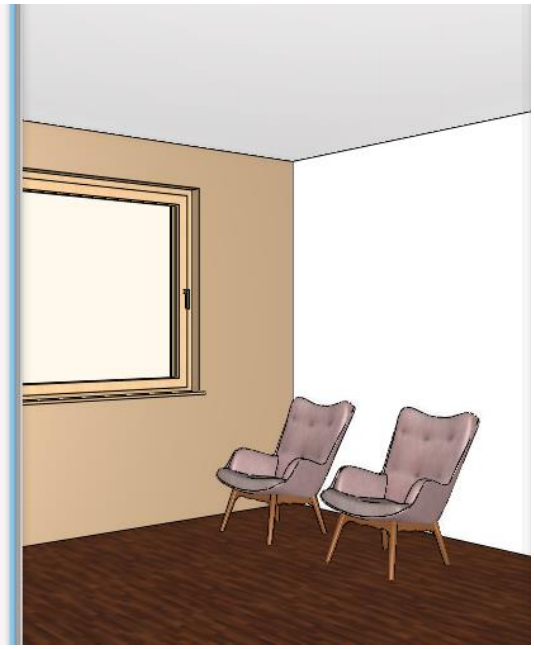
- The Rotation menu appears after you click on the Rotation marker. Select "Rotate 90 cw". Now the armchair is rotated, it faces towards the entrance door.

  The armchair faces in the appropriate direction. Place a second copy of this armchair next to the previous one. You could use the Design Centre again to do this, from where you could again select and place it, then rotate it to the right direction, but there is a faster way to do this, to copy an already placed drawing element and place it in the new location in one step.



- 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 color 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.

1.4.4. Downloading furniture items from 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. This time, we will search online for a specific coffee table from the 3D Warehouse library.

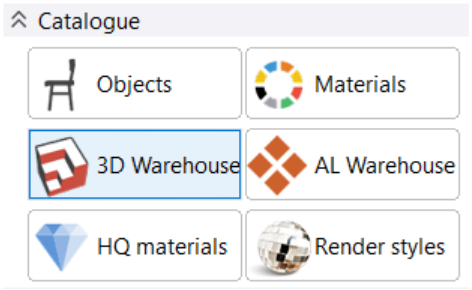
! Please note that the 3D Warehouse site is not a product of CadLine Ltd., but is owned by Trimble, a US company, which requires registration to use the site.
Therefore, we unfortunately have no control over the problems on the 3D Warehouse site. ARCHLine.XP provides the ability to place models directly into the project as an extra feature compared to other CAD programs, but Trimble makes no guarantee that this availability will be maintained. Availability changes frequently without notification. Also, registration does not always work properly.

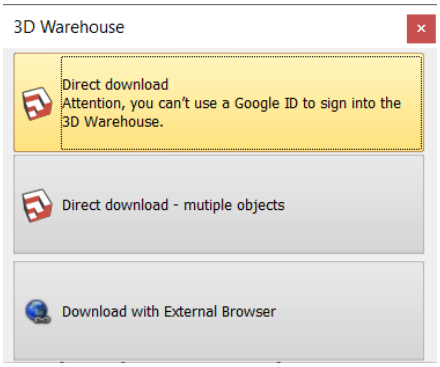
The 3D Warehouse object library contains a very large number of 3D models, which can be furniture, lamps, accessories, etc., which can be used for free after registration.

You have two options to download items:

1. **Direct download** and placing items on the floor plan through the built-in web browser of ARCHLine.XP®.
2. **Indirect download** from an external web browser: the items (.skp) are saved into an external file, then you can import them.

- Open the Design Center. Select **Catalog / 3D Warehouse** command and select the **Direct download** option.



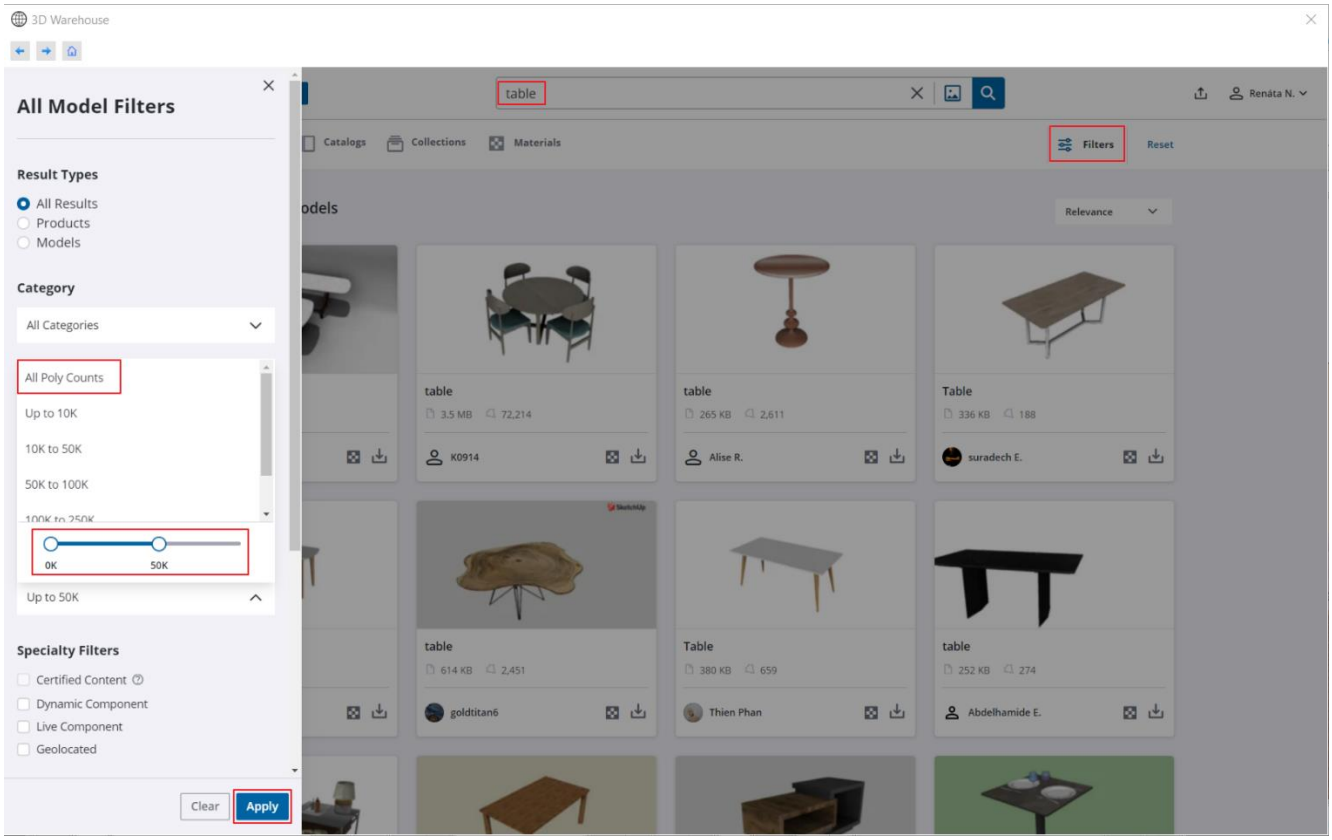


Direct download

The window of the *3D Warehouse* appears.
Trimble® requires a registration to use the page. The built-in browser of ARCHLine.XP® the registration can be created only with your e-mail address and password. (Do not use the Sign in with Google option, because Google does not support this kind of registration.)

- After registering and logging in, 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.

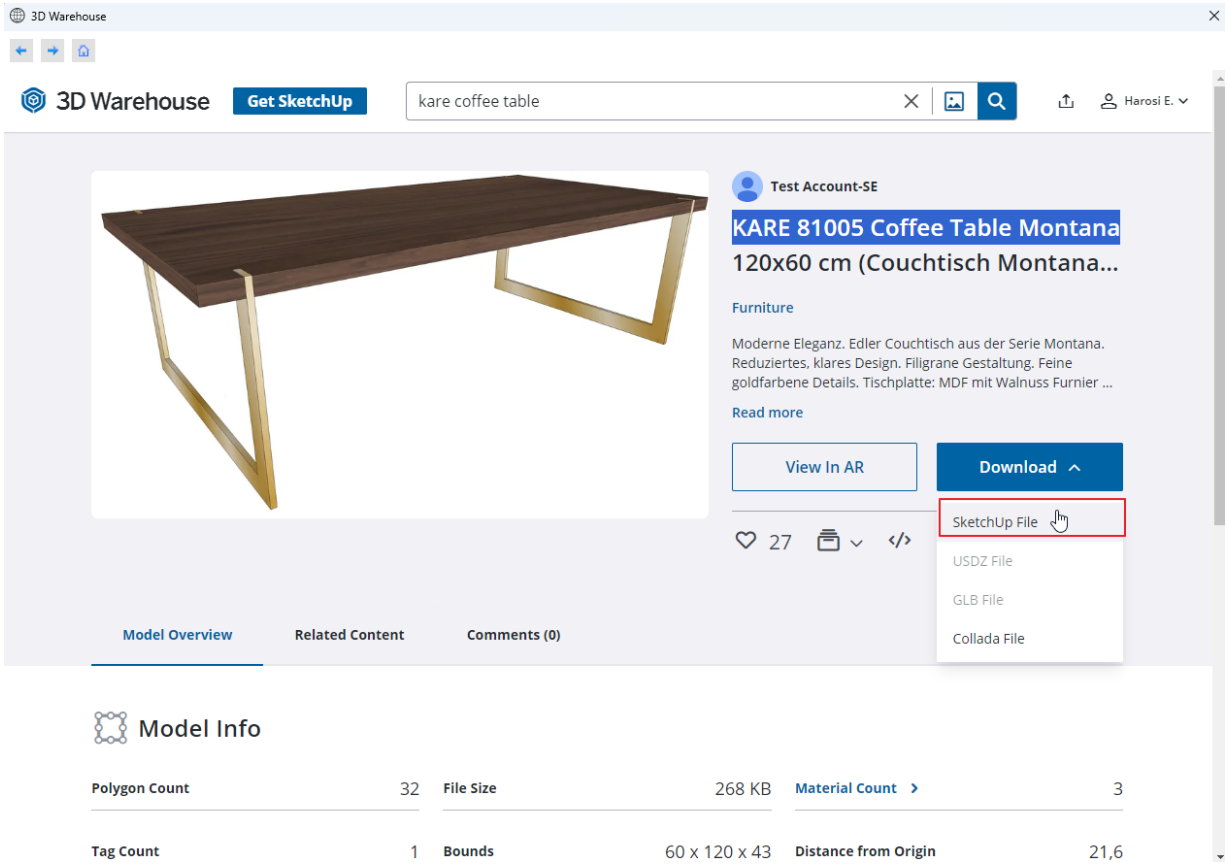
- The object is too large, contains more than **50,000 polygons** (surfaces)
- The object contains too many materials: there are more than **50 materials** on the object
- The object physical extension is over **100 m.**

The 3D Warehouse also provides help filtering objects as well.
When you turn on filtering, the filtering criteria are displayed on the left.

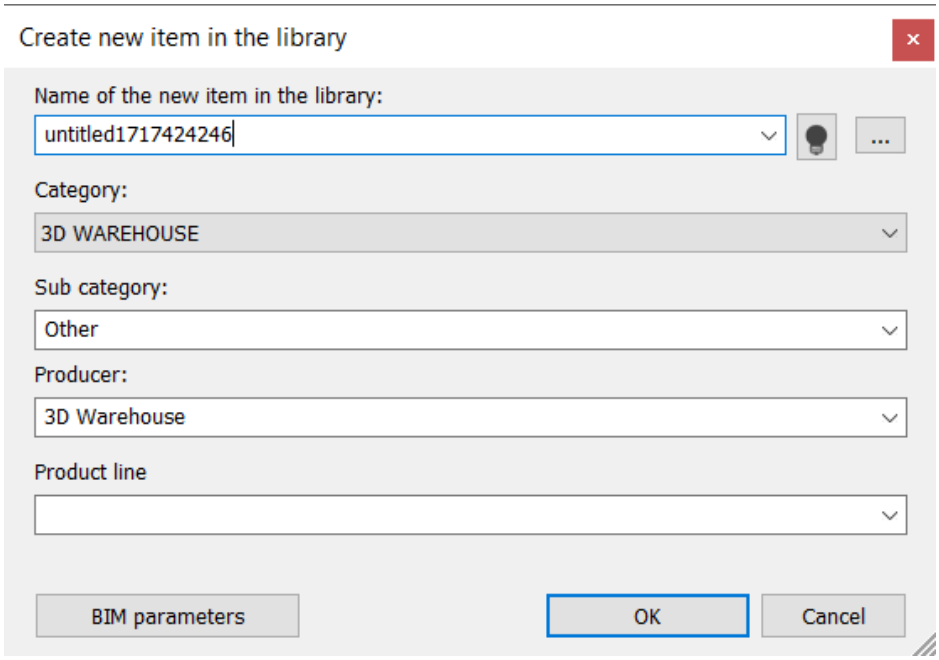
! **It is recommended that you set All Poly Counts to 50K. The website will only display objects doesn't exceed the maximum 50,000 polygons**. This way, unwanted too large objects which are not supported by ARCHLine.XP will not be offered to be downloaded.

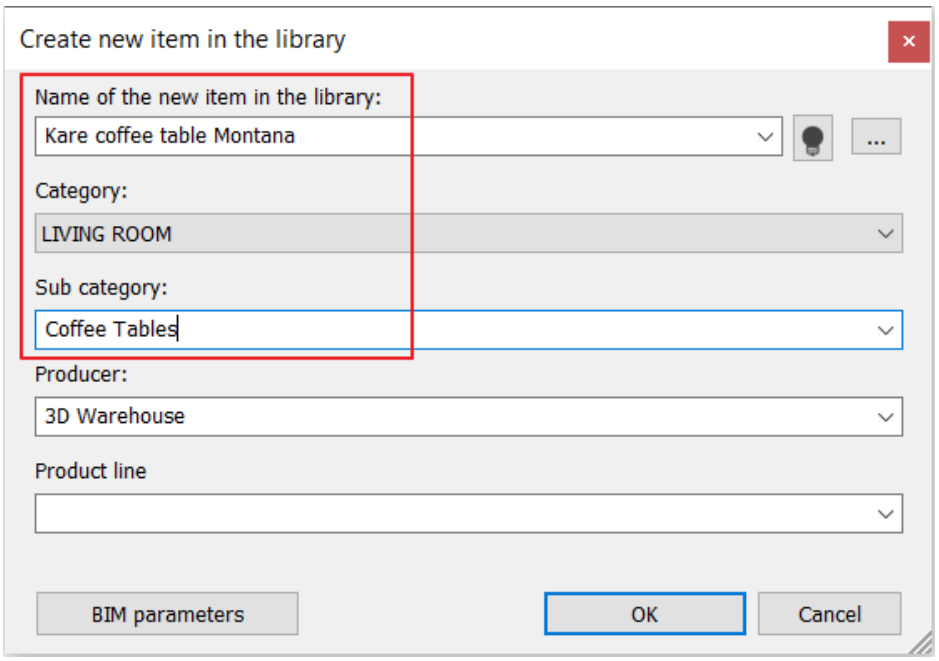
The hits can be refined, if the former simple search word is supplemented with another expression.

- 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 one of the tables from the results, e.g. KARE 81005 Coffee Table Montana.
- Now another page appears showing the selected object with a large image.



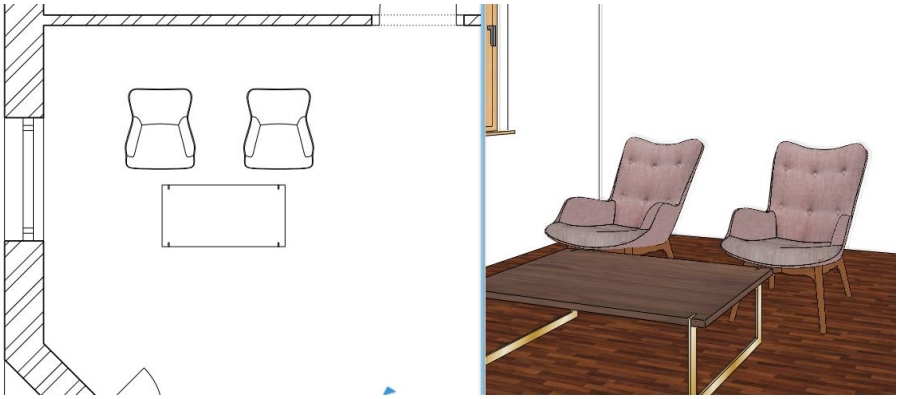
- Click on the Download button and select SketchUp File from the download list.
  The program offers to save the object with the name associated with the object (usually Untitledxxxx) to the *3D Warehouse - Other* category.
- It is recommended that you change it to the Appropriate name and category:





- The program will download the selected coffee table and offer to place it on the plan.
- Move the cursor until the orange-colored virtual top view appears, and place the table in front of the two armchairs.

The downloaded model is saved to the specified library: in the *Design Center*, in the *Objects – Living room – Coffee Tables* library. If the category does not match, you can move it to another category by categorizing it. In the future, you can place the table directly from the library.

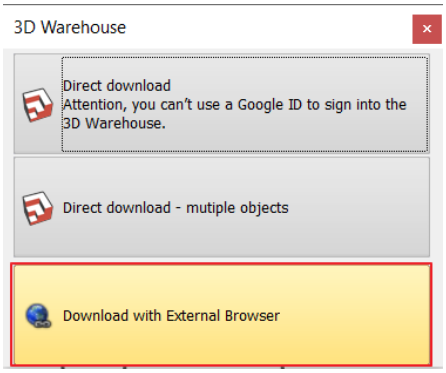


Multiple downloads

By enabling this option, you can download multiple items from the 3D Warehouse at once.
Then, after the download, the selected item cannot be placed on the plan, but another item can be downloaded from the 3D Warehouse.
In this case, the items are saved one after the other in the Design Center. They can later be selected individually to be placed here.

Indirect download from external browser

3D Warehouse may not support direct download, or you may not be able to access the 3D Warehouse from ARCHLine.XP.
Then we recommend the following:



- Open the Design Center. Select **Catalog / 3D Warehouse** command and select the **Download from External Browser** option.

  The *3D Warehouse* page opens in the external browser.

- Register on the page and sign in. Here you can use your Google account to register too.
- Select the model (.skp) and download it to your computer e.g. ARCHLineXP.Draw\SKP folder.
- Import the file with **File menu - Import – SketchUp** command.

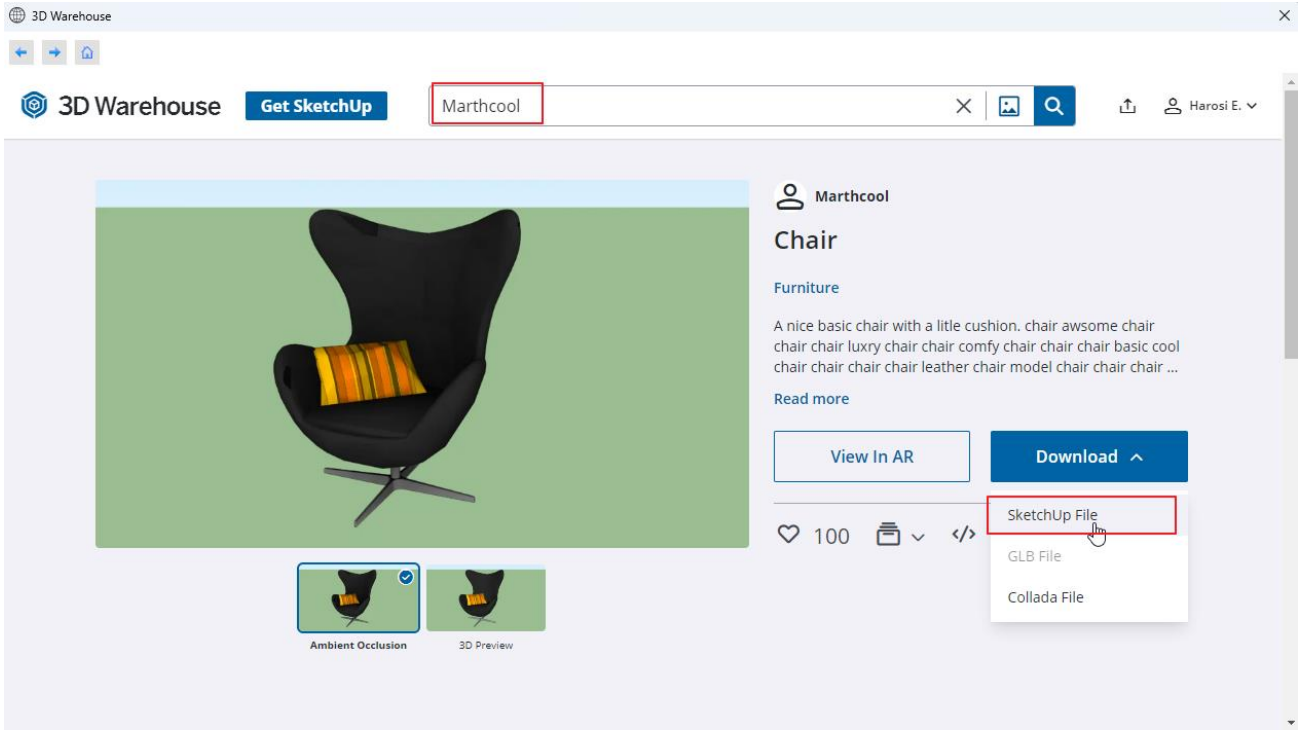
- After import, the model is saved in the directory and can be placed in the plan.

1.4.5. Sketch mode - Modifying downloaded objects - optional

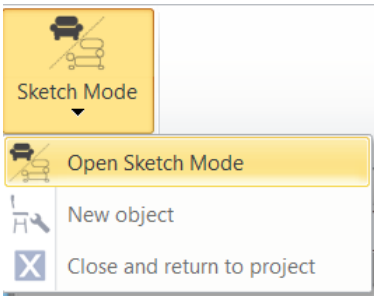
When we search for models on the web, we often face the fact that the downloaded model contains more items than we need, for example, chair collections, beds with extra small cushions on them, etc.

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: “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.

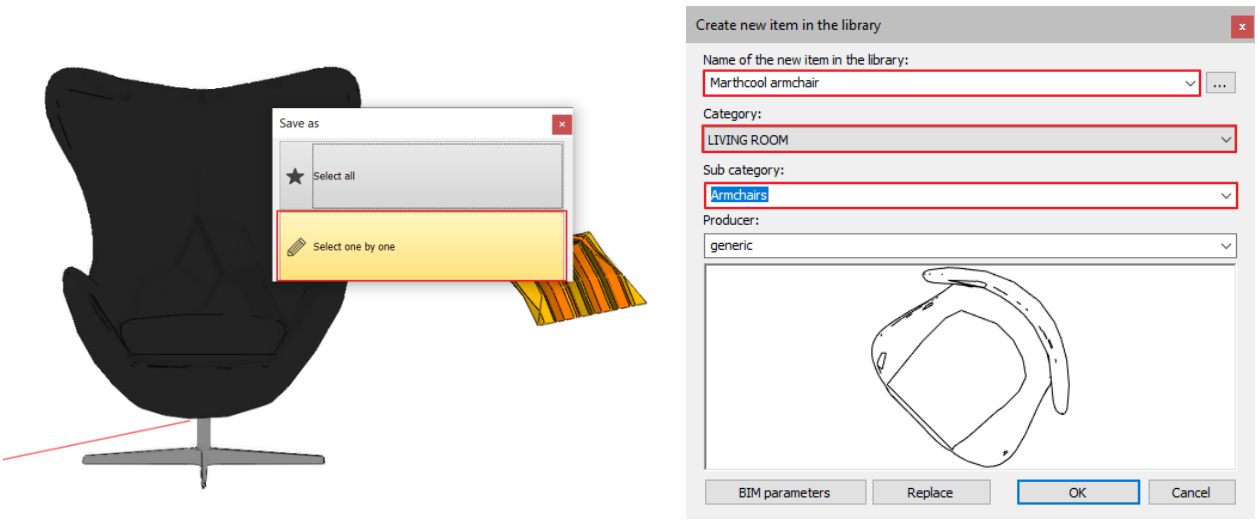


We are going to use the *Sketch mode* for this task. Before using it, it is recommended to save the project.
In *Sketch mode*, you can save only the selected items and then continue saving by saving another selected item or items. In the meantime, you can delete items or move and rotate them if necessary.

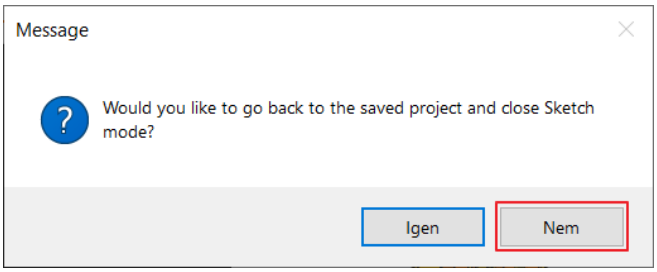
- Choose on the Ribbon bar / Interior / Sketch mode / Open Sketch Mode command.
- Select the chair.
-

Now the program closes the project and enters the Sketch mode, where only the selected element is shown. This way, the object is separated into parts: armchair and cushion. These items can be separately moved or deleted.

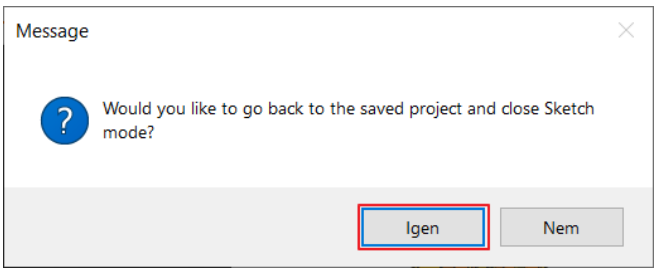
- Edit: Click on the cushion and move it away from the armchair.
- Save to the Design Center: *Interior - Sketch mode - New object* command.
Select the *Select one by one* option and mark the whole armchair without the pillow. Enter.



- Enter the name and category of the new armchair: Living room category, Armchairs subcategory.
  The selected armchair has been saved and deleted from edit mode.



- Do not close the Sketch mode.
- Now save the pillow repeating the previous process.
- Close the sketch mode:



- Now delete the old object on the floor plan and find the new under *Objects / Living room / Armchair* 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.

Complex projects and Sketch mode

For complex projects, we recommend that you do not start the sketch mode from within the project to save time. Proceed as follows:

- Start the second instance of ARCHLine.XP with a New project.
- Place the object.
- Start the sketch mode.
- Finish editing, save the object, exit the Sketch mode.
- Close the 2nd copy of ARCHLine.XP.
- Restart ARCHLine.XP instance 1 after saving the project, open the project, move the edited object from the library.

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

1.5. Layer management

It is a common task to present a floor plan in several different ways: as a furnishing plan, an electrical plan or to illustrate different pre-designed alternatives to 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.

1.5.1. What are the layers?

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

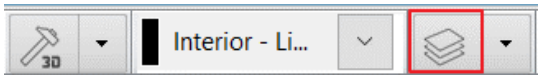
Name the tracing papers as **"Walls"** and **“Indoor – Hallway – Furniture 1”.** If you place the tracing papers on the top of each another, then you can see the walls, as well as the furniture items placed at the hall. If you pull out the tracing paper named “Indoor – Hallway – Furniture 1” under "Walls"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

1.5.2. 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.

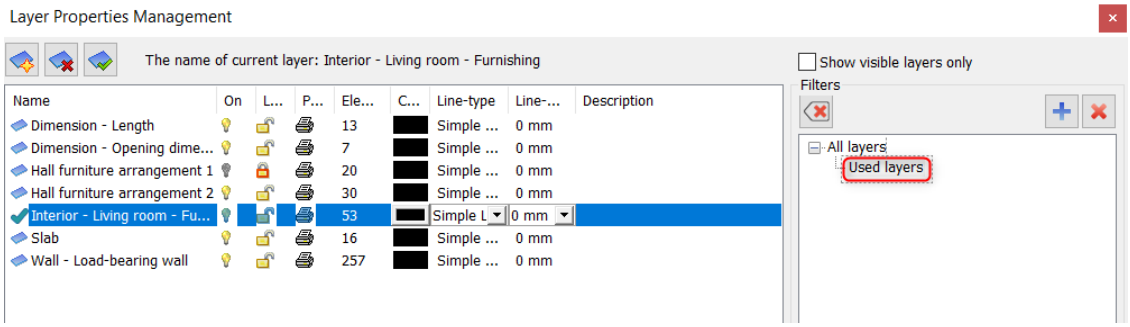


The "Layer Properties Management" dialogue appears.

Used Layers

- Click on the Used layer group under All layers.

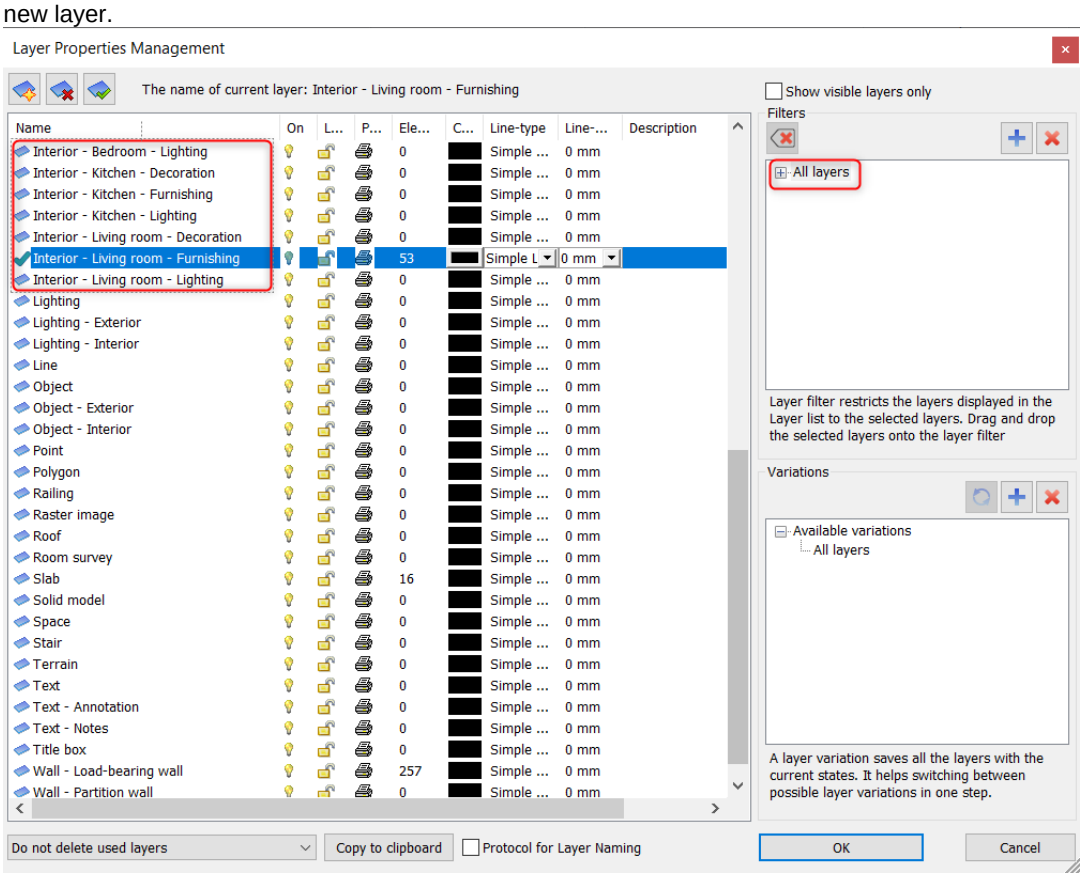
It is evident from the above description that the program automatically sorts the various drawing components to different layers depending on their type. Accordingly, the walls are arranged on the layer **“Wall – Load – bearing wall”,** the floor slabs are on the layer **Slab**, dimensions are on the layer **“Dimension – Length”,** while the objects are arranged on the layer **“Interior - Living room - Furnishing”**.



All Layers

- Now turn on “All layers” option.

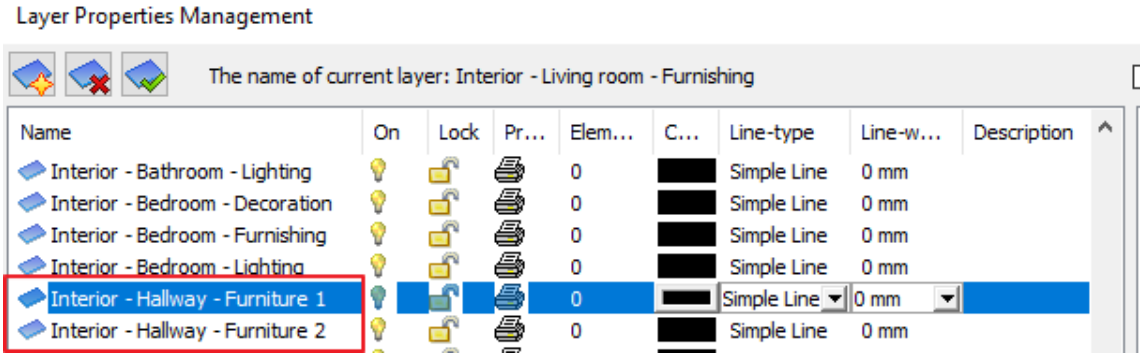
Then all the layers in the program will appear. We have prepared layers for both architectural items (these are automatically assigned to the item types) and for furniture so the designer can easily place furniture, decorative elements, lamps on a separate layer for each room. If you need an additional 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.

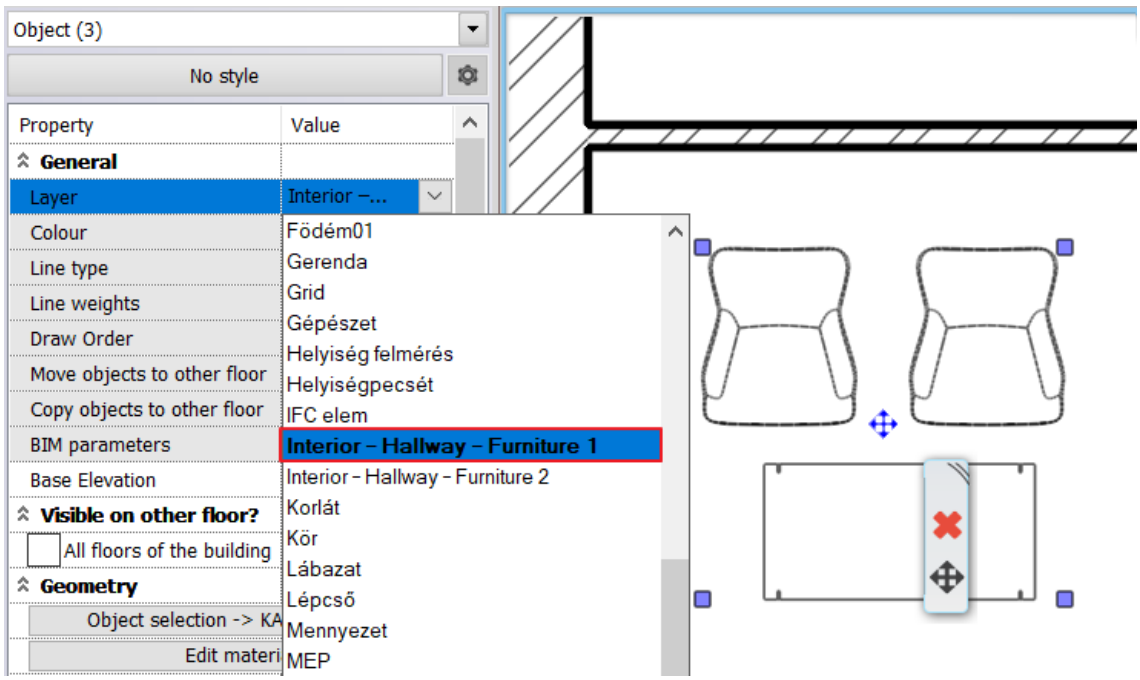
- To create a new layer, click on Add new layer icon. Now the “Layer : 1” is created.
- Double-click on the recently created new layer and rename **“Interior – Hallway – Furniture 1”.**
- Now create another layer by using “Add new layer” command.
- Double-click on the recently created new layer and rename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



- Close the dialogue window by pressing “OK”.

1.5.3. 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.



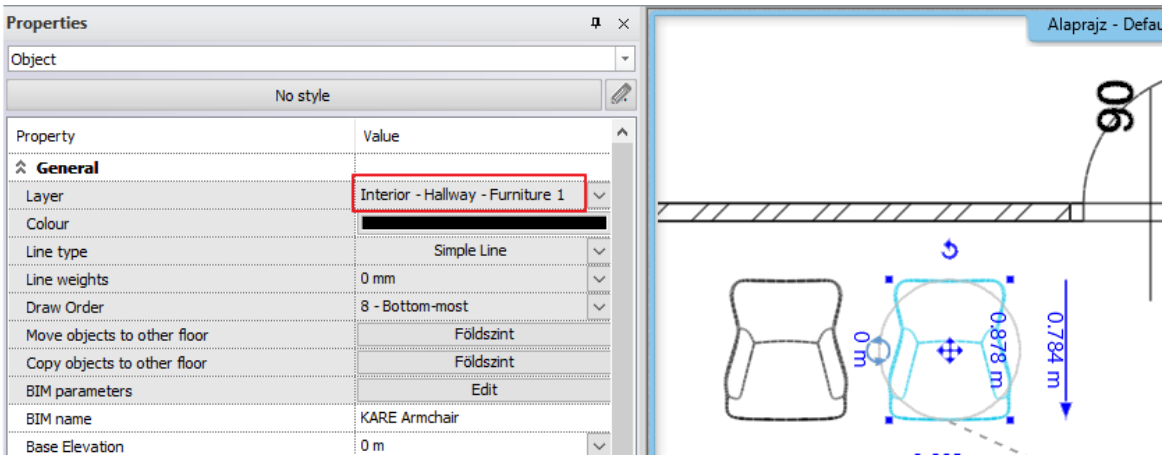
These three items are on "**Interior – Living room – Furniture"** layer.

- Now click on the **"Interior – Hallway – Furniture 1"** layer on top of the list.
  The objects have been moved.

Checking the layer properties of furniture

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.

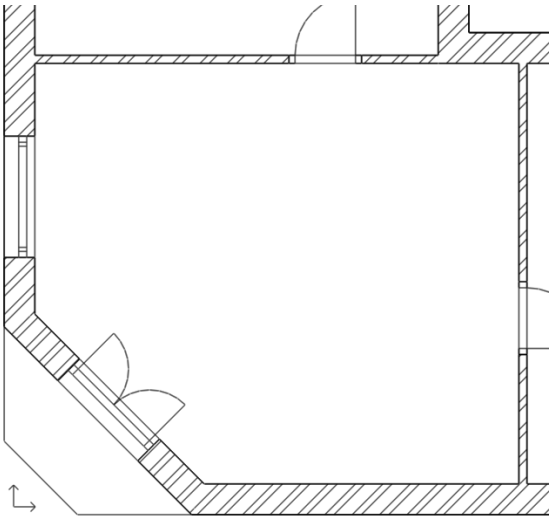
1.5.4. Drafting the second alternative arrangement

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

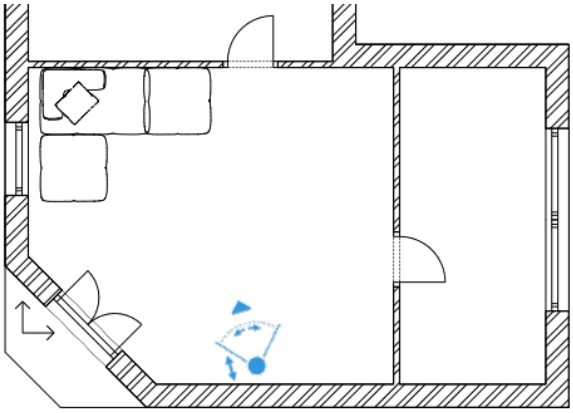
- Activate the floor plan window.
- Open the Layer Manager.
- Turn on "Used layers" option.
- Click on **"Interior – Hallway – Furniture 1**", then click on the yellow bulb icon to turn the visibility off. Now the padlock is locked.

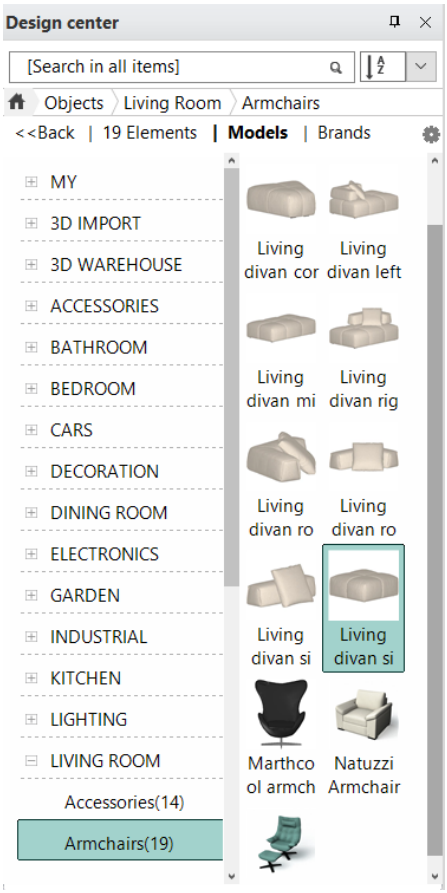
- Close the dialogue window.
  On floor plan, we can see an empty room.



Placing furniture – 2nd version

- In the Design Center click on **Catalog / Objects / Living room / Armchair** folder, and select items from the **Living divan** family as you like. Place them.
- Select the new furniture and move them to layer "**Interior – Hallway – Furniture 2"** by using the previously described method.

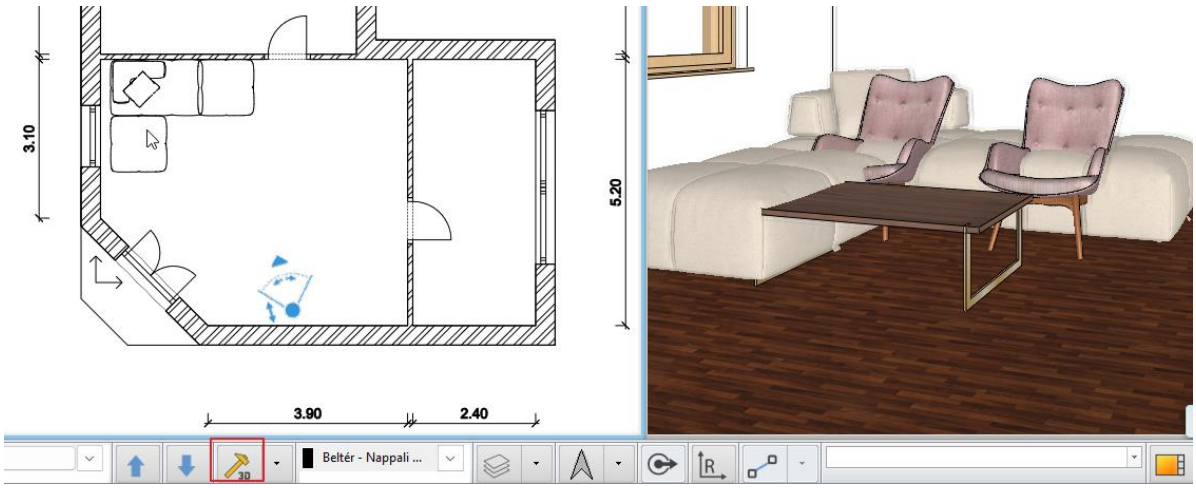


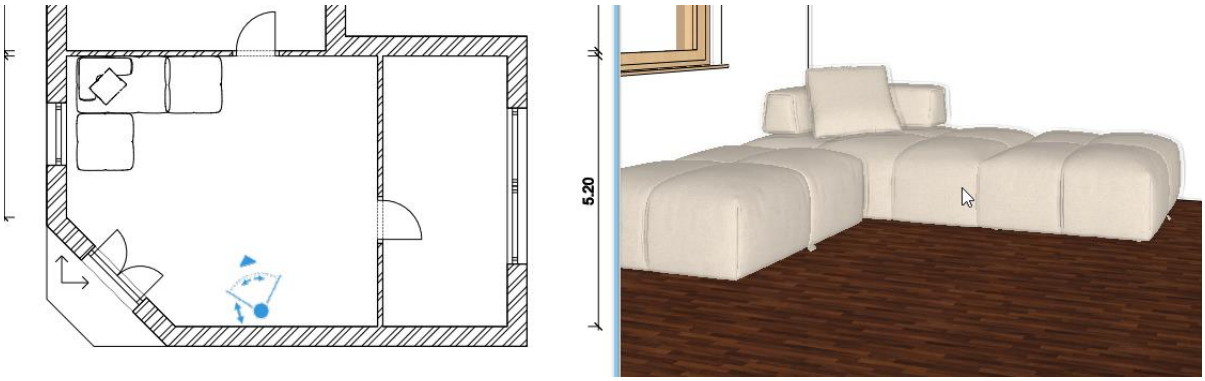


Updating 3D model

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 **Quick 3D model** tool. Using this tool quickly builds up the 3D model based on the content of the floor plan.



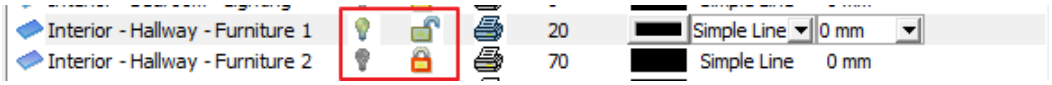


Two armchairs and coffee table disappeared, as the visibility of layer representing them had been turned off (this is same as that if we pull out tracing paper of this furniture under the other drawings).

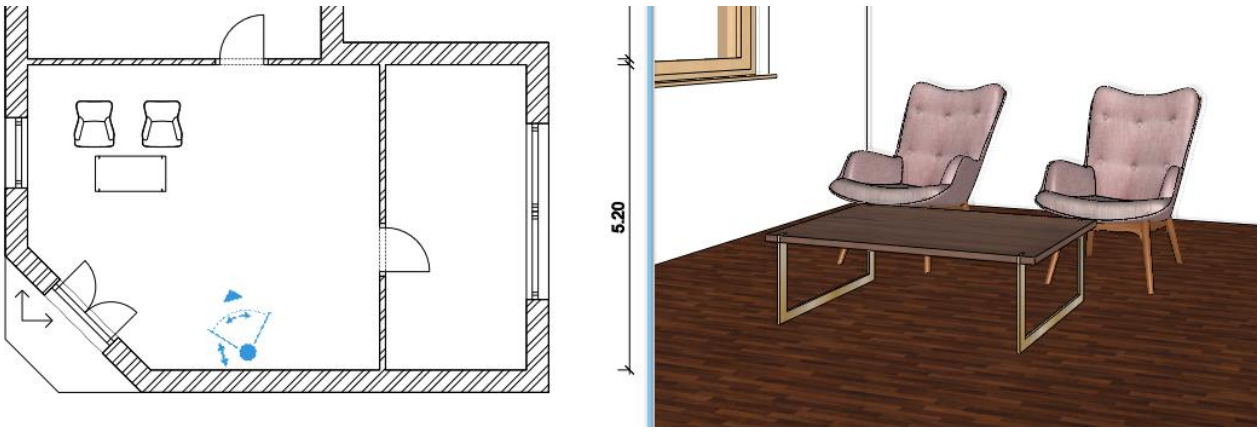
Switching between alternatives by turning on and off layers

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.



1.5.5. 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.

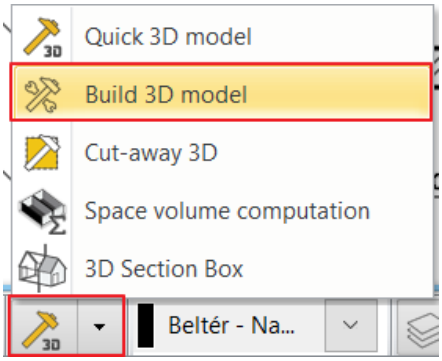
Using basic tools on the floor plan is not followed by an update on 3D view then you have to check: **File menu / Options / Graphics / Build 3D model / Keep 3D of this project updated** dialogue window**.** This option should be activated.

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 Quick 3D model tool. In essence, using this tool quickly builds up the 3D model based on the content of the floor plan.

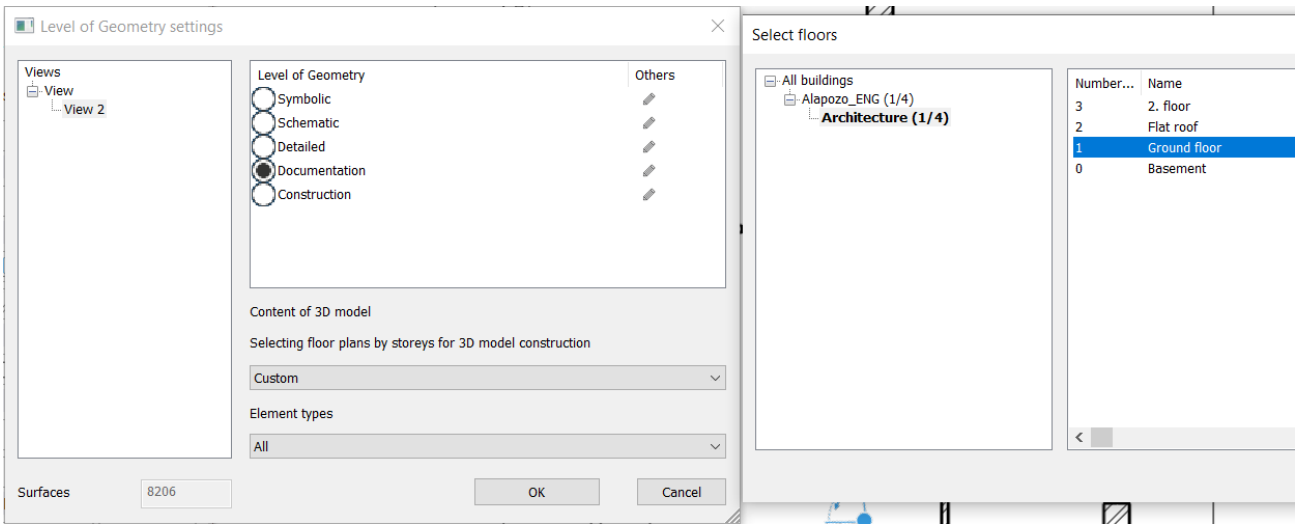
Displaying the active level only

- Click on the black arrow next to "Quick 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.

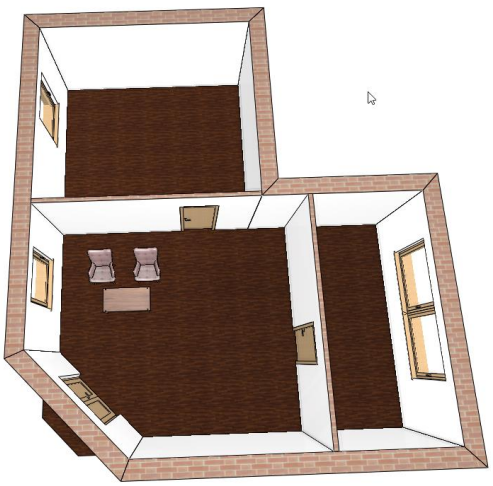


Now the Build 3D model dialogue window appears.

- In the "*Selecting floor plans by storey for 3D model construction*", select Custom
- Select only the Ground level. OK.

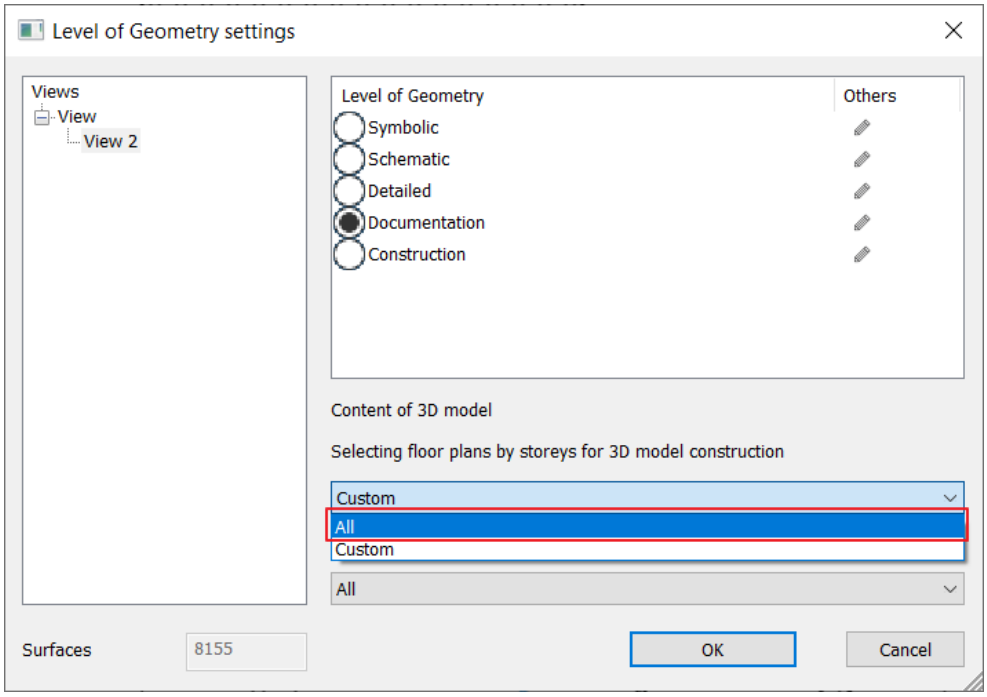


Upon pressing the button OK, the program starts working and soon displays the model. Now only those items are visible, which are on the Ground floor layer on the floor plan. This representation could be an excellent tool to create a semi top view, a so-called dollhouse view of the floor plan.



Re(building) the entire 3D model

- Select the Build 3D model – Level of Geometry settings, and select all.

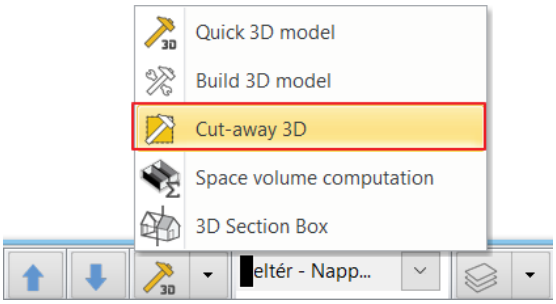


- The full model will be displayed again.

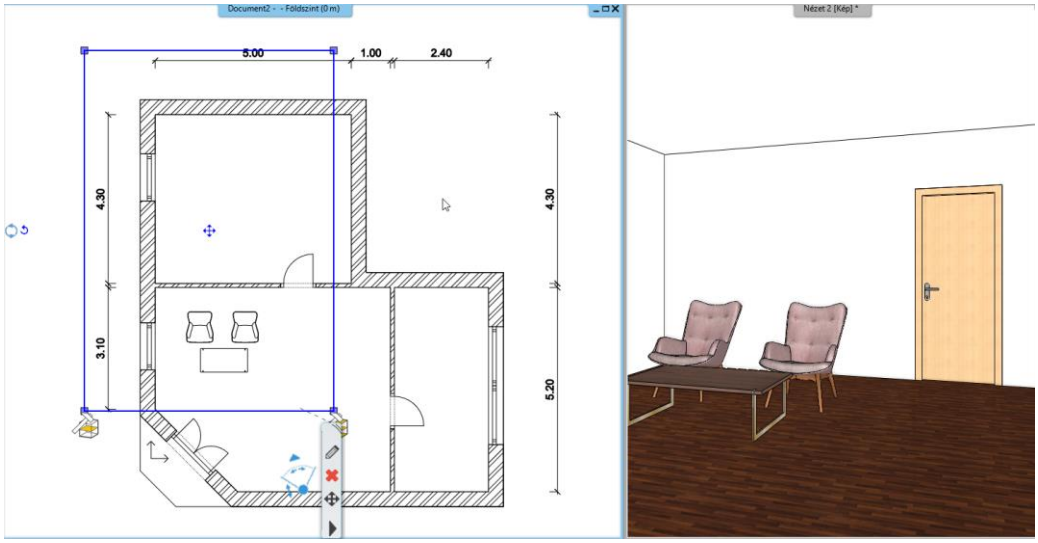
Cut-away 3D

The Cut-away 3D view allows you to reduce the complex 3D view to the model space you are currently editing. In the case of a large model, this function is advisable if the design is concentrated on a relatively small part.

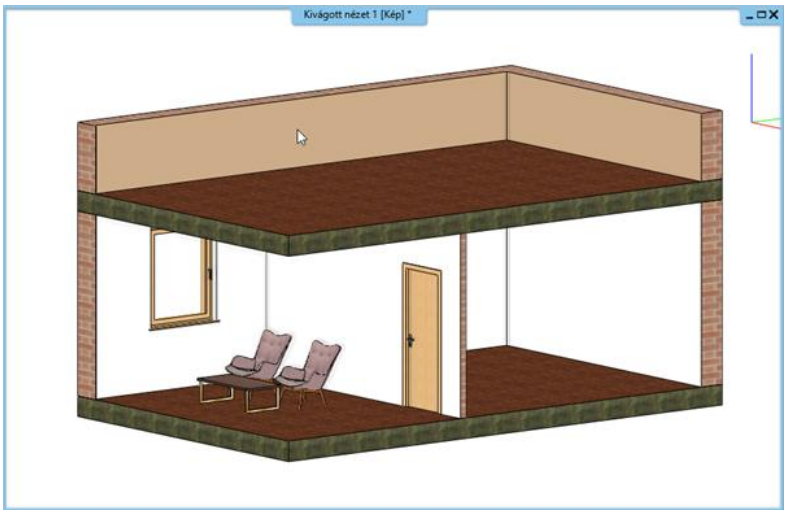
The function allows you to display the entire model in one 3D view and the model narrowed down to the desired detail in the other view.
A Cut-away 3D view can be created by using a rectangle or a cutting profile.



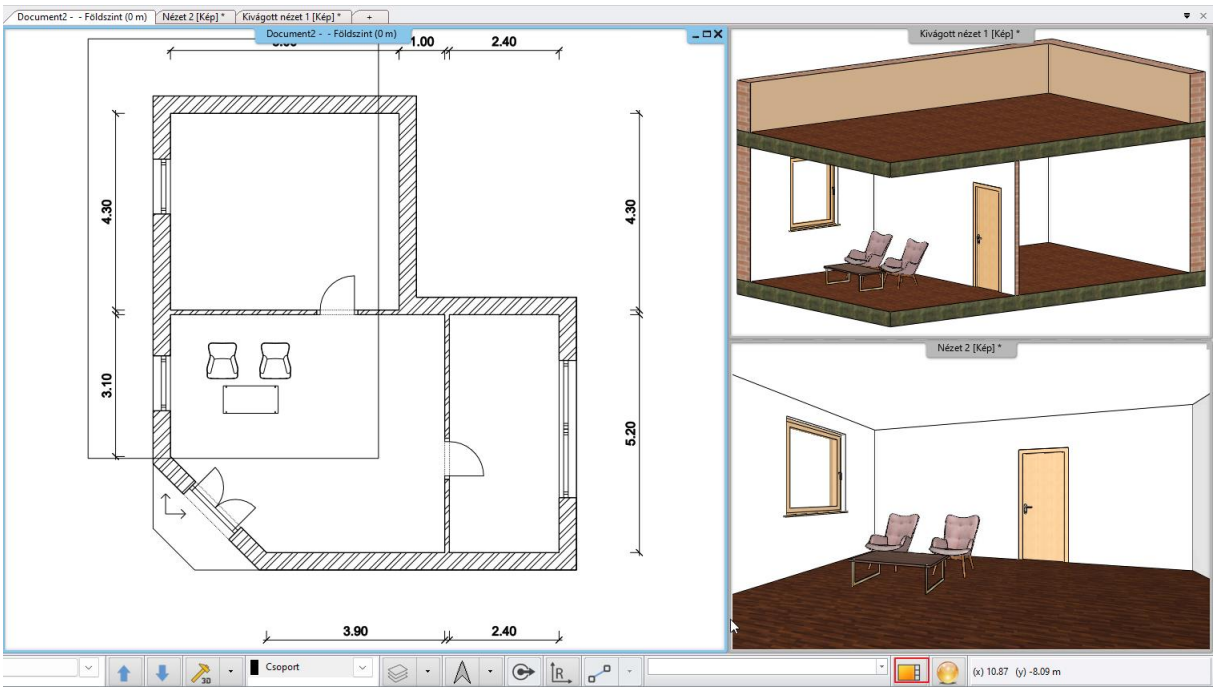
- Arrange the 2D drawing so that the entire floor plan is visible.
- Click on the black arrow next to the 3D hammer icon and on the "**Cut-away 3D**" command.
- Move the cursor to the upper left corner of the drawing area, and click. This way, you have placed the first corner point of the rectangle.
- Now move the mouse so that the bottom edge of the drawn rectangle cuts the model roughly in half, so that the armchairs and coffee table are in the selection rectangle. Then click again.



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

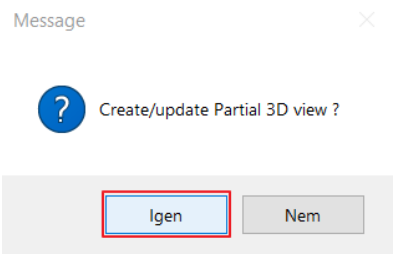


- In this view, you can edit elements in the same way as in the full 3D view.
- Use the Magnify View command in the Navibar to place this cropped view among the others.



You can modify the selected area at any time in 2D view:

- Click on the rectangle, select Offset, set the new cut-out and press Enter. Answer Yes to the message that appears automatically.



The remaining selection rectangle on the floor plan can be deleted, the cut-away view will not disappear.

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.

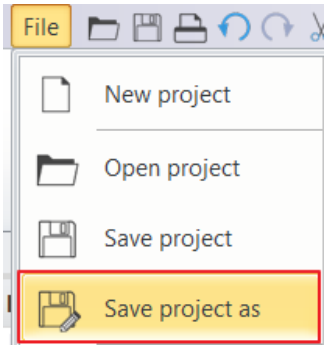
As a result of the previous steps, this time the program only displays the 3 selected objects in the model. This option can be particularly useful when you want to focus on a small, well-defined part of a complex drawing during the design process and want to temporarily isolate/emphasize it in the model.
Rebuild the entire model as you have learned.

1.6. The importance of “Save as” function

Finally, you can see exactly what the project contains and you can save it in a new project file. First, let's look at why this is even necessary.

Just like when working with other software, you may need to save different phases of your work with ARCHLine.XP® for different reasons. Among these reasons, one of the most important is the principle of "one file is not a file", which means nothing more than that if you only have your work in a single file, and if for some reason it is lost, e.g. deleted or damaged, then without a duplicate, all your work is lost!

- 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**".
- The appearing dialogue box indicates that the project presently contains three drawings, the floor plan, the model and the cut-away view. 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.
  So, we have two backups of the same state.

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.

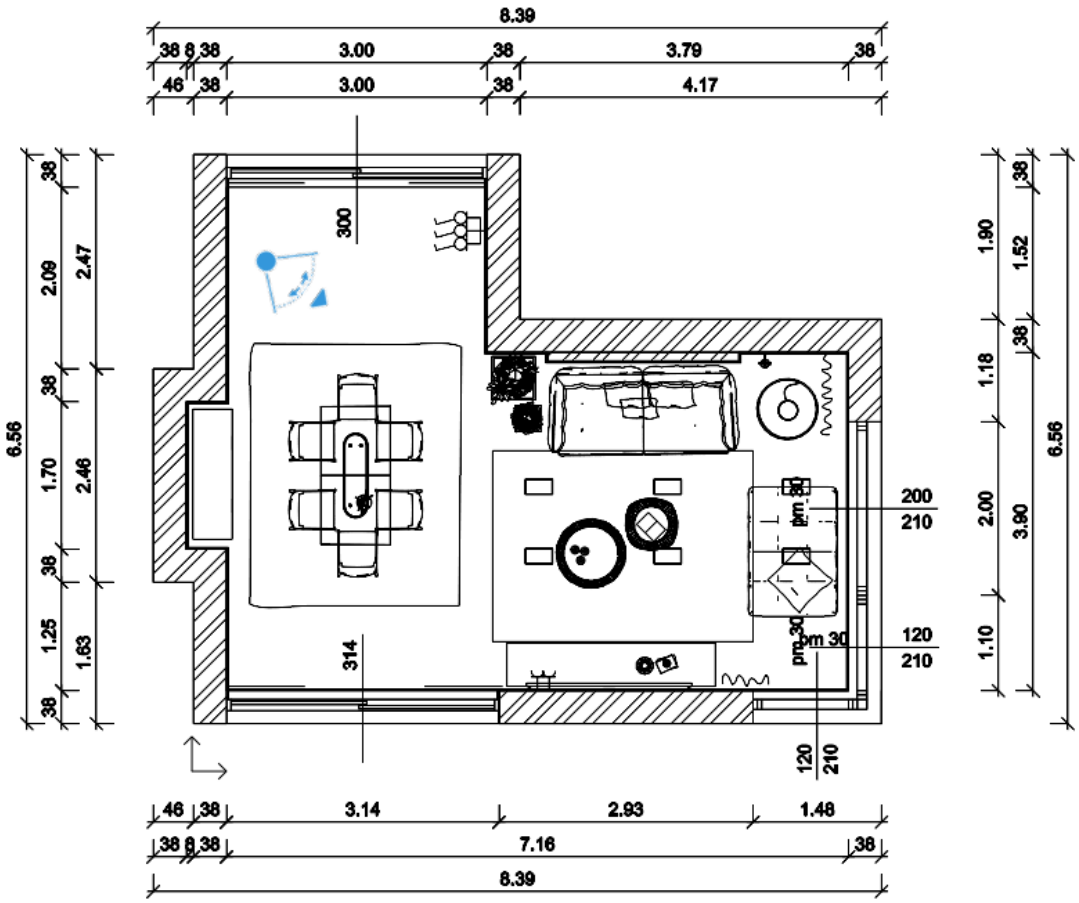
Workshop 2: Reception room

2. Workshop: Reception Room

In this workshop we will show you the steps to design a typical living room.
We will extend the editing method already learned in the Foundation workshop by using Pre-defined rooms and the Room maker.
We will cover the following topics:

- Fundamentals of CAD design: Interface and Drawing tools - Repeat
- Basic architectural design: Wall drawing using the Room maker, flooring, suspended ceiling.
- New method for placing openings in Room maker.
- In Room maker, dressing up a room: curtains, molding, skirting board, electric switch, picture on the wall, wall lamp, wallpapering, painting.
- From the Design Center, placing furniture and lighting.
- Download new textiles from the Internet.
- Visual design: shadows, lights, photorealistic/rendered images.

We will be creating the next living room design:

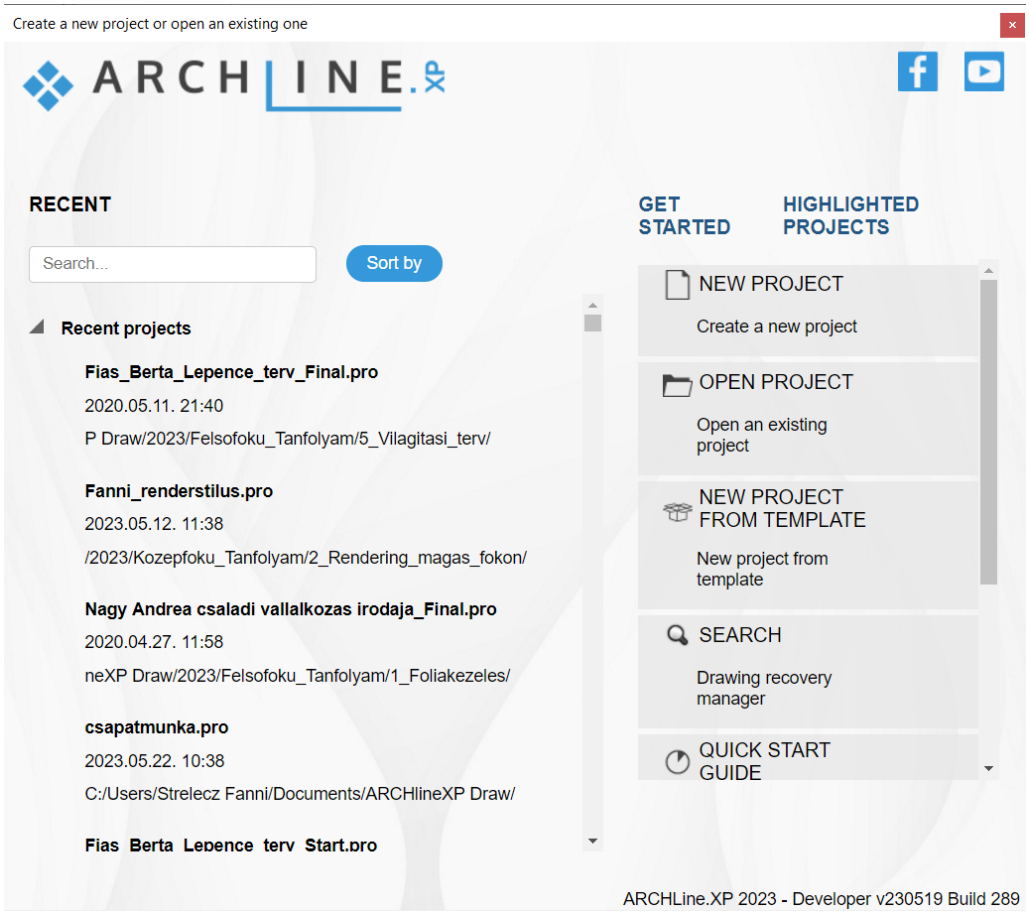


The project created by Berta Fias.

Open your browser and watch the living room design tutorial video:
Preliminary Course – Interior design – Reception Room
Download from our website the Workshop Projects 2024 installer, used during the Preliminary Course, and install it if you have not already done so.

Starting

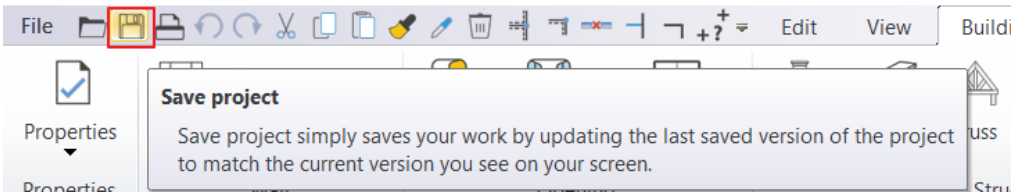
- Start ARCHLine.XP®. Your screen should look similar as follows:



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

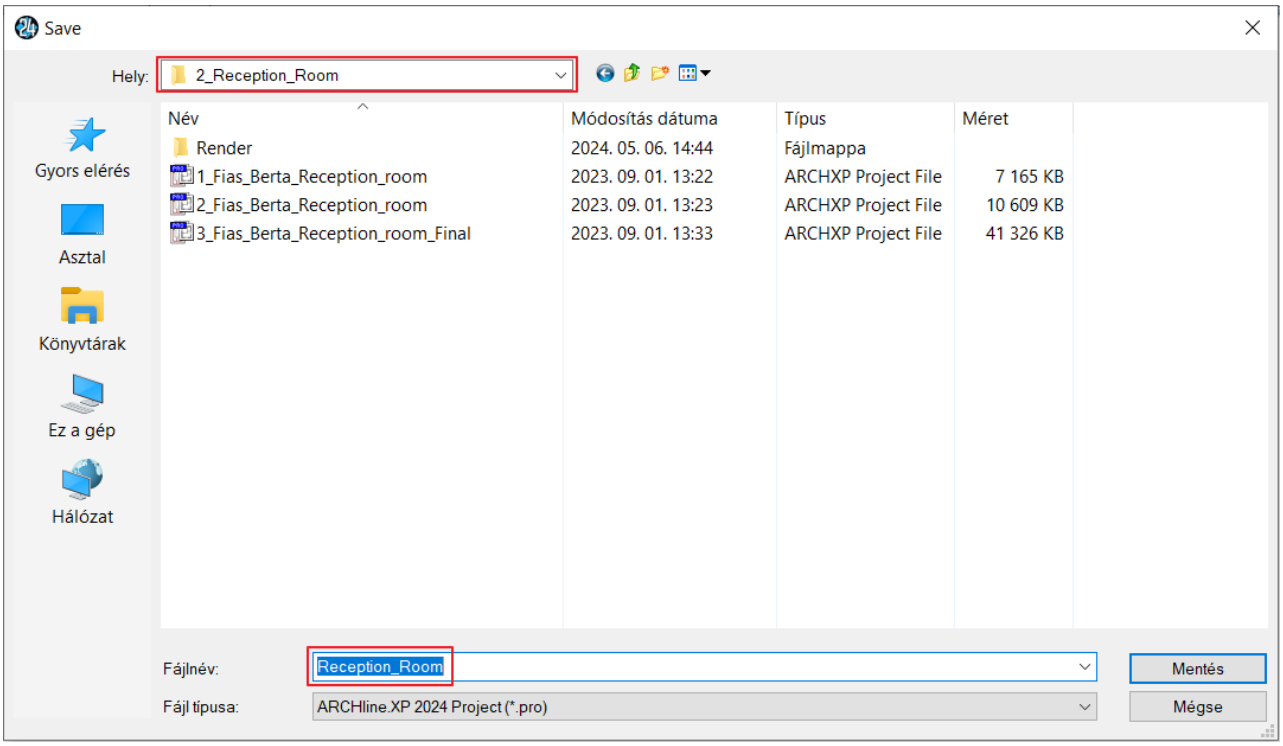
2.1. Saving the project

- Select Save Project from the Quick Access toolbar.



Since we have not yet given the project a name, the program now asks where and under what name we want to save our work. By default, the program will create a work folder named ARCHLine.XP Draw during installation, where projects can be saved. You can find this folder under Documents on your computer.

- Use the New Folder button to create a folder called *Reception_Room* under the ARCHLineXP Draw folder. If you have already installed the Preliminary Course workshop installation file, go to the appropriate folder: *...2024\ Workshop_Preliminary\2_Reception_Room*



- Go to the *2_Reception_Room* folder and enter the project file name "Reception_Room".
- Press the Save button.

From now on, it is enough to simply press the Save Project button on the toolbar and the program will update the contents of the "Reception_Room" project with the current state without prompting.

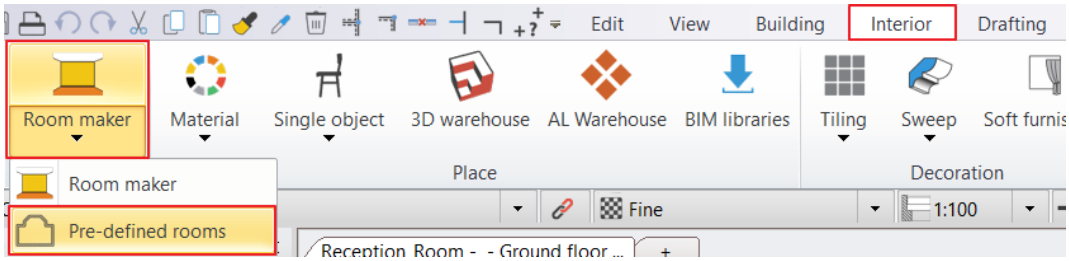
We recommend saving every 10-15 minutes!

To ensure the security of your work, you should make a duplicate copy of your projects at regular intervals.

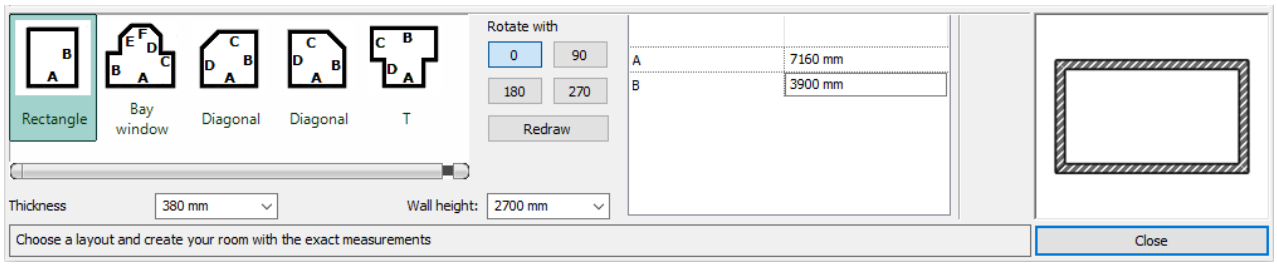
2.2. Pre-defined rooms

In the Foundation workshop, we learned how to set up a floor plan.
Now we'll explore a new possibility. Later, you can choose which method is easier and faster for you.

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

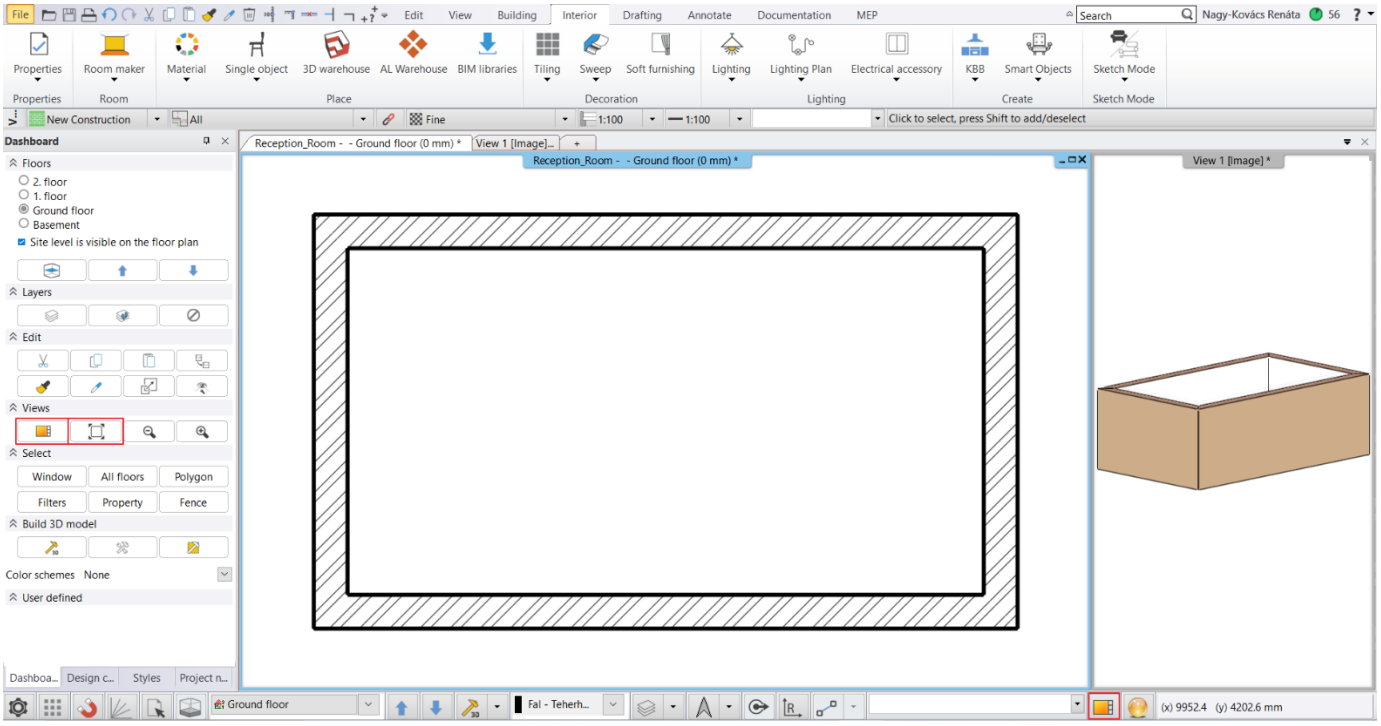


- In the appearing dialogue box choose: **Rectangle.**



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

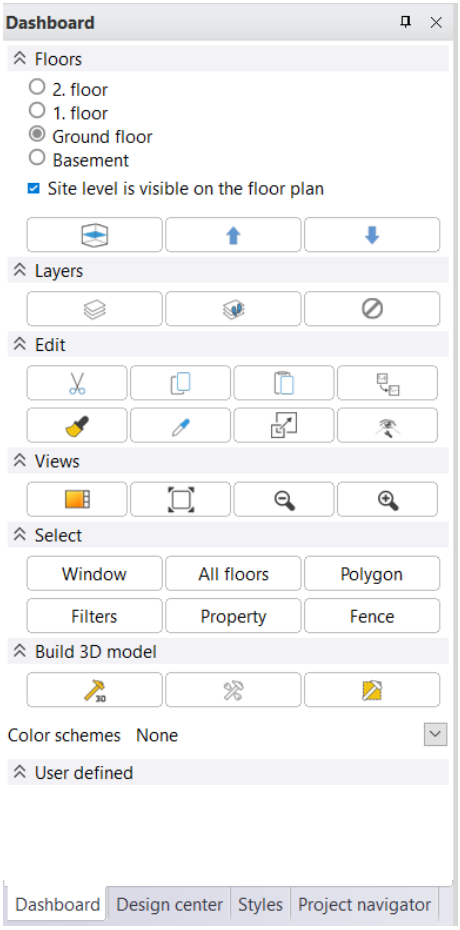
- Set wall properties: Thickness: 380 mm, Wall height: 2700 mm.
- Press the *Close* button and place the room on the drawing area near to the origin using the mouse left click.

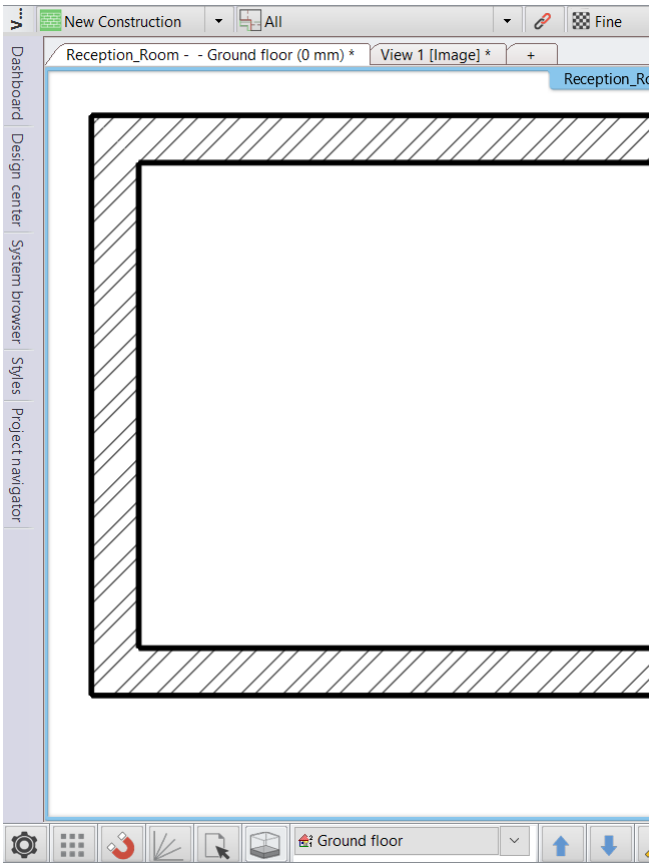


You should see the above layout on the screen: if you can only see part of the positioned room, select the **Optimal** zoom icon in the *Dashboard*. If you want to see the layout of the drawings, select the **Magnify view** icon, which you can also access from the *Status bar*.

Displaying Side Panels

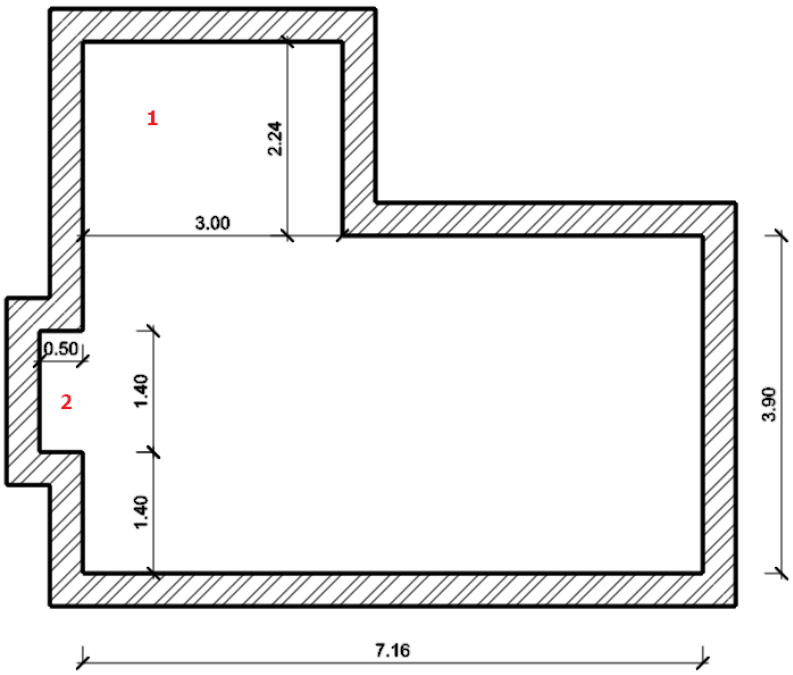
The Dashboard, Design center, Styles, and Project navigator are located on the left side of the screen, and can be activated by clicking on the different tabs.
To hide/show the contents, click on the drawing pin icon in the top right corner of the tab. Then, hover the cursor over the desired tab name to reveal its content.



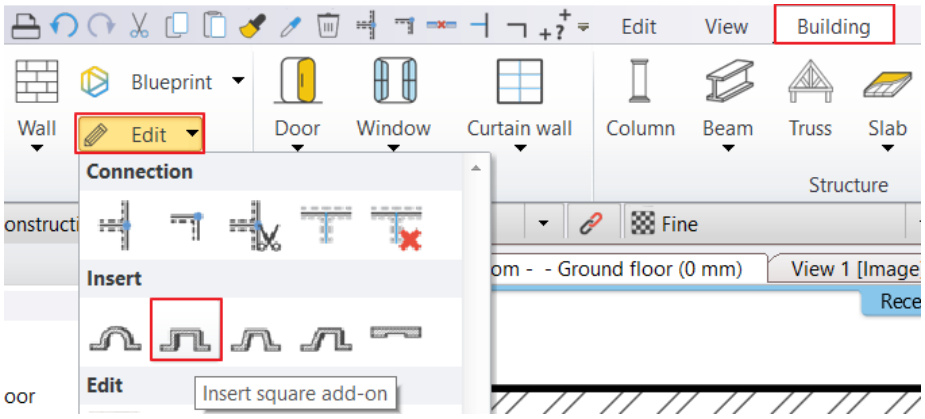


2.3. Editing wall

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.

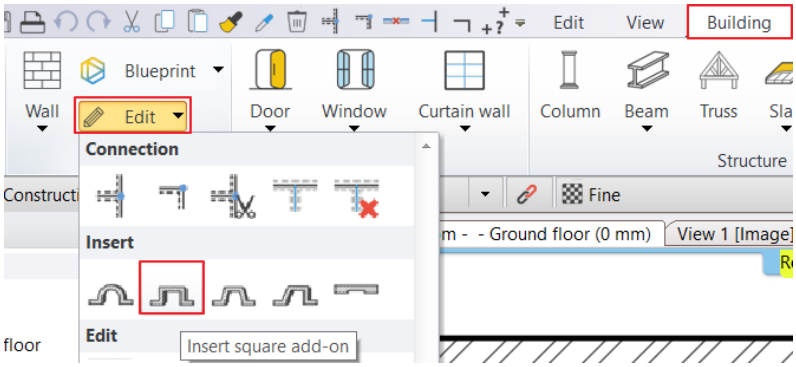


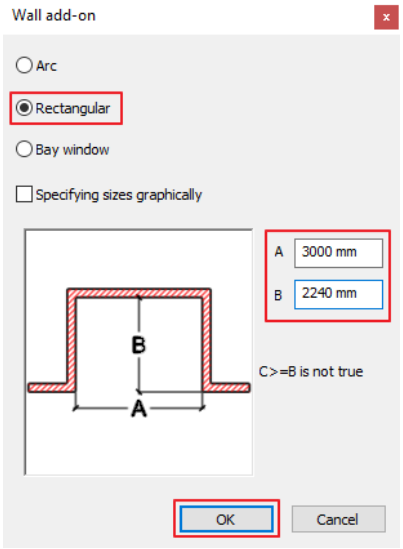
Wall add-ons and other wall extensions are most easily created in the floor plan window.

2.3.1. 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

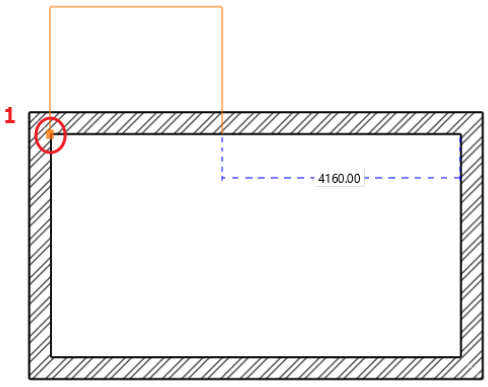


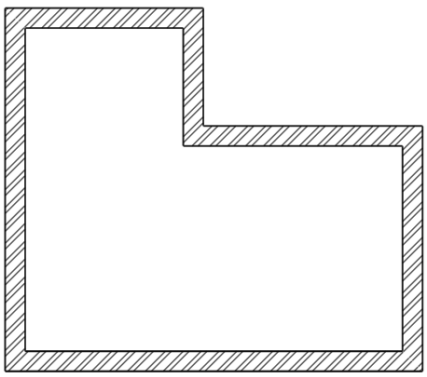


- Choose the room extension type: **Rectangular**.

  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.

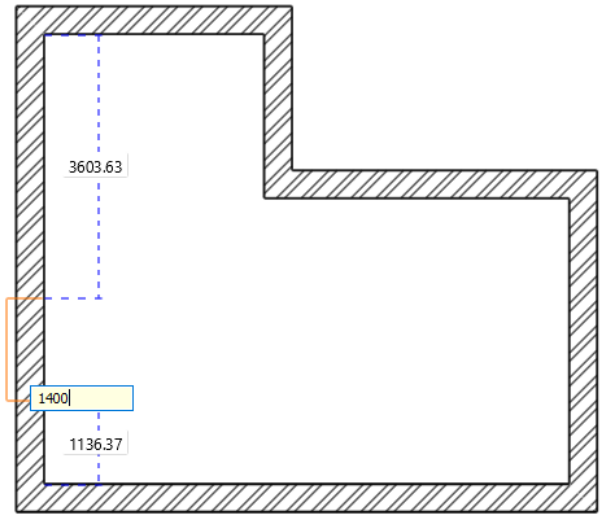




2.3.2. Add next Rectangle extension

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.

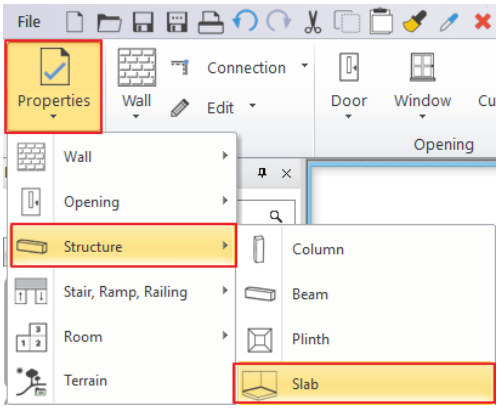
- Click on **Ribbon Bar / Building / Edit / Insert / Insert square add-on** command.
- Choose the room extension type: Rectangular.
- We choose the numerical way and type the value of **A:** 1400 mm and **B:** 500 mm. Then hit “OK” button.
- Moving the cursor over the selected wall, you can read the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



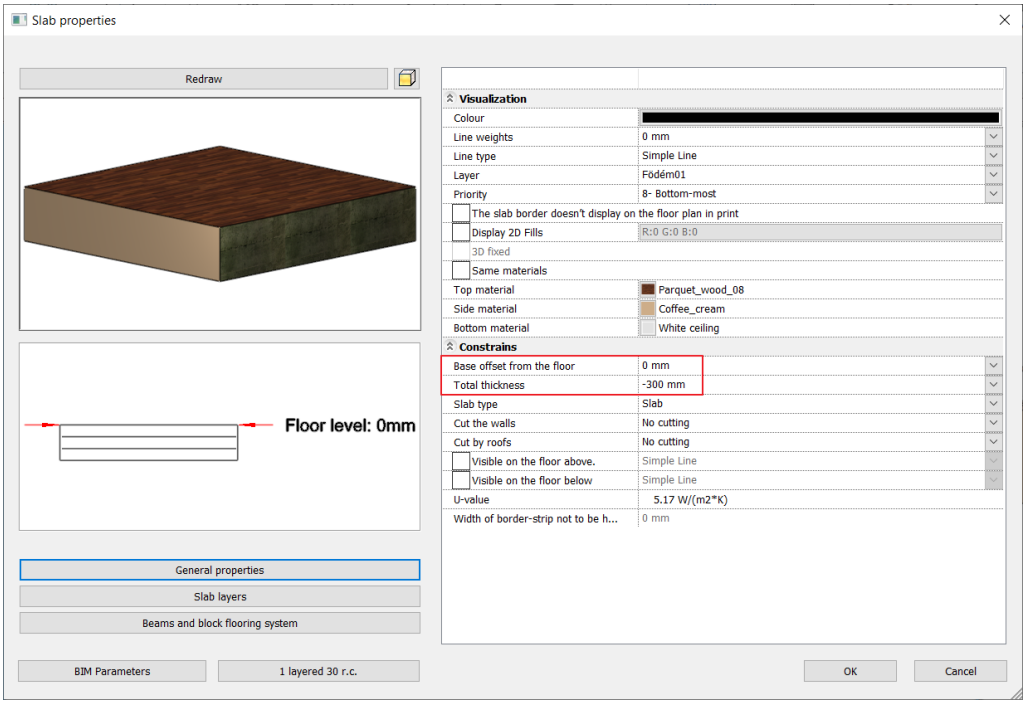
2.4. The slab

2.4.1. Slab parameters

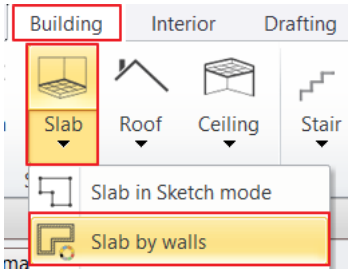
- Define floor properties: **Ribbon Bar / Building / Properties / Structure /Slab**



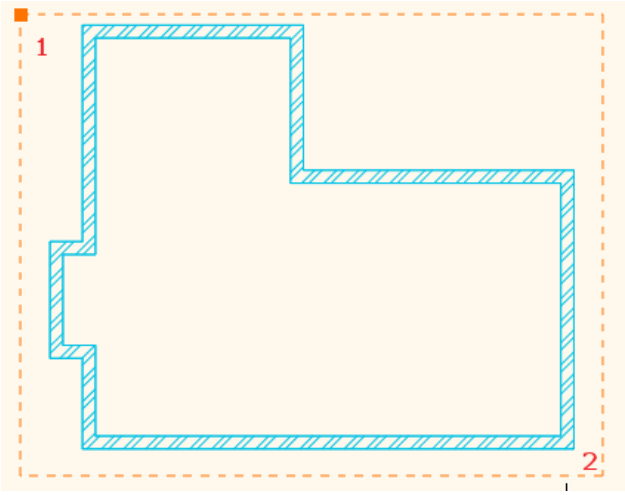
- Set up these values in the dialogue window:
  Base offset from the floor: 0 mm;
  Total thickness: -300 mm (as the floor is extended downwards from 0 mm).



2.4.2. Create slab

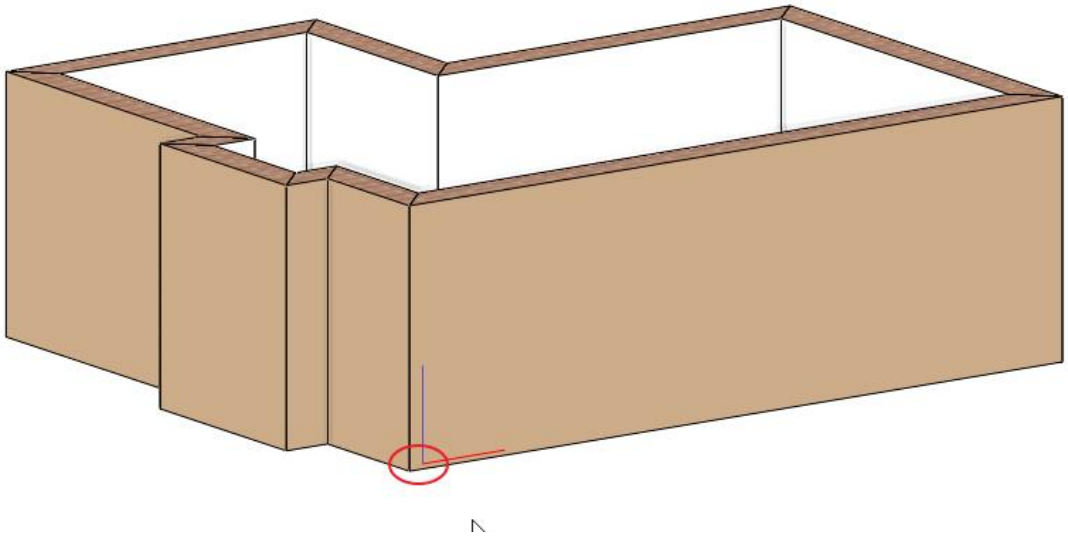


- Select the command: **Ribbon Bar / Building / Slab / Slab by walls**.
- Click on the two opposite corner points of the selection rectangle (1,2) and hit Enter to finish and close the command.
- The program creates the floor and generates it in 3D view as well.



The slab is placed under the walls. Now check it in the 3D view as well. Left-click in the 3D window, then rotate the model by holding down the right mouse button:

- Move the mouse near the corner point shown in the image.
- Here press the right button, hold it down and move the mouse.
  The point where you press the right button will be the center of rotation. This is indicated by a small colored coordinate system.
- Release the right mouse button to end the rotation.

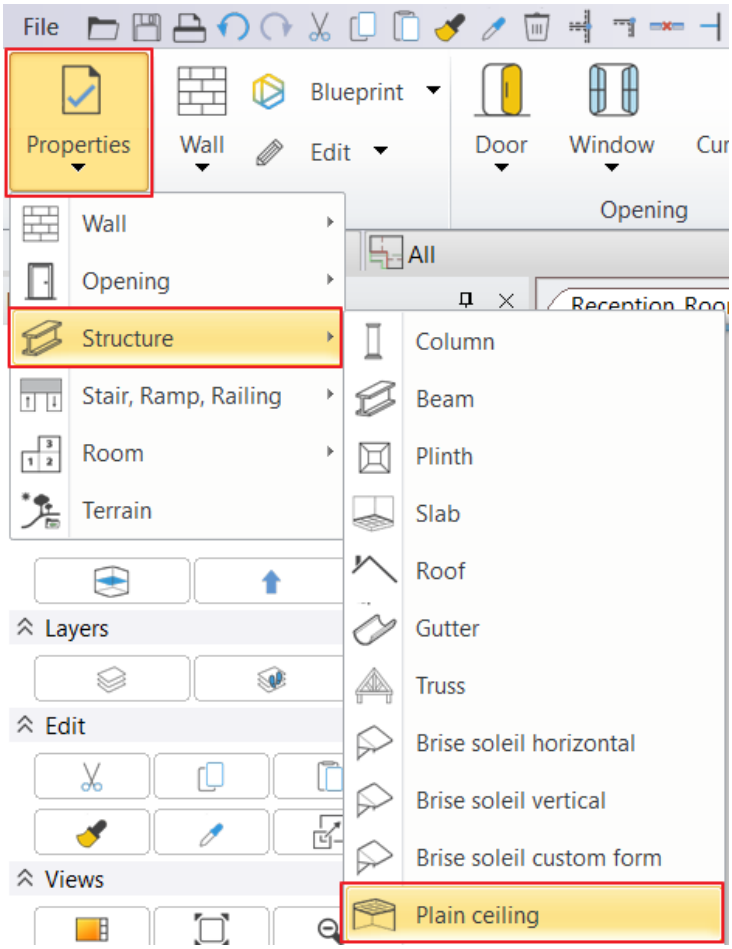


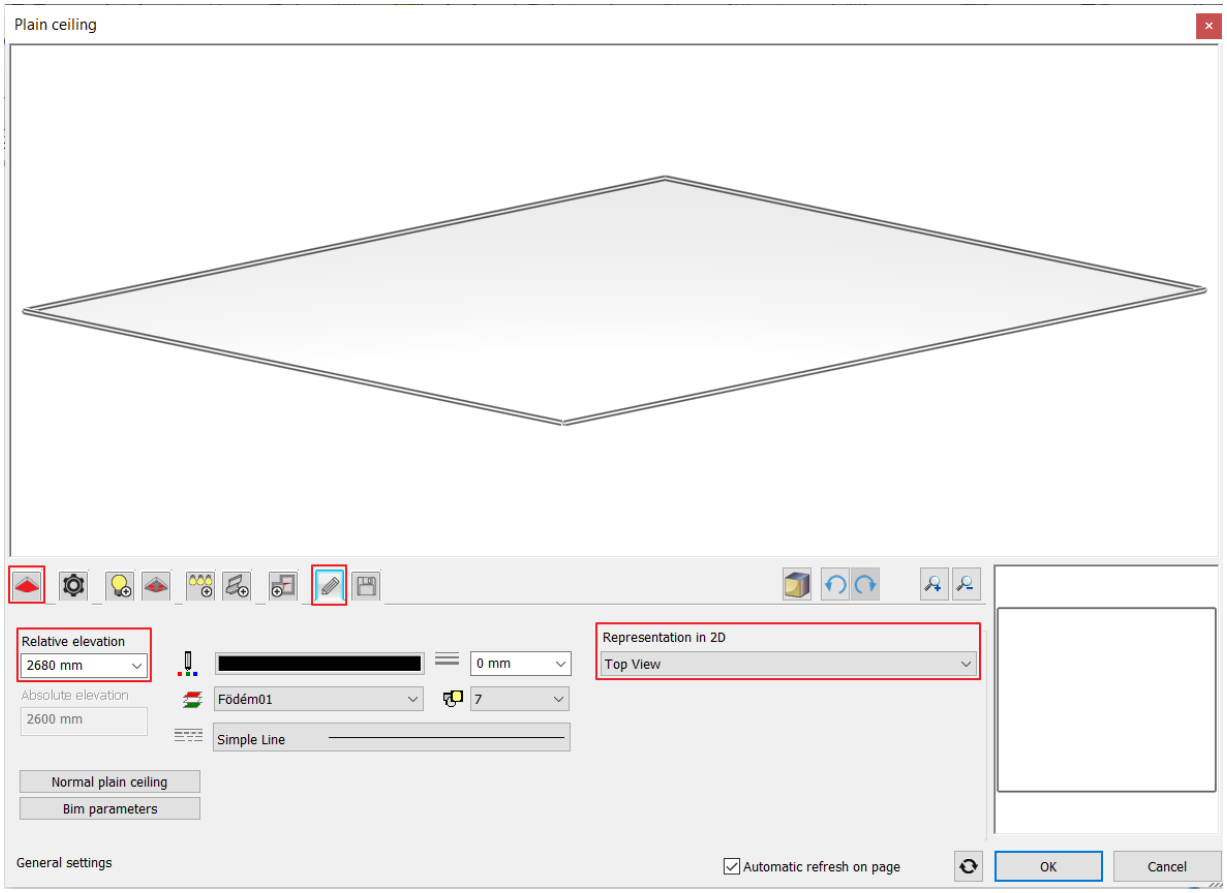
2.5. Add ceiling

Activate the floorplan window by clicking inside with left-mouse button.
Before placing the ceiling, first of all, set the Plain ceiling properties.

2.5.1. Plain ceiling properties

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



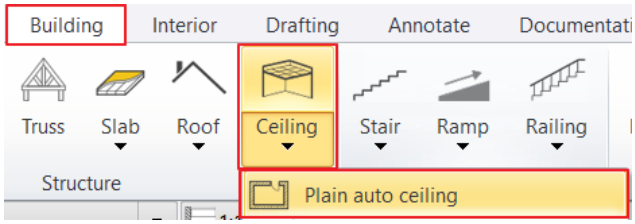


Set the following values in the dialogue window:

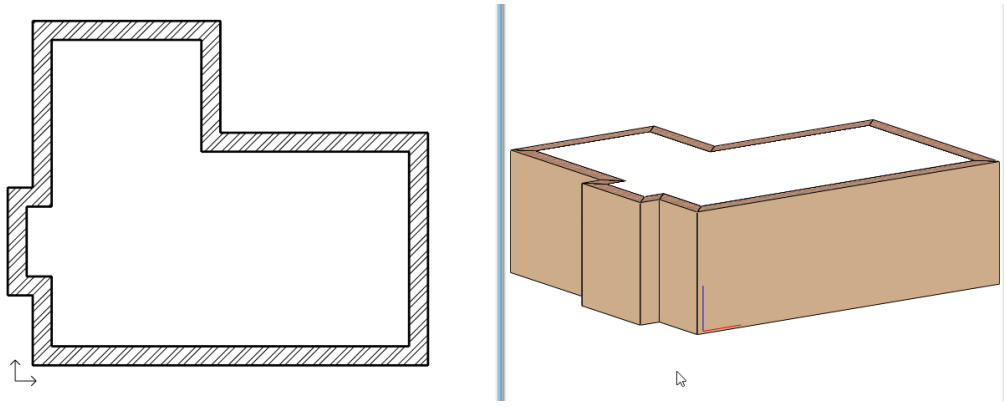
- Enter the ceiling color on the first tab: "Bright white"
- Go to the General settings tab.
- Change the Relative elevation to **2680 mm** and Representation in 2D to **Top View** (so that the suspended ceiling symbol will not be visible in the floor plan).

2.5.2. Placing the Plain 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.



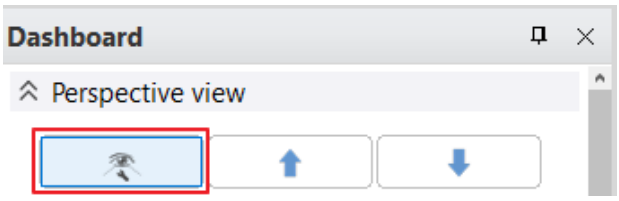
2.6. Setting up the perspective view

Click in the 3D model window, then click on the  **Magnify view** icon in the Status bar to display the model in the left window.

- Click the *Magnify view* icon again to display the model in full screen.
- Click again and the model will return to its original size.
- So, the *Magnify view* icon can be used to toggle the contents of the windows.

Like 2D content, the 3D model can be zoomed in, out, and moved using the mouse wheel.
As we have already seen, you can rotate it in space with the right mouse button.
The next step is to set four different perspective views. These views will help you see the room faster later.

- Activate and then enlarge the 3D window by clicking on the  Magnify view icon in the Status bar.
- No item should be selected.
- In the Dashboard, click the Perspective icon representing the eye.



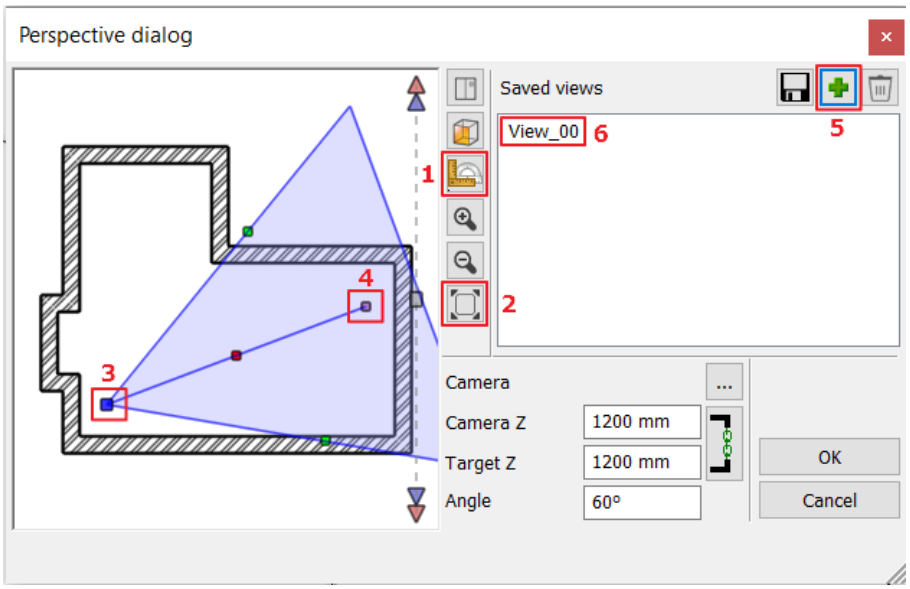
The Perspective dialog box appears.

Perspective dialog

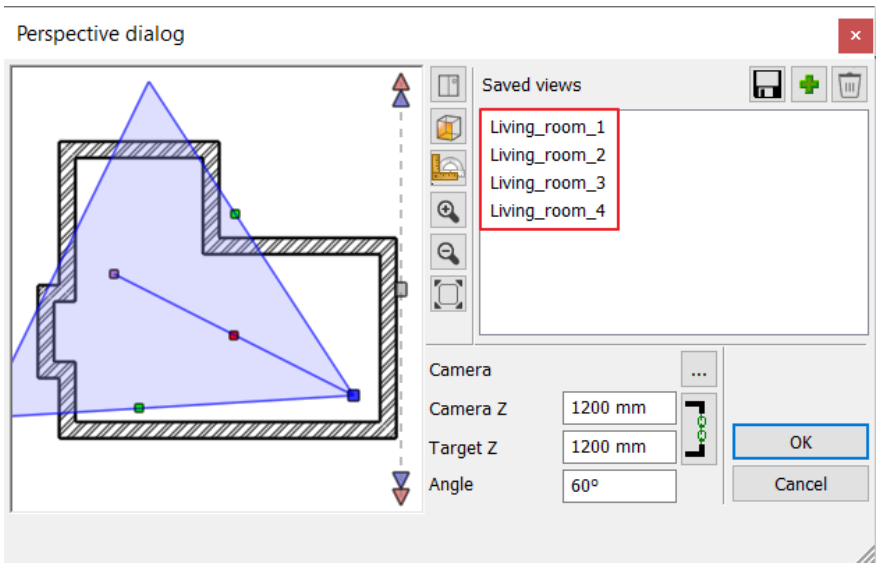
Open the Perspective dialog box.
The model is displayed in top view. We recommend that you select the floor plan view:

- Click on the *2D View* (1) button. On the left side, the 3D top view is replaced by a drawing of the floor plan at Ground floor.
- Press the *Fit to view* button (2) in the last position. The blue camera tool and the floor plan will be displayed.
- Click and hold the left mouse button on the blue point (3) representing the camera and move it towards the bottom left corner of the model.
- Now click and hold on the purple dot (4) representing the point (object) you are looking at and move it towards the top right corner of the model.
- Adjust the height of the camera and object to 1200 mm.
- This defines a perspective.

- Save this perspective setting by clicking on the green plus. The program saves the view as View_00.
- Double click on the view name and in the appearing dialog box, type the new view name: Living_room_1, then press OK. This renames the view you just saved.

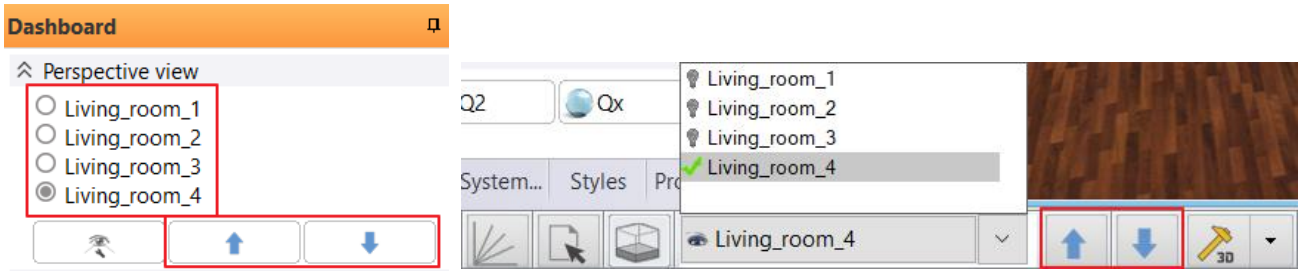


Create 3 more perspectives going clockwise around the room. Press OK to close the dialogue window.



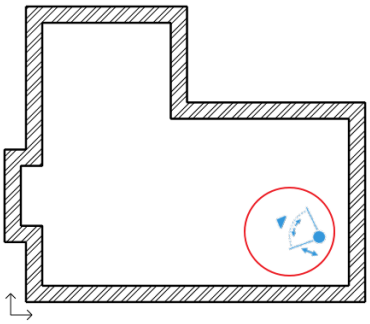
The views can be selected as follows:

- from the Dashboard by name or by using the blue arrows,
- from the bottom Status bar by name or by using the blue arrows,
- using the PageUp and PageDown keys on the keyboard.



Quick perspective views

After creating the perspective views and closing the Perspective dialog box, you will see that another icon appears on the floor plan. This allows you to set up quick perspective views.



The camera icon allows you to see exactly as if you were in the location marked with the camera icon on the floor plan.

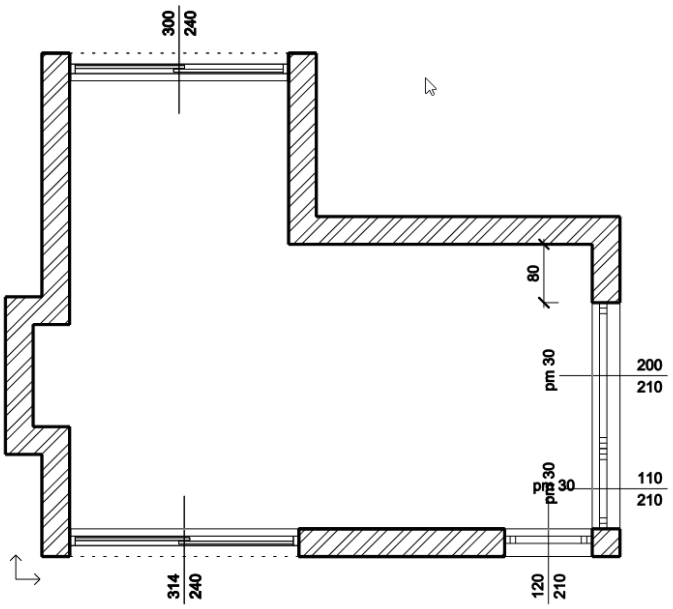
You can move the camera icon by clicking on the circle, and you can rotate it by clicking on the triangle, which means you can change the field of view.

2.7. Placement of openings - optional

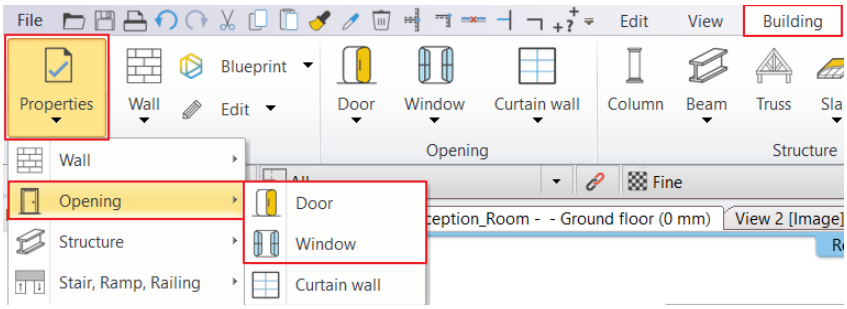
Here you can choose the *independent work* or move on. In this case, in the next chapter we will use a new method from the Room maker to place the doors and windows together.

Independent work:

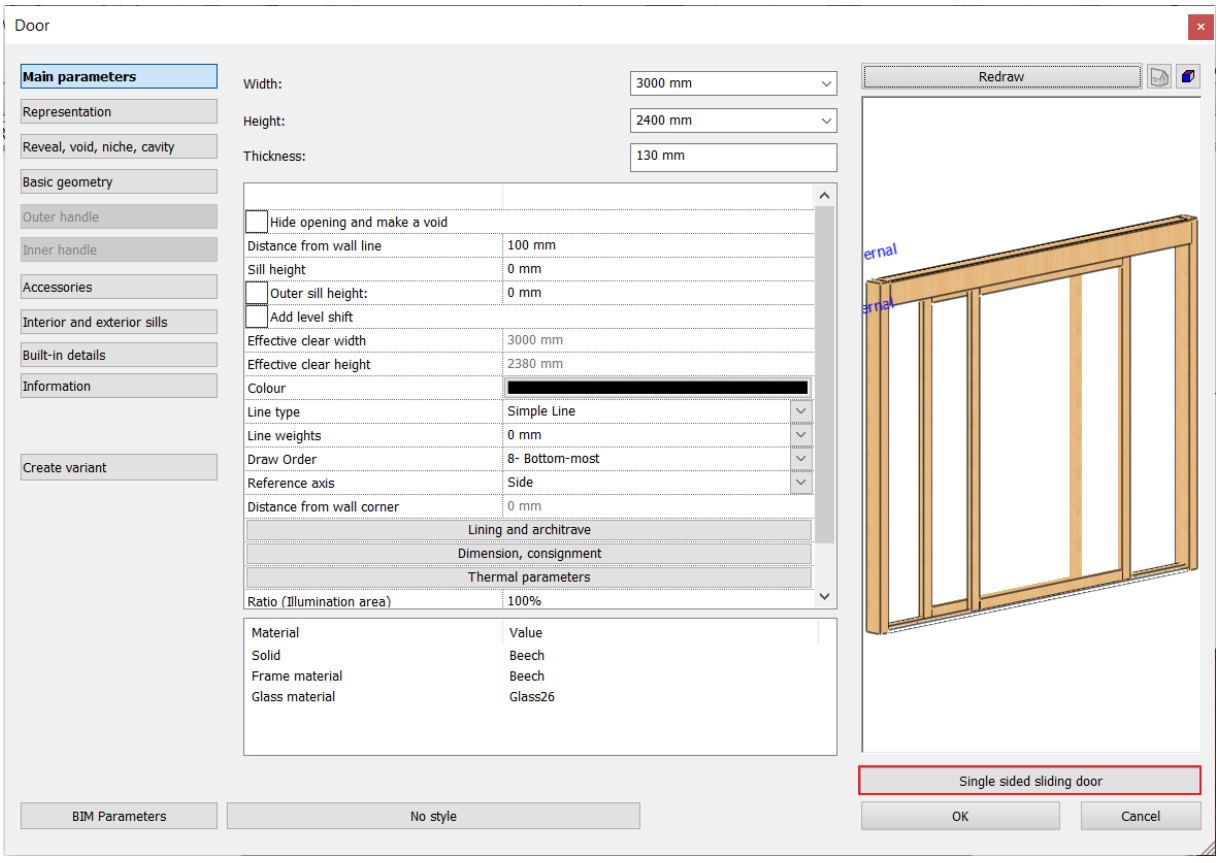
In the *Preliminary Workshop - Design* section, we learned how to attach the openings to the floor plan. Accordingly, place 2 doors and 3 windows as shown in the image.



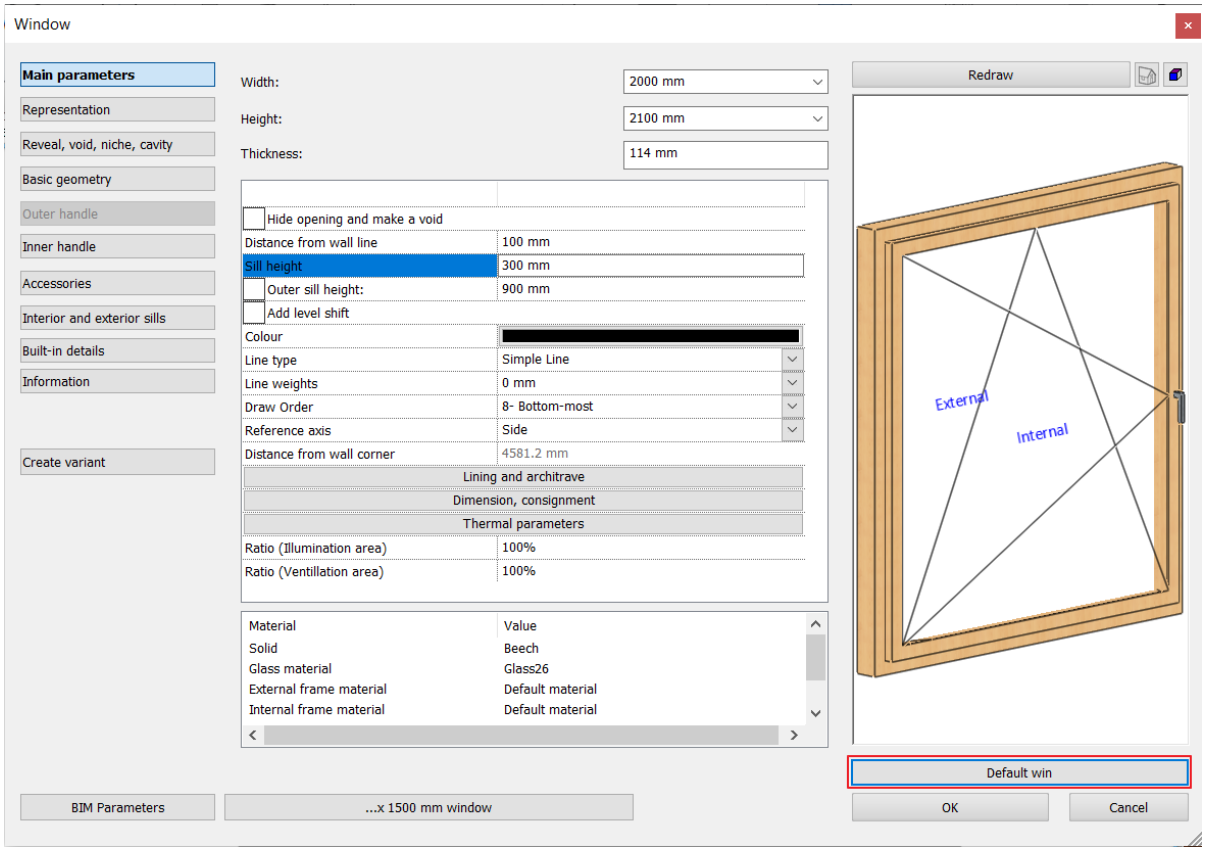
Before placement, set the Openings property:



Door's type: Doors/Indoor/Sliding: Double sided sliding door



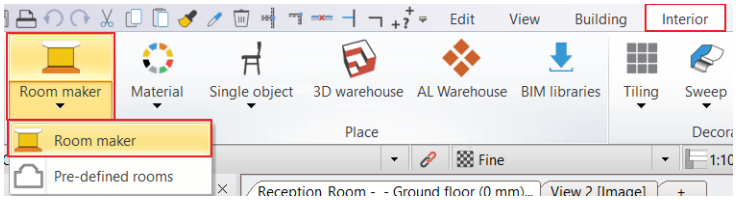
Windows type: Windows/Standard/Single: Default win



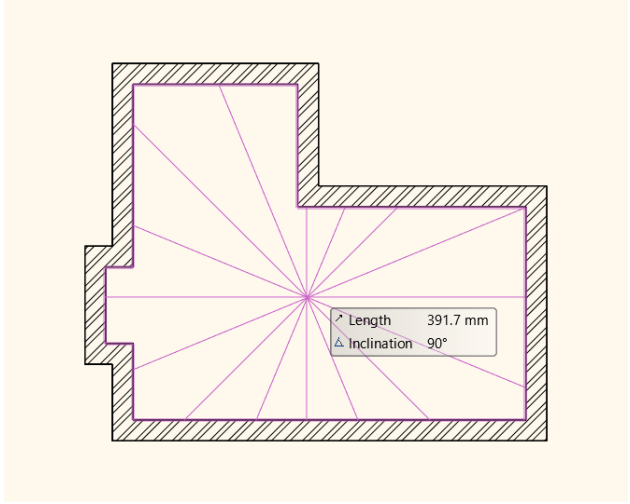
2.8. Room Maker

Room Maker is an all-in-one design tool that helps to speed up and simplify the design process. Start designing by placing doors and windows, then decorate the room with your choice of accessories.

- Start the command: **Ribbon Bar / Interior / Room Maker**



- Click inside the room on the floor plan.

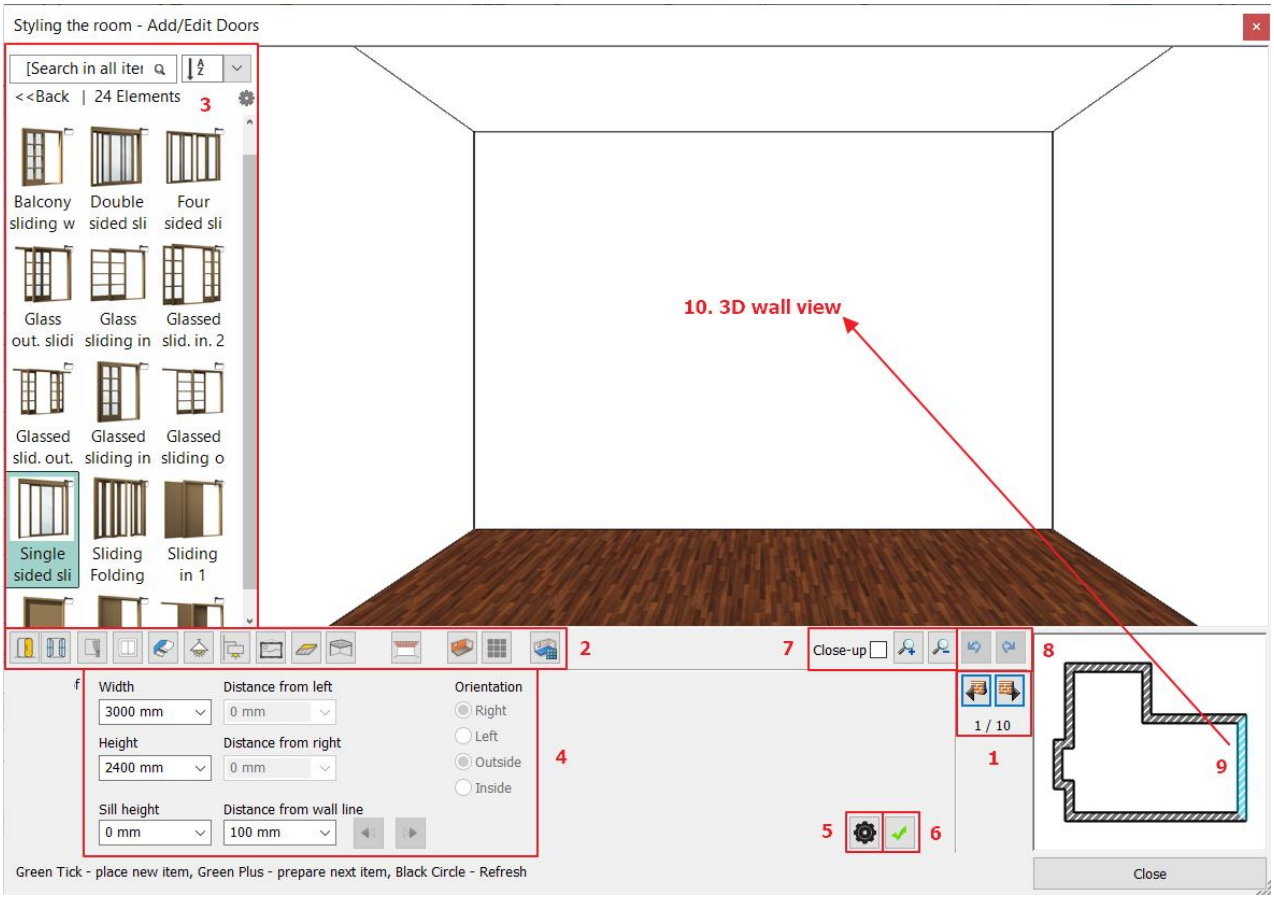


- The dialogue window of the Room maker will appear on your screen.

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:** An integrated version of the Object Center for selecting objects/items.
4. **Properties:** You can define these parameters, when you insert or modify a new item or material.
5. **Modify:** Additional properties of the element can be accessed.
6. **Insert new:** You can insert a new item by clicking on the green tick.
7. **Zoom in/out:** Zoom in or out on the 3D view.
8. **Undo/Redo:** Withdraw the last changes on the floor plan and set the previous status. You can undo and redo up to 16 actions.
9. **Floor plan:** The floor plan is presenting the selected item.
10. **3D view:** 3-dimensional view of the selected wall/floor/ceiling

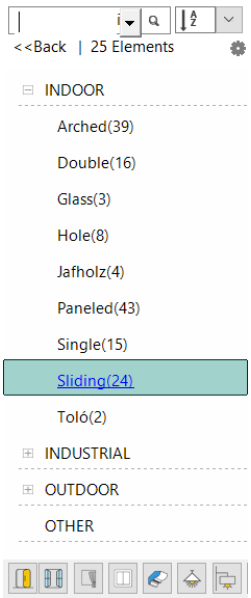
    Appears for additional items:
11. **Texture finder**: Here, you can find the last used textures.
12. **Add new / modify material:** Choose other materials from Design Center, modify the parameters of the selected item.



If you have already added the openings in the Independent work chapter, go on to chapter 2.8.3 Add curtains.

2.8.1. Add doors

1st door

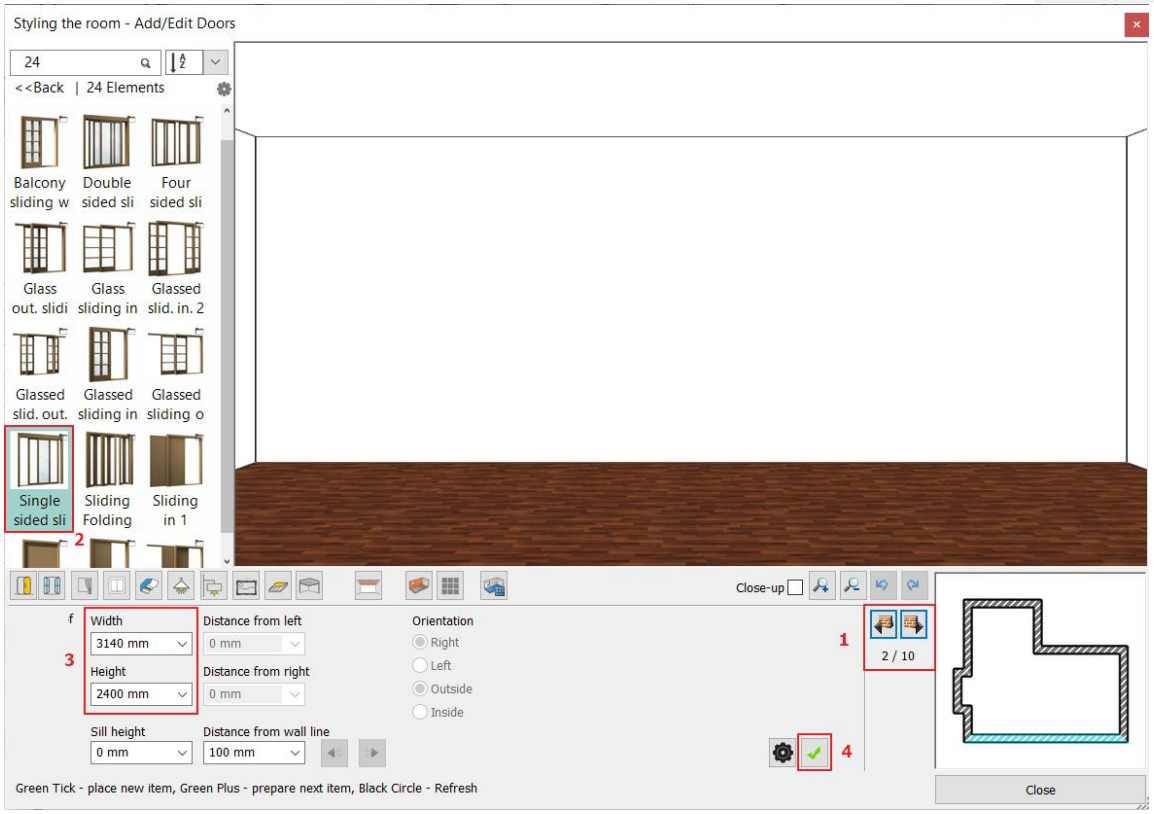


With Wall finder, you can switch from wall to wall. We always work on the opposite wall.

- Use the wall finder arrows (1) to choose the 7160 mm long wall on which you want to place the front door.
- Select the door: Back button, then **Door / Indoor / Sliding**.

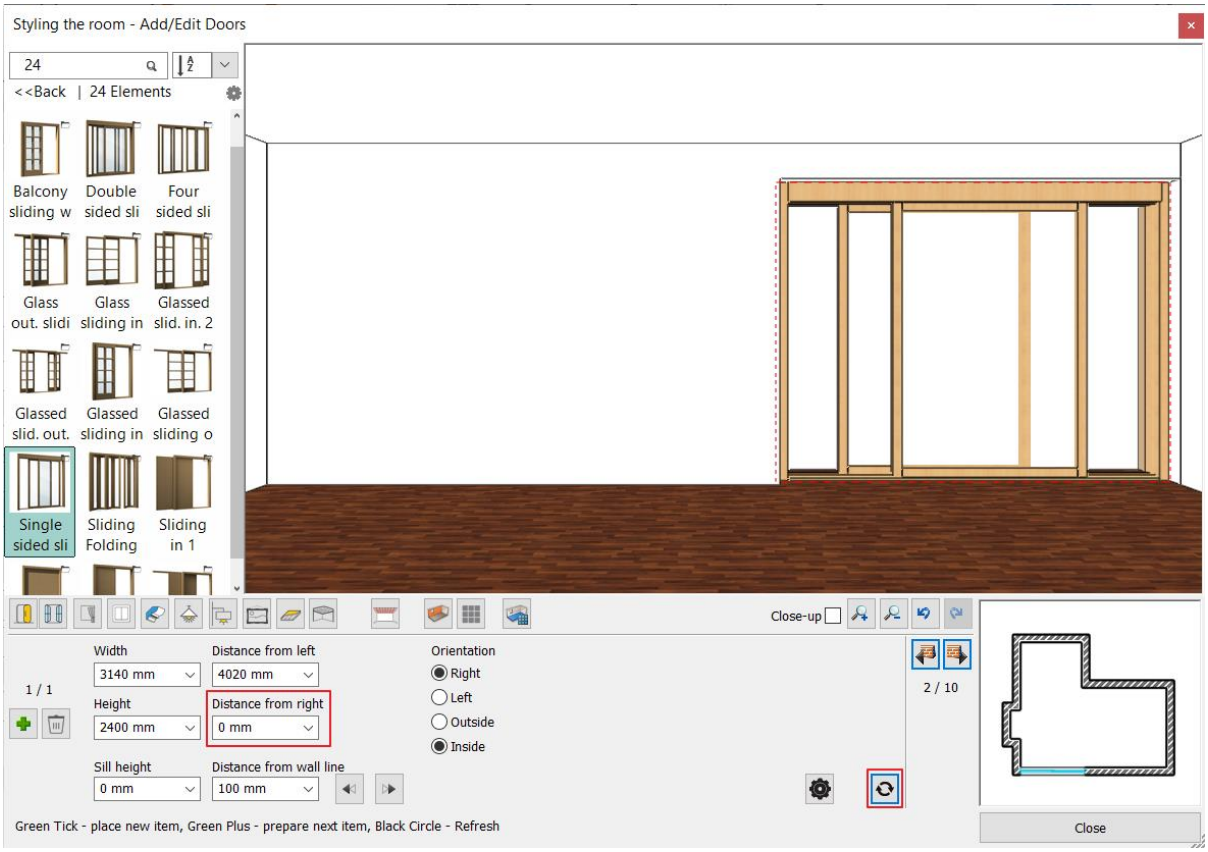
Select the door type "*Single sided sliding door*" (2).
It is necessary to change the properties of the selected door:

- Width: **3140** mm, Height: **2400** mm (3),
- then Green tick (4). The door is placed in the middle of the wall.



Next, change the distance from the wall corner:

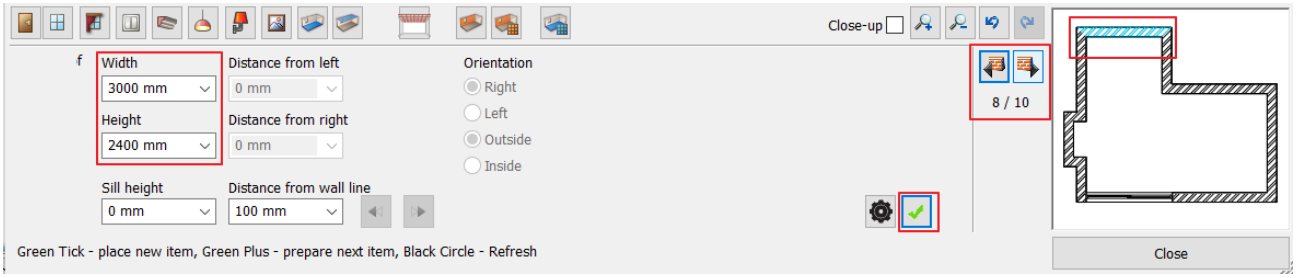
- Modify the previously created door “Distance from right” to 0 mm.
- Click on the Update button.



2nd door

- Place a door of the same type on a 3000 mm long wall with the following parameters:
  Select the desired wall with the wall finder.

  Width: 3000 mm (1)
  Height: 2400mm (2)
  Use the green tick (3) to create it.

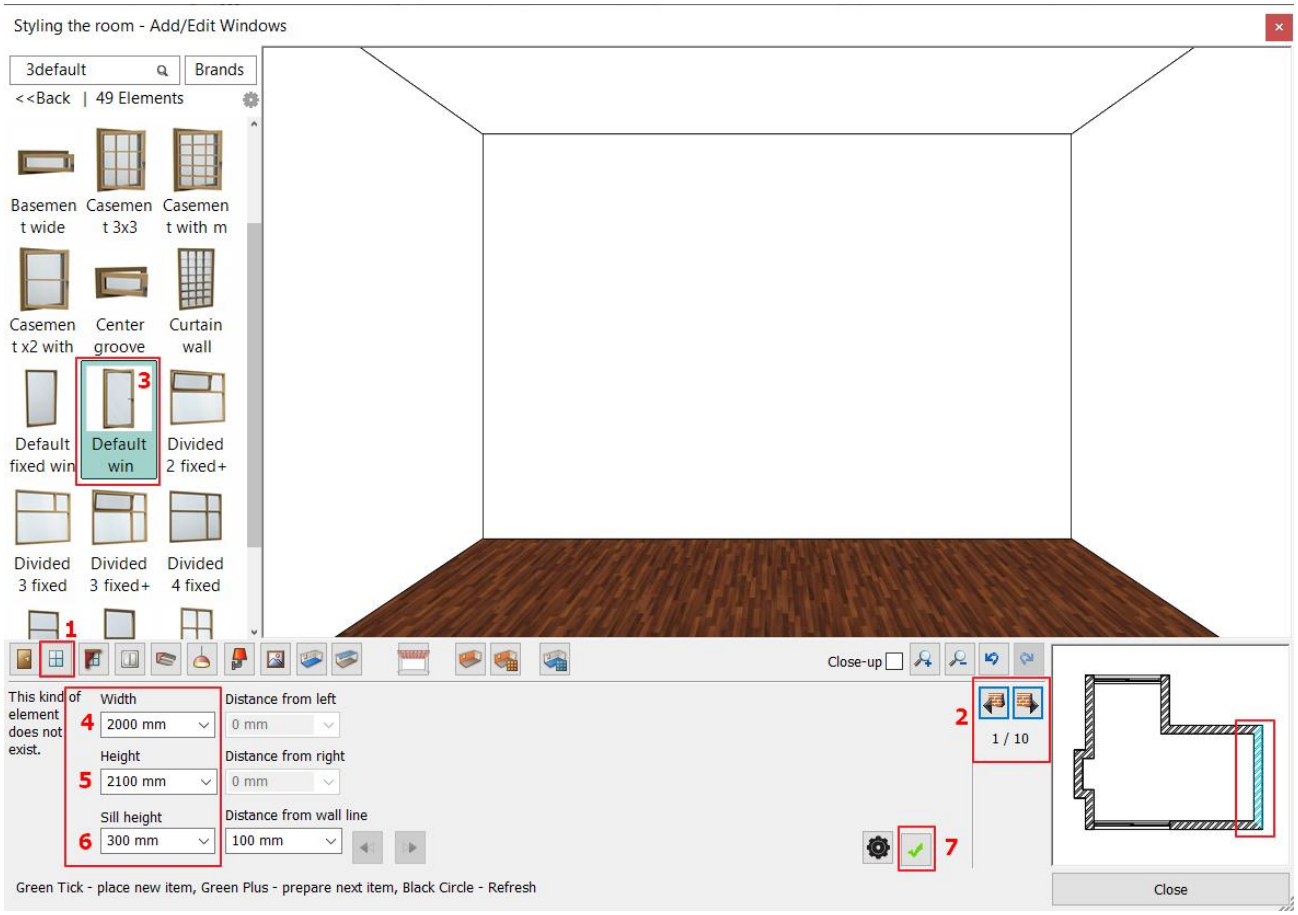


2.8.2. Add windows

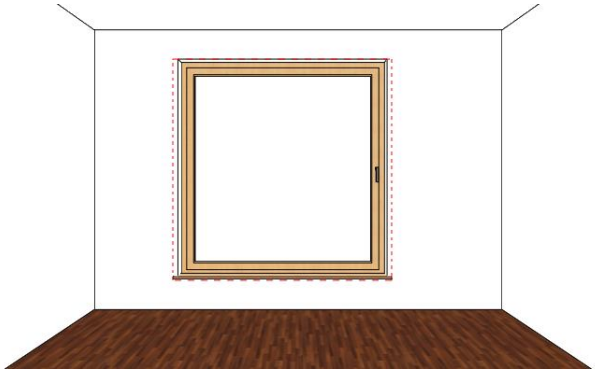
1st window

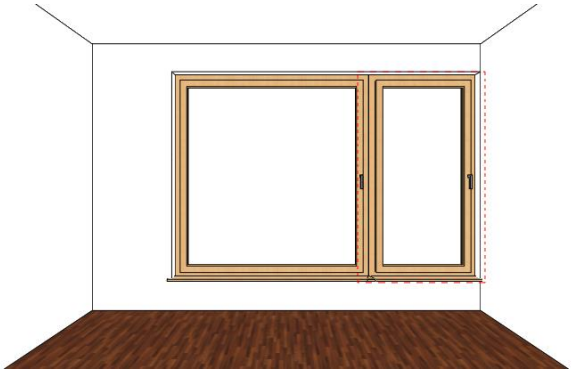
Place two windows on the wall with the length 3900 mm.

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



- Click on Green tick (7) – the window is placed in the wall center 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.

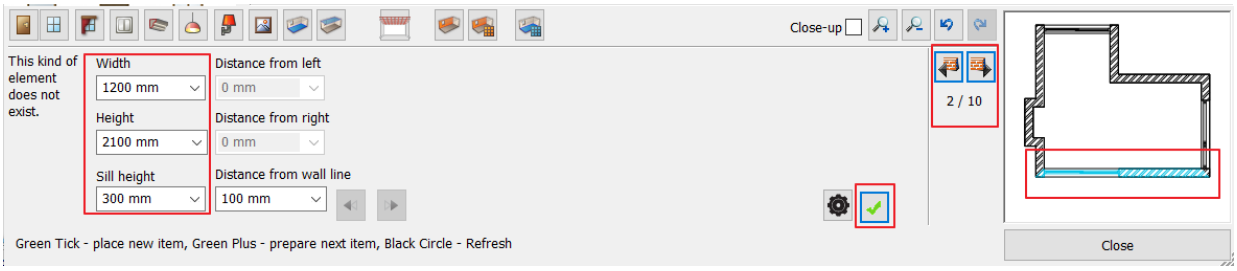




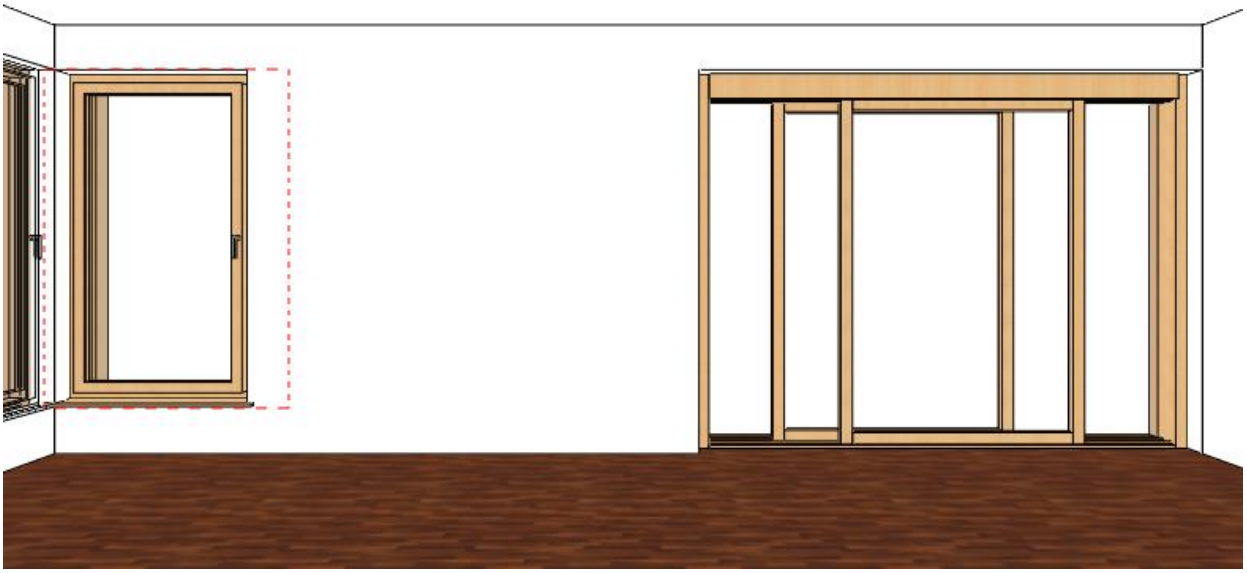
3rd window

Place a window of the same type but different dimensions on the 7160 mm wall.

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



- Click on Green tick, to place the window in the wall center point.
- Change left distance to 0 mm and press Enter or Refresh button.

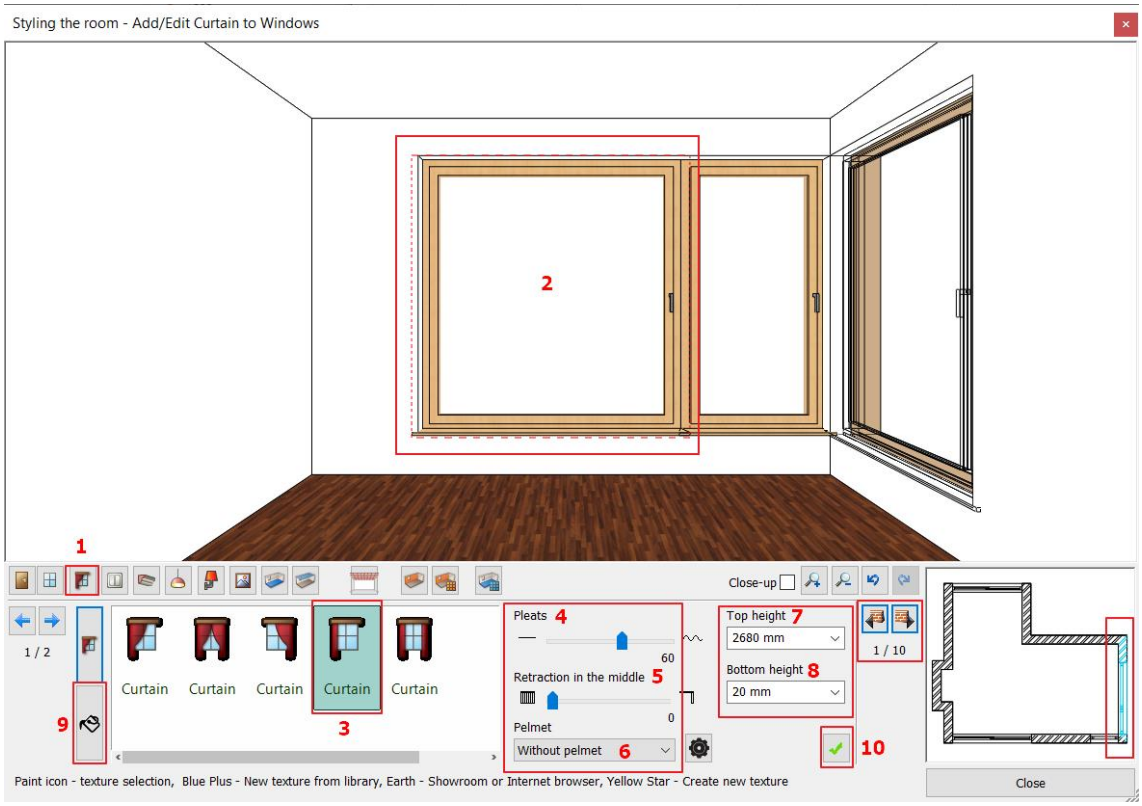


2.8.3. Add curtains

ARCHLine.XP offers a wide variety of 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 Warehouse or import them directly from the manufacturer's website.

1st curtain

- Place a curtain on the largest window first.
- Click the Curtain icon in the toolbar (1).
- Click on the window where you want to place the curtain first (2).
- Select the fourth curtain-type from the favorites (3) and change its properties:
  Pleats: high (60) (4),
  Retraction in the middle: no (0) (5),
  Without pelmet (6),
  Top height: 2680 mm (7),
  Bottom height: 20 mm (8).
- Click on the Edit material (9), then on the blue plus button  and select "Curtain 002" from the library.
- Click on Green tick (10) – it will place the curtain in front of the window.



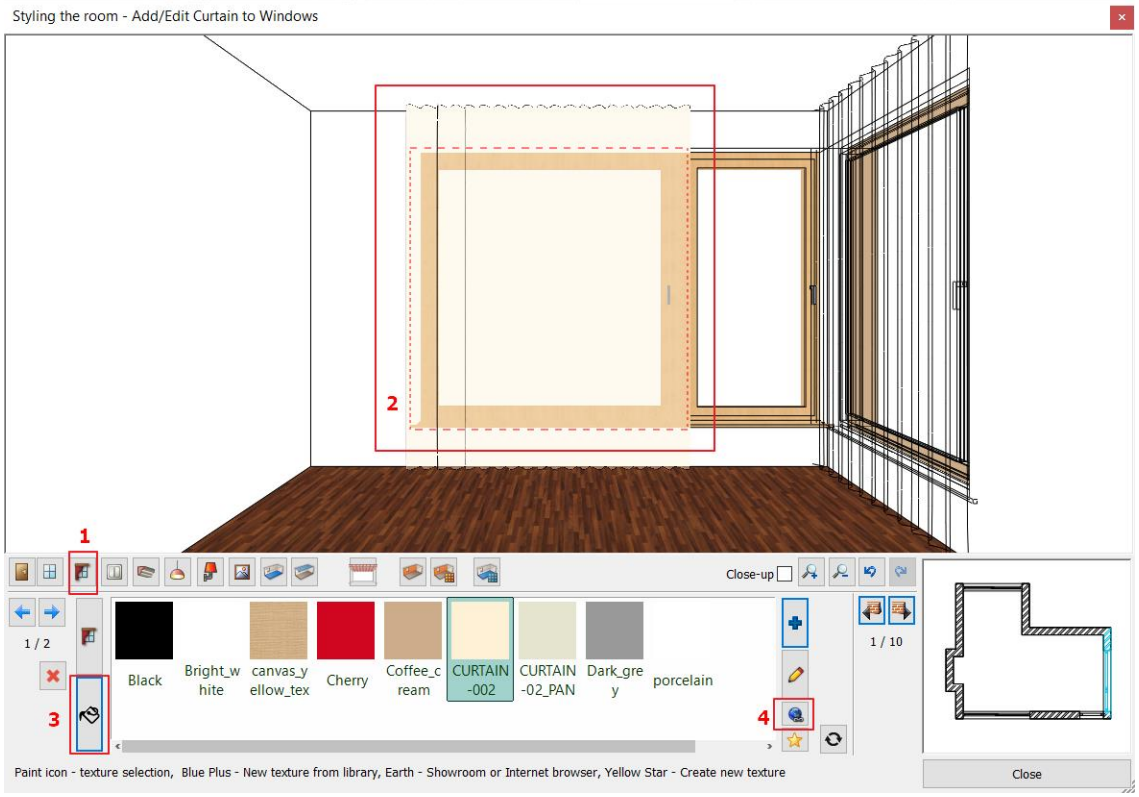
2nd curtain

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

- Select the wall.
- Click on the Green tick, to place the curtain.

Curtain material modification – Optional*

**This editing task requires Internet access.*
We are going to modify the fabric of the curtain on the wide window, thus select the curtain with the previously described method. Then:



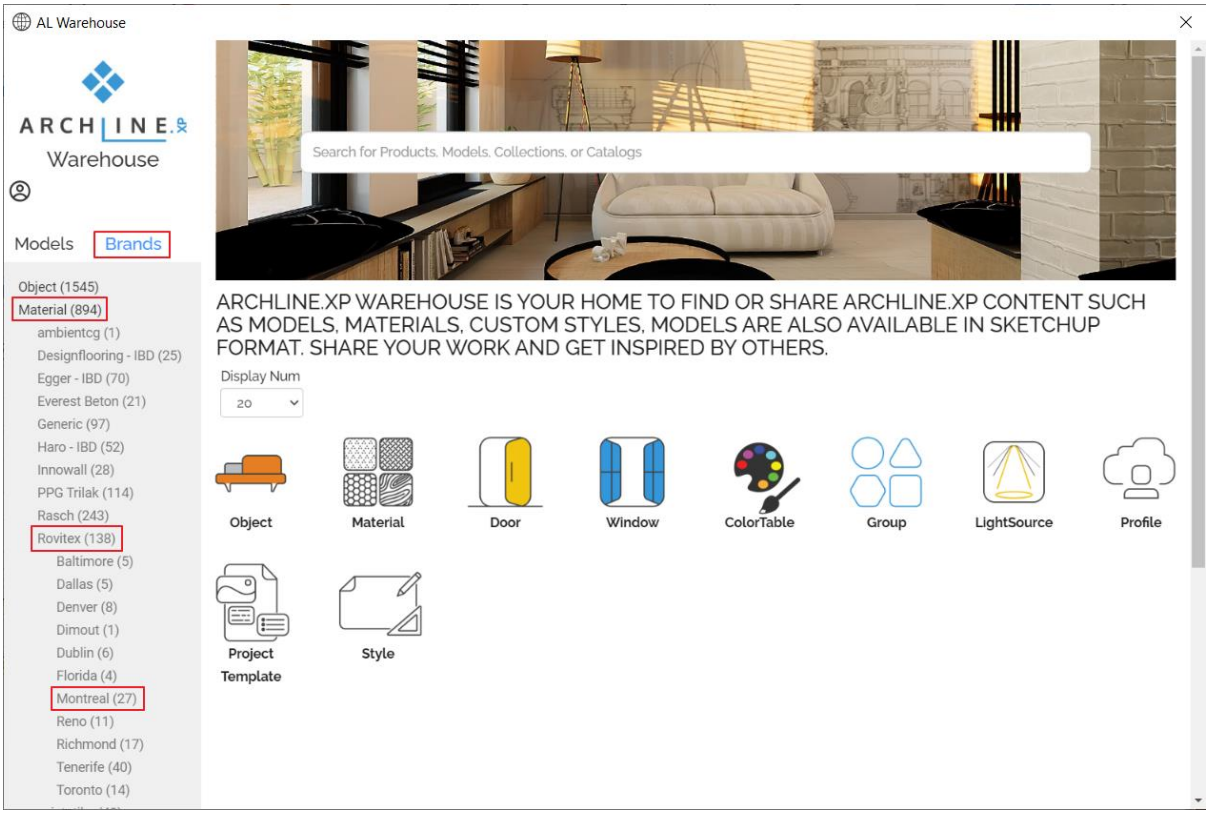
- Click on the Curtain icon on the toolbar (1).
- Click on the curtain (2).
- Click on the Edit material button (3).
- Click on the ARCHLine Warehouse icon (4).

Download material from the ARCHLine.XP Warehouse

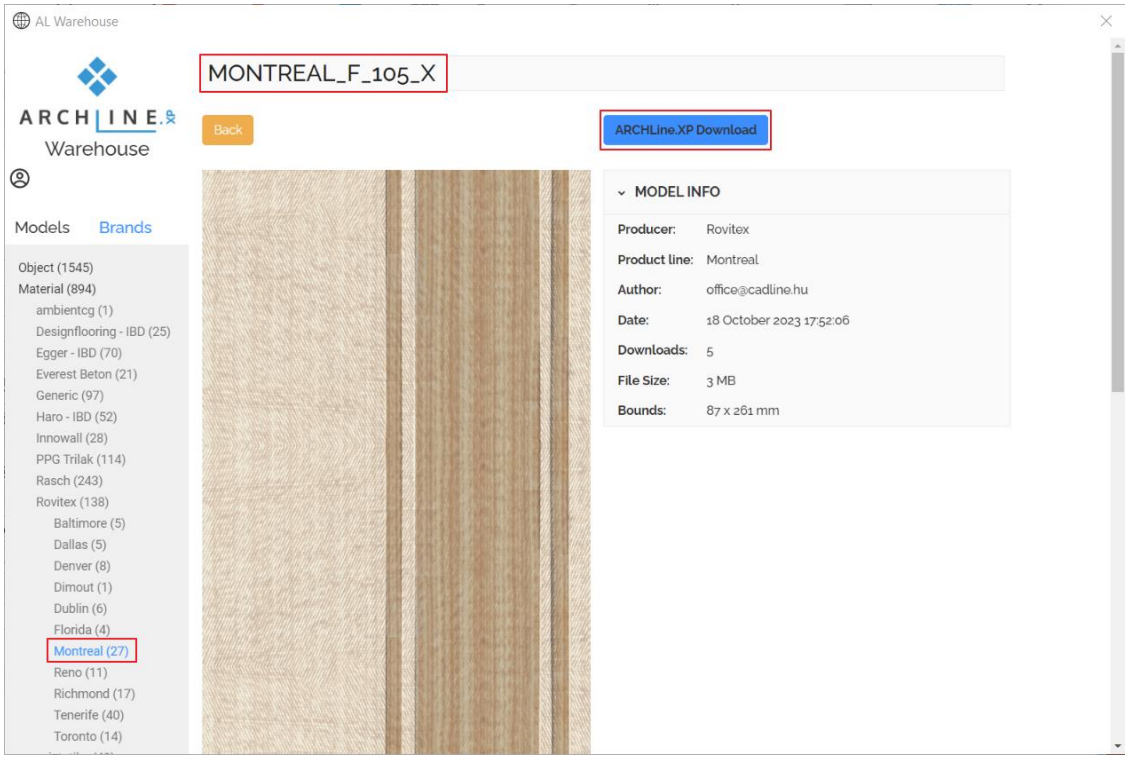
The ARCHLine.XP Warehouse is a collection of fabrics, lamps, furniture and more.

Click on the AL Warehouse button to browse the virtual collection of ARCHLine.XP.

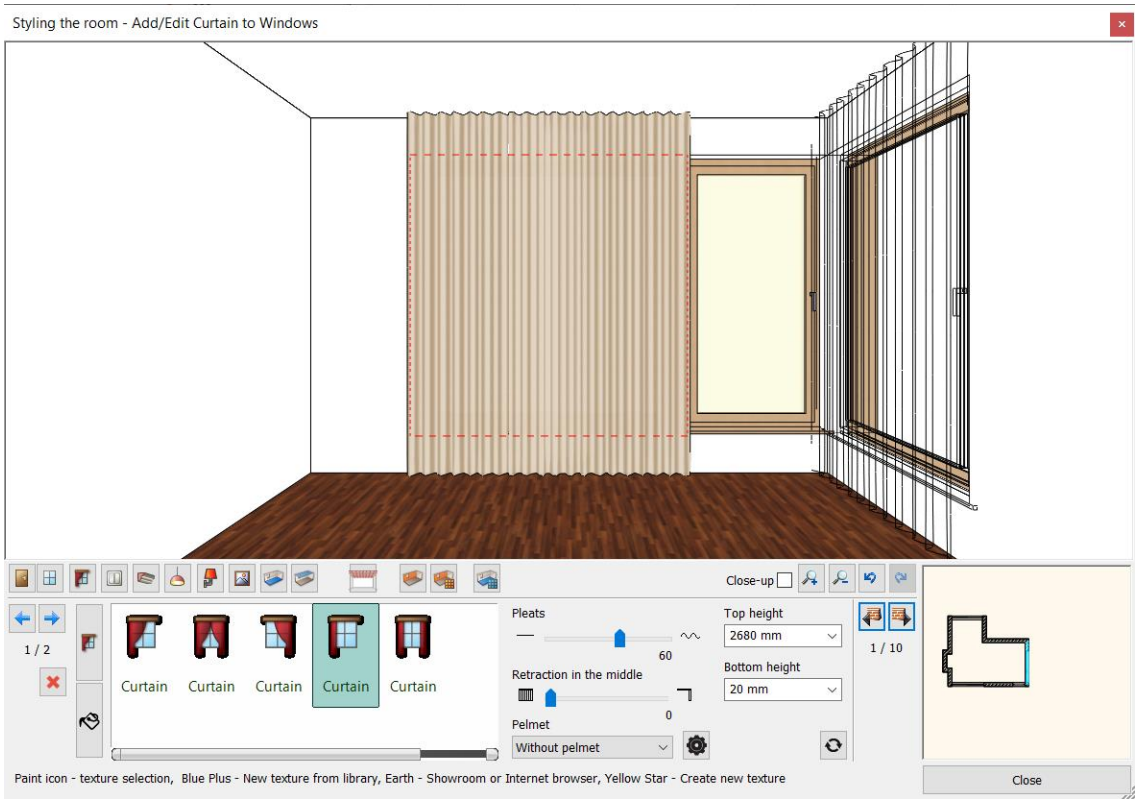
Find material by type, manufacturer, product family or product group. You can download more than one material at a time. Select the desired material and click "Download". The downloaded material will be created as a new material, and you can find it in Favorites.



- Within AL Warehouse, under **Brands / Material / Rovitex / Montreal**, select the material "*Montreal_F_105_x*" and download it.



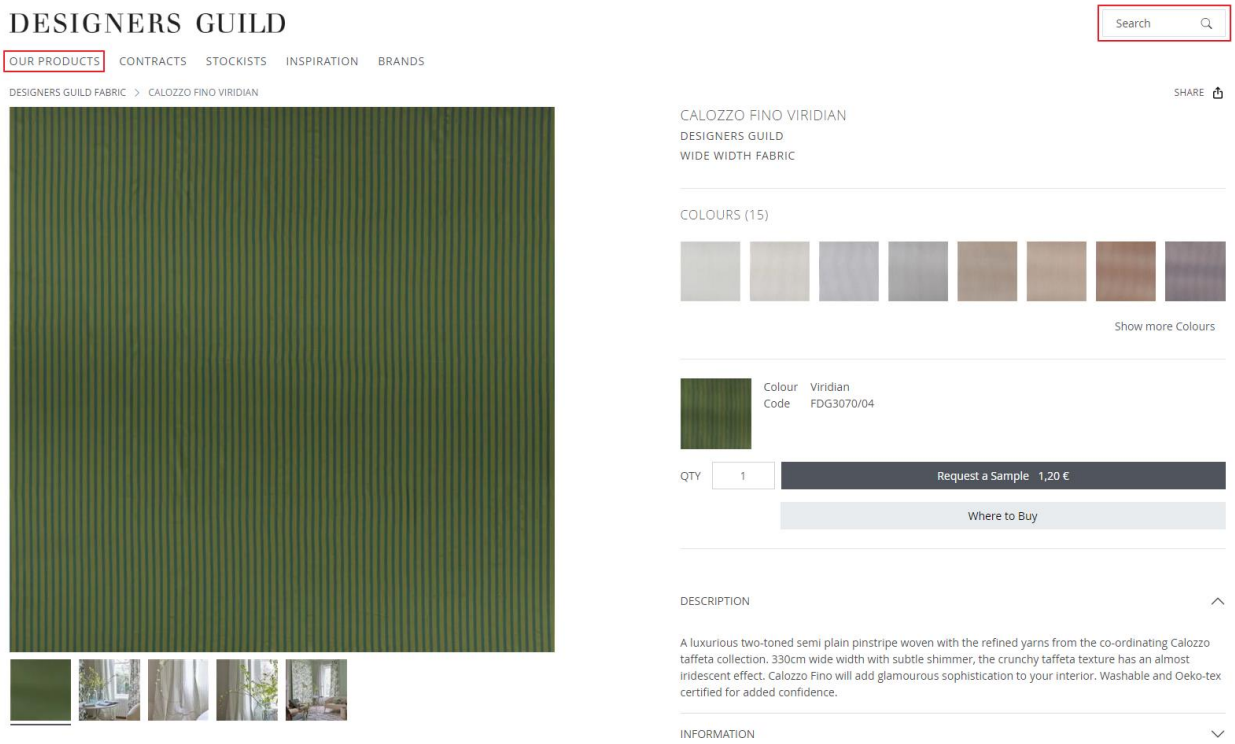
The new downloaded material will be applied immediately on the curtain.



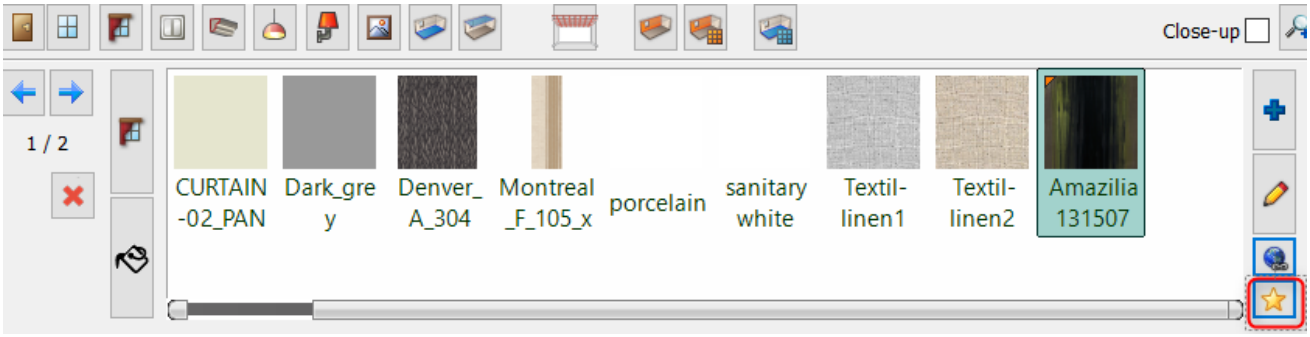
Material from the manufacturer's website

More often the desired fabric is only available on the manufacturer's website.
In this case, type the link to the manufacturer's website into your Internet browser.

In our example, we go to the https://www.designersguild.com/ website to select the **Calozzo fino viridian** fabric.

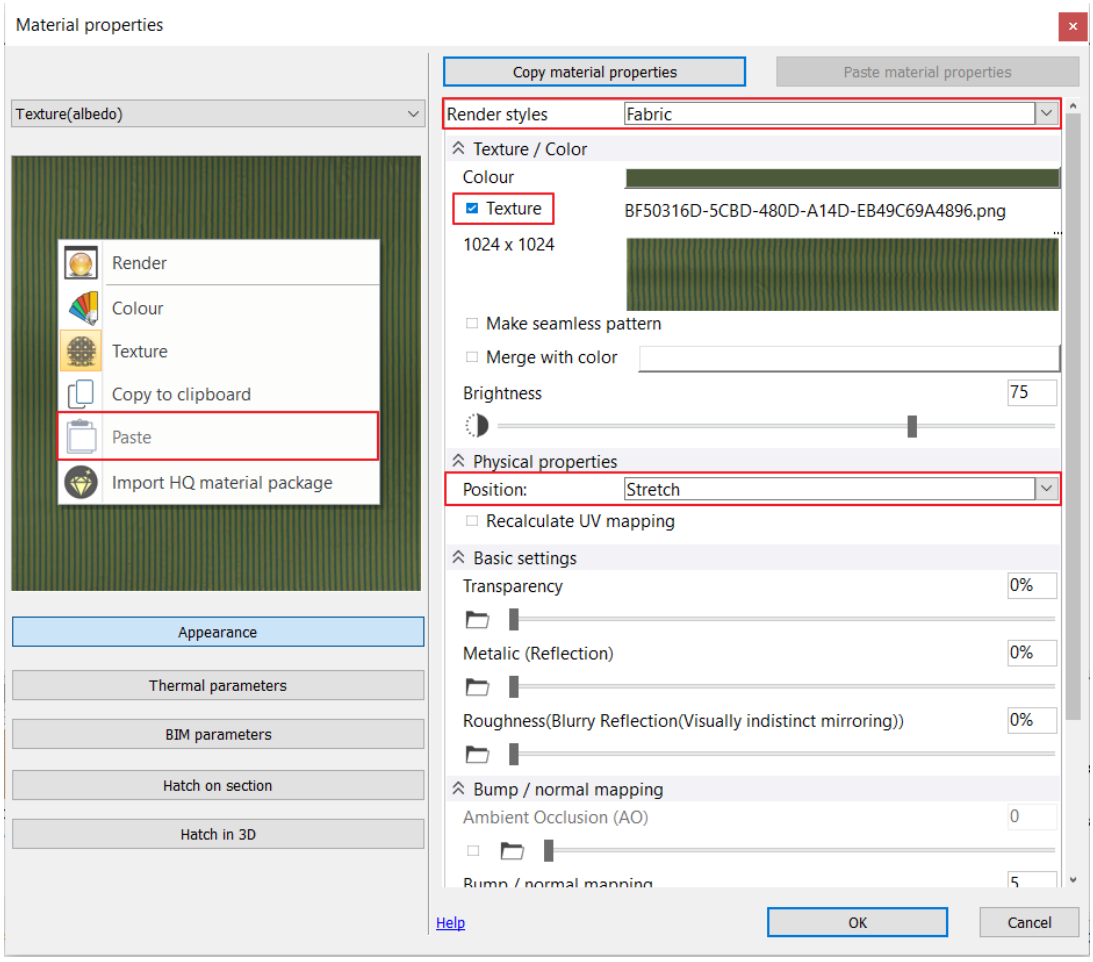


- Click on the fabric to enlarge it.
- Now right click on the image and choose “Copy image” command
- Return to Room Maker and select Create new material icon.

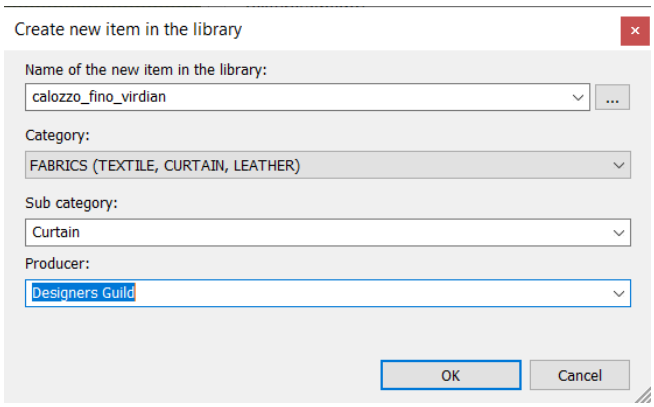


- Click on the preview and press the Paste button.
  The image will appear in the window. In the *Appearance*, you can change the properties of the photo-realistic representation, lighten the material, and change other settings.

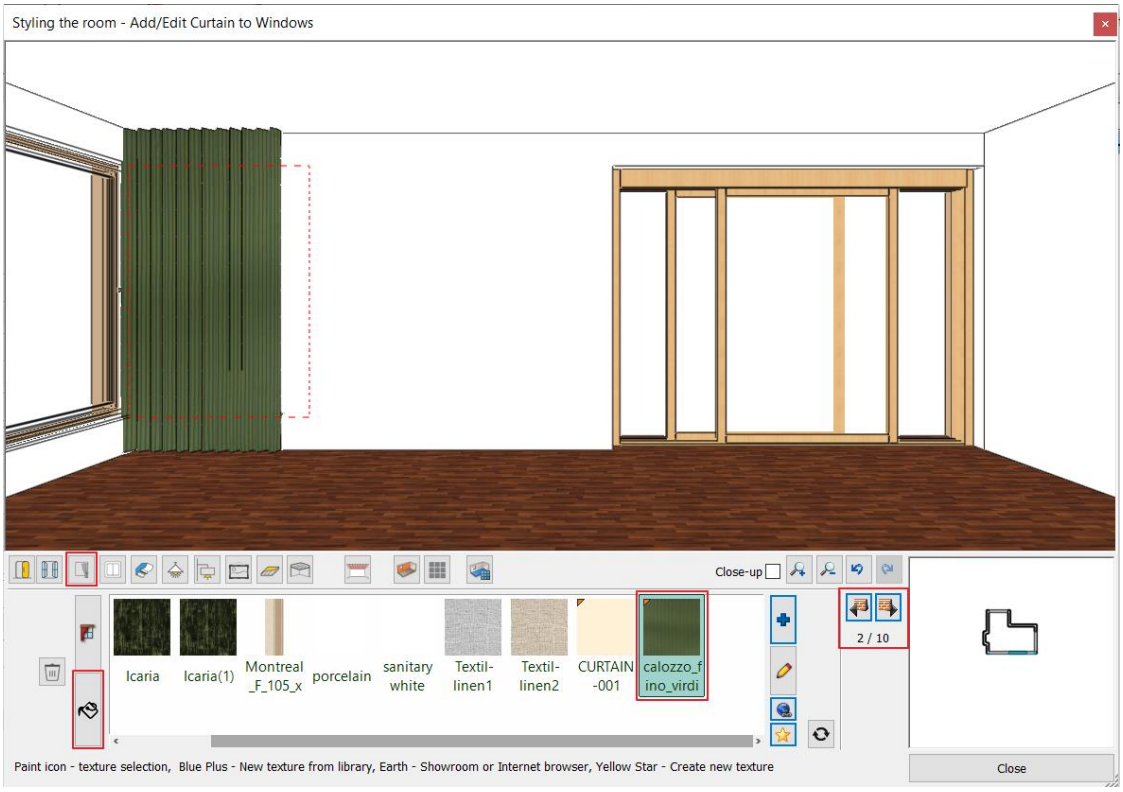
- From Render Styles, select the *Fabric* render style.
- In *Physical properties*, adjust the position of the texture from tile to stretch.



- Click OK. In the pop-up window, save the material to the library. Select the category in which you want to place the material, and set the manufacturer.

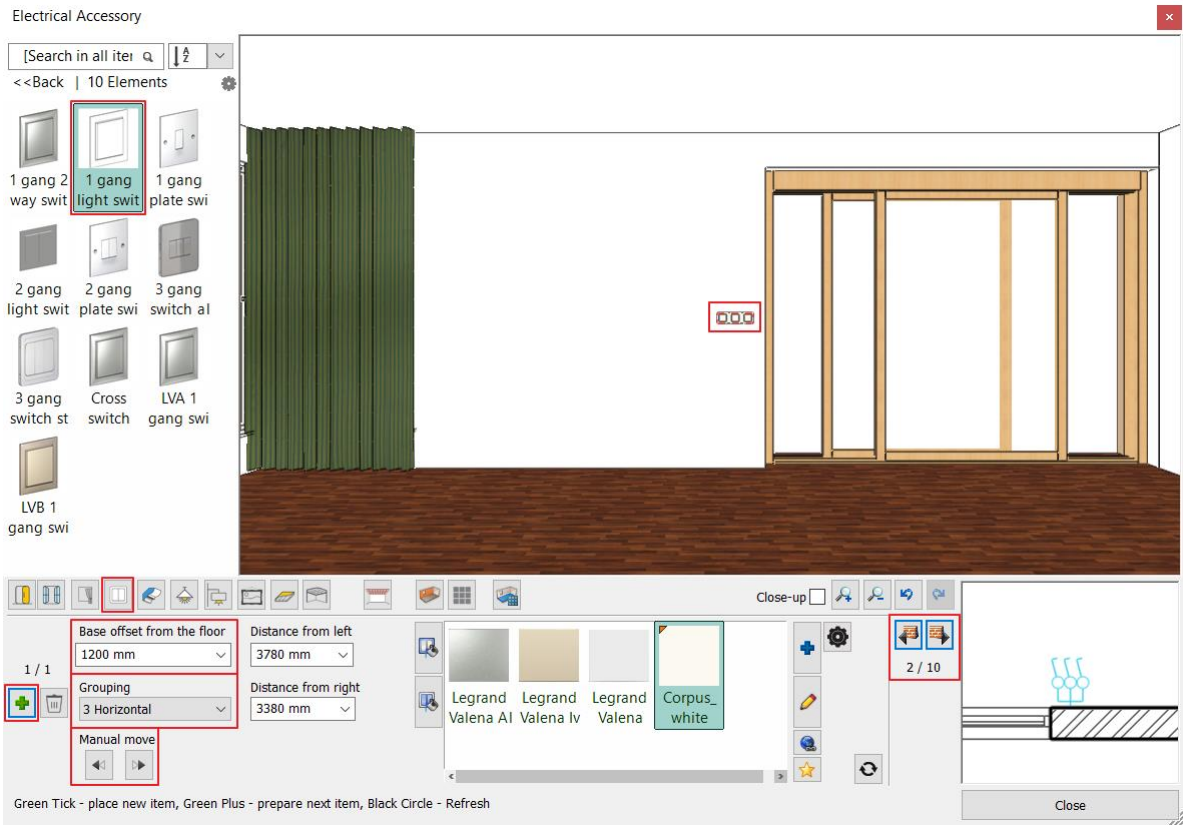


The new fabric is applied to the curtain immediately.
Step to the next wall. Change the curtain material here to Calozzo fino virdian.



2.8.4. Add Light Switches and Sockets

Create a 3-way switch and a 3-way socket on the 7160 mm long wall as follows:

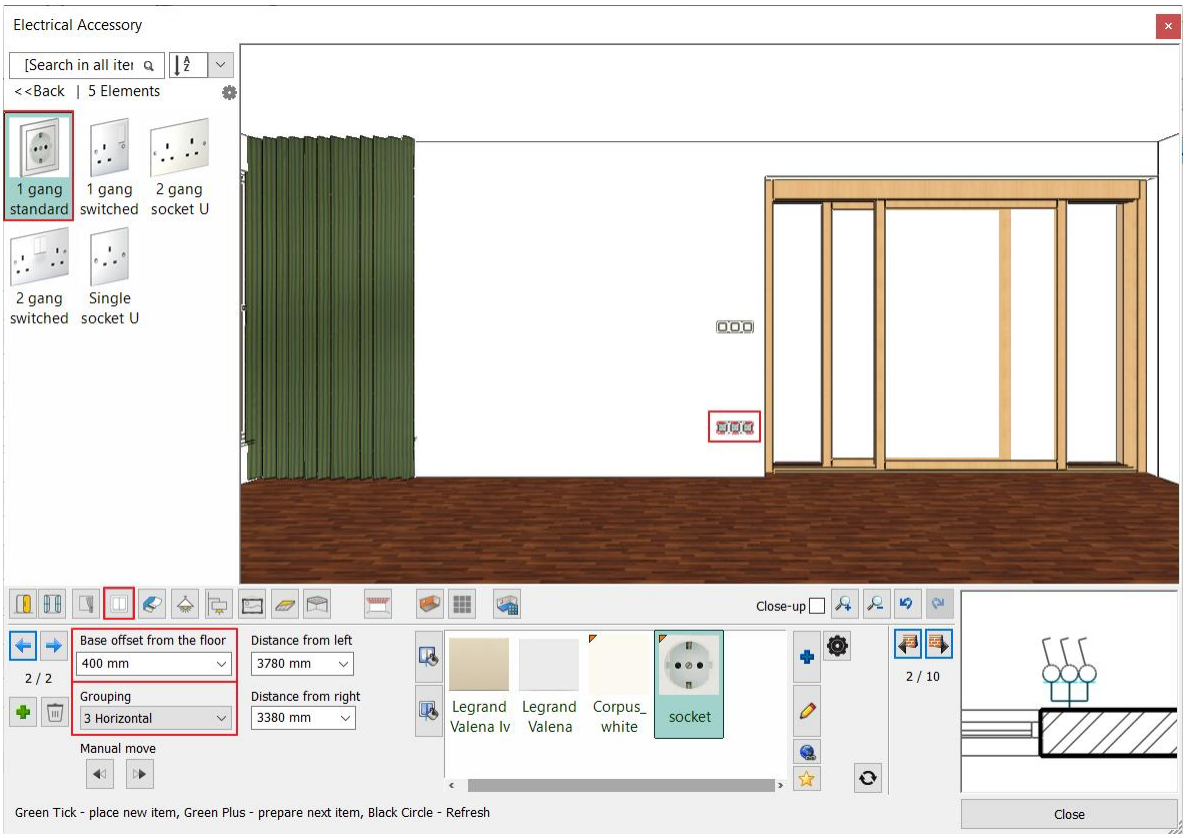


- Select "Electrical Accessory" on the toolbar.
- Select the 7160 mm long wall with Wall finder.
- In the Design Center select Plate switches and select the “1 gang light switch” and set the properties:
  Base offset from the floor: 1200 mm
  Grouping 3 Horizontal.

- Click on Green tick, to place the socket on the wall.
- Click on the right arrow below Manual move to move the switches to the right position.

Click on the green plus sign to add a 3-socket to the model from the Socket outlets:

- Repeat the previous steps, this time inserting a "1 gang standard socket". Place the socket 400 mm from the floor.

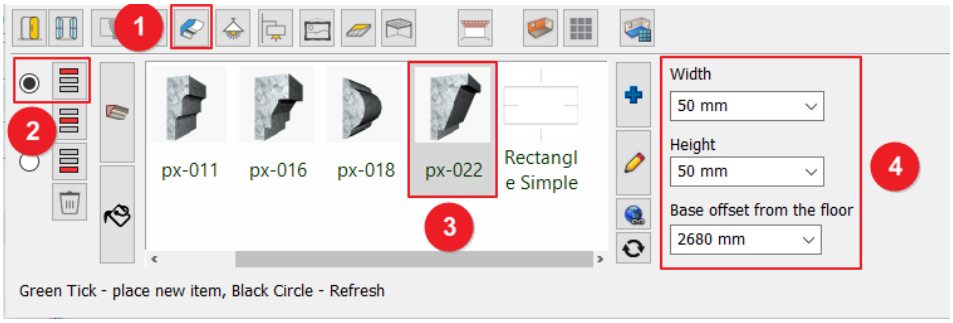


2.8.5. Add Profiles

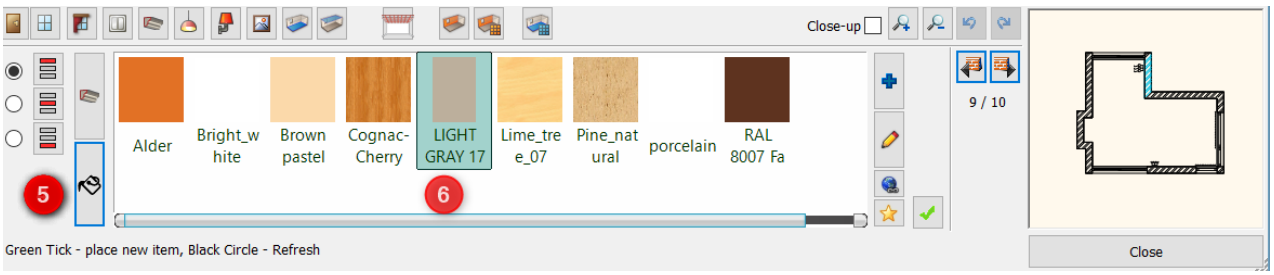
Crown molding

Install decorative moldings: crown molding running around the entire room where the ceiling meets the walls.

- Click on Profiles on the Toolbar (1).
- Choose the profile option (2).
- Select the “px-022” profile from Favorites (3) and change its properties (4):
  Width: 50 mm,
  Height: 50 mm,
  Base offset from the floor: 2680 mm.

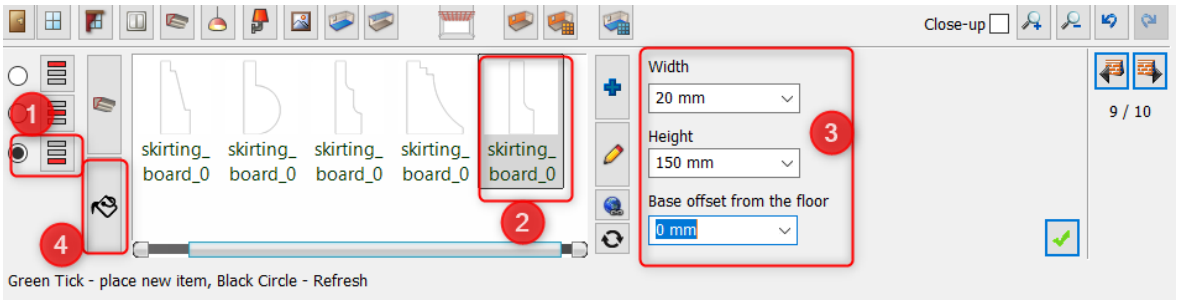


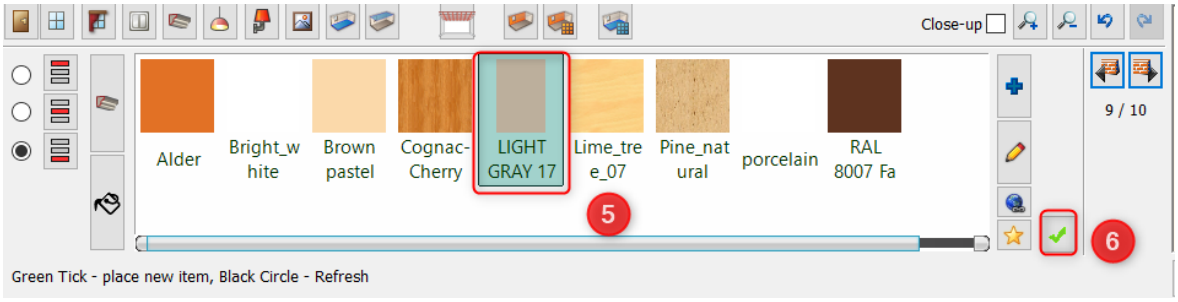
- Select a material for the profile: Click on the Edit material (5) and select “LIGHT GRAY 17” (6).
  Click on the Blue cross button to display the Materials Library.
  Find the material by typing its name in the search box.
  Click on Green tick (7) and it will place the crown molding around the room.

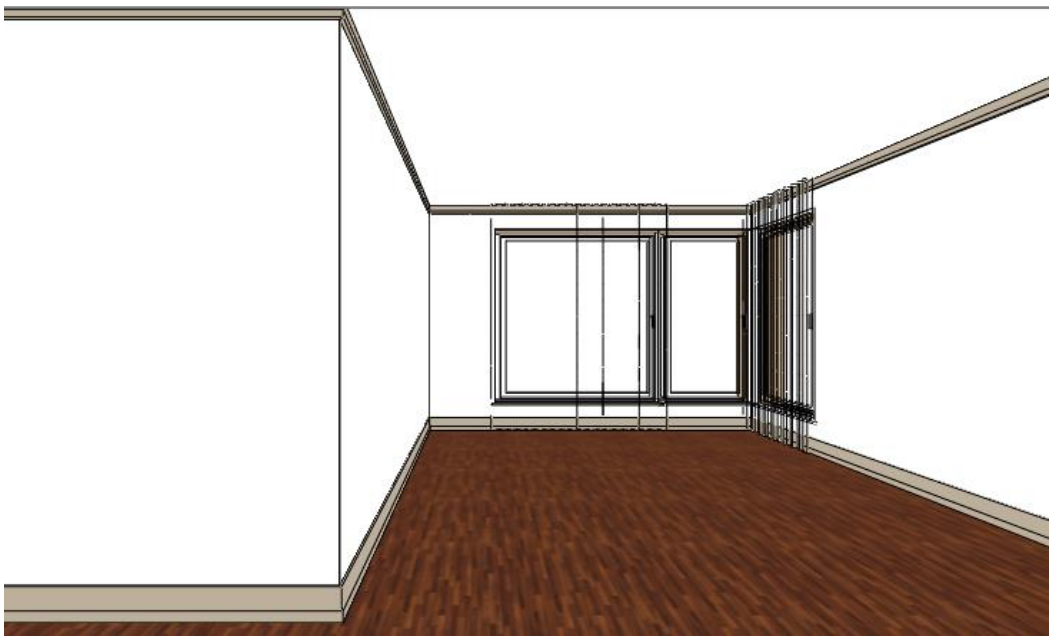


Skirting Board

- Change the position of the Profile (1).
- Select the “skirting_board_006” profile from Favorites (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 (6) to apply changes.

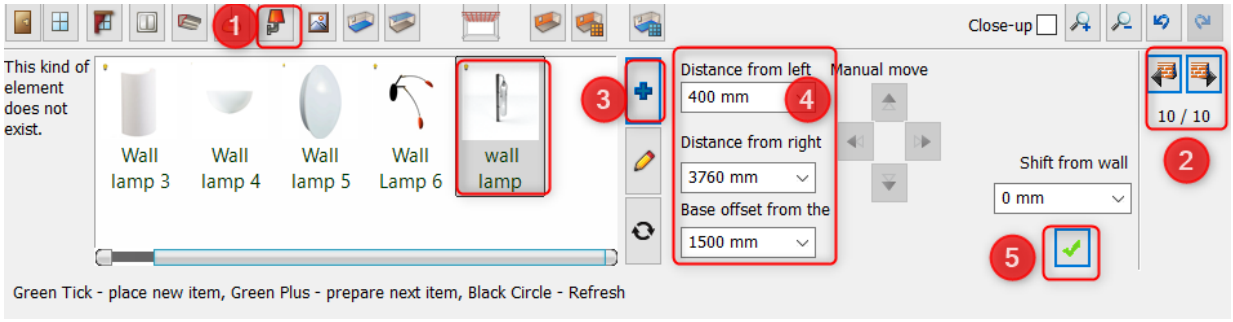






2.8.6. Add wall lamps

- 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 favorites 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.



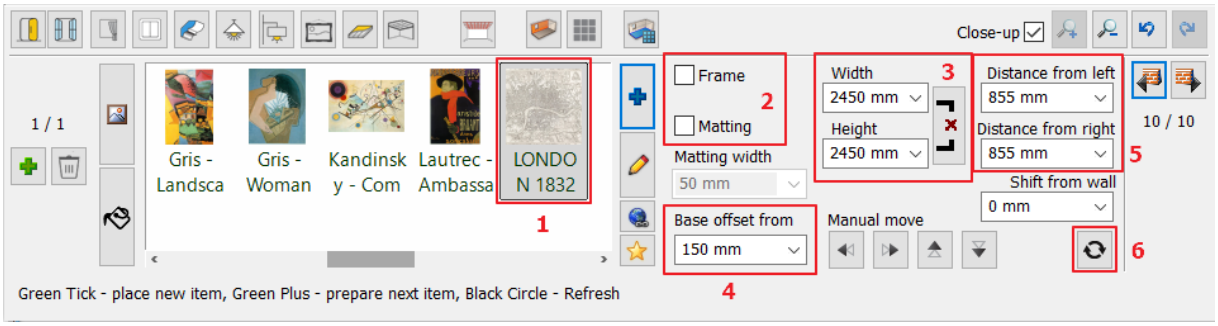
- Press the Green plus to place the next light:
  Set the "Distance from right" to 400 mm.
- Click on Green tick– it will place the next lamp on the wall.

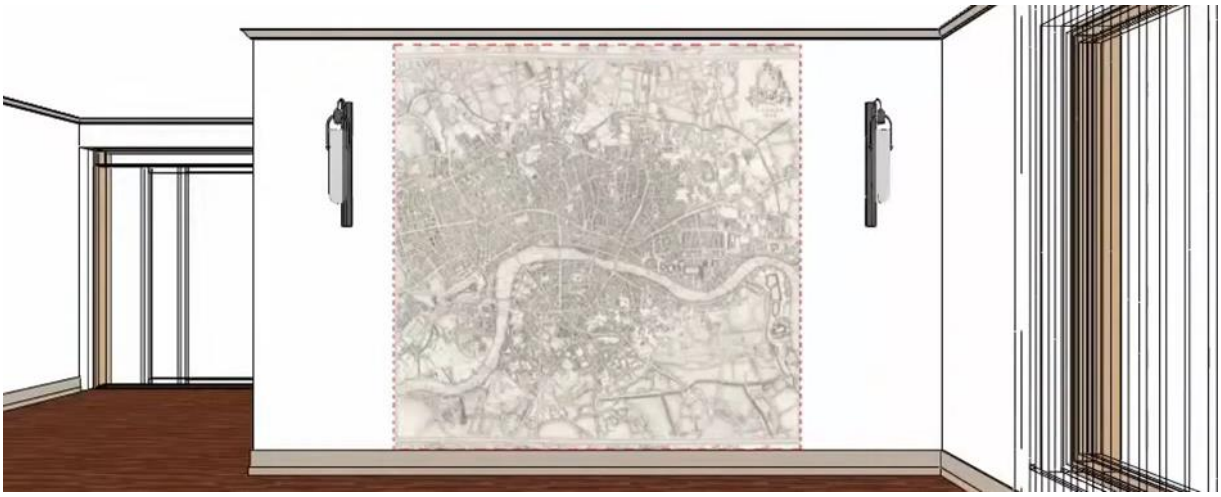
2.8.7. Add Painting

1st painting:

Now place a poster between wall lamps.

- Click on the *Picture on wall* icon on the toolbar.
- Choose "*LONDON 1832*" (1) from the library and change properties:
- Turn OFF the Frame and Matting (2)
- Leave the proportional magnification icon on and set the size (3): width: 2.45 m, so the height will be the same.
- Change the "Base offset from" value to 150 mm (4)
- The distance does not need to be set separately, as the program automatically places the image in the center of the wall. The left and right distance is 0.855 m (5).
- Finally click on the "Green tick" button to place it on the wall (6).

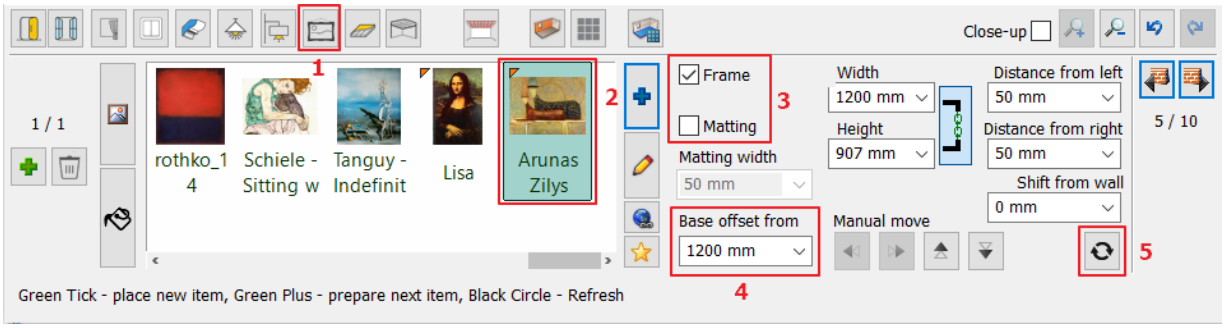




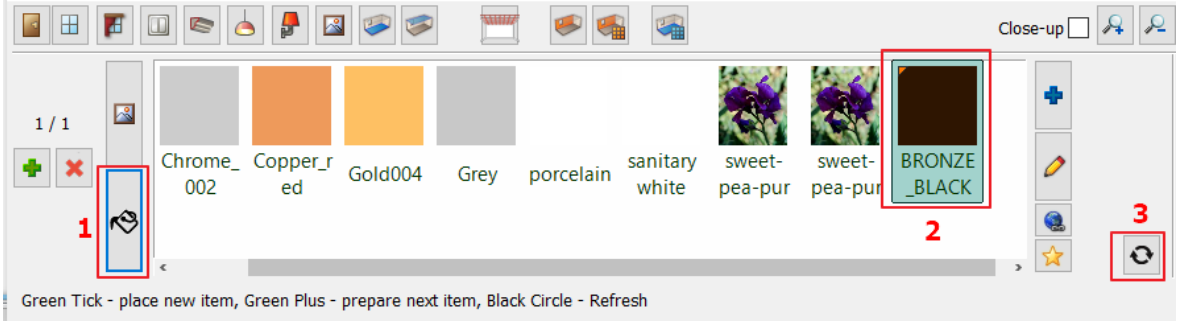
2nd painting:

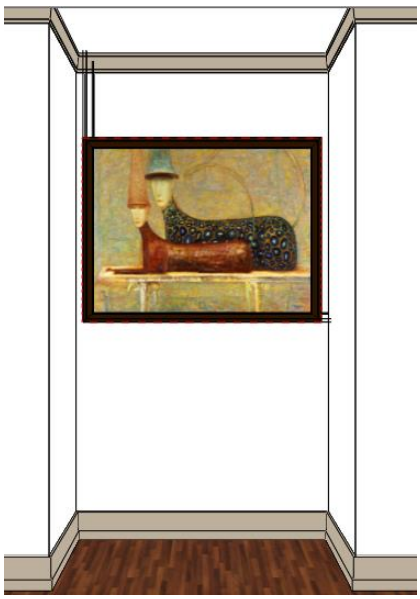
Place a picture on the recess of the wall extension.

- Select the image "*Arunas Zilys*" from Favorites or from the Materials library (2).
- Change properties: Frame: ON, Matting: OFF (3).
- Change the “Base offset from” value to 1200 mm (4).
- Finally click on the "Green tick" button to place it on the wall (5).



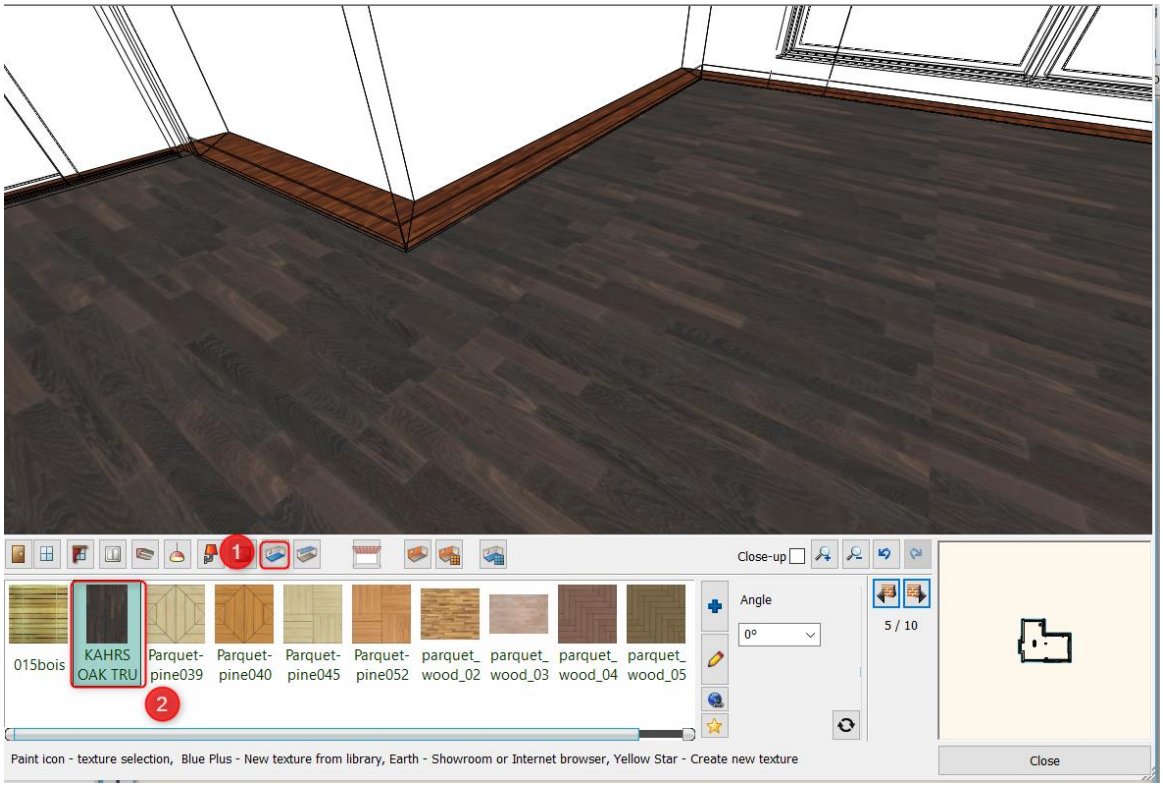
- To select the frame material, click on Frame material (1), select "Bronze - Black" (2) and press Update (3)





2.8.8. Floor covering

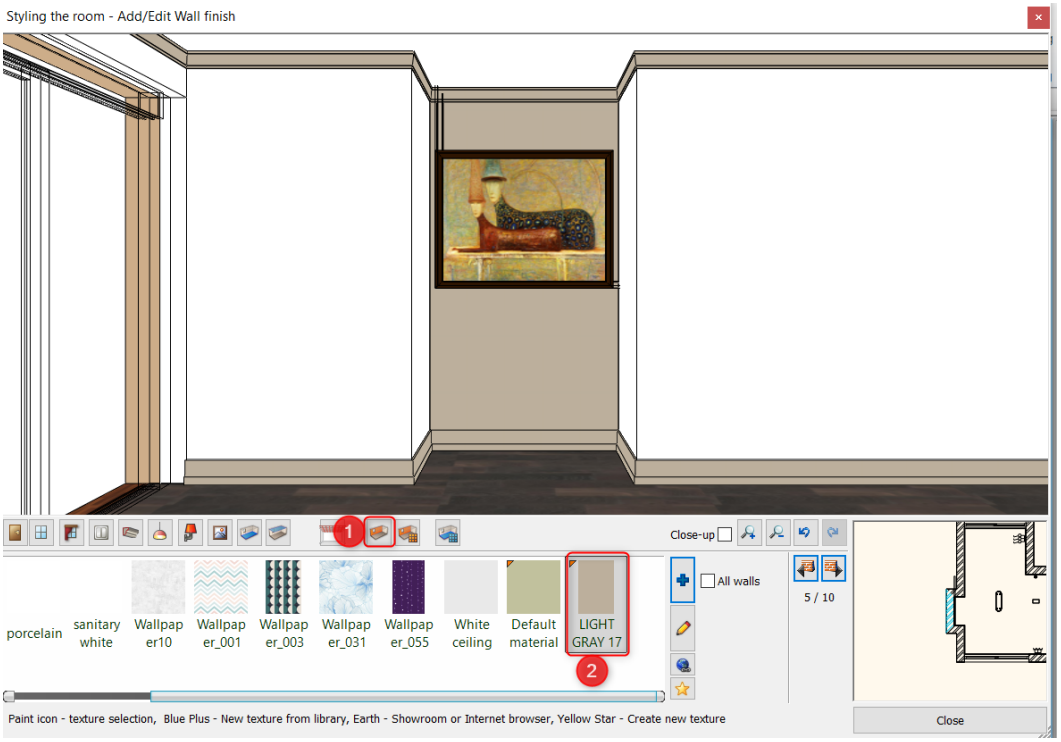
- You can choose from a wide range of materials to cover the floor. Click on the Add/Edit Floor finish icon (1) on the Toolbar.
- Choose "*KAHRS OAK TRUFFLE*" from the library (2). After selection, it will be applied on the floor.



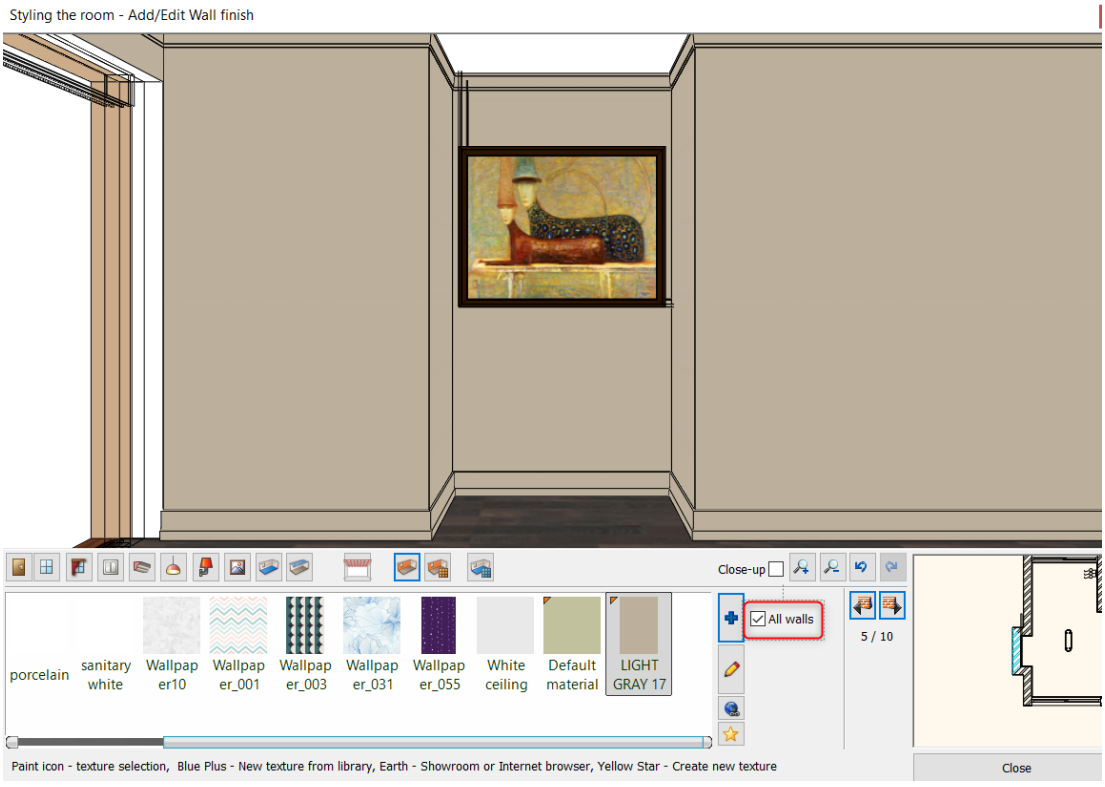
2.8.9. Wall covering

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

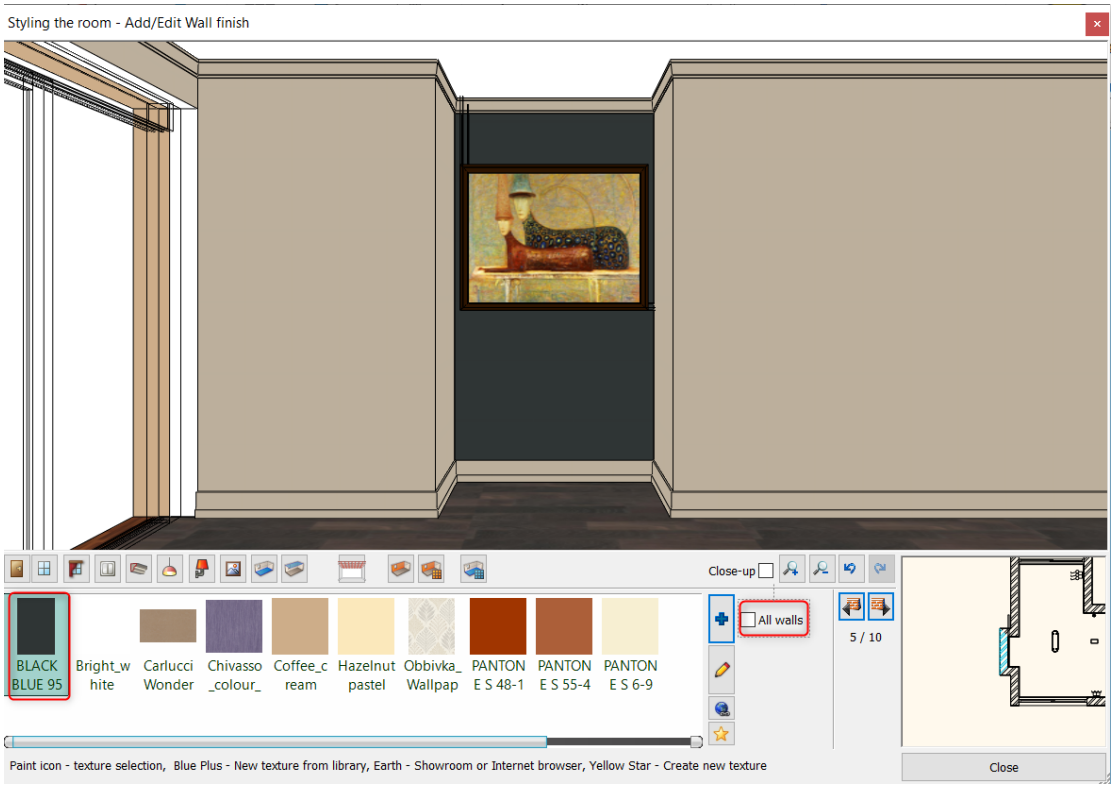
- Press on the Toolbar - Add/Edit Wall finish icon (1).
- Select "LIGHT GRAY 17" color (2).



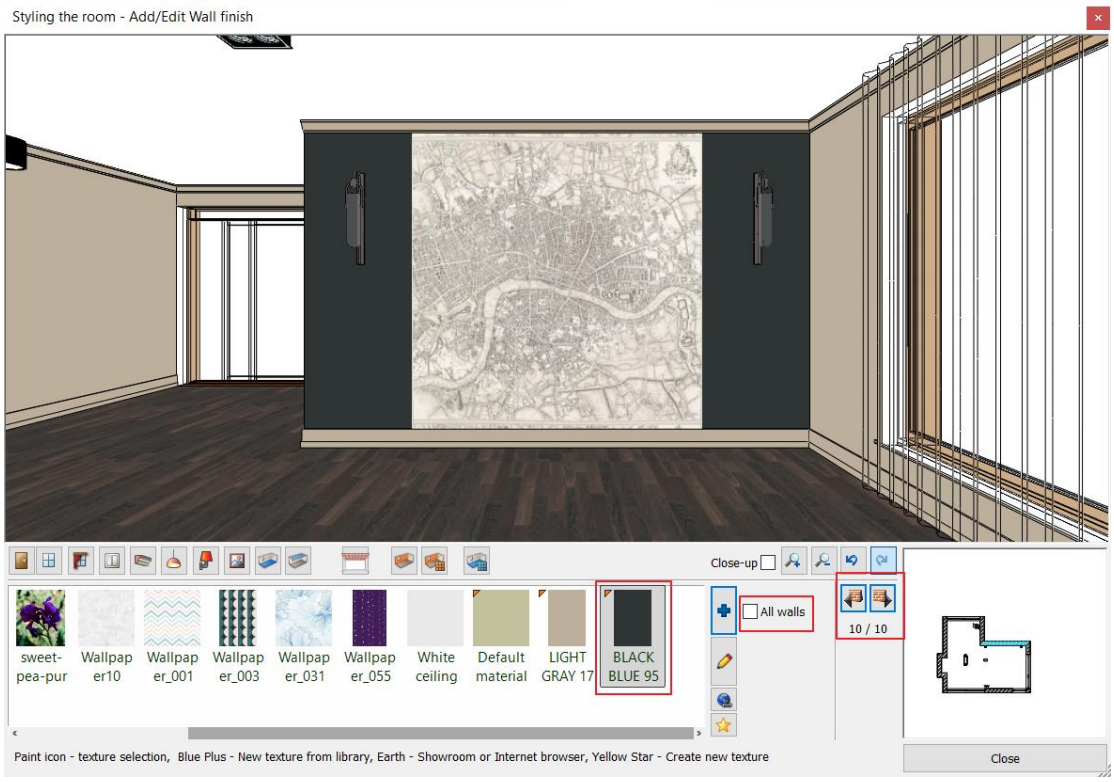
- Enable the "All walls" option to apply the selected color on all walls in one step and then click on *"LIGHT GRAY 17"* again.



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



- Switch to the wall on which the wall lights are placed. Change the color to "BLACK BLUE 95".



- Finally, close the Room maker dialogue window.

2.9. Add ceiling lamps

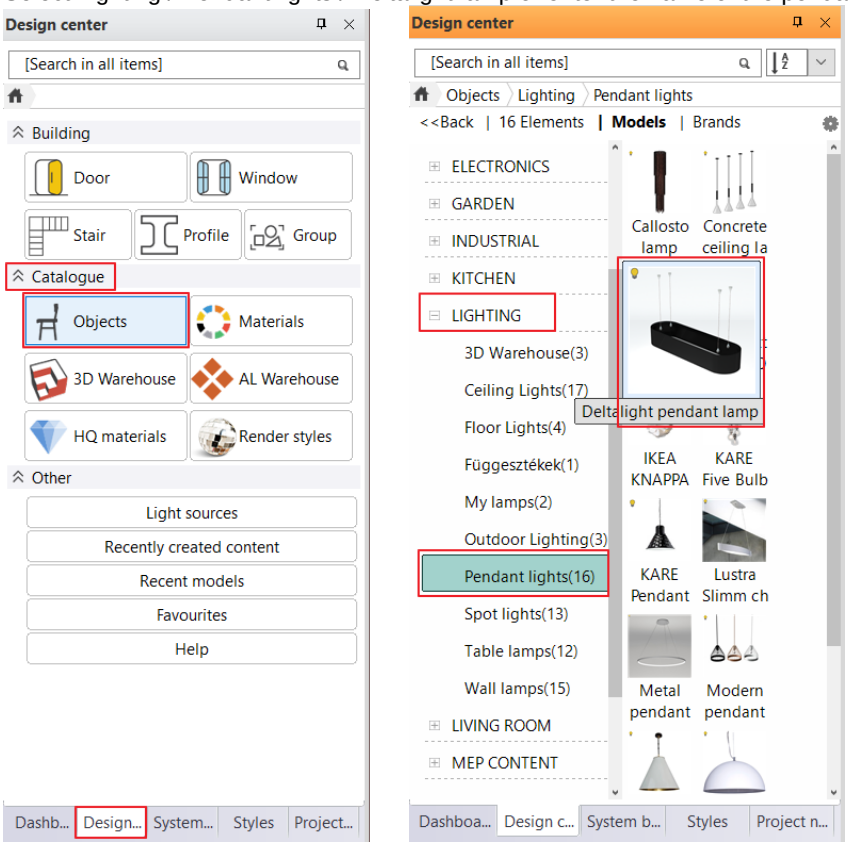
We put a pendant lamp in the dining room and spotlights in the living room.

Keep the floor plan window active. The Design Center is on the left.
In the Design Center you will find building elements, groups, symbols, objects, furniture, lamps, materials and much more.
You can browse the libraries or search for items using the search box.

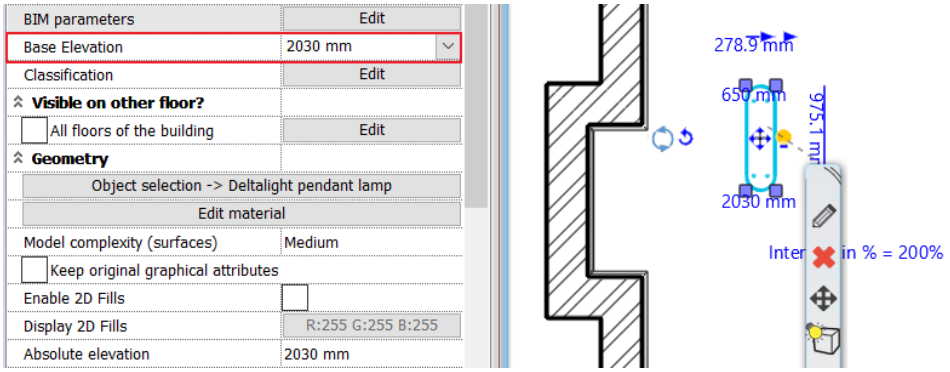
Positioning of a pendant light

- Click the **Design Center** tab, select the Catalogue / Objects folder.
  All the folders in the Design Library will then be displayed

- Select Lighting / Pendant lights / Deltalight lamp or enter the name of the pendant light in the search field: *Delta*



- To place an item, simply grab it and drop it on the drawing. Move the mouse and click to place it in the center of the dining area.
  Click on the lamp and change its Base elevation: 2030 mm.

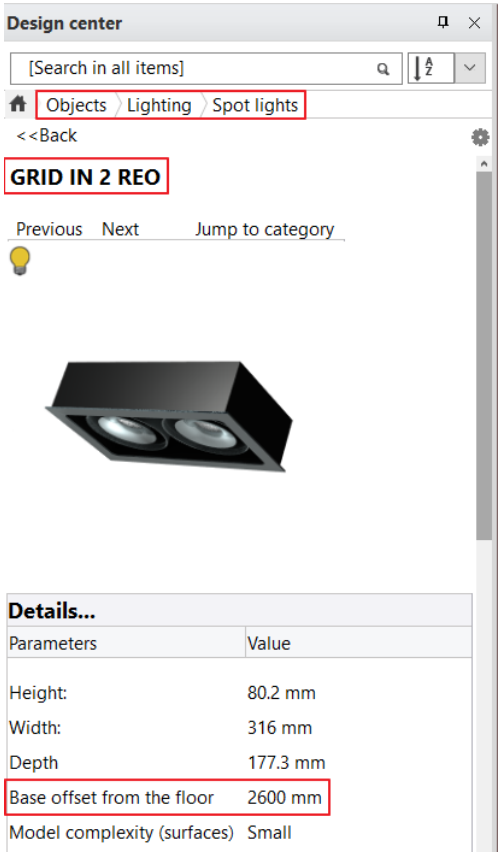


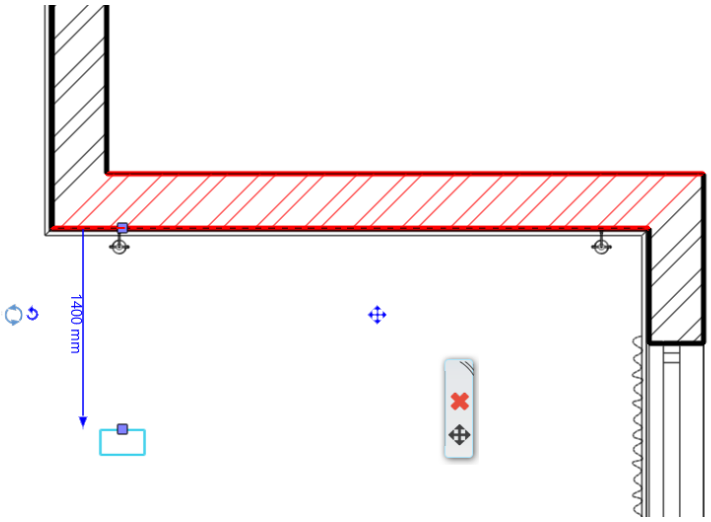
Place lamps on the ceiling. You can select pre-defined lamps from the built-in library, or you can import from 3D warehouse.

Spotlights

We continue with the placement of the lamps with a spot lamp

- In the Design Center, select Lighting / Spot lights / Grid in 2 Reo lamp.
- Click on the lamp and enter its Base offset from the floor: 2600 mm.
- Place it near the first wall lamp.



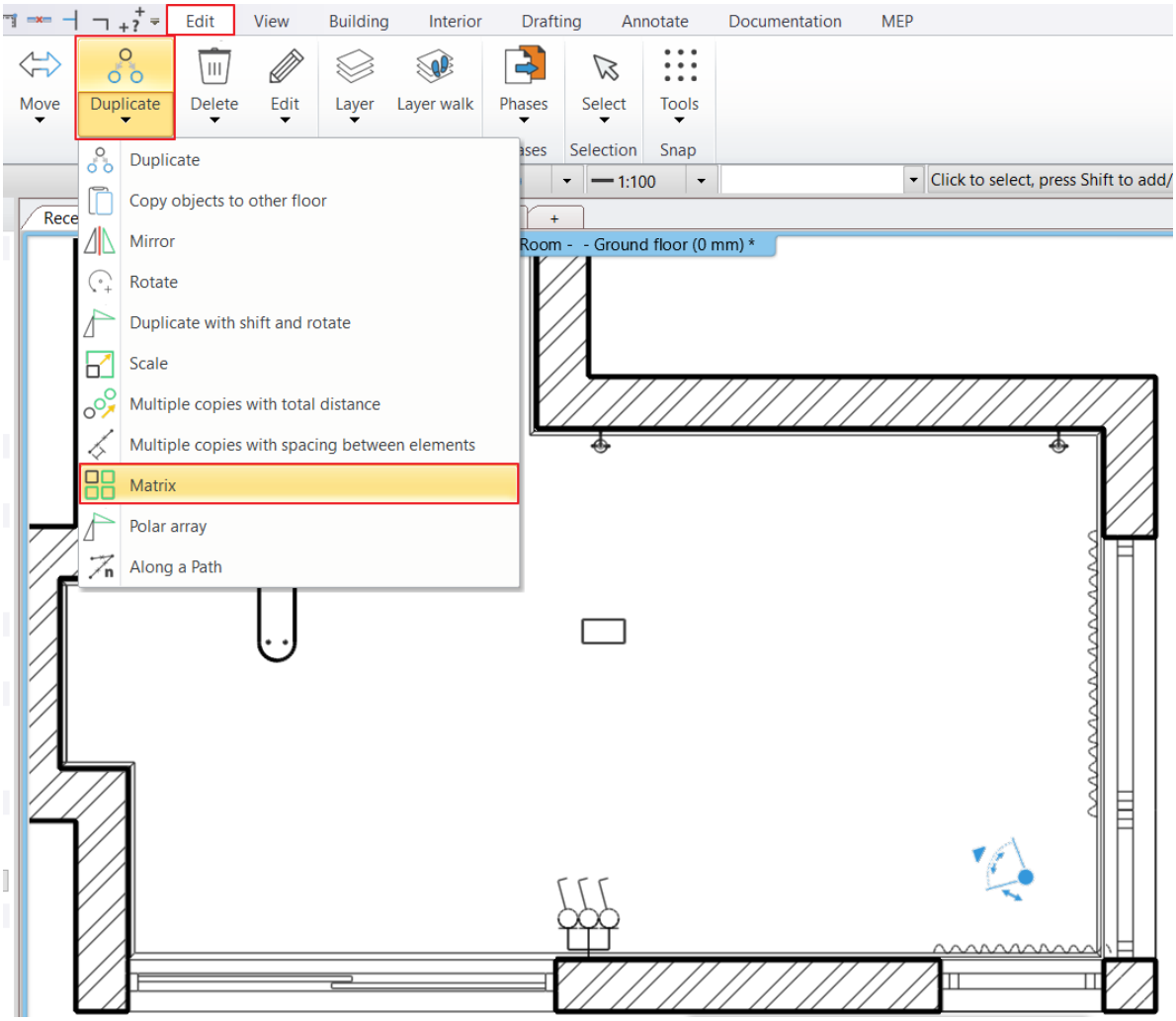


Now we set the exact distance from the wall.

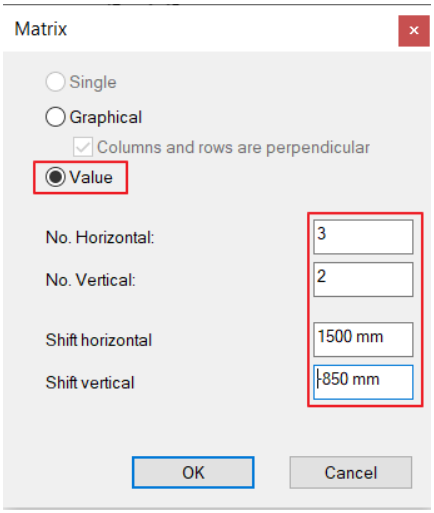
- First select the wall by clicking on the wall hatching, then select the spot by pressing CTRL.
- The first item selected will be highlighted in red, the second item in blue. The red element always remains in place and the blue element is moved in relation to it. The direction of the movement is also indicated by a small blue arrow, which can be clicked to change the distance: 1400 mm.

Next, the ceiling spotlight will be multiplied into a 3x2 matrix.
When you click on any drawing element, it is highlighted. The selected element will be displayed in a different color and will be surrounded by an icon menu and some so-called markers.

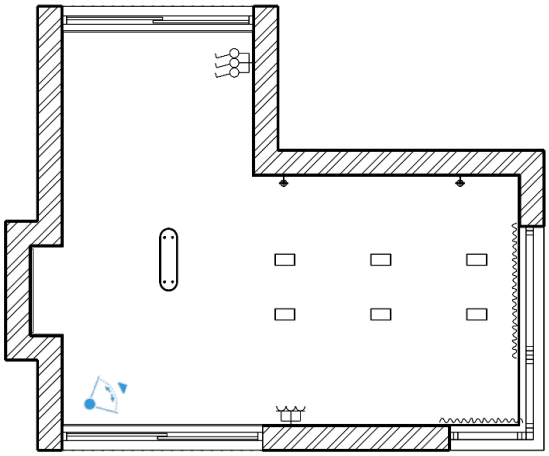
- Select the spotlight already placed on the floor plan.
- Select the **Ribbon Bar / Edit / Duplicate** menu and then the **Matrix** command.



- Click on any point of the spot lamp.
- In the dialogue window, select the Value option.
- Set the No. horizontal: 3, and No. of vertical: 2
- and the distance between the lamps: 1500 mm, -850 m.
- Position the lamps horizontally.



See the images for the floor plan and 3D representation:

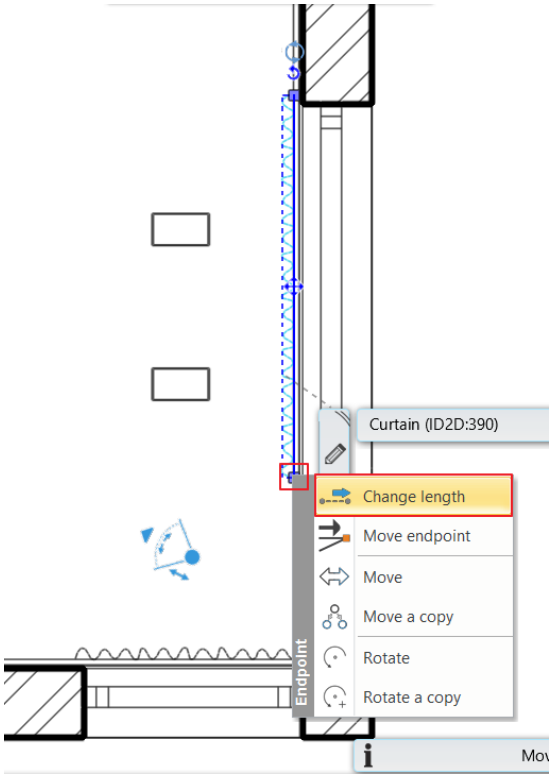


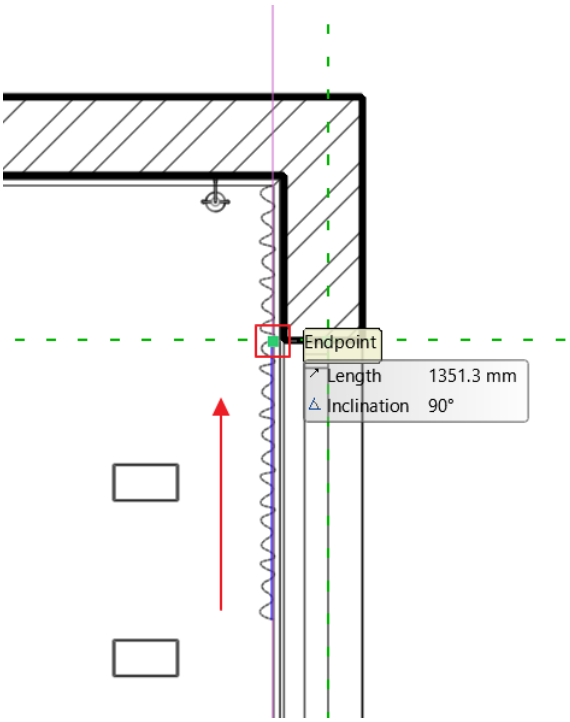
2.10. Editing curtain

In the previous example, we demonstrated that a selected item is represented with different color 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.

- In the floor plan window, zoom in on one of the curtains, then click on the curtain in the floor plan.
- The curtain is highlighted with a light blue color. Click on the blue dot marker at the bottom. Select the "**Change length**" command from the appearing menu.
- Place the selected point in the top corner of the wall.
- Repeat the previous step on the bottom of the curtain, aligning the end point with the edge of the window.



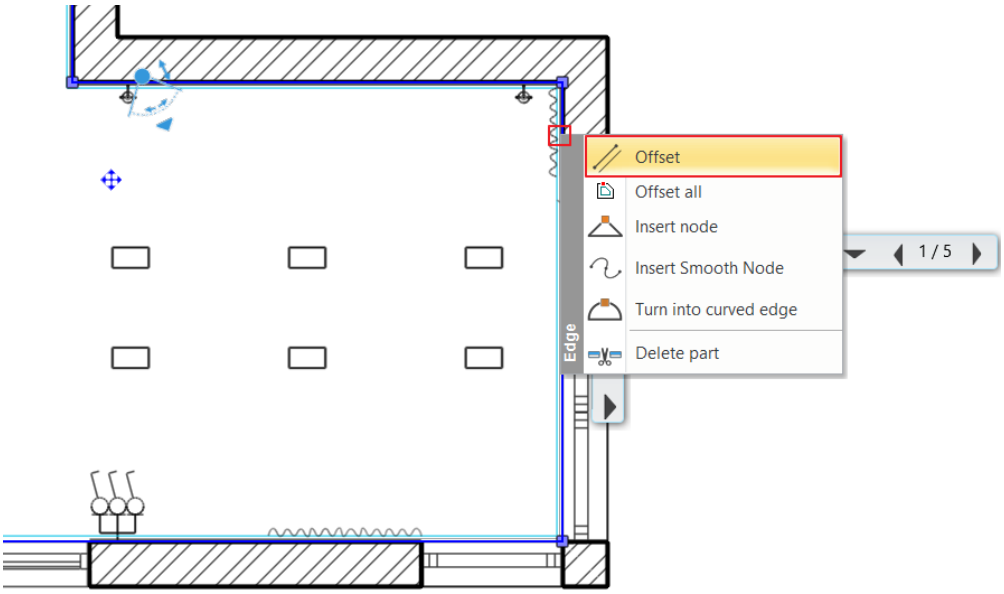


- Repeat these steps on other curtains.

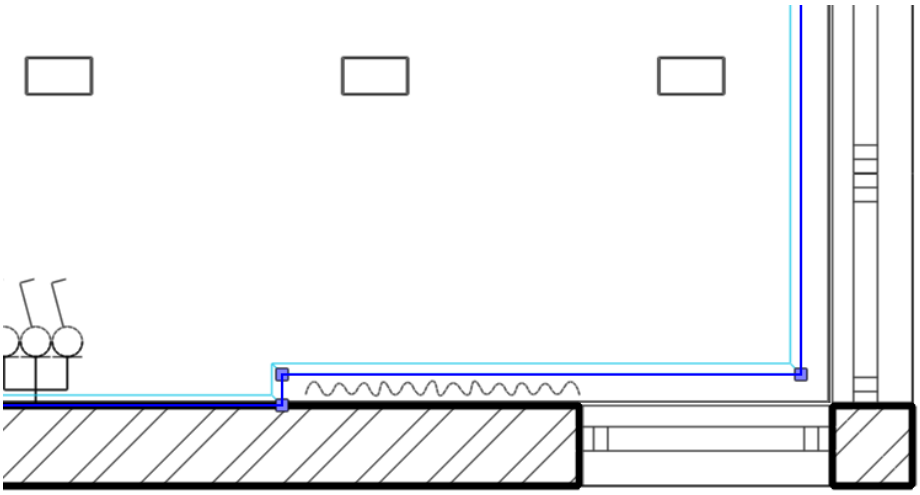
2.11. Modification of the molding

Curtains are currently not covered, so we move the molding on the ceiling in front of the curtains to create an elegant effect.

- Select the ceiling molding on the floor plan with a base elevation of 2680 mm.
- Click on the blue line on the right side of the room and use the Offset function to move it 150 mm towards the room.



- At the bottom, select Insert node and place the node close to the edge of the curtain.
- Set an offset of 150 mm for the section in front of the window.

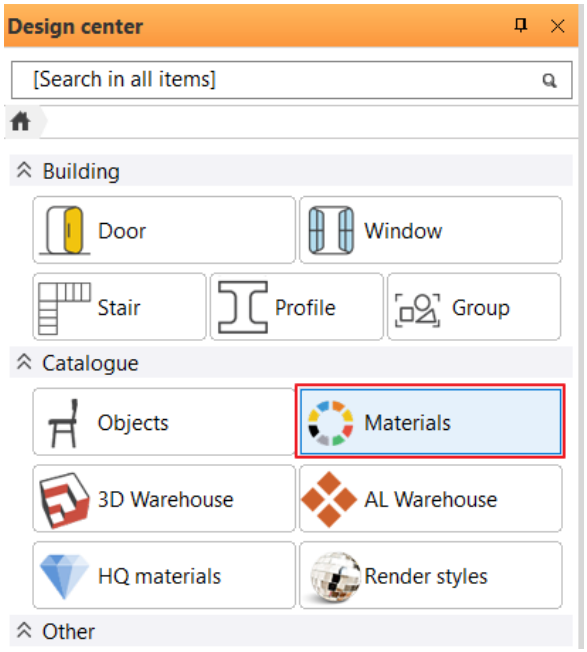


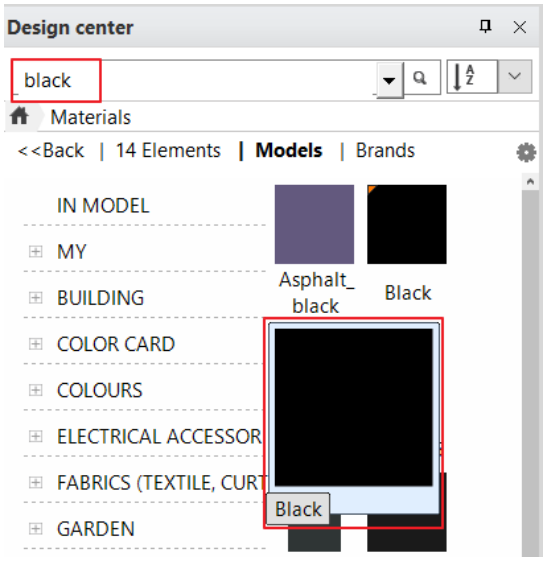
After the modifications are made, the molding hides the meeting point of the curtains and the ceiling, creating an aesthetically pleasing effect.

2.12. Change materials by using the Drag and Drop method

Next task is to change materials on all openings.
Activate the 3D view.

- Select the Living_room_2 perspective to make the window visible.
- Select the Materials from the Design Center on the left.
- In the search box at the top, type the name of the material you want to search for: *Black*, then click on it.





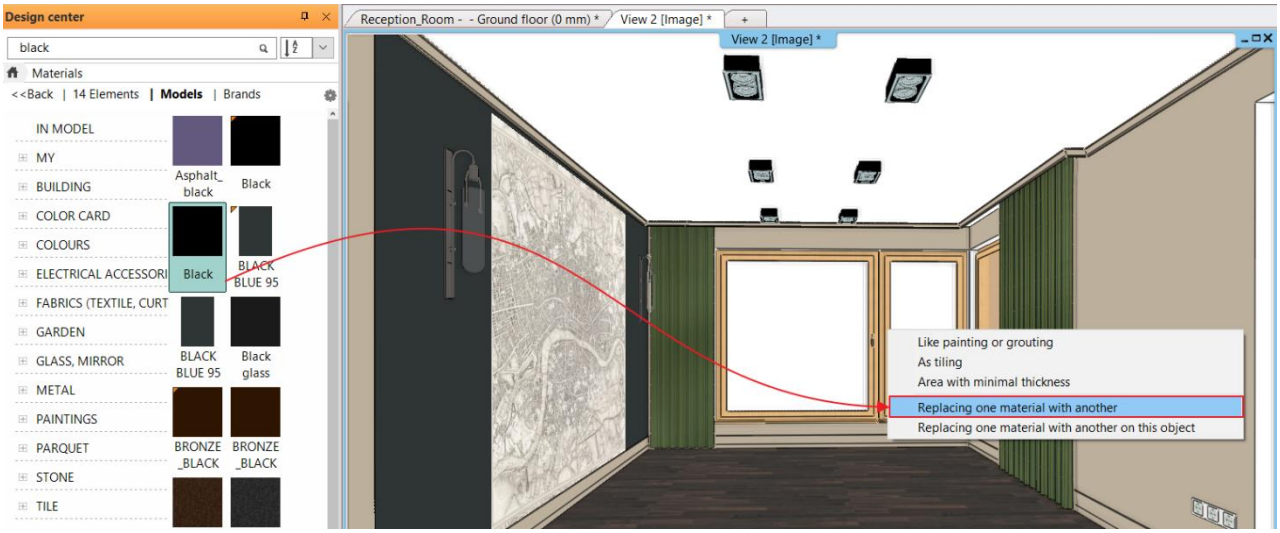
- Now drag the Black material and move it over to any window frames in the 3D window, while you are holding down the mouse left button.

The Drag and drop method is the following:

Press and hold the left mouse button to "grab" the item.
Move the mouse to drag the object to the desired position on the drawing area and release the button.

This method was also used to place the pendant lamp.

- 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.
- Click on the surface of the window frame.

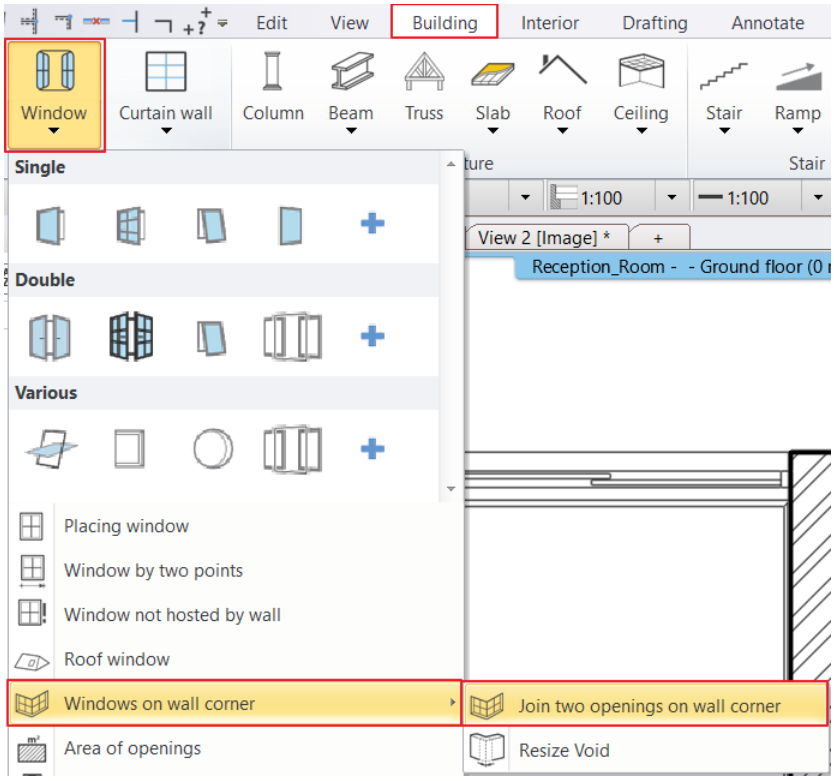


All window frames in the project that had the modified color were framed in black.

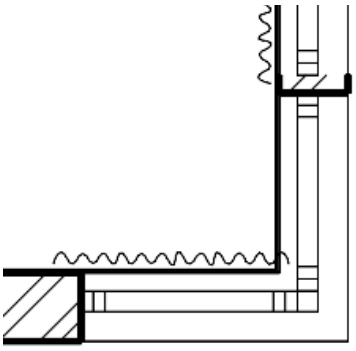
2.13. Windows on wall corner

Now join the two windows on the wall corner to create a corner window.

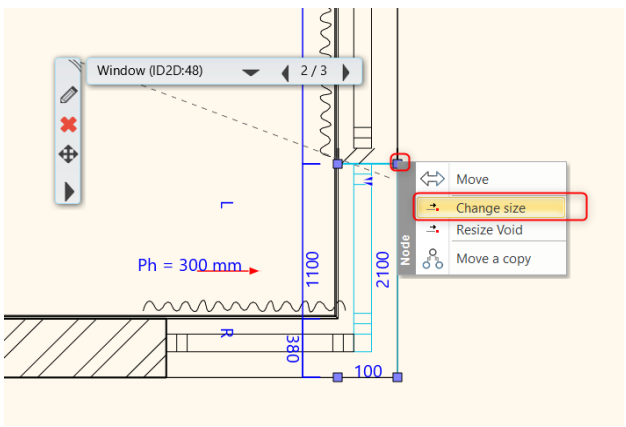
- Use the **Join two openings on wall corner** command from the **Ribbon bar / Building / Window / Windows on wall corner** menu.

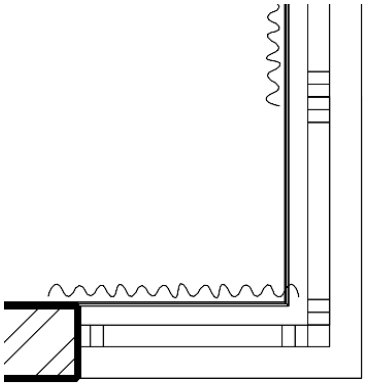


- Select the two windows in the corner with a single click and the program will automatically connect them.



- Finally, click on the 1100 mm wide window and click on one of the top handle points of the pop-up markers.
- From the menu that appears, select Change size and then align the top edge with the bottom edge of the larger window.



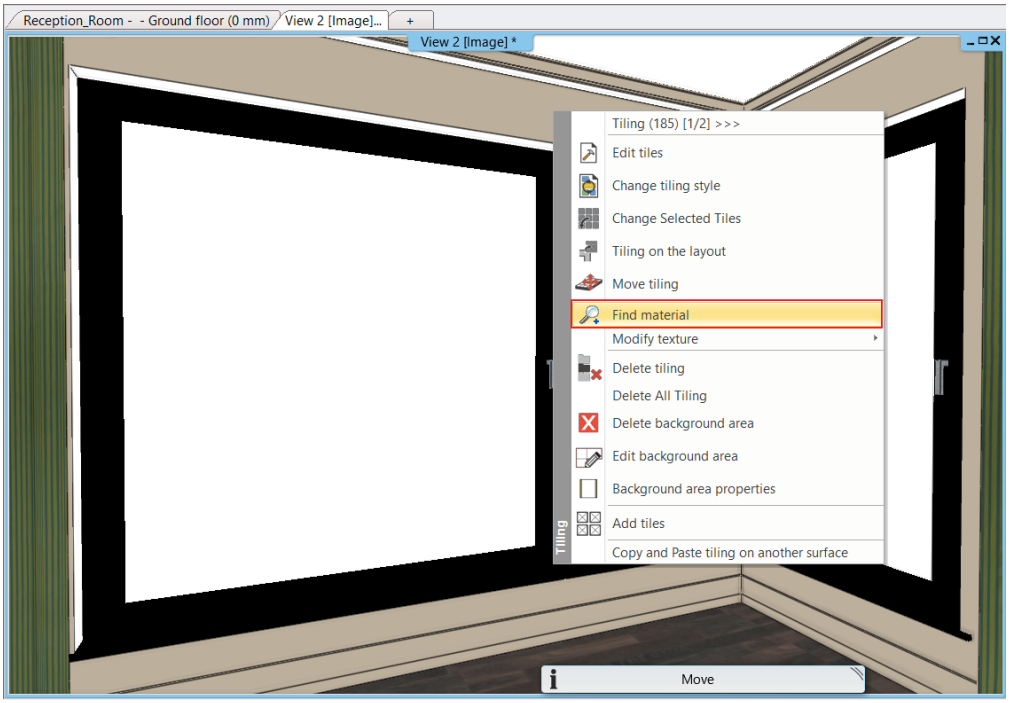


The final result is shown below.

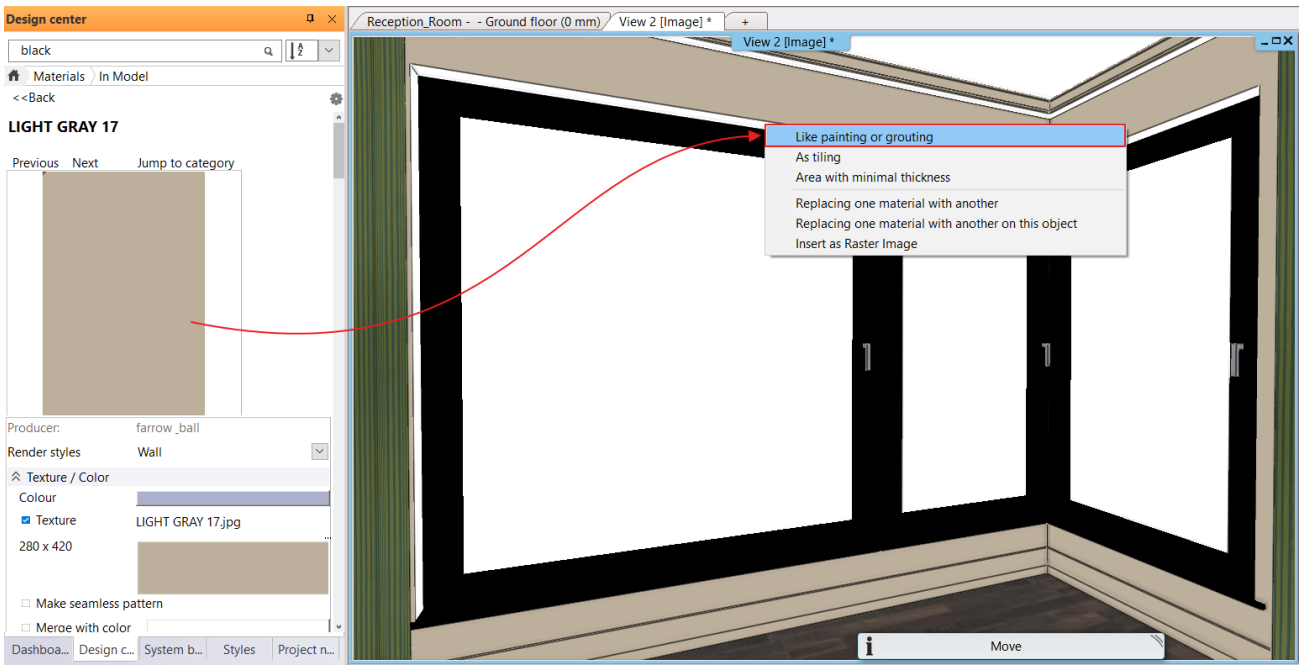
2.14. Repainting of wall surfaces around openings

To achieve a uniform color throughout, the wall areas around the windows need to be re-colored. The following is a step-by-step guide on how to do this.

- Right-click on a wall surface where the LIGH GRAY 17 material is located.
- Select the Find Material function from the pop-up menu.



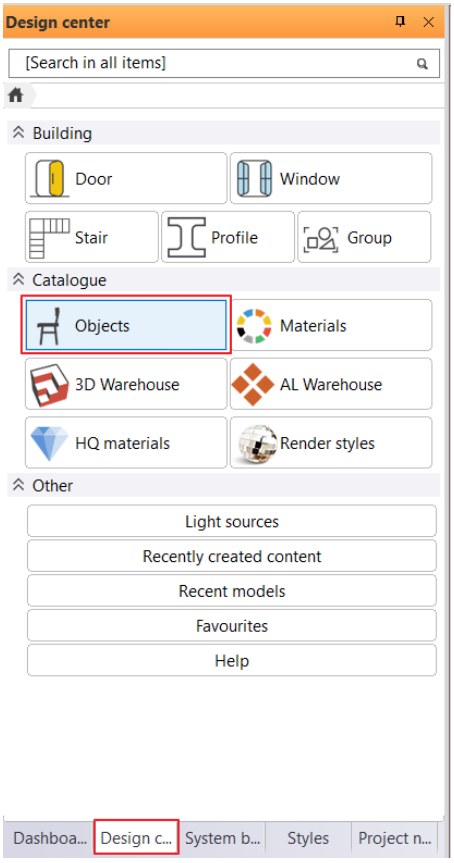
- Use the "drag and drop" method to apply the new color to the white wall surface around the windows.
- In the menu that appears, select Like painting or grounting, then click on all the white surfaces you want to recolor.



2.15. Placement of furniture from the Design Center

Keep the floor plan window active.
In the Design Center, you can find building elements, groups, symbols, objects, furniture, lamps, materials and many more for your design.
You can browse the libraries or search an item by using the search field.

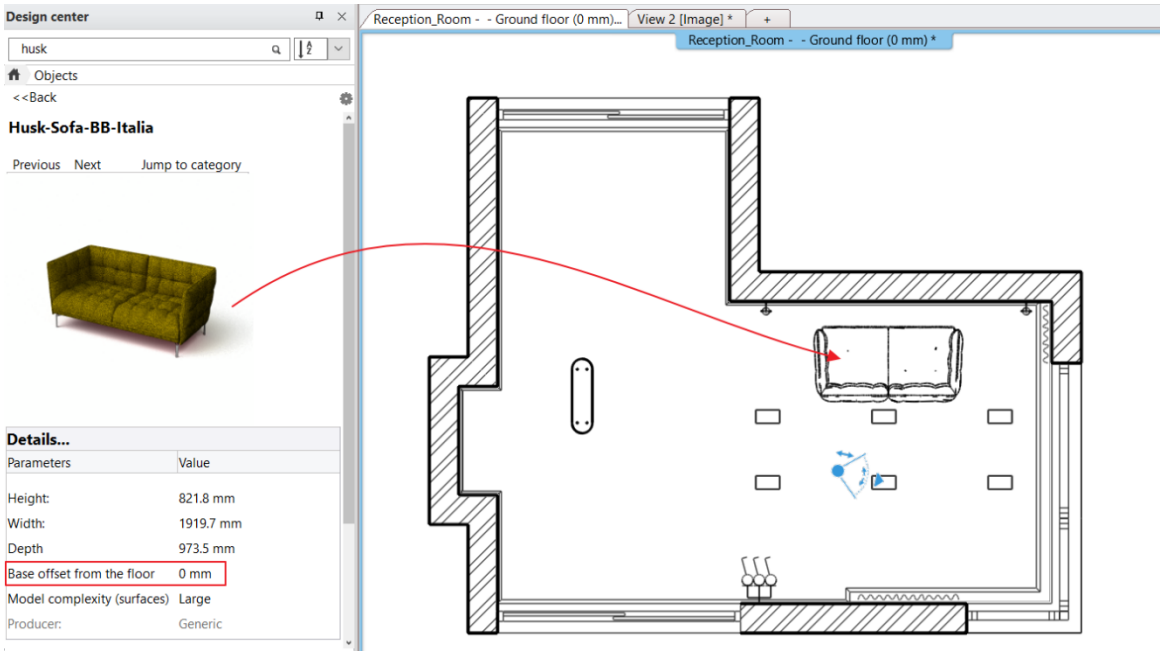
- Click on the **Design Center** tab. Choose Catalog – Objects folder. Now all subfolders appear.



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. Type in the search field: Husk
- Click on the sofa and check the Base offset from the floor: 0 mm.
- Drag and drop it to the floor plan. Move the mouse and click to place it.

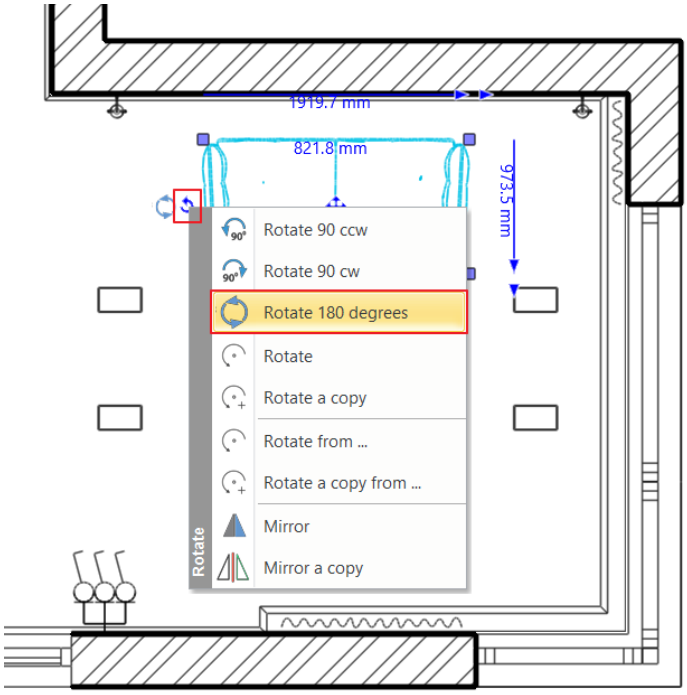


Place other furniture as well.

Moving furniture

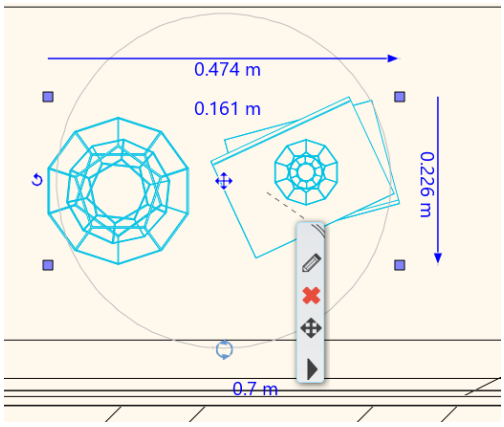
Next step is to rotate the sofa by 180 degrees:

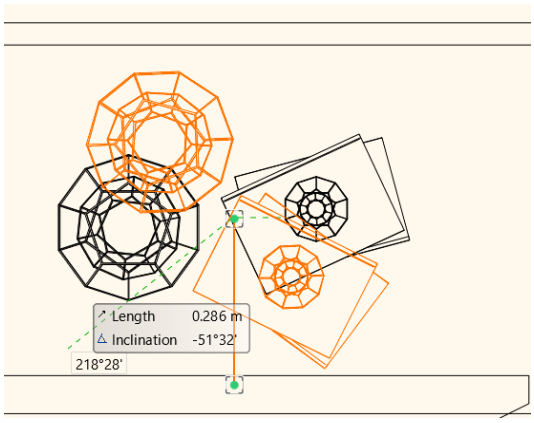
- Click on the sofa. The selected item is highlighted in light blue. Click on the rotation marker. Select the appropriate Rotate 180 degrees command from the pop-up menu.
- The sofa will be positioned according to the selected command.



There is another method to rotate items. Now rotate the decorative element in front of the TV.

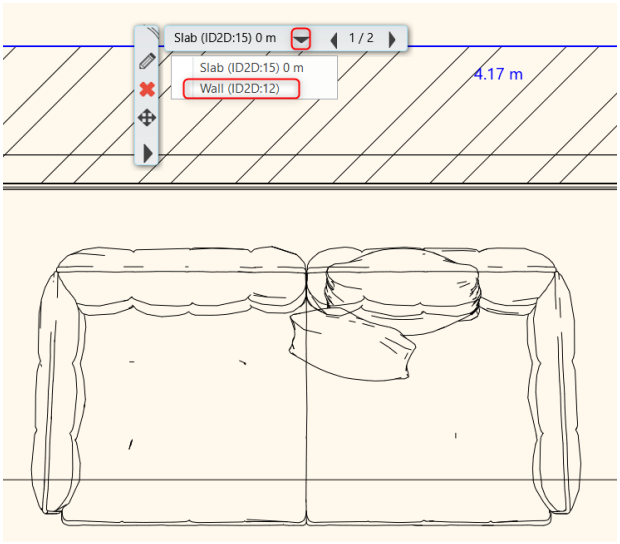
- Click on the item, and select “Free rotation marker”. This way, you can rotate an object around its own axis and define the angle you want to move.



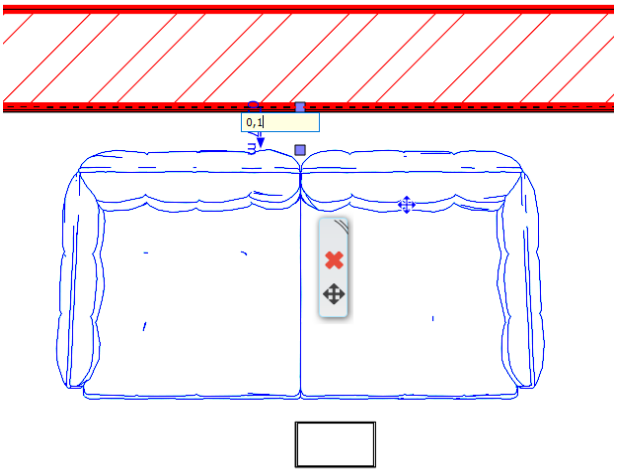


If you want to select multiple items, hold down CTRL key and simultaneously click on other items.
Now we move the sofa away from the wall by 100 mm.

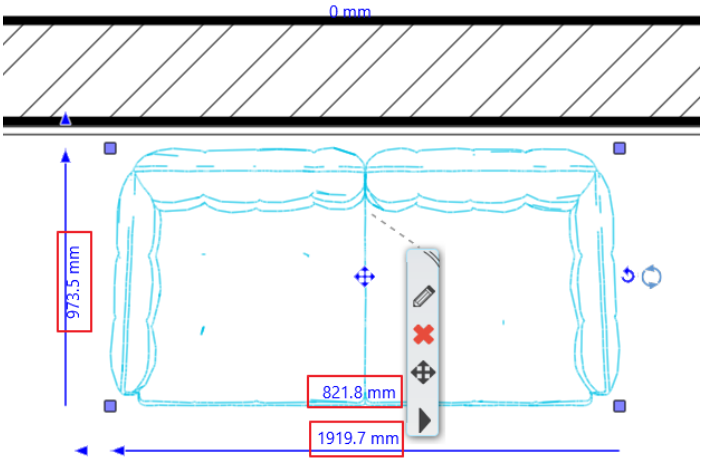
- First select the wall, then the sofa by holding CTRL key down. If accidentally the slab is selected, click on the black arrow and choose the wall from the list.
- The first selected item is marked in red and the second item in blue. The red element always stays in place and we move the blue element relative to it. The direction of movement is indicated by a small blue arrow, which can be changed by clicking on it.



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



You can resize objects on the floor plan graphically by using the arrows or by clicking on the values:

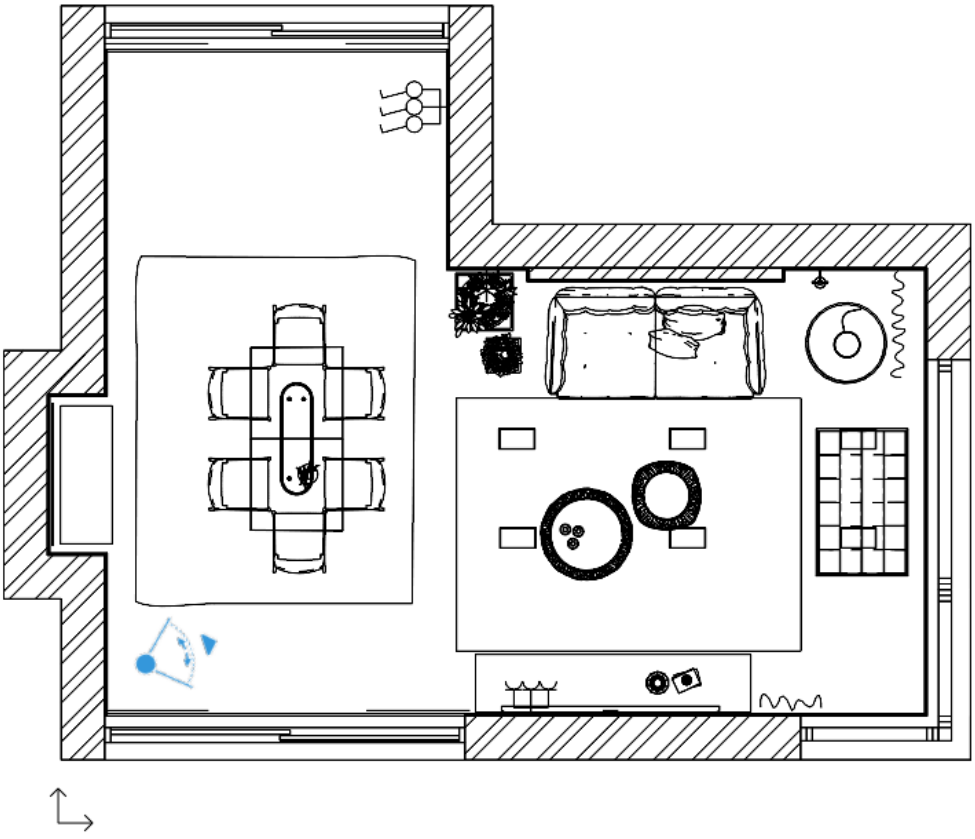


Place Objects in 3D:

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

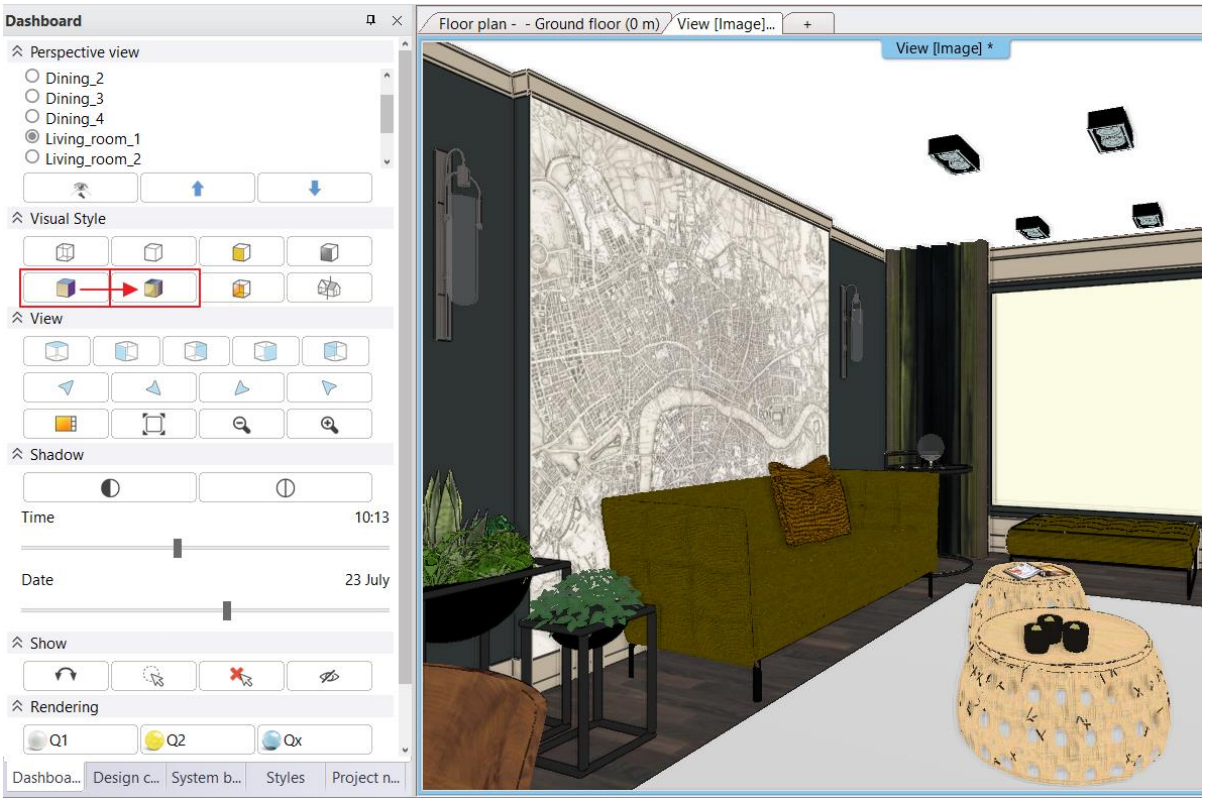
- Activate the 3D window.
- Find the candle ("*candles*") and drag and drop it into the 3D view. ARCHLine.XP recognizes the 3D surfaces.
- Click on a surface where you would like to place the object.

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

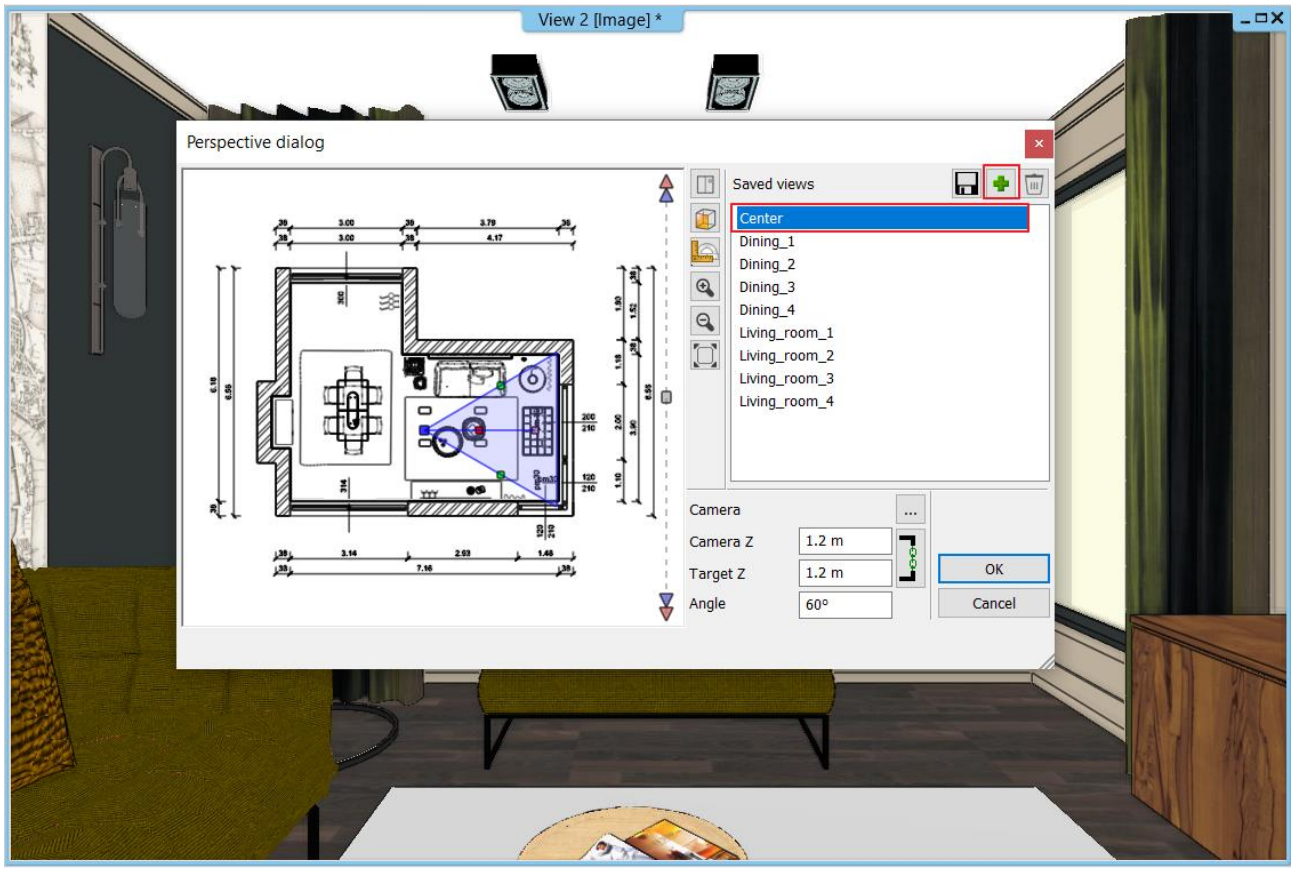


2.16. Visualization

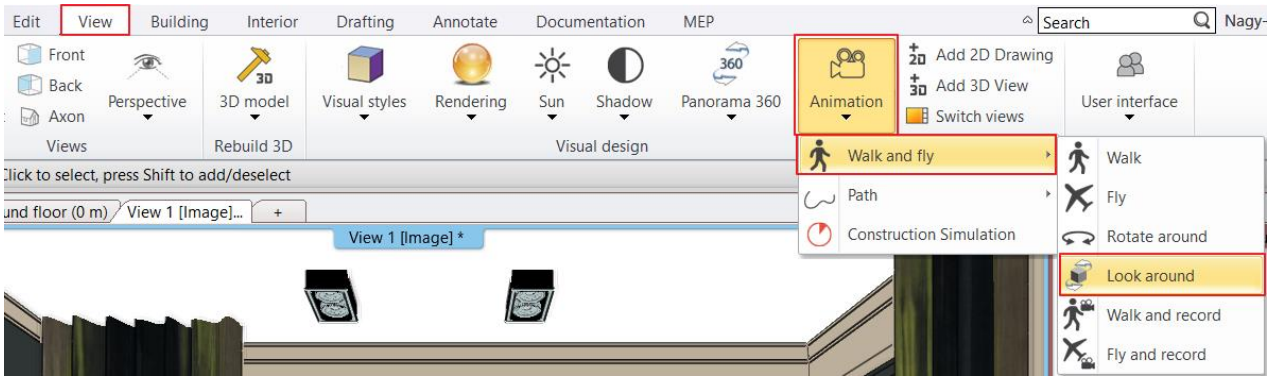
In the 3D window, there are lots of ways to display the model.
So far, we used the *Consistent color* mode. Activate the 3D window.
In the Dashboard, select *Realistic representation* to get a more realistic look in the 3D model.



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.

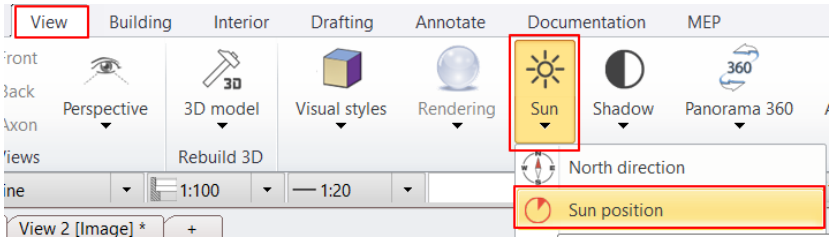


By pressing ESC command, you can stop the animation any time.

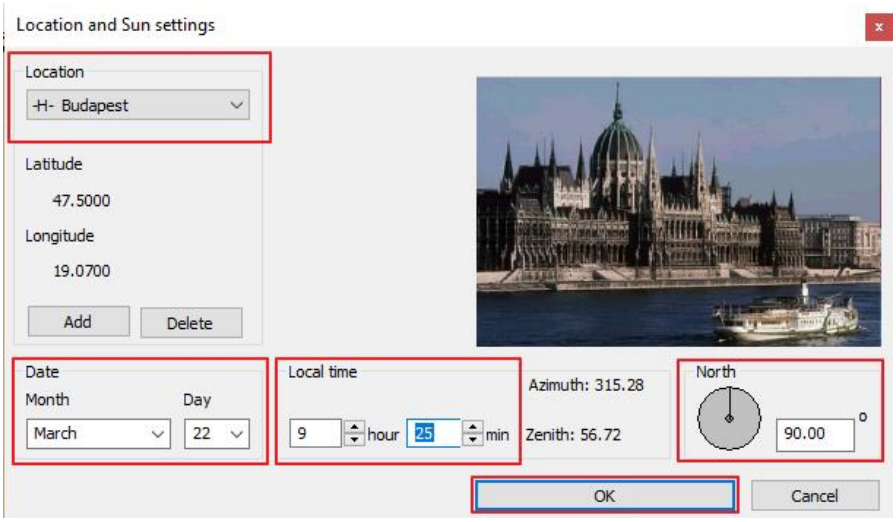
2.16.1. Shadows

You can visualize the 3D model with shadow effects.

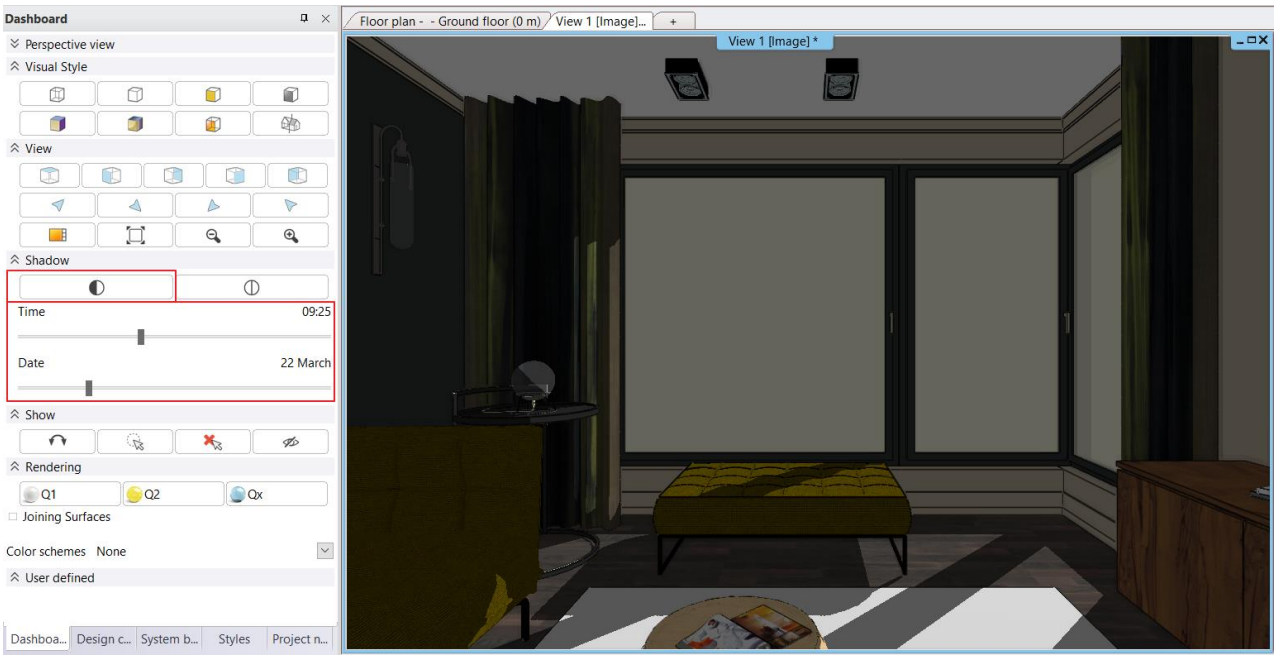
- First activate the Sun setting tool from the **Ribbon bar / View / Sun / Sun position** option.



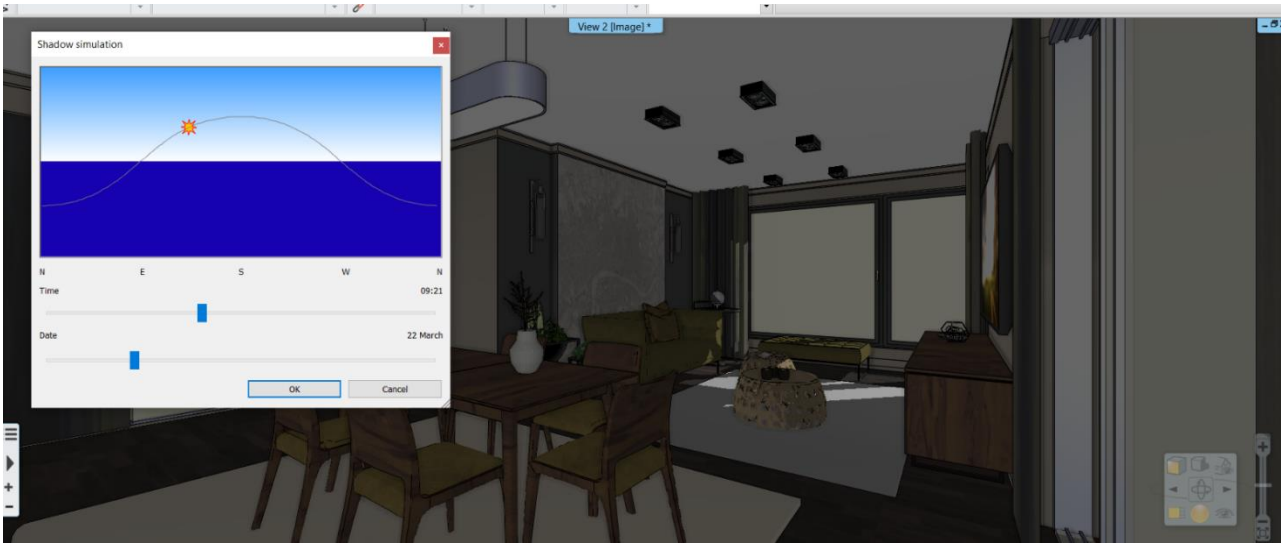
- The exact shadow calculations will be given after setting the location, the date, the time and the north direction.



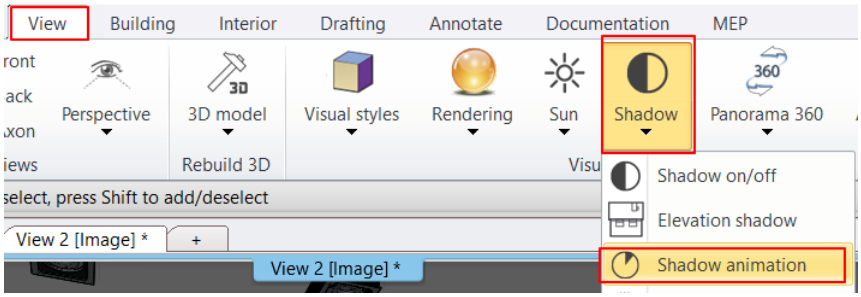
- From the Dashboard, click on: *Display shadow on*. The 3D model will look like this:

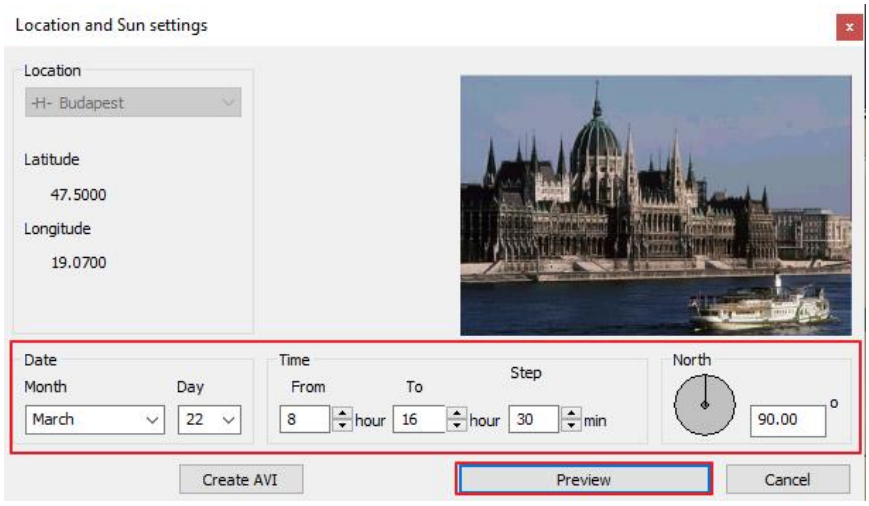


- Choosing from the **View menu / Sun and Shadow simulation** command the date and time can be selected by the slider, which will be followed by the model.



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**.





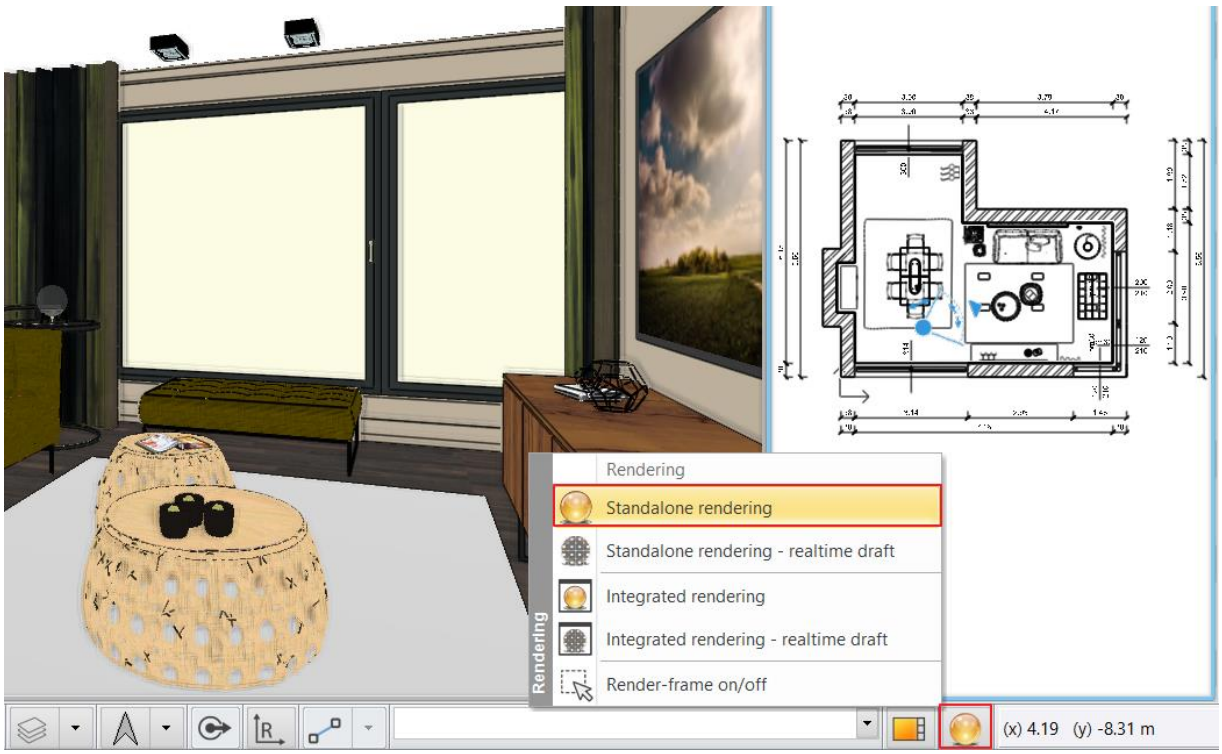
Turn off the shadow by clicking the same button.

2.16.2. Rendering

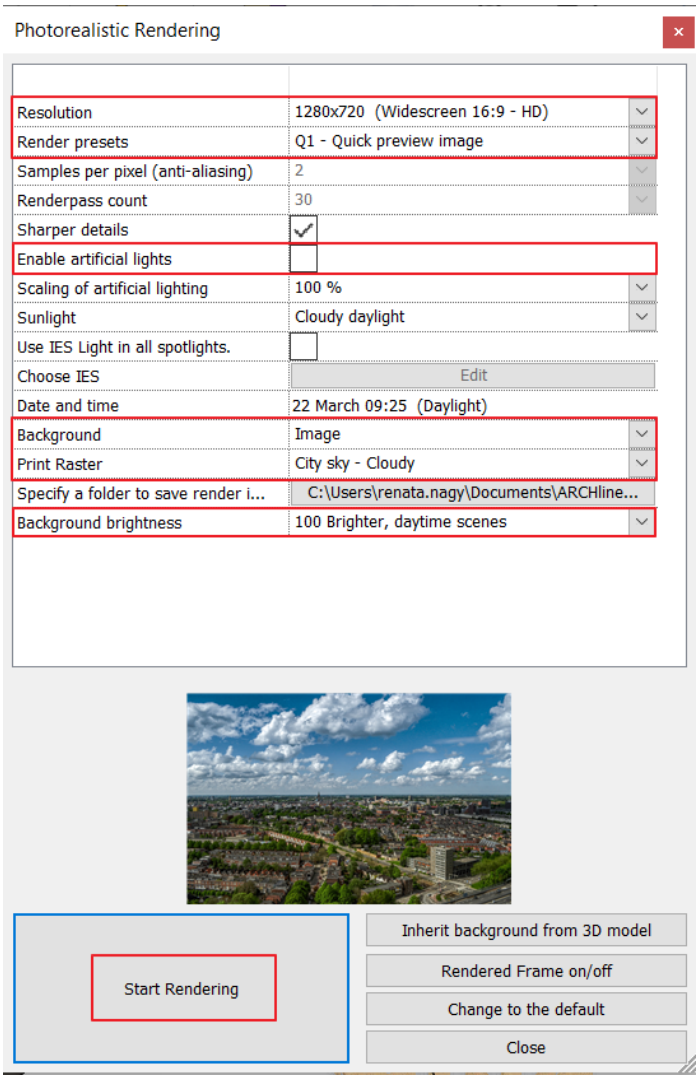
Finally, we create photorealistic renderings.

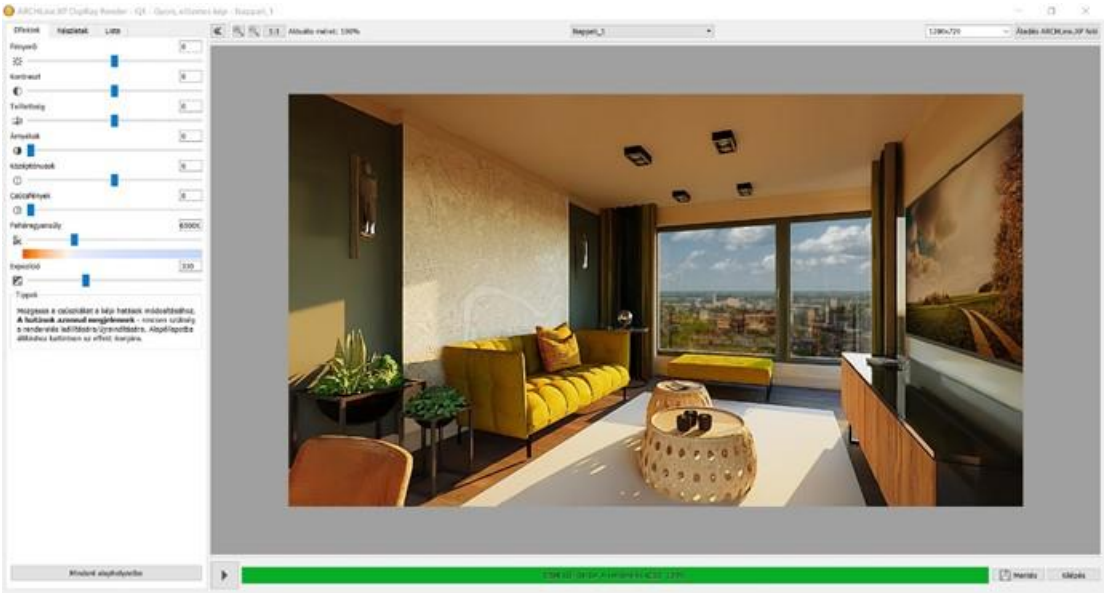
To get the best quality photorealistic rendering, we might have to create up to 20-25 images.
It is recommended that you first render in low resolution, without lights, in "Q1 - Quick preview image" mode.

- Click on the Status bar / Rendering icon, then click on the “Standalone rendering” command.



- 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 “Qx – Custom settings”.
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 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.

- Open your browser and watch the bathroom design video:
  https://www.archlinexp.com/enrollments/courses/preliminary-course

- Download the **Preliminary Course - Workshop Projects 2024** installer from our website and install it if you have not already done so.

Our goal is to achieve a result similar to the picture below:

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. We will continue to work with this project.

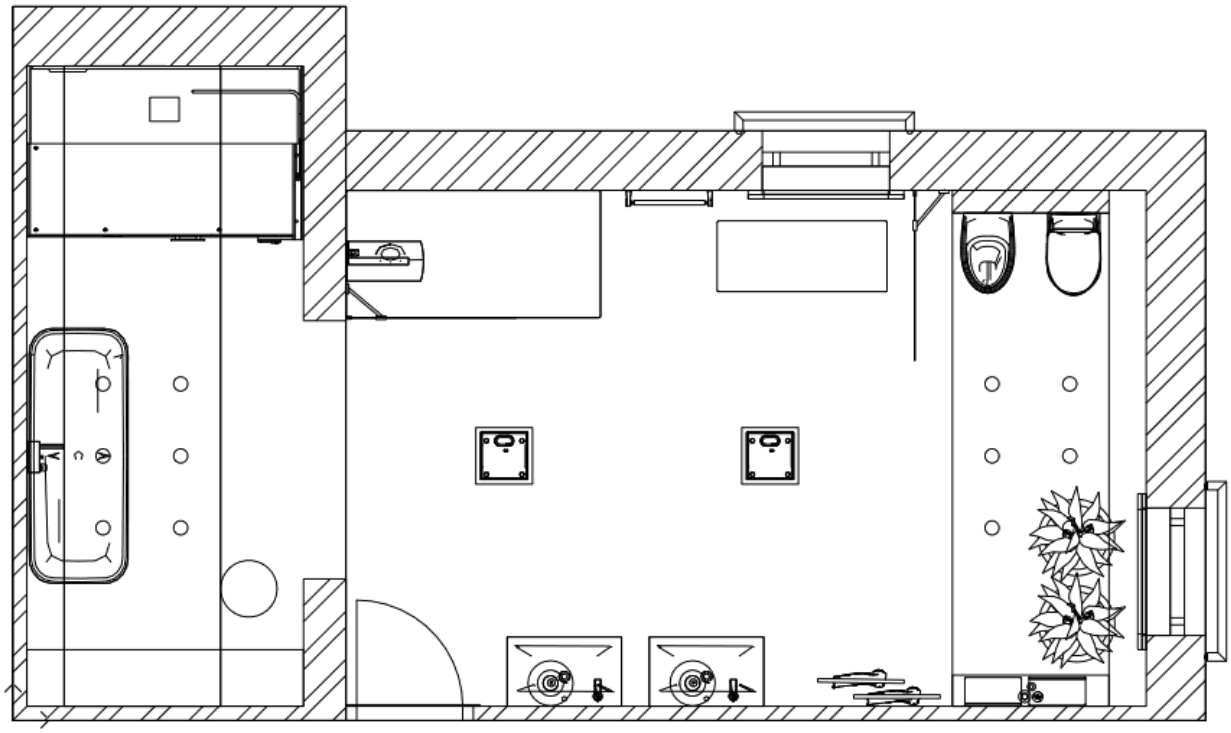
- Start ARCHLine.XP®.
- Click on the "**Open Project**".

and choose the:
- ..\Documents\ARCHLine.XP Draw\2024\Workshop_Preliminary/3_Bathroom_Tiling\1_Ferenczi_Eva_Bathroom_workshop_Start.pro project.

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.

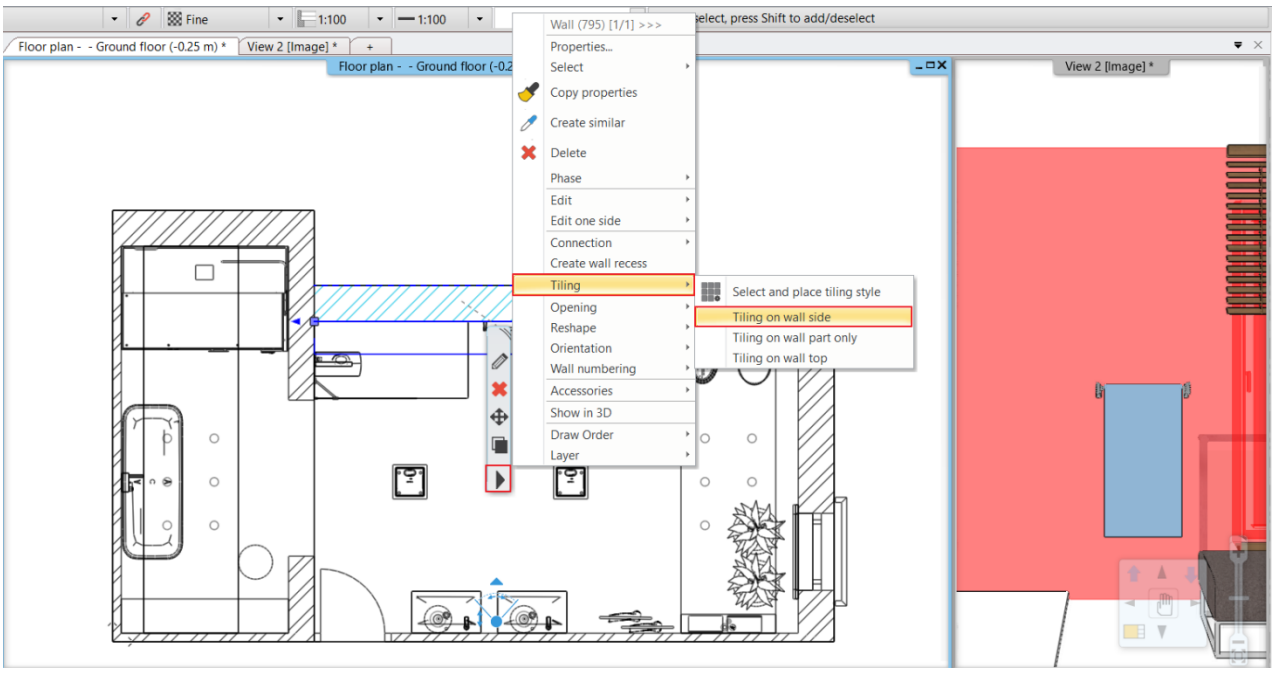


3.2. Tiling on the layout

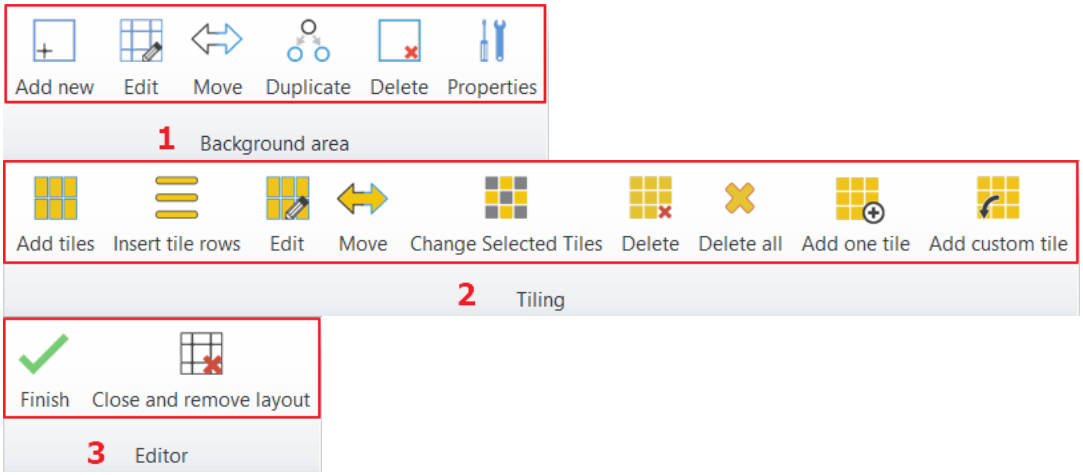
ARCHITECT_GRANIT_30_30_2 will be installed on the wall surface.

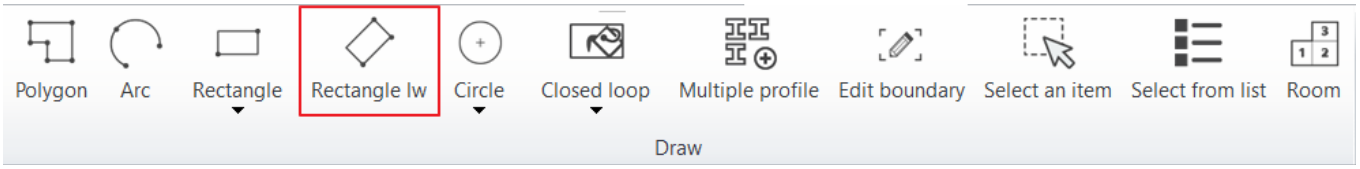
3.2.1. Wall tiling

- Make the 3D window active (the frame of the active window will turn blue). To activate the 3D window, just click in the 3D window.
- Make the "*View 5*" active, and set the viewpoint according to the image.
- Switch to the floor plan window.
- Left-click on the wall and select **Tiling, Tiling on wall side** from the local menu.
- Place the displayed wall layout on the floor plan.

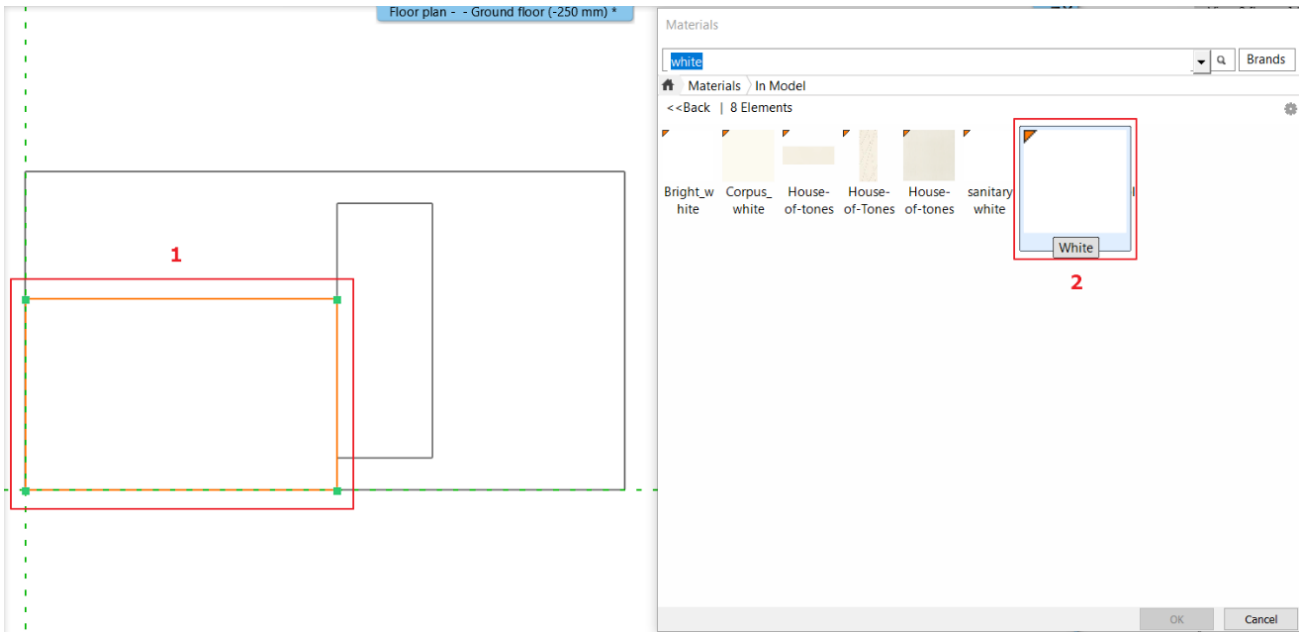


The tiling command consists of three parts: the Background area (1), the Tiling (2) and the Editor (3).

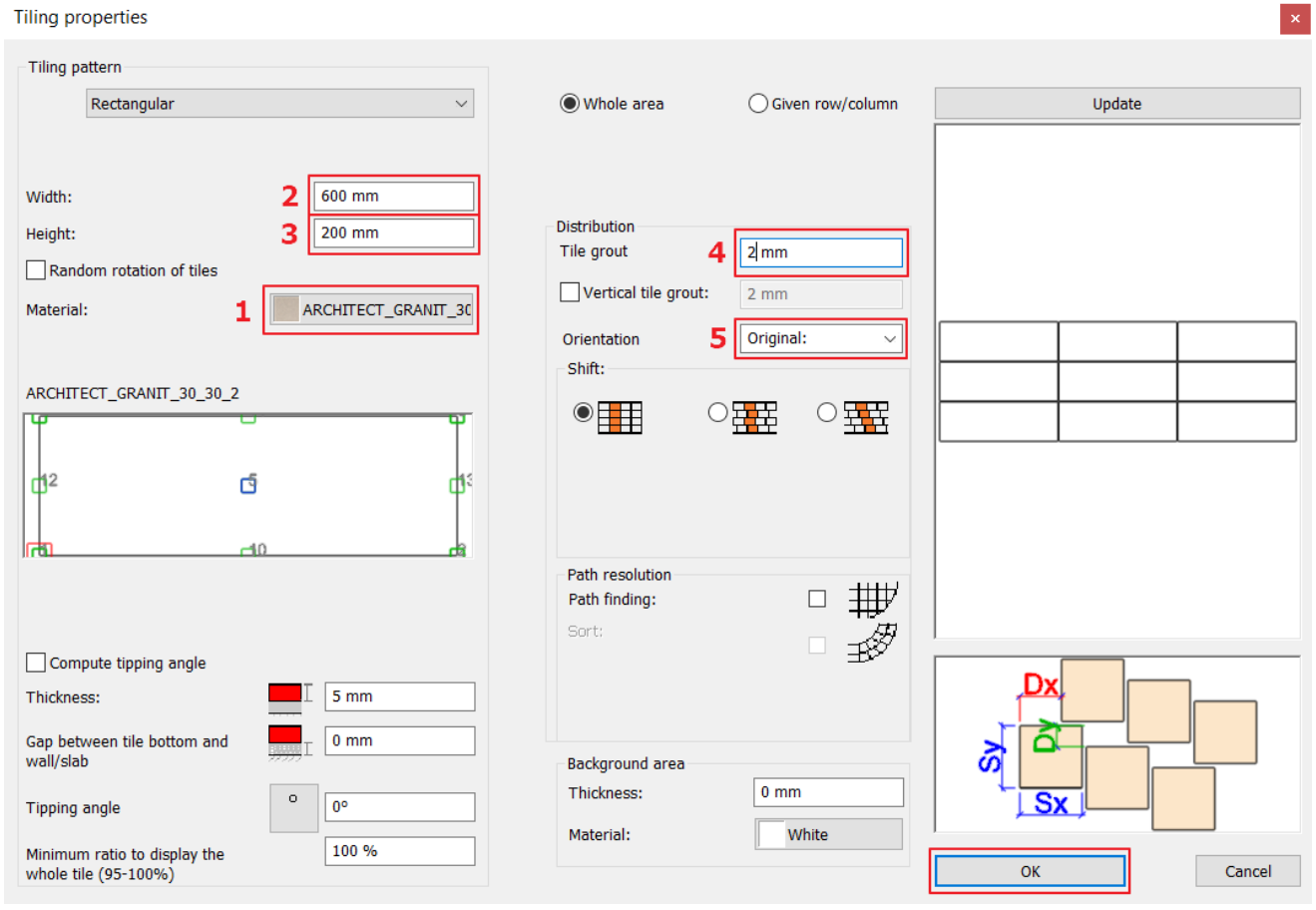




- Choose Add new command, then choose *Rectangle lw* command.
- Click on the bottom left corner of the tiling and enter the height to be tiled: 1800 mm.
- Draw the rectangle to be tiled (1).
- From the pop-up dialogue menu select White from the library. This will be the color of the tile grout (2).



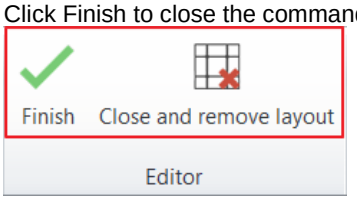
- Click **Add tiles** and select the area you have already drawn.
- In the pop-up dialogue click on the material name and select the tile **ARCHITECT_GRANIT_30_30_2** from the **Materials / Tile / Indoor** (1).
- Tile width: 600 mm (2)
- Tile height: 200 mm (3)
- Tile grout: 2 mm (4)
- Tile orientation: **Original** (5)
- Click OK to place the tiling.



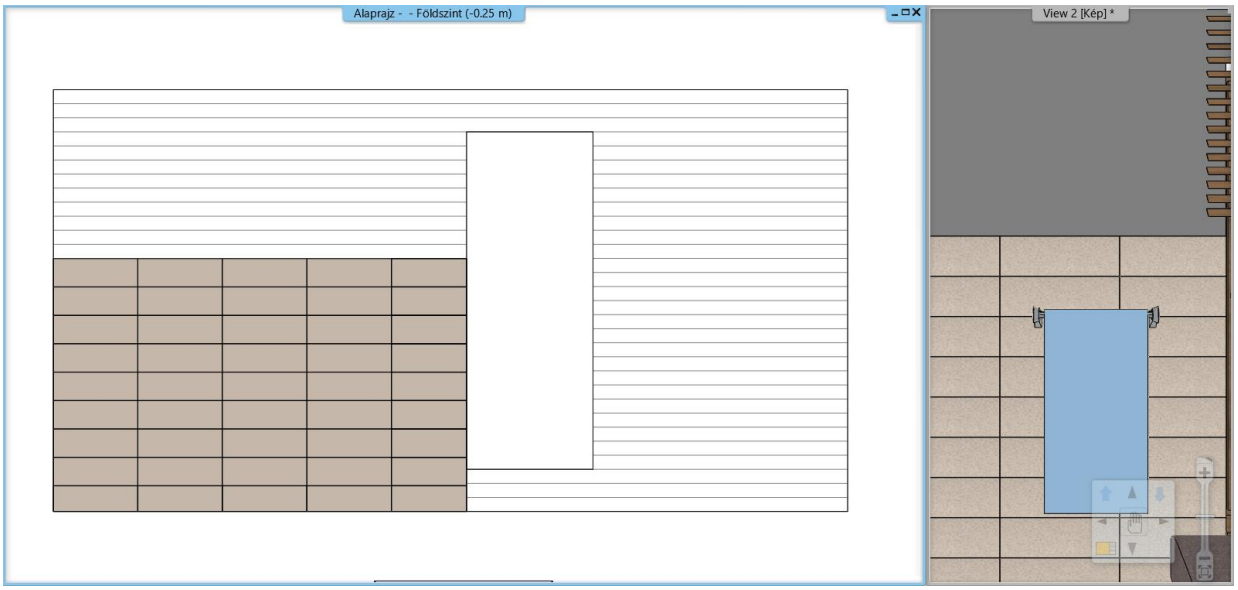
- In the floating menu, select the reference point of the tiling so that it is in the bottom left corner, then place the tiling in the top left corner of the background area.
- Enter the orientation of the tiling: 0°

The results are immediately visible. The next step is to prepare the painted part of the wall.

- Select **Add new**, then **Closed loop**, **Point of profile and islands**.
- Click on the 2D layout inside the area not yet tiled.
- In the pop-up dialogue select **PANTONE-S325-3** from the library. Click OK.
- Click Finish to close the command.



The result is immediately visible. The bathroom wall is now tiled.



3.2.2. Delete tiling

We delete the existing tiling to show the tiling method in 3D.

- Make the 3D window active.
- Right-click on the wall that was previously tiled and select Delete All Tiling from the local menu.

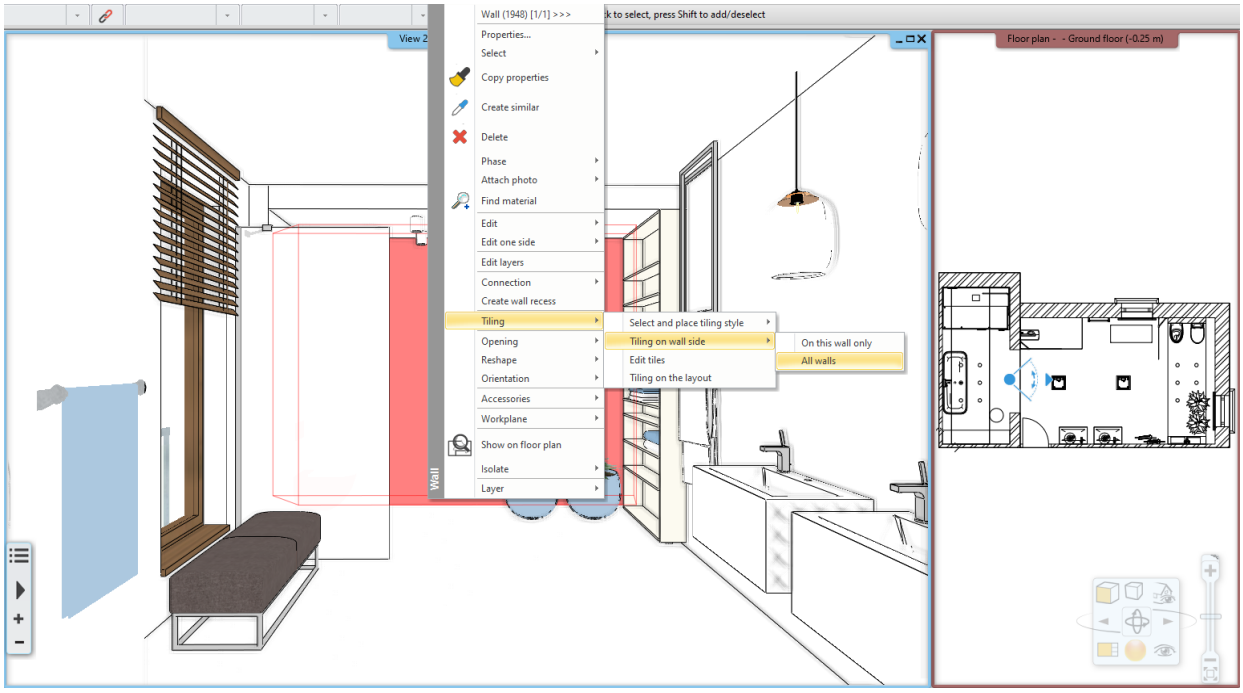
3.3. Tiling in 3D

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.

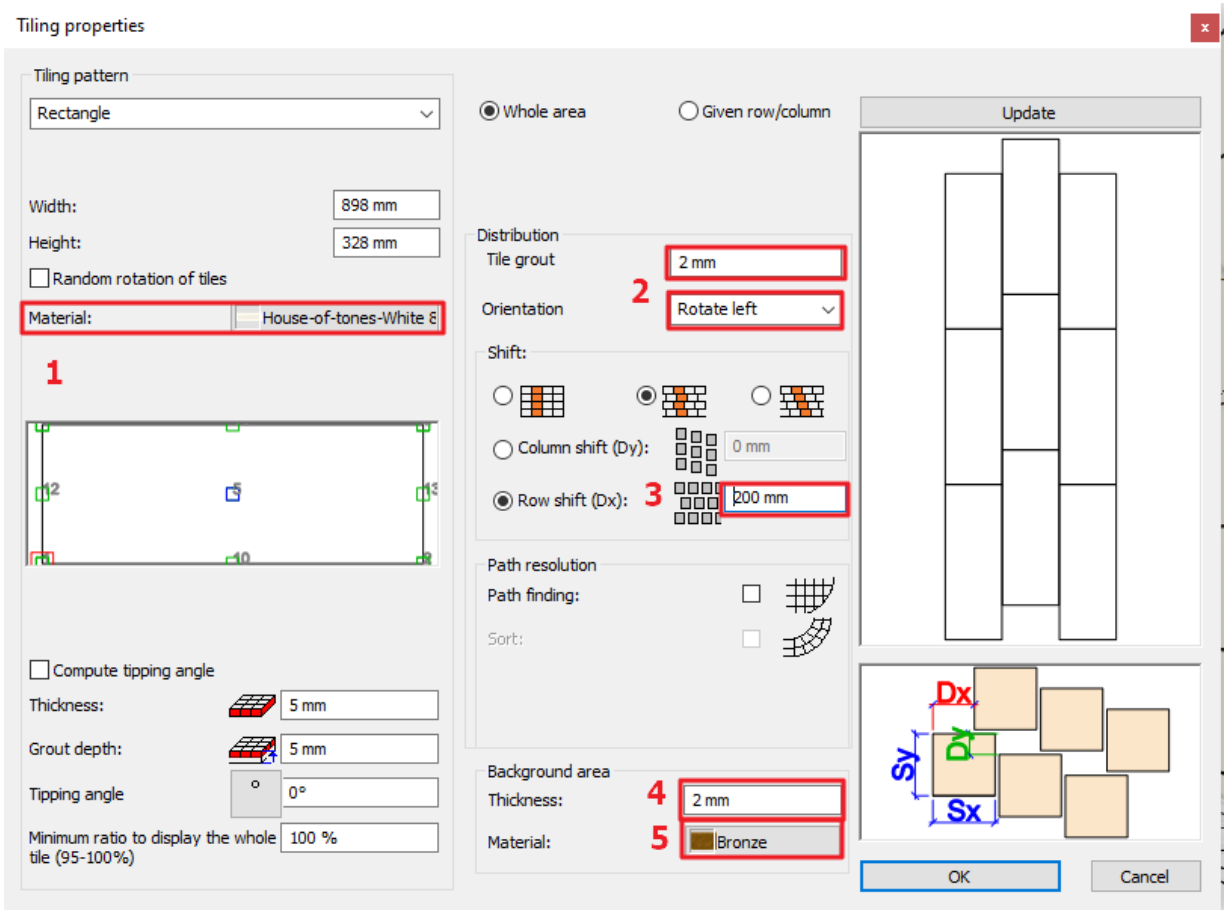
3.3.1. Wall tiling

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 color** 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)



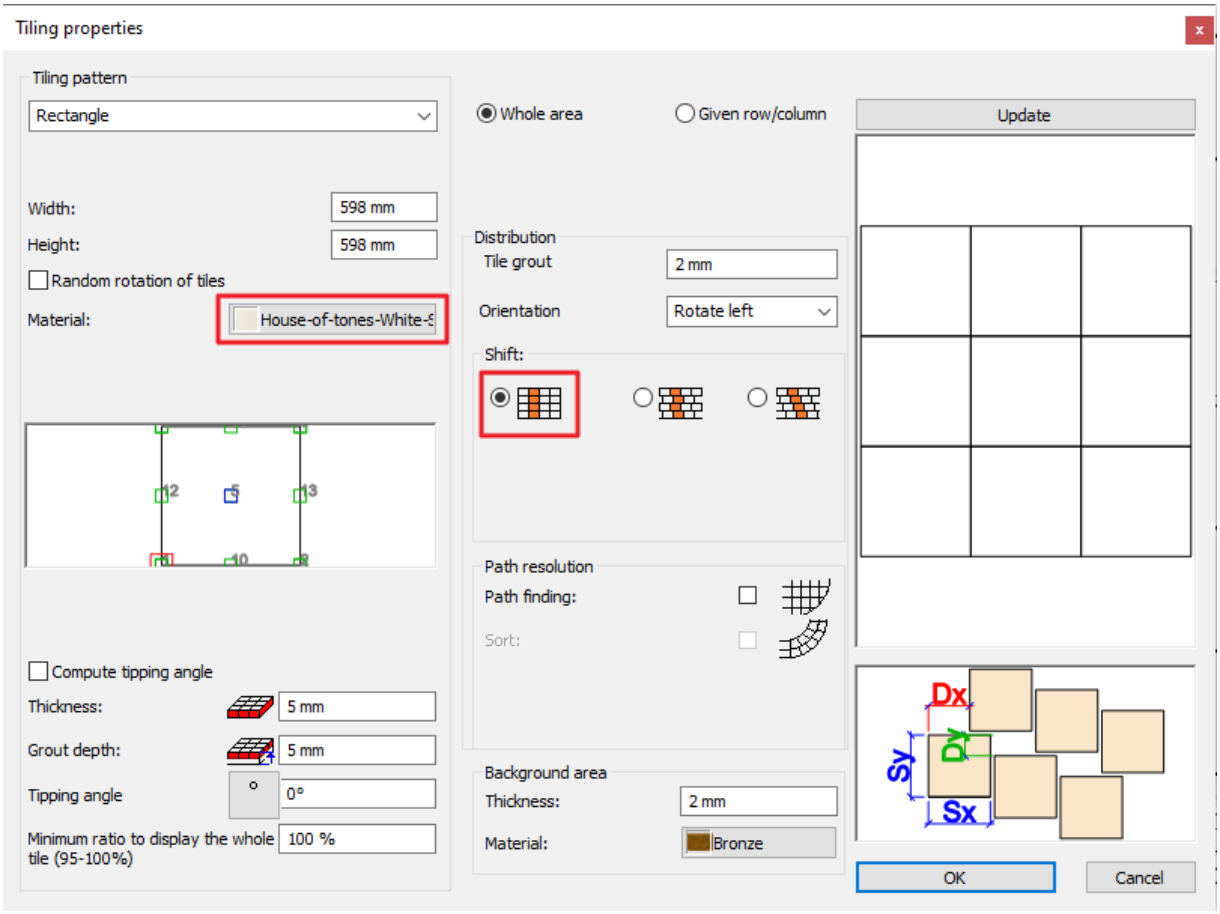
- To place the tiles, click on the OK button.
- The result can be seen immediately.

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

3.3.2. 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.



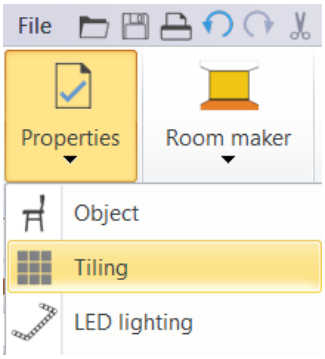
- In the appearing dialogue, click on the name of the material and select from Library **/ Material / Tile / Indoor / House-of-tones-White-STR 598x598**.

- Turn off the row shift. The dimensions of the grout and its color 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.

3.4. Creating a tiling pattern - 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.

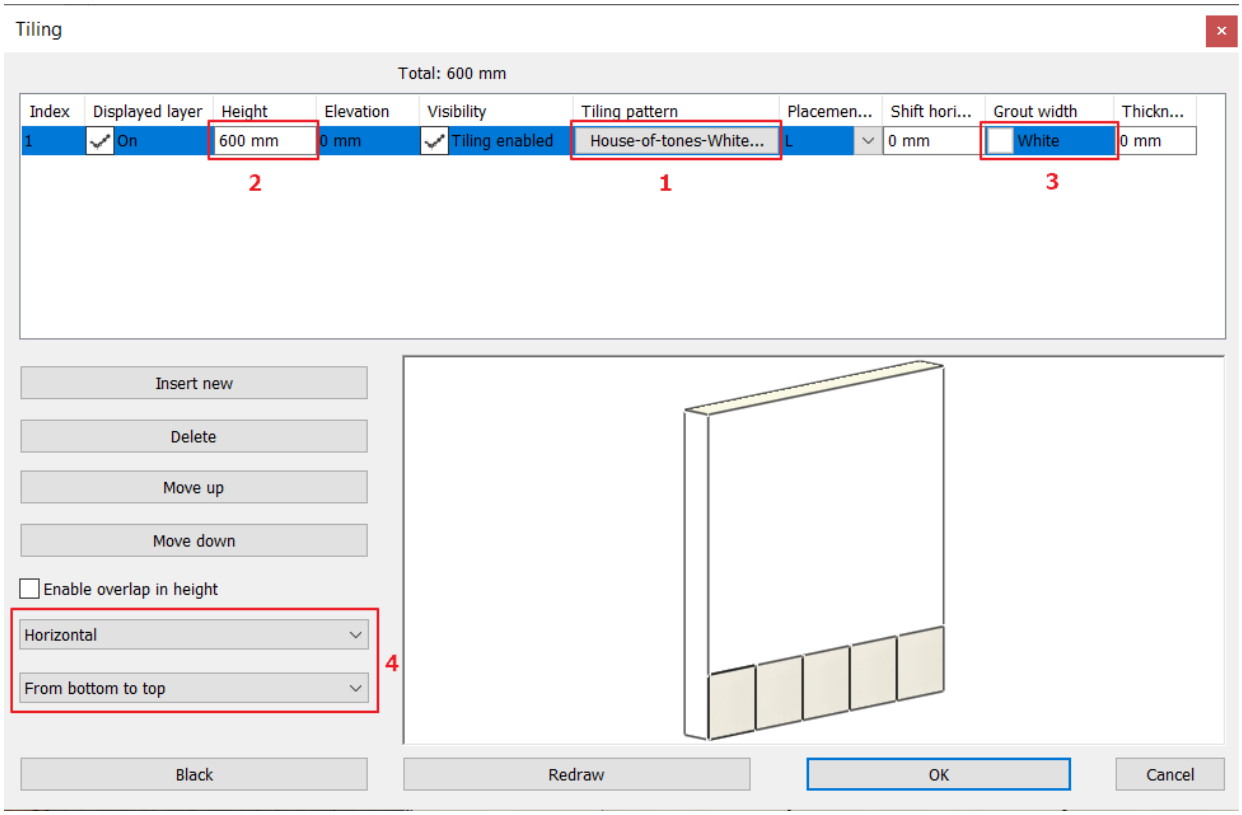
Define style: Tubadzin

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 953 mm in a 1650 mm high area: **House-of-tones-White A 898x328**
Row 5: White paint from 2600 mm to the ceiling.

Row 1: Tile

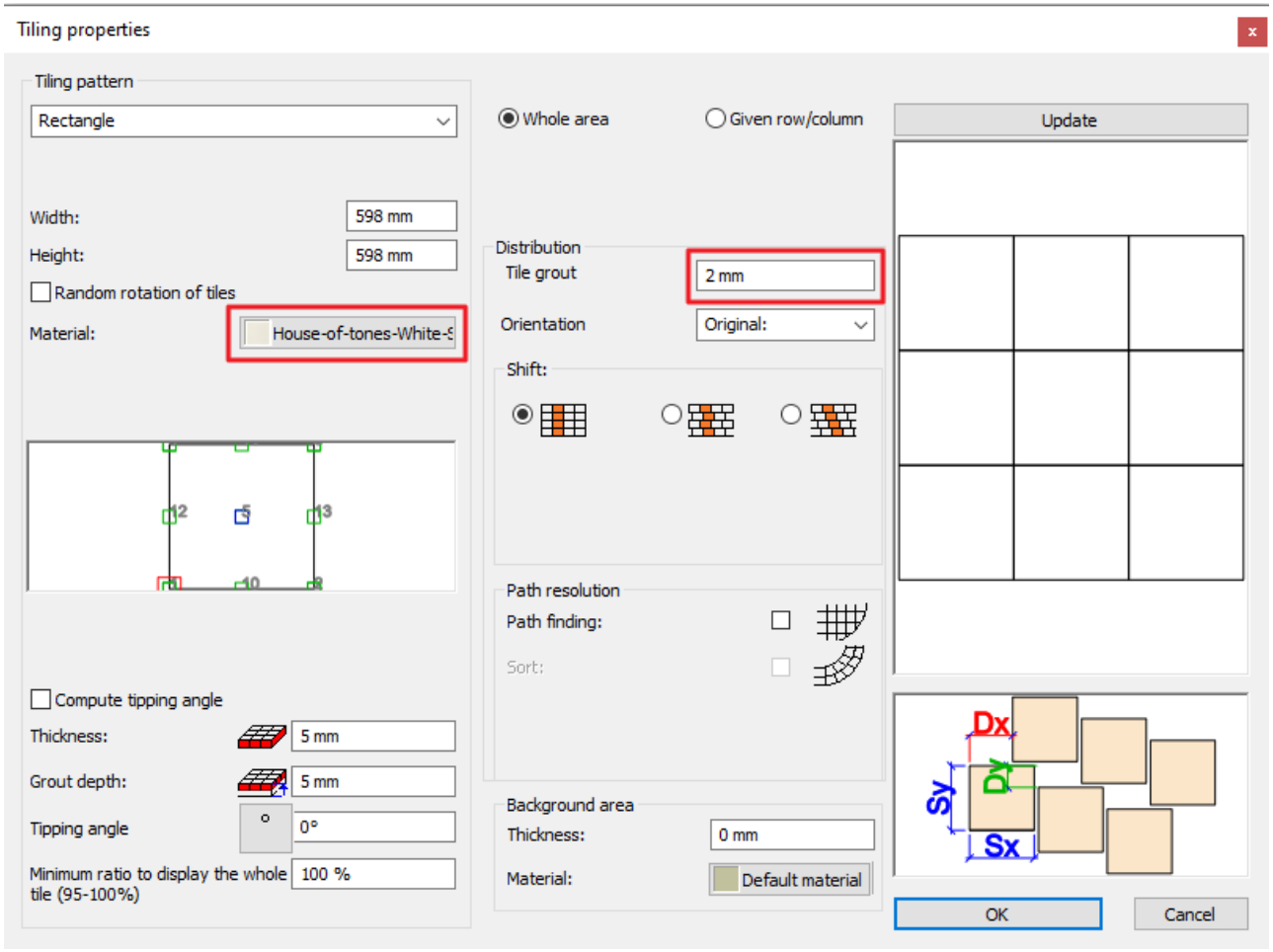
Enter the following parameters in the appearing dialog:



- Click on the name of the tile (1) 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.

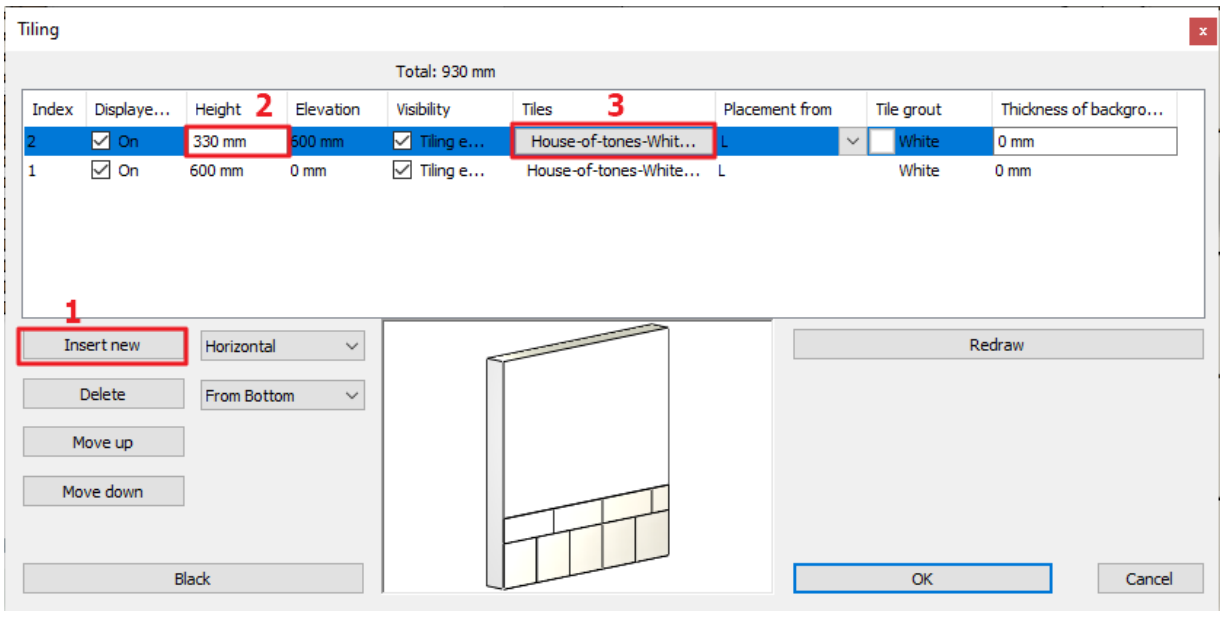


Now enter the values in the Tiling properties window:

- Total height: 600 mm (2).
- Grout: white (3).
- Rows are Horizontal and start from the bottom (4).

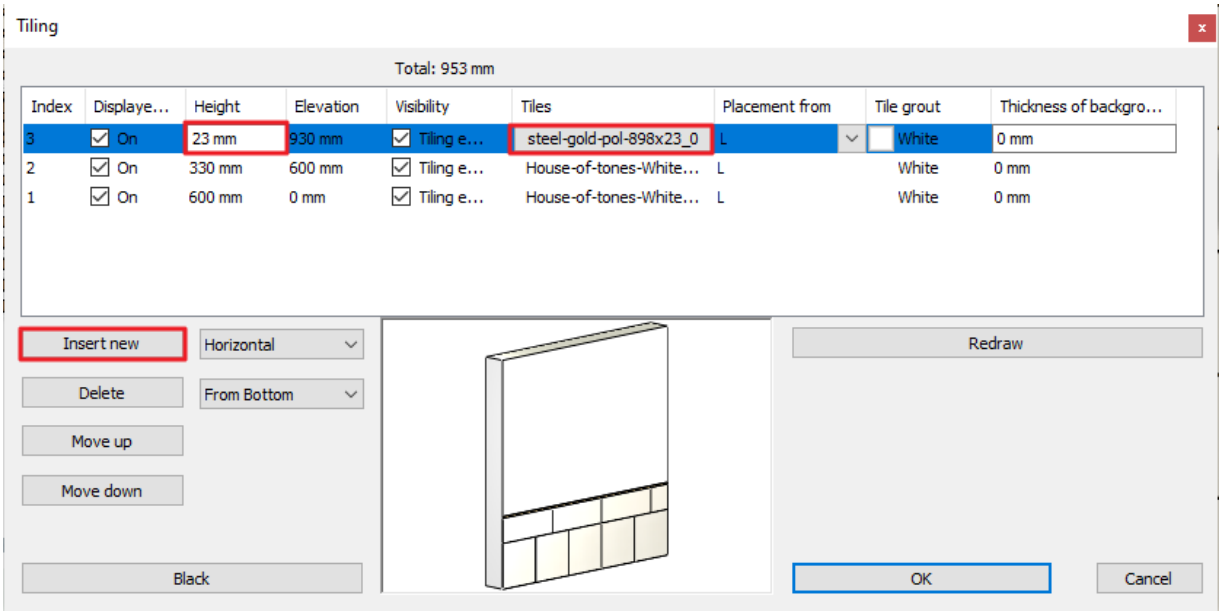
Row 2: Tile

- 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)



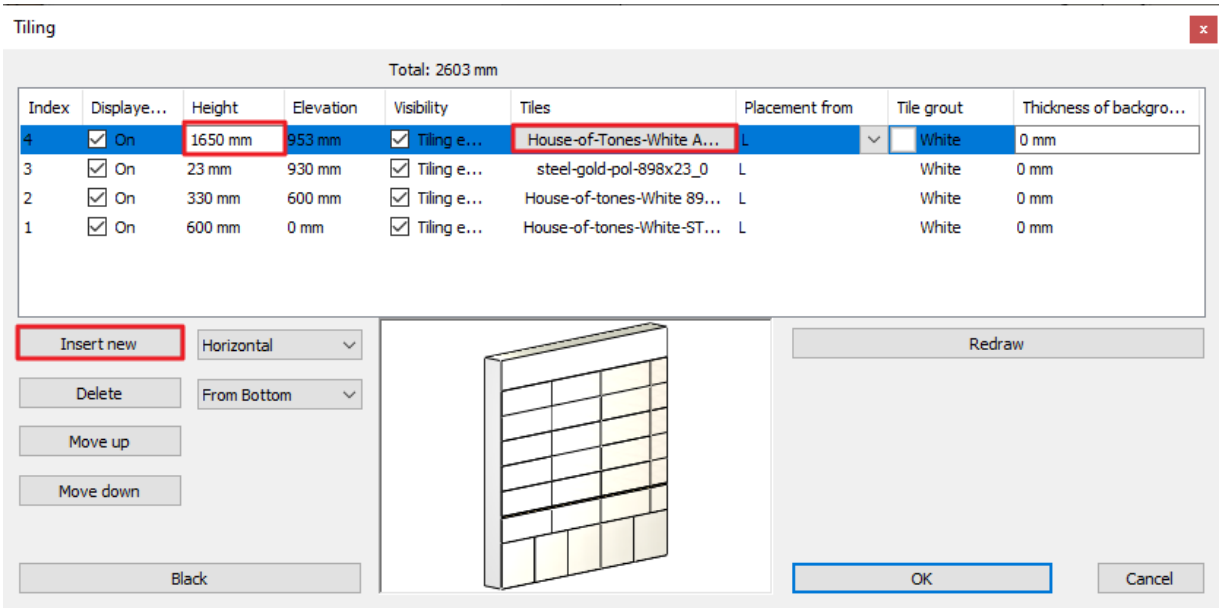
Row 3: Decor strip

- 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**



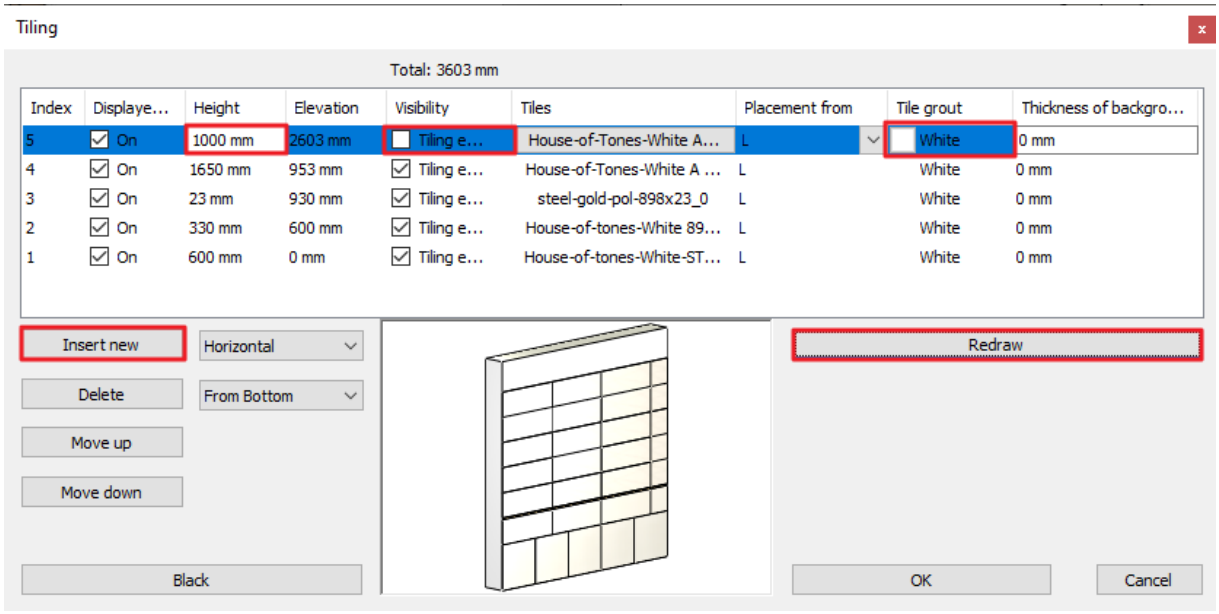
Row 4: Tile

- 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**. Orientation: Rotate left.



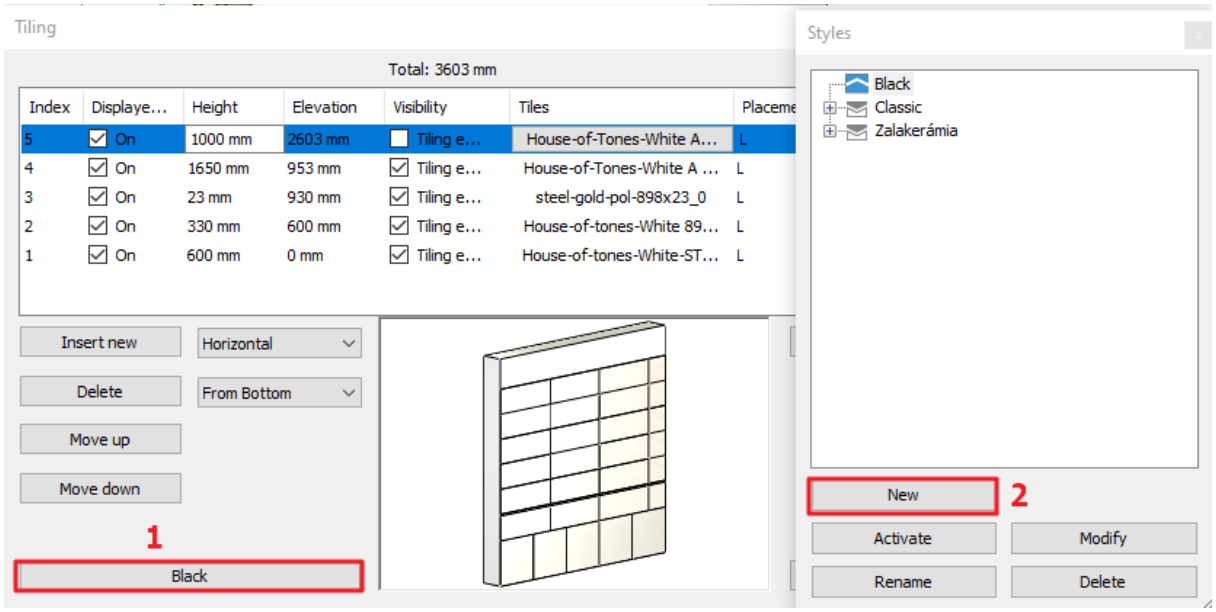
Row 5: Paint

- 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.

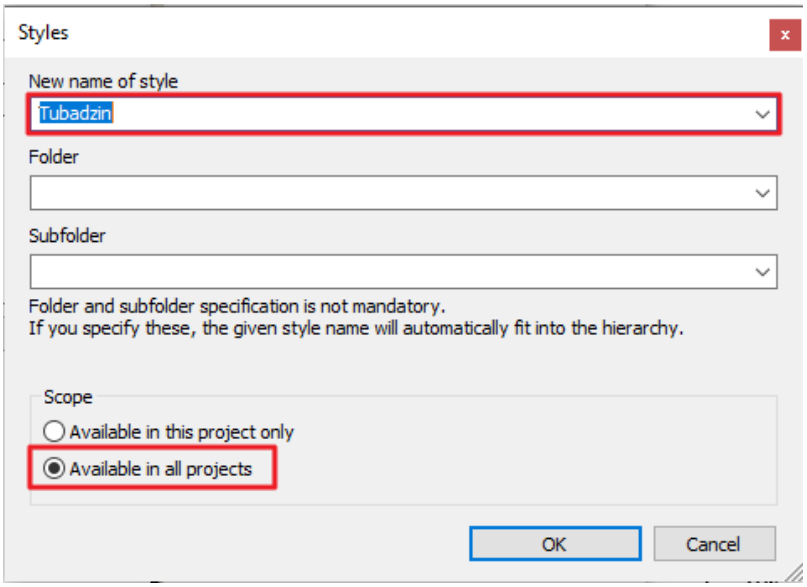


Finally, we need to save the new tiling style under the *Tubadzin* name.

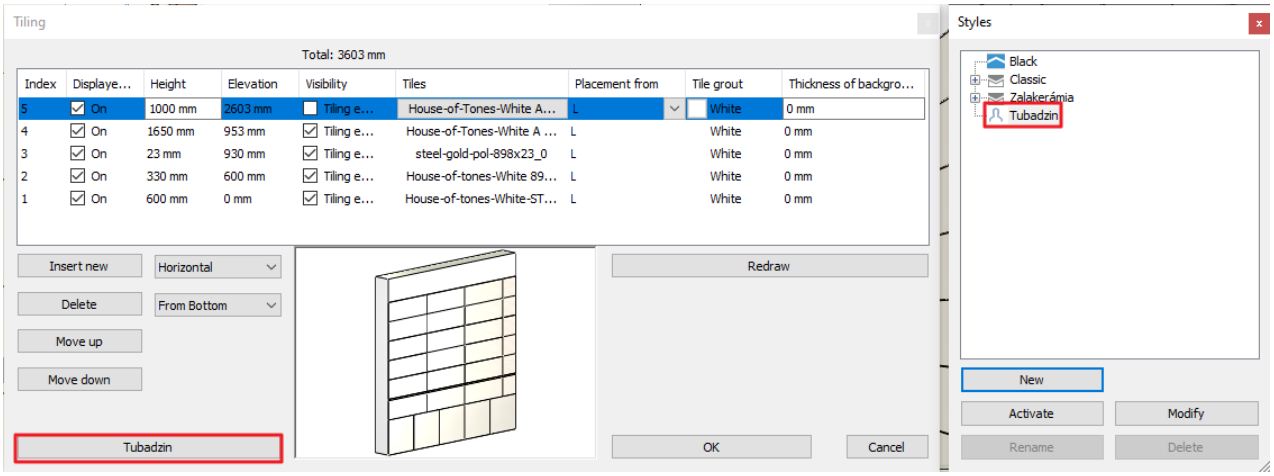
- Click on the Style name button (1).



- 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:

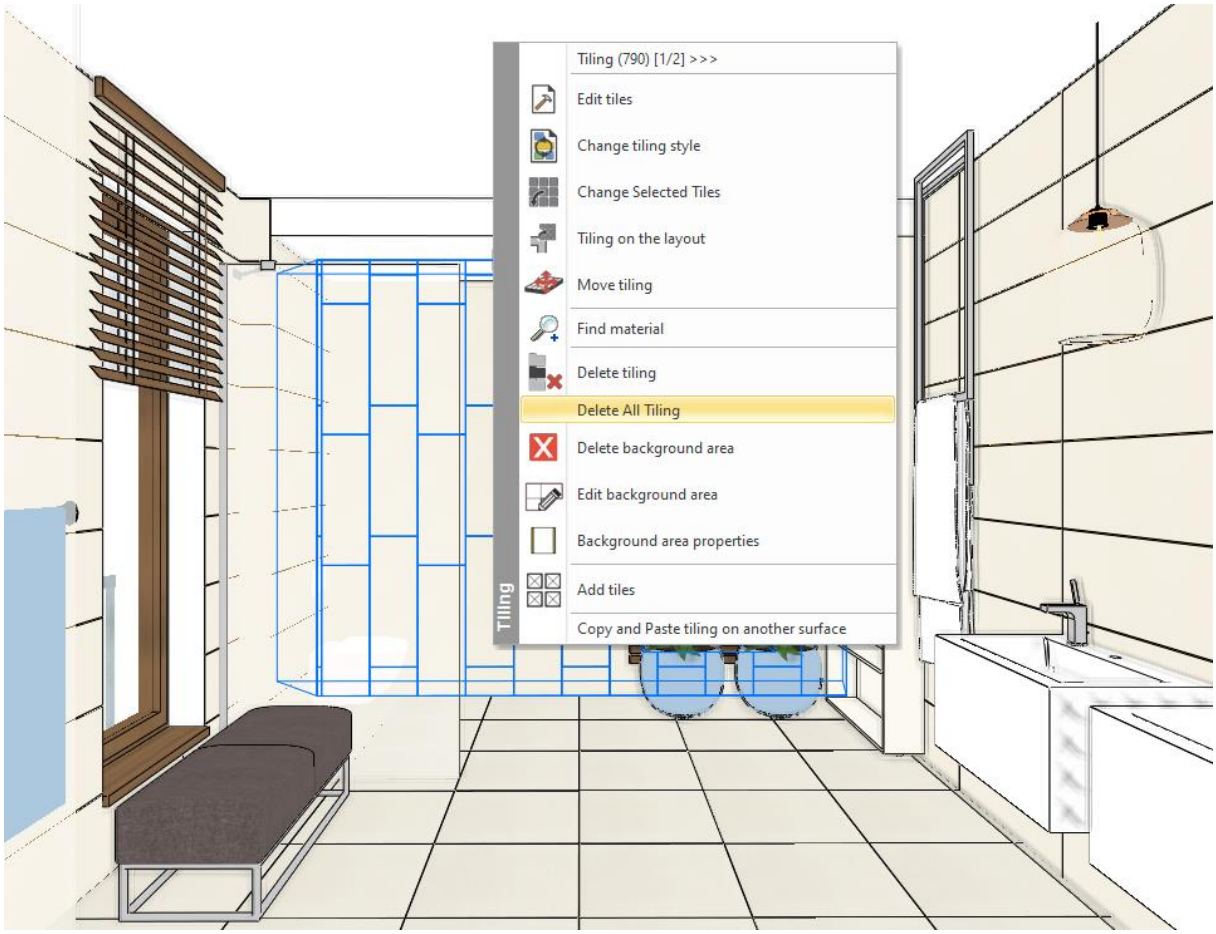


- Click on the OK button.

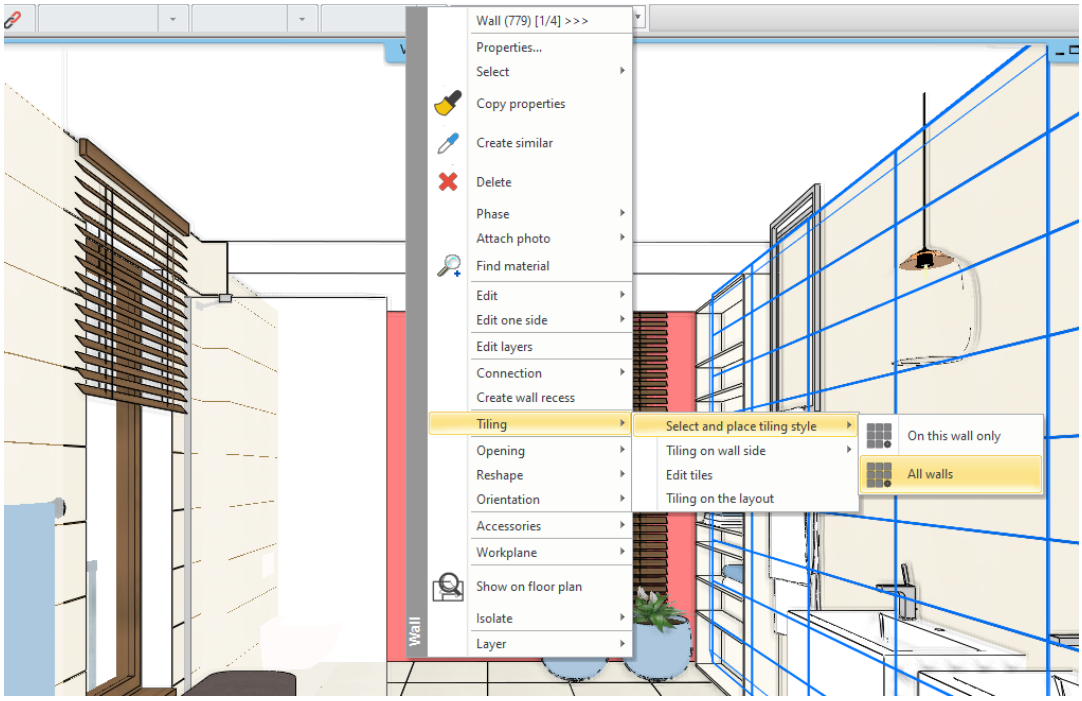
3.5. Placing Tiling Style in 3D

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.

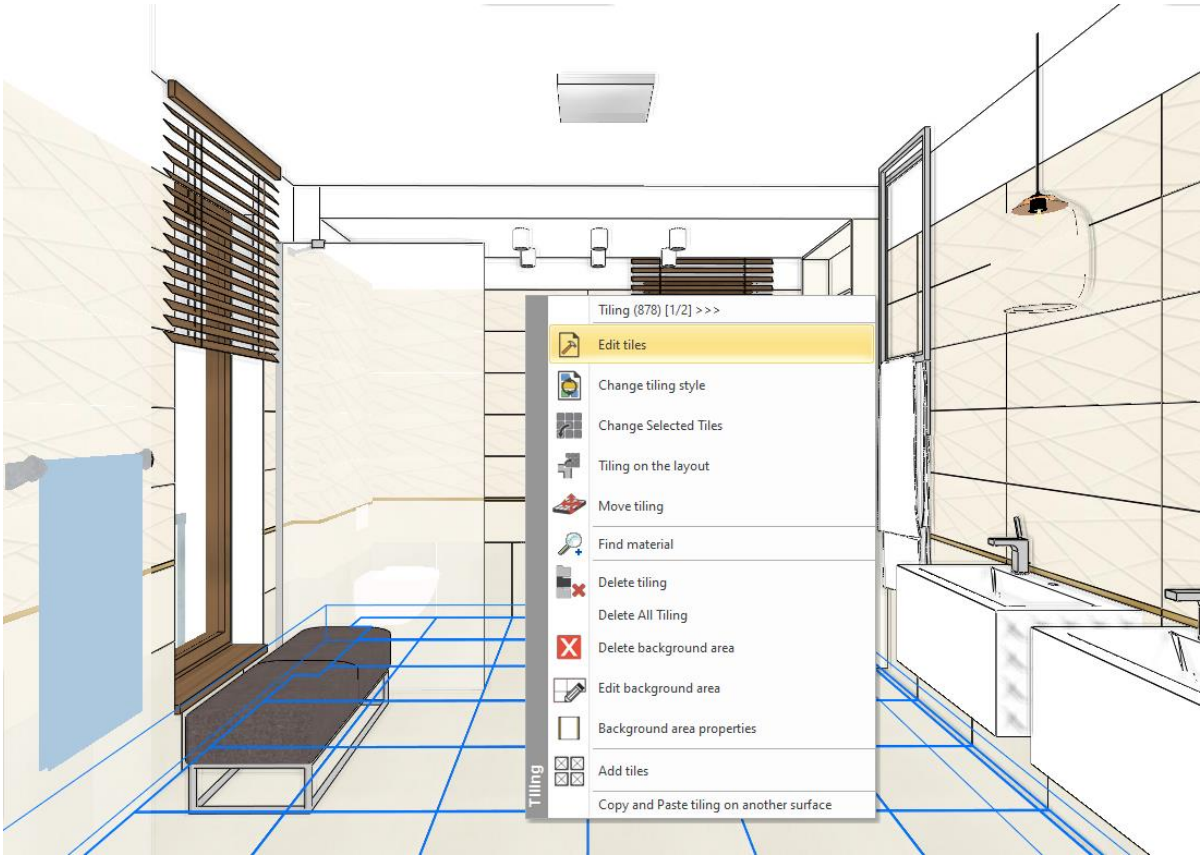


- In the appearing dialogue you need to make sure that the style Tubadzin is activated, and accept with OK.

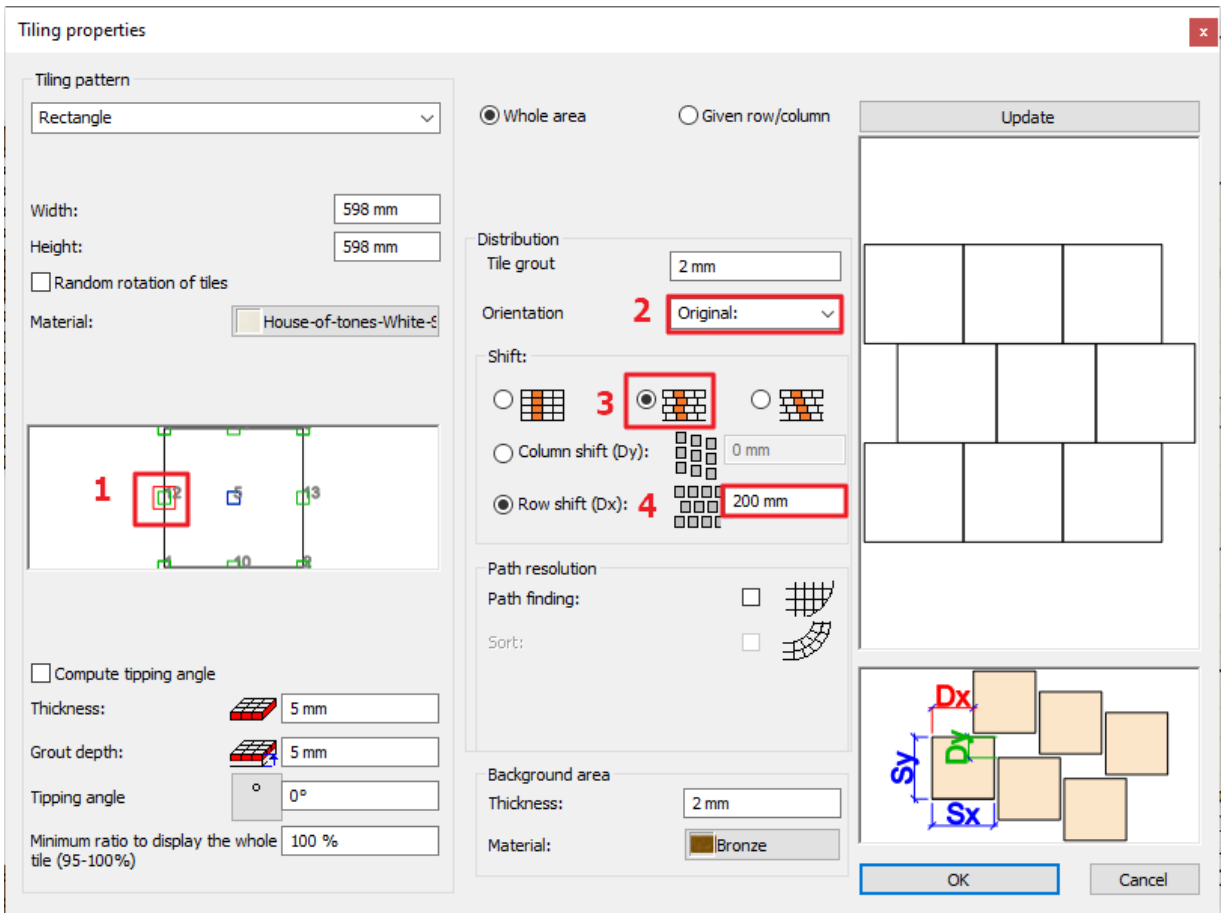
3.6. Modifying the tiling on the floor

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)



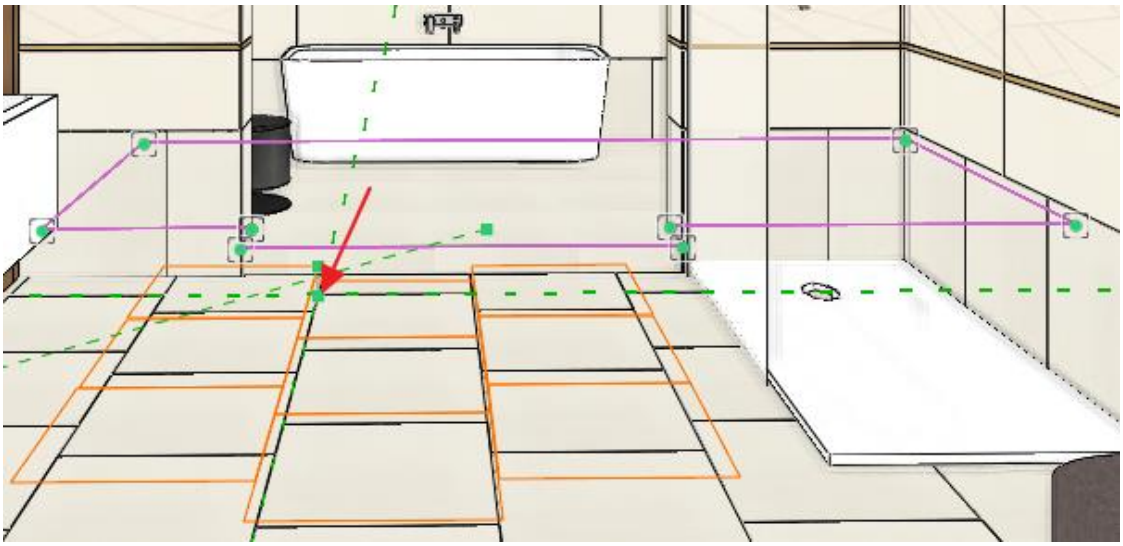
- Place the first point in the same corner point we used for the first time, then place the second point, which defines the rotation, hit ENTER so the tiling will be placed horizontally.

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.

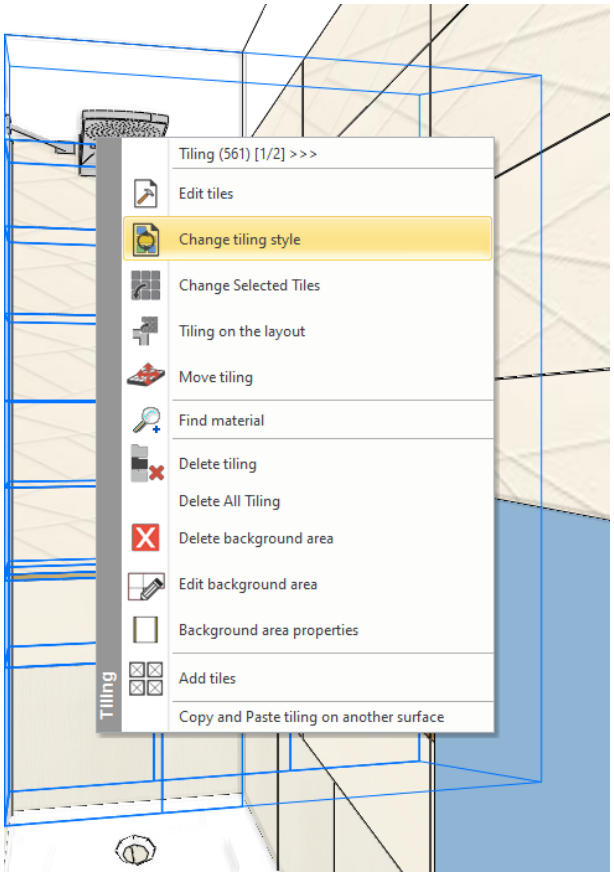
Pay attention that the reference point of the tile should be in the upper left corner point. The orientation should remain original. When placing it, you can adjust the reference point to the corner point of the tile on the previously tiled slab so the grouts will be continuous, even though the second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



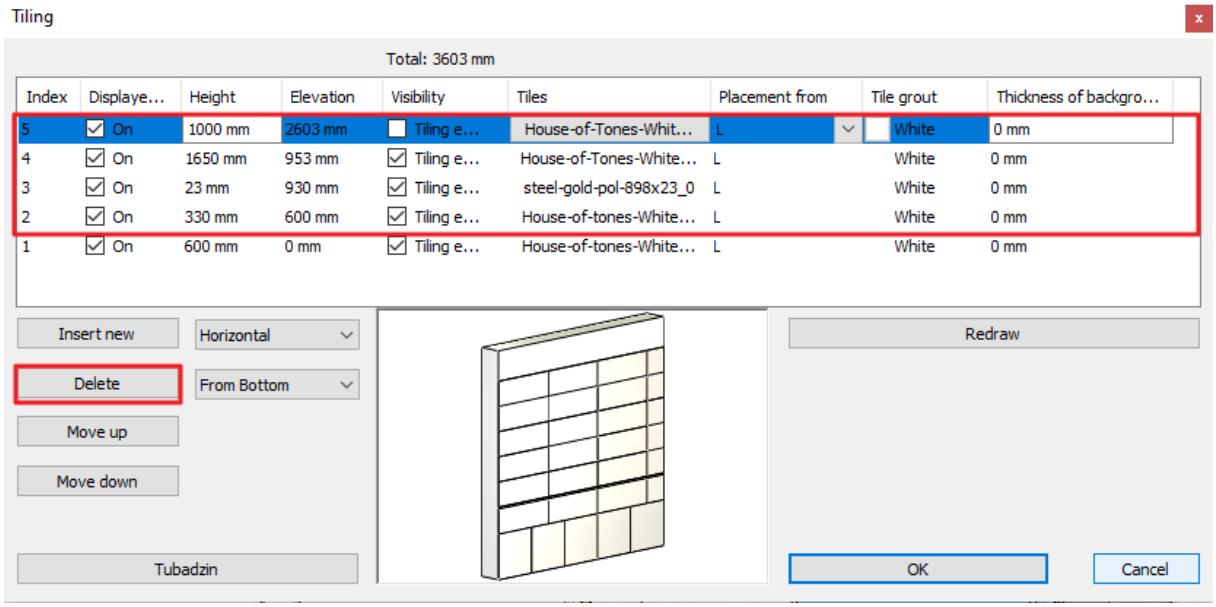
3.7. Mosaic tiling

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 colors and they are distributed evenly to the 2600 mm height. Above white painting. For this, we will also create a tiling style.

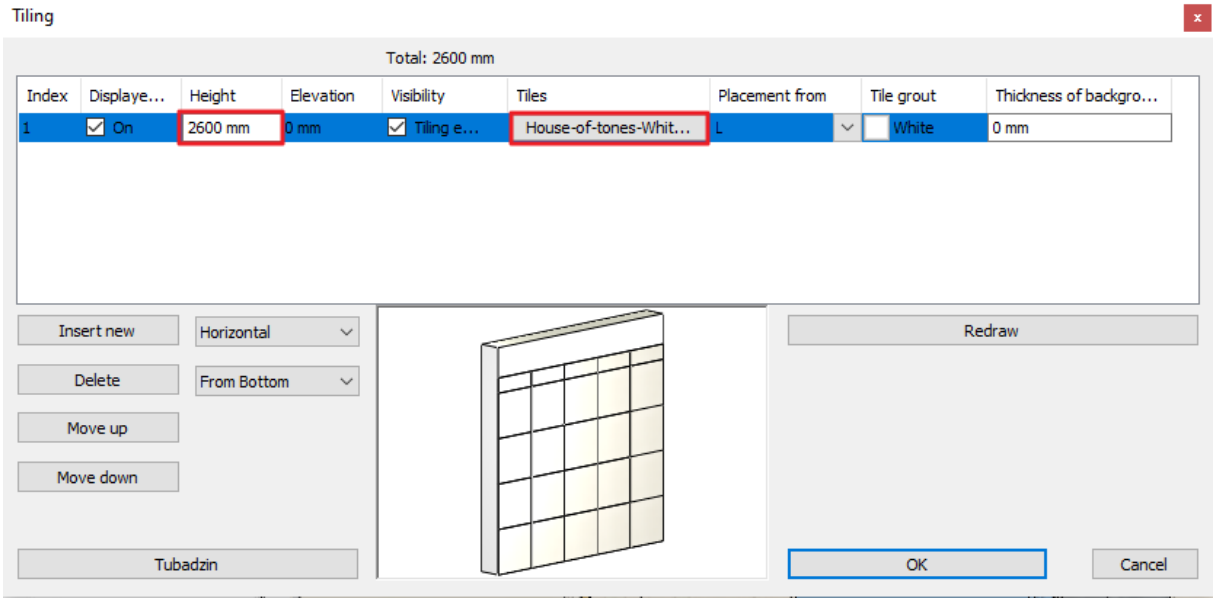
- Let's find the "Bathroom_6" view with the help of the blue arrows, from where we see the wall behind the shower clearly.
- Right click on the wall behind the shower and select the *Change tiling style* option.



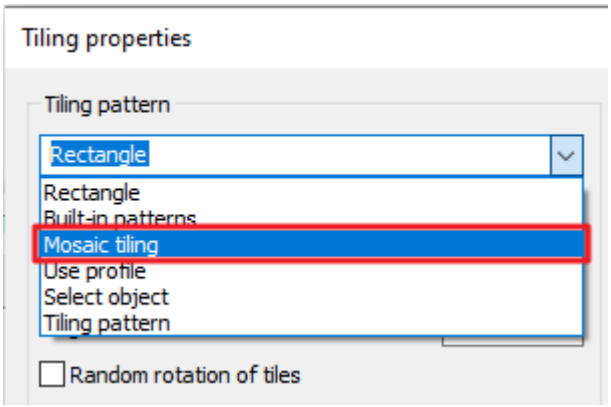
- The Tiling style dialogue appears with the Tubadzin style.

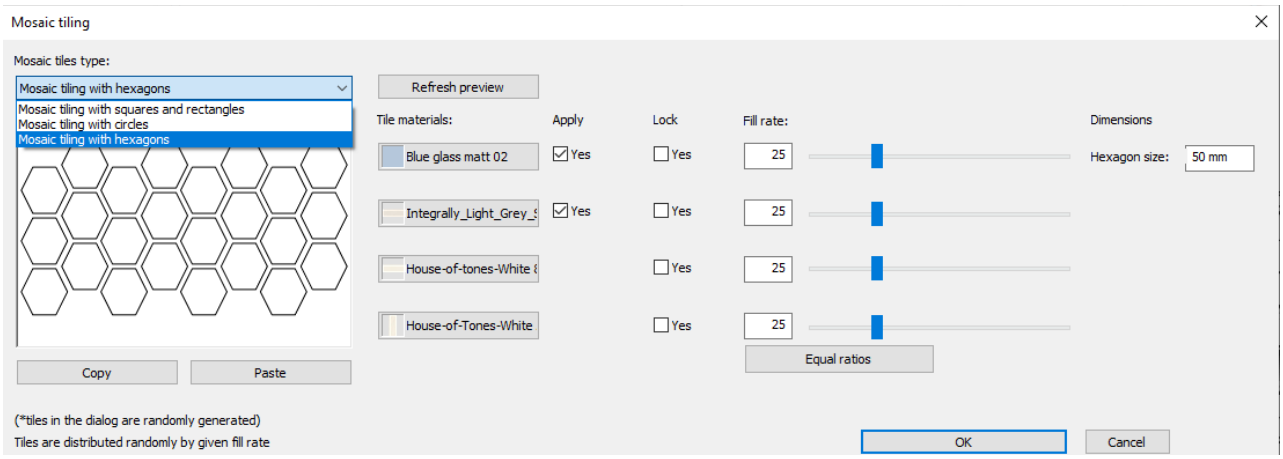


- Delete the row from 2 to 5. Rewrite the height to 2600 mm.
- Click on the tile name. We will set the mosaic tiling here.



- In the Tiling properties dialogue select the mosaic tiling.

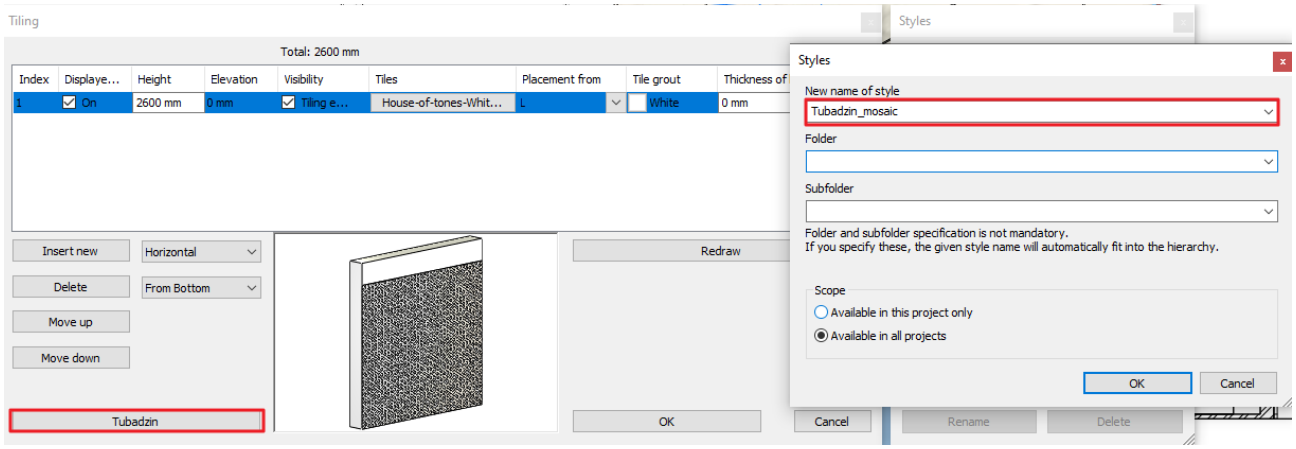


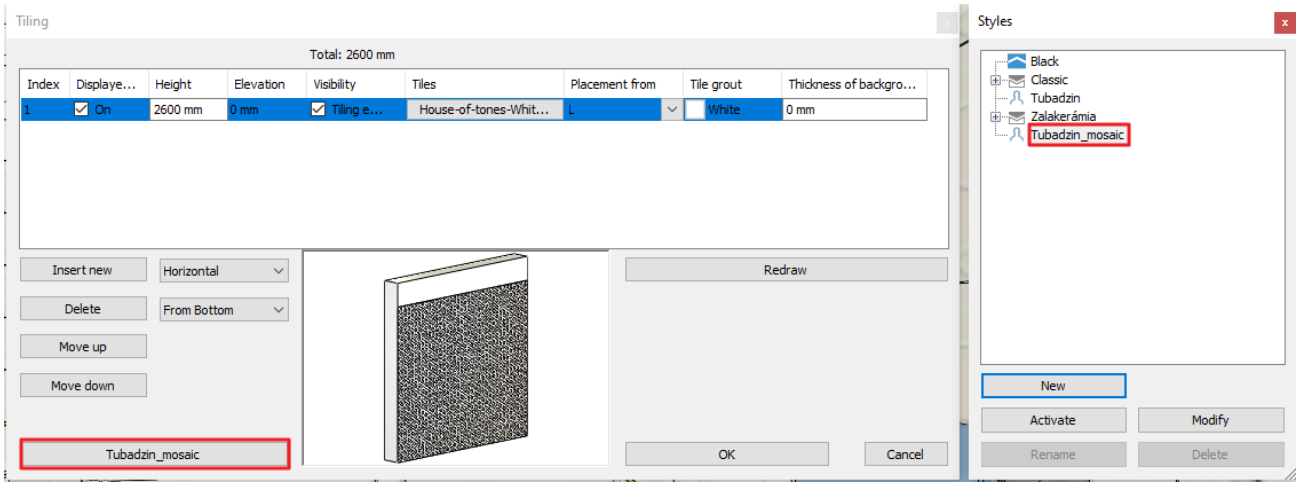


- The mosaic pattern should be *Mosaic tiling with hexagons.*
- Select the elements of the mosaic: **House-of-tones-White A 898x328, House-of-tones-White 898x328, Integrally_Light_Grey, Blue glass matt 02**
- Hit OK. Then OK again.

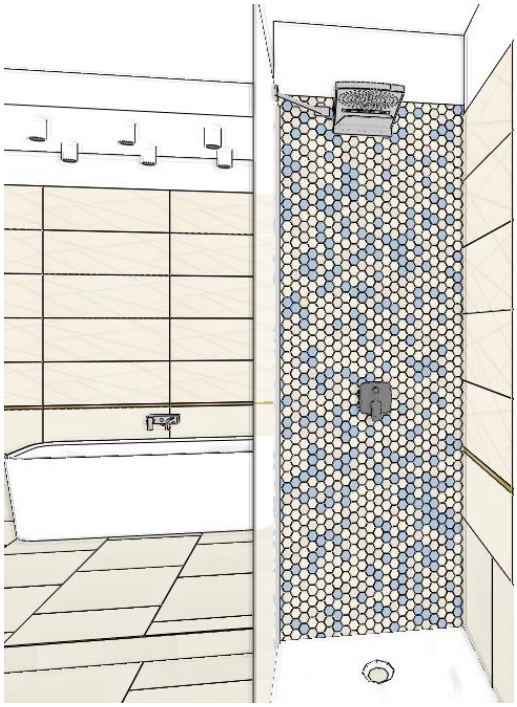
The new tiling style is ready. Let's save it under the name of Tubadzin_mosaic.

- 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.

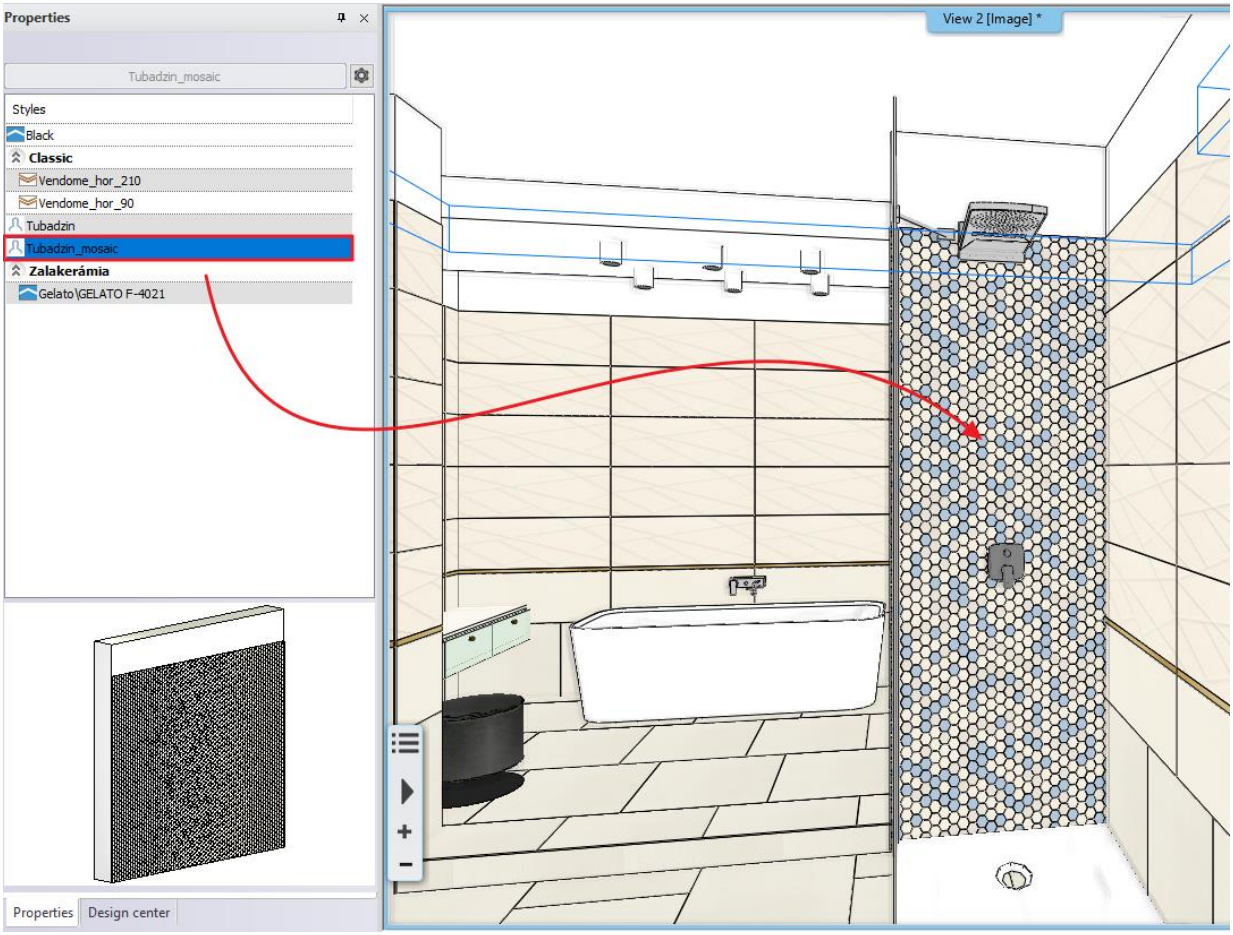


Each click displays another variation. This can be repeated until the desired allocation is obtained. Enter.

Later on, 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.

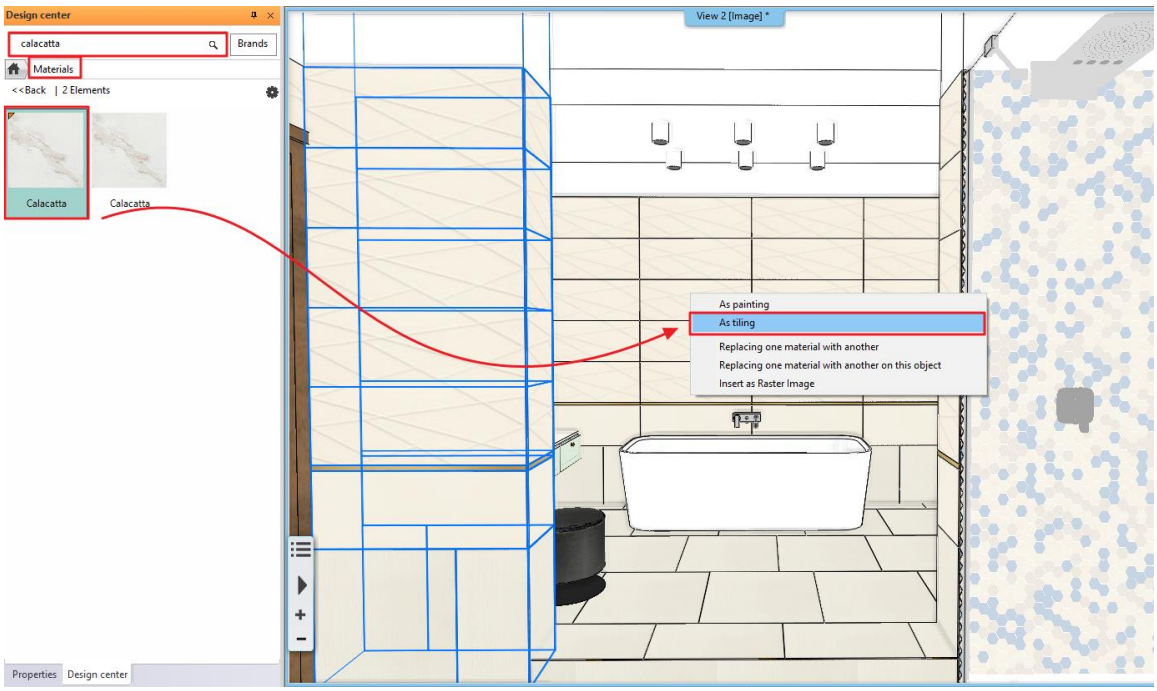
After every click a new variation will appear. This can be repeated until we get the desired layout.



3.8. Mixing tiles - Optional

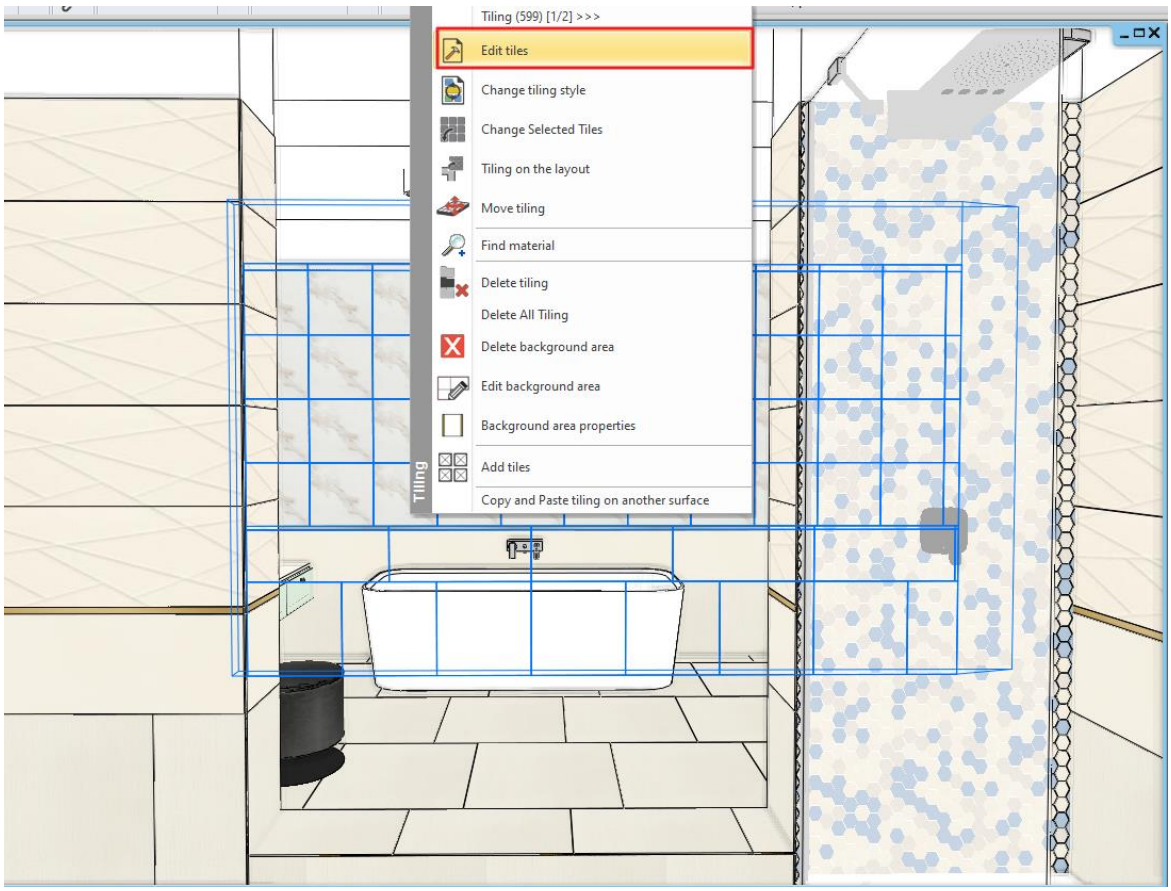
When tiling the tiler often mix the same tiles in the tiling pattern. By doing so the tiles are randomly rotated and the result will be more natural.
Let's see an example. Change the **House-of-tones-White A 898x328** tiles behind the bath tub to **Calacatta** marble.

- Choose the "Bath 3" perspective view and approach the wall.
- Drag the Calacatta material from the Design Center to the wall, selecting the Place as Tiling option.
- Click on a tile.

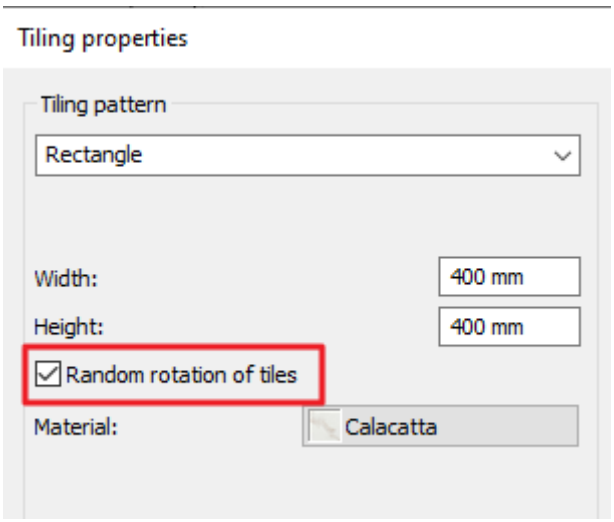


We get this regular result.

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

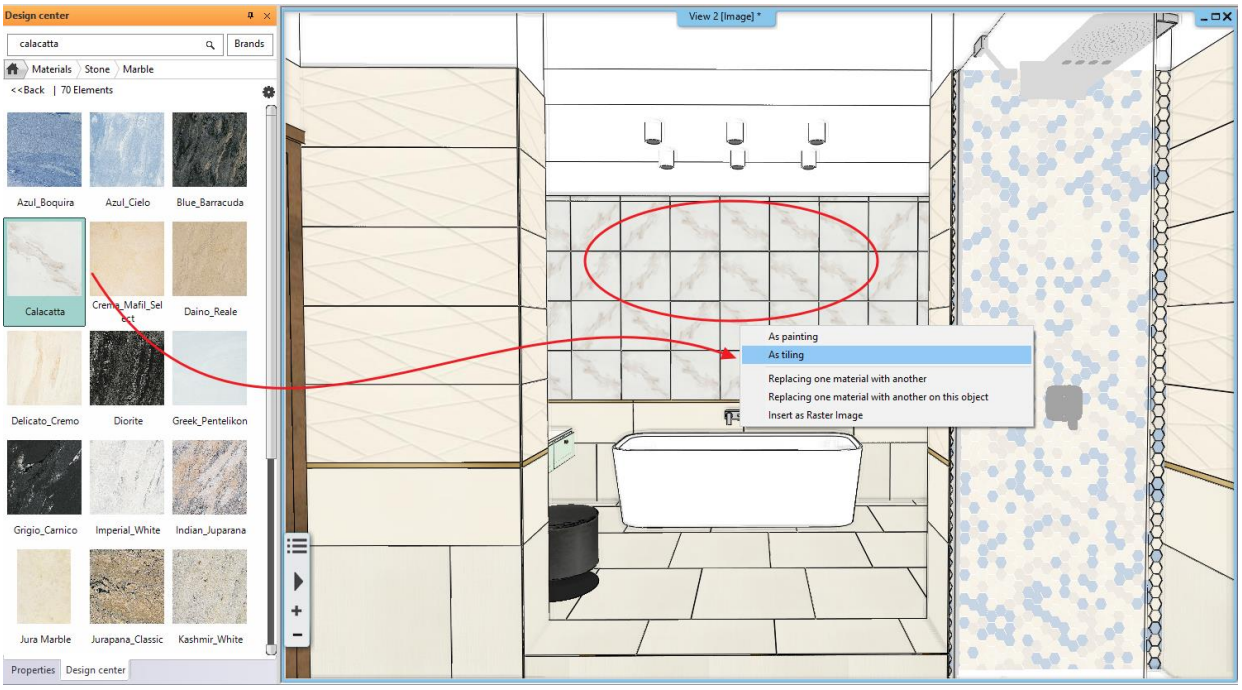


- In the Tiling properties dialogue turn on the **Random rotation of tiles** option.



- 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.

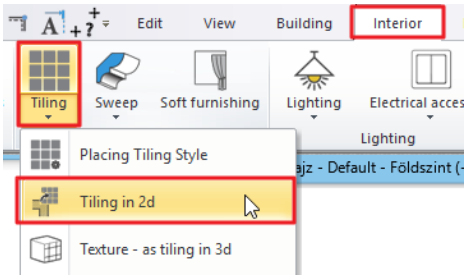
3.9. Placing mirrors as tiling

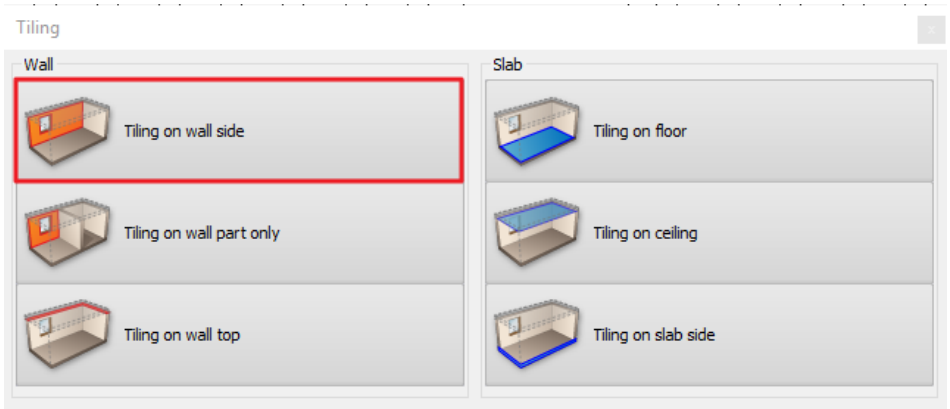
We will place a mirror above the washbasins to the left side of the door, and another one above the dressing table opposite of the shower.

3.9.1. Mirror above the washbasins

Create a wall layout

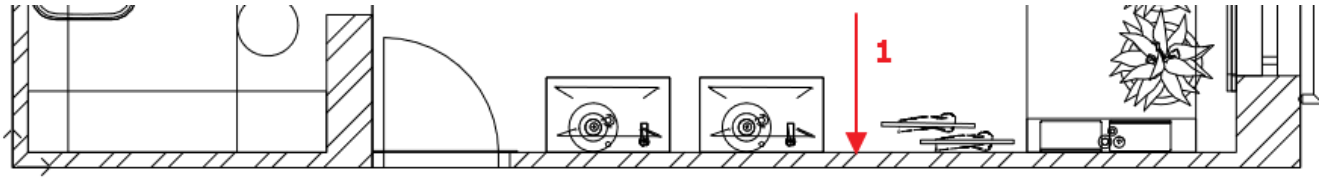
- Activate the 2D layout.
- Click on the **Ribbon bar / Interior / Tiling / Tiling in 2D** command.
- When the dialogue opens, choose the "Tiling on wall side" option.

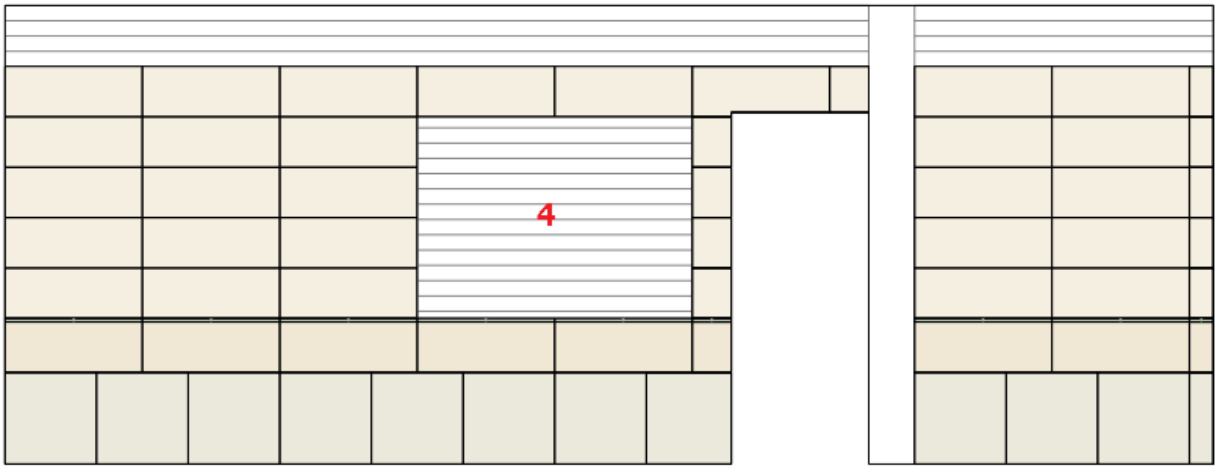




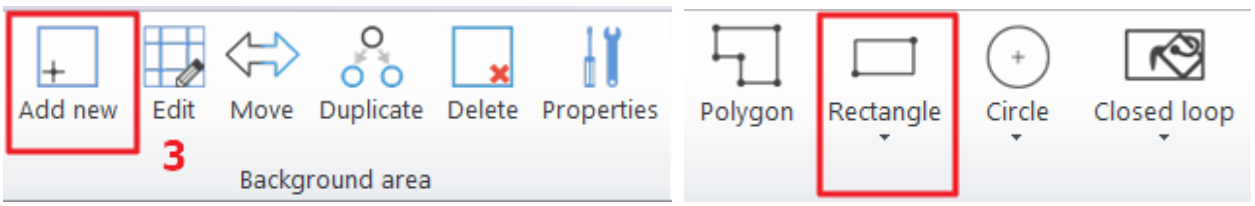
- Now, click on the internal side of the wall on the 2D plan (1) (which needs to be modified) and place the tiling layout somewhere close to the actual floor plan (2).

"Tiling on the layout" command can be found in 3D window, right click on the wall and choose it from the appearing "*Tiling on the layout*" 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.

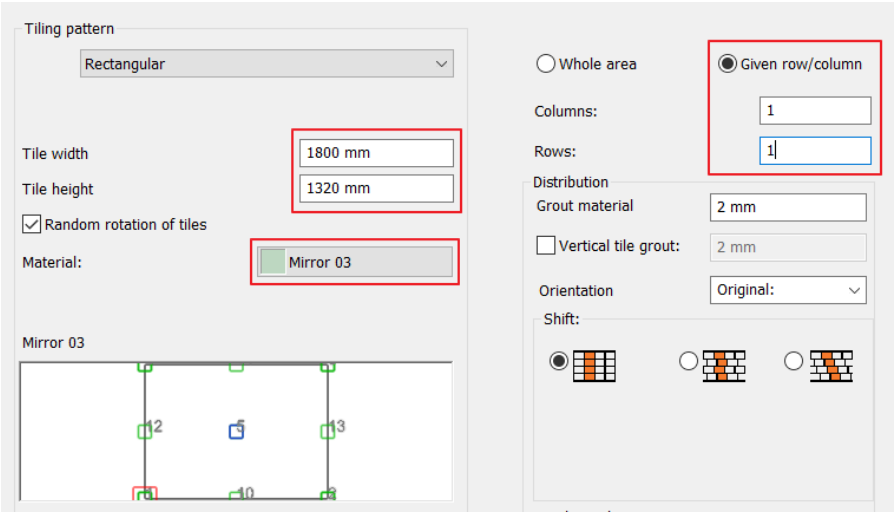




- Choose the *Add new* (3) option from the drop-down Ribbon bar. And the Rectangle option.



- According to the image above (4), draw the rectangle with its opposite corner points, which is 2x4 tile in this case. ENTER
- 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 one column, one row because we will place the mirror in one piece.



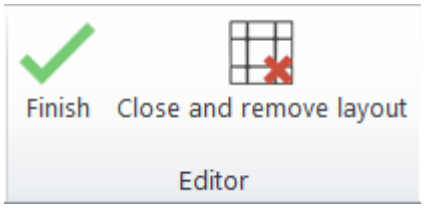
- Close the dialogue by pressing OK and place the first point of orange mirror on the new area. Then set its angle of rotation by defining the second point. Place the mirror horizontally. You can do so by pressing ENTER.

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.

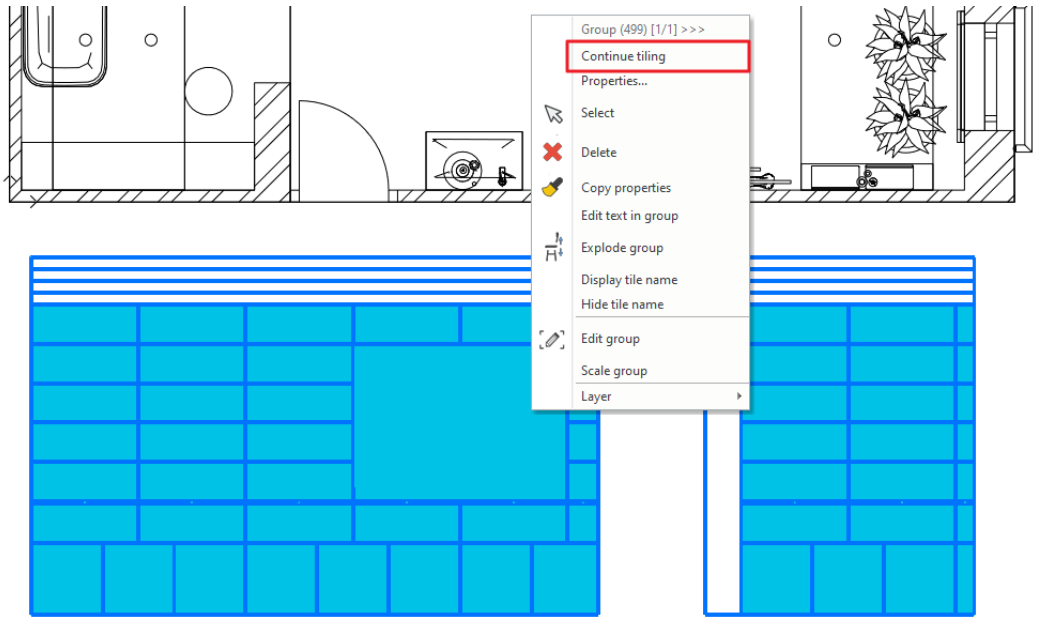


- Select the Finish option. This will keep the layout.

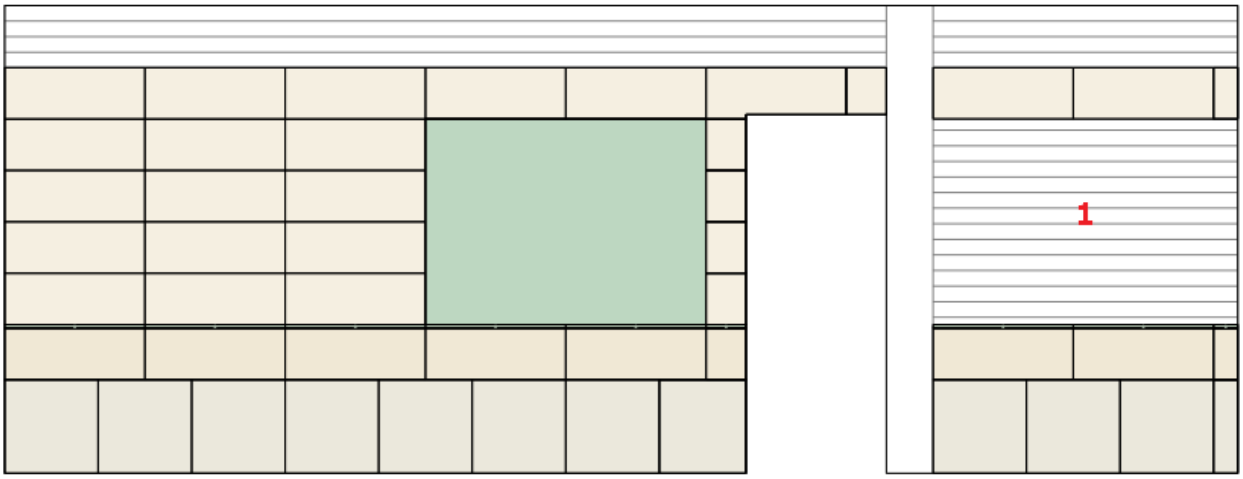
3.9.2. Mirror above the dressing table

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.

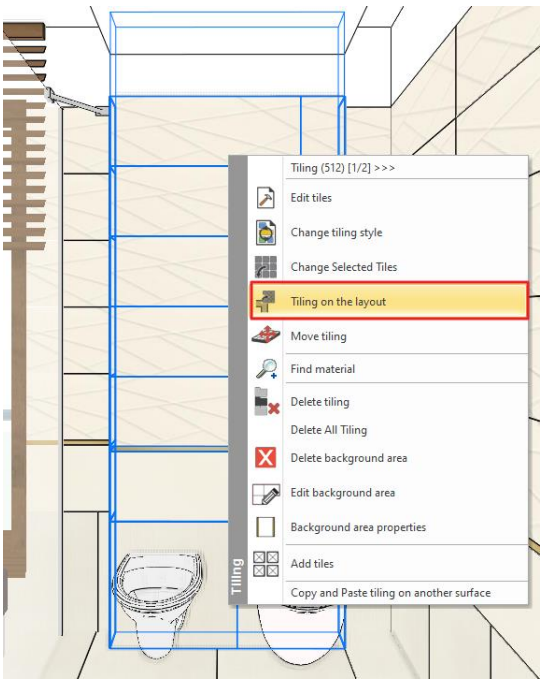
- Right click on the layout and select *Continue tiling*.



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



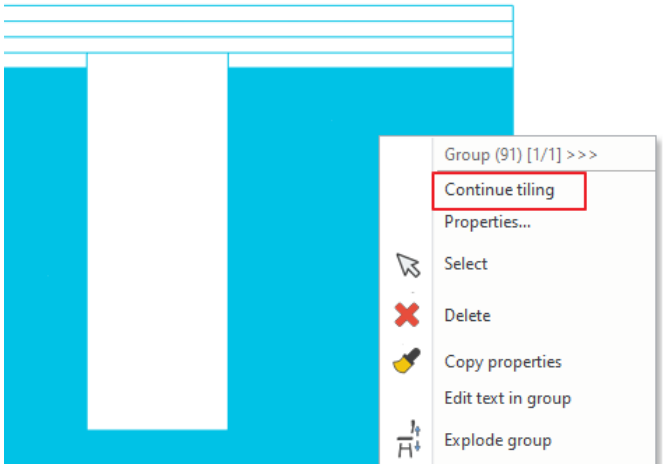
- From the appearing material library select the White material, which is the material of the grout.
- Click on the Add tiles command on the Ribbon Bar. Then select the previously created new area, because we will place a mirror on this.
- In the Tiling properties dialogue select the “Mirror 03” material and set its dimensions: 1960 x 1320 mm. Then change the settings to 1 column, 1 row 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.

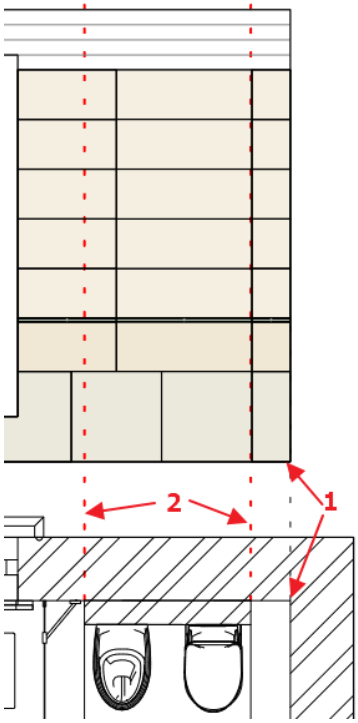


3.10. Deleting tiles on the layout

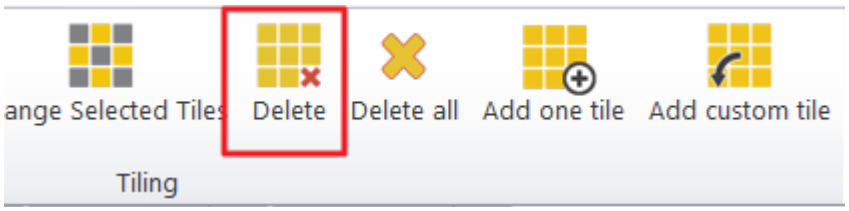
In order to have a right consignation at the end we need to delete the tiles behind the parapet wall of the toilets. To simplify it, we will only delete the whole tiles in this example.

- 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). Enter.
- Draw the two vertical lines symbolizing the parapet wall (2) so we will be able to determine the whole tiles behind the parapet wall.
- Right click on the layout, and select the *Continue tiling* option.

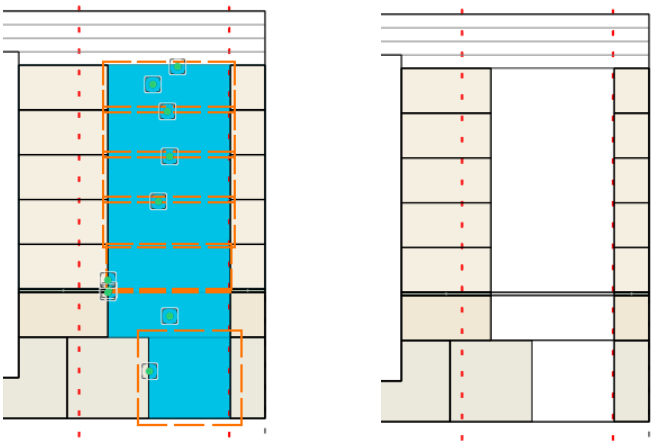




- Click on the *Delete* button on the Ribbon Bar.



- Select the tiles to delete. Enter.

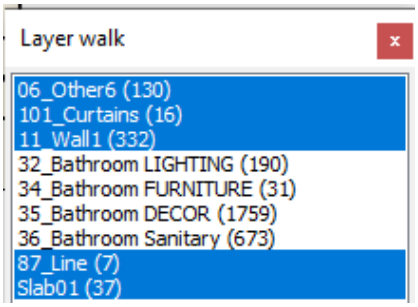


3.11. Tiling Layouts

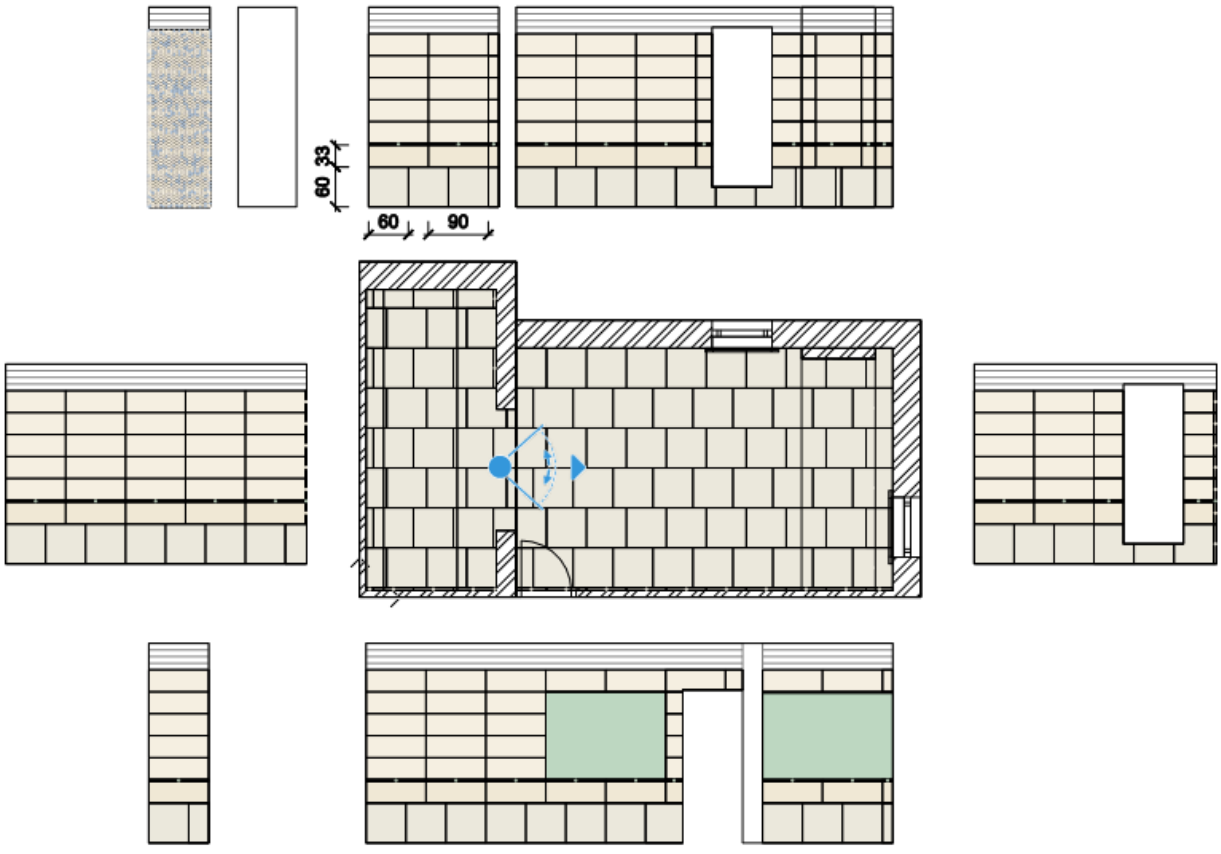
We can easily create tiling distributions if we place the tiling layouts of the walls and the floor on the floor plan. The tiling layouts can be dimensioned.

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.



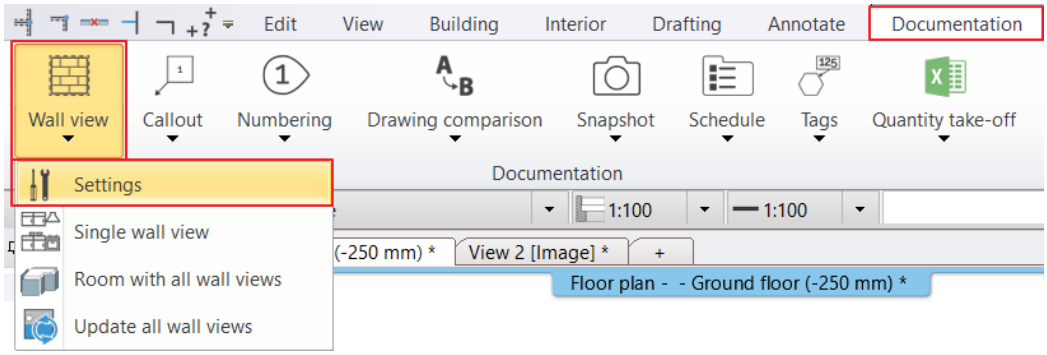
We can place the layout anywhere; we can move them later. In the case of the slab, if we press ENTER, the layout will be placed exactly on the slab.
Use the dimensioning commands to dimension the layouts.
We generated the following tiling layouts. It is advised to turn off the *Bathroom* layers.



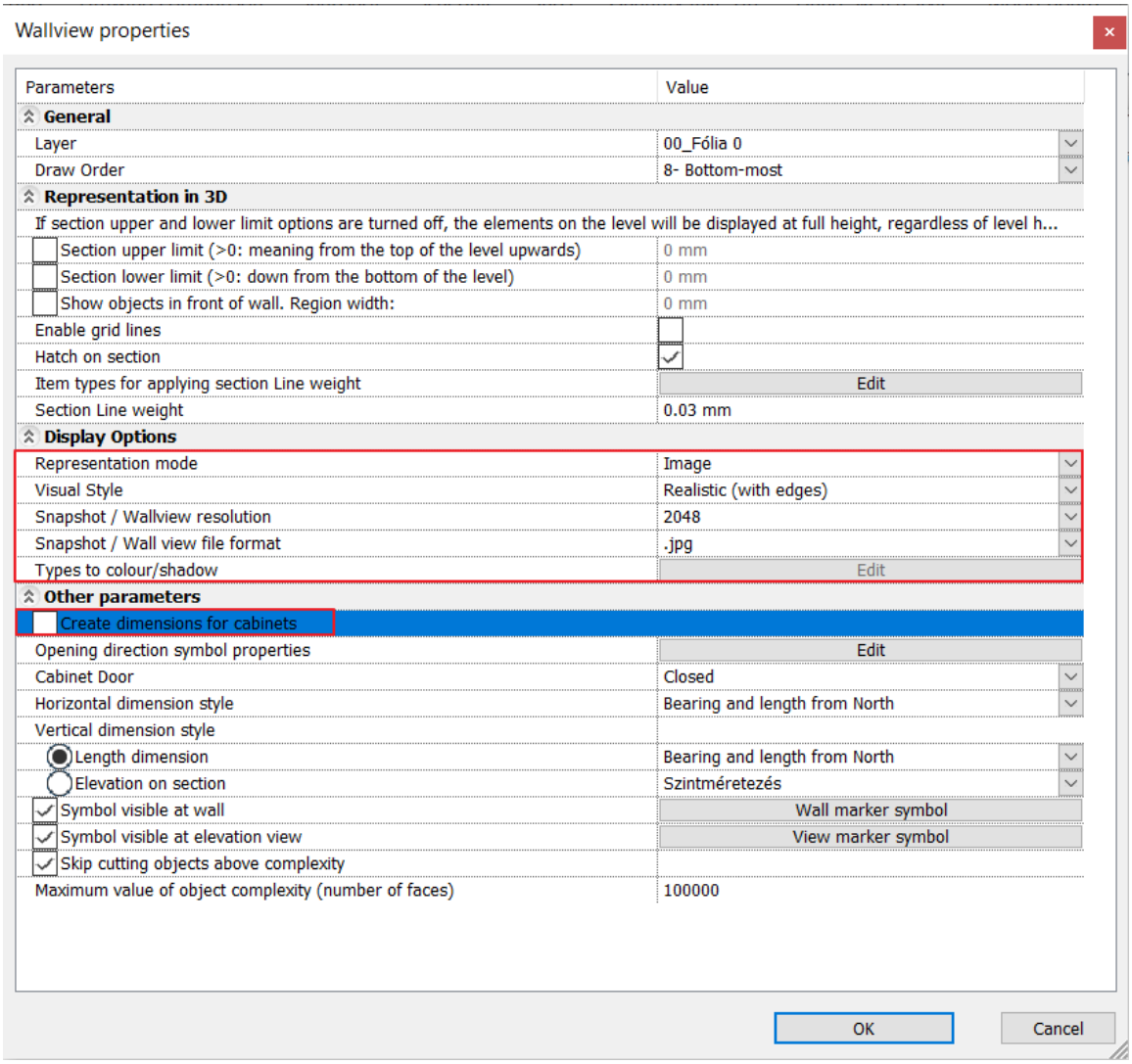
3.12. Wall elevation view

The tiling layout offers you a line drawing visualization of the tiles.
If you need a colored 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 / Settings** command.

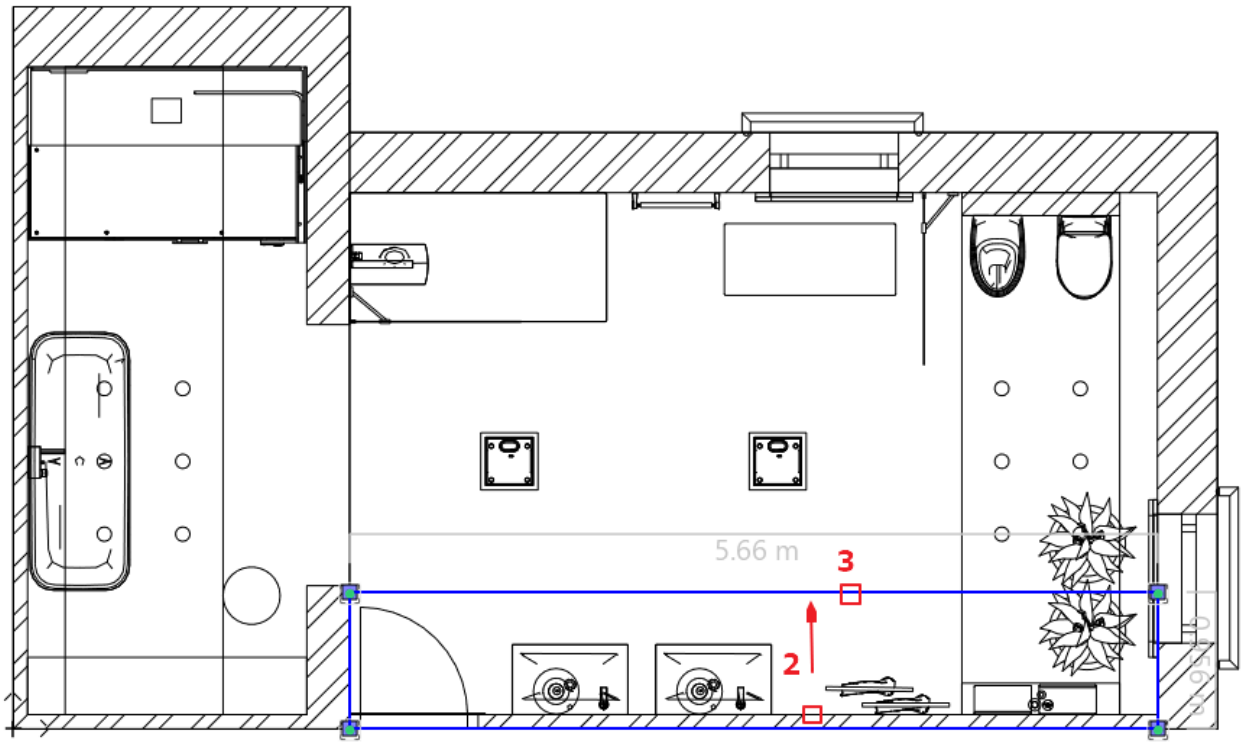


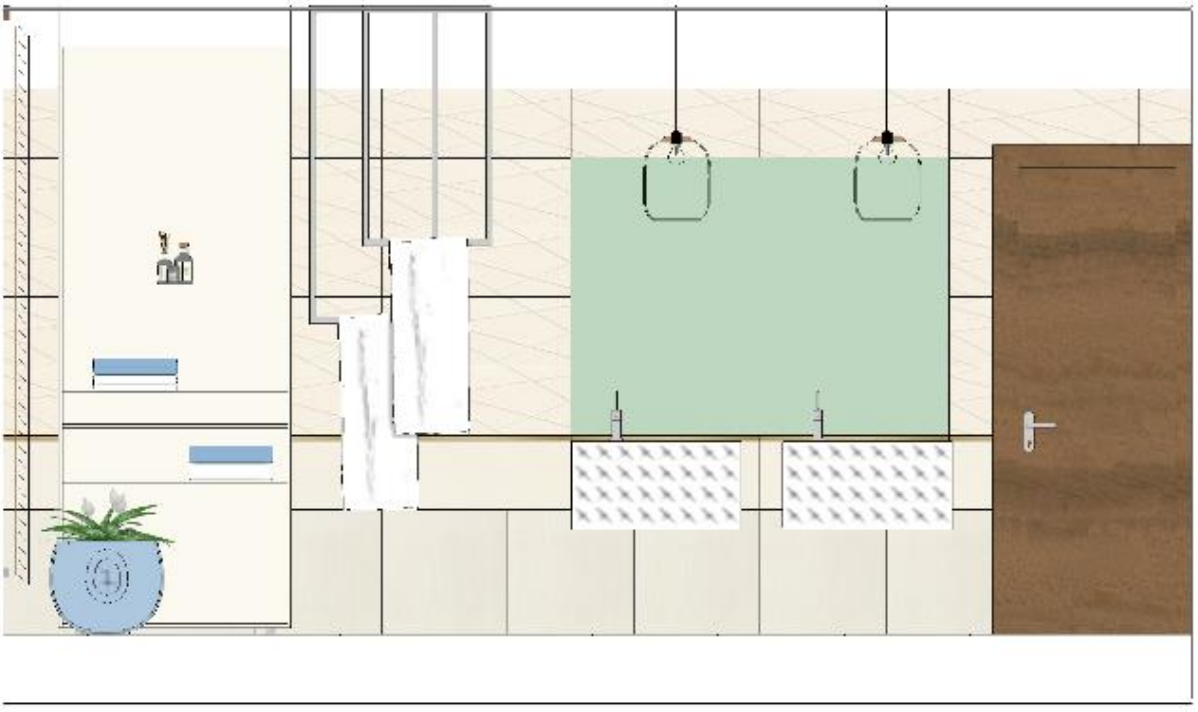
- Here you set the *Image representation mode* and the *Realistic with edges visual style*.
- Turn off the *Create dimensions for cabinets* option.



- Start the **Ribbon bar / Documentation / Wall view / Single wall view** command.
- Click on the internal part of the wall. (2)
- Move the orange arrow and click on the desired point (3). A blue rectangle will appear, indicating the area to be displayed by the wall view. Enter.
- The wall 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.

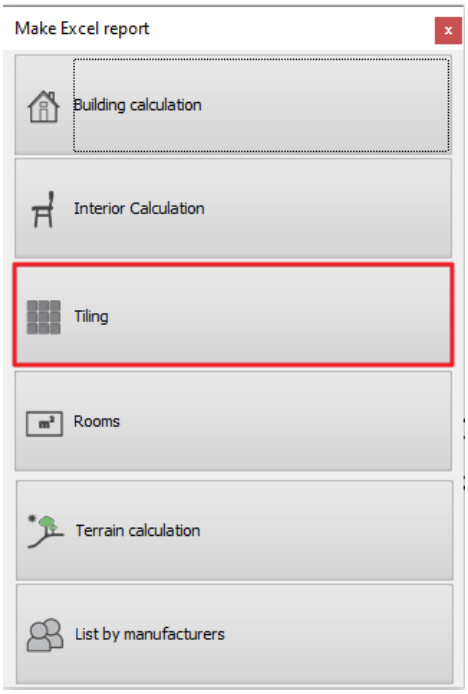




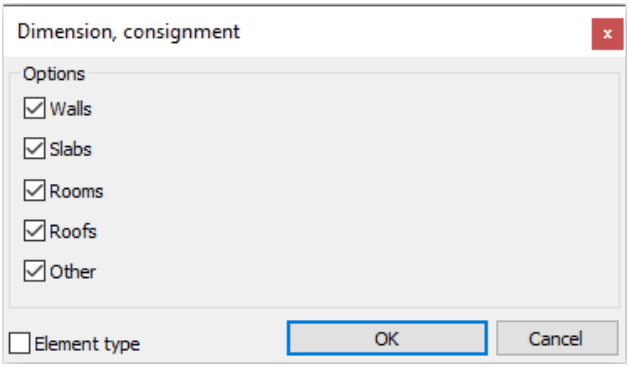
3.13. Tiling consignation

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.



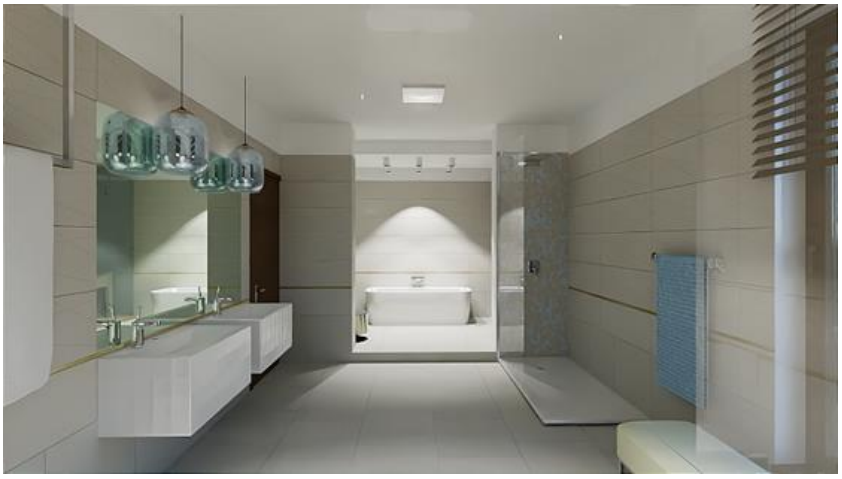
- In the appearing **"Dimension, consignment"** window click on OK.



- 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.

Open your web browser and watch the video of creating this kitchen:
https://www.archlinexp.com/enrollments/courses/preliminary-course/kitchen-design/1

4.1. Open and Save the Project

If you have not downloaded the **Preliminary Course - Workshop Projects** yet, please download it from the website and install it. It includes all project for all preliminary workshops.

Open project

- Start ARCHLine.XP® Professional.
- Click on the Open Project:
- and choose the:
  …\Documents\ARCHLine.XP Draw\2024\Workshop_Preliminary\4_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.

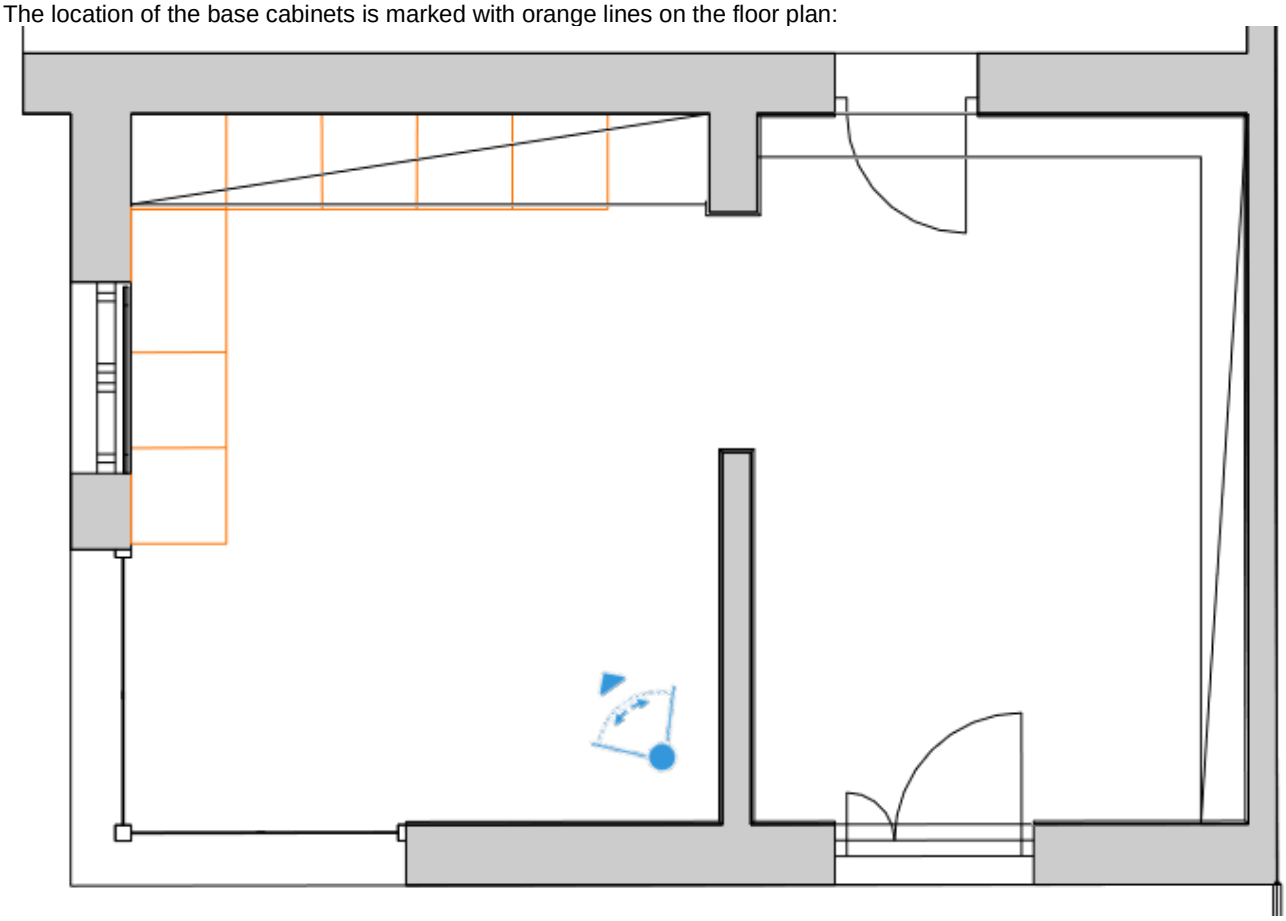
- Clicking on the **File menu / Save project as** command.
- Click on the ***Save*** button and give another name.

Furniture Library

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

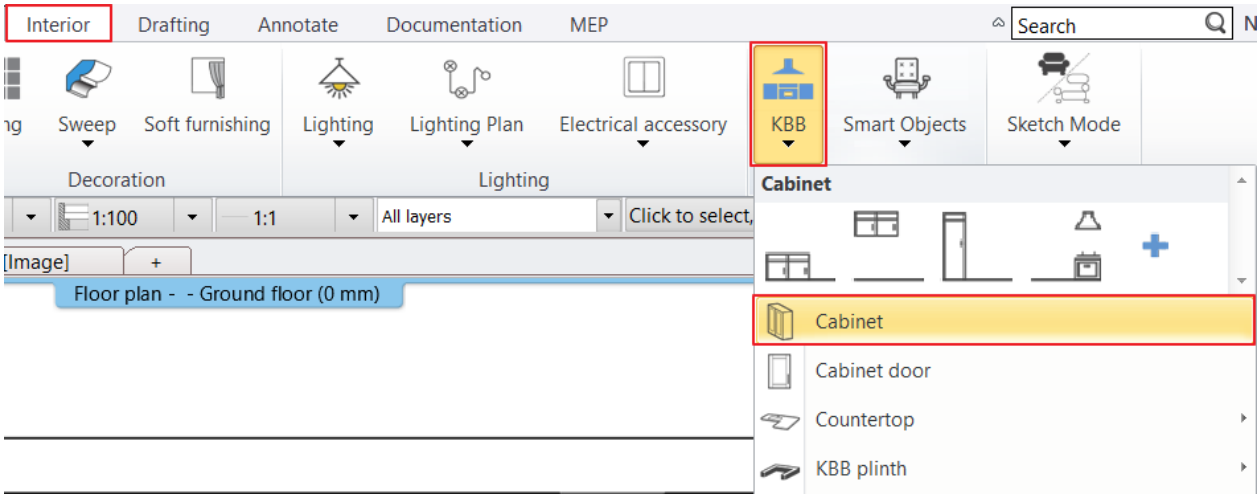
4.2. Base cabinets

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



4.2.1. Creating base cabinet

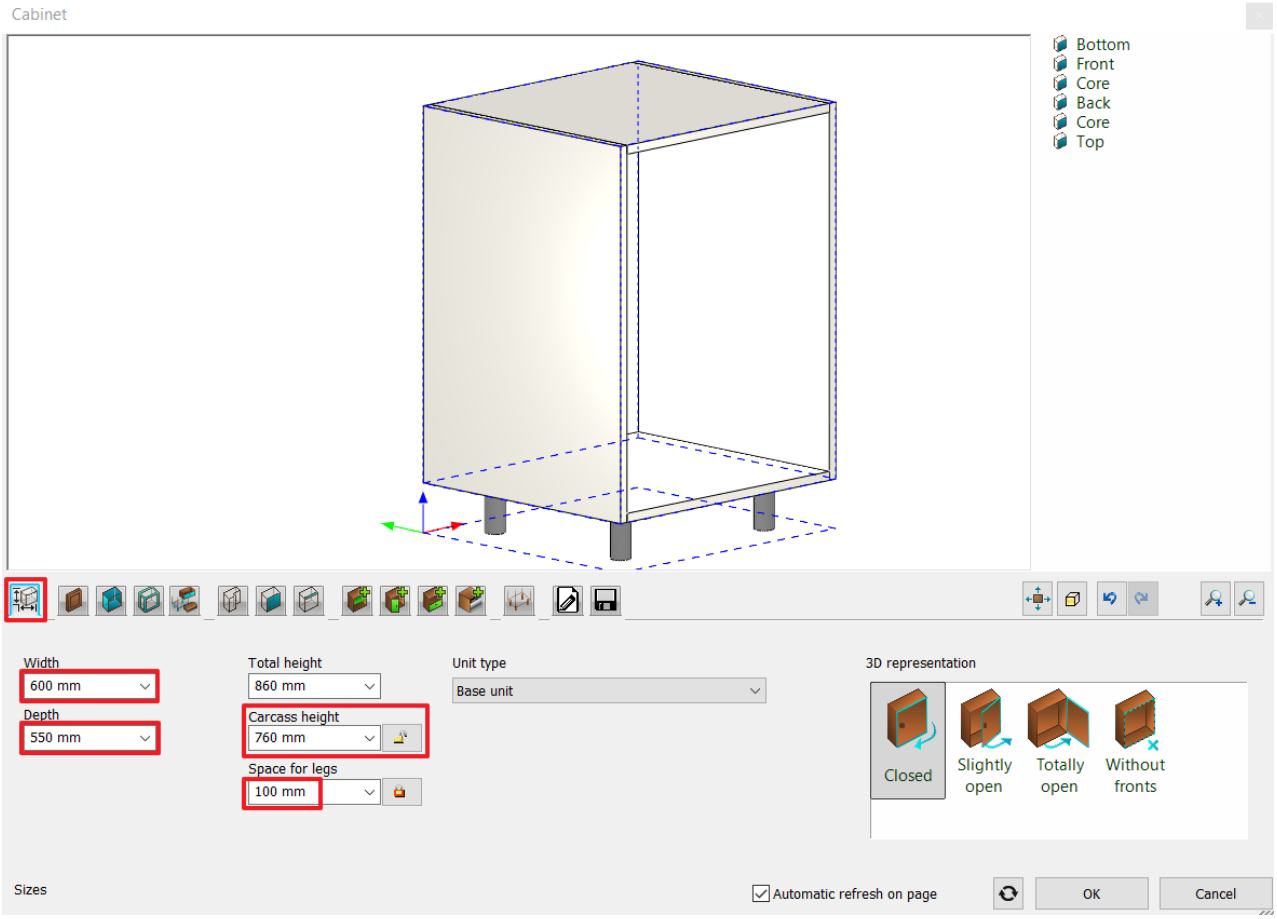
- Click on the **Ribbon bar / Interior / KBB / Cabinet** icon.



Setting the global properties

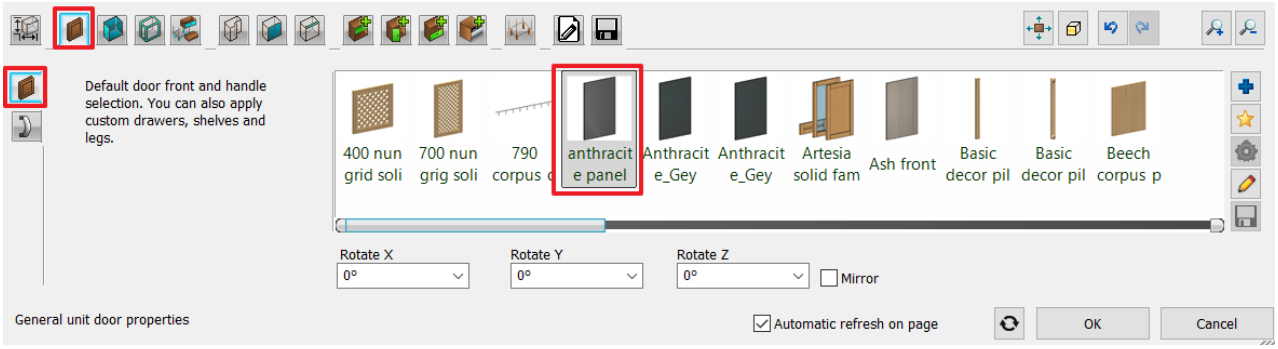
Size page

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. The program calculates the total height.

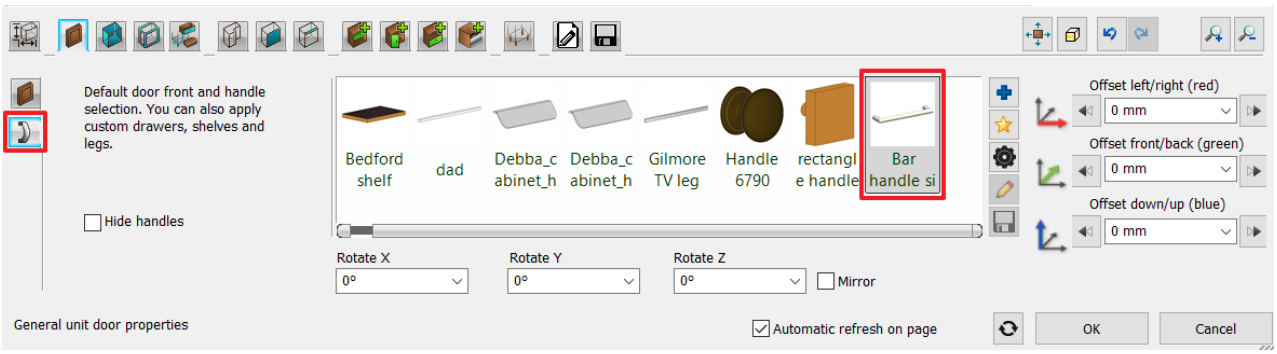


General unit door properties page

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

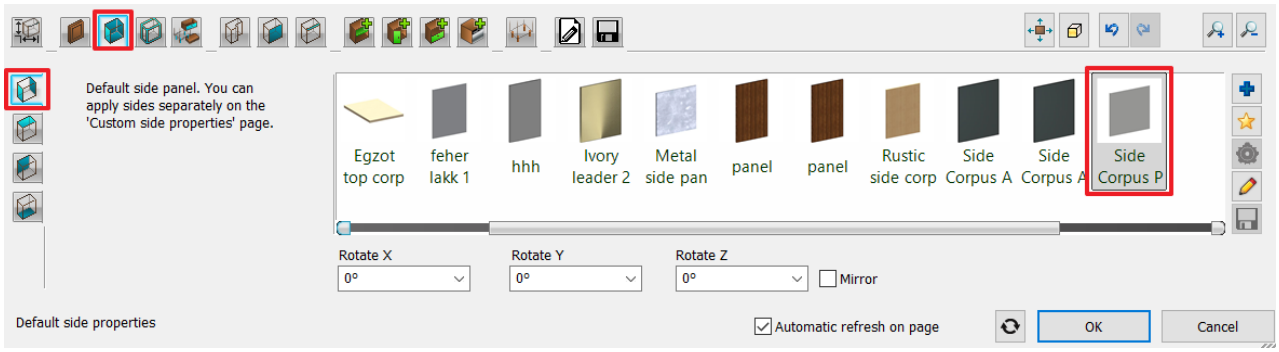


Select the "*Bar handle simple 120*" handle.

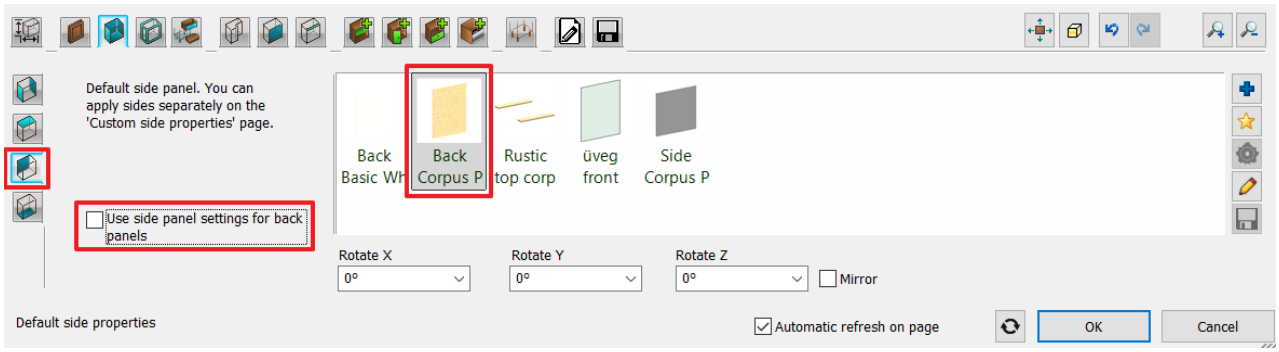


Default side properties

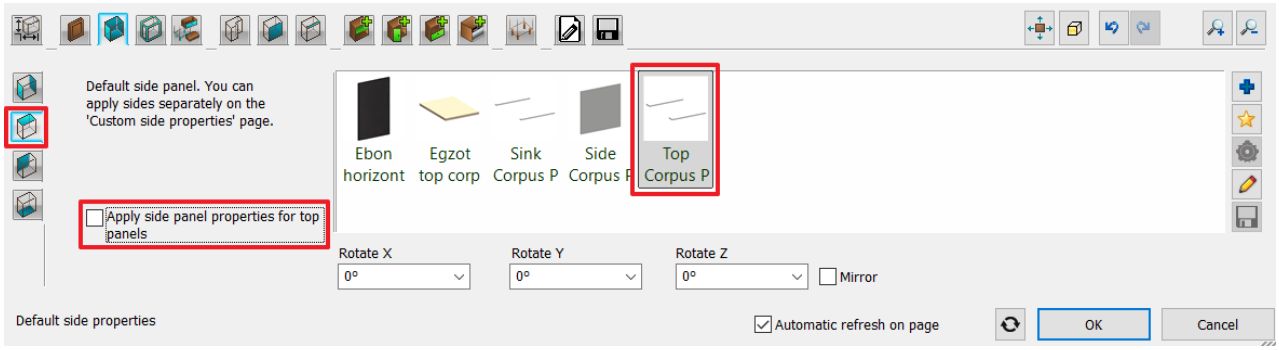
Select the *Default side properties* tab and select *Side corpus panel* side panel.



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



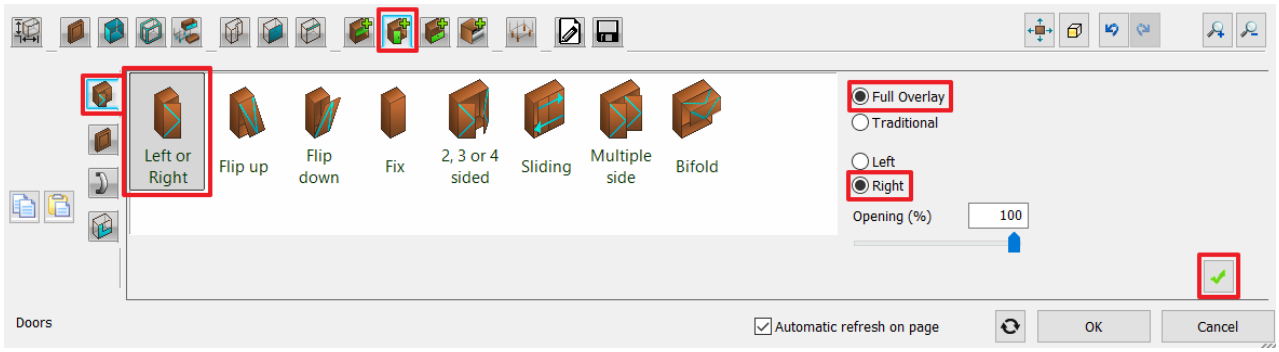
On the *Top* tab switch “Apply side panel properties for top panels” off and select “Top corpus panel”.



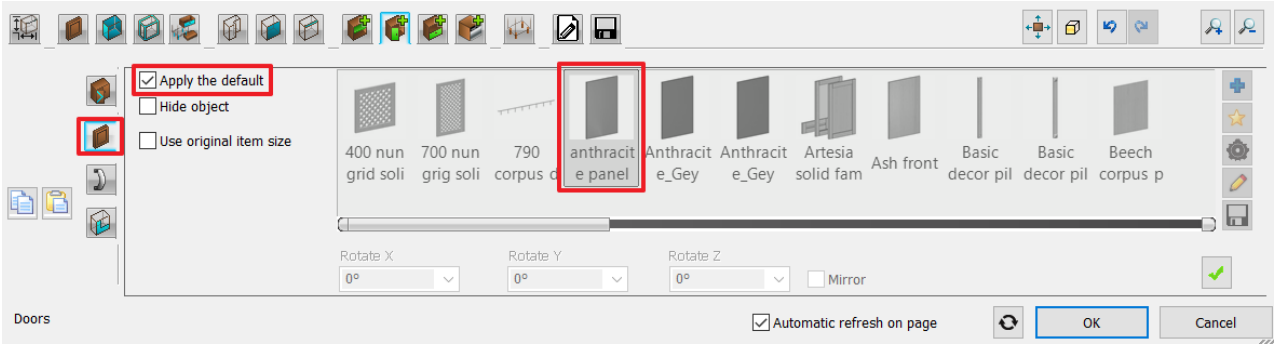
Add items – local settings

Doors page

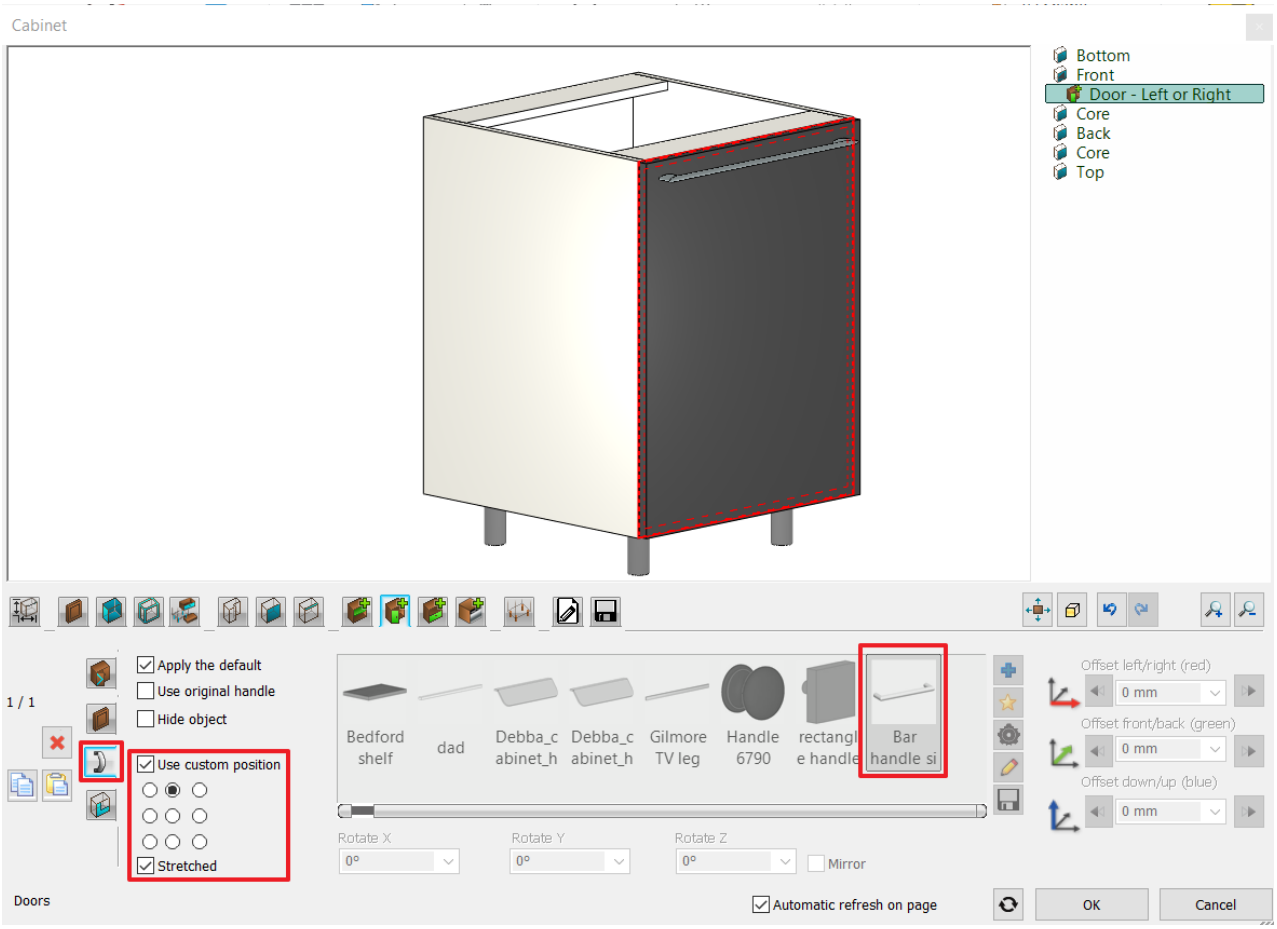
First add a new default door by pressing the button, which opens to the right side and fully overlays the cabinet.



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

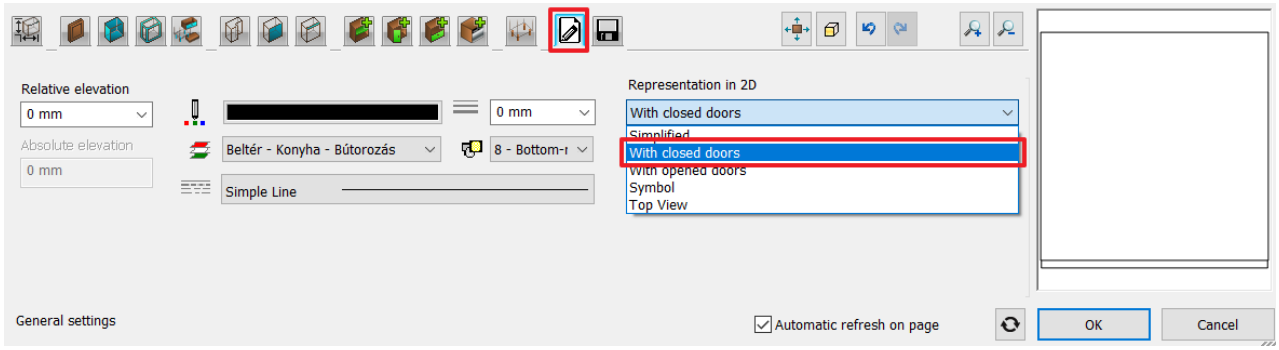


Go to the *Handle* tab. Here we use the same handle as in the global setting, but we change its placement and size:
Turn on the *Use custom position* option and move the handle to the top of the door panel.
Also select the *Stretched* option.



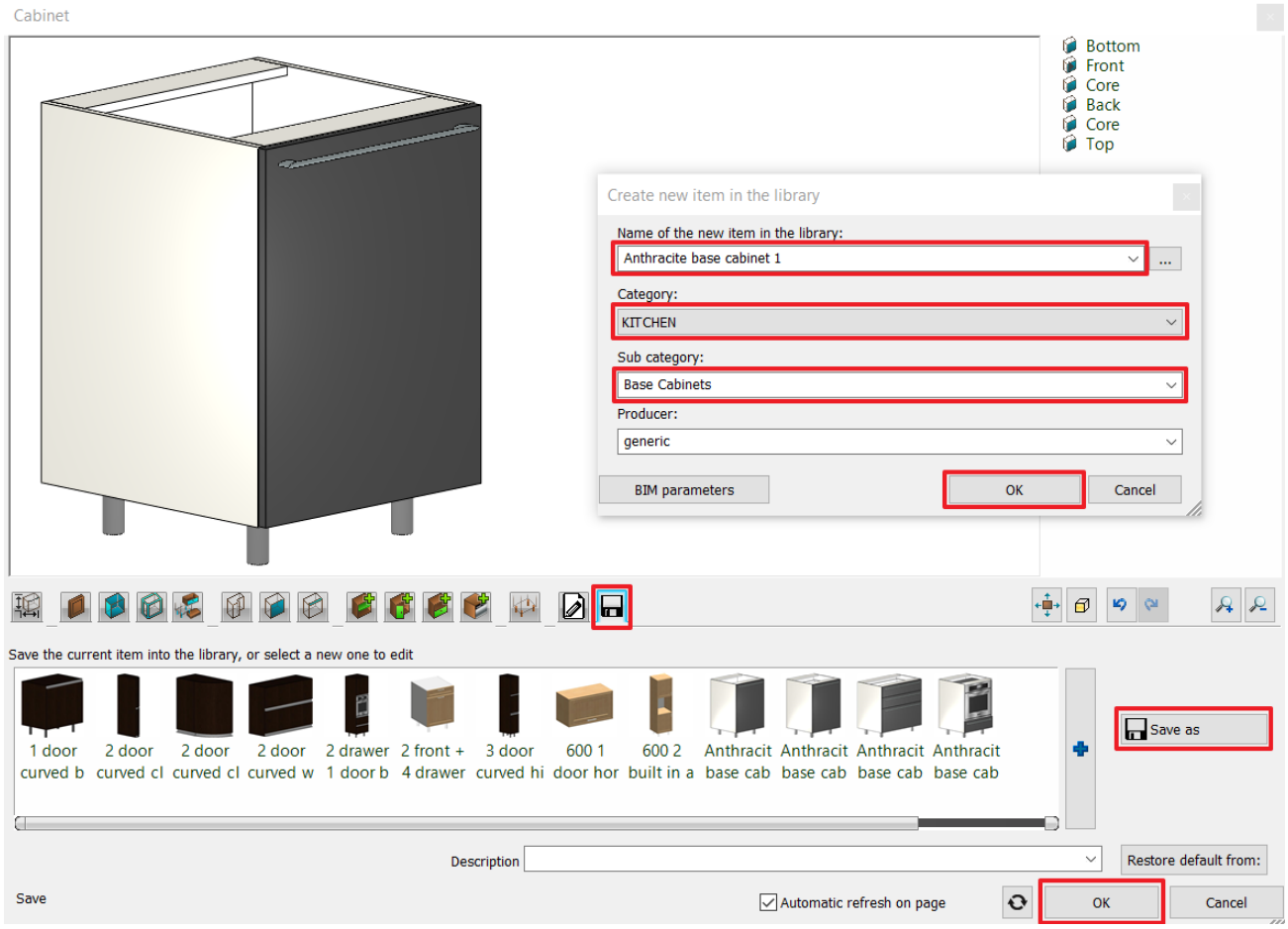
General settings

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

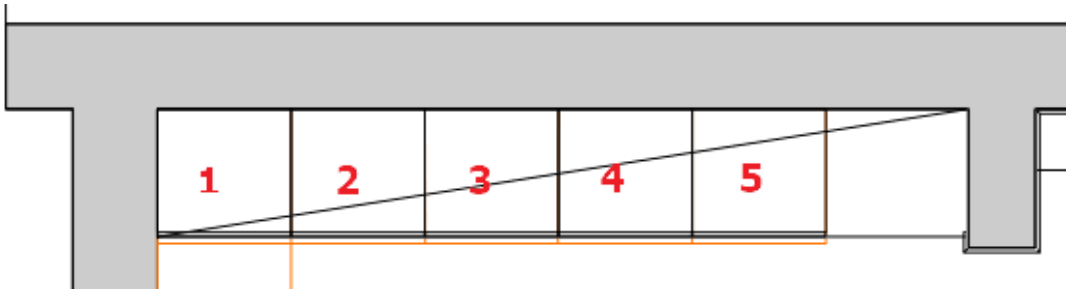


Save page

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 copies 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. The pre-drawn orange lines also help with placement.

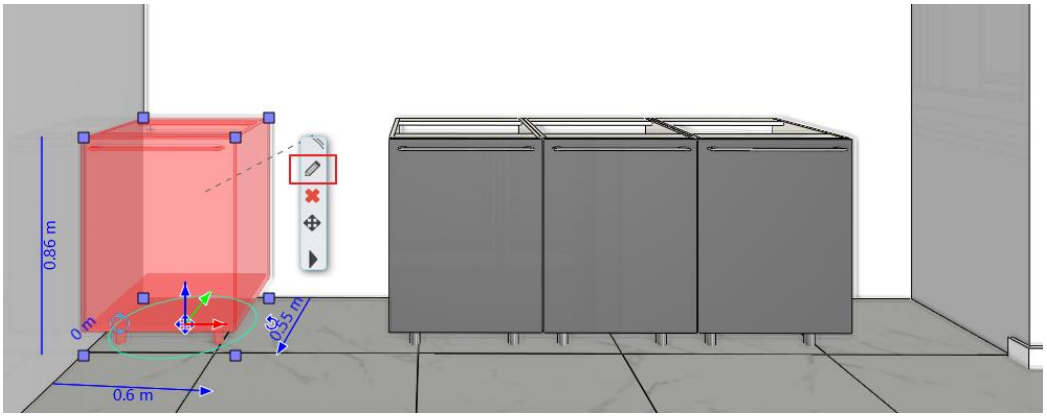


4.2.2. Creating the corner cabinet

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

Delete the No. 2 cabinet.

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

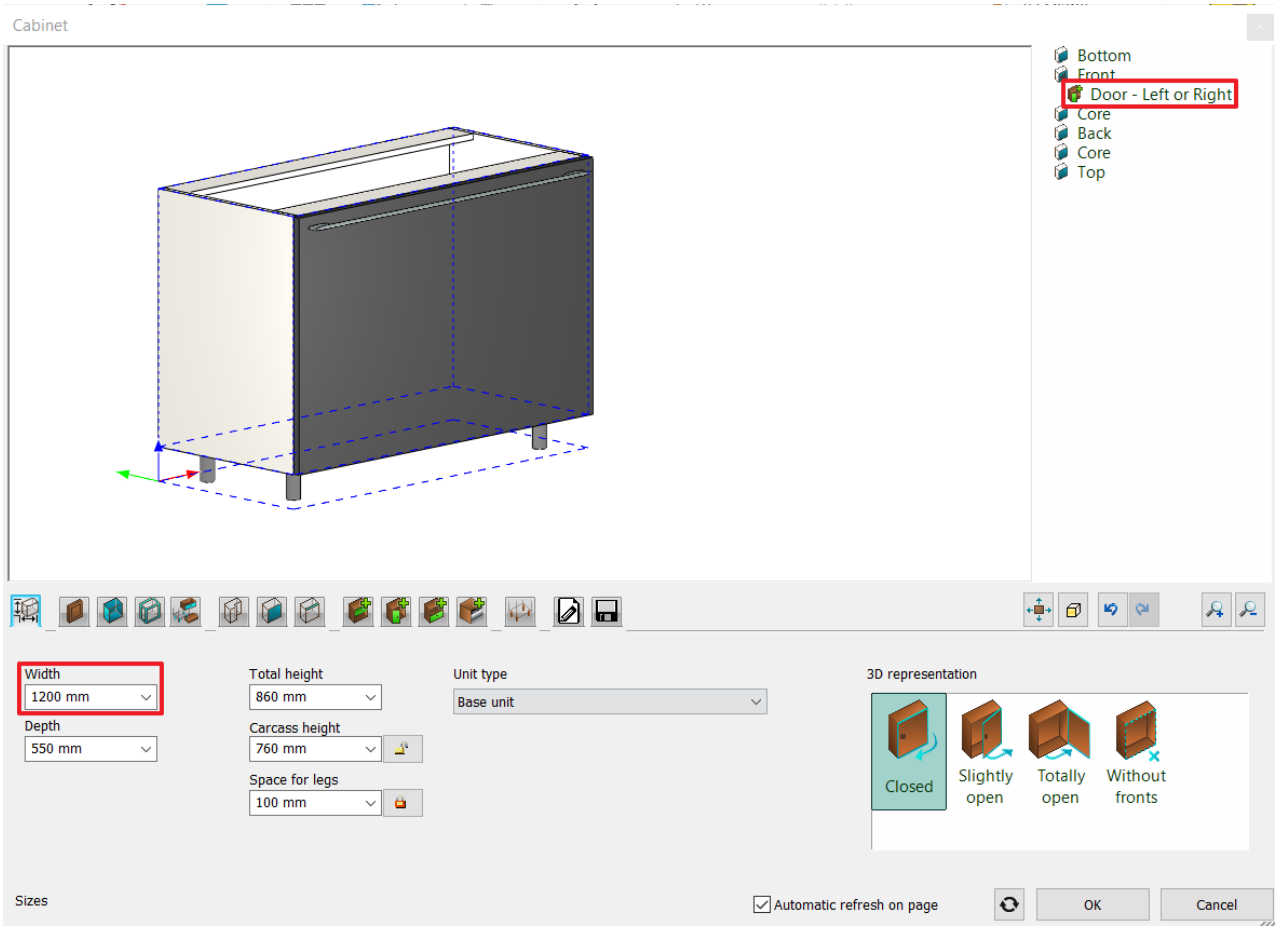


The corpus window appears.

Sizes tab

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

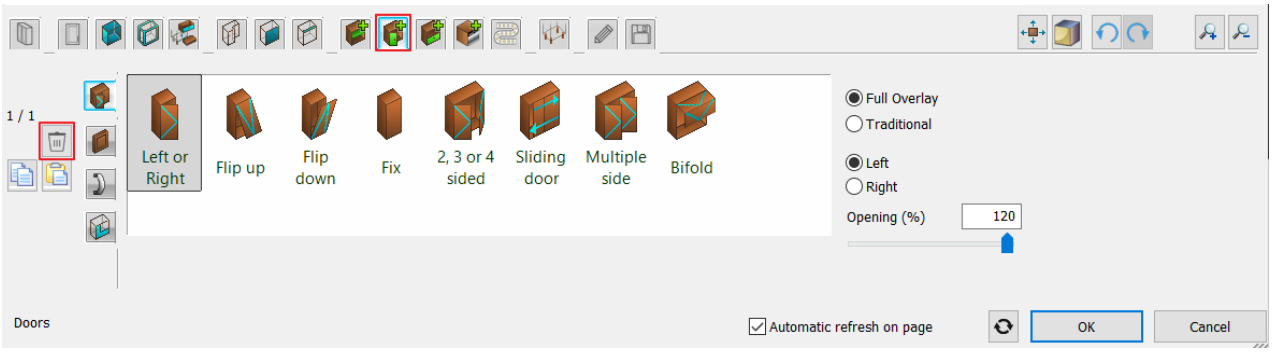
You can also select the Door settings by pressing Alt while clicking on the door.



Doors tab

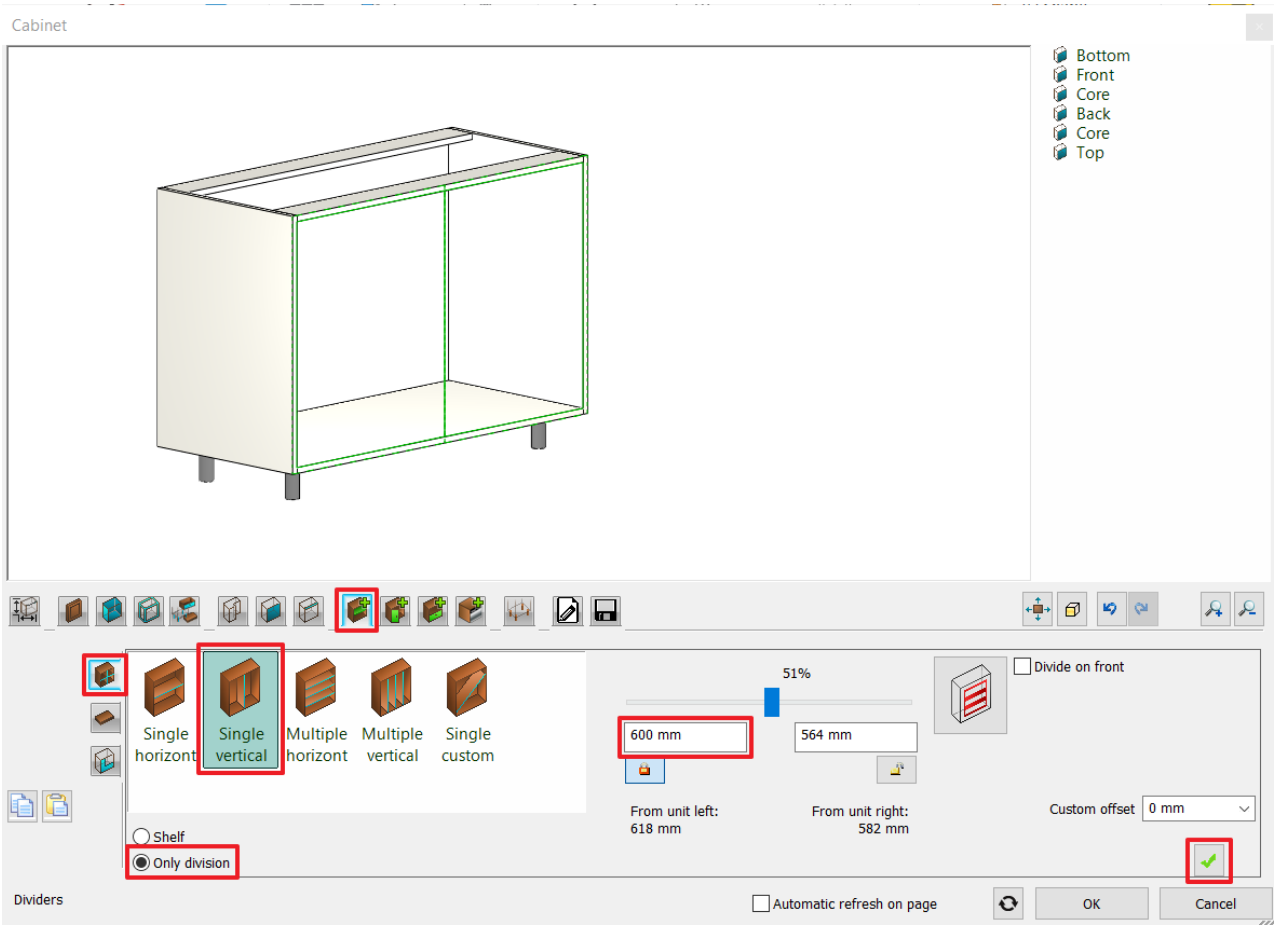
Now the *Doors* tab appears.

Delete the selected door by pressing the button.



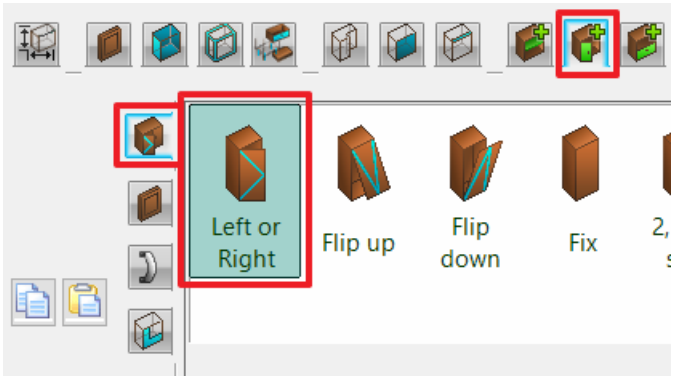
Dividers tab

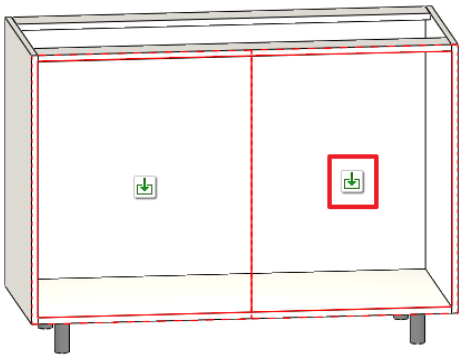
On the dividers tab select the ”Single vertical” divider and set it to ”Only division”. Set the left side distance to 600 mm, then place it by pressing the button.



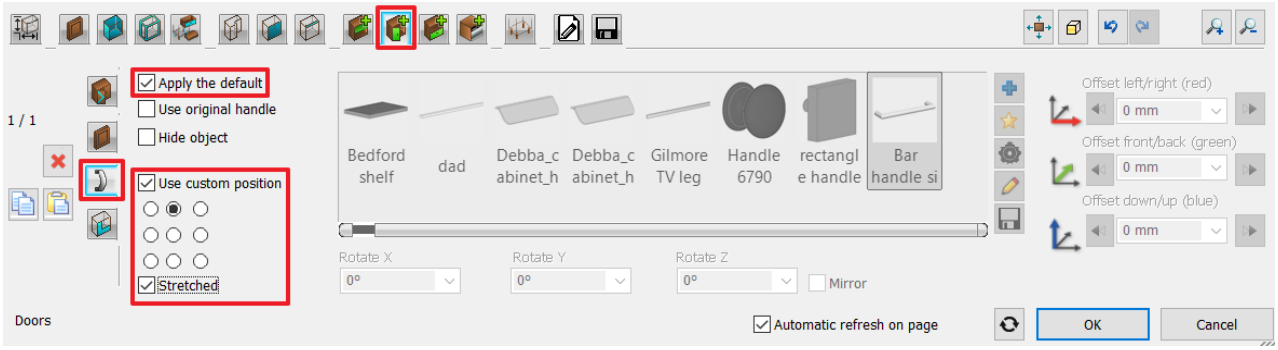
We divided the front of the cabinet into two sections. We will place a non-opening door on the left side and an opening door on the right side: In the preview, click on the right button in the empty zone.

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

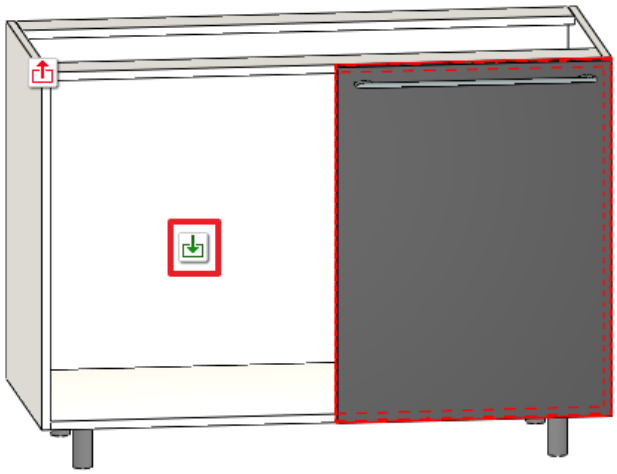




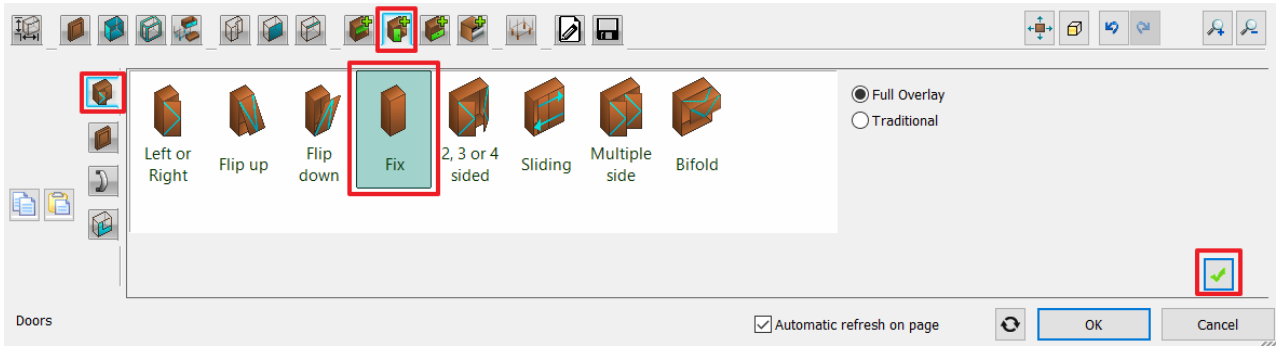
When the door is ready, select the *Handle* tab and activate the Use custom position. Place the handle on the top center part of the door and stretch it.



On the cabinet preview click on the left side  button.

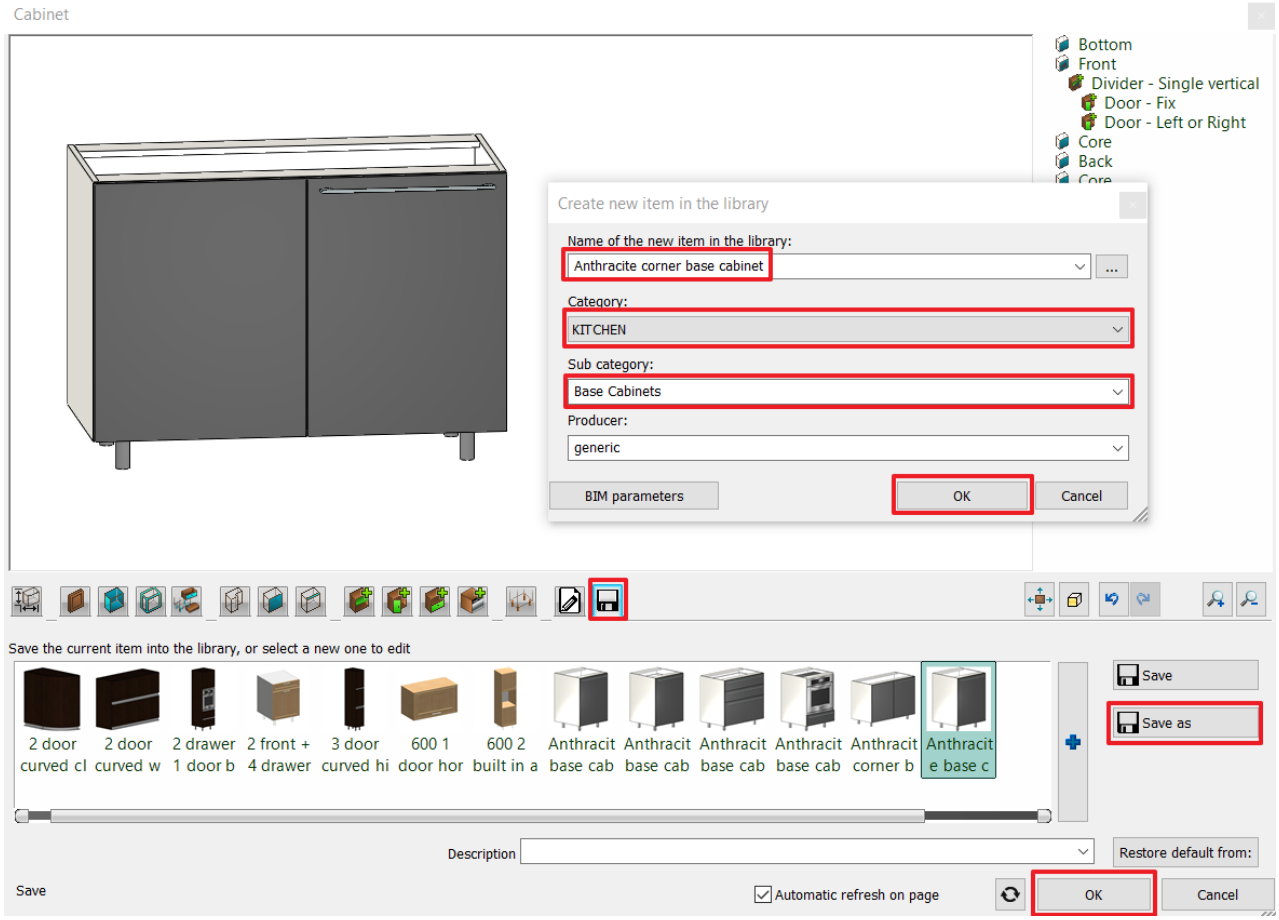


Select the Fix door and place it by pressing the  button.

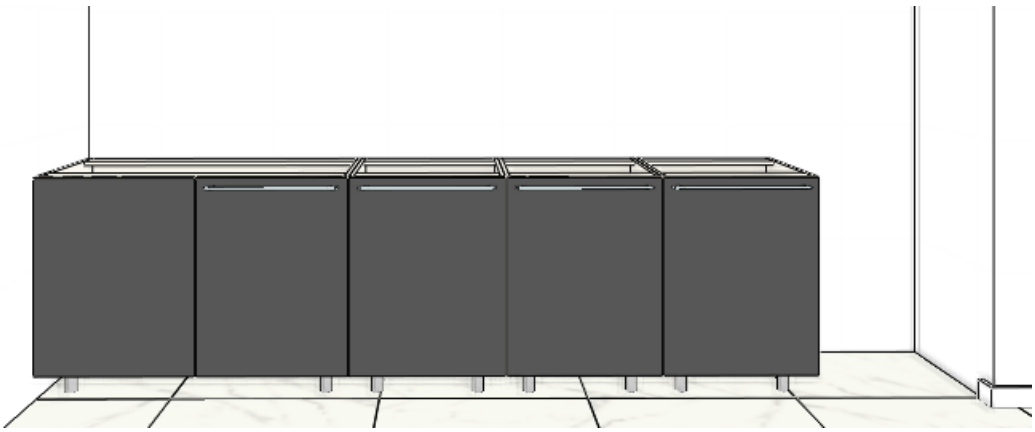


Save tab

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



Close the window by clicking on OK.



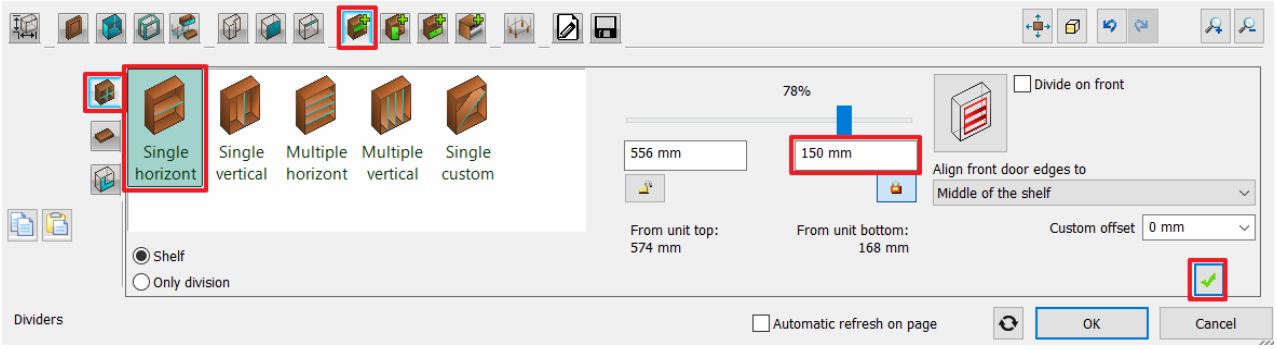
4.2.3. Placing the oven

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.

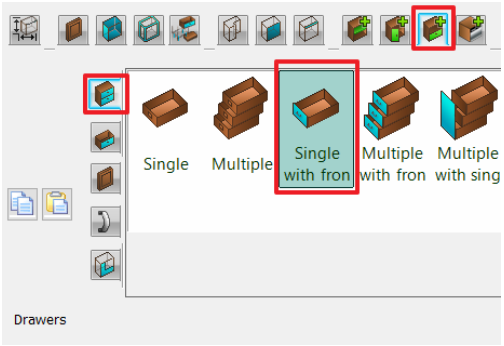
Divider tab – placing a shelf

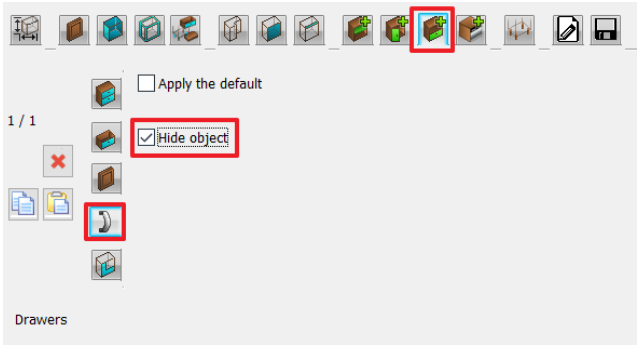
Select the *Single horizontal* divider and click on the *Shelf* option. Set the Right side distance to 150 mm and place it by clicking on the button.

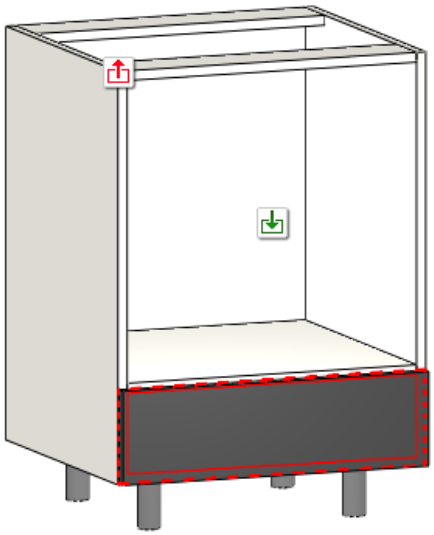


On the cabinet preview click on the lower button.

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

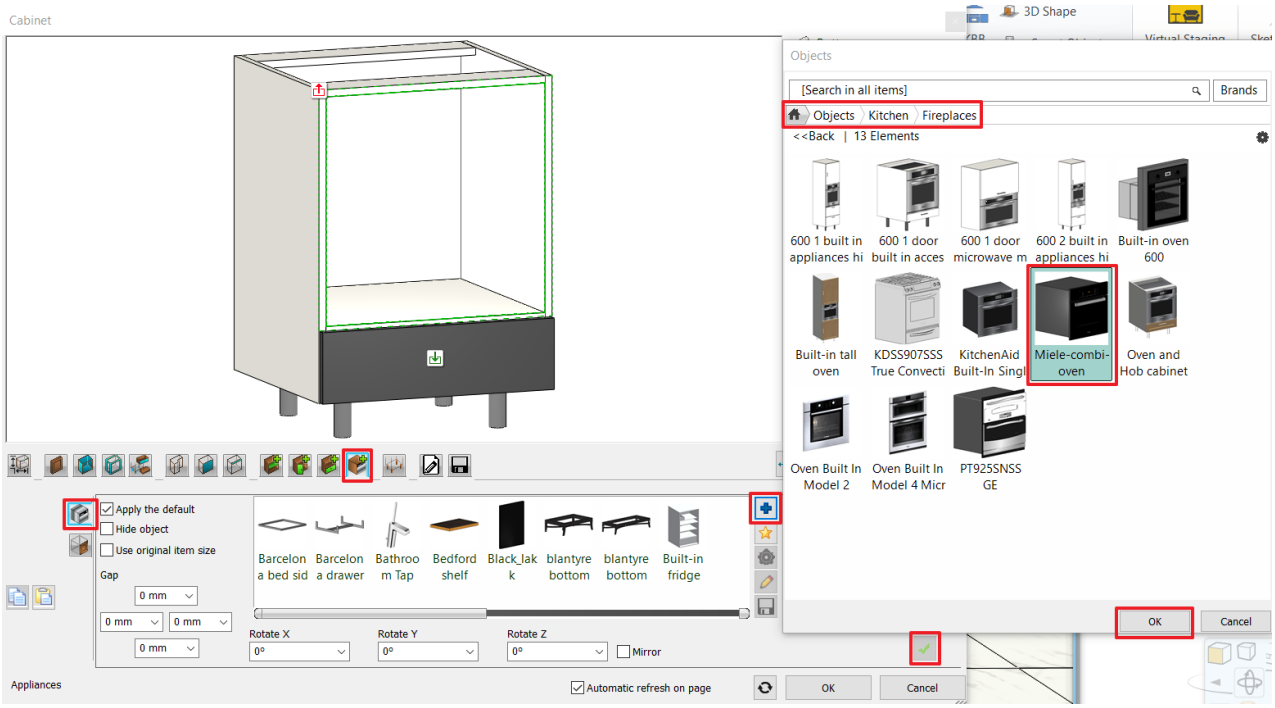




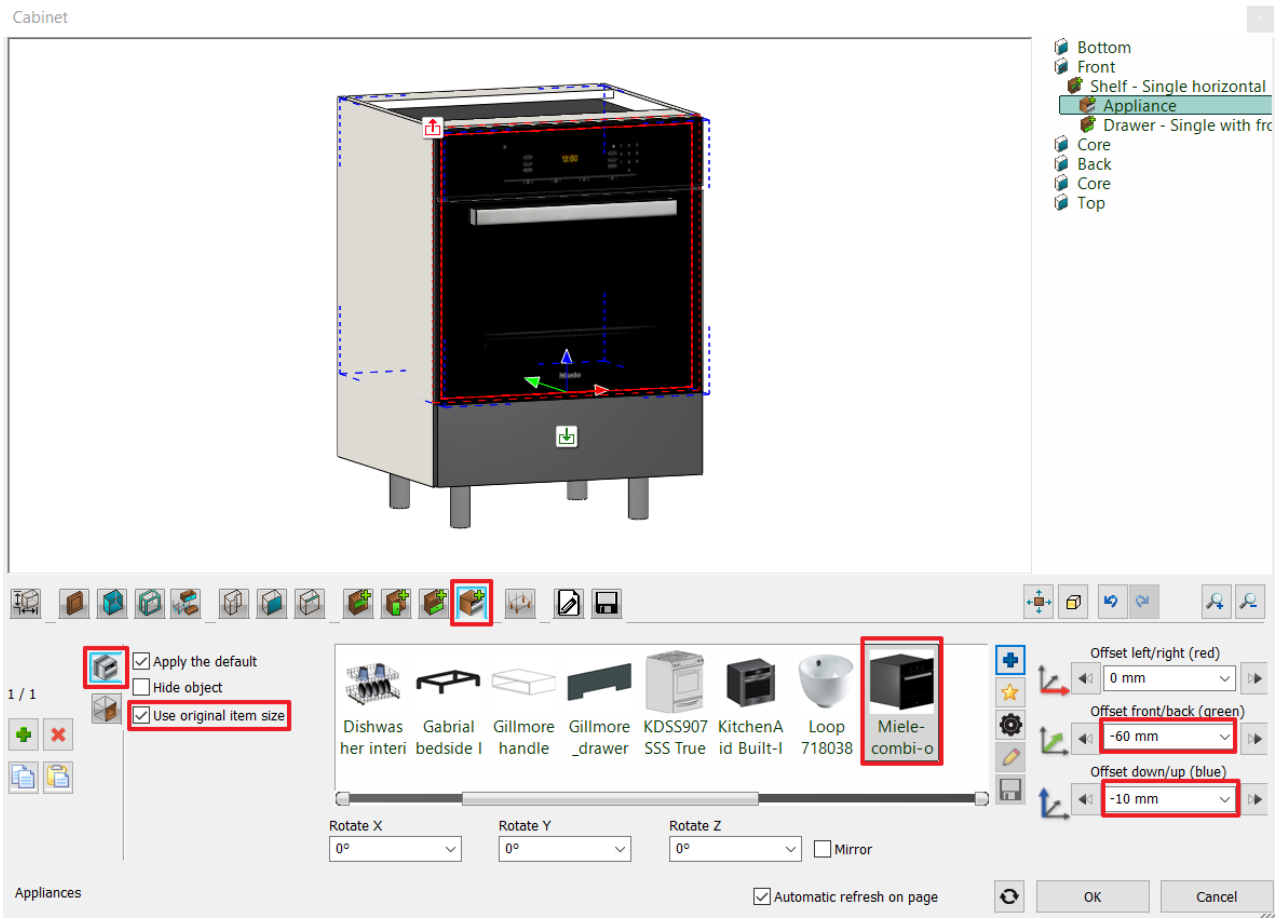


On the cabinet preview click on the  button.

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) to fit exactly the oven into the cabinet.



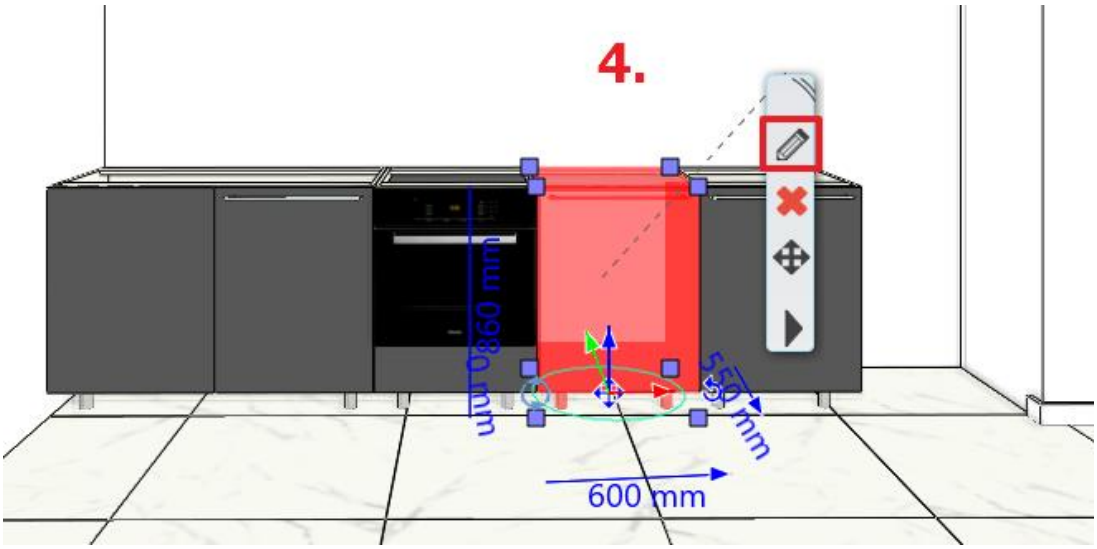
Save tab

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.

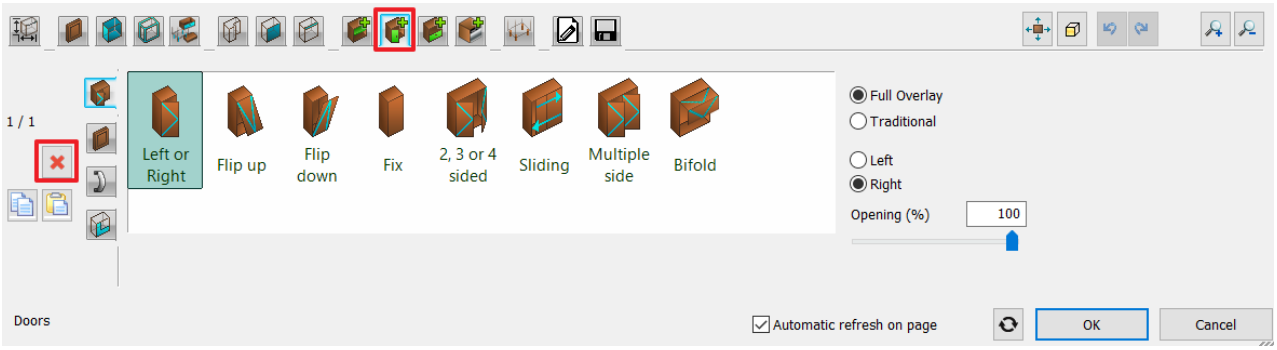
4.2.4. Drawer cabinet

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

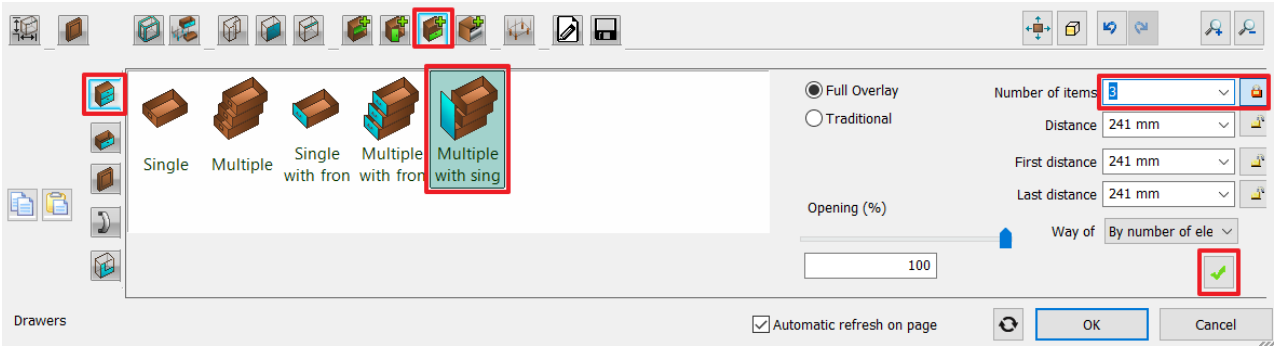
- Select the cabinet and click on the properties:



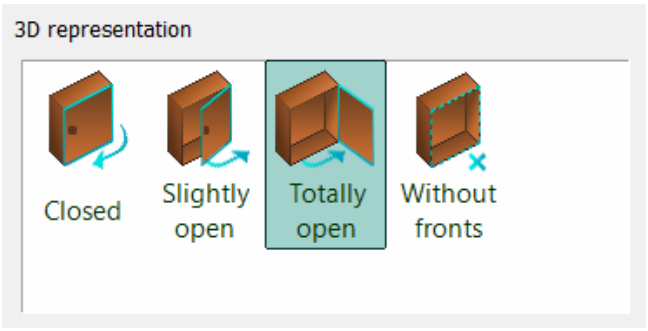
- Select the door: ALT + Click on it (or turn to the Doors page). Delete the selected door clicking on the marker.

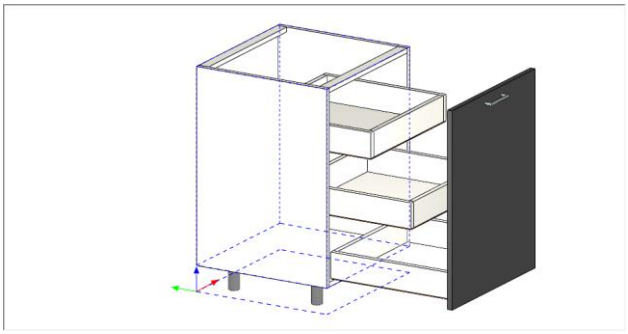


- On the drawer page  select the option “Multiple with single front”, set the number of drawers to 3, finally insert the drawers by pressing the  button.



- On the Handle tab, turn on the Use custom position option, and reposition the handle by stretching it over the top of the door panel.
- To view the drawers, click on the *Sizes*  tab and select the "Totally open" option in the 3D representation window, then set it back to "Closed" for placement.





 ***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

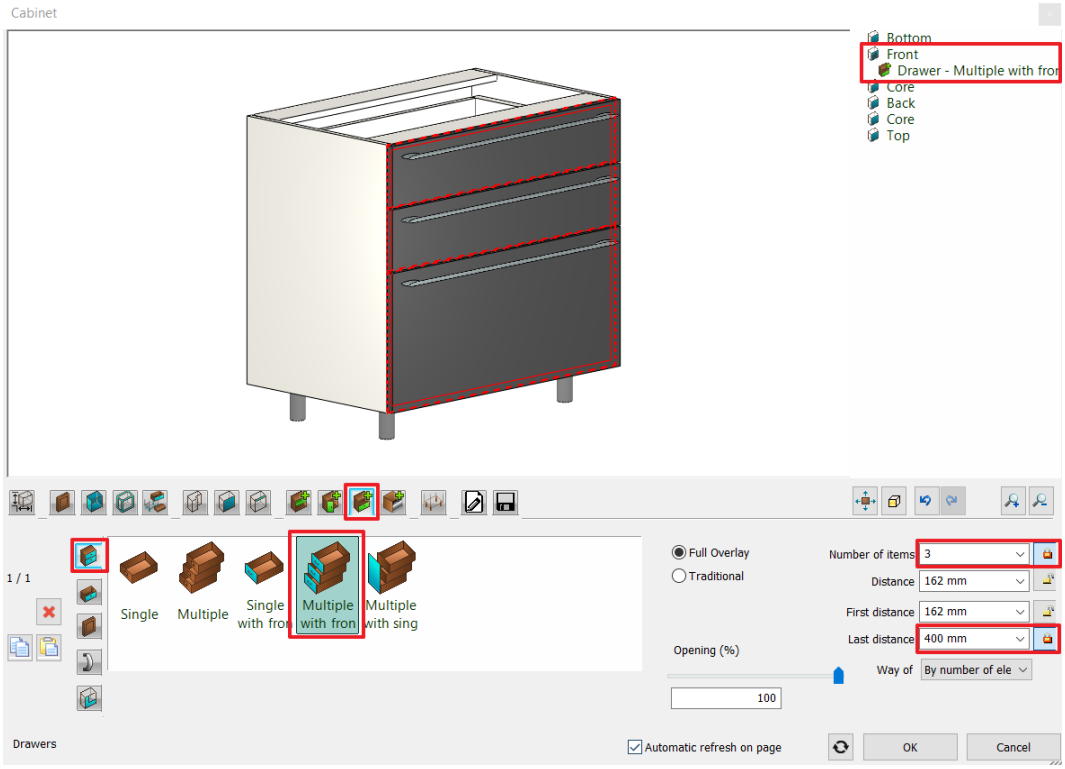
On the left-hand side wall place 3 base cabinets with white fronts. The first cabinet in the corner has drawers.

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

 **Save tab** – load the previously saved hidden drawer cabinet.

 **Sizes tab** – Set the width to 900 mm.

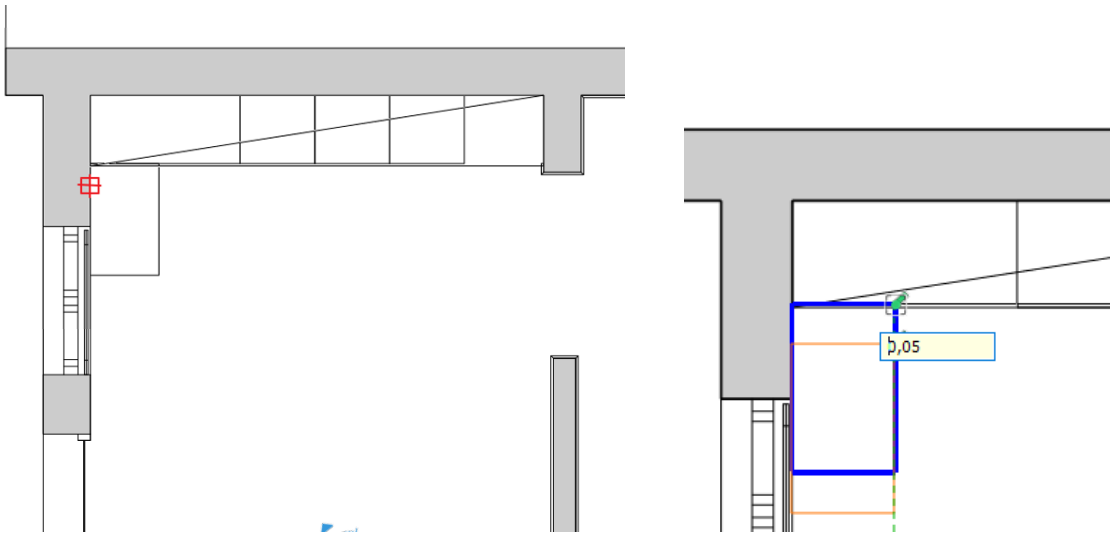
- Select the drawer: ALT+Click the drawer (or turn to the  Drawers page). Change the type of the drawer to *Multiple with front* and set the height of the lowest drawer to 400 mm.



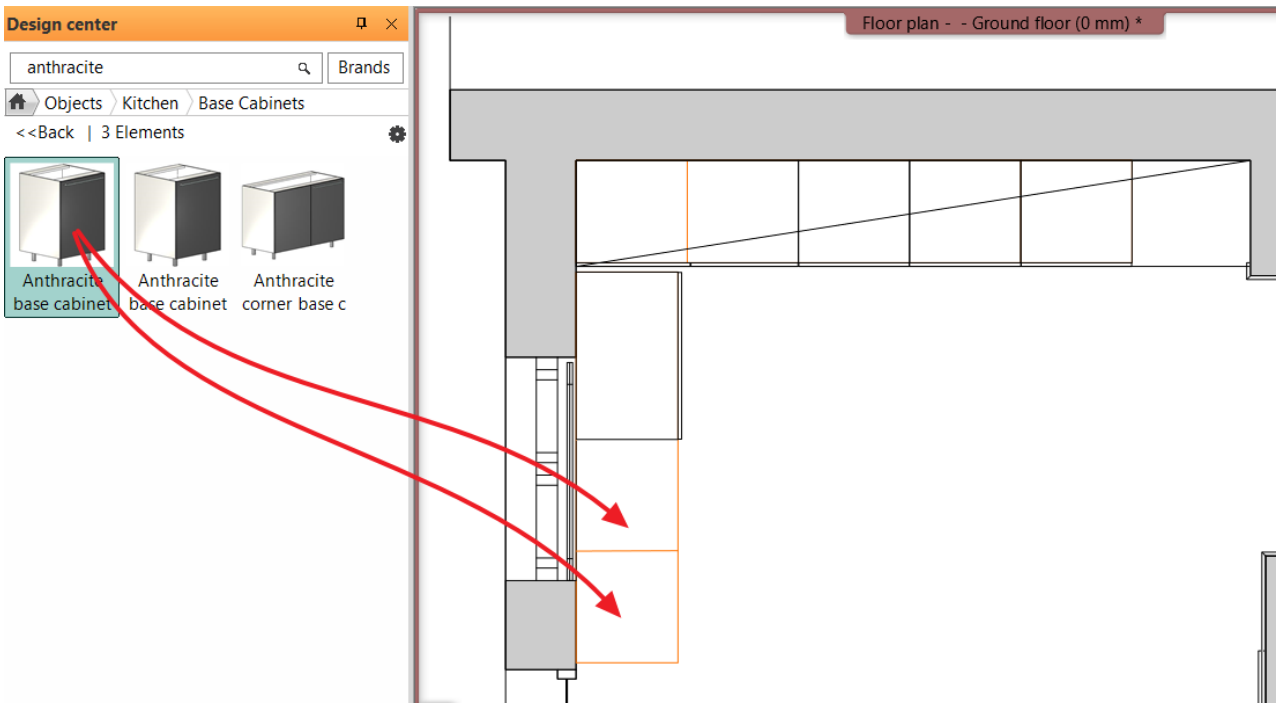
Save tab

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.



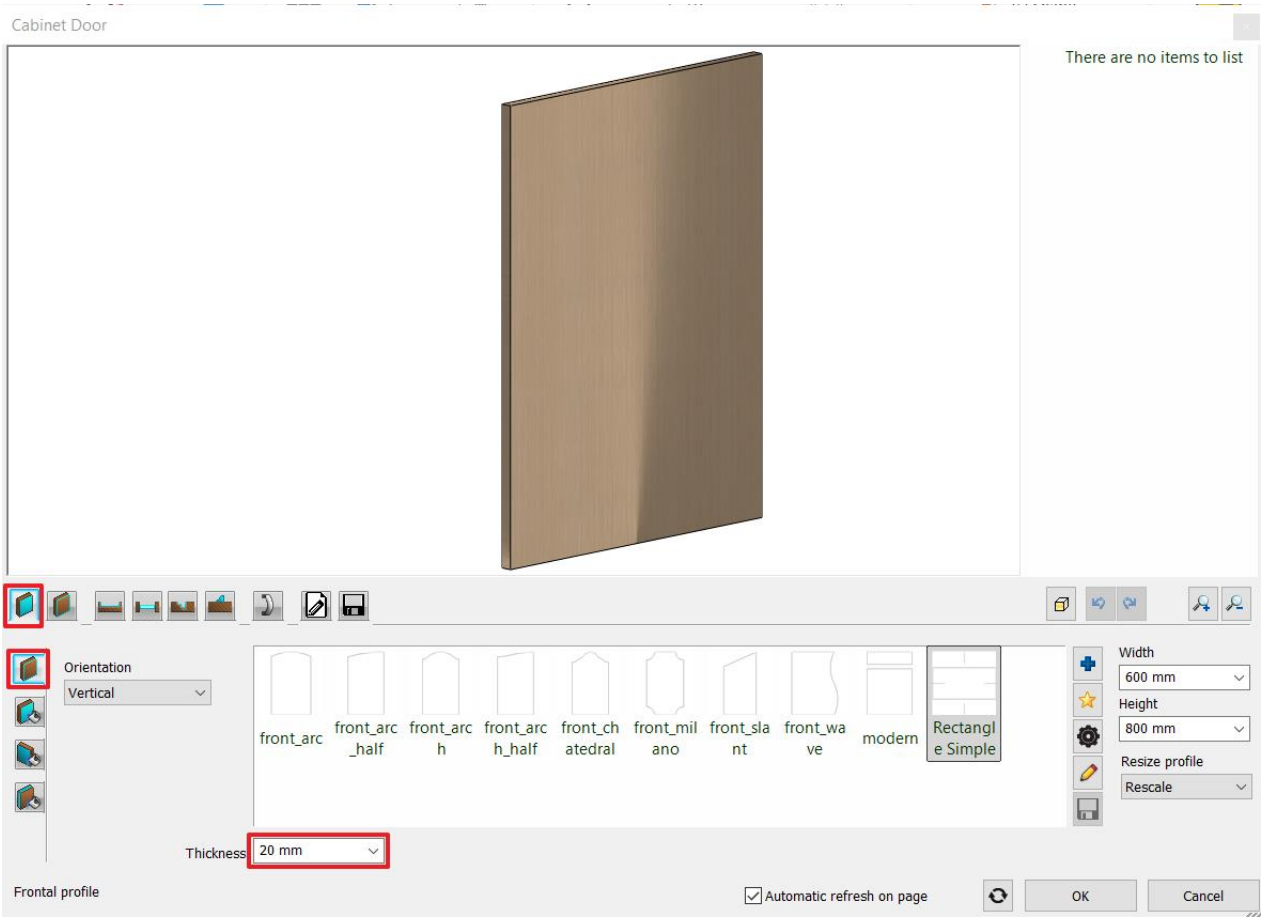
Open the **Objects / Kitchen / Base cabinets** category in the **Design center**. Write the word “anthracite” in the search bar. Drag and drop the *Anthracite base cabinet 1* on the two remaining places marked by orange lines.



4.3. Creating new front panel

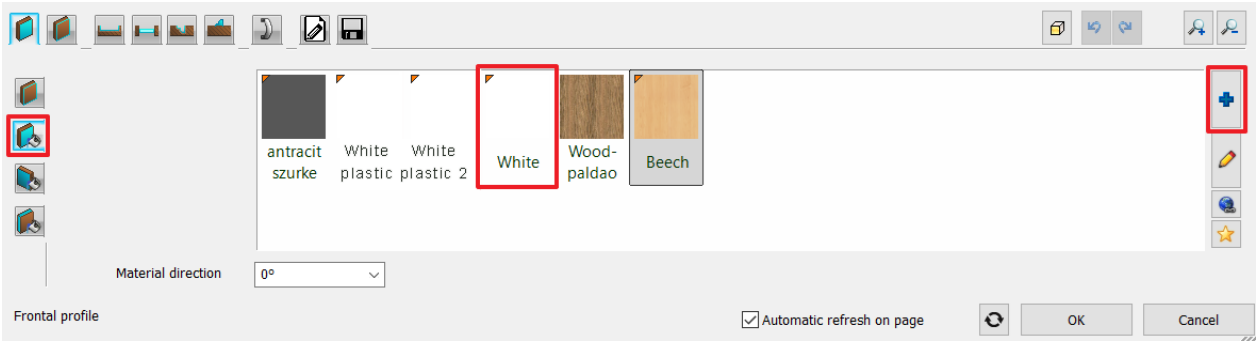
Create a 20 mm thick matte white front panel, and change the existing (Antracite) ones with it.

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

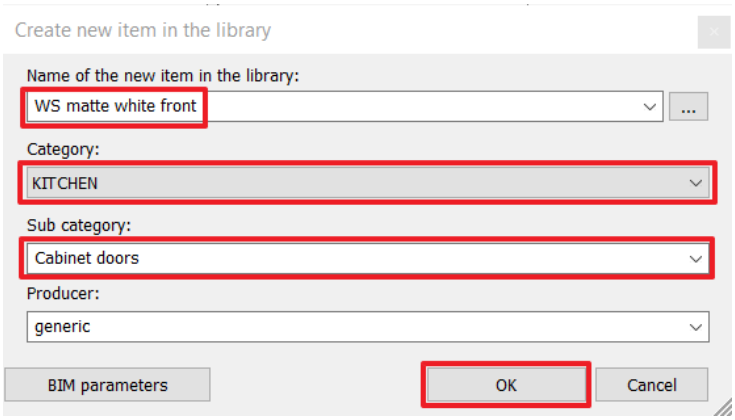


Set the thickness to 20 mm.

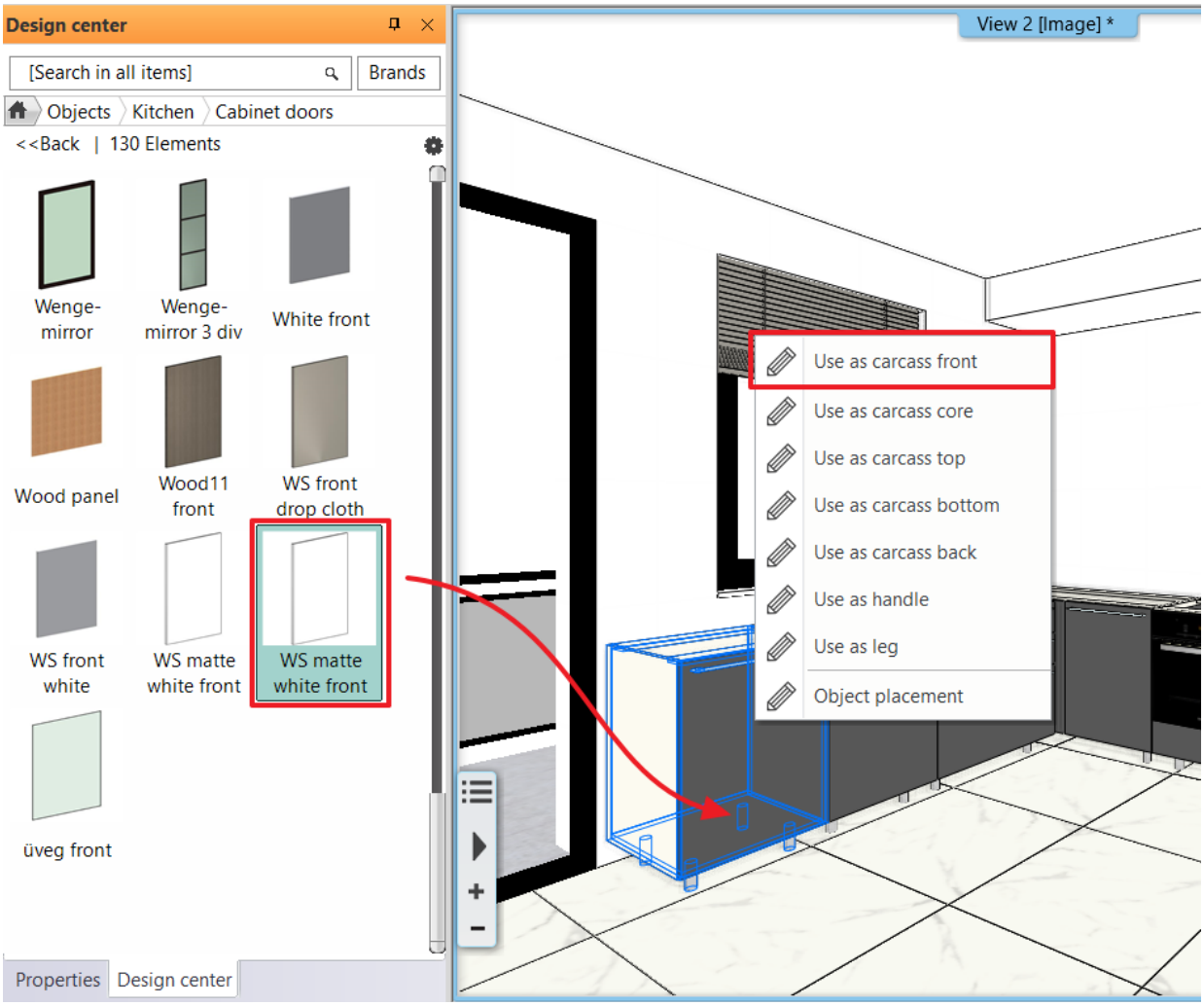
Click on the Front material tab and select the *Matte white 2* material.



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



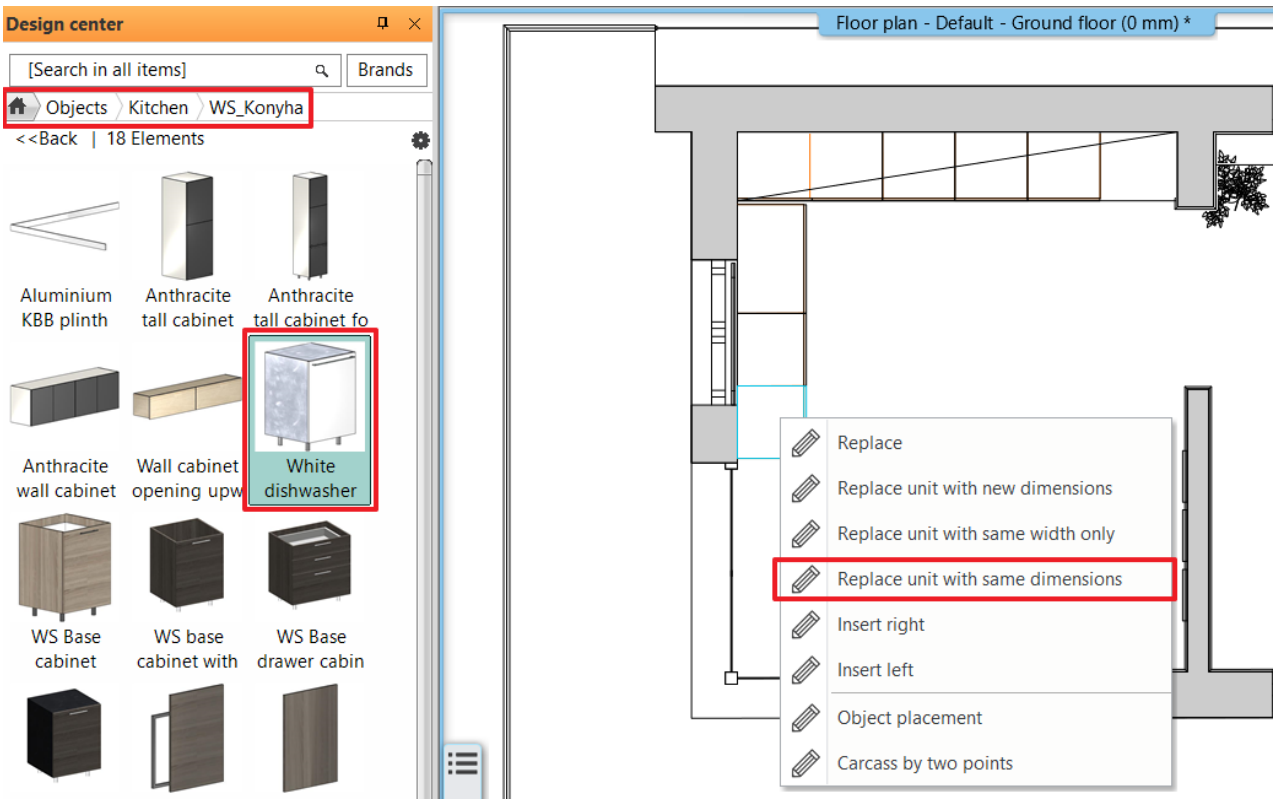
Search the front panel in the **Design center / Objects / Kitchen / Cabinet doors** and drag and drop it on the first cabinet from the left side. Select the *Use as carcass front* option. Repeat it with the other two cabinets on this side.



4.3.1. Dishwasher

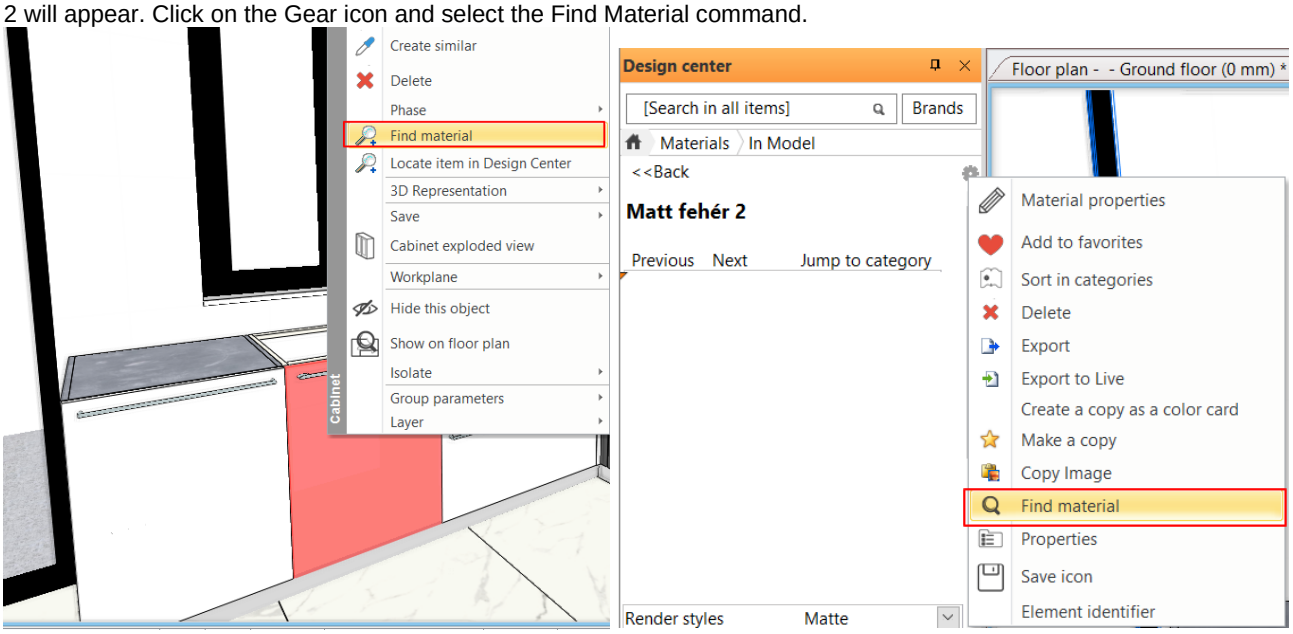
Replace the left edge element for a dishwasher:

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.
Change the front panel of the dishwaswher to WS matte white front.



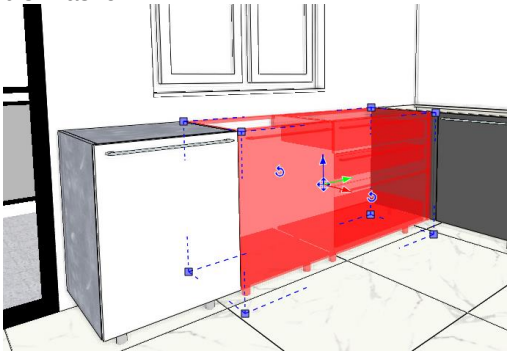
We need to check that the front of the dishwasher matches the front of the other cabinets.

- Right-click on the cabinet next to the dishwasher and select Find Material. In the Design Center, the material Matte White 2 will appear. Click on the Gear icon and select the Find Material command.



You can see that the front of the dishwasher is not made of Matt White 2.

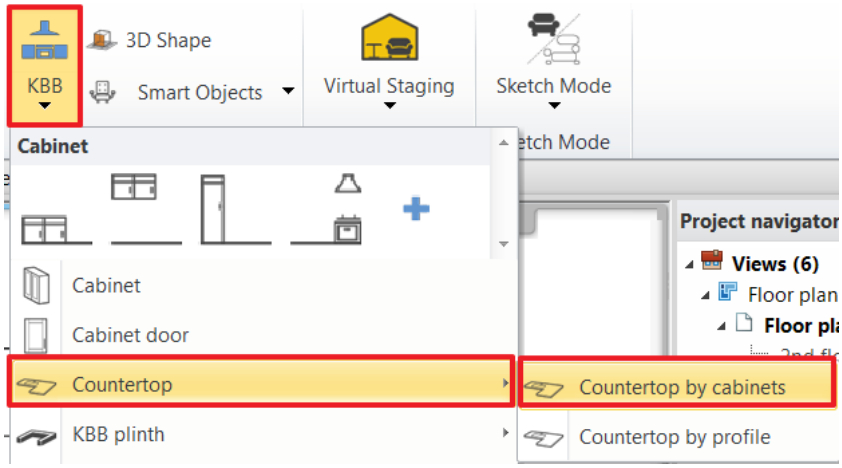
- In the Design Centre, in the Objects - Kitchen - Cabinet doors category, select the WS matt white front and drag it onto the dishwasher.



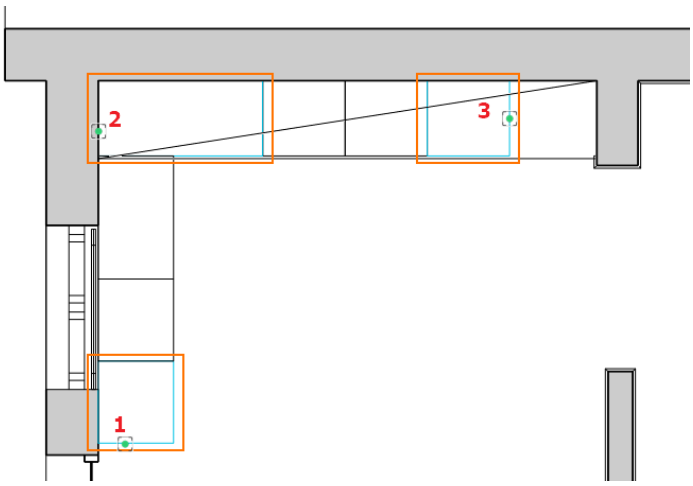
4.4. Create Countertop

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. Here we choose the first solution.

- 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: 1, 2, 3. Hit Enter when finished.

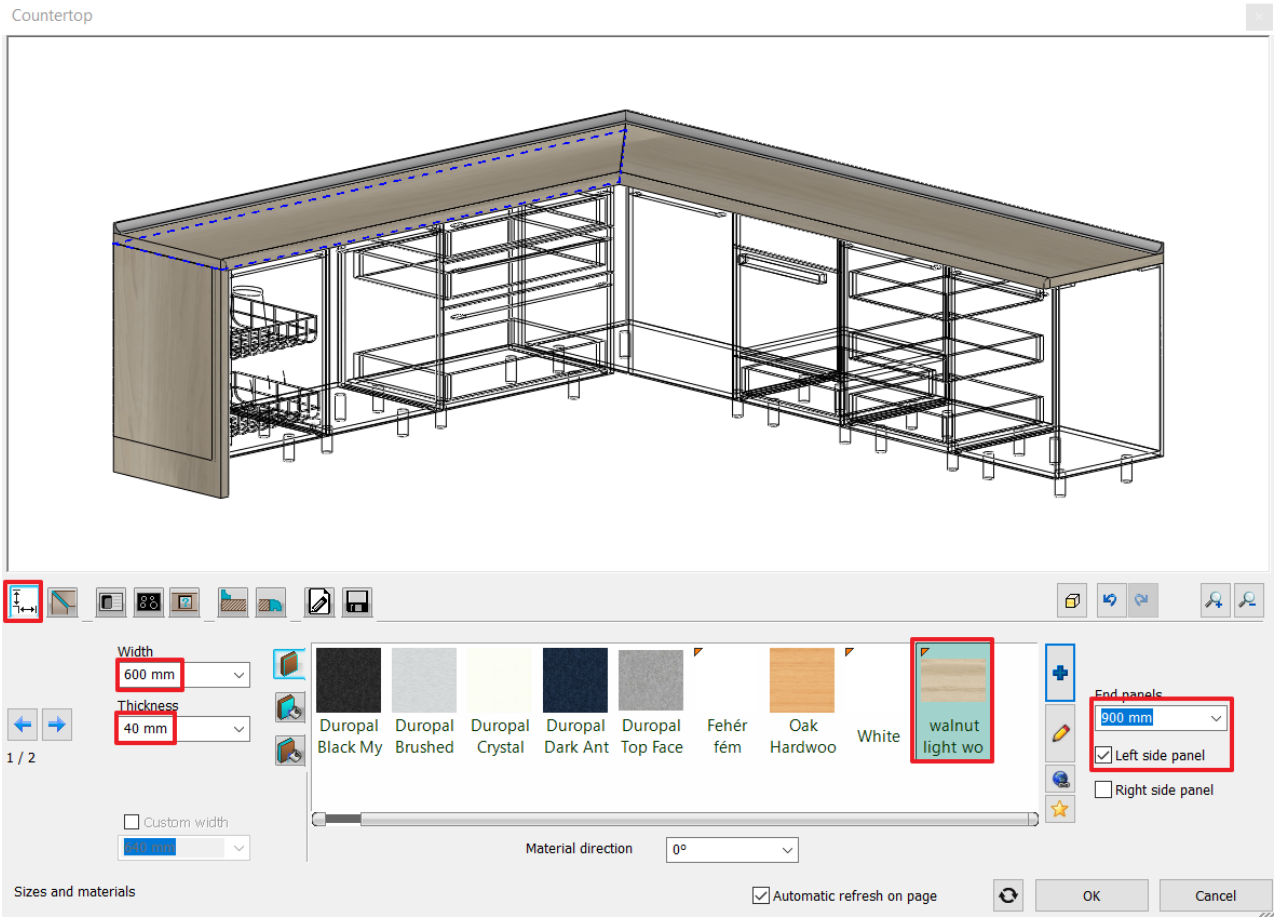


Set the following properties:

Sizes and materials page

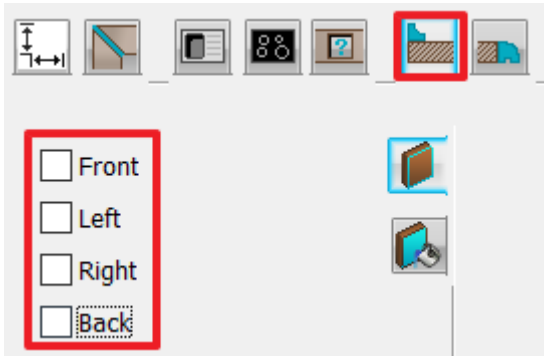
The width of the countertop is 600 mm, the thickness is 40 mm.
Activate the left side panel and set its height to 900 mm.

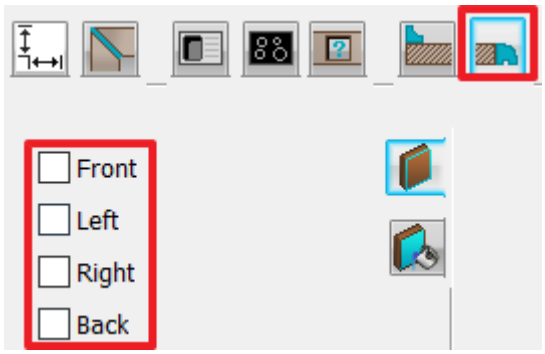
Select the *walnut light wood* material. If you can't find the selected material within Favorites then click on icon and find it in the Material Library.



Wall strip and Countertop edge tab

Turn these off:

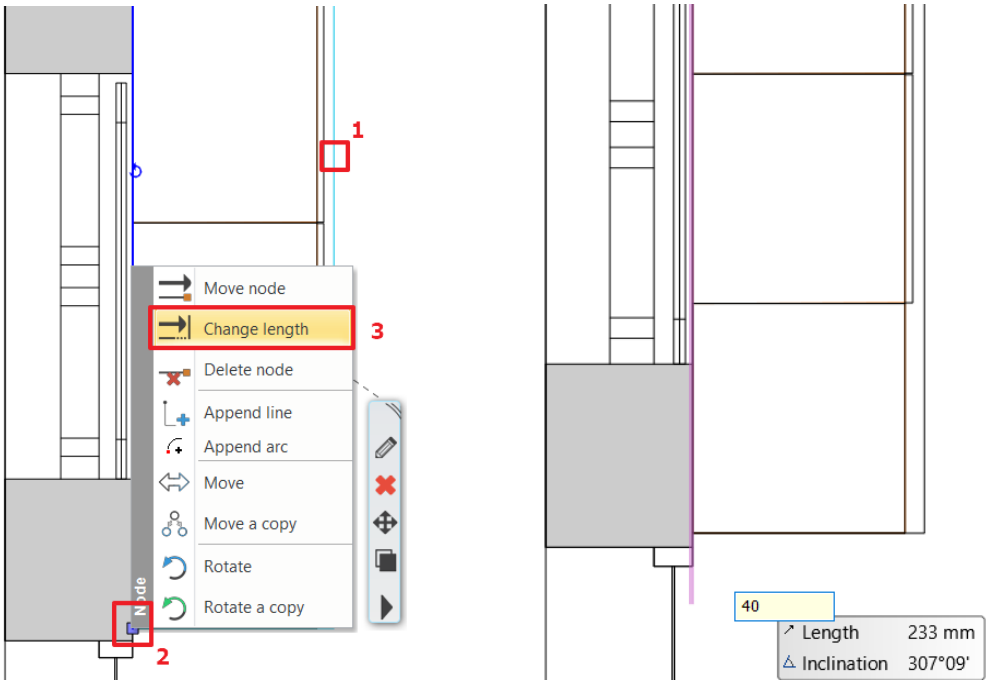




Click on OK to close the window.

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.

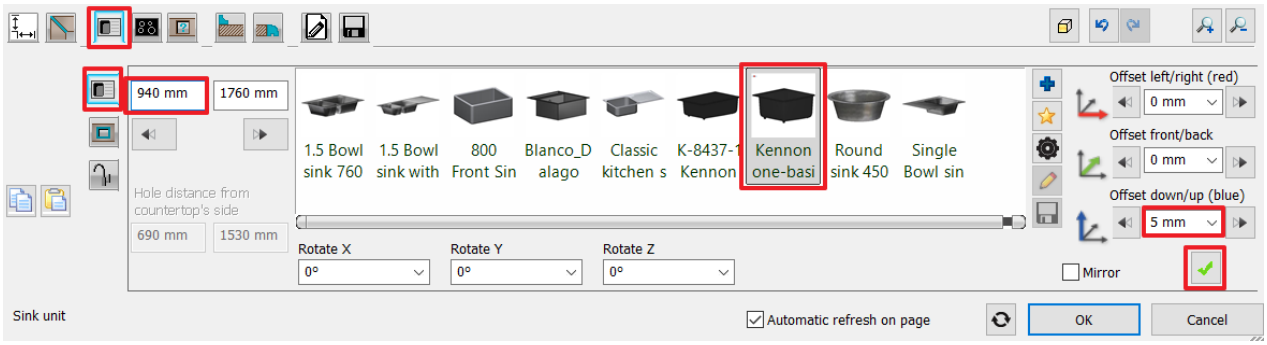


Placing the sink and the hob

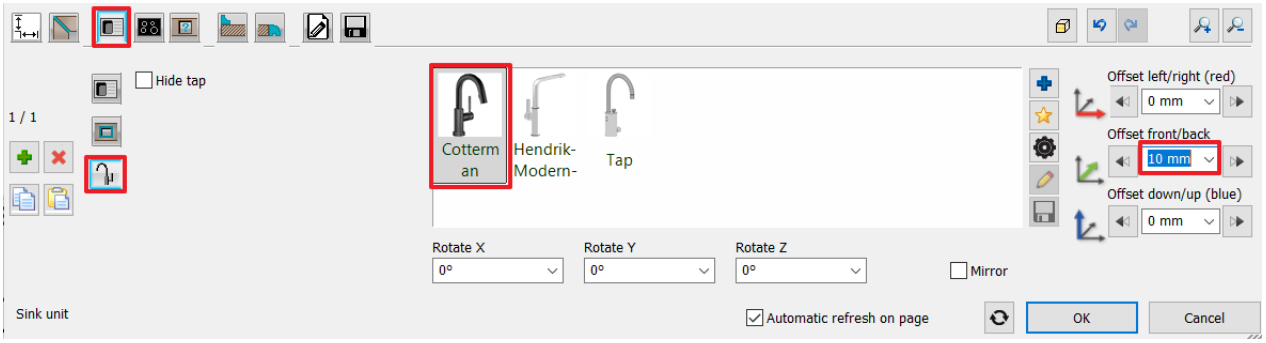
Further modifications:

Sink unit tab

Click on the countertop above the dishwasher.
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.

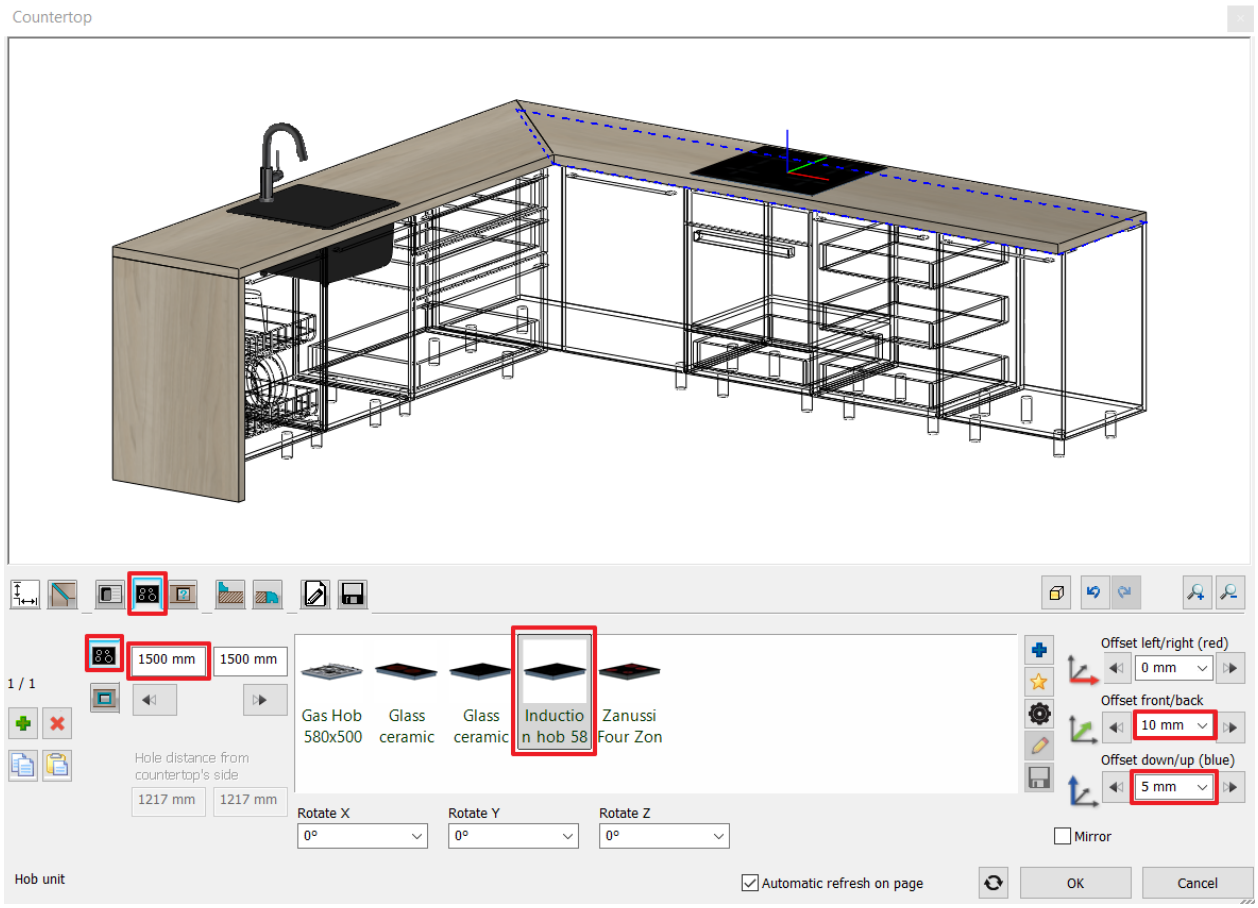


Click on the **"Tap" tab** , select *Cotterman* tap and move it to the appropriate position: Offset front/back +10 mm.



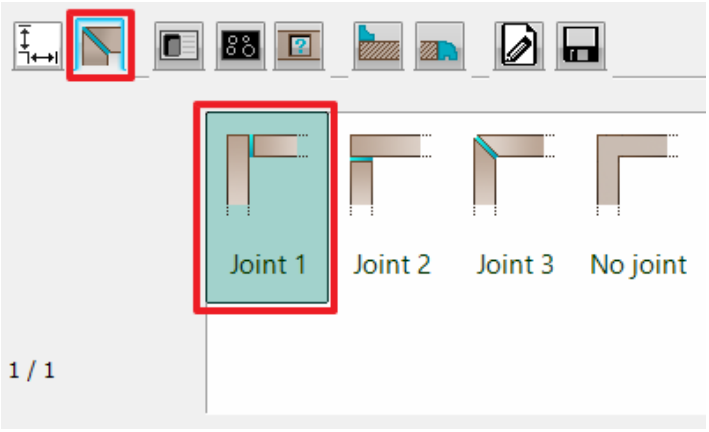
Hob unit tab

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.



Joints tab

Select joint 1.



Save tab

Click on the Save as command and save the item to the Kitchen category, Countertops subcategory named *WS countertop*.

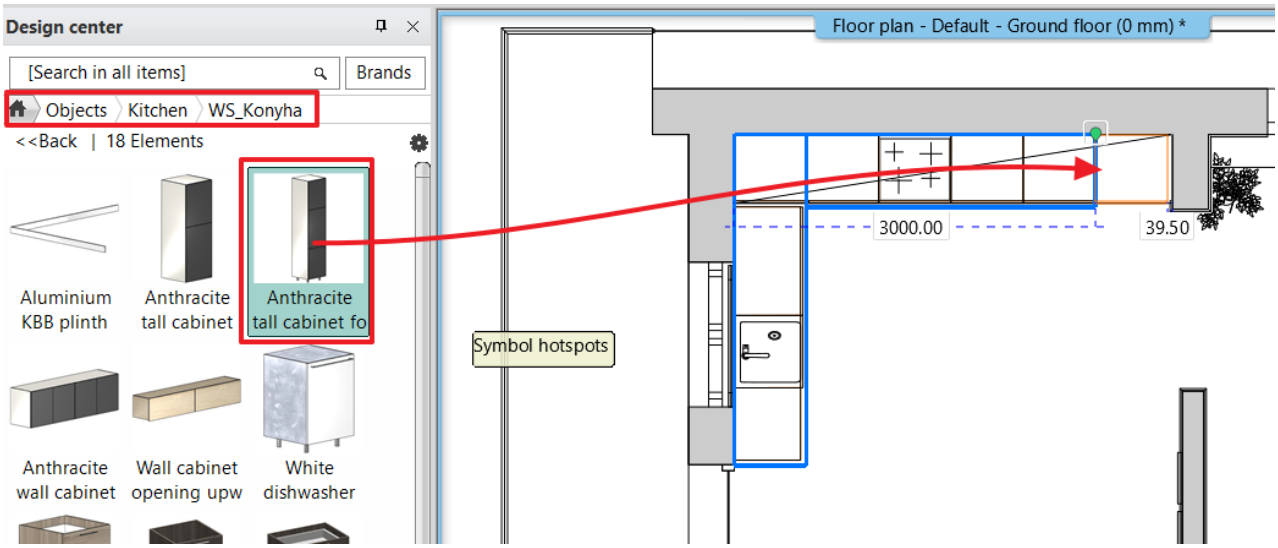
Close the dialogue by pressing OK.

4.5. Adding Cabinets

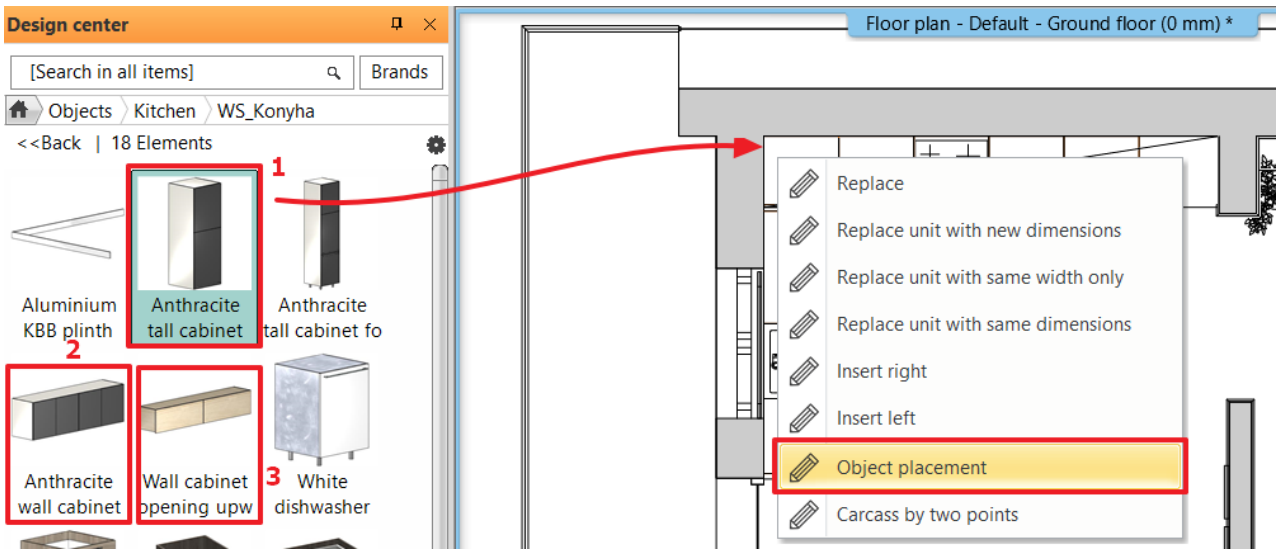
4.5.1. Add high cabinets

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.

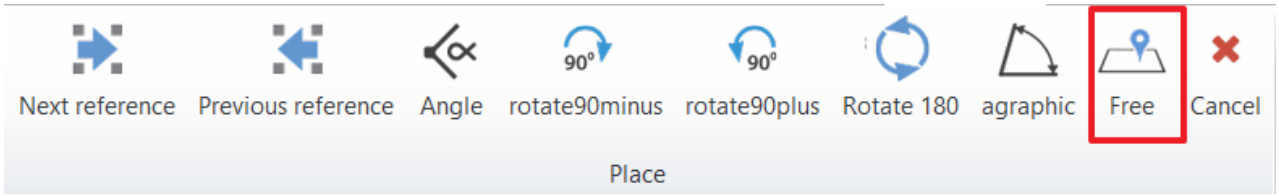
- Open the **Objects / Kitchen / WS Kitchen** category in the Design Center.
- Drag the ***Anthracite tall cabinet for fridge*** and drop it next to the last piece on the right side.



- Drag and drop the "**Anthracite tall cabinet**" (1) and place it in the corner onto the base cabinet. There is already an element here - a corner cabinet - so the program offers a choice. 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*.

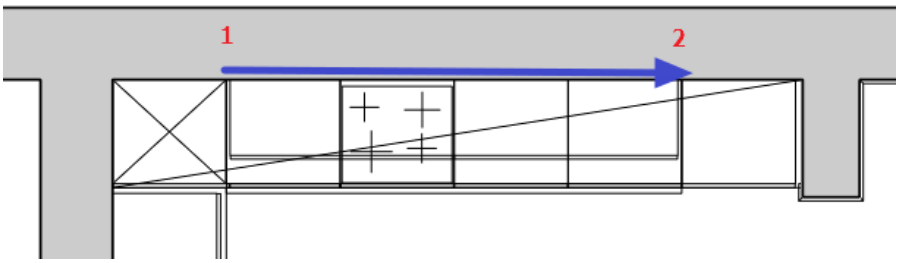


The result is the following:

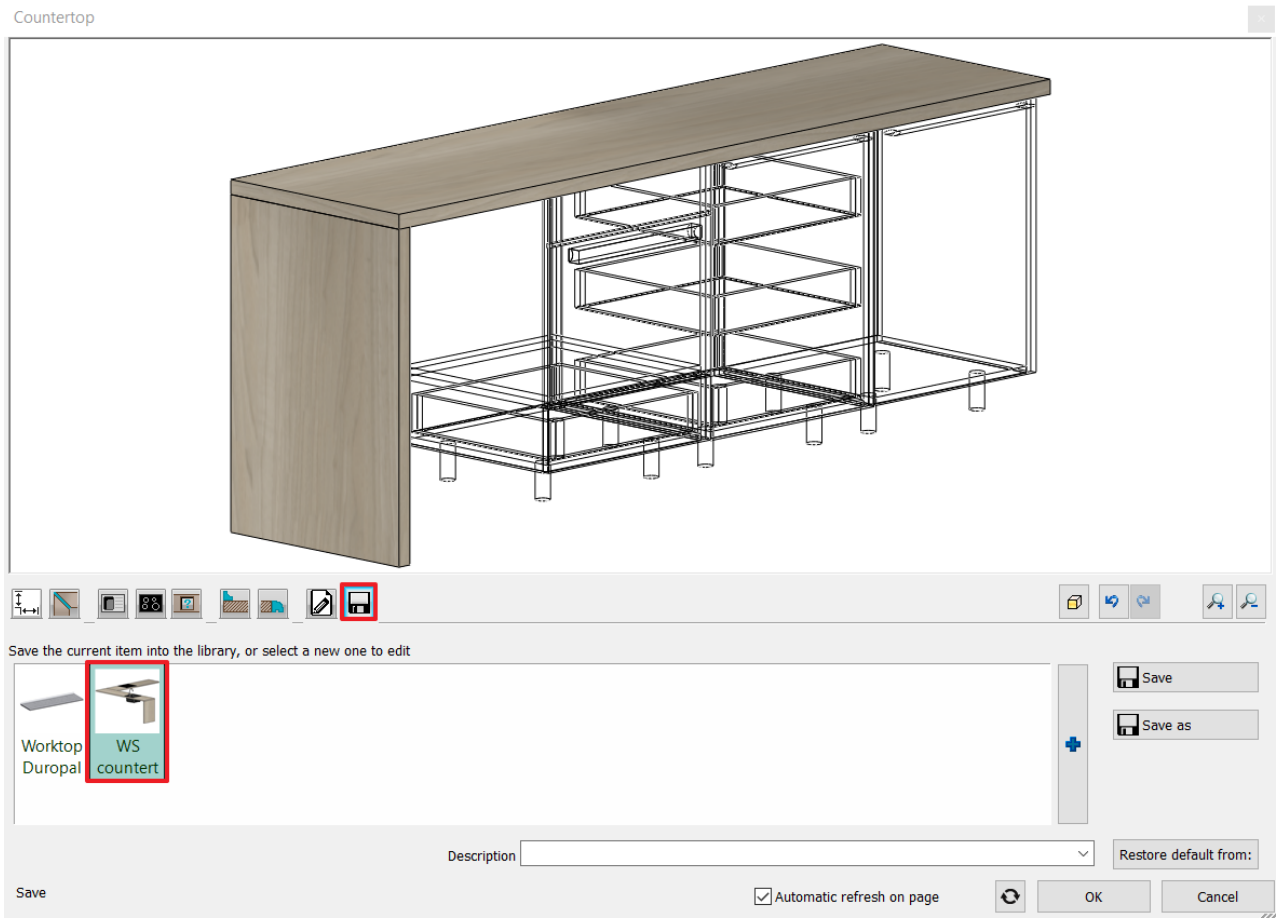
4.5.2. Creating the “box” with countertop

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

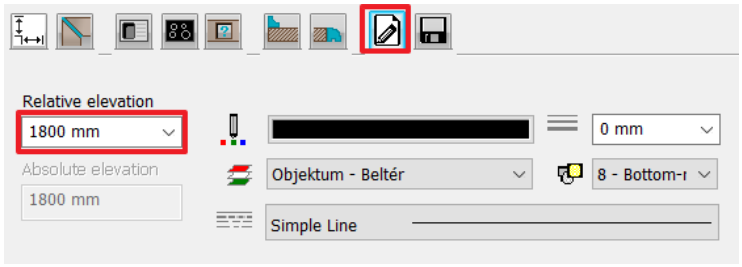
- Open the Interior / KBB / Countertop / Countertop by profile category.
- Enter the start and endpoints of the piece: (1), (2), Enter.



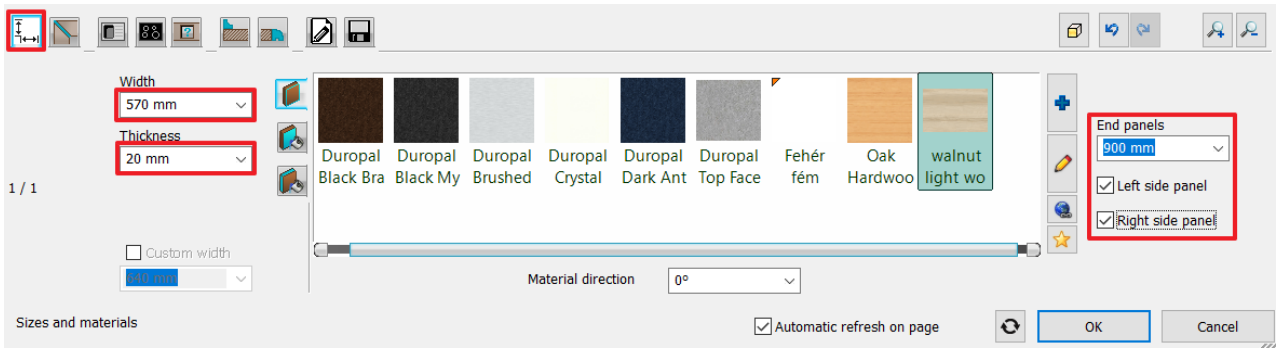
- In the countertop window select the *Save* tab and select the previously created WS countertop. Now it appears with the already set parameters.



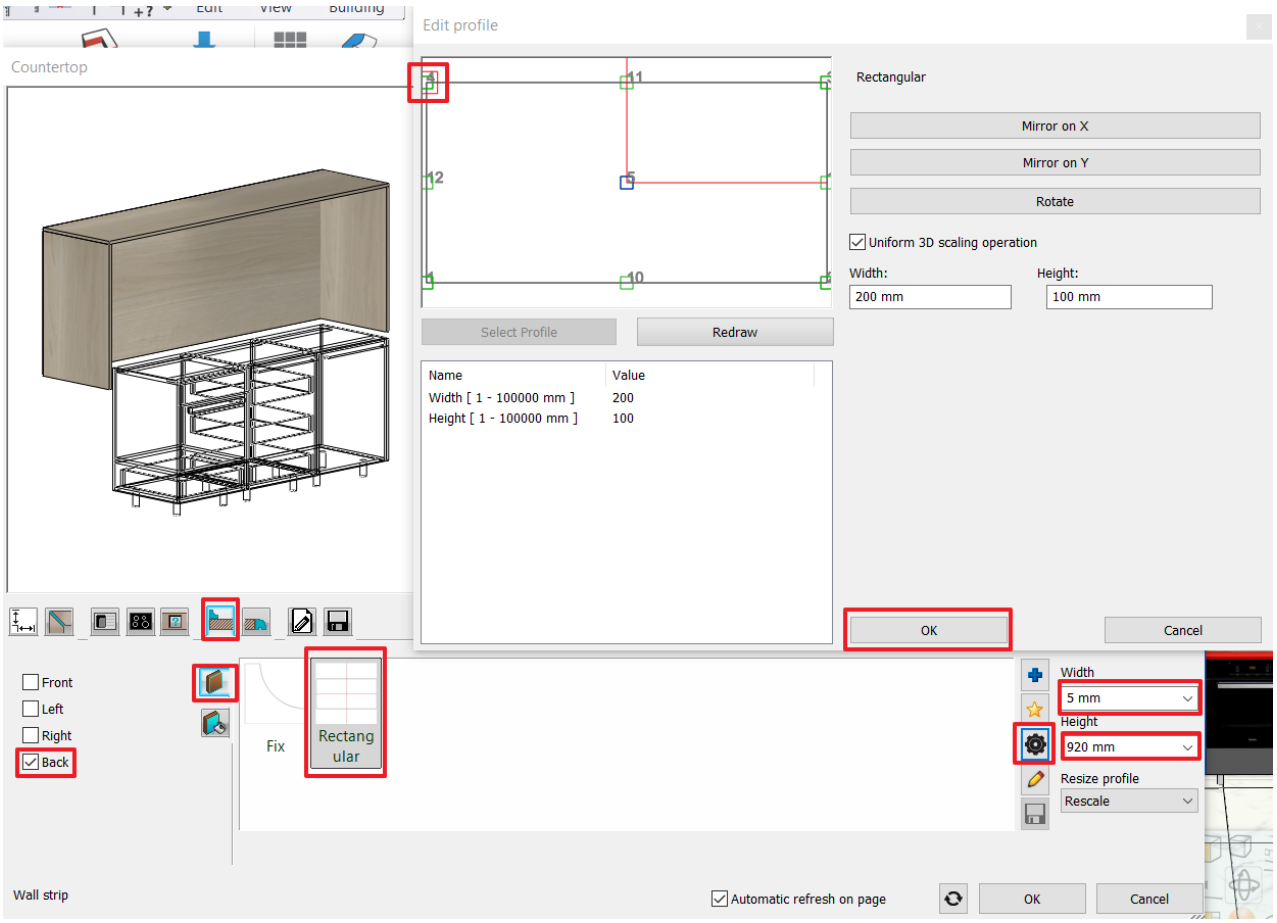
- In the General settings set the relative elevation to 1800 mm:



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

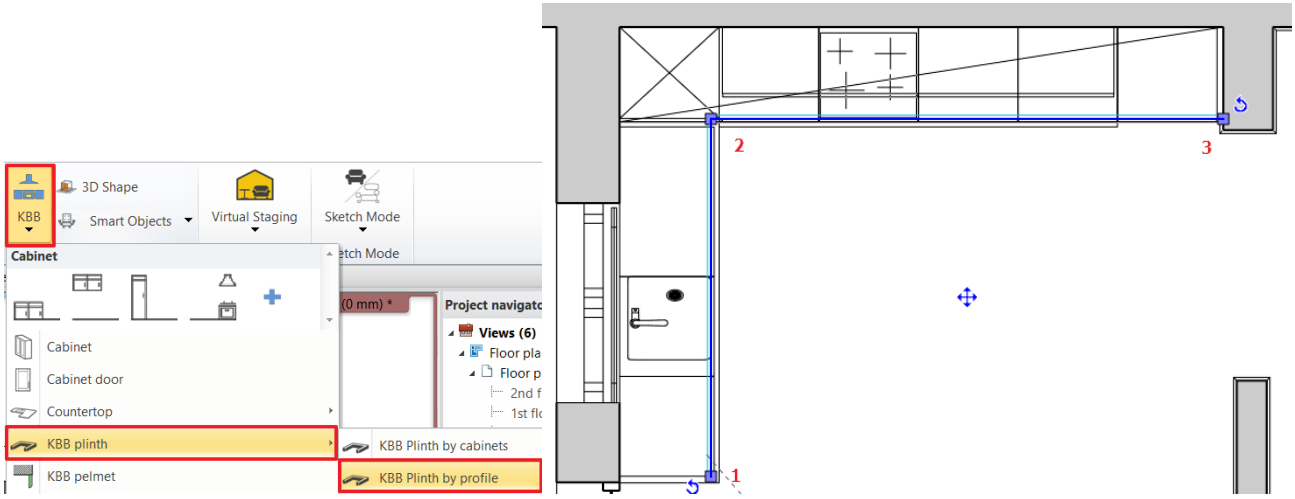


On the Wall strip tab activate the back and select the rectangular profile. Width: 5 mm, height: 920 mm, *settings (gear icon)*: reference point is the upper left corner.
Select the Walnut light wood fine material.

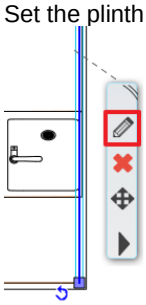


4.6. Edit Plinth

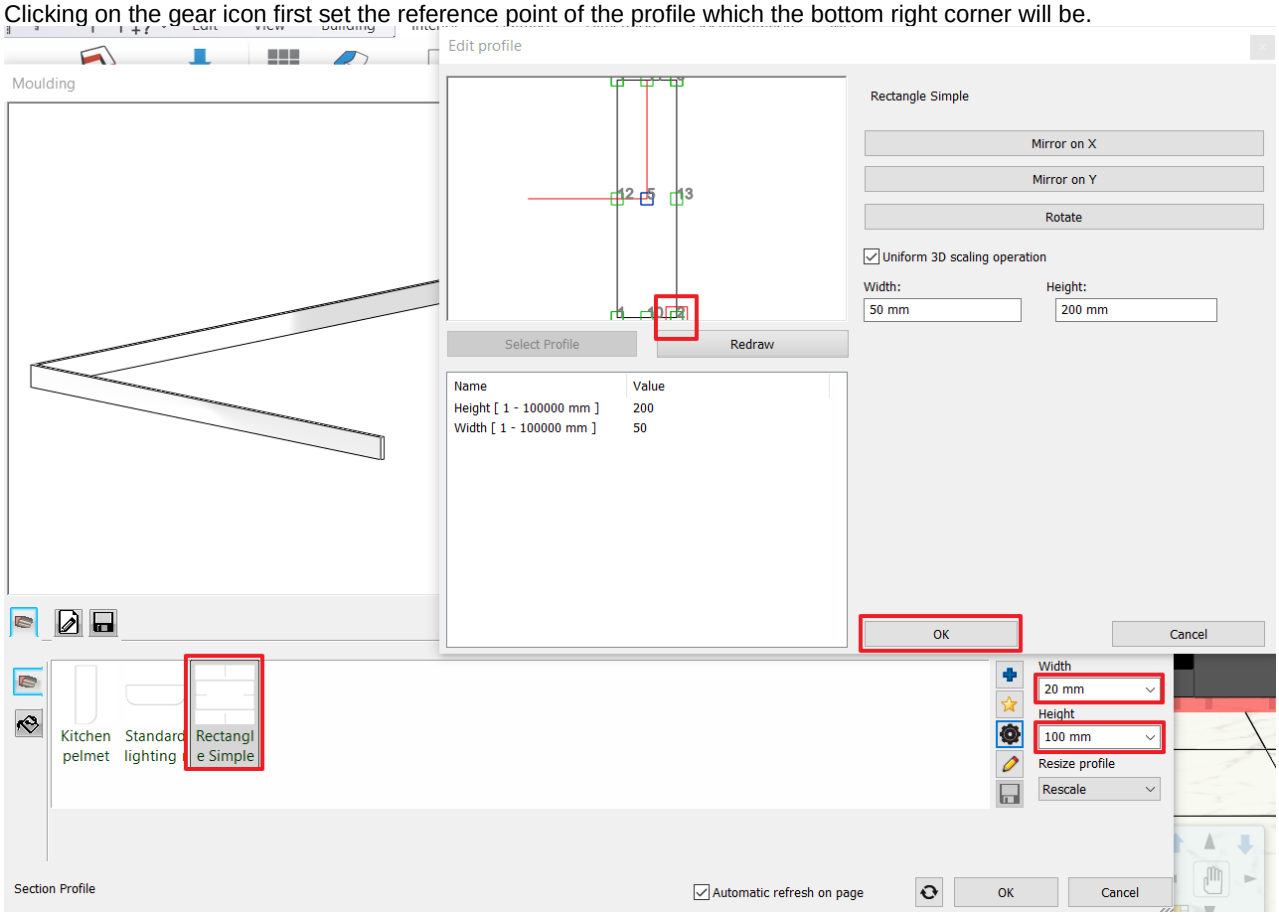
- Select **Ribbon bar / Interior / KBB / KBB plinth / KBB plinth by profile**.
- Draw the reference line of the plinth: (1, 2, 3), then hit Enter.



- Set the plinth properties:

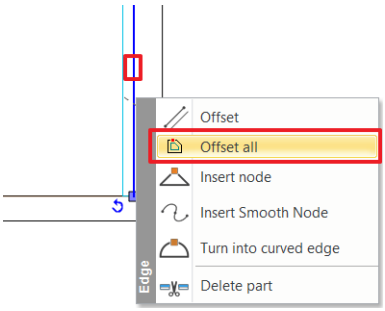


On the first page set the Section Profile properties - rectangle.
Clicking on the gear icon first set the reference point of the profile which the bottom right corner will be.



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. Creating the documentation

4.7.1. Creating a scaled wall view of the cabinets

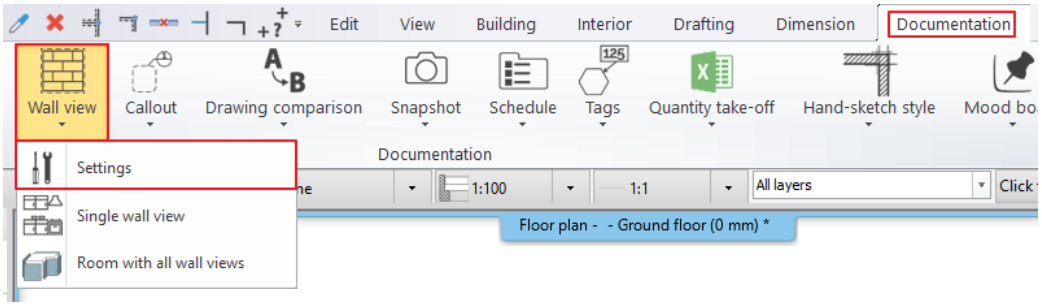
There are two ways to create a wall view: as a raster graphic image or as a vector drawing. The graphic image is faster and more versatile, but the vector drawing is more accurate.
It is possible to display the storage furniture scaled in the wall view. This applies to both the horizontal and vertical directions. Storage furniture can be displayed with or without a front, even in one step, so two wall views are made at the same time. Wall views are assigned to the wall by the linked symbol.

In this example, there are two types of wall views of the created furniture:

- ❖ scaled pictorial wall view with front, and
- ❖ scaled vector wall view without front.

Scaled wall view with front

- Activate the floor plan
- Click on the Ribbon bar / Documentation / Wall view / Settings option.



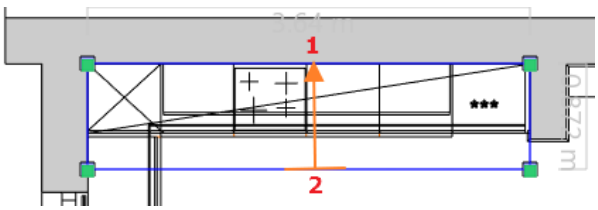
Wallview properties

Parameters	Value
General	
Layer	00_Fólia 0
Draw Order	8- Bottom-most
Representation in 3D	
If section upper and lower limit options are turned off, the elements on the level will be displayed at full height, regardless of level h...	
☐ Section upper limit (>0: meaning from the top of the level upwards)	0 mm
☐ Section lower limit (>0: down from the bottom of the level)	0 mm
☐ Show objects in front of wall. Region width:	0 mm
Enable grid lines	☐
Hatch on section	☐
Item types for applying section Line weight	Edit
Section Line weight	0.03 mm
Display Options	
Representation mode	Image
Visual Style	Consistent colour (with edges)
Snapshot / Wallview resolution	2048
Snapshot / Wall view file format	.jpg
Types to colour/shadow	Edit
Other parameters	
☑ Create dimensions for cabinets	
Opening direction symbol properties	Edit
Cabinet Door	Closed
Horizontal dimension style	Bearing and length from North
Vertical dimension style	
○ Length dimension	Bearing and length from North
◉ Elevation on section	Elevation dimension
☑ Symbol visible at wall	Wall marker symbol
☑ Symbol visible at elevation view	View marker symbol
☑ Skip cutting objects above complexity	
Maximum value of object complexity (number of faces)	100000

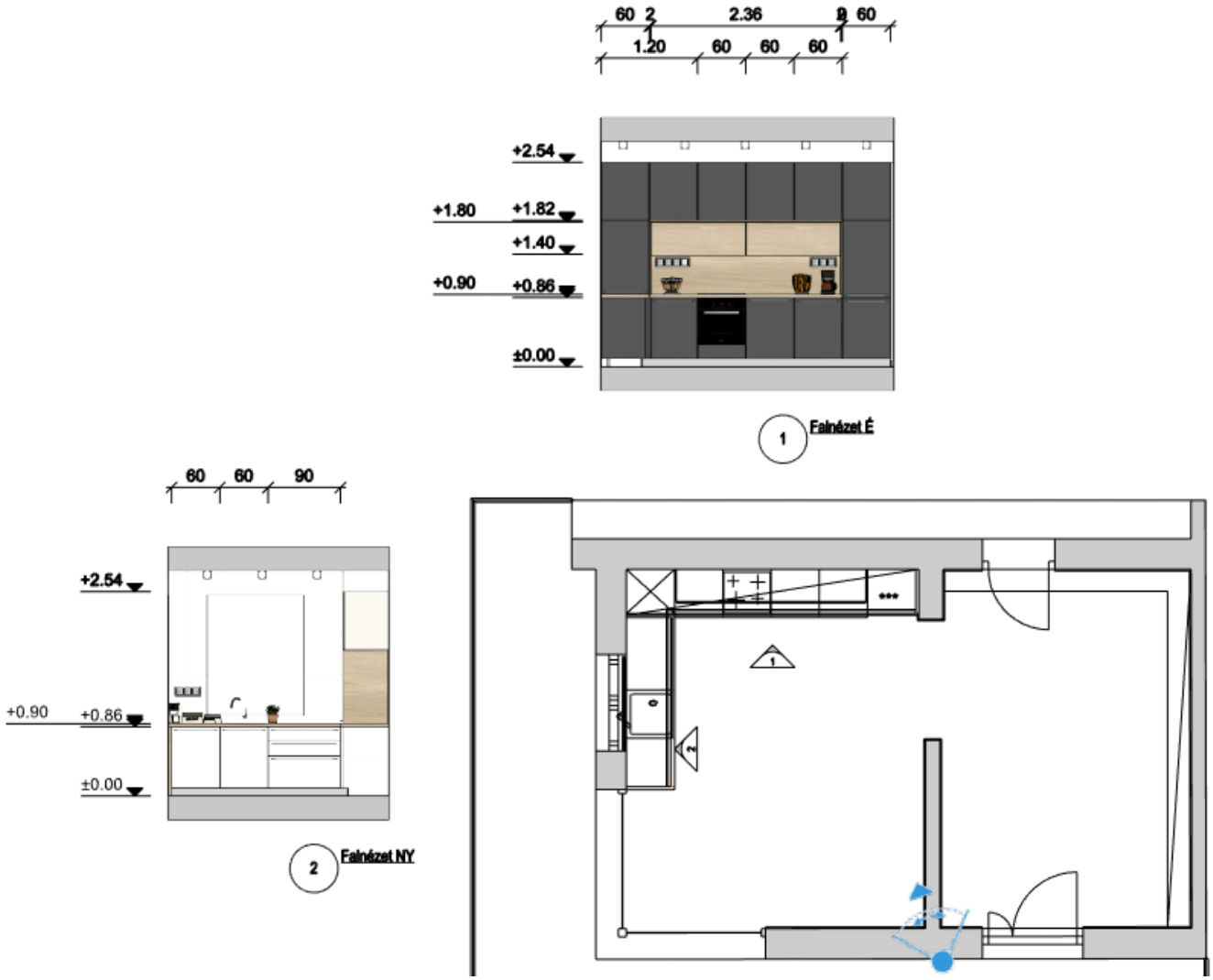
OK Cancel

- Turn off Hatch on section.
- Here, set the Representation mode to Image and the Visual Style to Consistent color (with edges).
- Turn on the Create dimensions for cabinets option.
- The Cabinet doors should be closed.
- Turn on Elevation on section for Vertical Dimension style.
- Turn on Symbol displays.

- Start the **Ribbon bar / Documentation / Wall view / Single wall view** command.
- Click on the side of the wall facing the kitchen furniture (1).
- Move the orange arrow and click on the desired point (2). A blue rectangle appears, indicating the area to be displayed by the wall view. It is advisable to include the full form of the furniture. The boundaries of the enclosure can be further edited as desired. Enter.

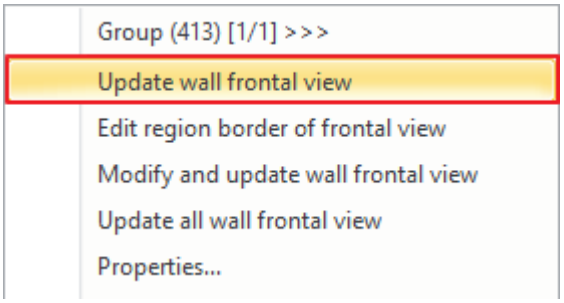


- Place the wall view in the desired location.
- Also take a wall view of the kitchen furniture on the other wall. The balcony door is not displayed in the wall view, so change the size of the blue rectangle that appears by clicking on the side below and then selecting the offset.



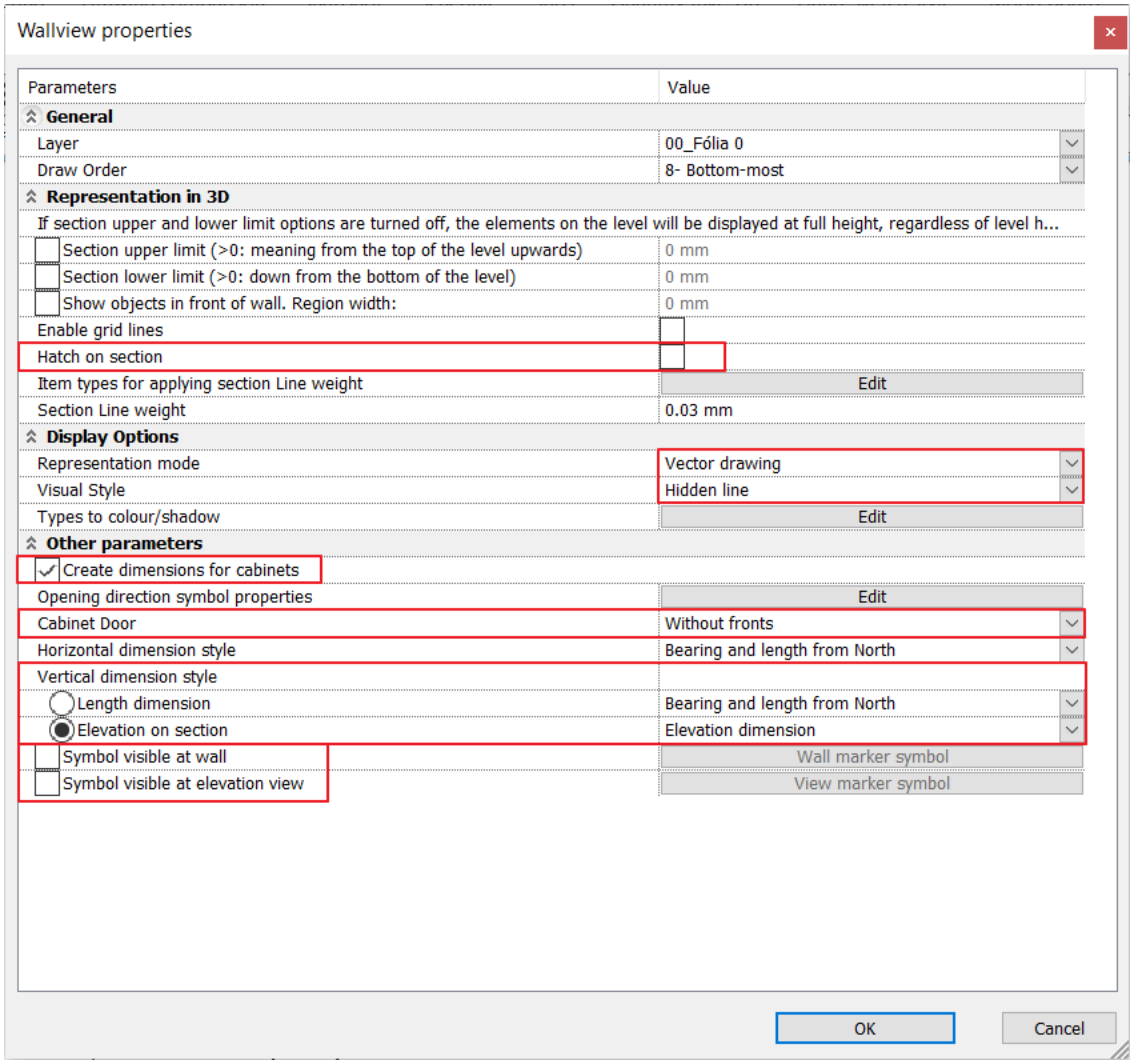
The resulting wall views are groups. By entering the group from the group local menu, the items in the group can be edited. In the picture, we thus corrected the congested dimension lines. After editing, be sure to close the group.

If you change the plan, the wall views can be updated manually. You can also do this in the wall view local menu:



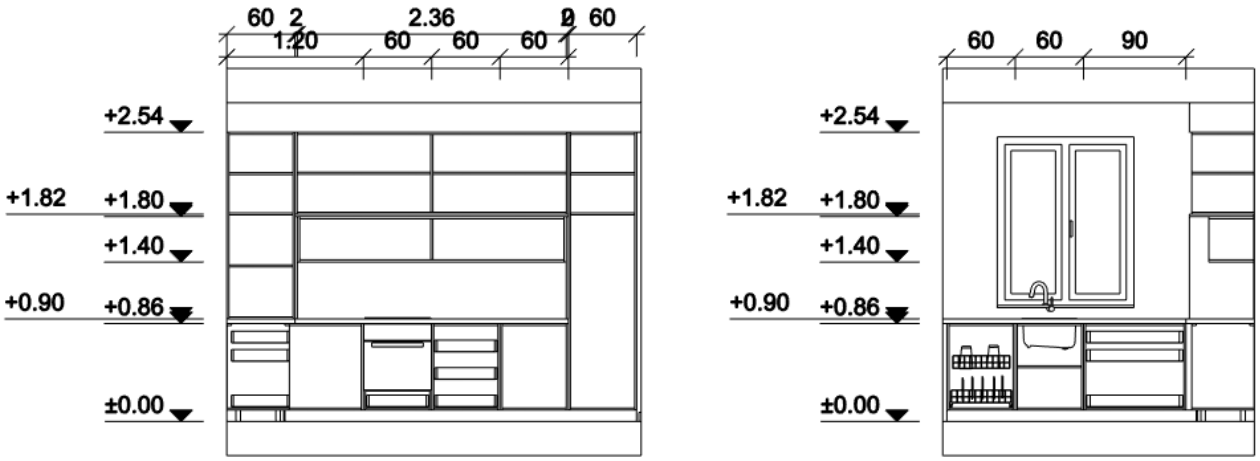
Scaled vectorial wall view without front panels

- Click on the Ribbon bar / Documentation / Wall view / Settings option.



- Here, turn off Hatch on section.
- Set the Representation mode to Vector drawing and the Visual Style to Hidden line.
- Turn on the Create dimensions for cabinets option.
- The Cabinets should be without fronts.
- Turn on Elevation on section for Vertical Dimension style.
- Turn off Symbol displays.

Create the wall view based on the previous instructions.

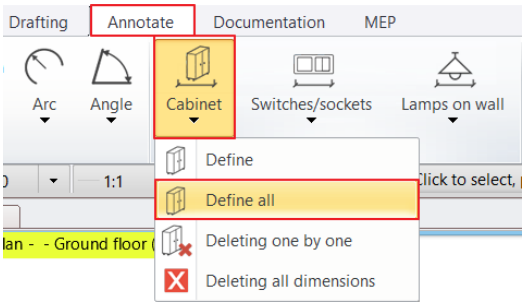


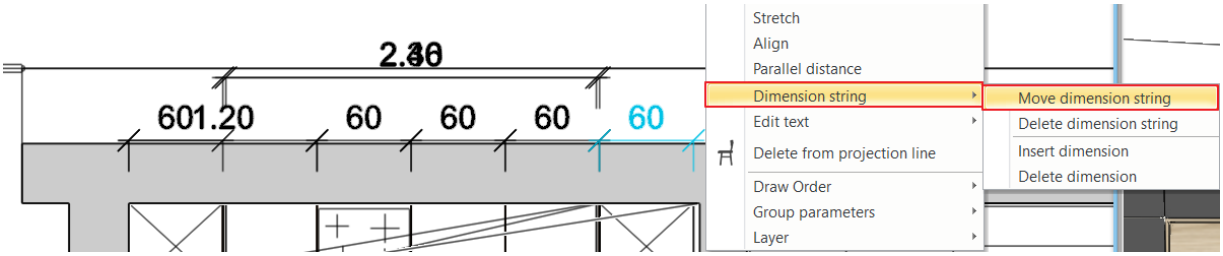
4.7.2. Dimensioning cabinets on the floorplan

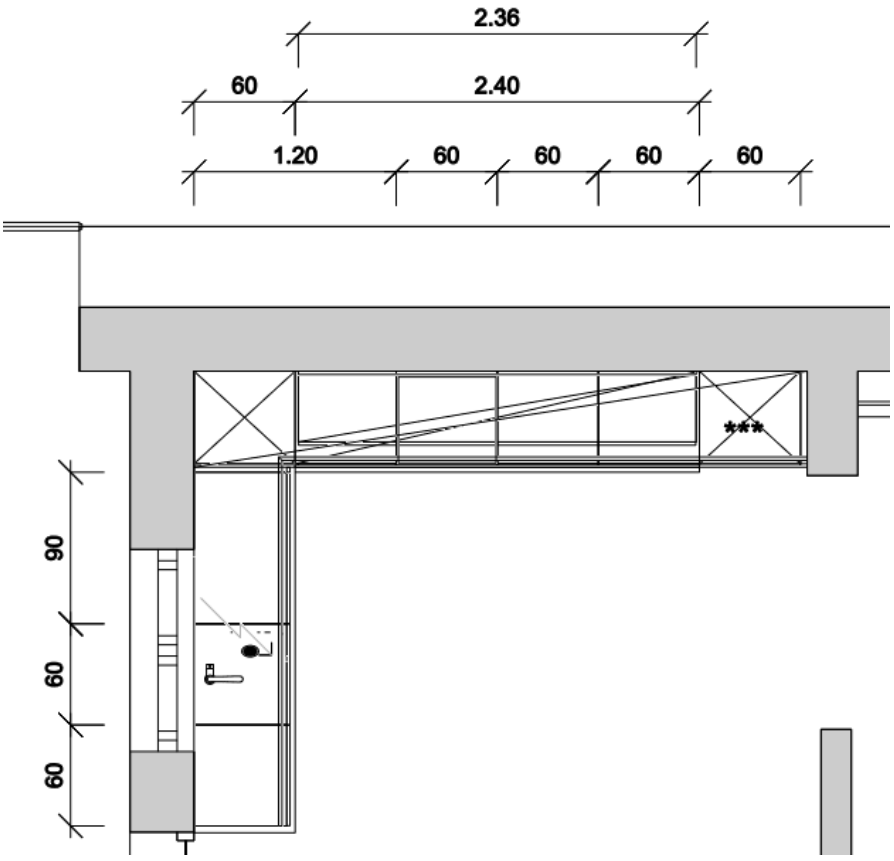
- Make the floor plan window active. Select **Annotate / Cabinet / Define all.**

  All cabinets are scaled.

  For better placement, the scales should be moved.
  To do this, use the Move dimension string command from the Dimensioning local menu.

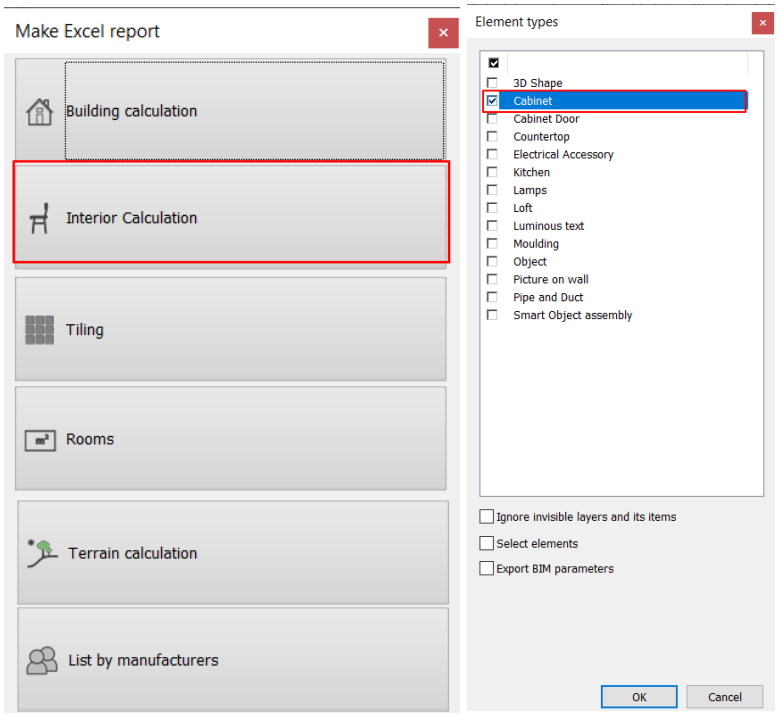






4.7.3. Create an Excel list

- Select **Documentation / Quantity take-off / Excel list.**
- In the window that pops up, select the **Interior calculation**, then select only the **Cabinet** from the element types.



- In the pop-up window, save the list to your computer, then open the file.
- In the *Furniture detailed* tab, the program lists the cabinets, the tiles and components that make them up, the number of pieces, the type of cabinets and their dimensions.

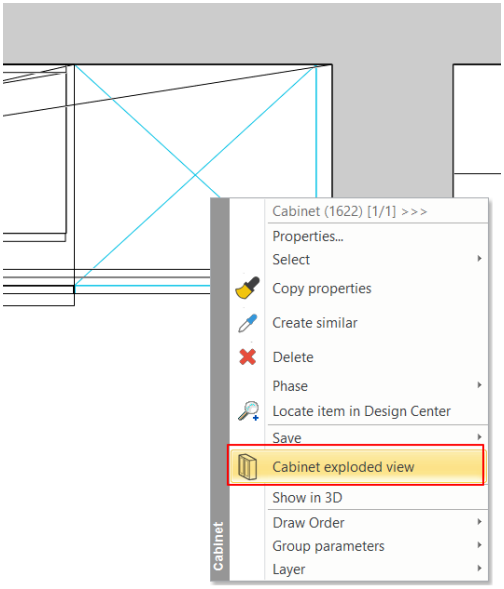
Cabinet details list (Overall dimensions)

Name	*Copies*	*Components*	*Type*	*Width [mm]*	*Height [mm]*	*Thickness [mm]*	*Left edge*	*Right edge*	*Bottom edge*	*Top edge*
alapszekreny antracit			**Base unit**	600	550	860				
	1	**anthracite panel**		596	**756**	20				
	1	**Sink Corpus Panel**		564	**18**	550				
	4	**Simple Circular Leg**		40	**100**	40				
	1	**Side Corpus Panel**		564	**547**	18				
	2	**Side Corpus Panel**		550	**760**	18				
	1	**Side Corpus Panel**		564	**18**	550				
	1	**Bar handle simple 120**								
	1	**Back Corpus Panel**		564	**724**	3				
Unknown			**Tall unit**	600	550	1640				
	1	**anthracite panel**		596	**713**	20				
	1	**WS roll-front**		596	**919**	20				
	3	**Side Corpus Panel**		564	**547**	18				
	2	**Side Corpus Panel**		550	**1640**	18				
	2	**Side Corpus Panel**		564	**550**	18				
	1	**Bar handle simple 120**								
	1	**Back Corpus Panel**		564	**1604**	3				
rejtett fiokos			**Wall unit**	2361	400	400				

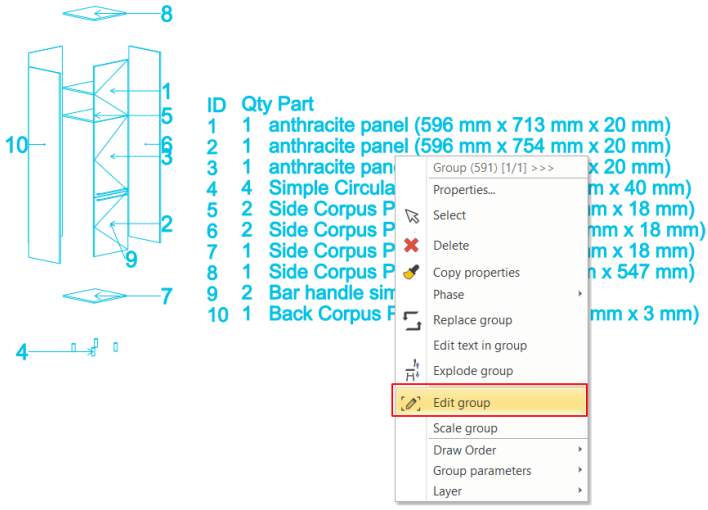
Project properties | Furniture summary | **Furniture detailed** | Summary

4.7.4. Cabinet exploded view

- Right-click on one of the cabinets and select the **Cabinet exploded view** option.



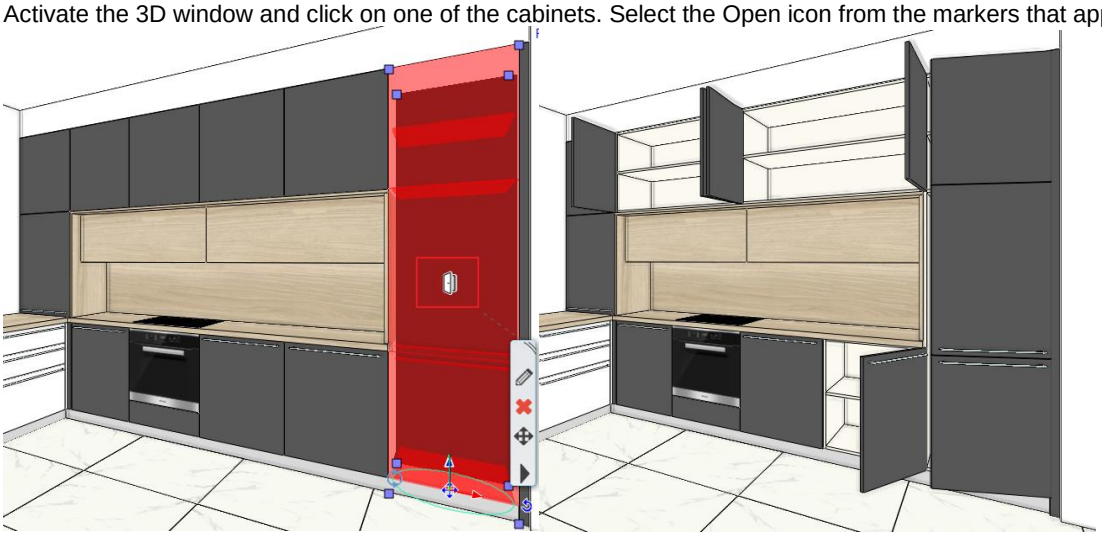
- Place the figure on the floor plan.
  The exploded view is also a group, so you can edit it freely with the Edit group command.



4.7.5. Using the Opening icon

The opening icon is used to show you the internal structure of the cabinets, making the plans even easier to understand.

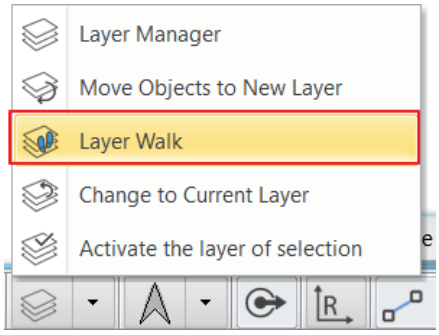
- Activate the 3D window and click on one of the cabinets. Select the Open icon from the markers that appear.

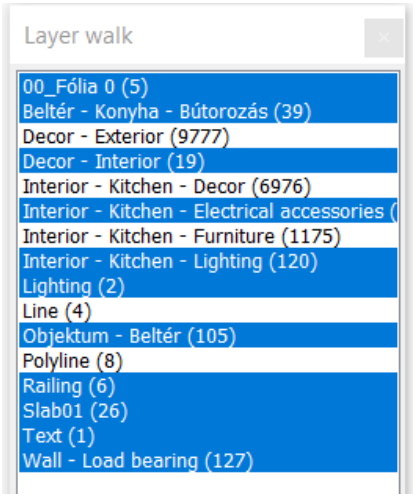


4.8. Display the whole plan

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:





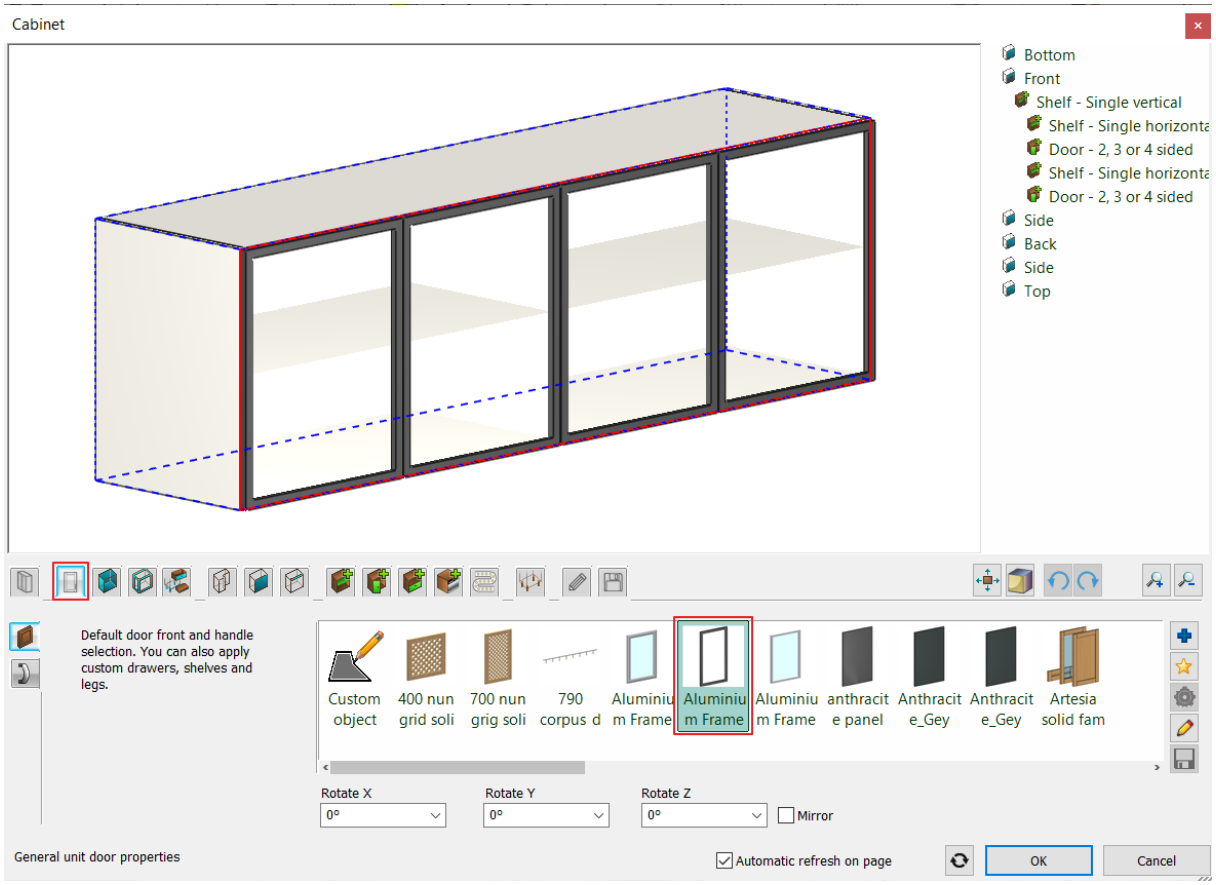
- Click on the 3D hammer icon and regenerate the 3D model. On the screen you will see a similar solution:

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

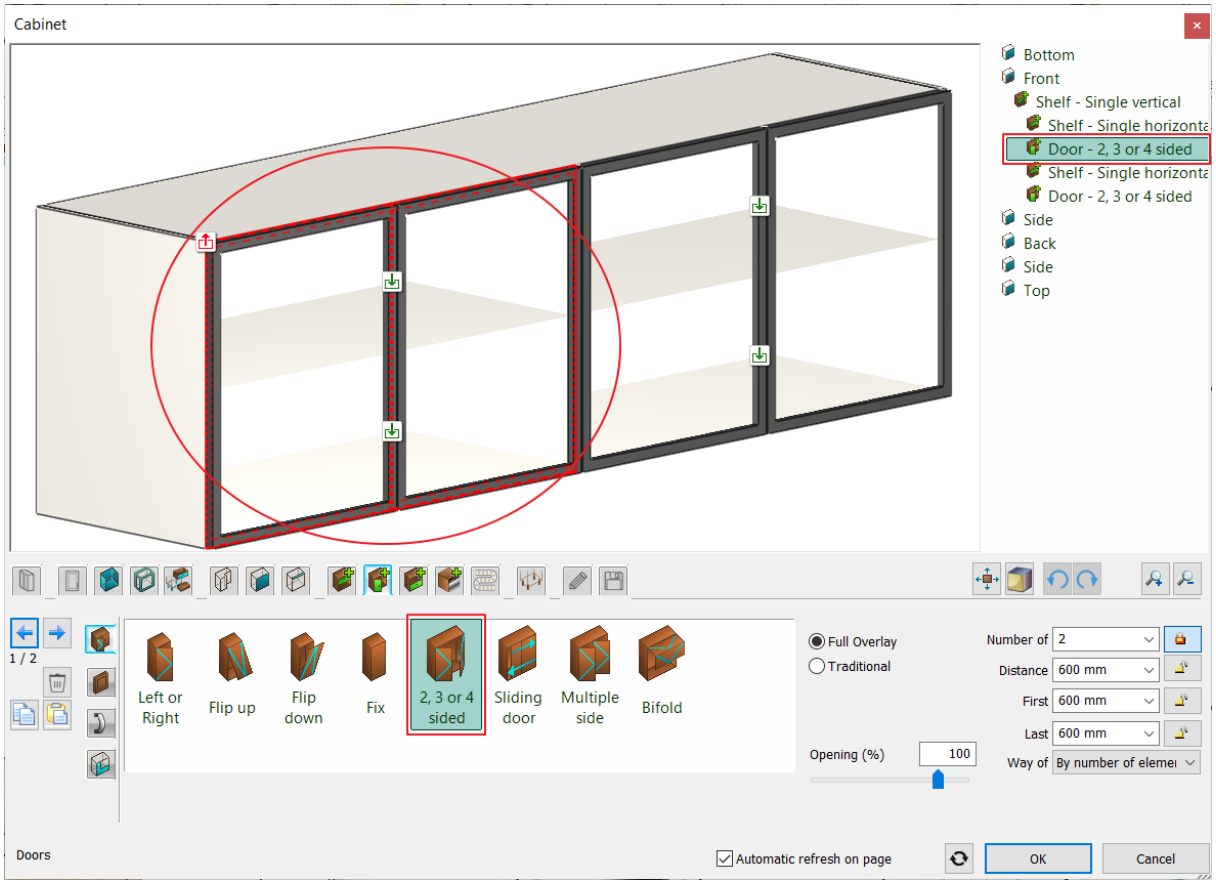
4.9. LED strip placement - optional

We will convert the upper cabinet to a glass door and install an LED strip.

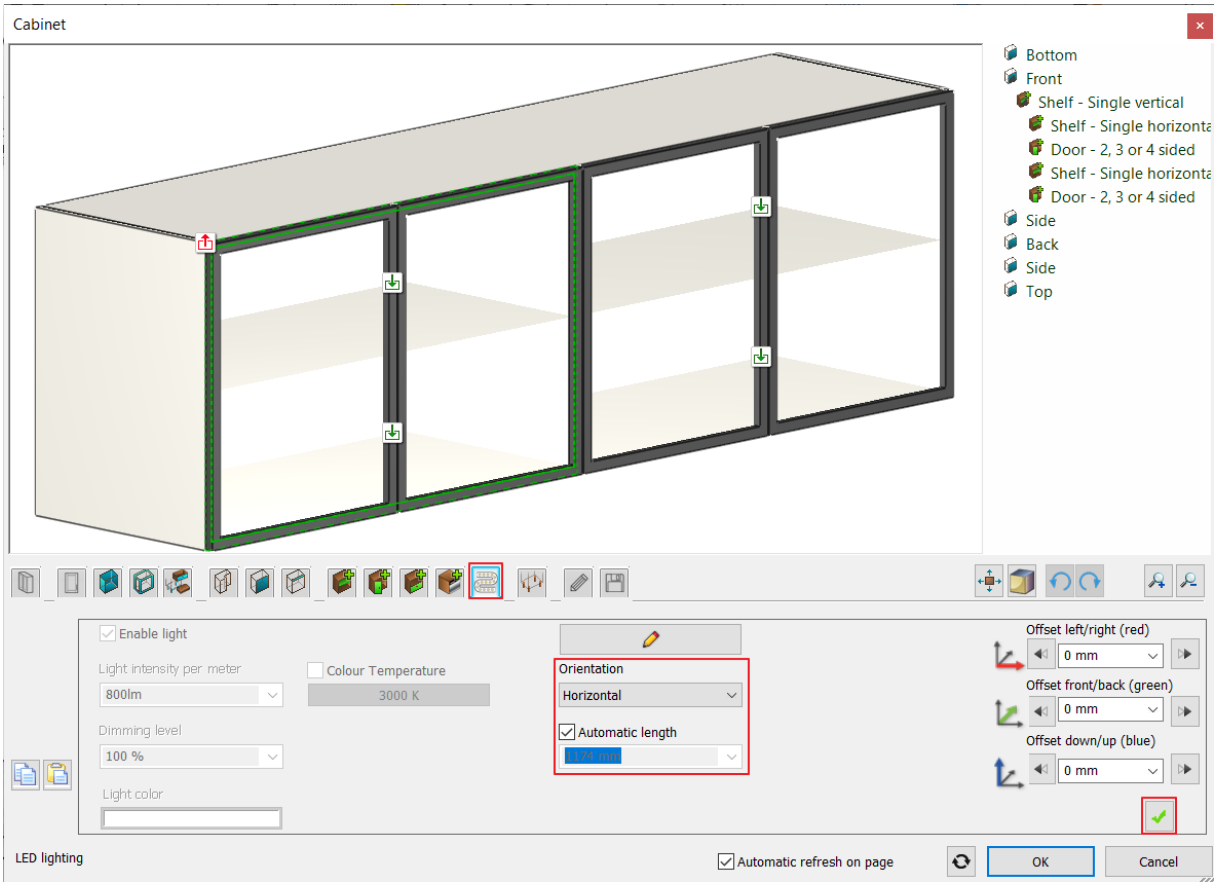
- Select a glass door from the library to replace the default door of the upper cabinets.
  You can choose the *Aluminium Frame Modern Glassfront* and then change the frame material.
  Change the shelf material to glass.



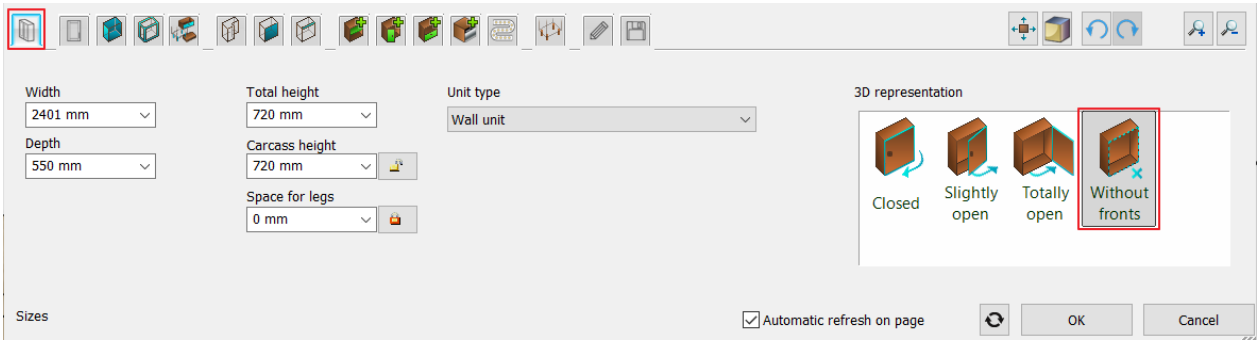
Select the left front:



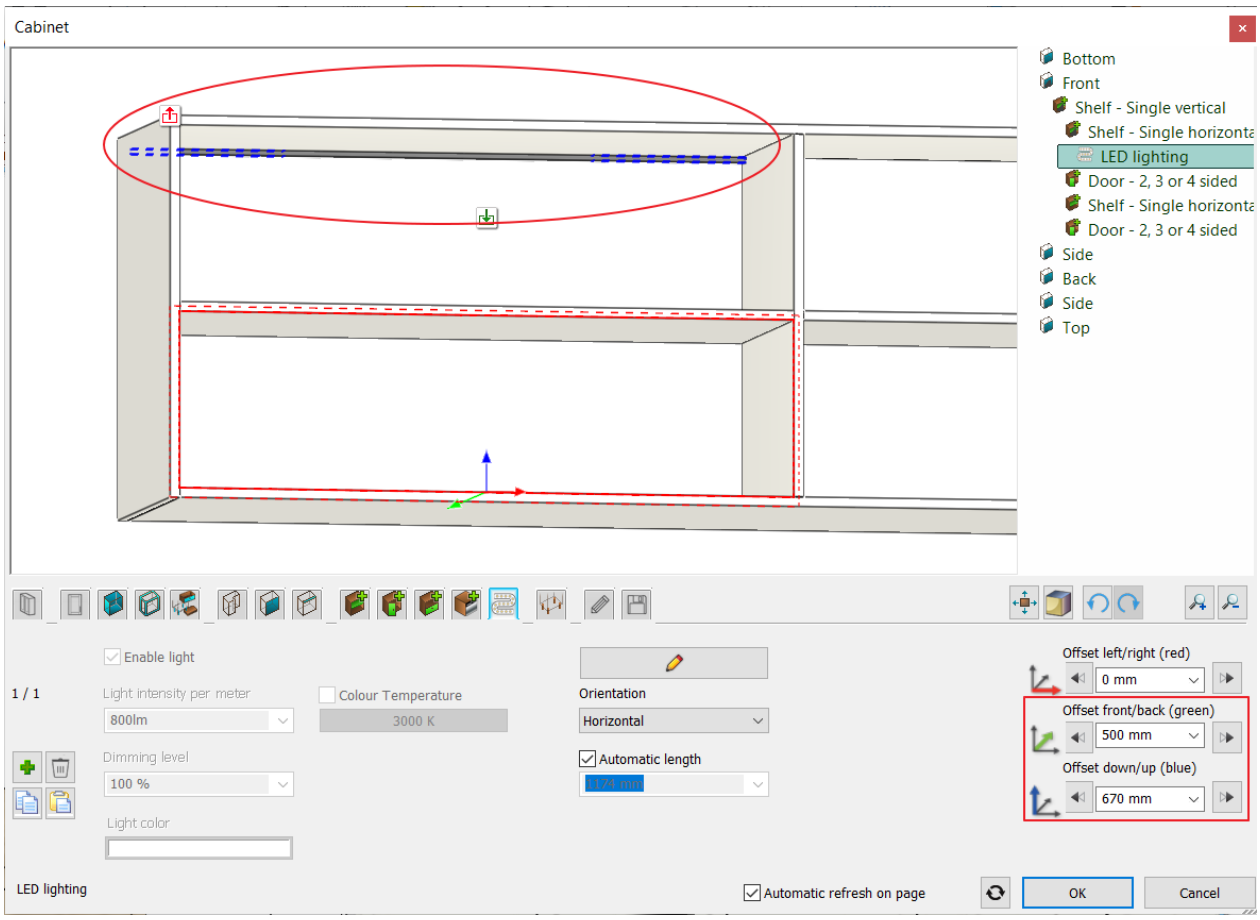
- Click on the LED lighting icon and set its position: horizontal and its length is automatic, so it will take up the internal width of the cabinet:
  Click on the green tick.



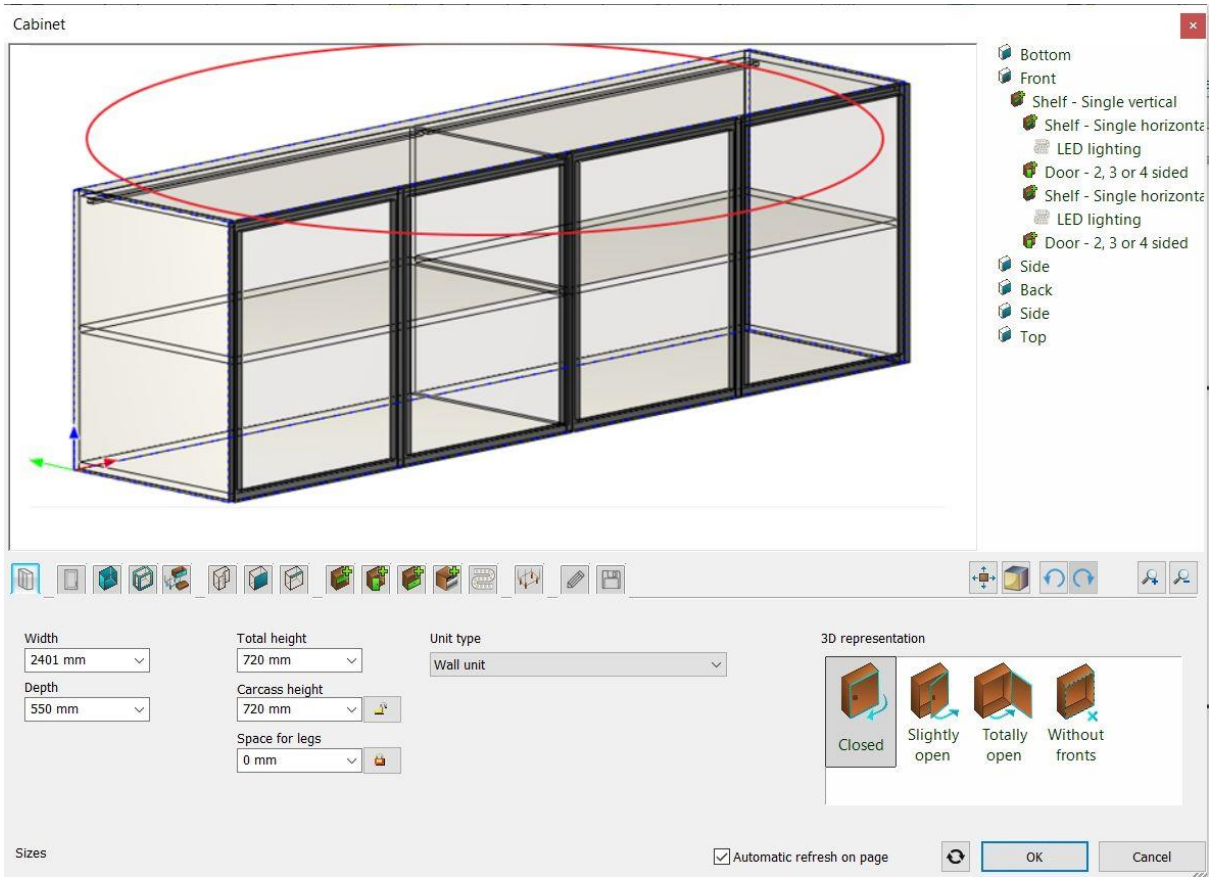
- Display the wall unit without front:



- then change the position of the LED strip:



- Place LED strip in the right cabinet as well:
  Display the cabinet with the doors closed.



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
- Colored floor plan
- Wall elevation views
- Plot layout

- Open your browser and watch the following video
  https://www.archlinexp.com/enrollments/courses/preliminary-course/documentation/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 **Preliminary Course - Workshop Projects 2024** from our website and install it. It includes all projects for all preliminary workshops.

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

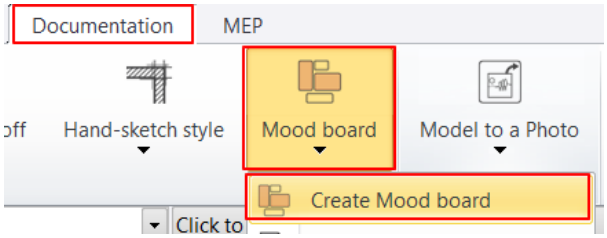
and choose:
…\Documents\ARCHLine.XP Draw\2024\Workshop_Preliminary\5_Documentation\1_Receptionroom_workshop_start.profile.

5.1. Creating Mood board

The ARCHLine.XP Mood board feature is an easy-to-use tool to create collage by using the images of the colors, materials, and furniture of the project, helping the communication between designer and customer.
We are going to create the following mood board:

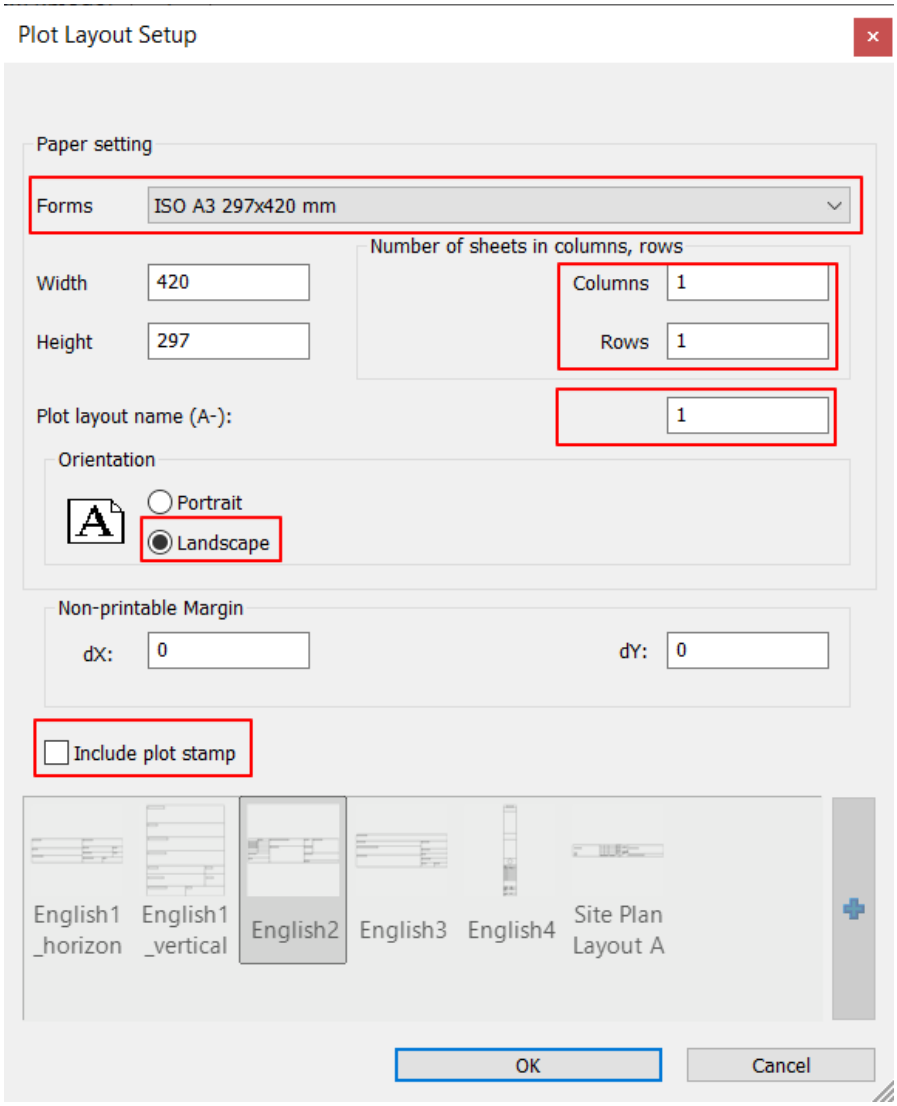
5.1.1. Open mood board

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



5.1.2. Paper setup

- In the *Plot Layout Setup* dialogue window set the following properties:
  Forms: ISO A3 297x420 mm
  Orientation: Landscape

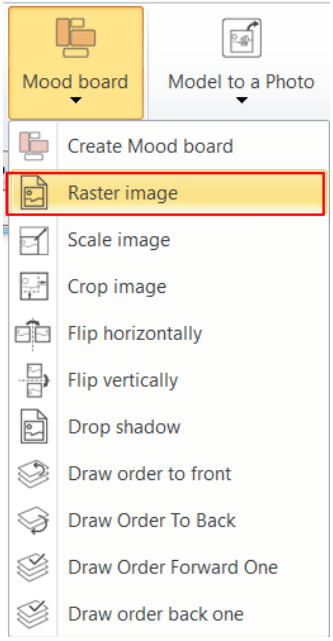


Also, you can place plot stamp on the document by ticking the **Include plot stamp** checkbox.
A blank page with the selected properties will be created, on which you can place images as you wish.

- In this case, turn this option off!
- Click OK to close the window.

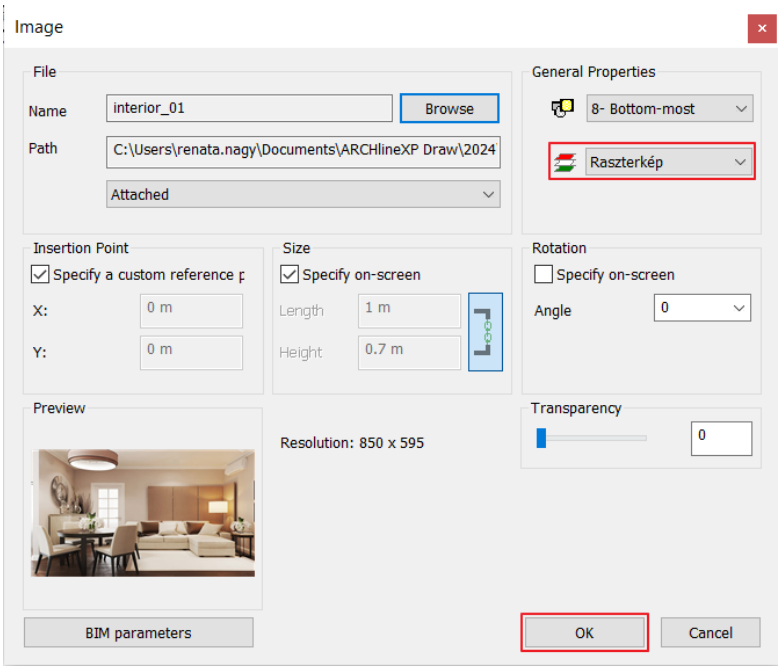
5.1.3. Place images

The name of the created window is “A-1”, it can be renamed by clicking on it.



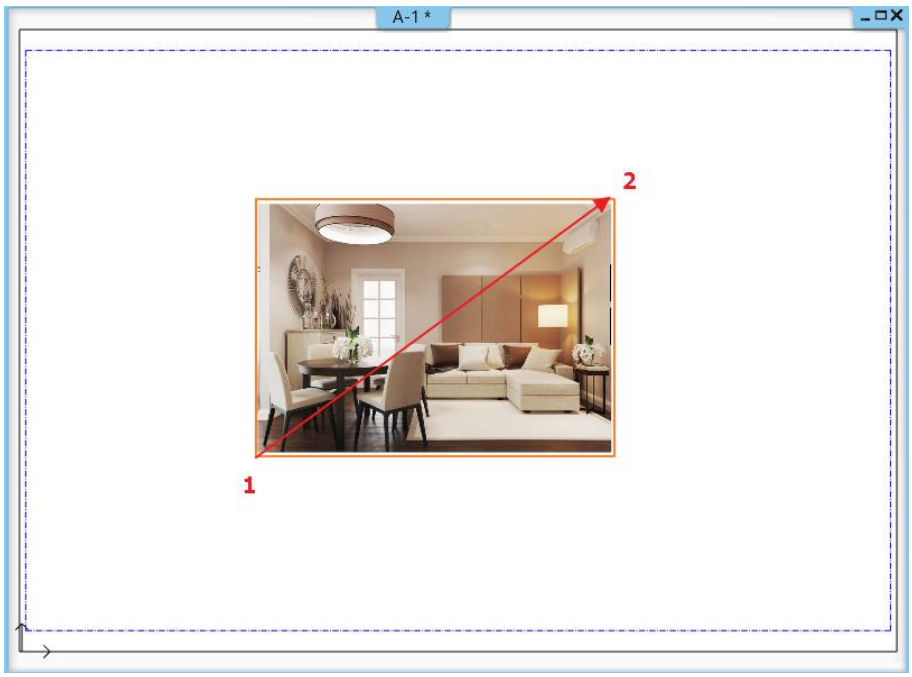
Choose the **Ribbon bar / Documentation / Mood board / Raster image** command, so you can select the images to be placed.

- Find the folder where images are saved: *Documents\ARCHlineXP DRAW\2024\ Workshop_Preliminary\5_Documentation\Pictures*
- Click on "*Interior_01*", then click on Open. In the Image dialogue window just click on OK button.



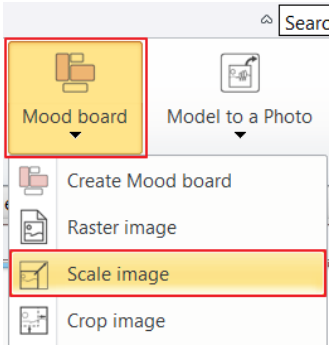
An orange borderline appears above the plot layout indicating the selected image.

- 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 6-7 additional images from the previous folder in the same way, or drag and drop them onto the plan sheet.

5.1.4. Modify images

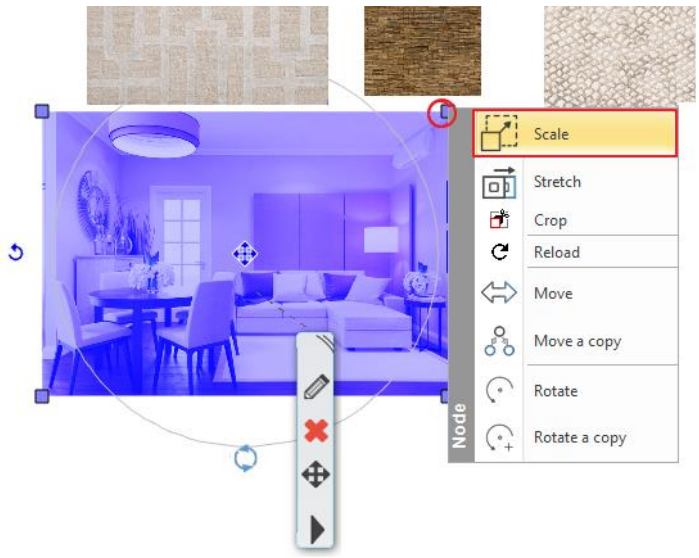


We need to modify the pictures to get the desired look. The image editing and modifying options can be found under the **Mood board** command. Some instructions can be accessed by clicking on the corner of the picture.
Use the following commands to create an aesthetic montage:

Resizing and scaling images

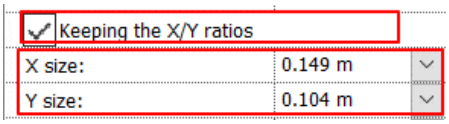
After selecting this command, click on the image you want to change. An orange line appears as borderline of the picture, which can be modified by moving the cursor to get the right size. You can finalize the right image size by clicking once.

The command is accessible by clicking on any reference point of the selected image.

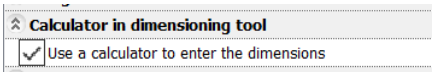


Resize image – Enter value

Once the image is selected, you can change its width and height by entering a value in the floor plan or in the side menu. In the side menu, you can scale the image proportionally by selecting *Keeping the X/Y ratios*.

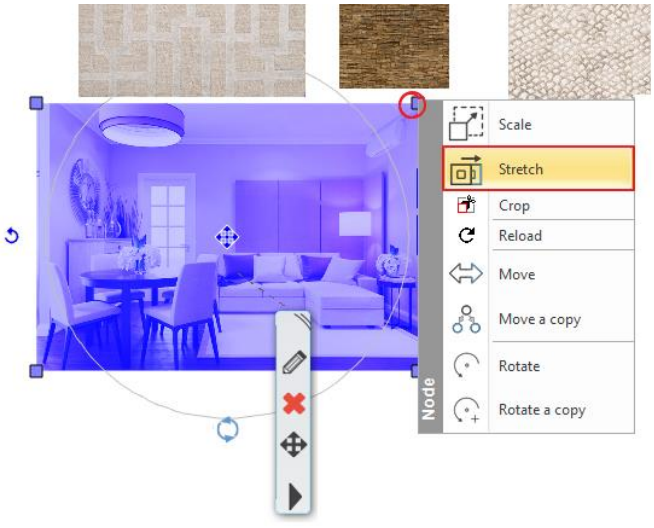


The calculator can be switched on and off under  *Settings / Units and angles*.



Stretch image

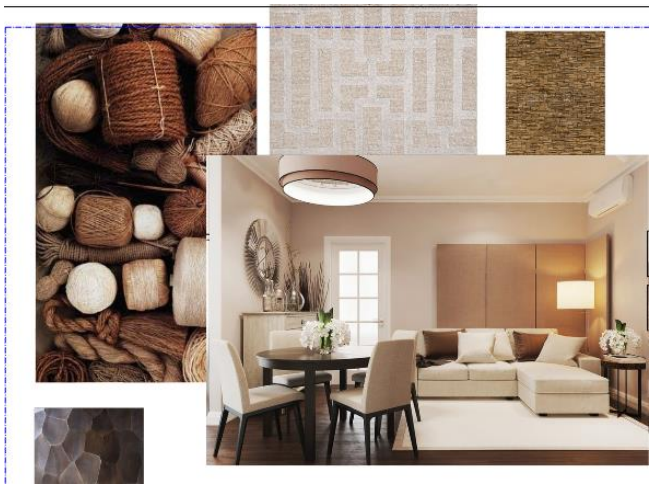
The command is accessible by clicking on any reference points of the selected image. Using Stretch command, you can resize the image, but not proportionally to the original.

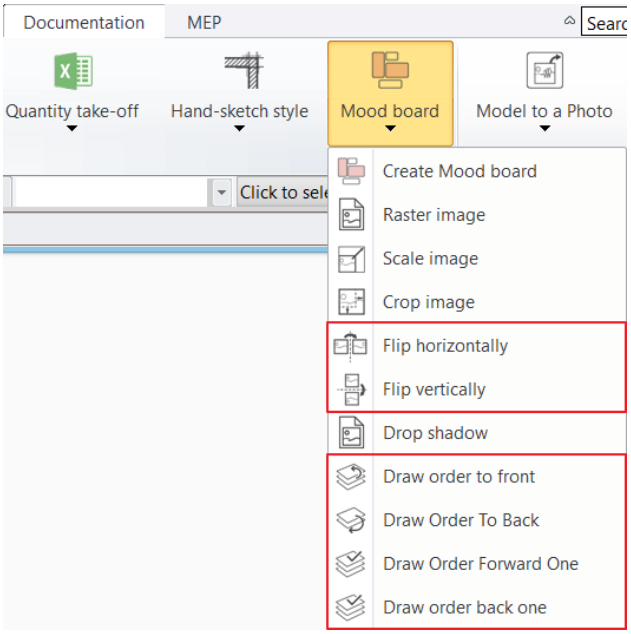


Order of image

While sorting pictures, you can specify their order. You can decide which is placed at the front or back.

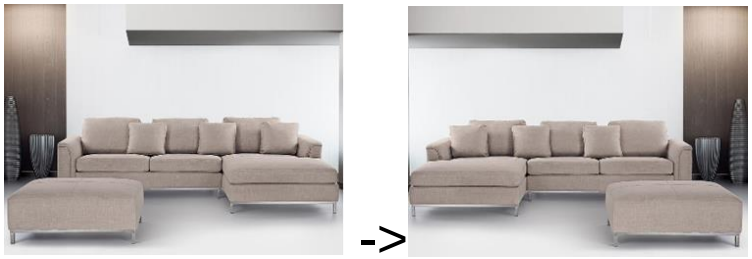
The command is available from the *Mood board* menu, or by right-clicking on the image and selecting the *Draw Order* menu.
Display order functions allow you to easily set the desired position of the images.





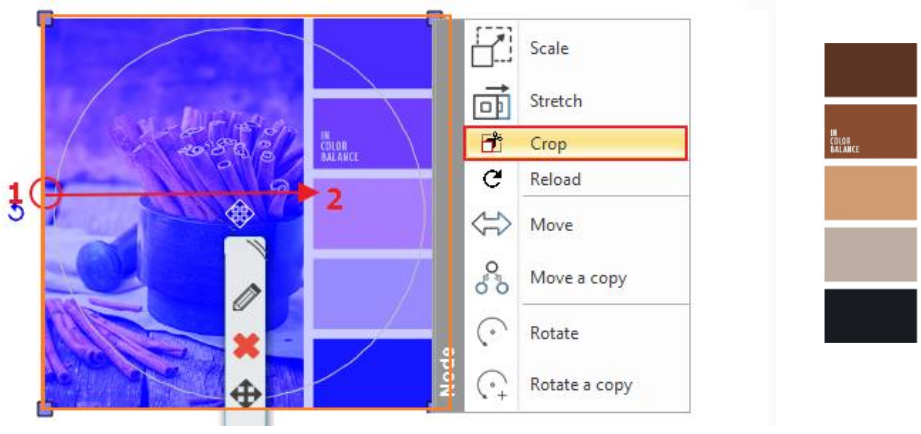
Flip image

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



Crop image

Click on a reference point in the image you want to edit. Select **Crop**.
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.

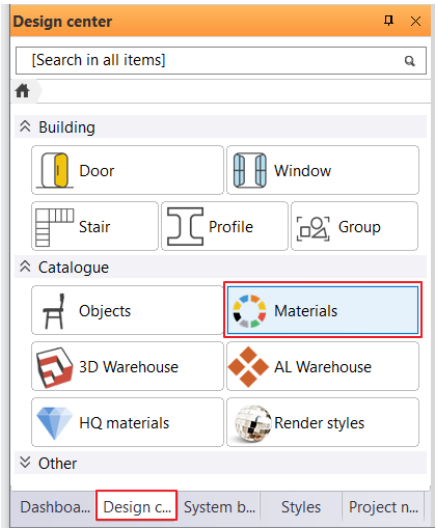


Obviously, the images can be also rotated and moved.

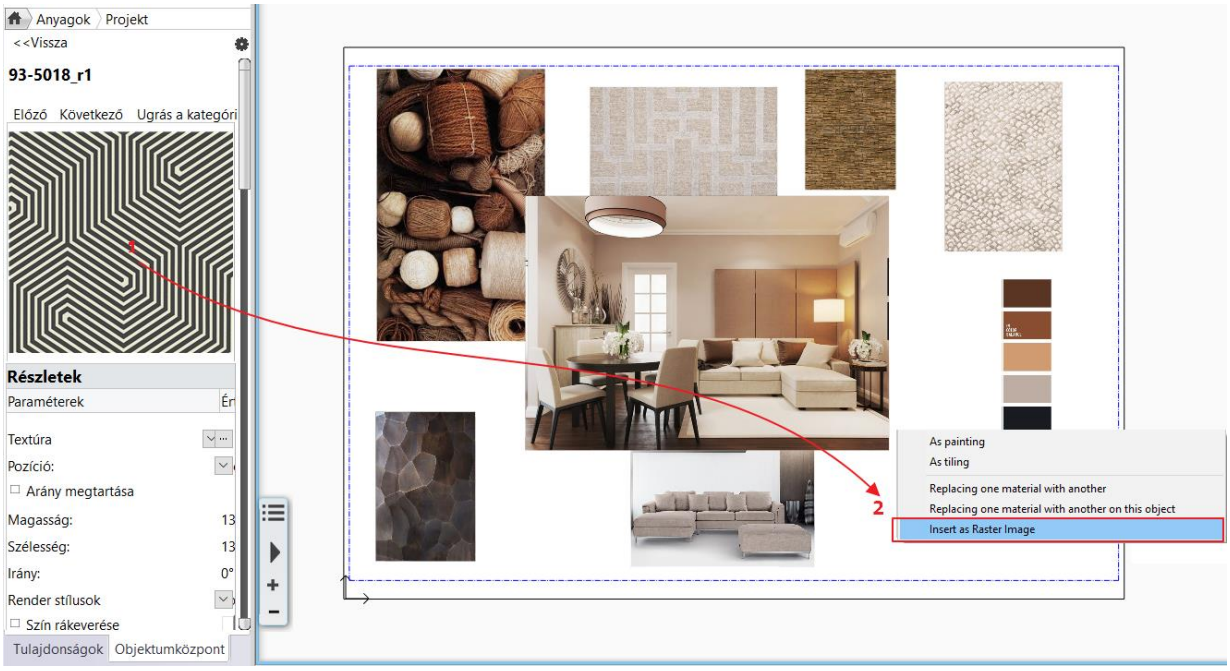
5.1.5. Place materials in same size

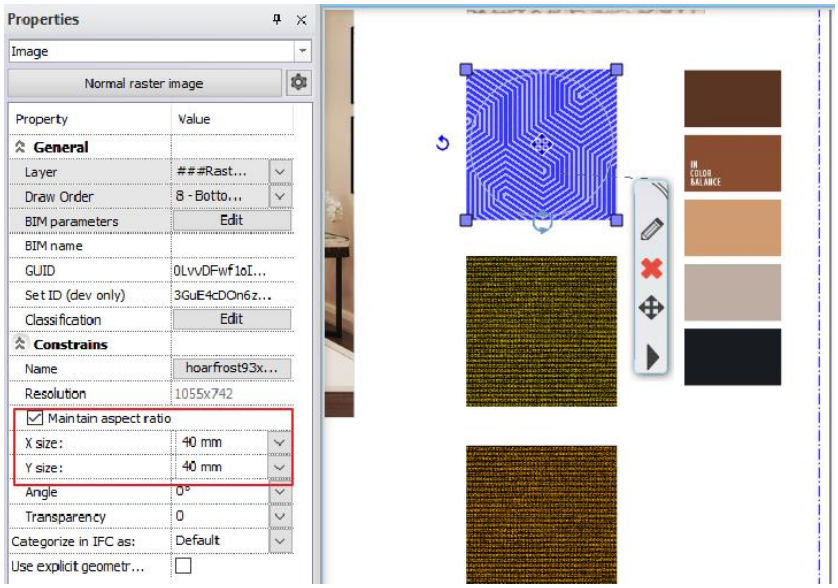
In the Mood Board you can place materials, fabrics, wallpapers which already had been used in the project. Under the **Design Center / Materials category** in the IN MODEL folder you can find the materials of the recent project.

- 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).
- Place the picture as you’ve just learned to. 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.





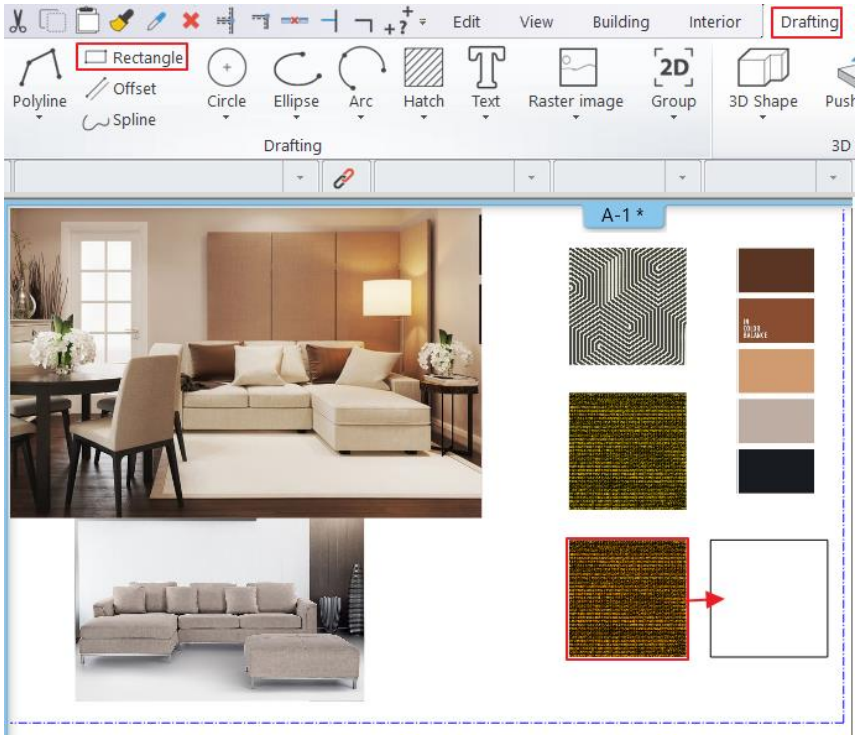
After placing the image, you can easily move it to the desired position so they don’t cover each other.

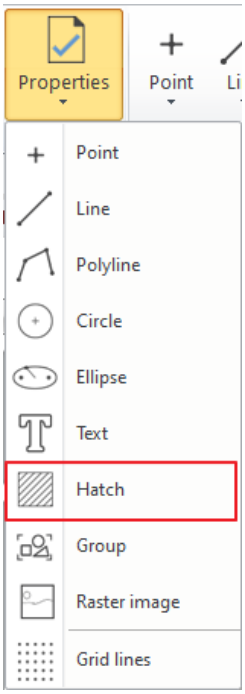
5.1.6. Place colors with hatch

Within project materials there are some which can't be moved directly to the mood board, these are the colors.
A material is considered to be a color, when "Insert as Raster Image" command is not offered by the pop-up menu at the time of placing. Colors can be displayed in mood board by hatching, which means that we have to fill a closed shape with a color. 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 / Rectangle**) to redraw the outline of an exciting picture and move the rectangle away from the pattern.

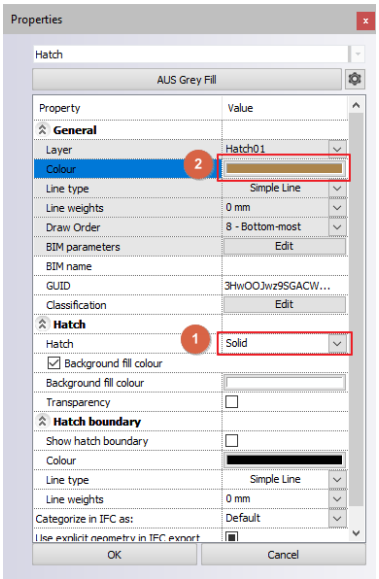


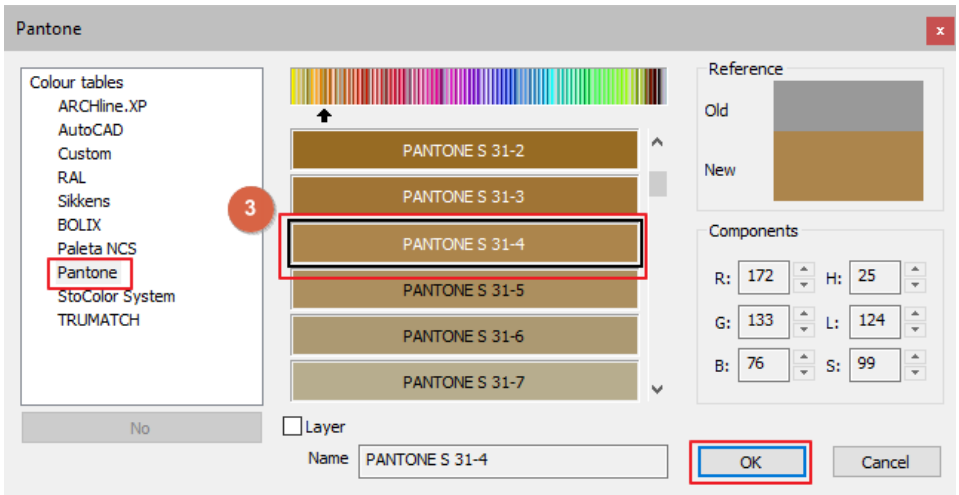


Define the properties of the solid area, as hatching

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)
- Click on the color button (2)
- Select the right color from the palette (3)



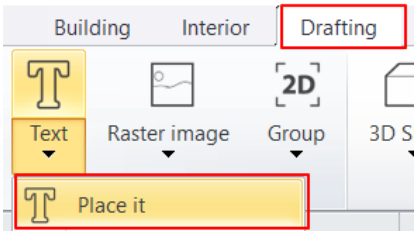


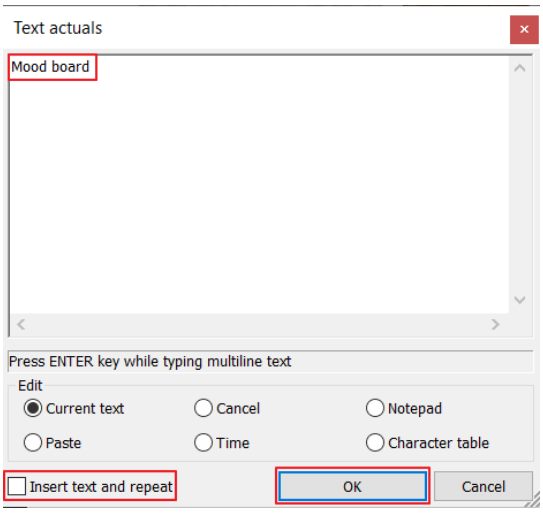
Placing the hatch

- On the **Ribbon bar / Drafting / Hatch / Hatch – pick point** command, click inside of the drawn rectangle, and press the ENTER. The selected color fills out the rectangle.
- The hatch can be changed later by selecting the rectangle.

5.1.7. Place text

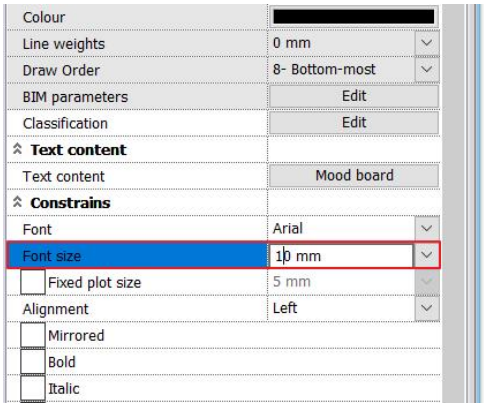
Place text on the mood board by **Ribbon bar / Drafting / Text / Place it** command. In the pop-up Text actuals window type the content that you want to place (e.g. Mood board).
Turn off the Insert text and repeat option, then hit OK.





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 and on the Properties tab change the Font size parameter from 200 mm to 10 mm.



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

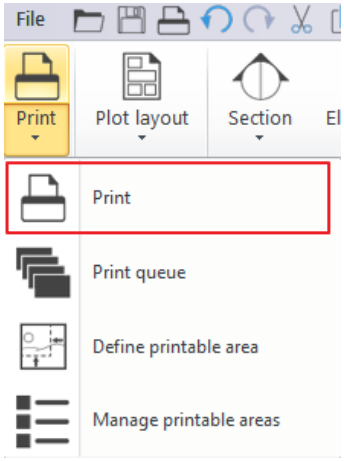
The default text height is 200 mm because it appears at the optimal size of 1:50 or 1:100 on a scale with respect to drawing content. In case of mood board, however, the composition is made in a ratio of 1:1, so it is necessary to modify the text height afterwards.

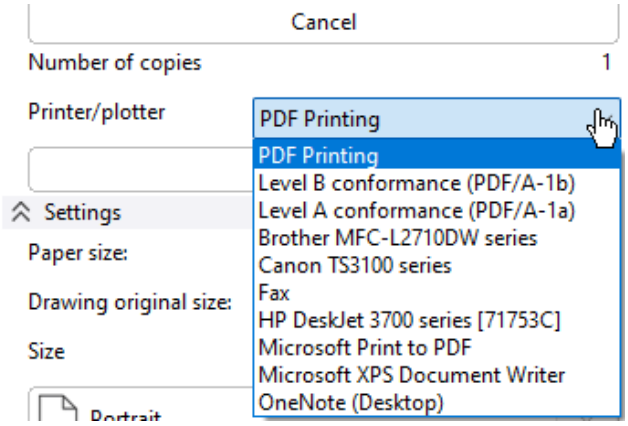
Other properties of the text, e.g. color, font, etc. can be modified as if it is required.

5.1.8. Print to PDF

Convert the completed mood board to a PDF file.

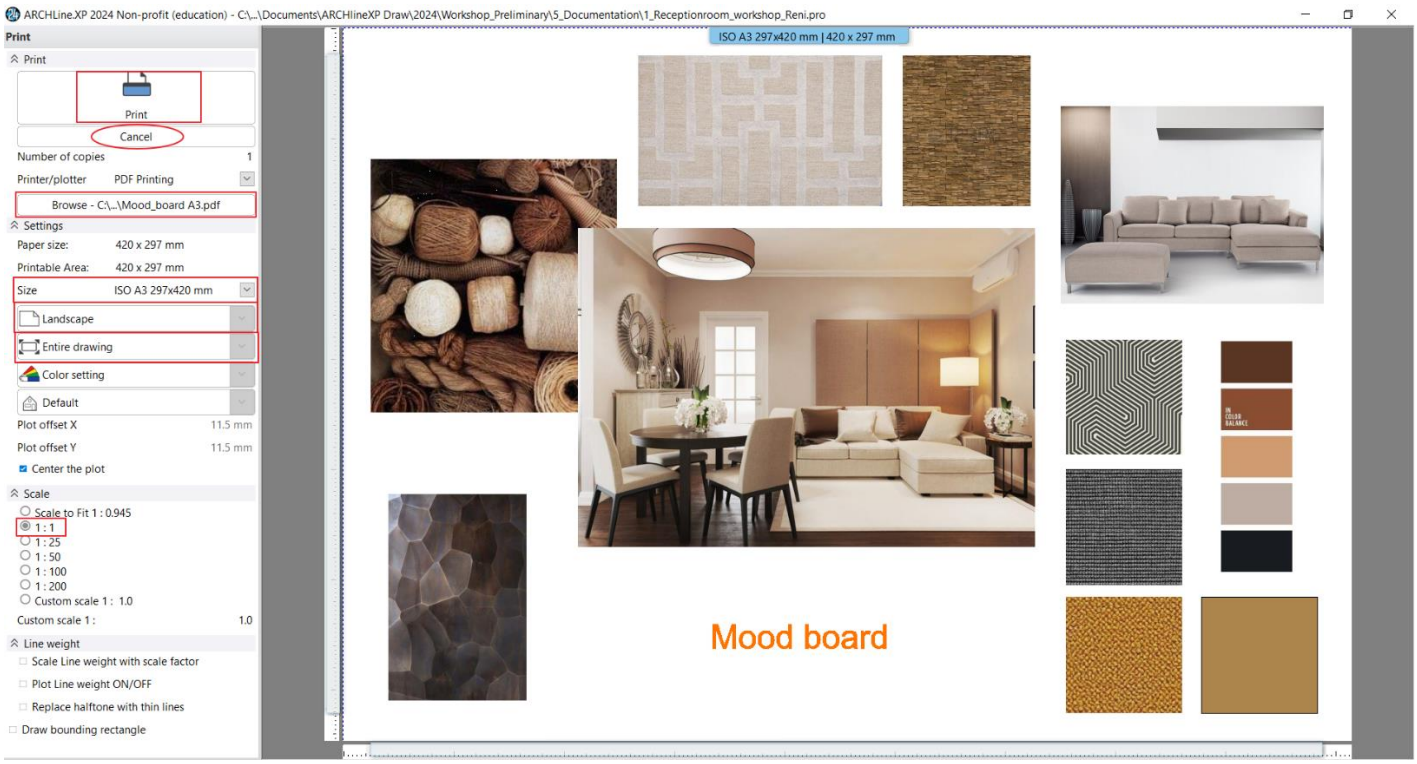
Choose the **Ribbon menu / Documentation / Print / Print** command or the **File menu / Print** option and enter the data as described:





- Choose the PDF printing command.
- Browse: specify to which folder the PDF created during printing should be saved and under which name. Let the destination folder be:
  ...\Documents\ARCHLine.XP Draw\2024\Workshop_Preliminary/ 5_Documentation, and the file name is **Mood_board A3**.
- Paper size: **A3** (same paper size as our mood board)
- Orientation: **Landscape**
- Entire drawing
- Scale – Scale ratio: **1:1**
- Plot offset: **Center the plot**

When you see the desired result in the preview window, click Print. The PDF will be generated.
Close the PDF file, then click Cancel to close the Print window.



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.

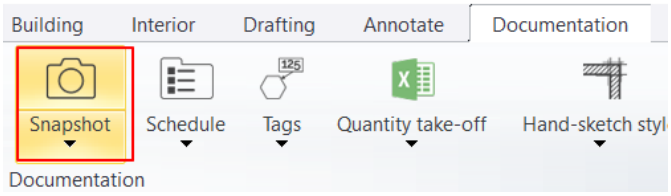
- It is recommended that you regularly save the project during the work.

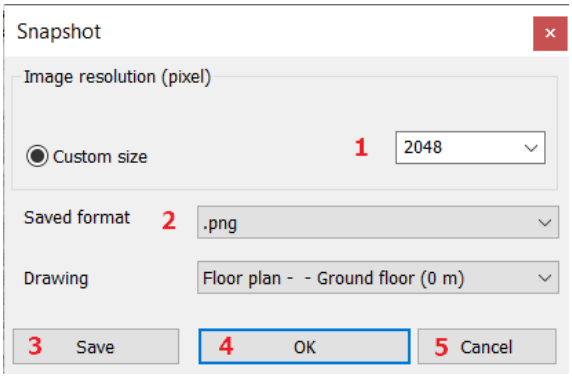
5.2. Creating snapshots

In the 3D view, 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 / Snapshot 3D view** command. The Snapshot dialogue window appears, now set the followings:





- Image resolution: You can specify the snapshot size (1). The higher resolution will result in better quality pictures, however the file size will grow too.
- Saved format: You can specify the format of the created image file (2). PNG format is recommended.
- 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. You can send this file as an attachment to the customer.
  Now the software offers to place the image in that window which is defined by the Drawing option.

- OK: In case you don't want to save the image, then press this button. The snapshot will be created and located accordingly the Drawing setting option (4).
- Cancel: Close the dialogue without placing a snapshot (5).

- Now save a snapshot of the set view in 2048 resolution in ".png" format in the *…\Documents\ARCHLine.XP Draw\2024\Workshop_Preliminary\5_Documentation* folder with the name "living_room_view_1".

5.3. 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.

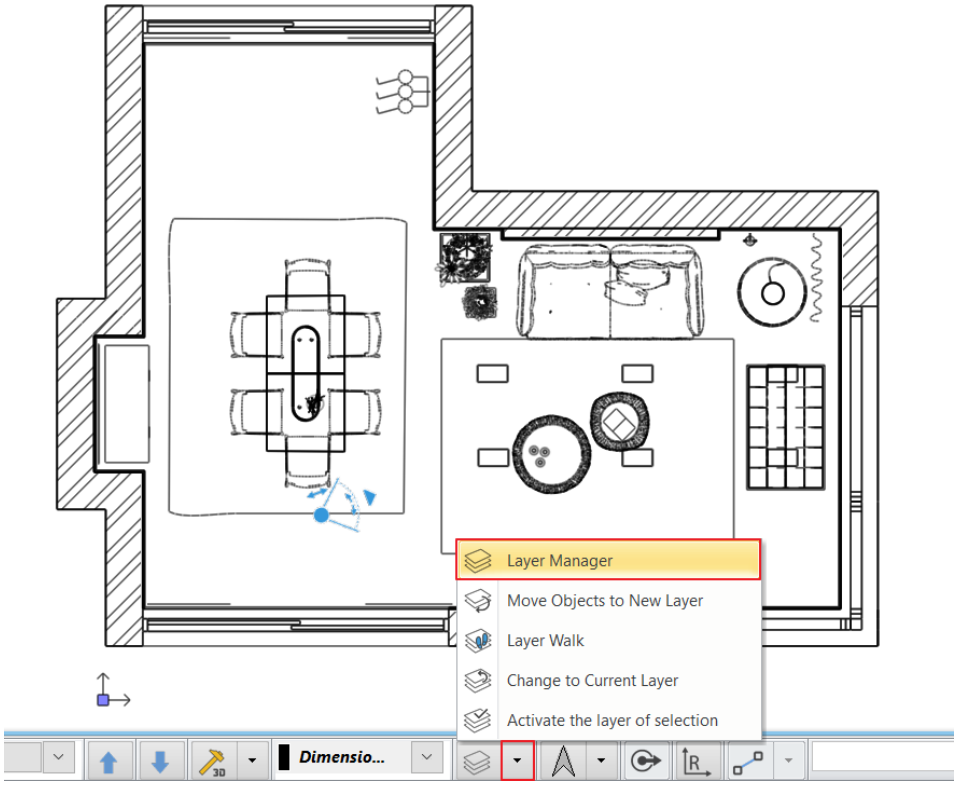
5.3.1. Layer properties management

The layers are served to group used items in the project, *see in 1.5. 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.

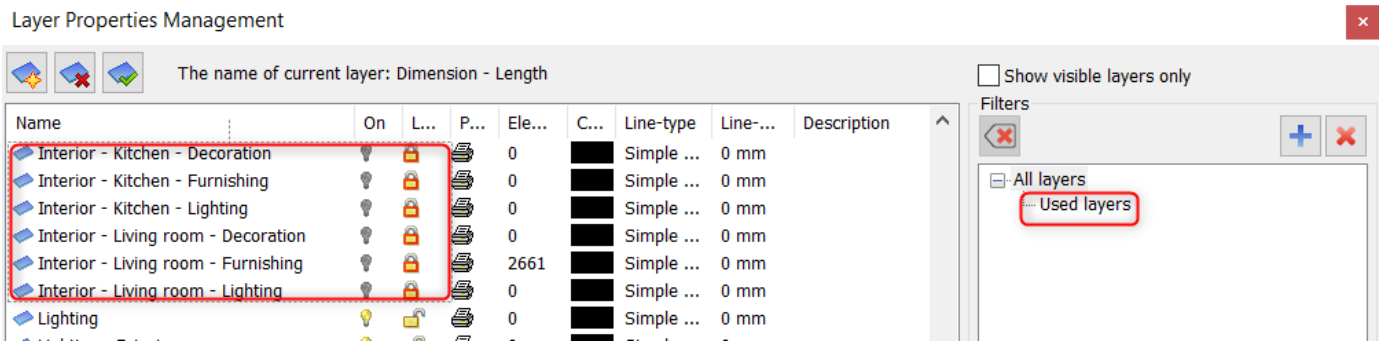
Switch off layers and create new layer groups

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.

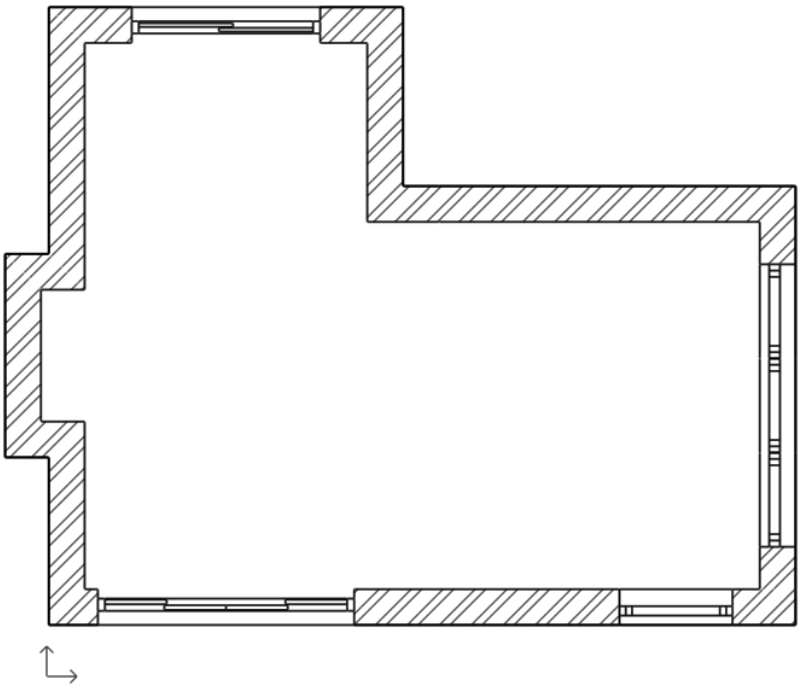
- The floor plan window should be activated.
- Open the **Layer manager**.



- 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.
-

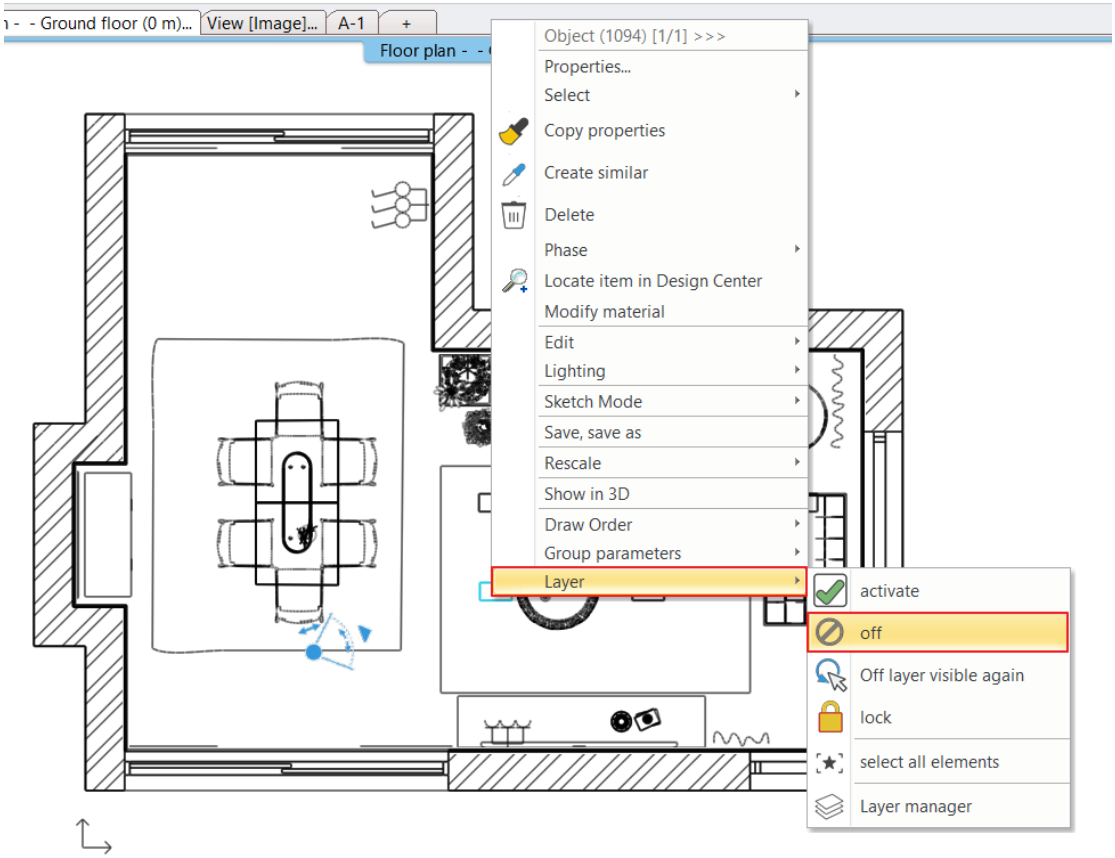


- When you finished removing the visibility of the layers, press OK.
- This is the result you should see on floor plan window:



! *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.*

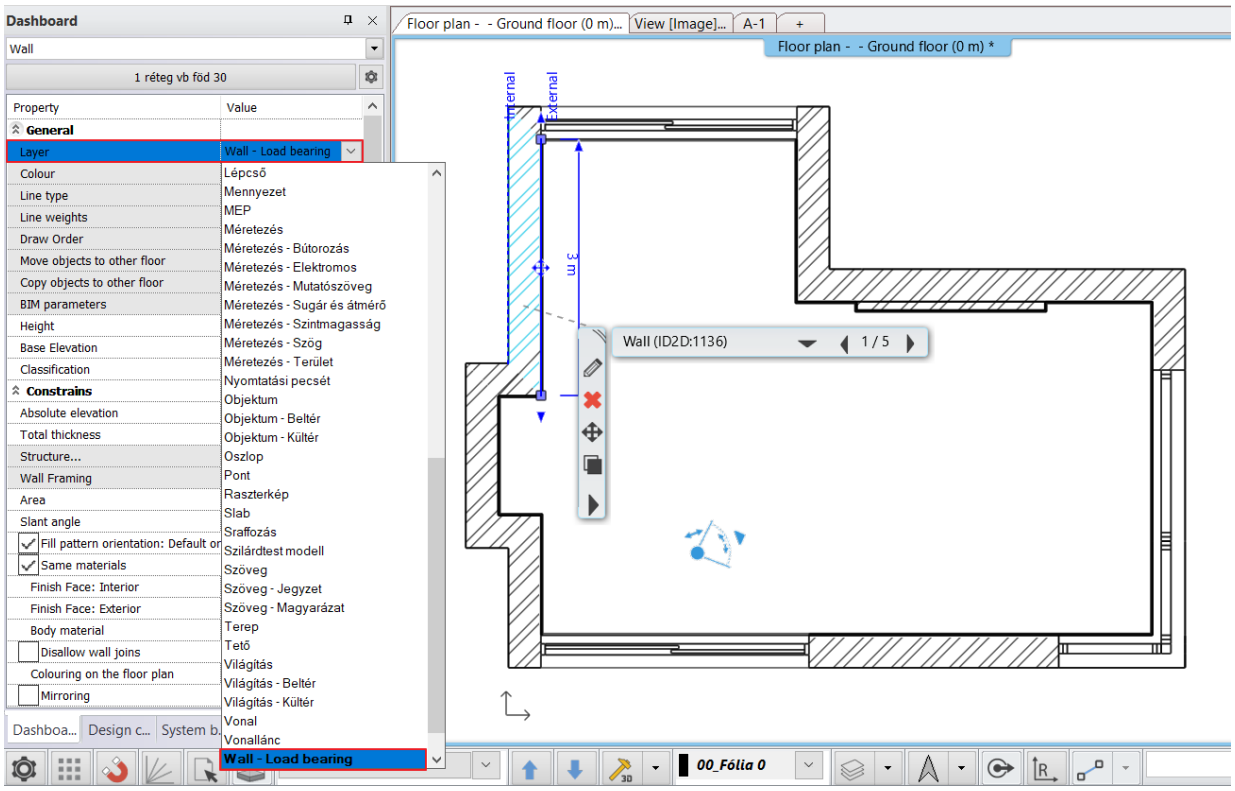
Another way to switch off layers is to right-click on the item on the floor plan and select **Layer / Off** from the list.
At this time, the entire content of that layer becomes invisible where the selected item is located.



! *Please note:*
If you can't find 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 is the element on?

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.



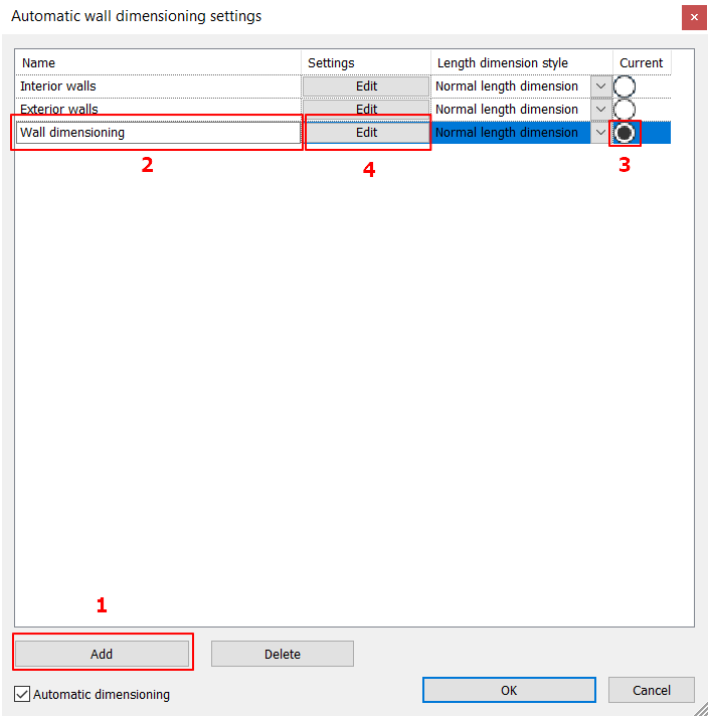
5.3.2. Dimension

In the next steps, the wall and window dimensions will be placed on the whole plan.

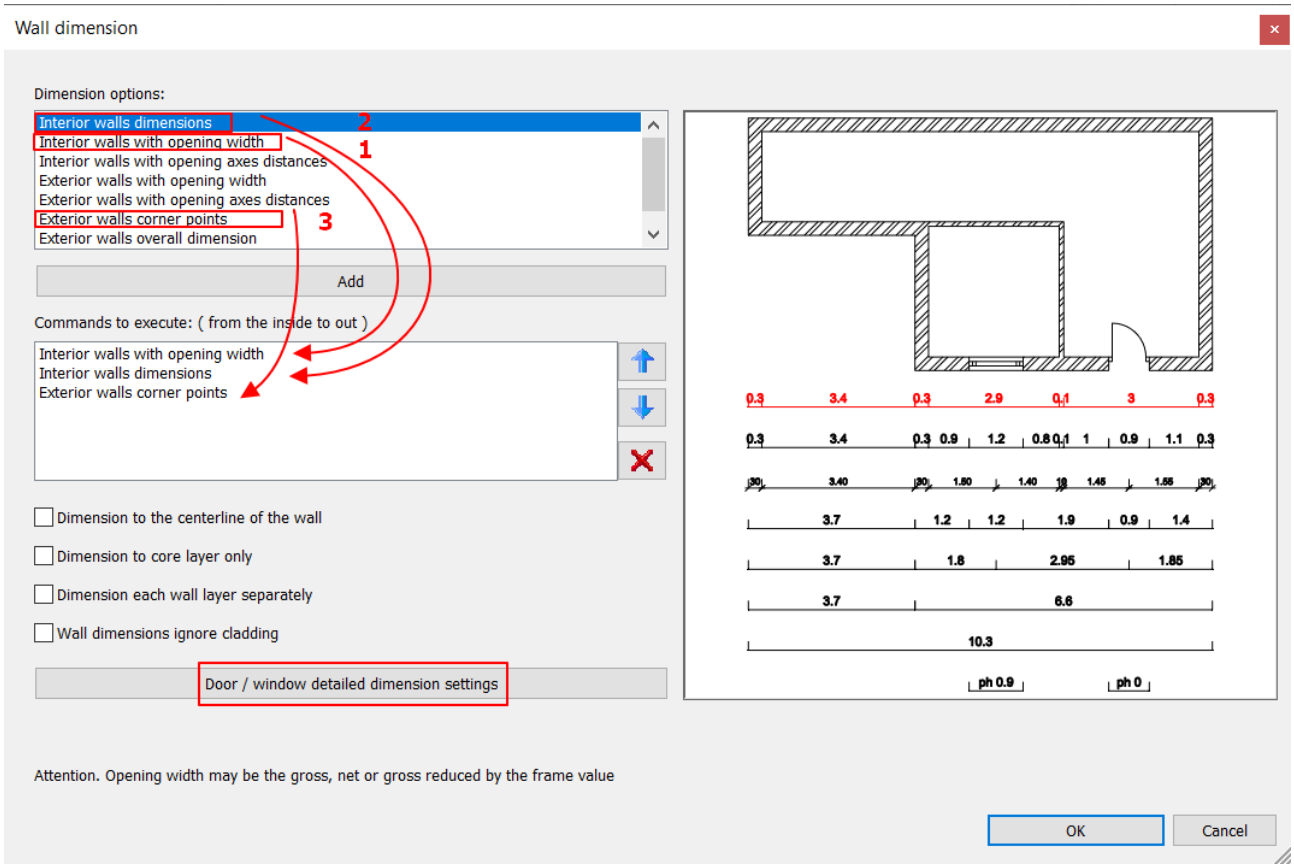
Wall dimensioning styles

Wall dimensioning styles can be created for easier and faster scaling. These styles can be used when drawing the wall, so that the wall is automatically scaled together with the wall.

- Select the **Ribbon bar / Annotate / Building / Wall dimensioning styles** command.
- In the pop-up window, select *Add*, then name the style. Set the created style to current, then click *Edit*.



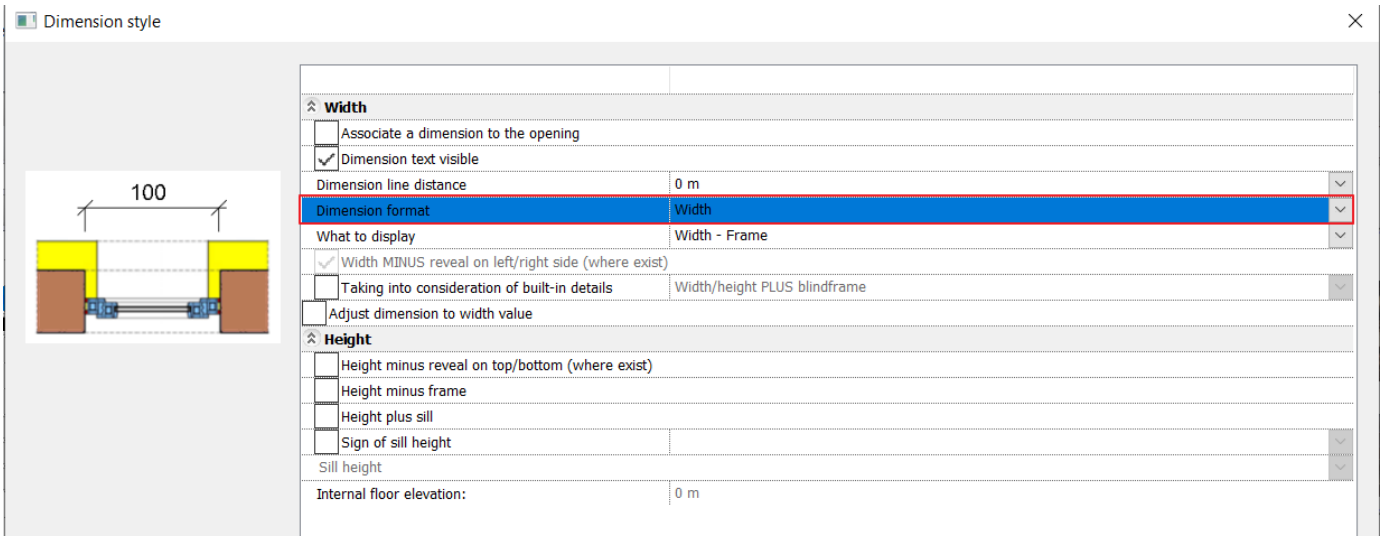
- Select the Dimension options.
- Add the desired dimensions to the list as shown on the picture.
- Pay attention to the order of dimensioning!
  For better clarity, clicking on the list item in the top list, the image on the right highlights the scaling in red.



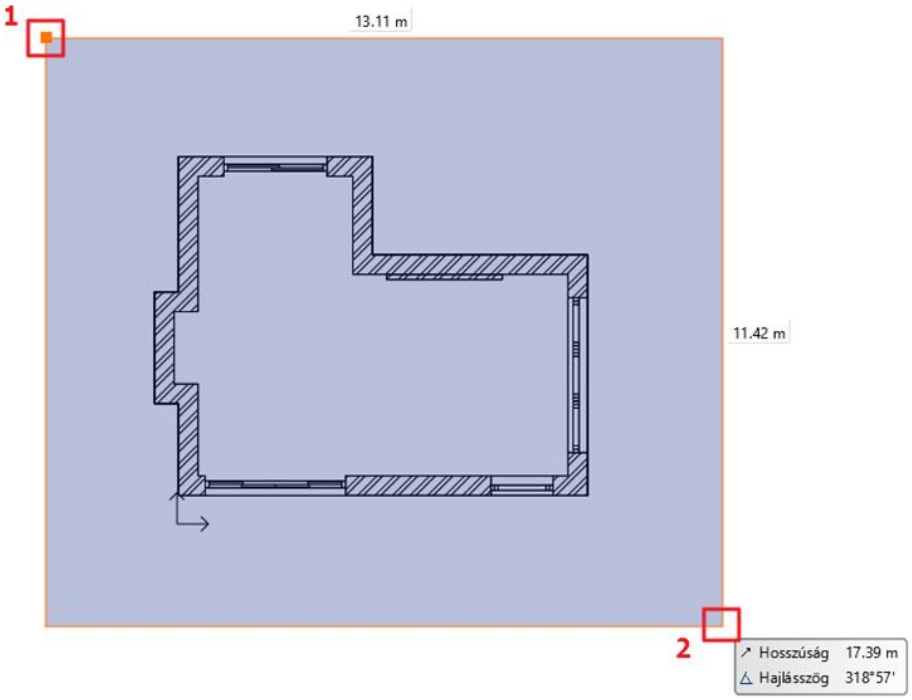
Detailed dimensioning settings for doors and windows

Here you can define the appearance of the door and window data in the scaling chain.

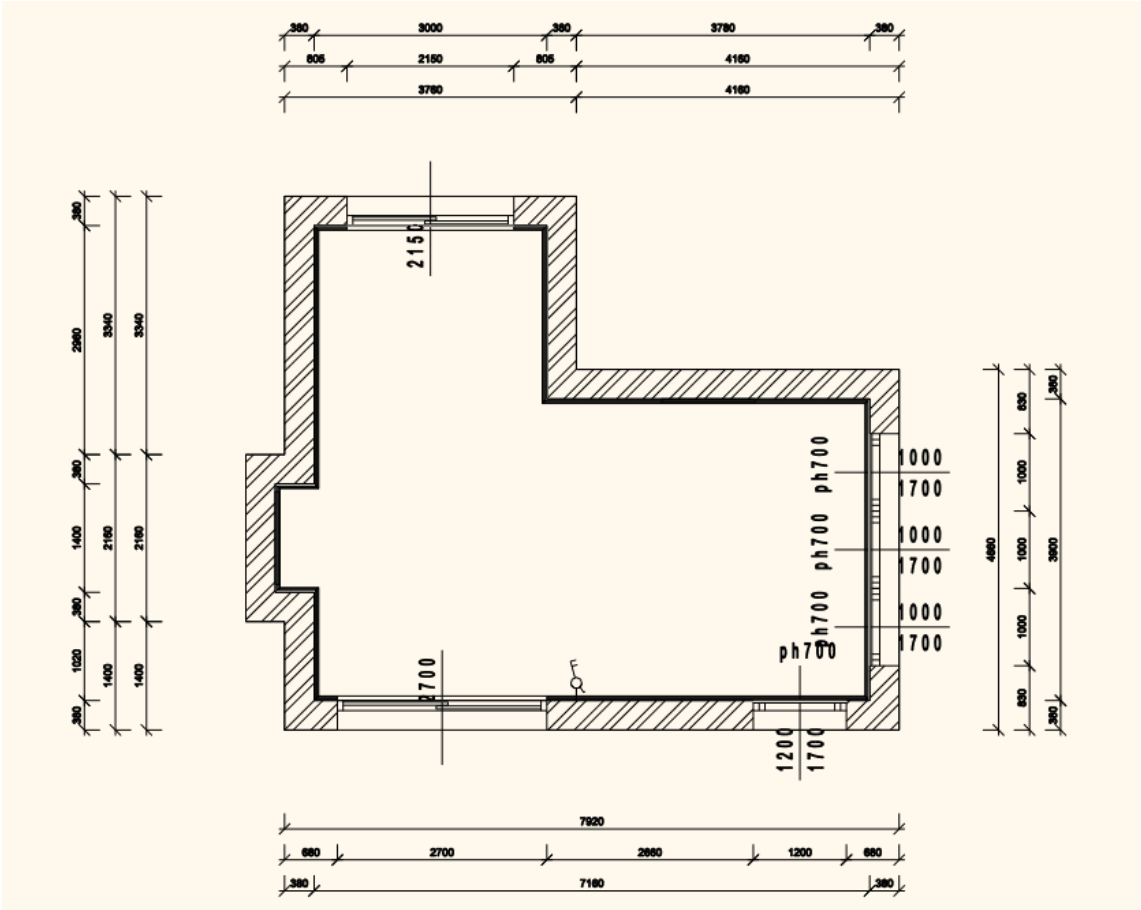
- Click on the button. In the pop-up window you can only select the width.



- Close the window by pressing OK.
- After closing the window, select **Annotate / Building / All walls** command.
- You can define the area where you want to place dimensions. Draw a selection rectangle from the top left corner, the color of the selected area changes to light blue.



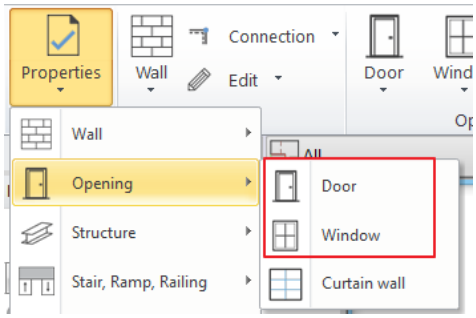
- Press ENTER then the contour of the room is selected automatically.
- Move the mouse to the first point of dimensional chain and click one.



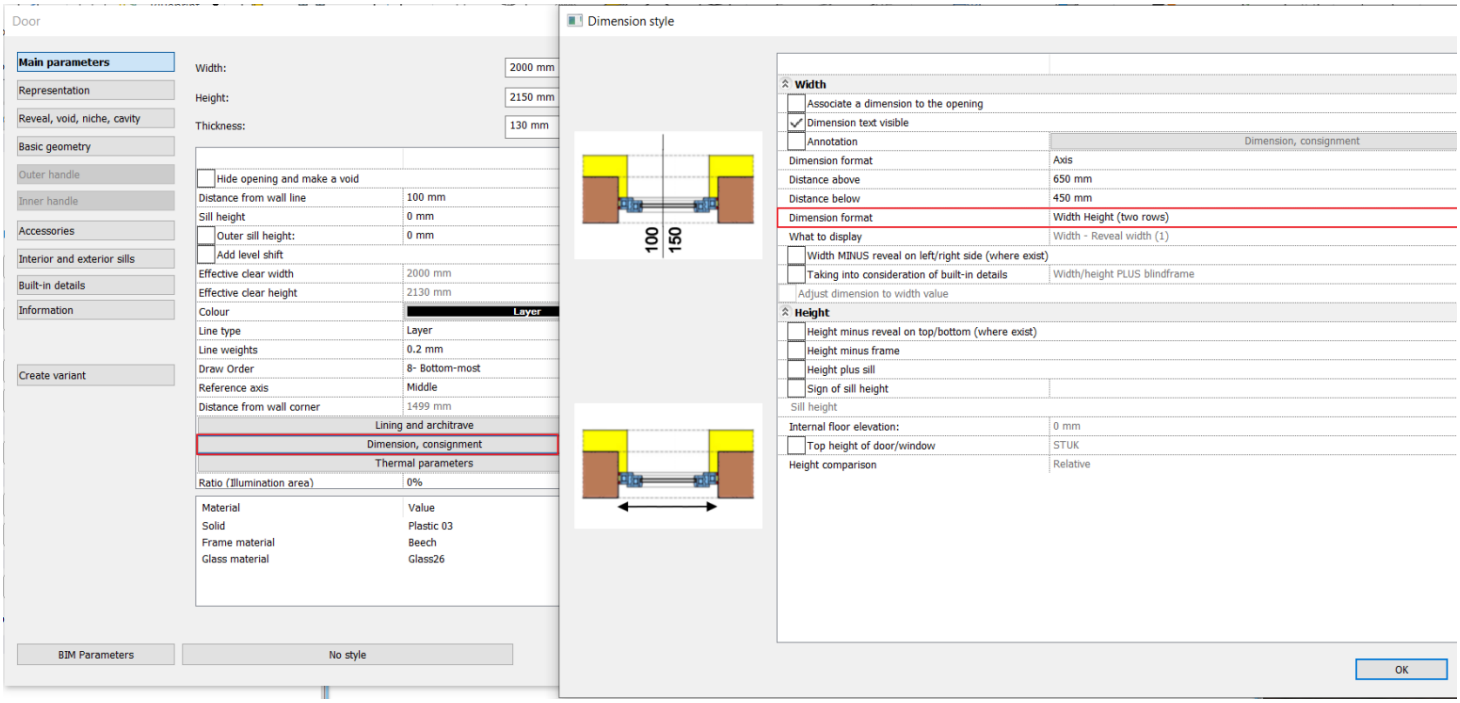
Setting up door/window dimensions

The first step is to set the dimension parameters for both doors and windows separately in their properties.

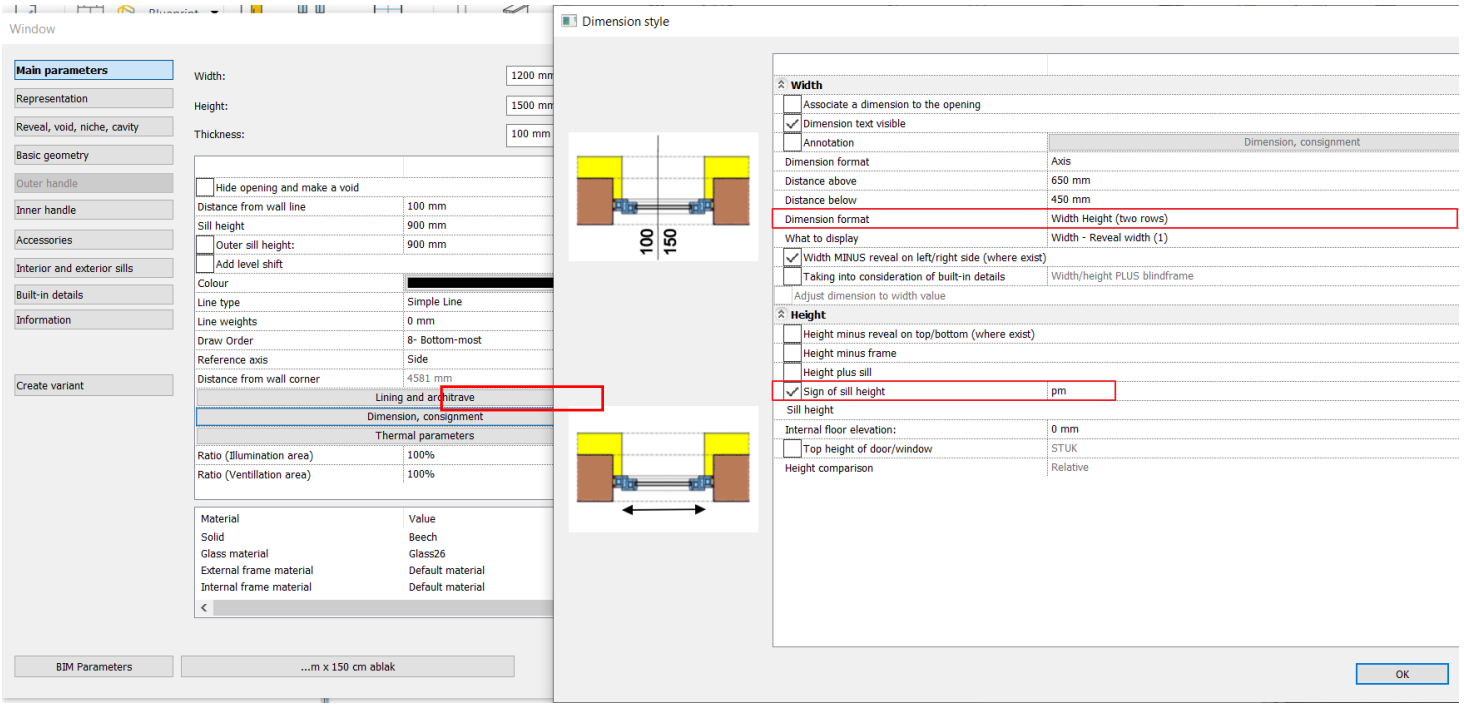
Select the **Ribbon bar / Building / Properties / Opening / Door** command.



- In the properties click on the *Dimension, consignment* button.
- In the pop-up window set the properties of the consignment sign.



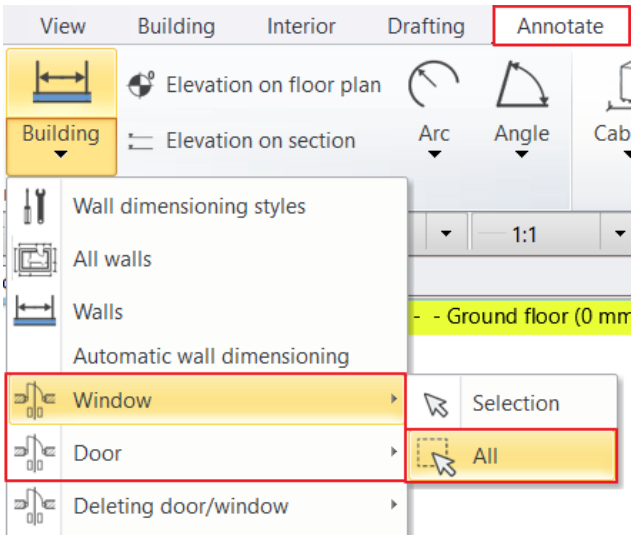
- The same way set this for windows too.

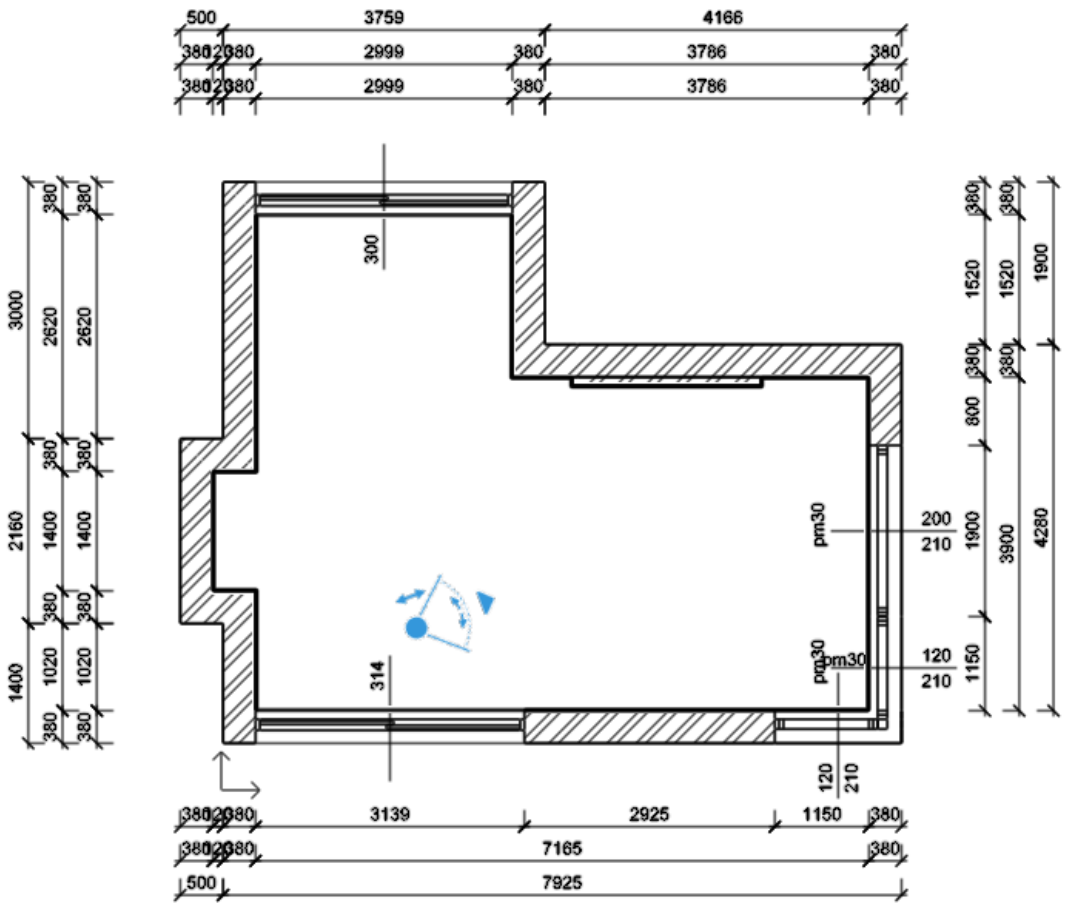


Dimensioning doors and windows by axis

The axis dimensioning of the windows is placed separately.

- Choose one after the other Annotate / Building / Door, Window commands using the All option.

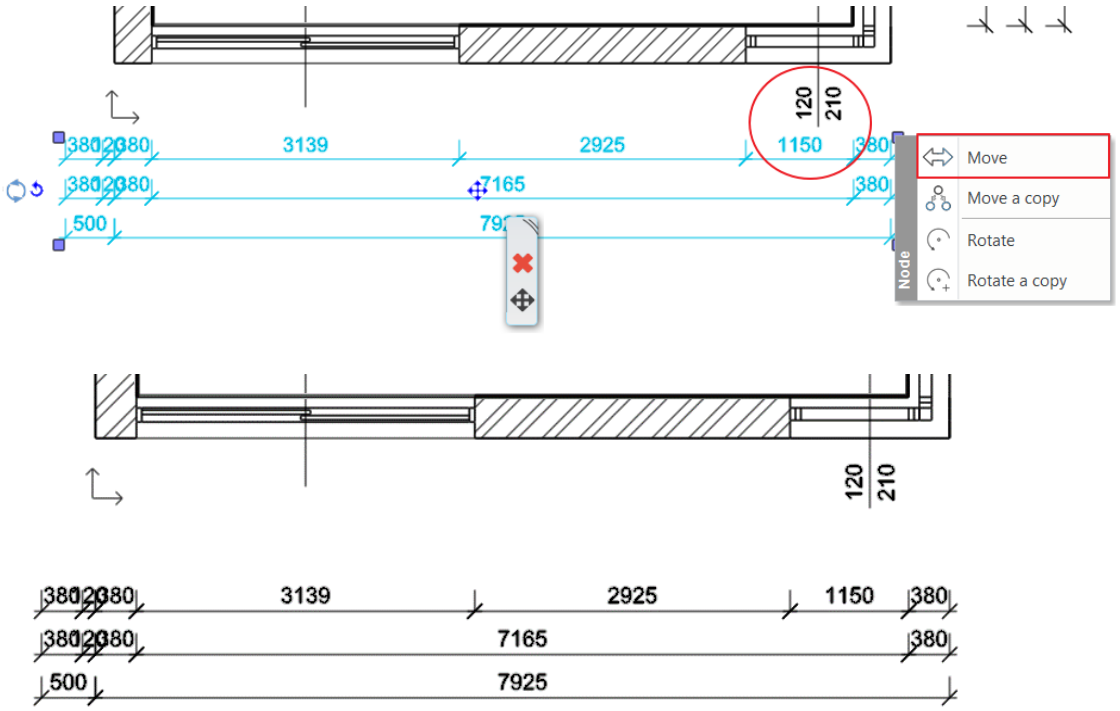




Modify dimensions

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, where they overlap each other.
- By clicking on the blue reference line, select the *Move* dimension command.
- 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. To fix the direction, you can use the Shift key.



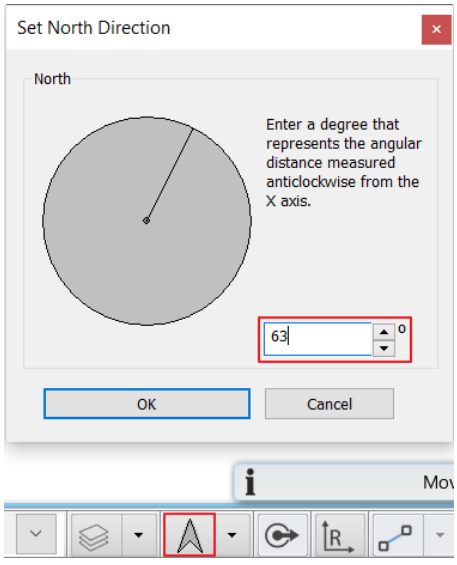
5.3.3. 2D symbols

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:

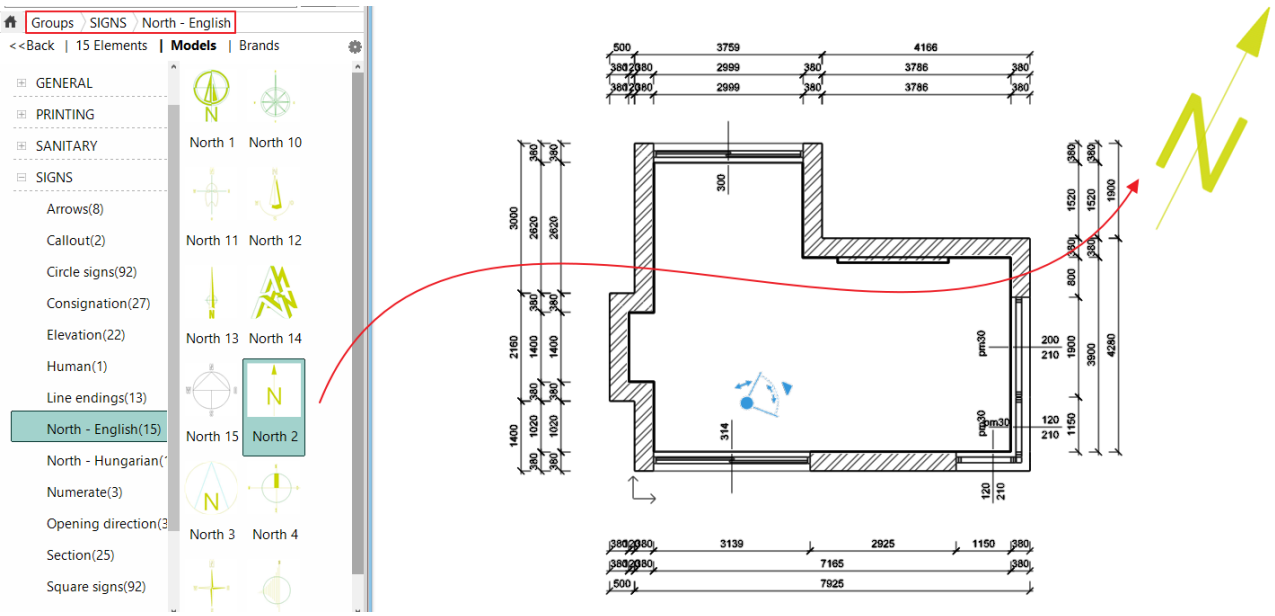
North direction

Before placing the North direction, first set the project direction.

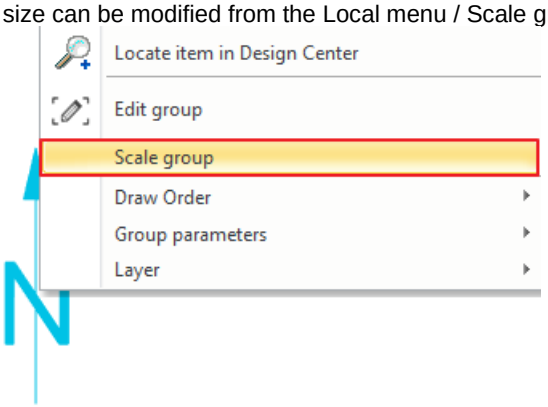
- To do this, click the gray arrow in the bottom Status Bar. In the dialog that appears, set the North direction of the project exactly graphically or in degrees. Close the dialog with OK.



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

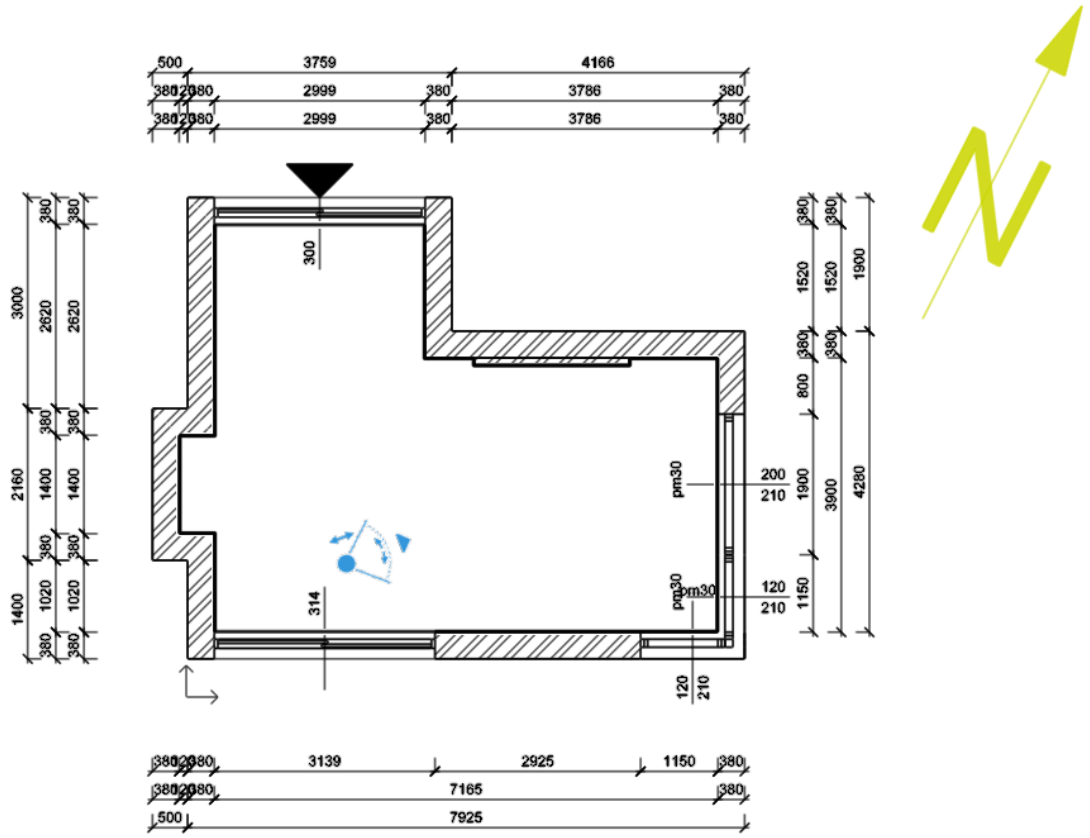


- As you can see, the North direction symbol points to the direction already set in the project.
  If you want to modify the position of the sign, then select it and use the rotation and move commands. Other properties can be changed on the Properties tab.
- Its size can be modified from the Local menu / Scale group.



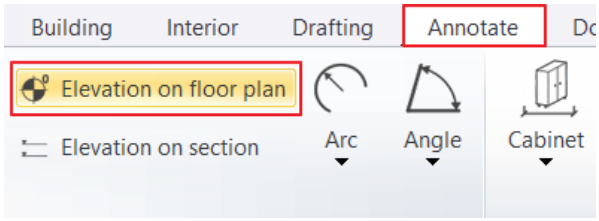
Entrance

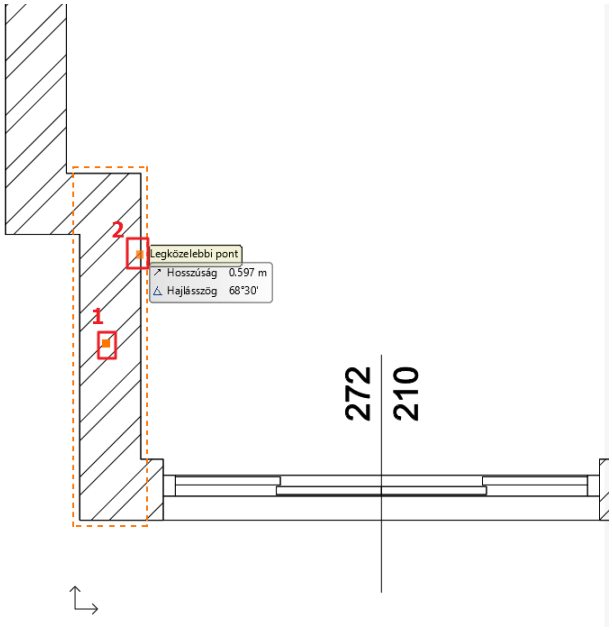
- Now select an arrow from the Signs / Arrows category, and place it to the entrance.
- The above-mentioned modifications (such as size, position) can be made in the same way as it was described in the previous example.



Elevation

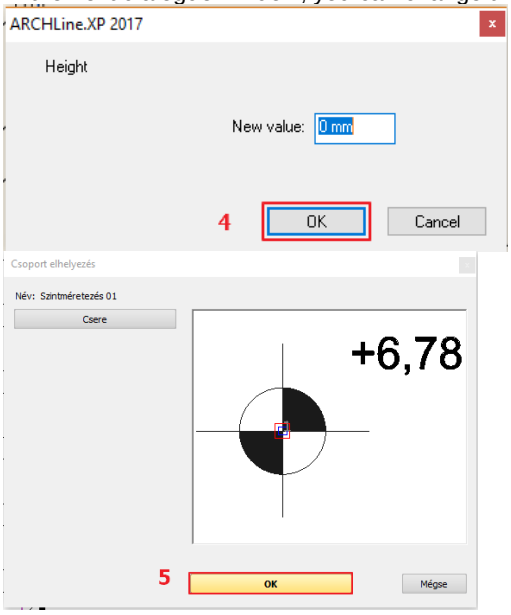
- Choose from the **Ribbon bar / Annotate** menu the **Elevation on floor plan** command.

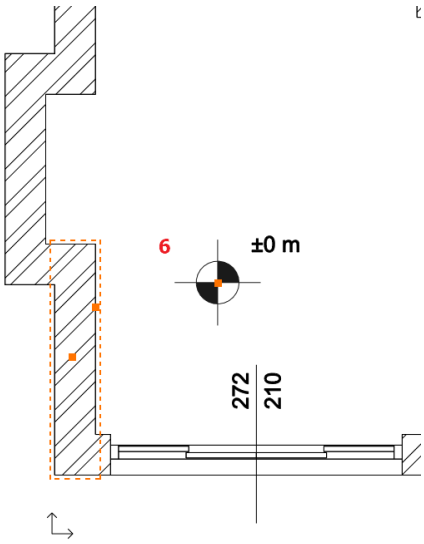




To determine the elevation on the floor plan you must define an object (e.g. a wall) (1) and its one point (2) with a single click.

- 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), then OK.





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

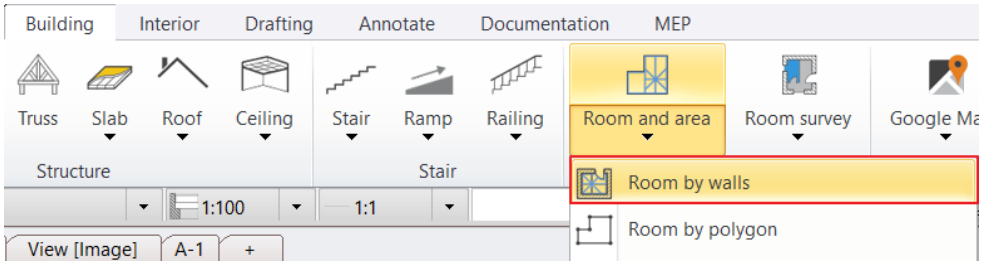
  The dimension and the 3 previously mentioned signs were placed on the floor plan.

5.3.4. Room stamp

You can read more important information about the floor plan by using the room stamp e.g. the name and the size of the rooms in the plan.

Room stamps commands 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.

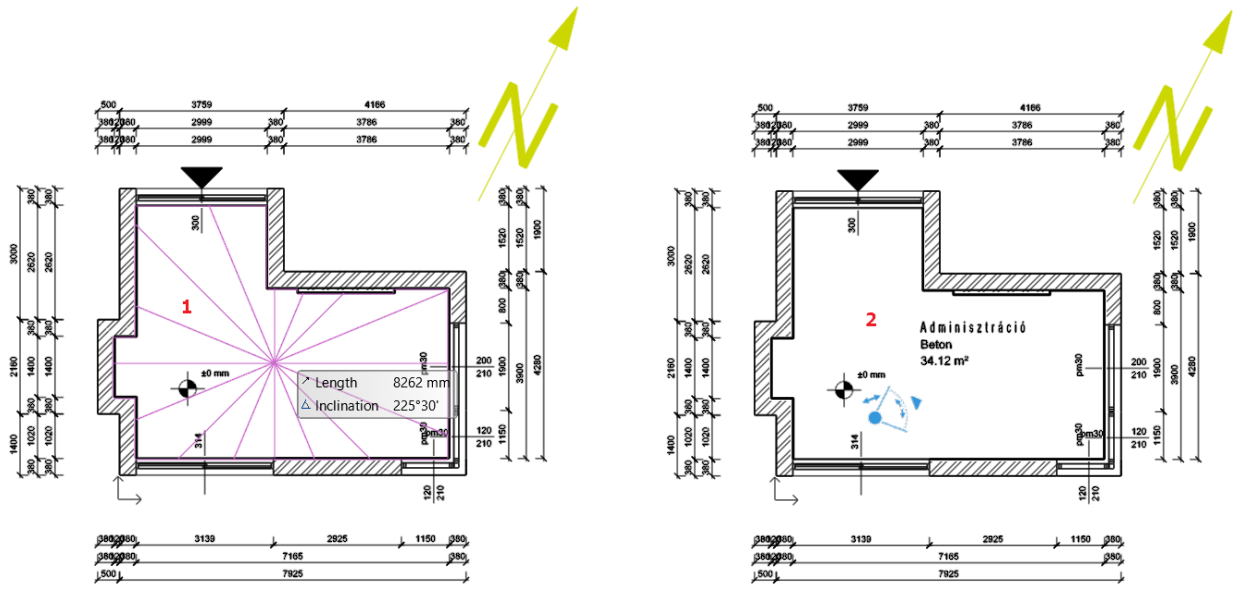
- **Room by walls**
- **Room by polygon**
  This function is used when you need to scale a room that is not bounded by walls. Such as e.g. a balcony, terrace. Then draw a line with a polyline to draw the area to be scaled.



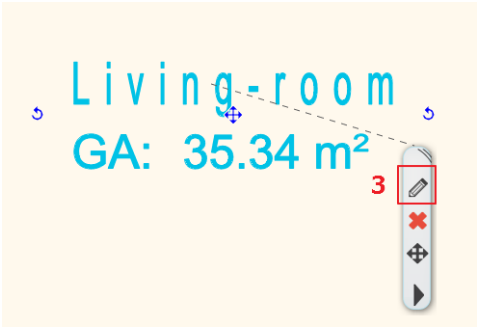
Room by walls

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).
- The Room book appears where you click (2).



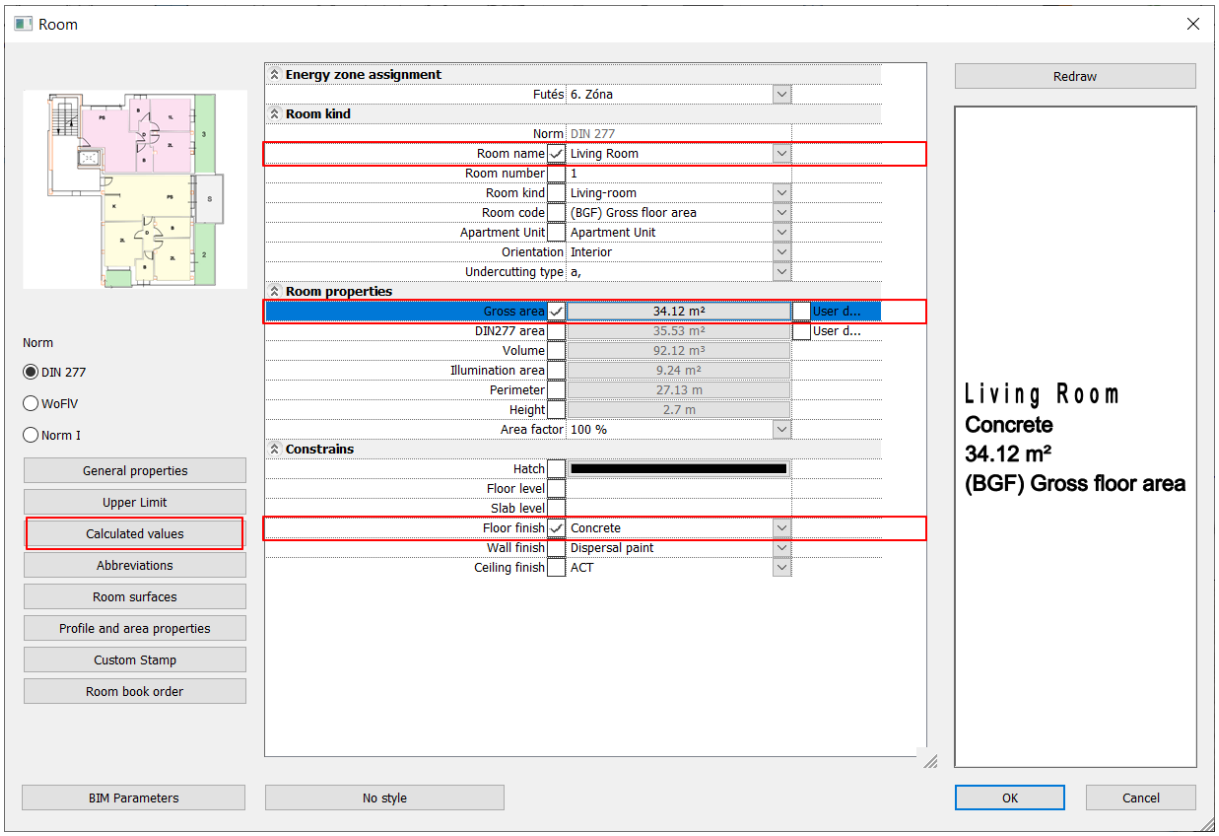
We can change the appearing content on the room stamp within its properties.



- Click on the already placed text in order to select it and then choose the pencil icon (3).

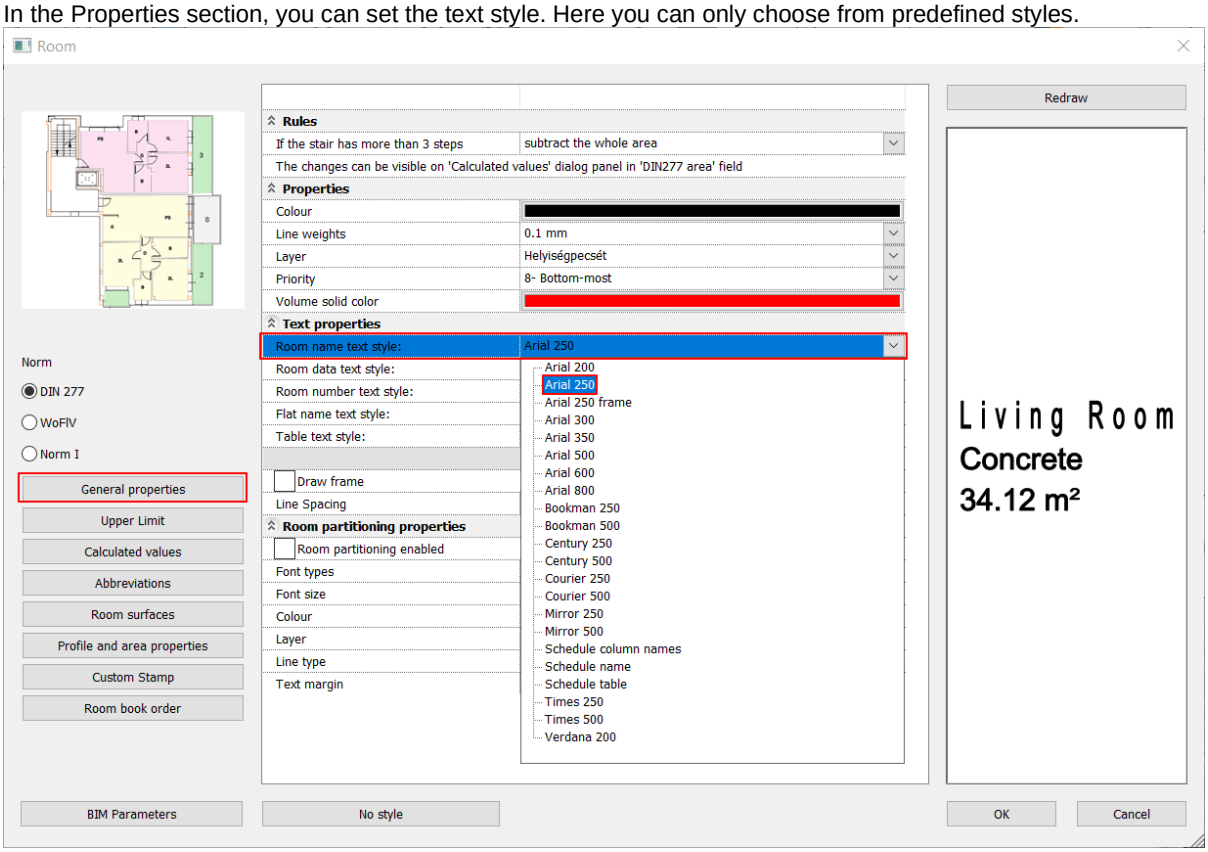
In our example, there are 3 data. We can modify them as follows:

- 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. We need this.
- 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.

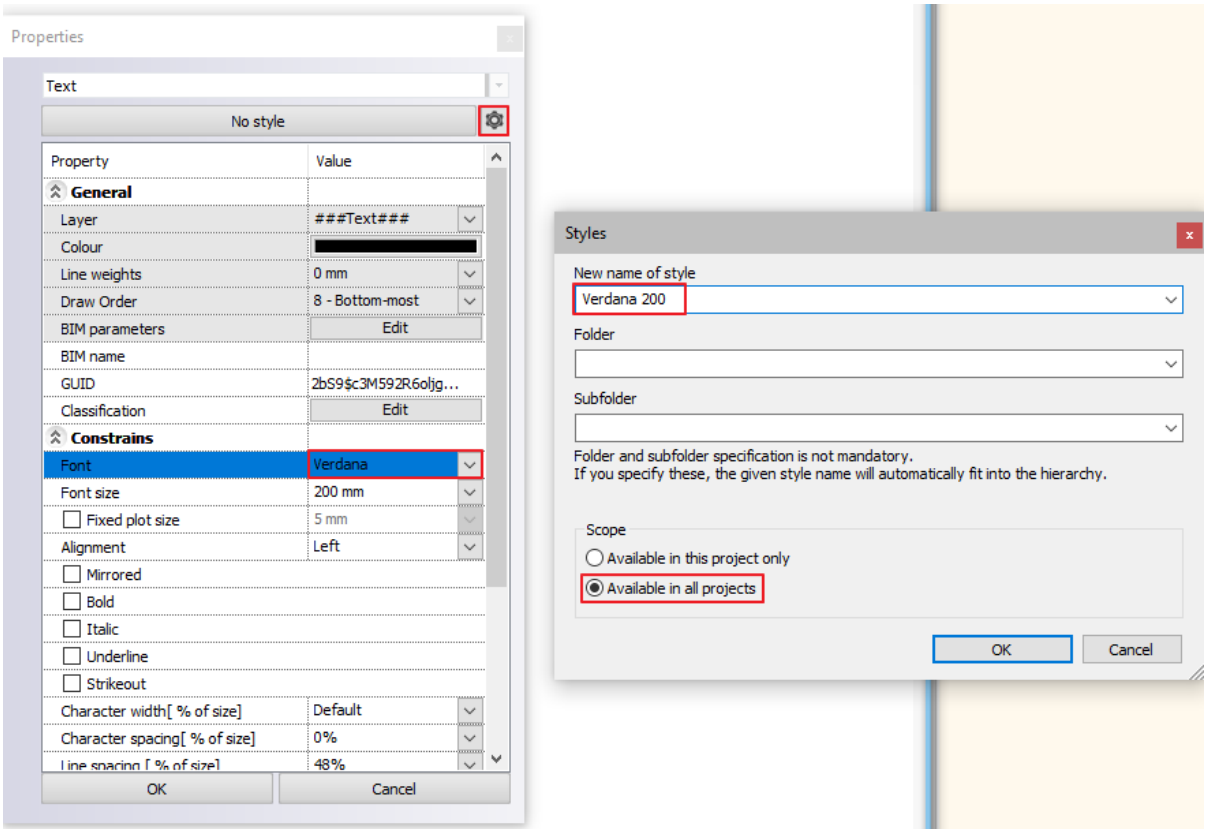


General properties

In the Properties section, you can set the text style. Here you can only choose from predefined styles.

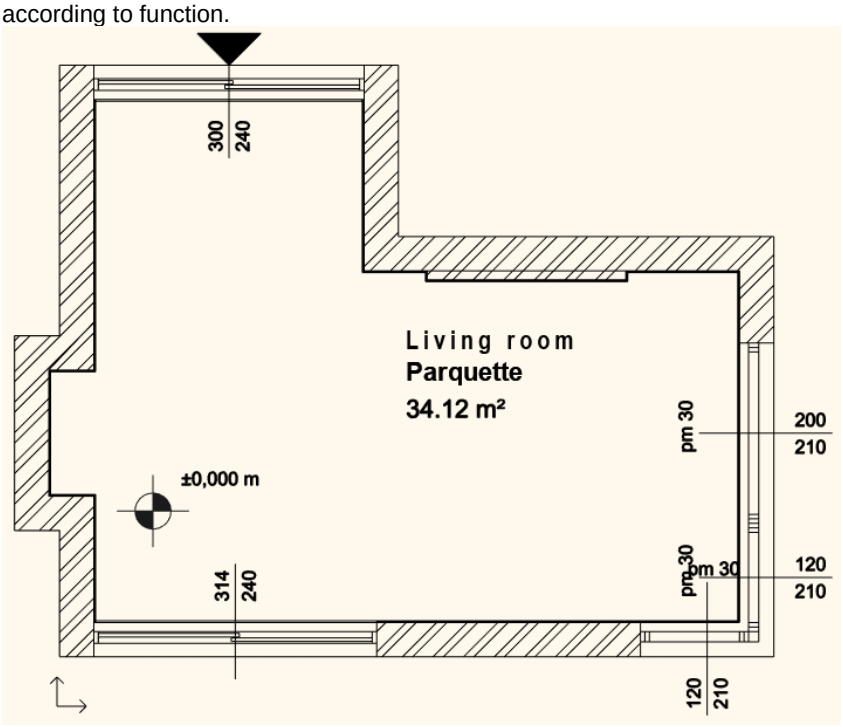


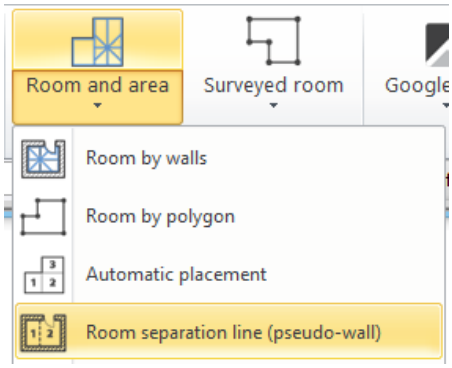
If you need a different style of text, you must create it and save it as a style in the Text properties window. The new style appears under Room Stamp - Properties text styles



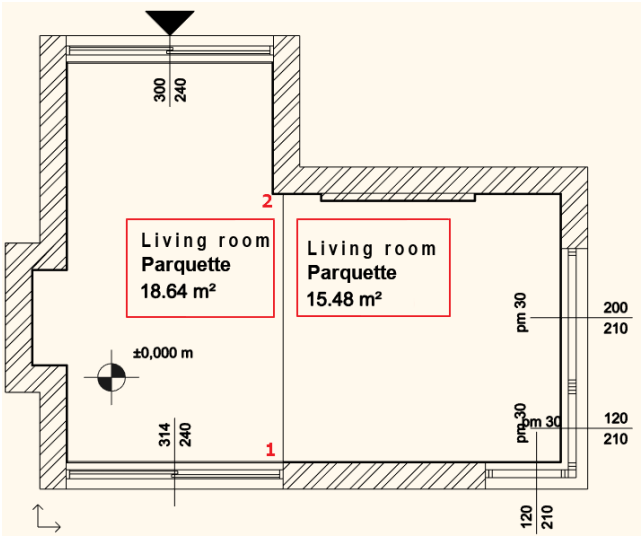
Dimensioning spaces with different functions in one room

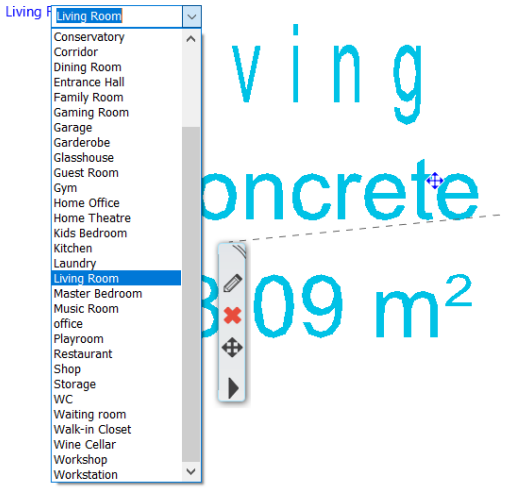
When you want to scale rooms with different functions and cladding in one airspace, it is worth placing a room demarcation line between the two rooms. In this example, we divide our room into a dining room and a living room according to function.





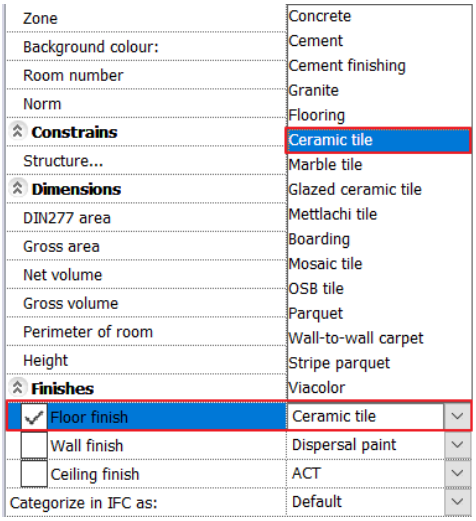
- Select the **Room and area / Room separation line (pseudo-wall)** command.
- Enter the start (1) and end (2) of the line.
  Be careful to draw the line from wall to wall, otherwise the command will not work! Press Enter.
  The room stamp is automatically created in the two rooms with the appropriate dimensions.





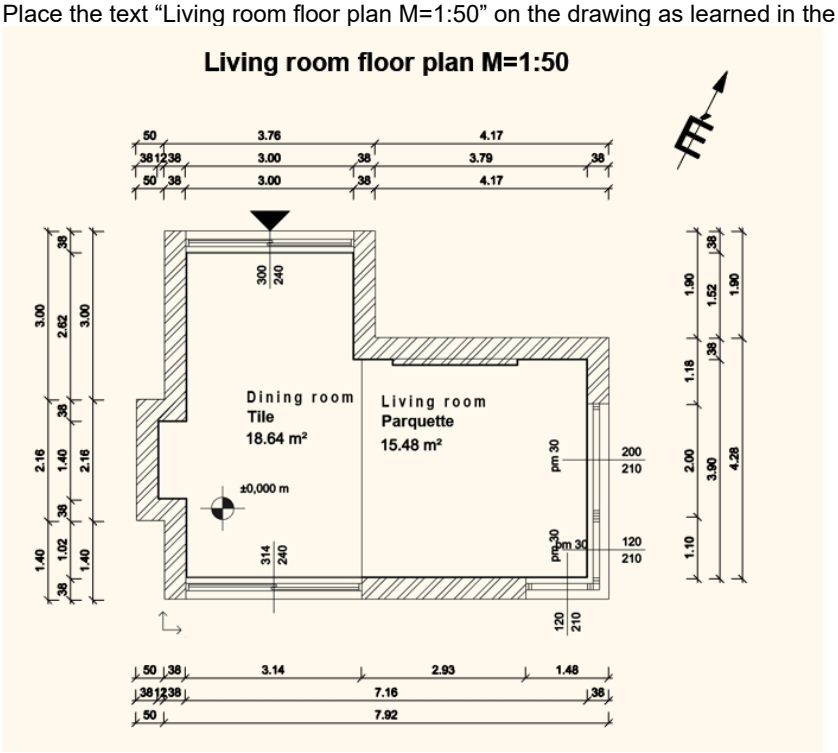
The information on the left room stamp must be modified:

- Select the room stamp on the left, then click on the name marker to transcribe the text, or click on the arrow to select from the list. Now select *Dining Room* from the drop-down list.
- You can change the floor material in the side menu. Here select *Ceramic tile* from the list.



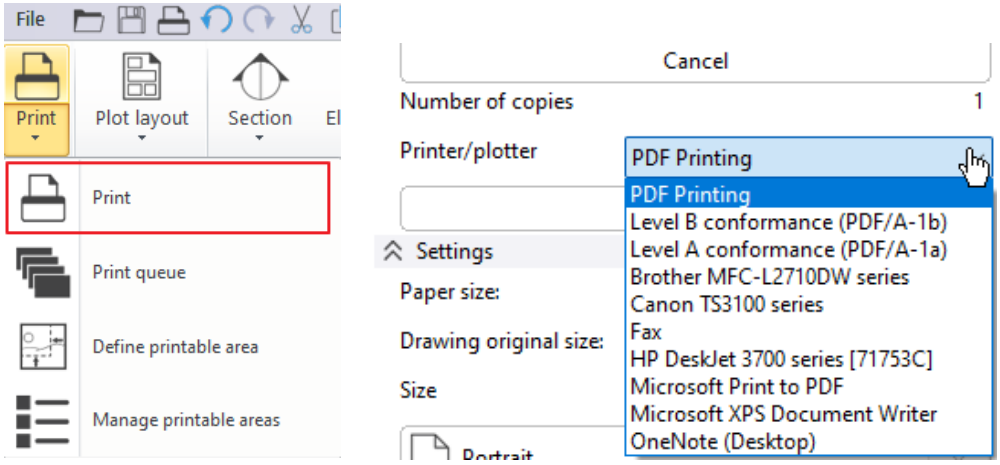
Text placement

Place the text “Living room floor plan M=1:50” on the drawing as learned in the Mood board section.



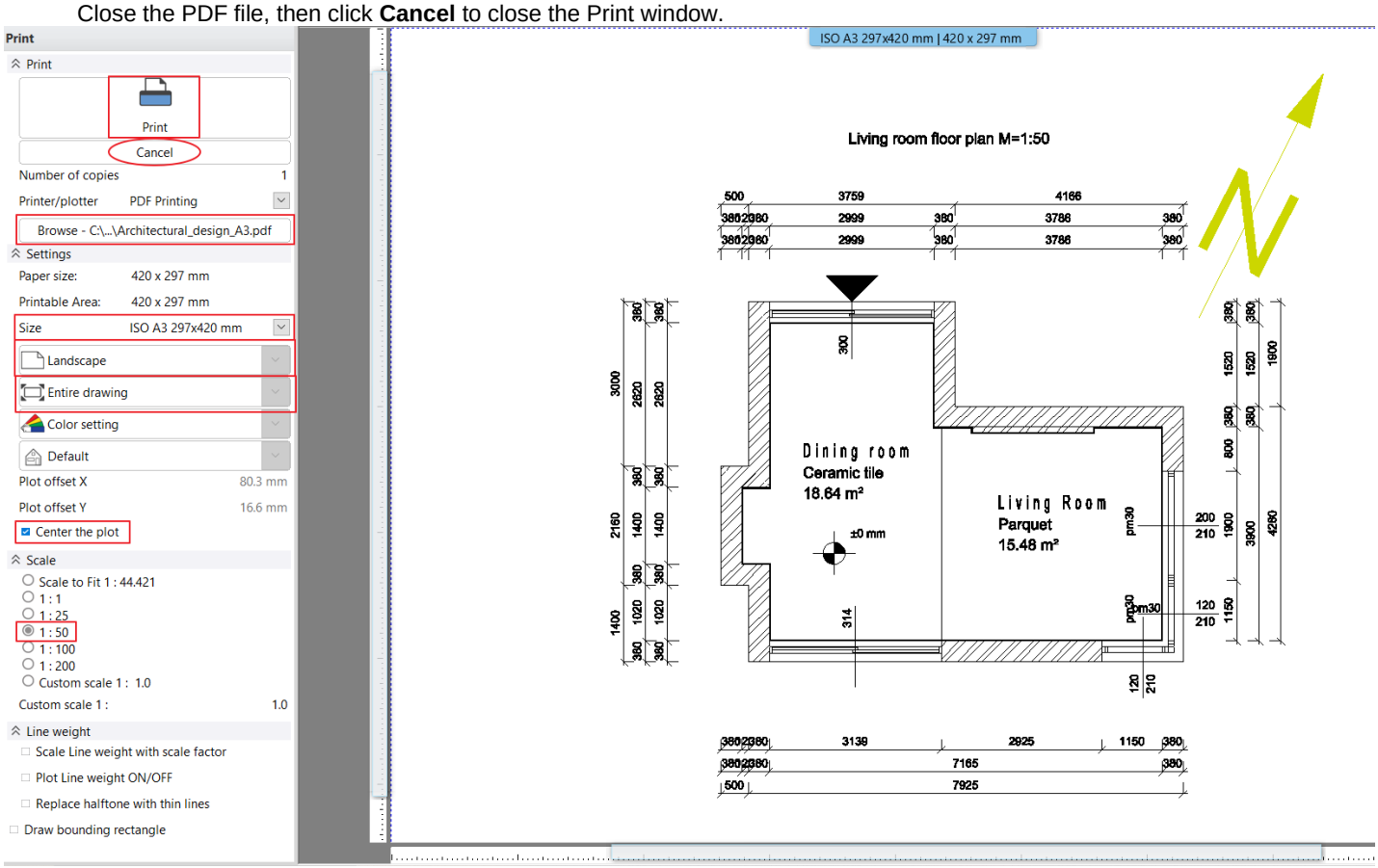
5.3.5. Print to PDF

Create a PDF file from the completed plan. We use a scale of 1:50, unlike the Mood board.
Choose the **Ribbon menu / Documentation / Print / Print** command or the **File menu / Print** option and enter the data as described:



- Choose the PDF printing command.
- Browse: specify to which folder the PDF created during printing should be saved, and under which name. Let the destination folder be: *...\Documents\ARCHLine.XP Draw\2024\ Workshop_Preliminary\ 5_Documentation,*
- and the file name is **Architectural_design_A3**.
- Paper size: **A3**
- Orientation: **Landscape**
- **Entire drawing**
- Scale: **1:50**
- Plot offset: **Center the plot**

When you see the desired result in the preview window, click **Print**. The PDF will be generated.
Close the PDF file, then click **Cancel** to close the Print window.



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

5.4. Create colored floor plan

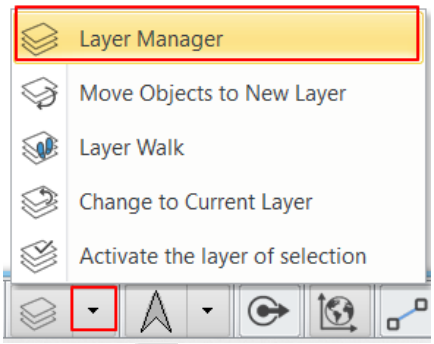
5.4.1. Layer variations

To create a colored floor plan first you must switch to furnished floor plan.

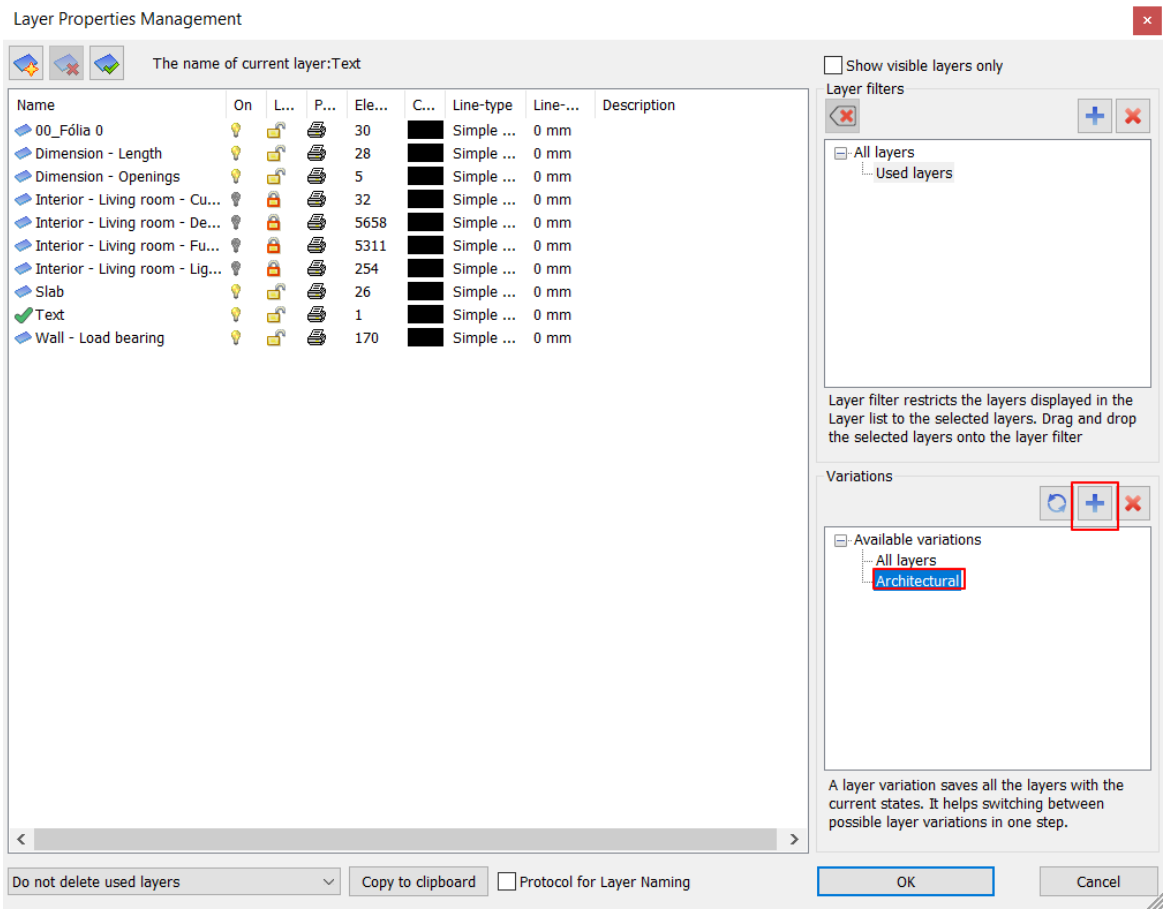
Previously, we switched off “Interior” layers in the layer manager. Now we turn them back on. The Group, Room stamp, and Dimension … layers are turned off.
To make it easy to switch between different plans, we create layer variations.

Activate the floor plan.

- Click on the status bar on the arrow next to the layer icon, then select the Layer Manager option.

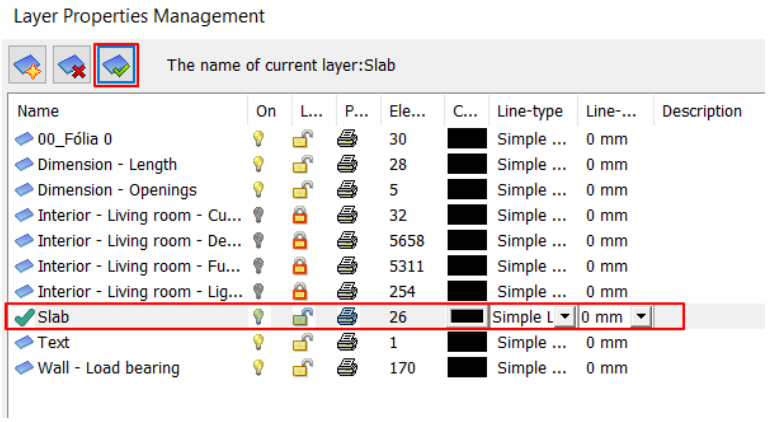


- Click on the  button in the Layer variation section to create a new variation and name it "Architectural".

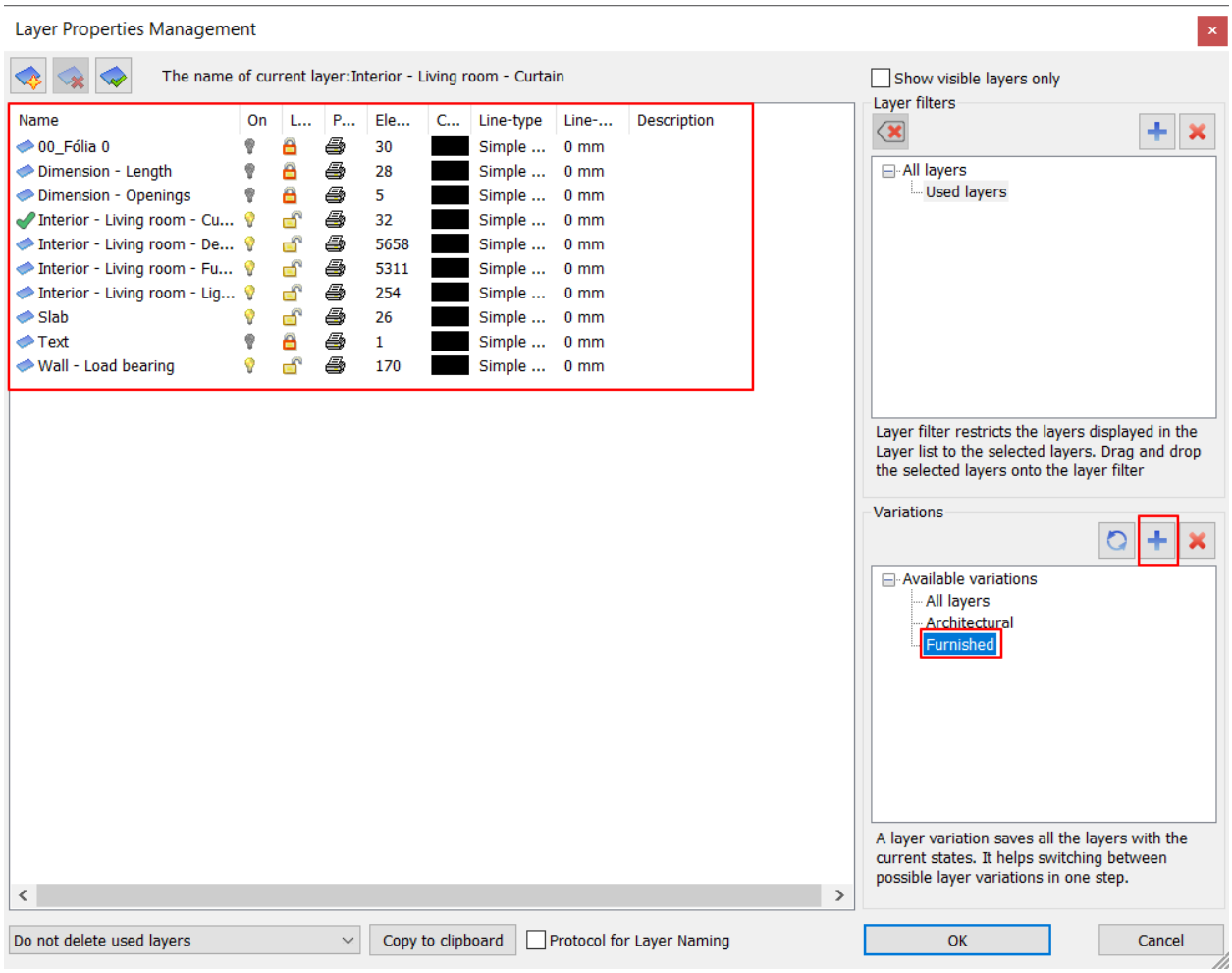


To create a Furnished variation, we need to disable the  layer, which is currently active and cannot be disabled.

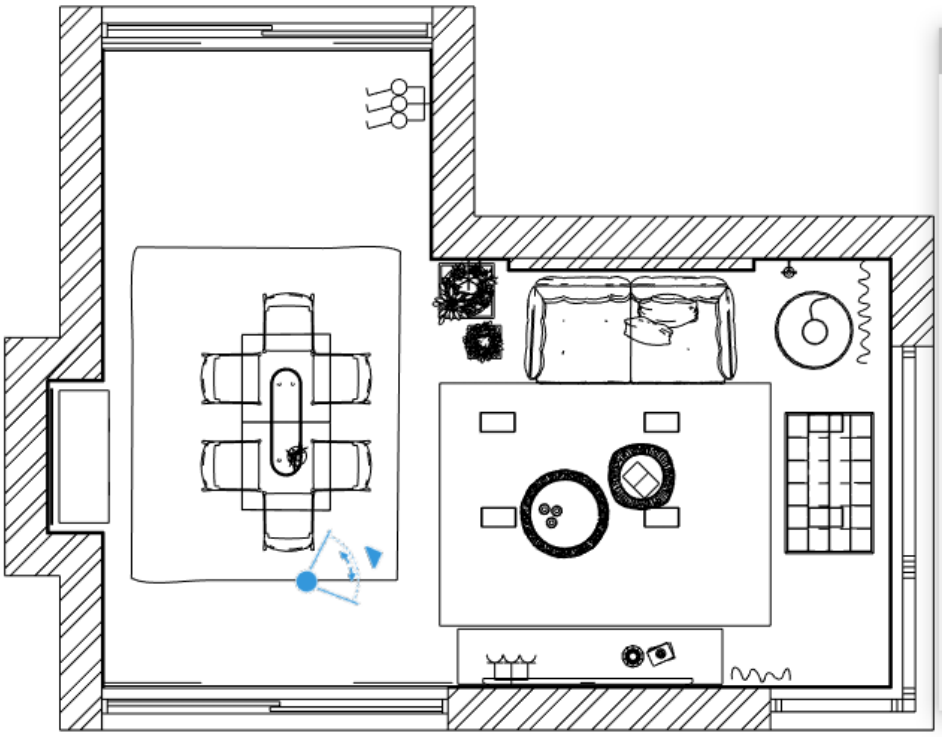
- Click on the slab layer and then on  *Activate Layer*, then deactivate the text layer.



- Switch the layers on and off as shown in the picture, create a new layer variation and name it "Furnished" variation. You can select or disable multiple layers at once by pressing the CTRL key and clicking the layer name. All items between the selected first and last layers can be selected by pressing the SHIFT key.

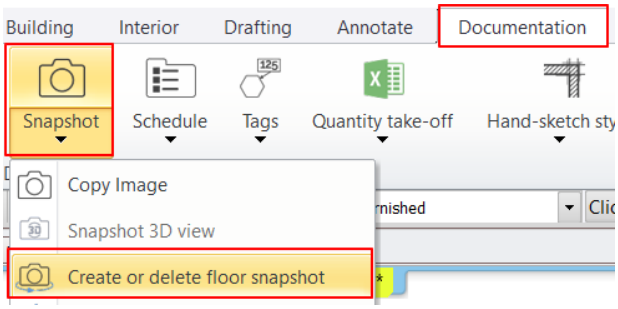


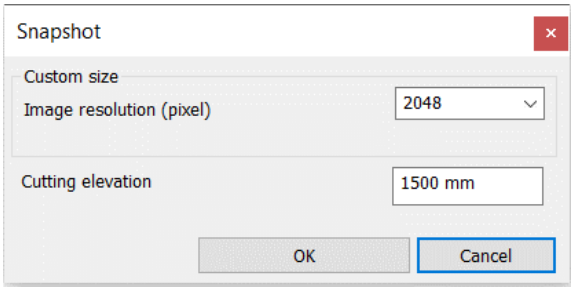
- Click the  Quick 3D Model icon to create a 3D model that matches the new layer settings.



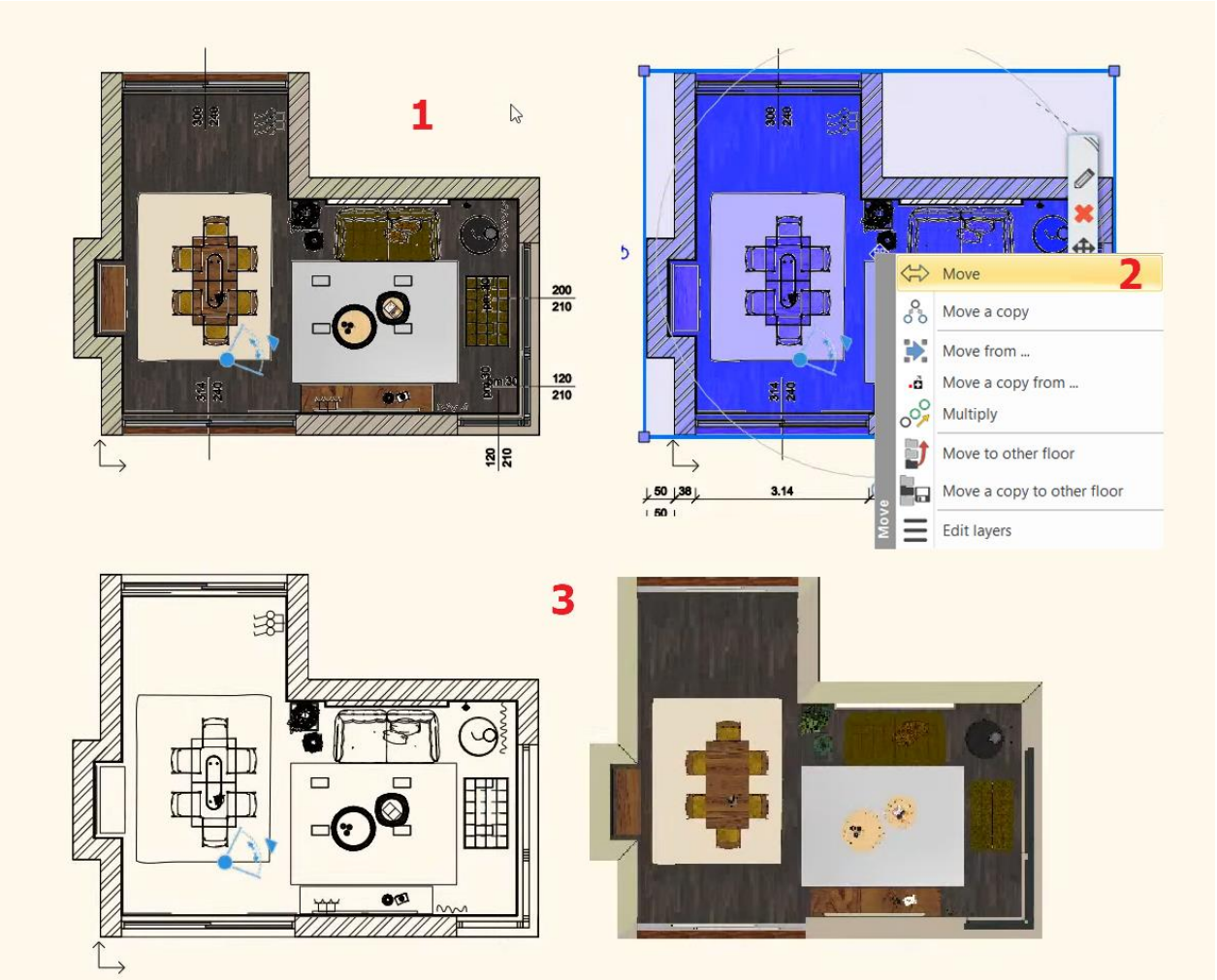
5.4.2. Create floor snapshot

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



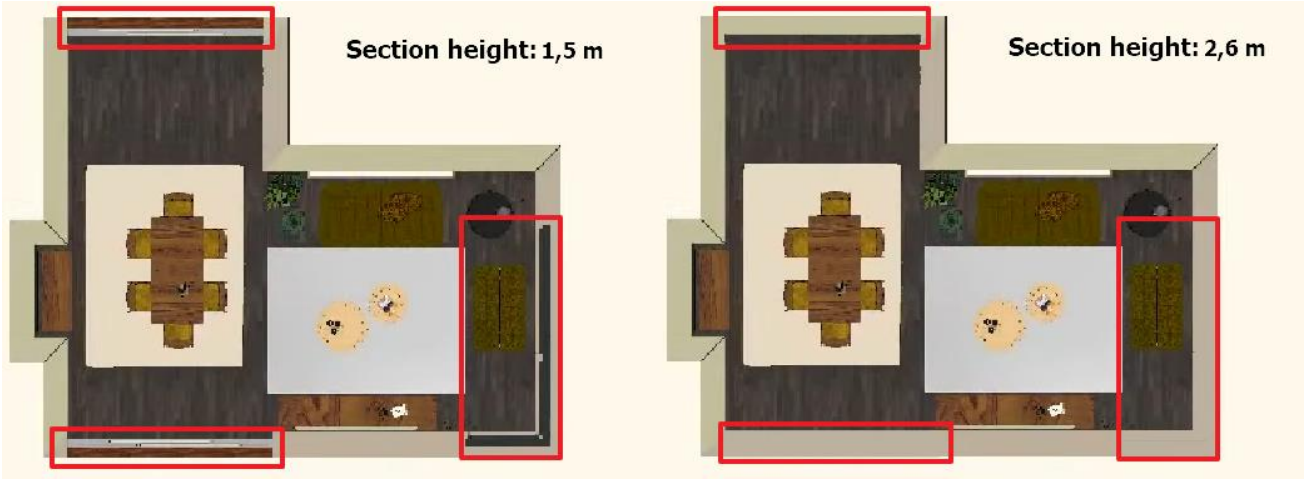


The snapshot is a raster image (1) that can be easily moved away from the floor plan and placed next to it (2; 3).



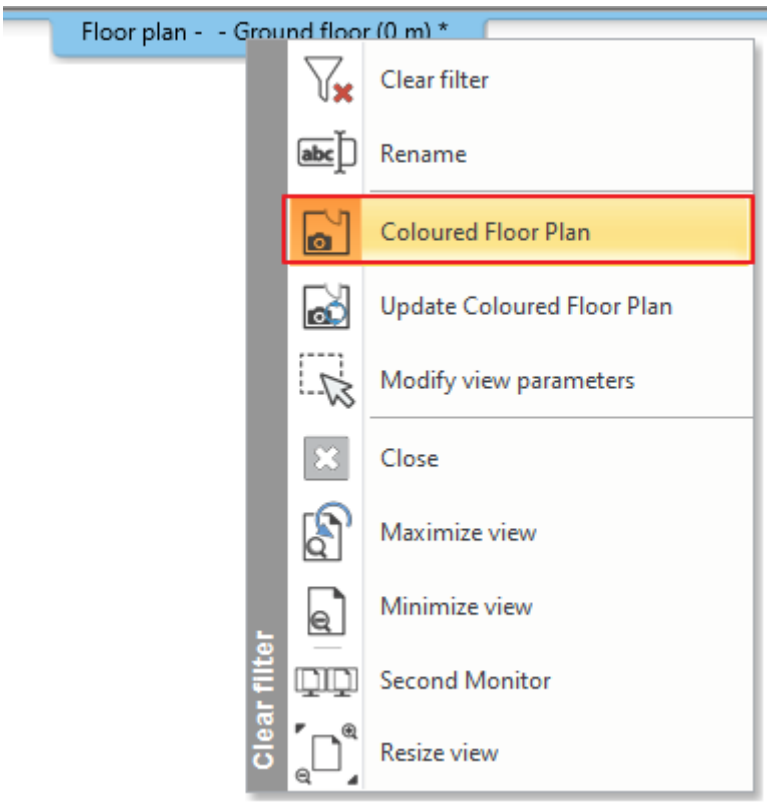
Attention!

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.



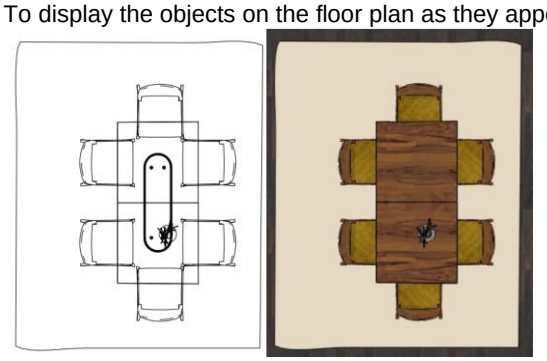
The finished colored floor plan, can be printed to PDF as it is described in Chapter 5.4.5. Also, you can save it from its Local menu by *Save / Save as*…

If you no longer need the level snapshot, you can turn it off by clicking the floor plan window name and selecting Colored Floor Plan.

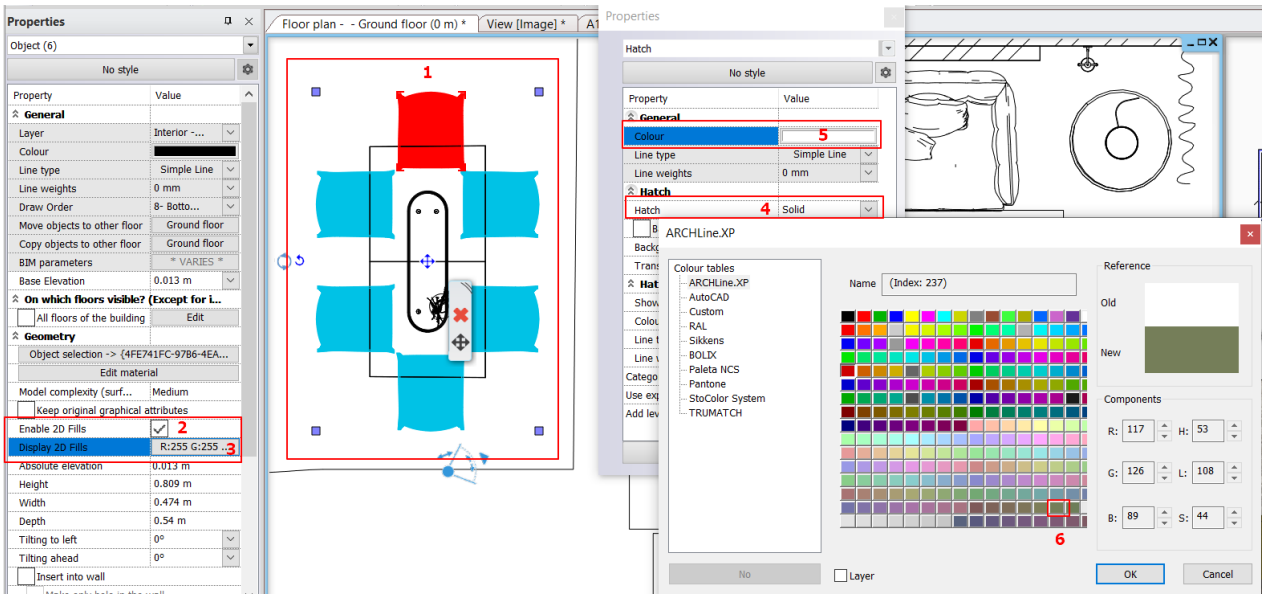


5.4.3. Draw order

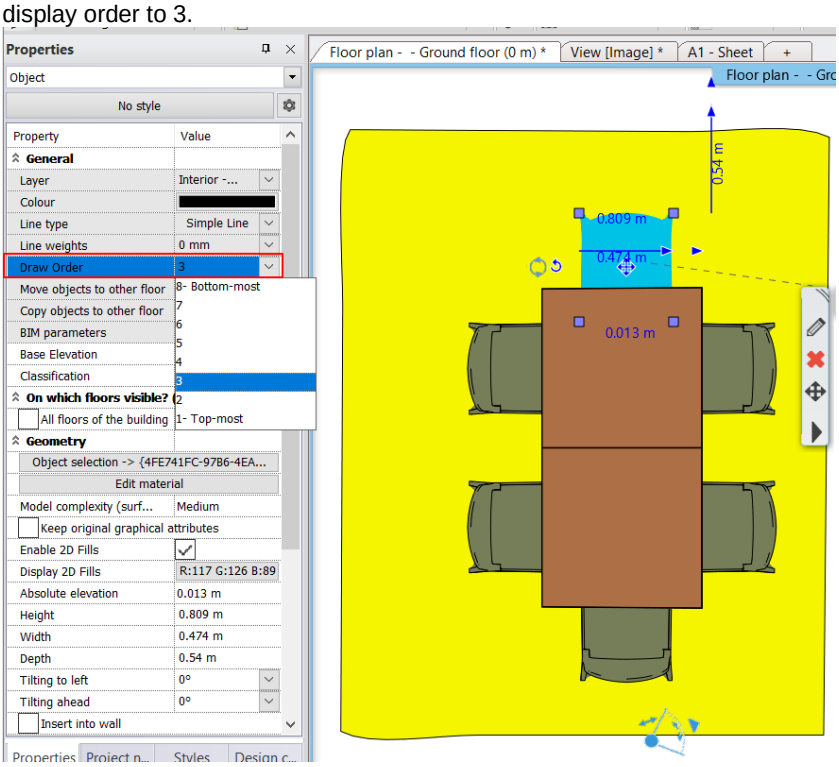
To display the objects on the floor plan as they appear in the level snapshot, we need to set their display order.



- Select the chairs (1), then activate the Enable 2D Fills option in the side menu (2), click on the button next to Display 2D Fills, (3) set the Properties window to Hatch: Solid (4), and select a greenish brown color (5)(6). OK.



- Select the carpet and set a pale yellow fill, then select the table and set a brown fill.
- In the side menu, set the draw order of the carpet to the bottom and the table to the top. Select the chairs and set their display order to 3.

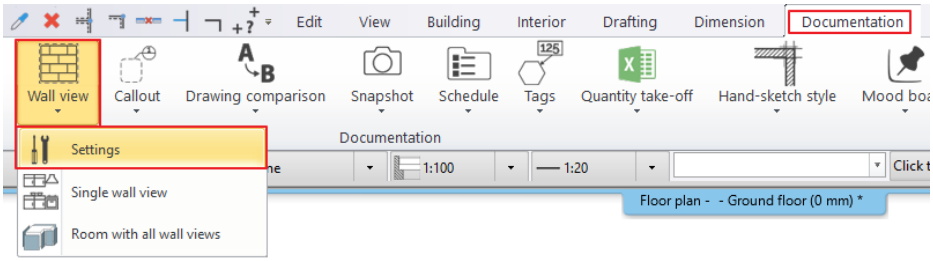


5.5. Creating wall elevation views

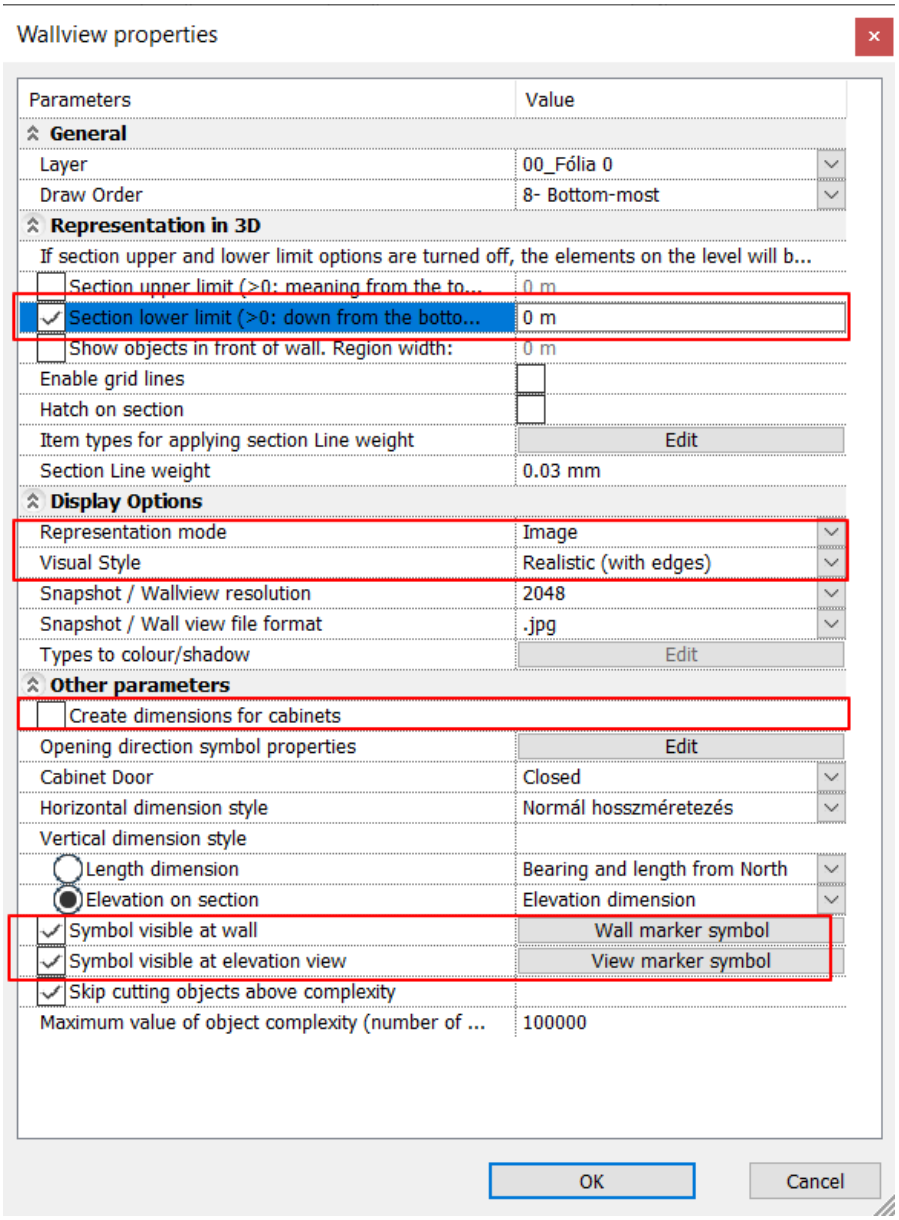
Create an image (textured) wall view, a vectorial (line wall view), and then scale the latter.

5.5.1. Image wall view

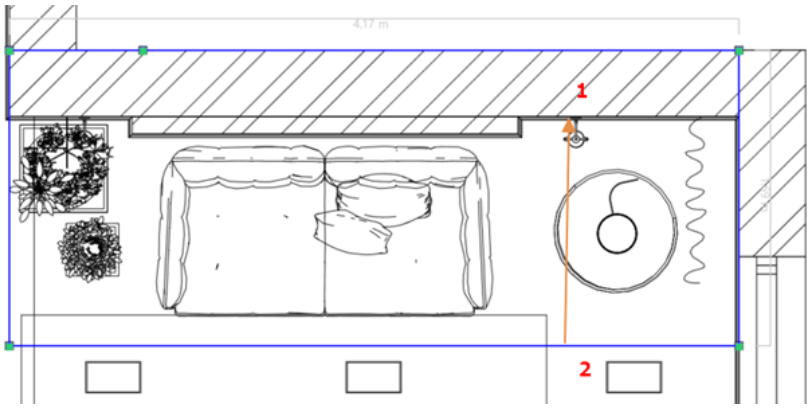
Click on the Ribbon bar / Documentation / Wall view / Settings command.



- Enter the lower limit of the section: 0 m. Thus, the slab under the wall is not included in this wall view.
- Here, set the Representation mode to *Image* and *Realistic visual style with edges*.
- Turn off the *Create dimensions for cabinets* option. (This option only applies to furniture created with the KBB instruction.)
- Turn on Symbol placements to easily identify the wall and its wall view.

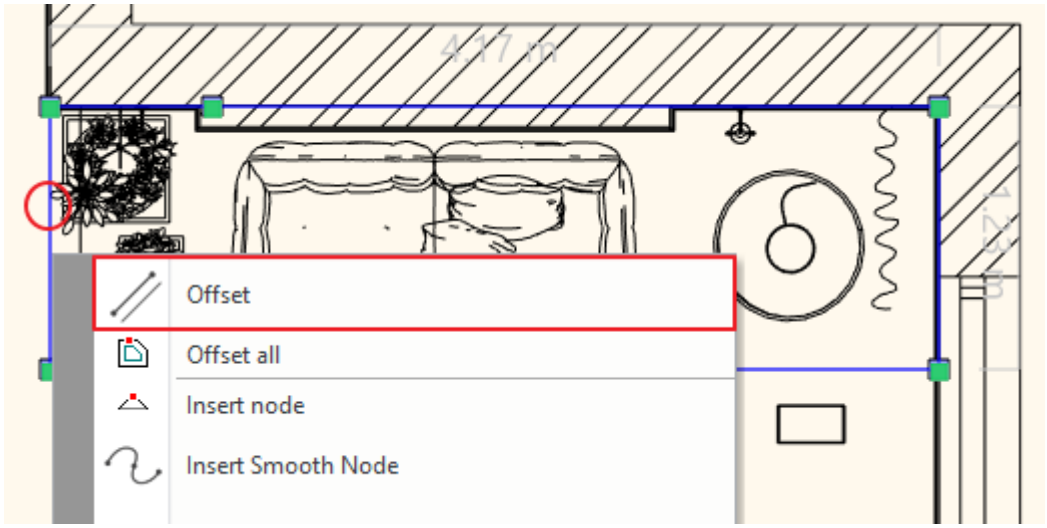


- Start **Ribbon bar / Documentation / Wall view / Single wall view** command.
- Click on the inside of the wall (1).
- Move the orange arrow and click on the desired point (2). A blue rectangle appears, indicating the area to be displayed by the wall view. Enter.



- Place it on the desired spot.

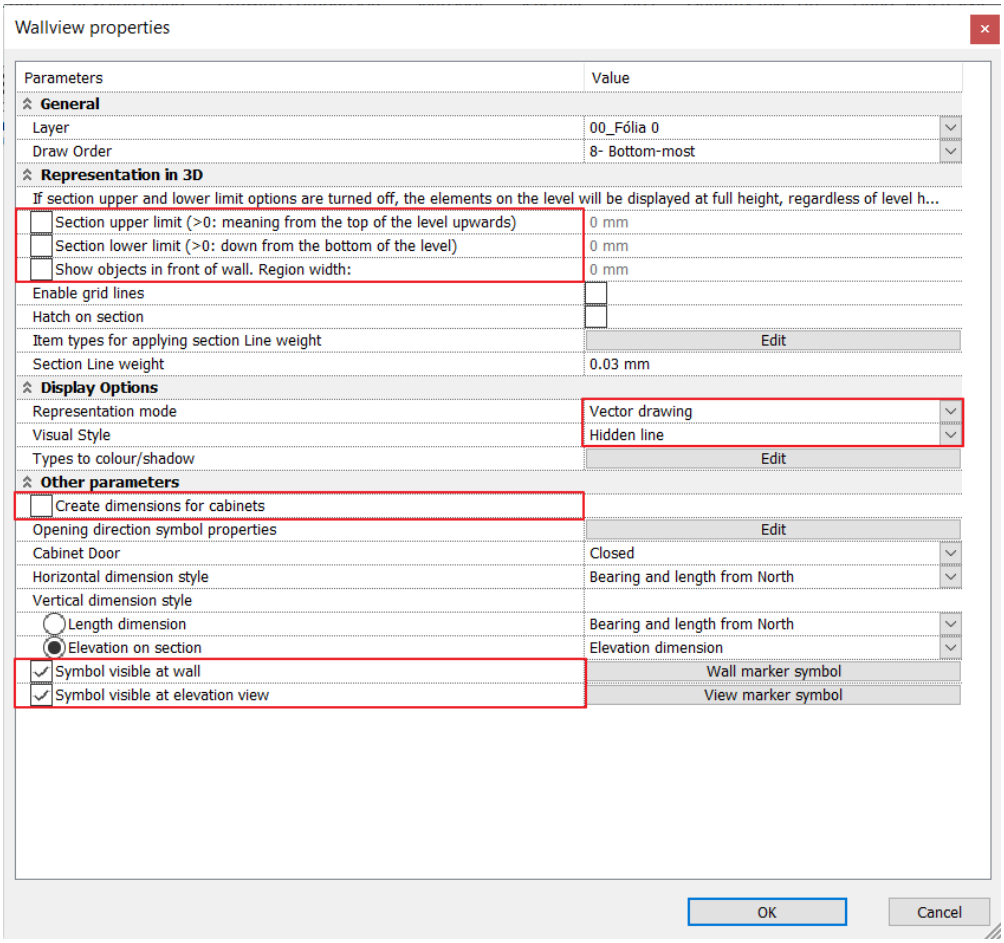
Before creating a wall, elevation view it is also possible to select a part of the highlighted wall to be used for the snapshot. You can do it, when the blue frame appears: click on the frame and us the Offset command.



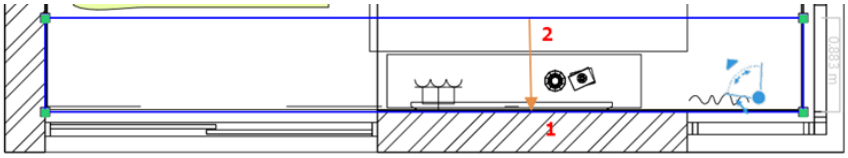
5.5.2. Vector wall view

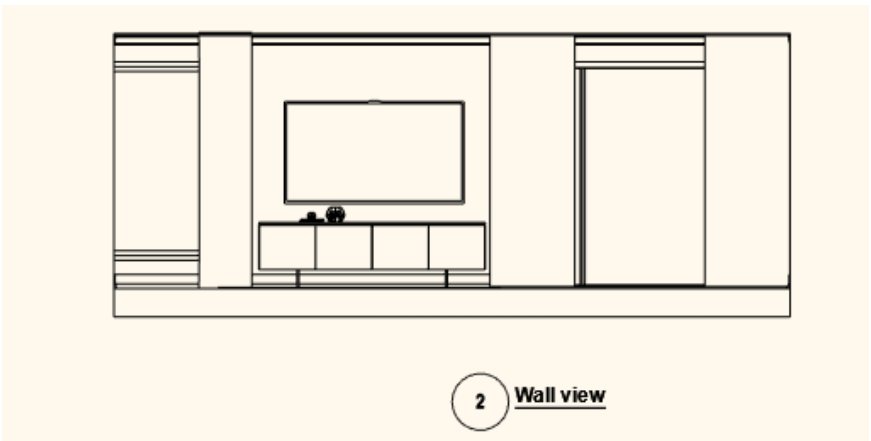
Create a vector wall view of the opposite wall.

- Click Ribbon Bar / Documentation / Wall View / Settings.
- Set the Representation mode to *Vector drawing* and the Visual style to *Hidden line*.
- Turn off the lower limit of the section. Thus, the slab under the wall is also included in this wall view.



- Start **Ribbon Bar / Documentation / Wall view / Single wall view**.
- Click on the inside of the wall (1).
  Move the orange arrow and click on the desired point (2). A blue rectangle appears, indicating the area to be displayed by the wall view. Enter. Ok, then place the wall view.

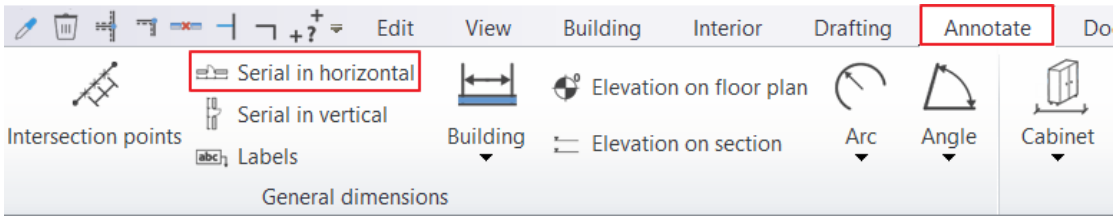




5.5.3. Dimensioning Length

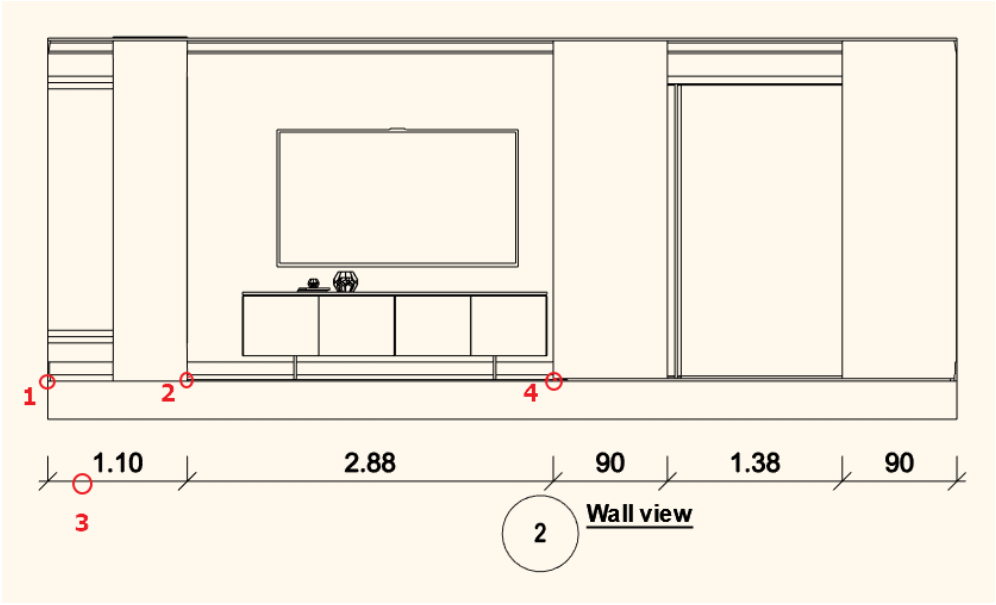
In this example, only the architectural elements will be dimensioned on the vector wall elevation view.
You can do it on image wall elevations too.

- Select the Ribbon bar / Annotate / Serial in horizontal command.
  By starting this command, the Dimension – Length layer is automatically activated.



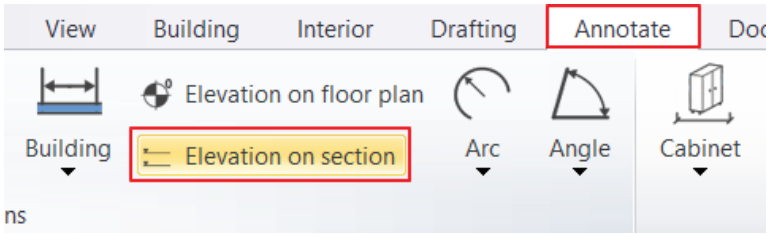
- Click on the first point on the wall view (1), then on the second one (2).
- Select the place of the dimension line (3).
- Add the other points too.

- Serial means that the second point of the previous distance and the first point of the following distance we are overlapping each other, therefore we have to give the second point only.

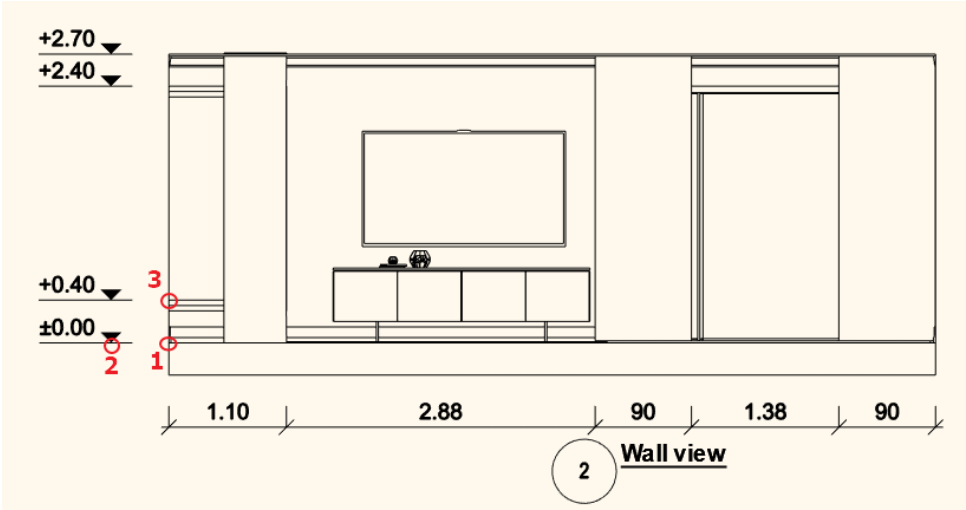


5.5.4. Elevation on section

In this example we will measure the wall with window on the right side of the wall view.
The dimensioning process is the following:



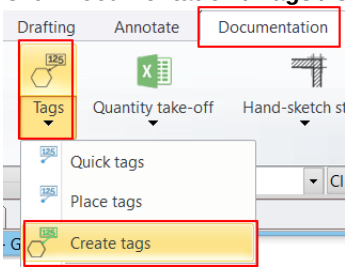
- Click on the Ribbon bar / Annotate / Elevation on section command.
- Enter the first point to be dimensioned. This will be the connection point between the slab and the wall (1).
- Click on the same point again so we can place the 0.00 height point (1).
- Click the scaling location (2).
  The first height value 0.00 appears next to the wall view at the desired location.
- Specify the additional points to be scaled: the window sill (3), the top of the window, and the top of the wall



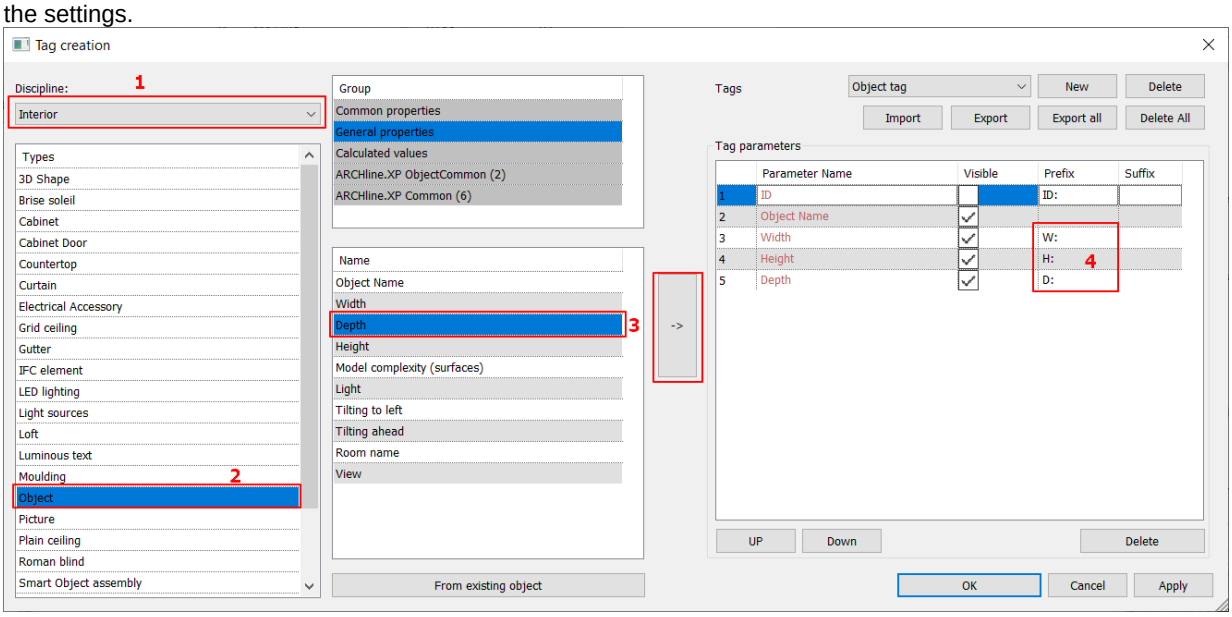
5.6. Create tags

Let's create a tag for an object.

- Click **Documentation / Tags / Create tags**.

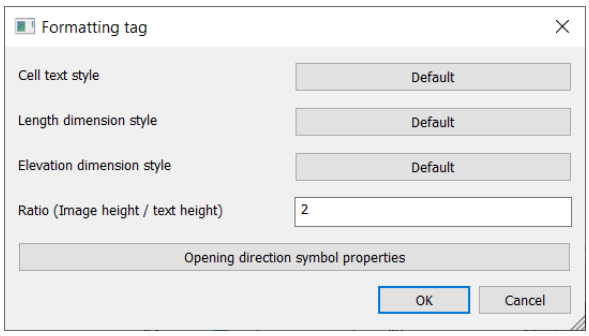


- In the pop-up window, select Interior from the Disciplines, (1) Object from the types, (2) then add Depth to the label parameters. (3) Modify the Width, Height, Depth parameters of the prefixes as shown in the figure. (4) Click OK to accept the settings.

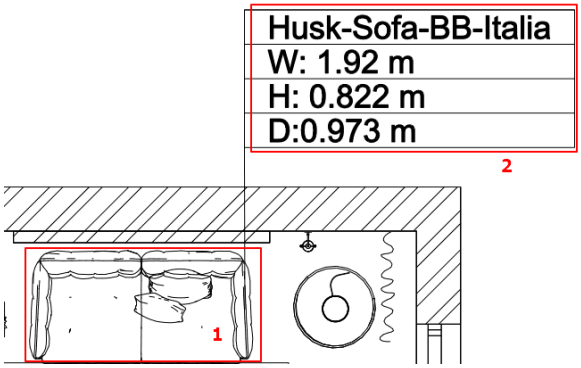


- Select **Documentation / Tags / Place tags**. The pop-up window will display the previously made setting, accept it by clicking *Apply* and *OK*.

In the next pop-up window, you can set the label formatting.

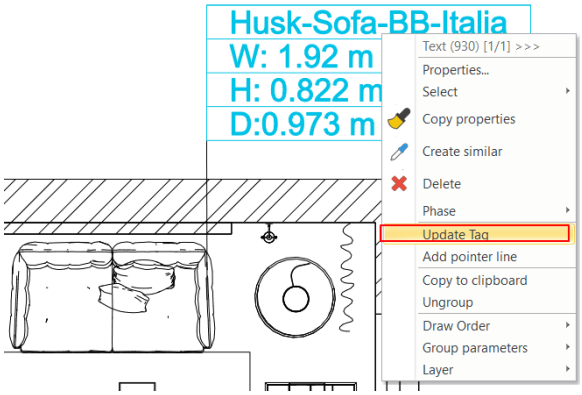


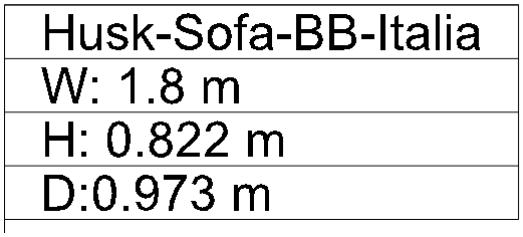
- Accept this also by clicking OK. Click on the sofa and place the tag.



The tag and the object are connected by a line, indicating that the two elements are linked. The line can be deleted, but the link remains. When the object's tag parameters are changed, the tag is also changed.

- Change the width of the sofa to 1800 mm. Update the label using the Update item command.



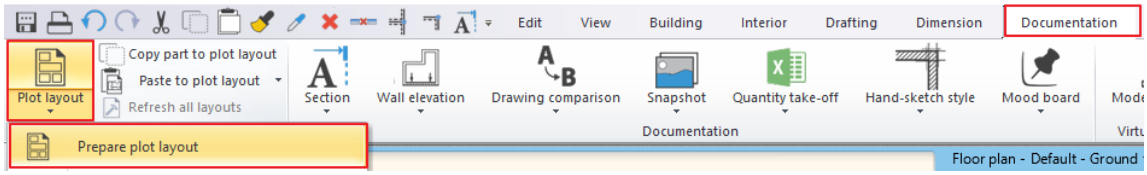


5.7. Using the plot layout

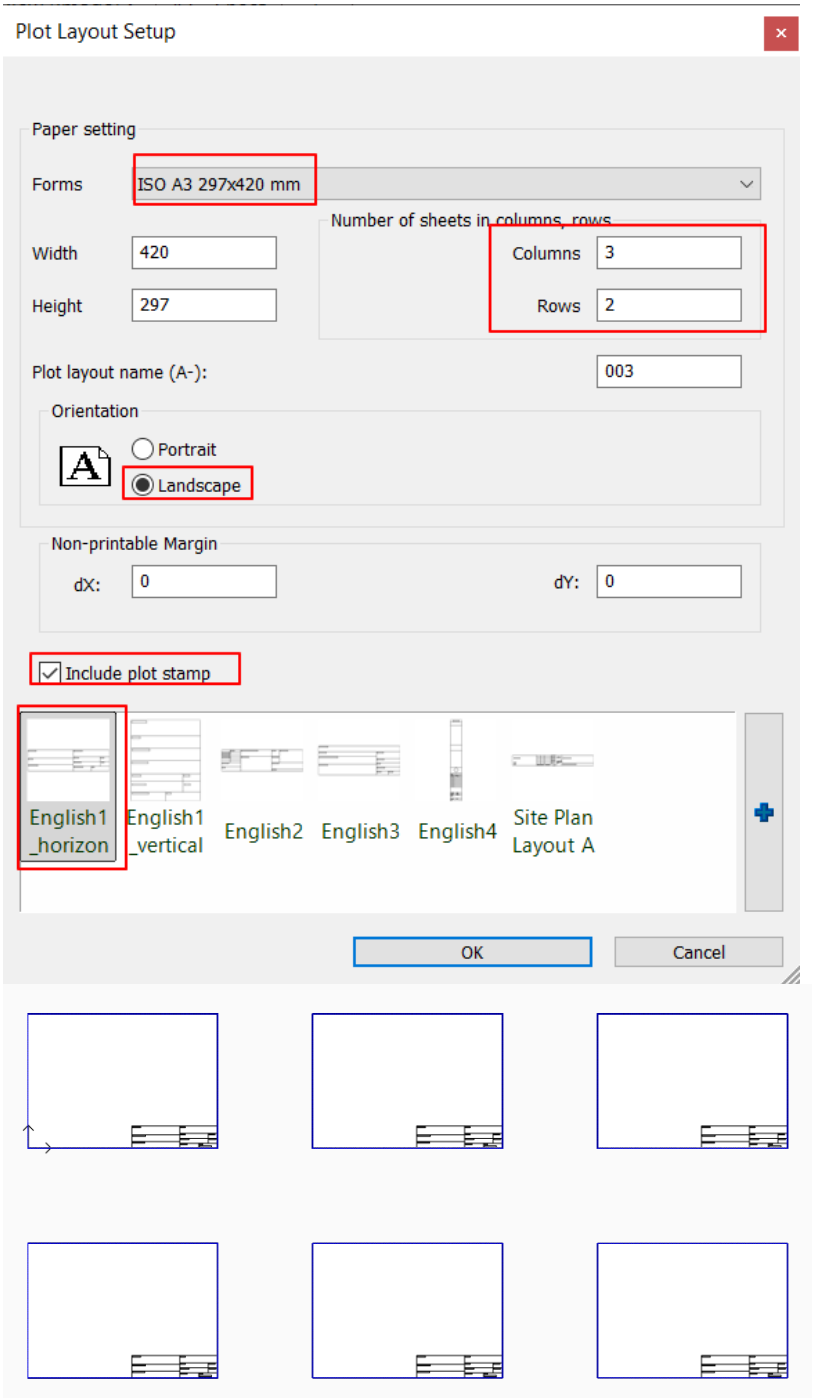
As we have seen, we were able to print the floor plan using the Print PDF command directly from the floor plan. This is the easiest, fastest solution. However, documenting plans is a much more complex process.
Get to know the use of the *Plot layout*. In this example, we create 6 sheets, which are specified on one print view.

5.7.1. Prepare plot layout

The **Prepare plot layout** command is available under the **Ribbon bar / Documentation / Plot layout** menu item.



- Set the A3 size to the page size and landscape orientation.
- Since we want to create 6 layouts, the column should be 3, the row 2.
- Select Include plot stamp option, with English horizontal.
- Click OK to create the 6 blank layouts.



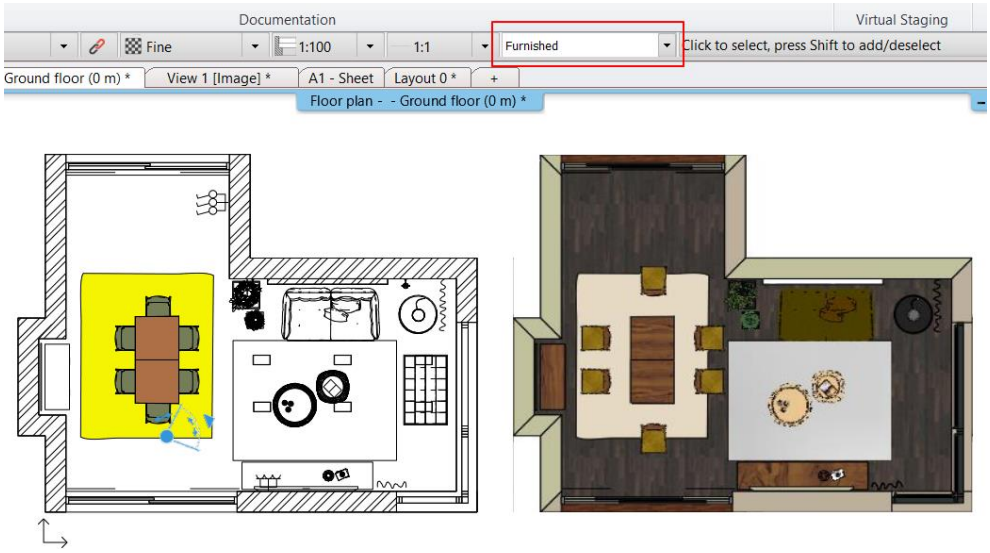
The actual size of the A1 print sheet, i.e. the A3 sheet, is determined by the size of the black rectangle 1:1. The blue dashed rectangle indicates the margin size. None of the rectangles appear in the printout.

5.7.2. Sheet 1: Furniture layout

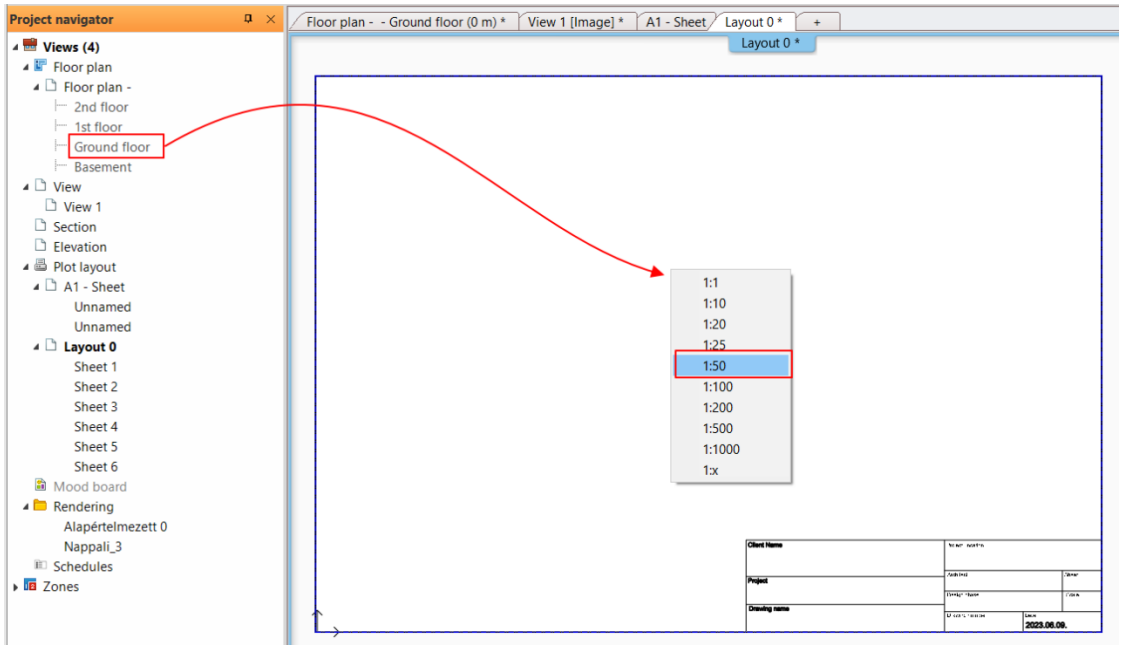
Place a drawing on the page from the project navigator

The floor plan will be placed from the project navigator on page 1, which will include our furnished floor plan.

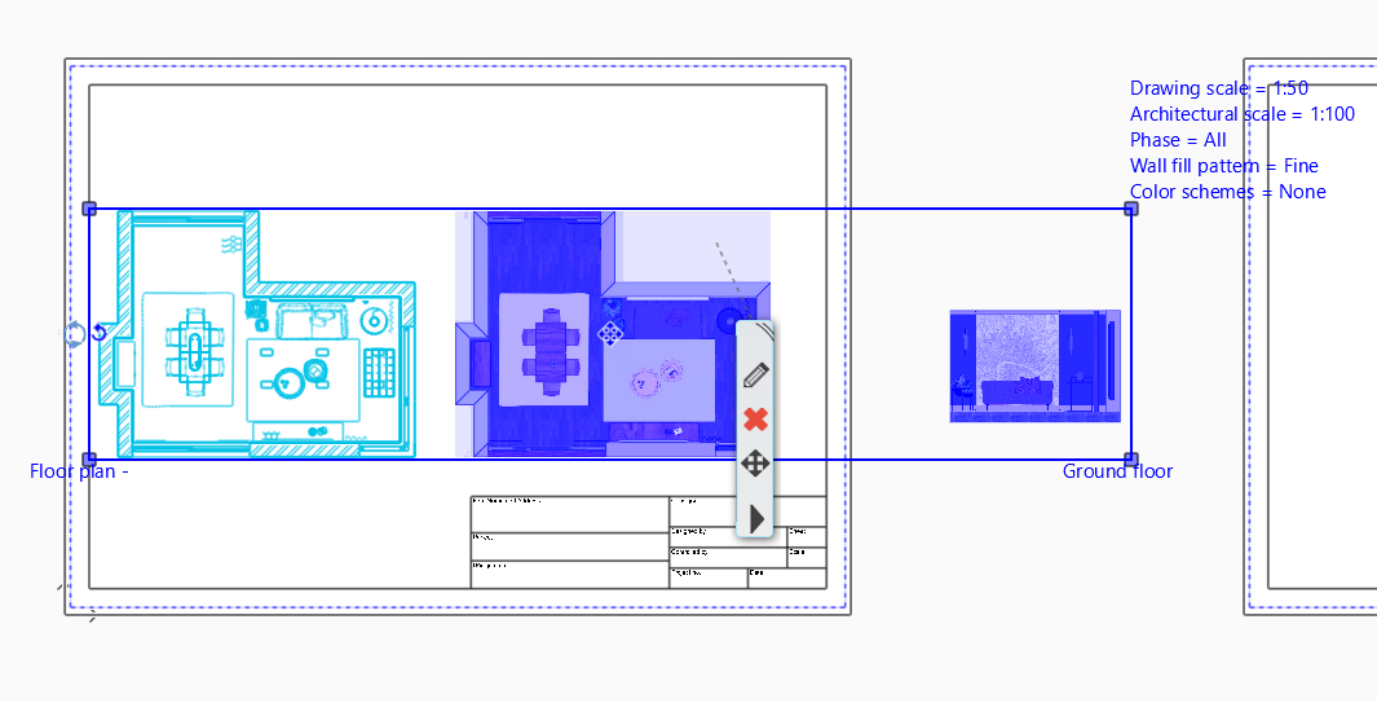
- Switch to the floor plan view and select the Furnished layer variation.



- From the project navigator on the left, drag the Floor Plan - Ground Floor to the plan sheet.
- Select 1:50 from the list that appears.

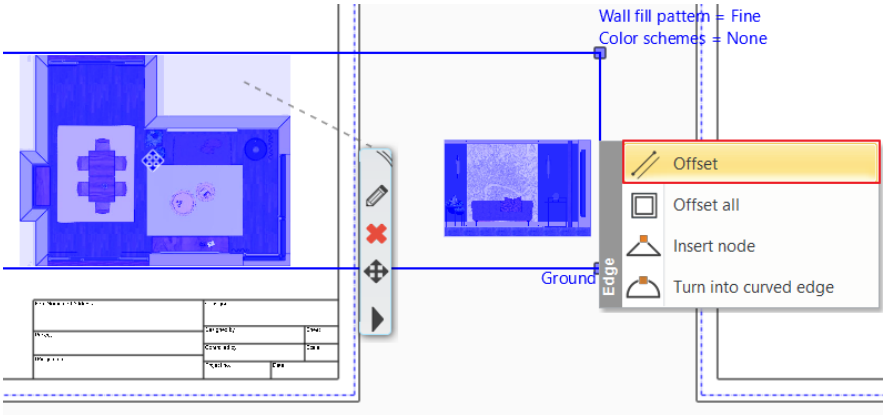


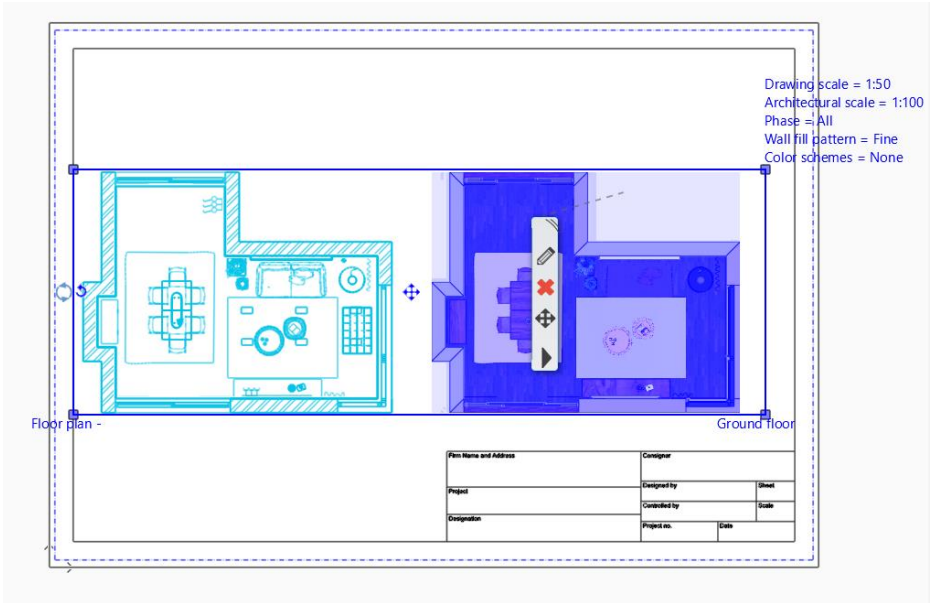
- Place the drawing.



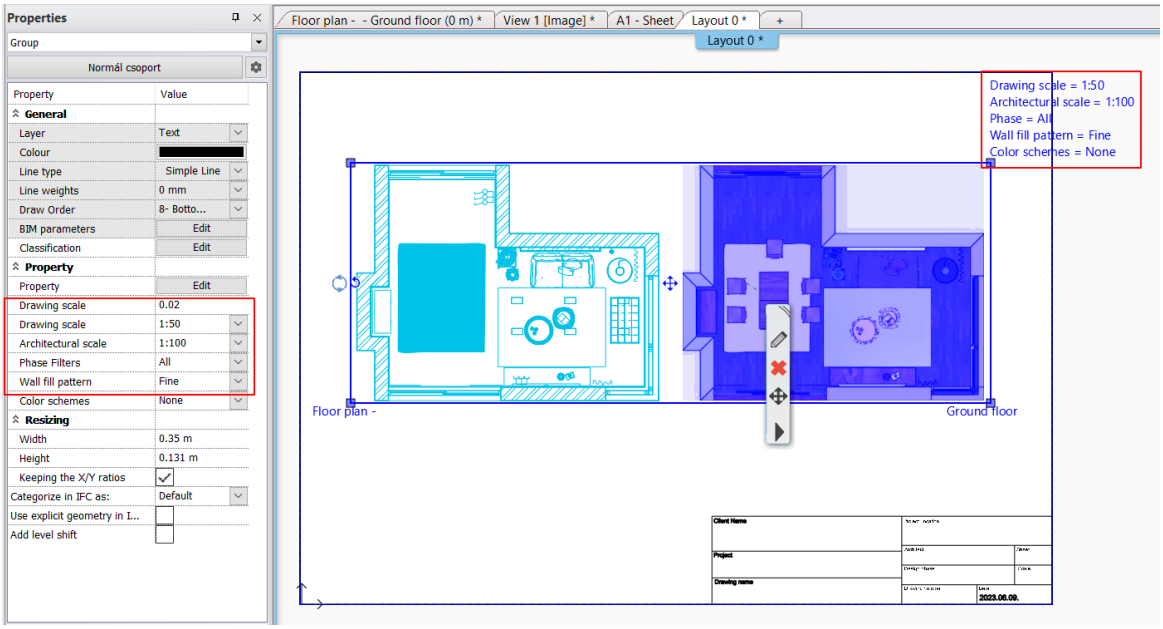
The floor plan also includes the wall view, which we do not want to show on this plan sheet. By modifying the drawing border, only the floor plans are displayed.

Click on the right side of the blue rectangle and select Offset. Move the cursor to the left so that exactly the floor plans are in the rectangle.





The important parameters can be set or modified directly with the markers on the layout. The markers help you to directly edit drawings on the plan sheet, such as drawing scale, architectural scale, phase or wall fill.

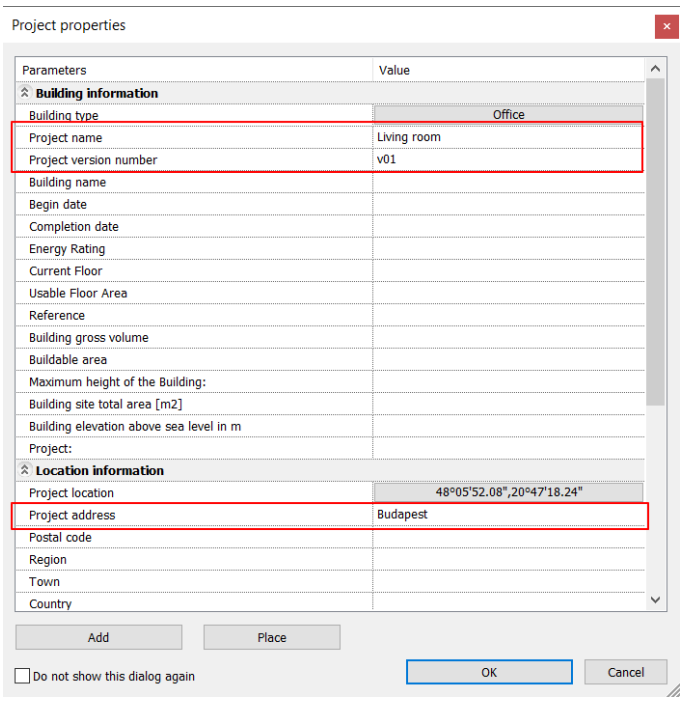


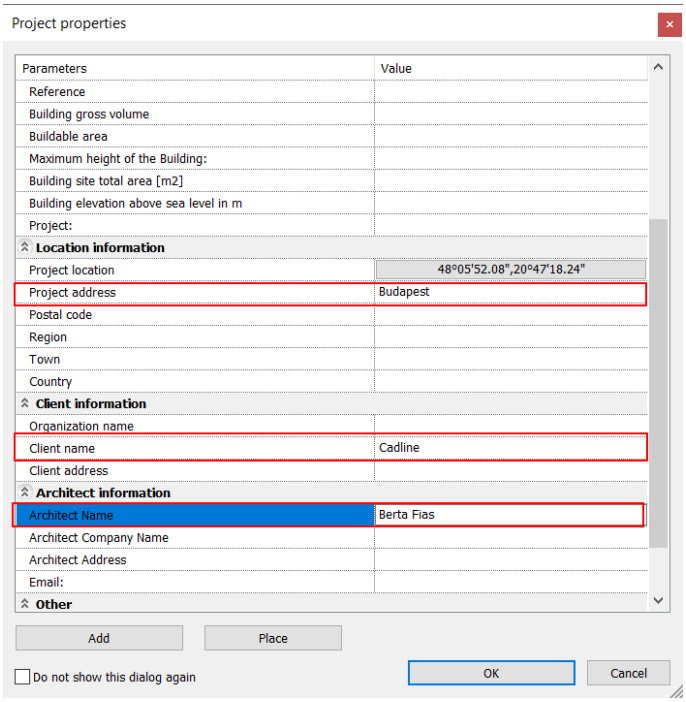
Filling in the stamp

- Select **File / BIM / Project Parameters.**

  When opening a new project, this window will always appear so that you can pre-fill the project details.

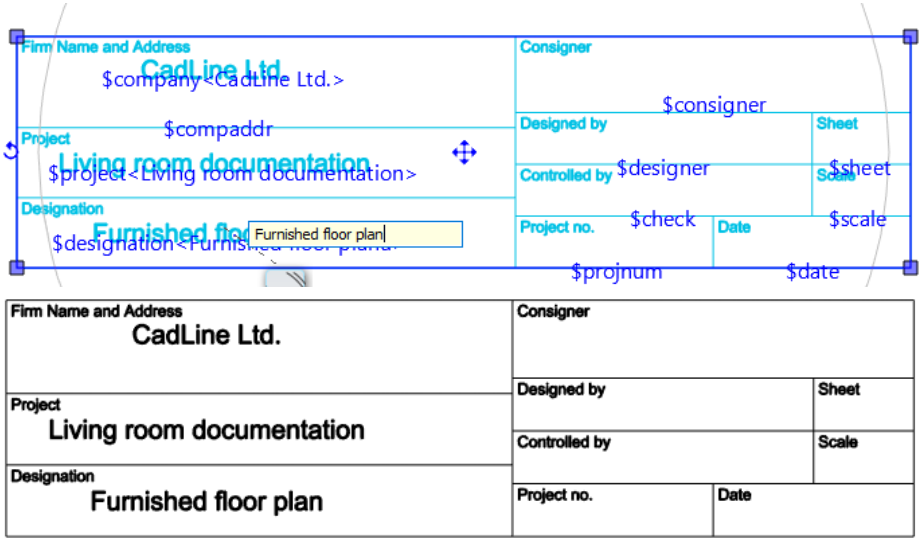
- Enter the data as shown in the diagram and OK to close the window.



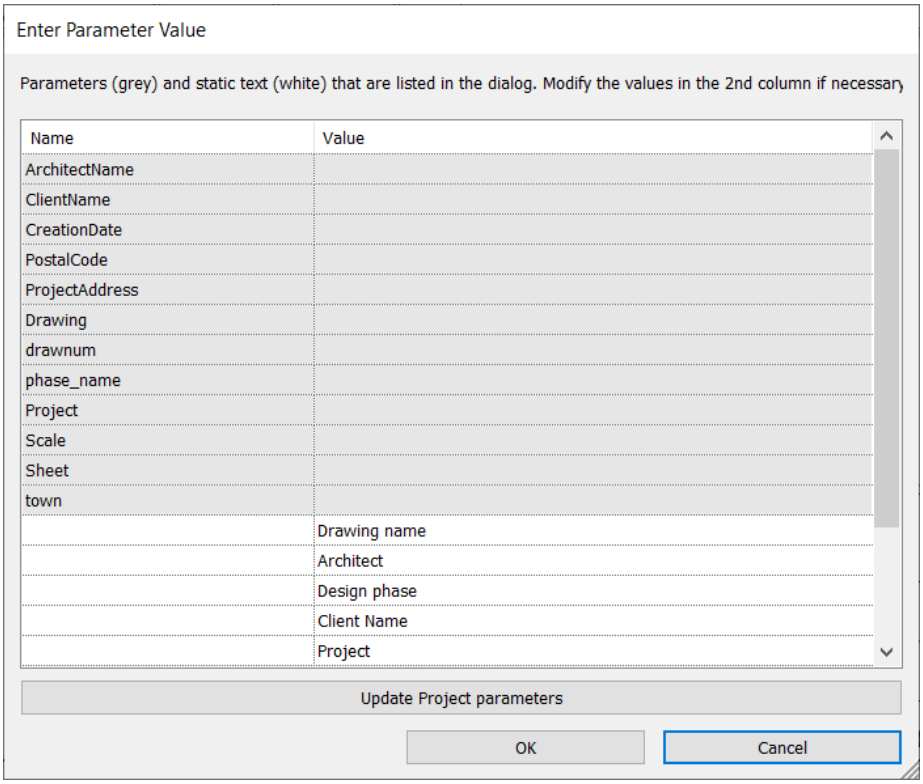


In case the stamp is not updated, you can update it with the **Documentation / Plot layout / Update Project Parameters** command.
The other information can be filled in in two ways.

- Click on the stamp and enter the missing data by clicking on the different field values as shown in the figure, closing all data with Enter.



Another way to fill in the stamp is to use the **Documentation / Plot layout / Fill /modify title box** command.



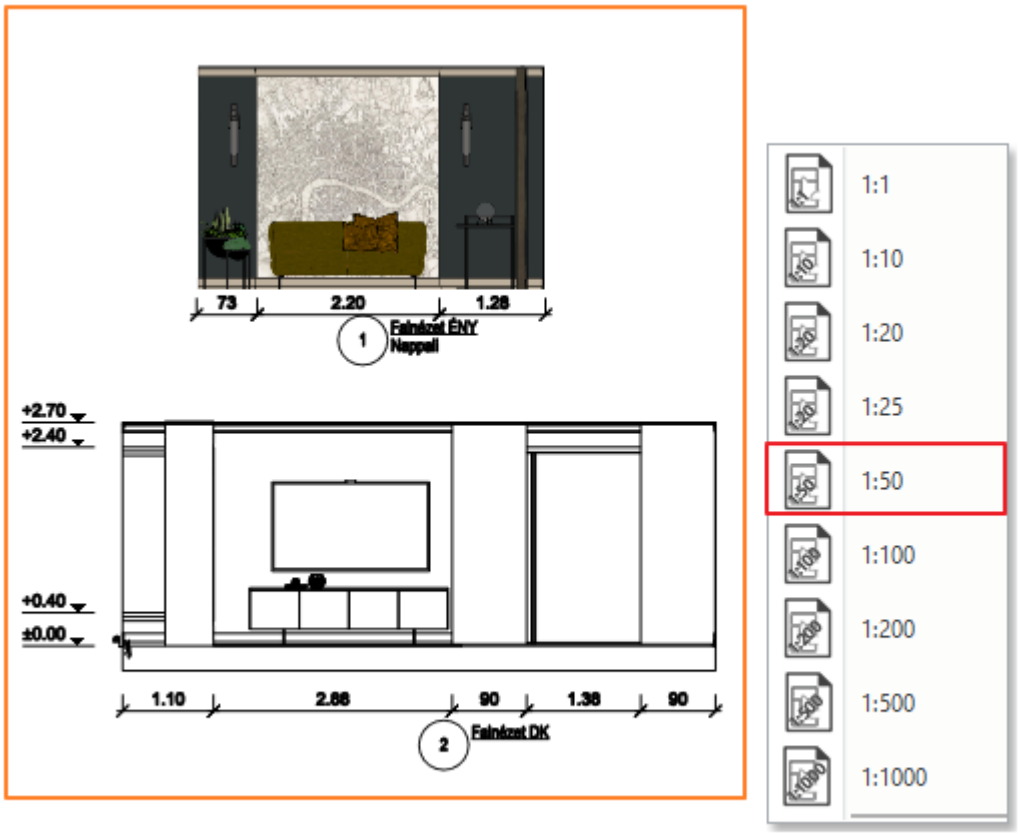
5.7.3. Sheet 2: Wall elevations

Viewports

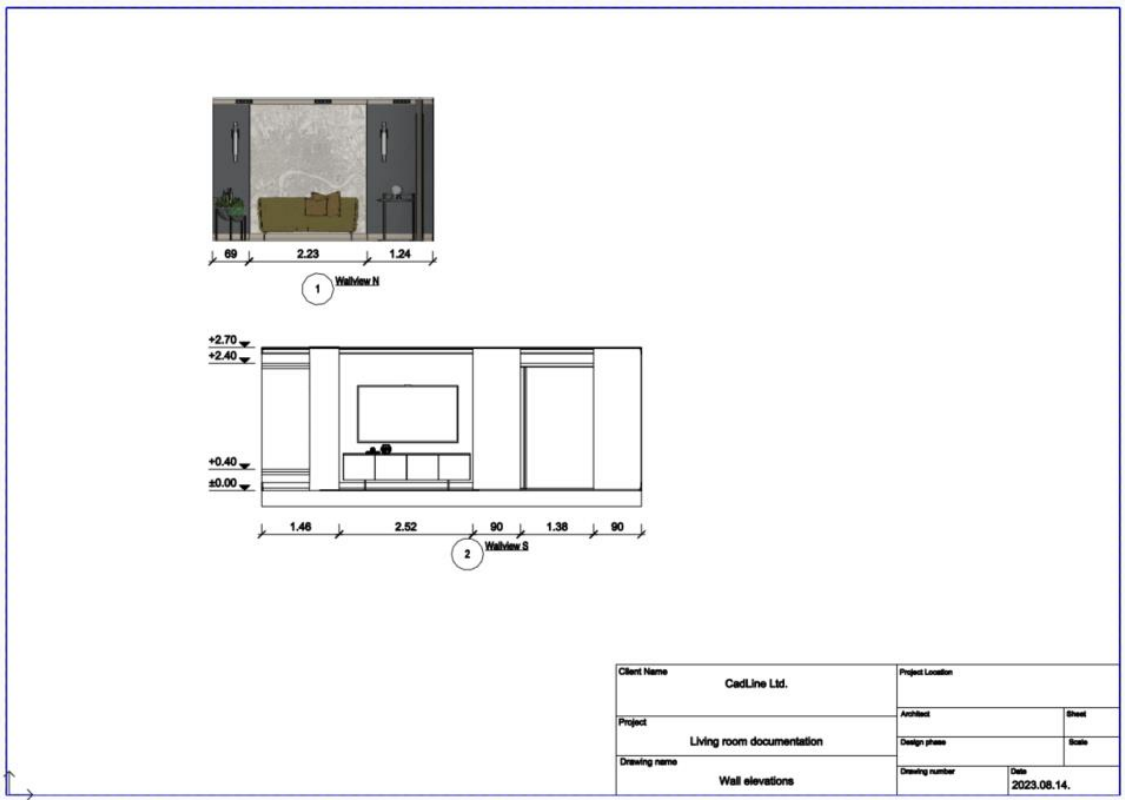
Viewports display a selected part of the model on the plan sheet.
Viewports are located on the plot layout. You can create multiple viewports on a plot layout.
Each viewport displays a view of the design space, such as a floor plan, section, facade, 3D views with the scale and orientation you specify.
If the viewport was created on the floor plan, it can be edited either in its original location or on the plot layout.

We will copy the wall views elevations the floor plan as drawing details to the second, still blank plan sheet.

- Activate the floor plan.
- Choose the *All layers* variation.
- Choose **Ribbon bar / Documentation / Plot layout / Create viewport**.
- Select the part you want to copy and enter the scale: 1:50.



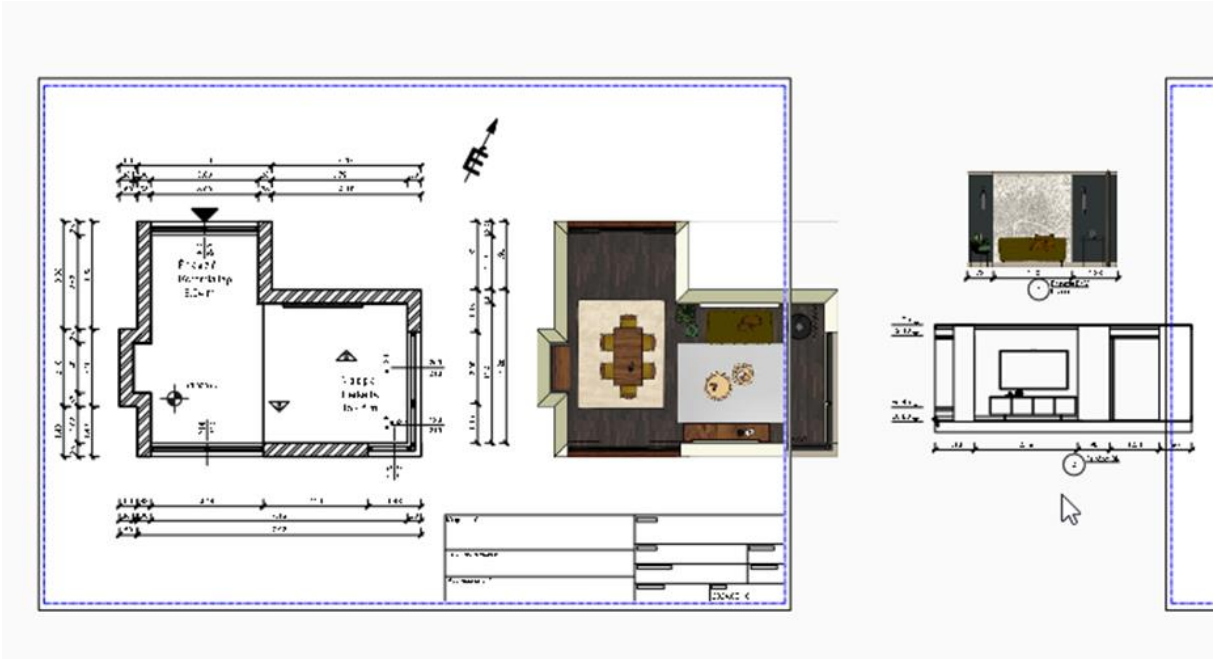
- Fill the stamp.



5.7.4. Sheet 3: Architectural floor plan

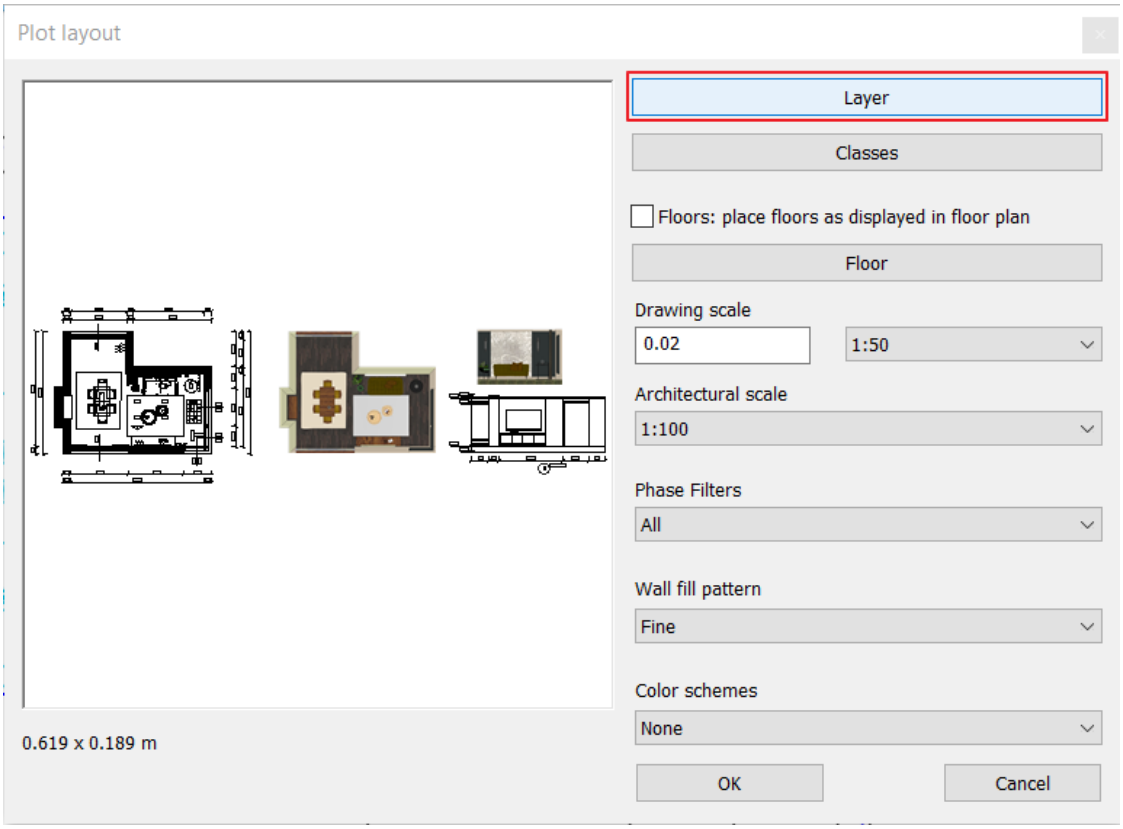
Activate the floor plan view, select the Architectural layer variation and from the Project manager, place it on the third plan sheet at a scale of 1:50.
On the floor plan on the plot layout, both the furniture and the dimensions, north sign, etc. are visible.

Our goal is to display the furnished floor plan on this sheet without any dimensions, north mark, etc.
We could have achieved this directly using Viewport. In this example, we will show the use of transparencies on the plan sheet.

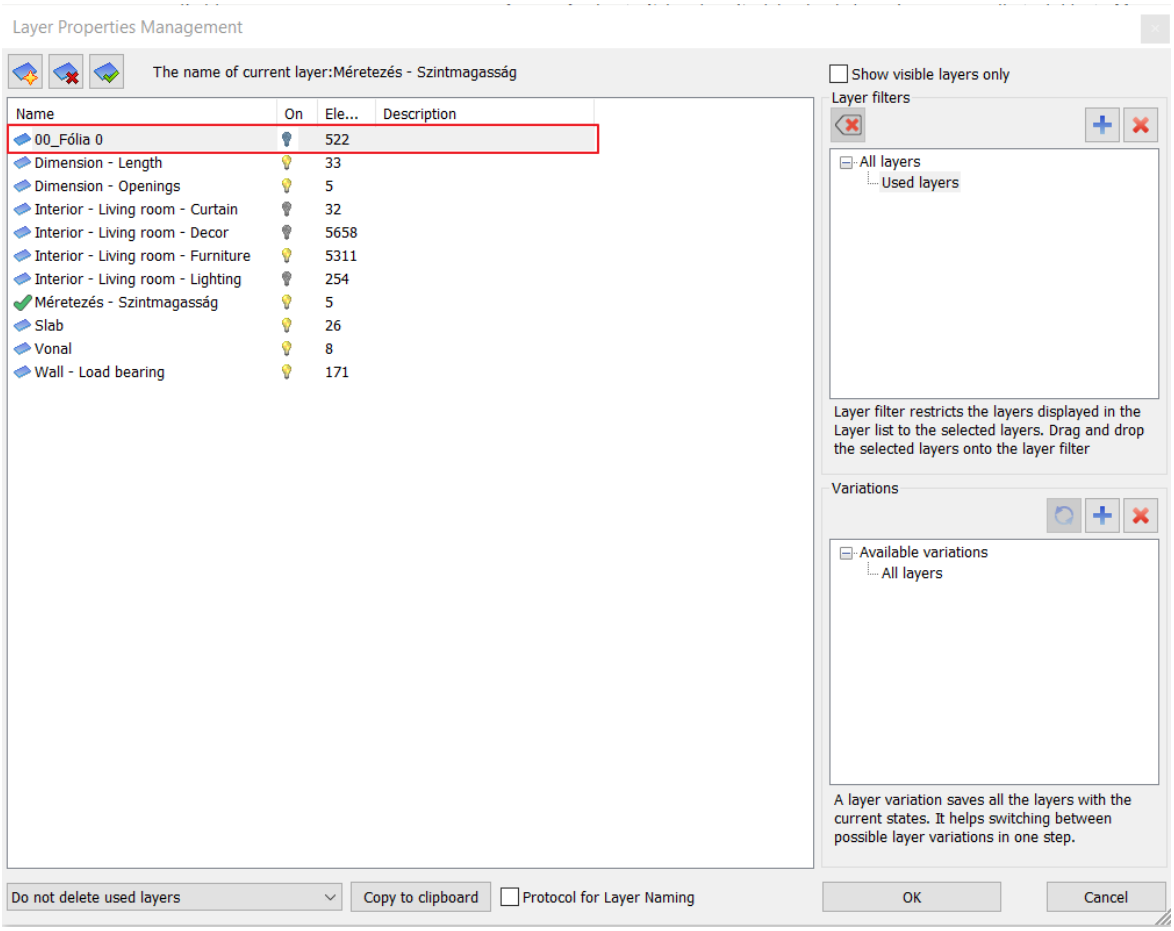


Layer settings on the layout

- Select the floor plan on the layout sheet, and then click the pencil icon from the shortcut menu.
- Enter the layer manager from the pop-up window.

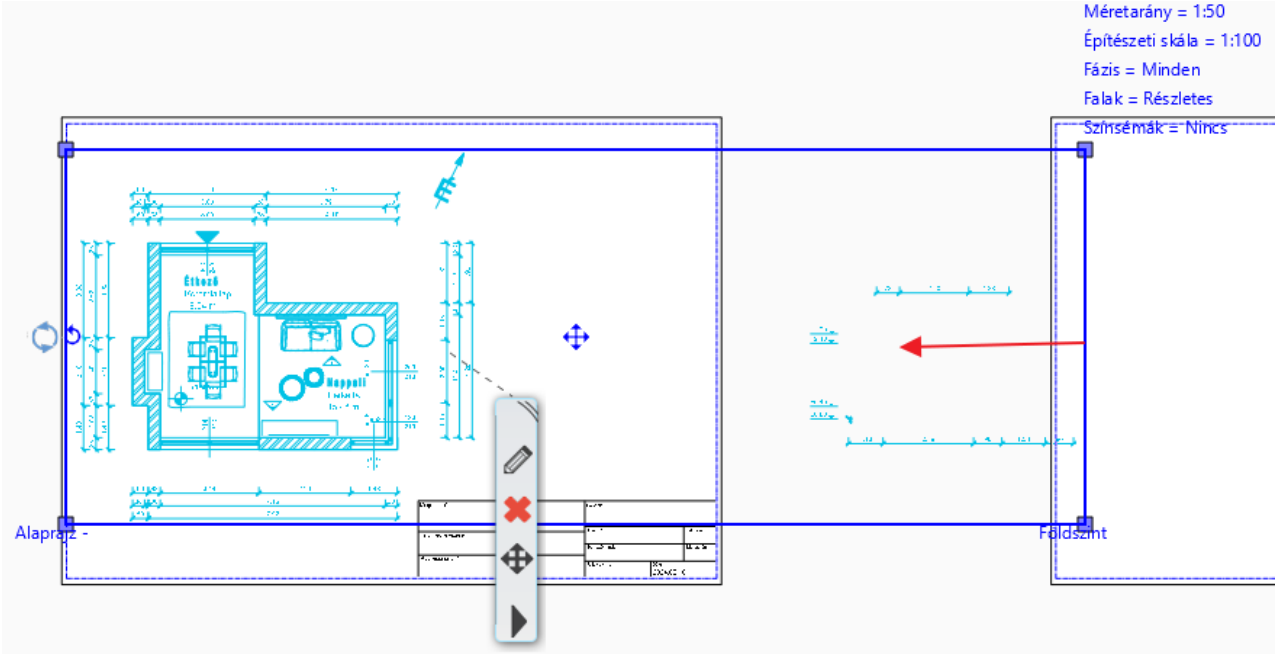


- Activate the Used Layers filter.
- Turn off the 00_Layer 0 layer, where the snapshot and the wall views are. (If one of these is active, move the active layer to, for example, 00_Layer 0, as the active layer cannot be switched off.)

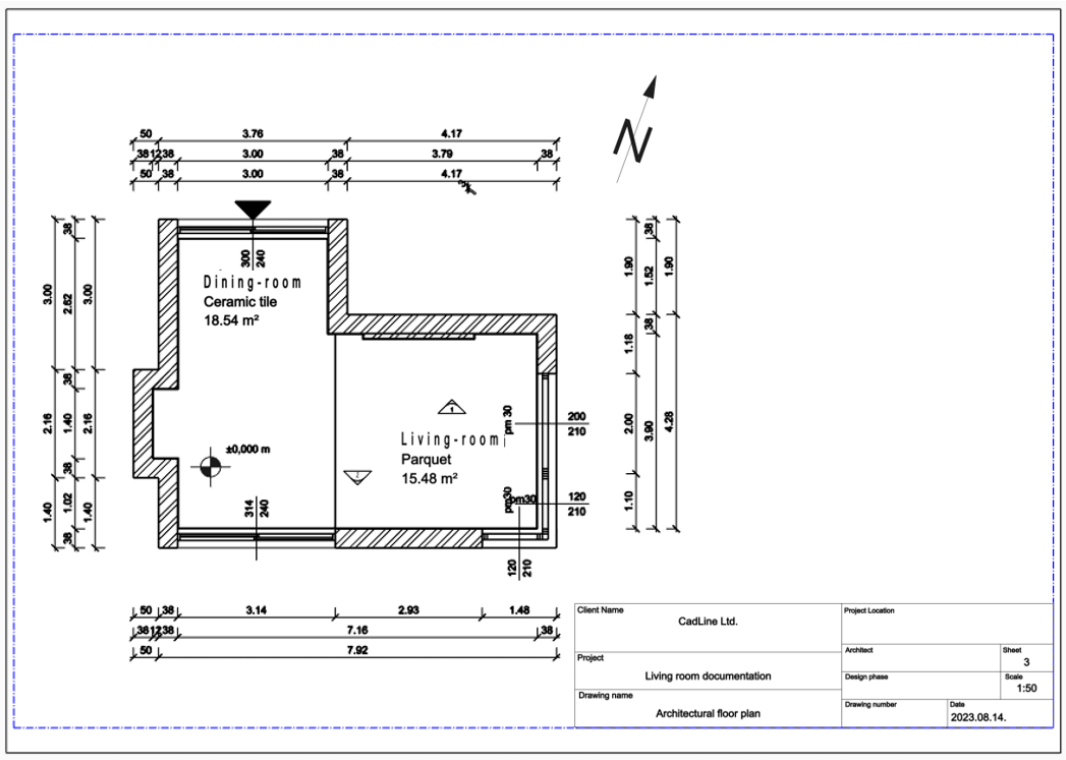


Then only the architectural plan and the dimensions of the wall elevations remain on the plan sheet.

- Click on the drawing, then click on the side of the blue contour where the wall view dimensions are, and select the offset. Move it so that the dimension lines of the wall views are not visible.



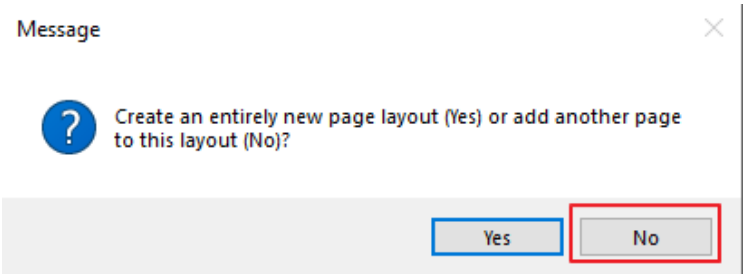
After setting up everything, the you will see the following:

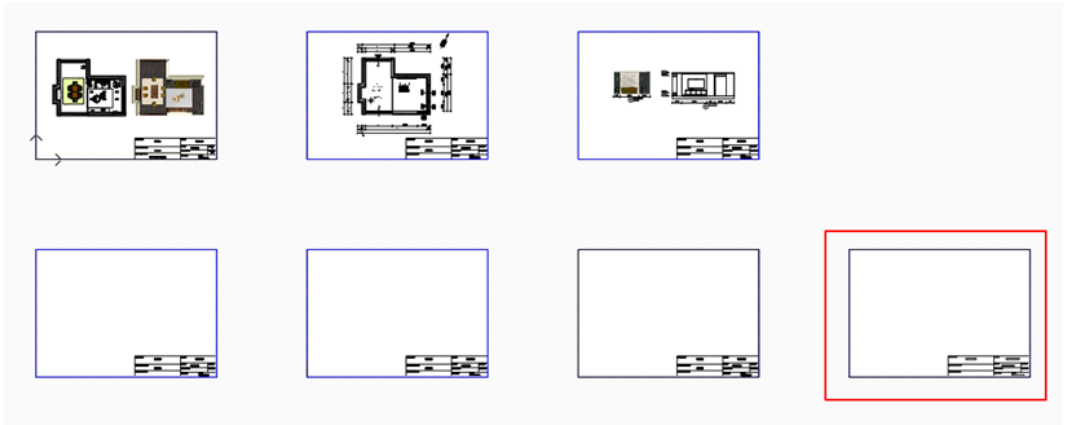


Add new sheet

In retrospect, we will add a new sheet to our plans.
The sheet is also placed on the existing print sheet so we can handle it all at once.

- Activate the Plot Layout, then create a new plot layout with the *Prepare plot layout* command. Set the number of Columns and Rows to 1.
- Then a dialogue box will appear, asking you to choose whether you want the third sheet to appear on an entirely new page layout or on the same layout. Here, place it in the same page, so select No.





The plan sheets can be freely moved or deleted.

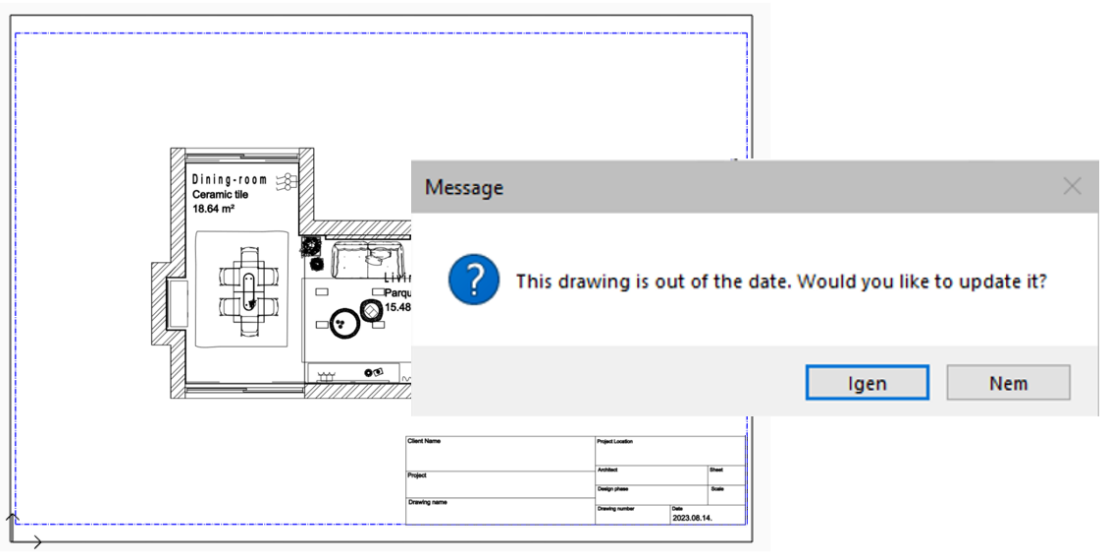
- Select and delete sheet 7.

5.7.5. Refreshing drawings on the plot layout

It is also possible to display changes in the 3D model in the wall view on the plan page, or 3D snapshot.

- Activate the 3D window.
- Make the desired modification to the model (e.g. change the wall material).
- Activate the floor plan view.
- In the context menu of one of the wall views located there, select **Update all wall views**.
- The contents of the wall view change based on the changes.
- Make the Print tab active.
- On Sheet 2, click the wall view and choose **Update drawing** from the shortcut menu.
  The layout is updated based on the wall views in the floor plan window. It is also possible to update all layouts at once.

If we continue to work on the floor plan and make changes to it there, after saving the project, clicking on the plan on the layout sheet will display a new message stating that our drawing is out of date and waiting to be updated. We recommend the update.



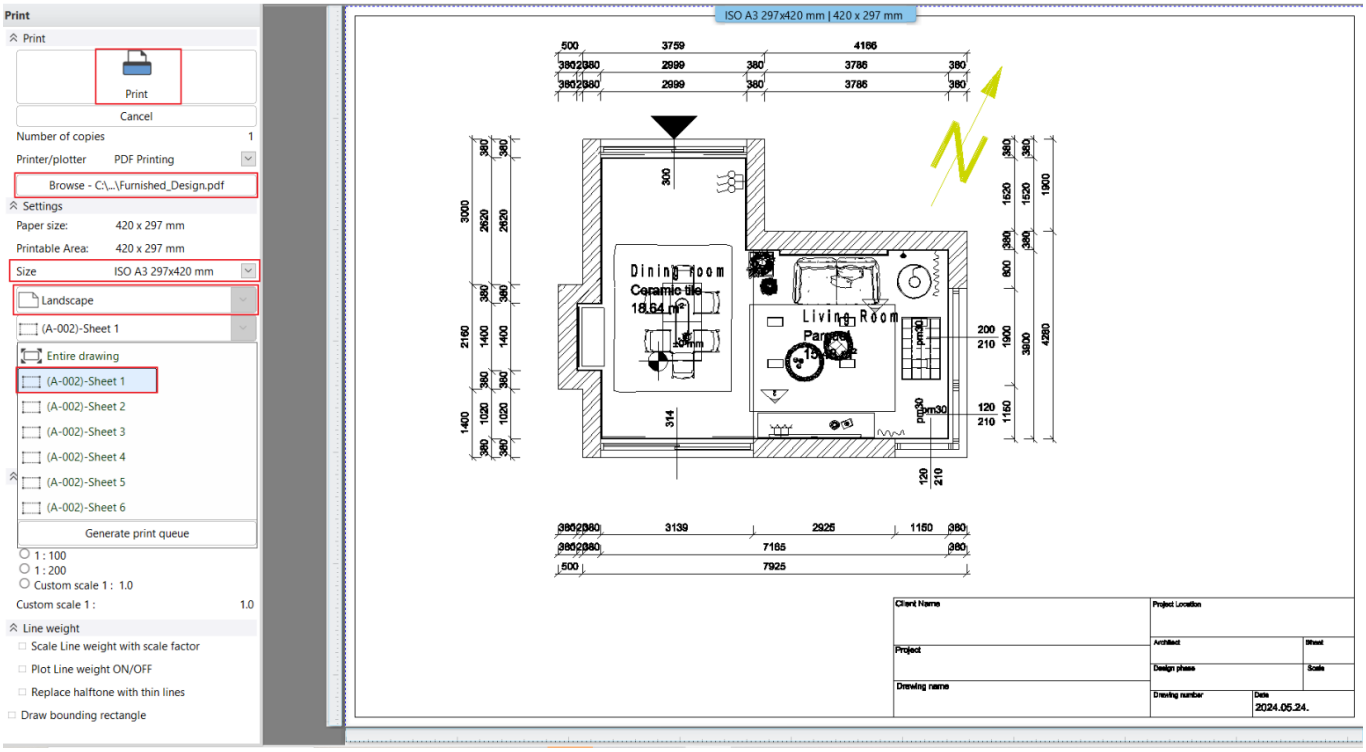
5.7.6. Print to PDF

There are six Sheets on the plot layout. Now we print the first page, the Furnished Plan.

Choose **File Menu / Print To PDF**, and then enter the following information:

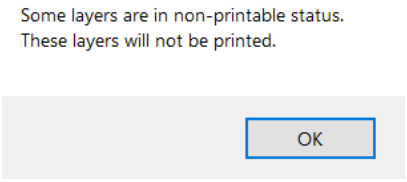
- Browse: specify in which folder the PDF created during printing will be saved and under what name. Make the destination folder:… ...\Documents\ARCHLine.XP Draw\2024\ Workshop_Preliminary\ 5_Documentation, and the file name is **Furnished_Design**.
- Paper size: **A3**
- Orientation: **Landscape**
- Instead of Entire drawing, select **Sheet 1** from the list.
- Scale: **1:1**
- Plot offset: **Center the plot**

When you see the desired result in the preview window, click **Print**. The PDF will be generated.
Close the PDF file, then click **Cancel** to close the Print window.

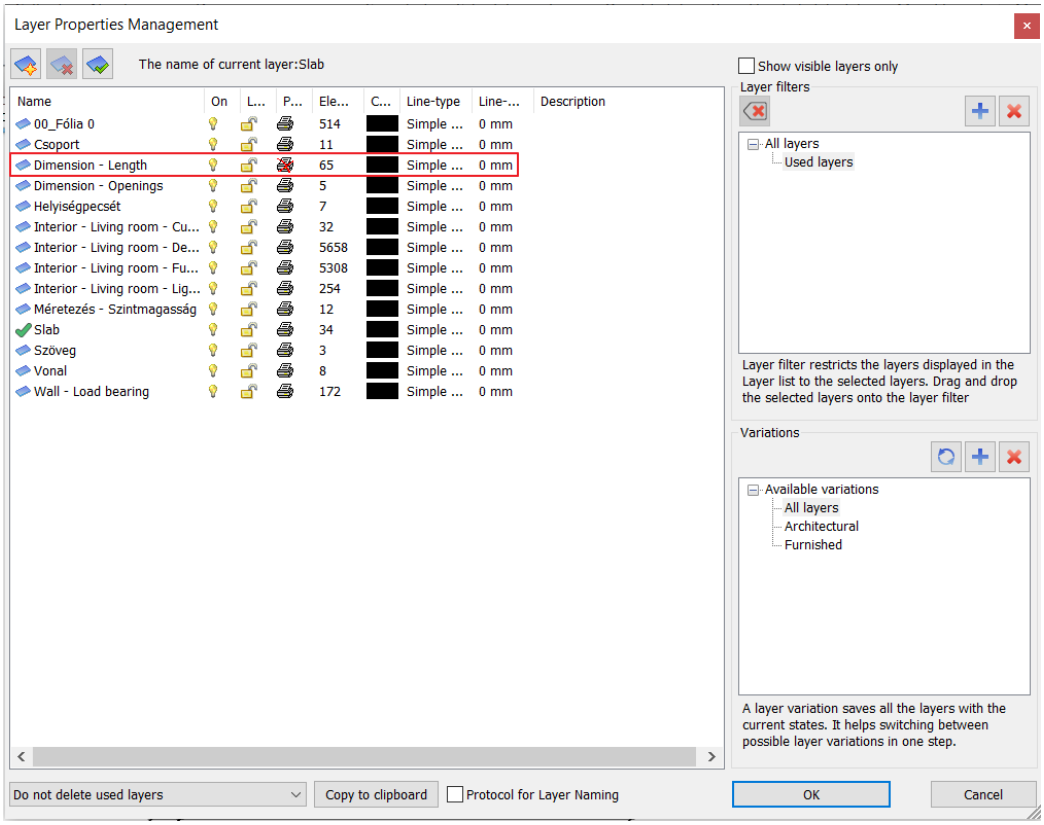


You may see elements on the floor plan, but some of these elements may not appear when printed.

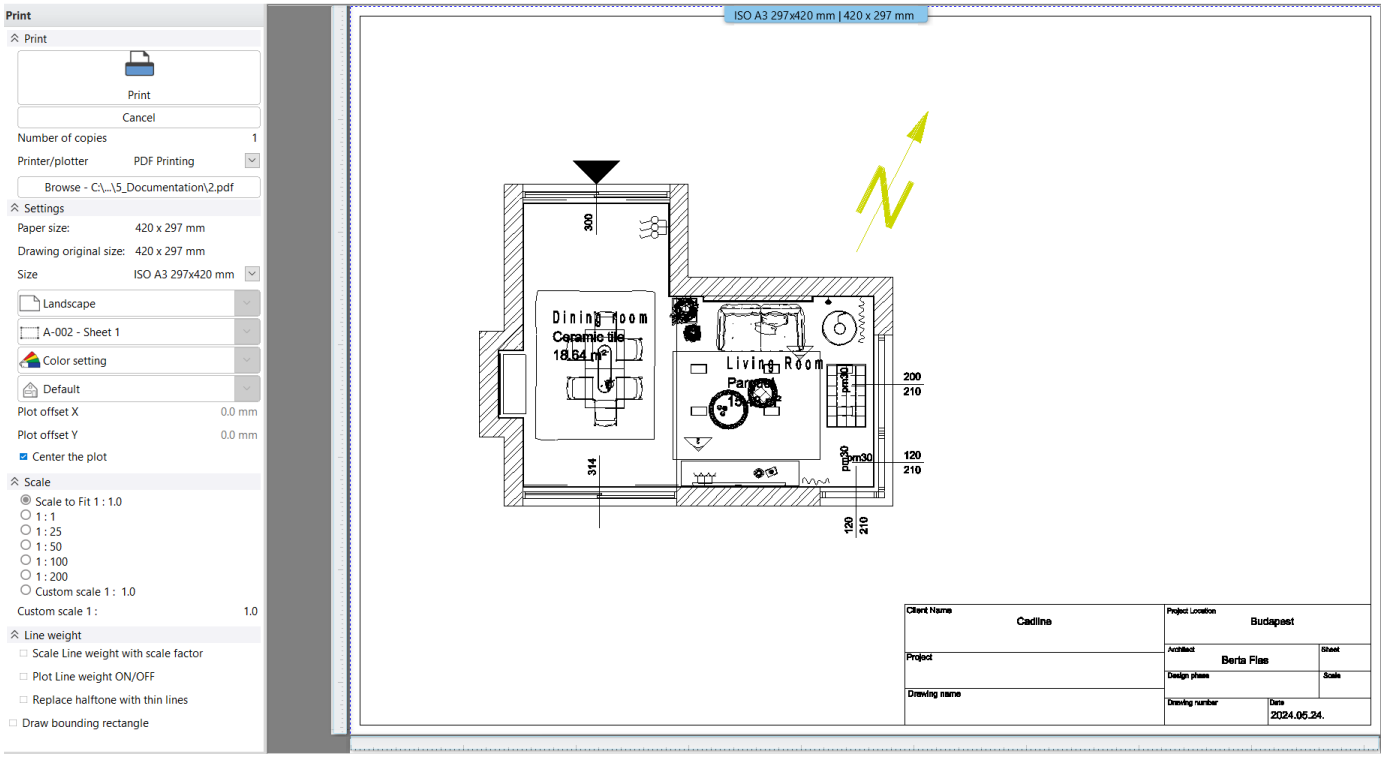
The reason for this is that the **Printability of Layer** is turned off.
This is also indicated by the warning message when printing:



In this case, the printability of the layer of the element must be switched on in the Layer manager on the floor plan, *if necessary*.



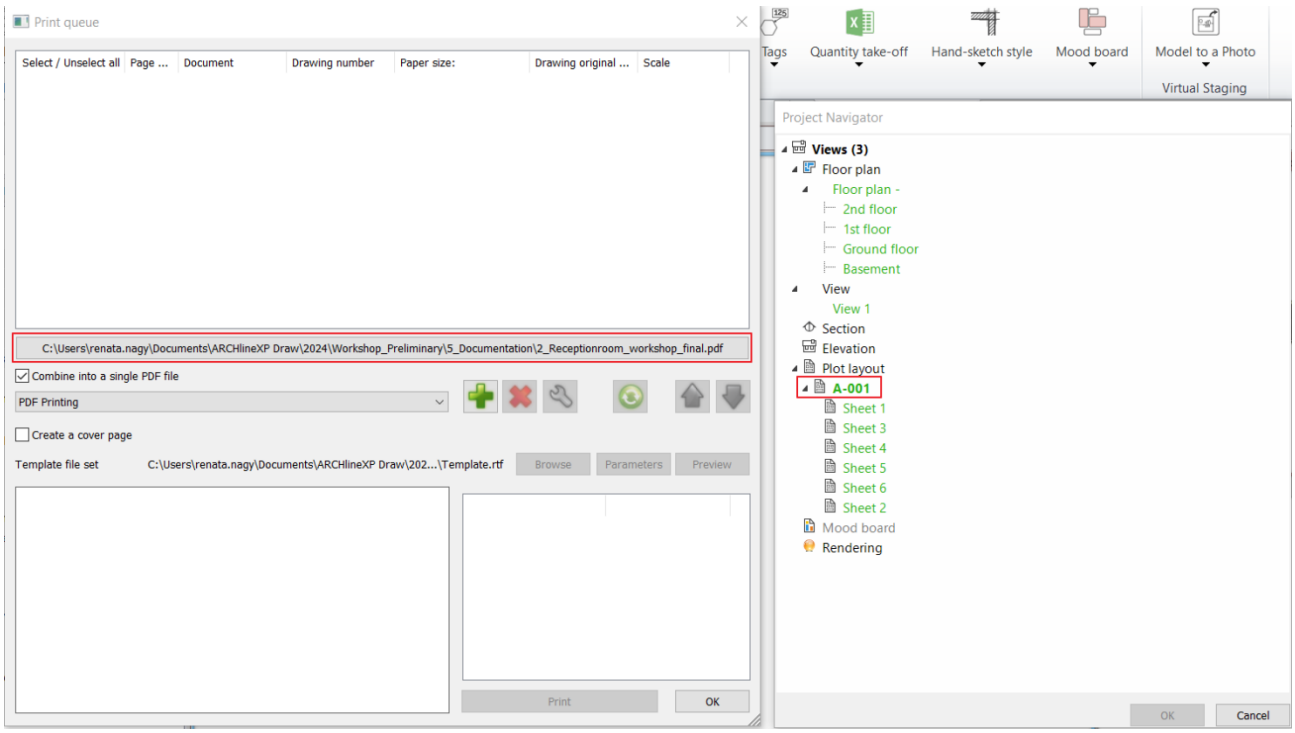
In the example, the dimensioning layer is not printable.
The Print window will then show the following result:



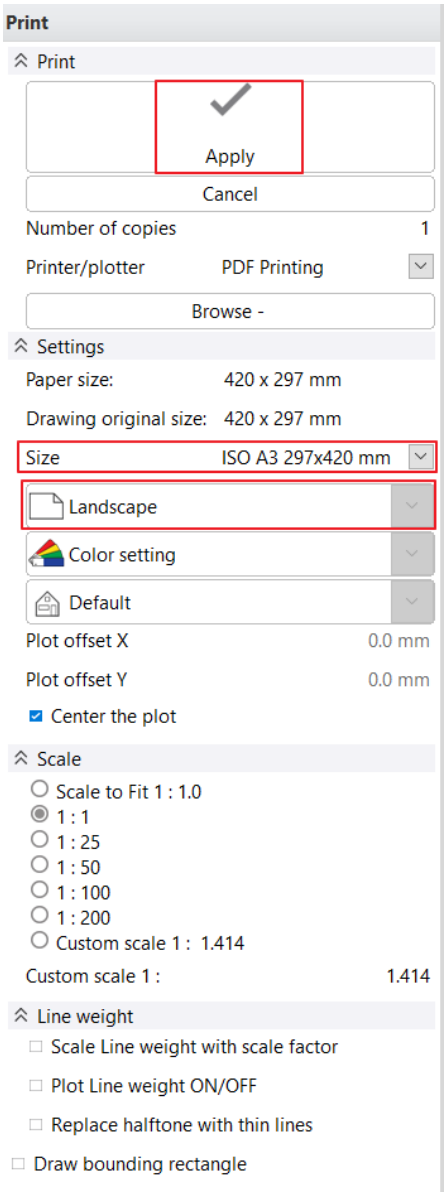
5.7.7. Print queue

Print Queue helps to print a large number of drawings (plot layouts, views and sheets) from a project. To batch print, you can insert every plot layout on one print layout. This way you can drop every document into a single PDF file.

- Select the File - Print Queue command.
- Specify the name and location of the PDF file.
- Click on Insert - green cross.
- Select Plot layout: A-001



- Set the parameters in the appearing Print dialog window. Paper size: A3, Source: Landscape, Scale factor: 1:1, Center the plot.

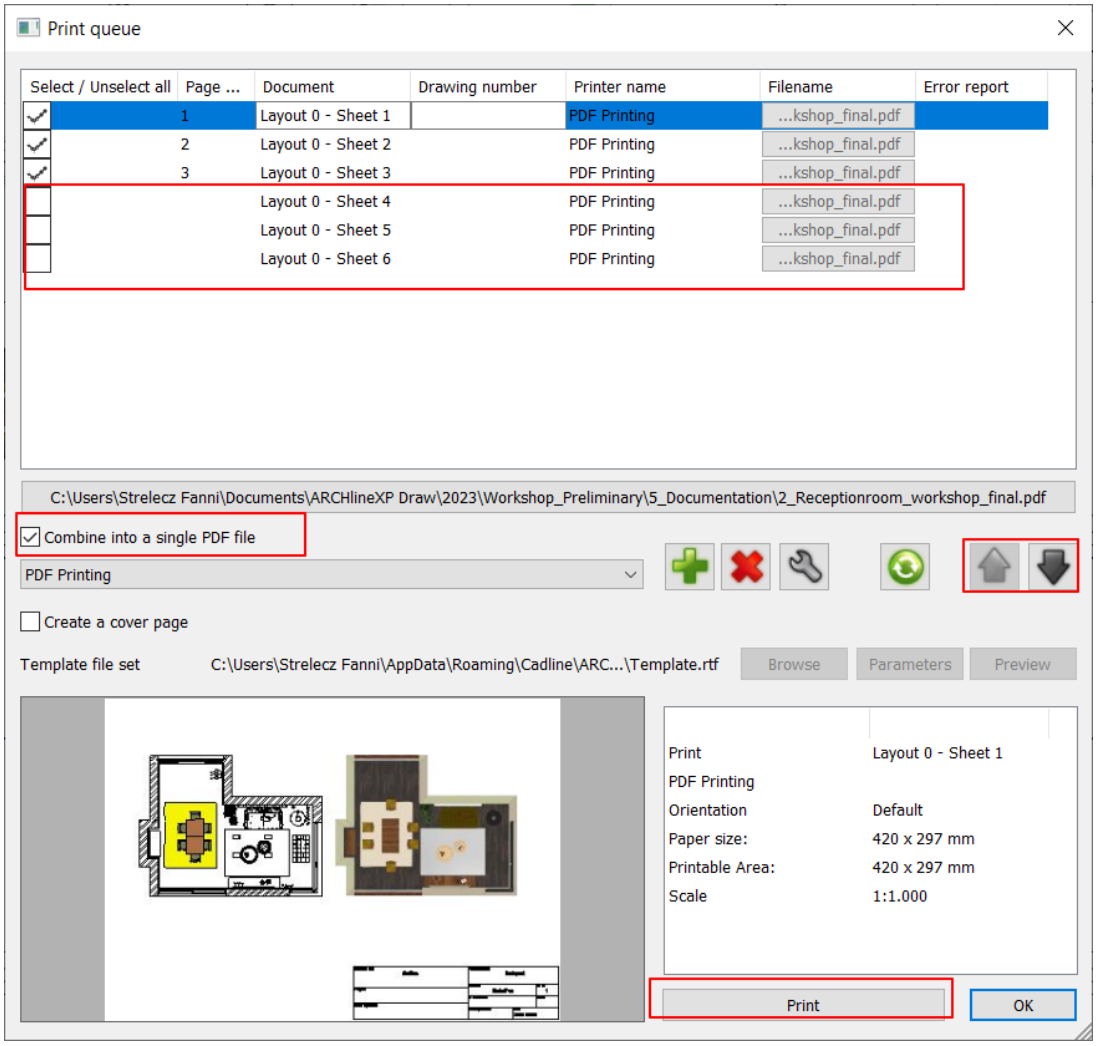


- Click on Apply.
  The settings in the Print dialog box apply to any additional views and sheets imported into the Print Queue.

  Now the Print Queue window appears.
  You can change the order of the sheets by using the arrow keys.

- Turn off the last three blank sheets.
- Activate the Combine into a single PDF file option.
- Click on Print.

  Now the batch PDF file is ready.



5.7.8. Create 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.

What does '$' character mean before parameter name?

If the plot stamp contains a text beginning with '$', that means ARCHLine.XP takes it as a parameter . The '$' before parameter name means parameter can be used to assign a value by user.

Create plot stamp

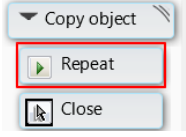
The process of creating a custom plot stamp by the following steps:

1. Draw the shape of the plot stamp using 2D drafting tools.
2. Fill in the stamp with texts and the assigned parameters containing the "$" sign. These parameters can be either parameters from the project (BIM parameters) or individually created.
3. Save plot stamp as a 2D group.

1. Draw the plot stamp by 2D drafting tools

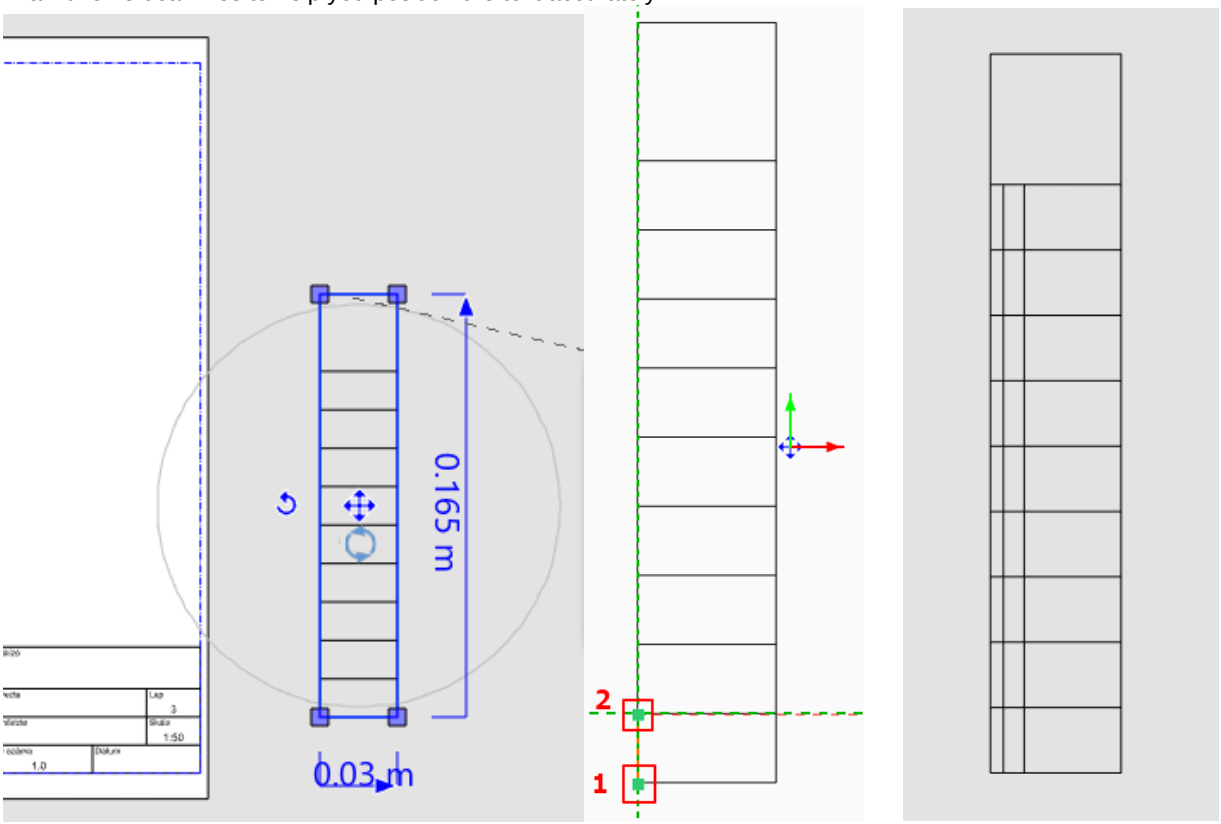
In this example we draw the stamp on the existing print layout (It could be also on the floorplan.)

- Draw a rectangle with real 1:1 stamp size, e.g. 30 x 165mm.
- Draw the first horizontal line 15mm from the bottom of the rectangle and mark it. Select **Edit / Duplicate** and then *Repeat* from the floating menu. Enter the repeat number: 8.



- Enter the points required for the command as shown in the figure.

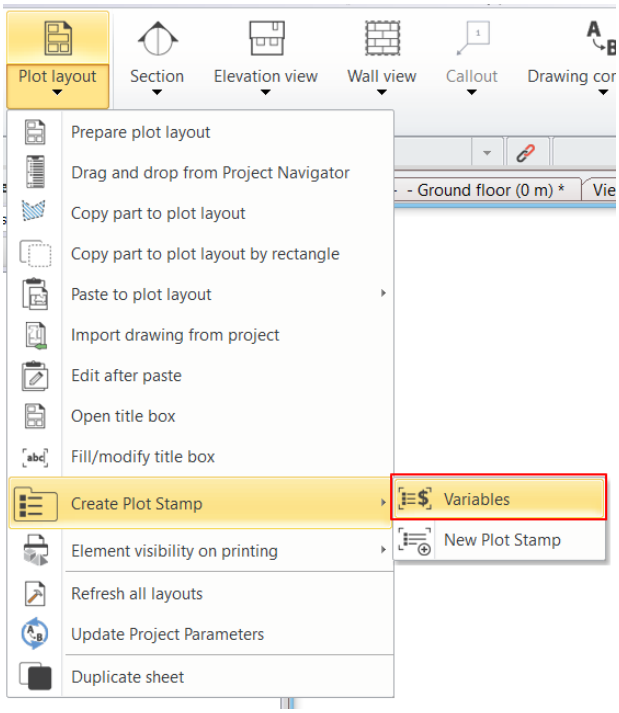
- Draw two vertical lines to help you position the text accurately.



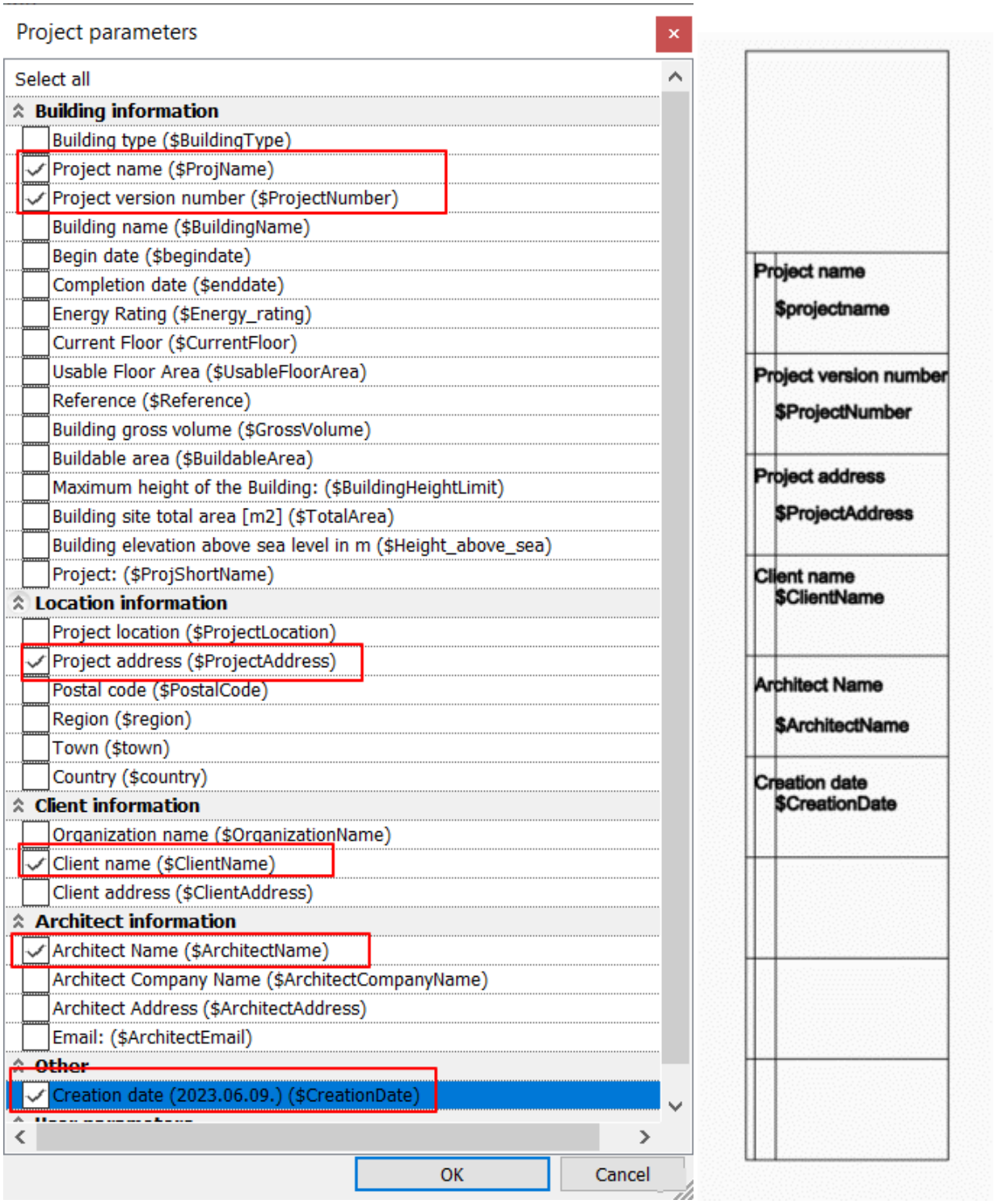
2.a *Fill in the stamp with BIM parameters*

First, add BIM parameters from the project to the plot stamp. If you have already filled in the project IDs (project name, building name, building address, client name, architect name etc.) in the project, the details of the plot stamps will be filled in automatically on the plot layout. Using BIM parameters will save you time.

- Select the following command: **Documentation - Plot Layout - Create Plot Stamp - Variables**



- In the appearing Project parameters window select those data you want to display on the plot stamp. In this example six parameters are selected.

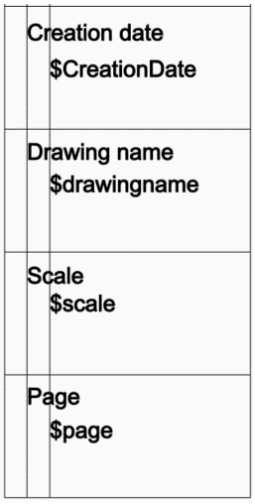


- Define the text size 2 mm.
  Place the text together with the assigned with parameters.
- Later you can modify the text („$" parameters cannot be modified). Now change

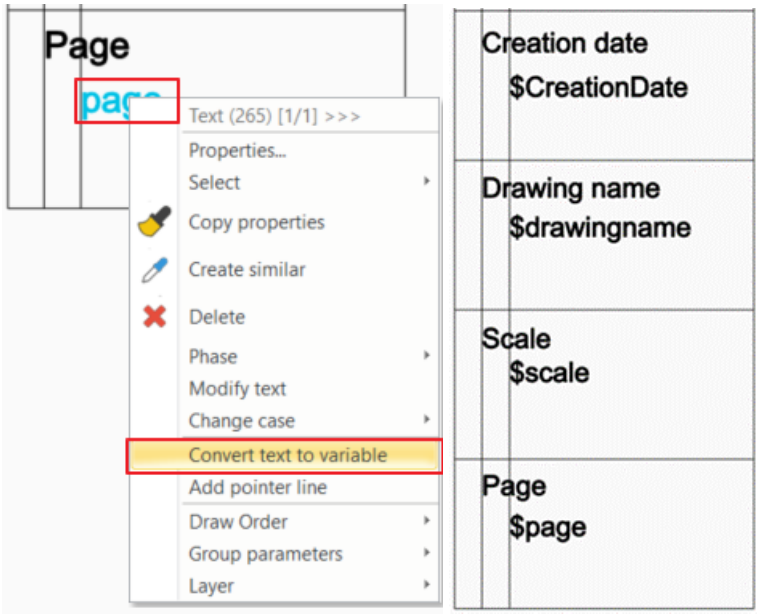
  Client (Customer) – Client, Creation Date – Date.

2.b. Fill in the stamp with your own data

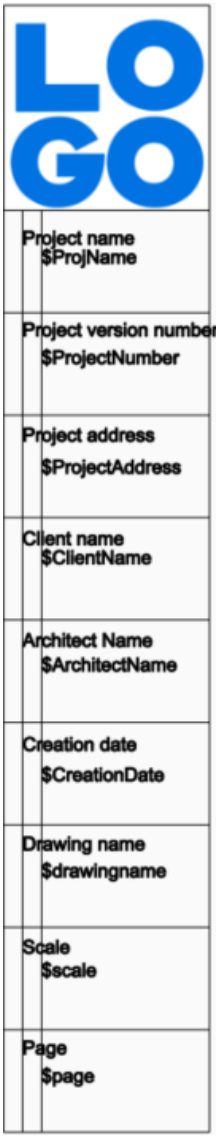
To complete the plot stamp, we need additional data that is not in the project data (BIM parameters), such as drawing name, scale factor, page number... Add these texts to the plot stamp by adding variables starting with "$". Now the content of these texts can be modified later after the plot stamp is placed on the plot layout.



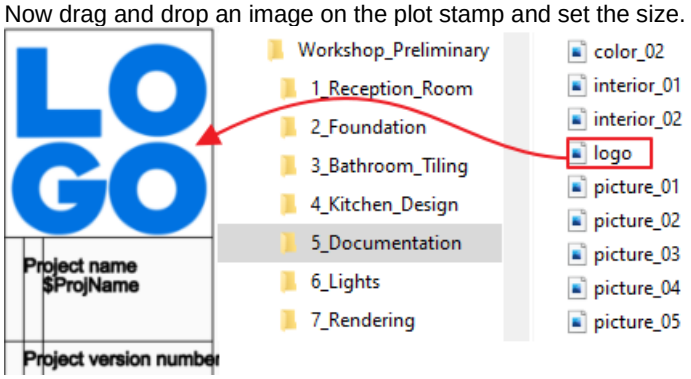
- Set the height of the text to 2 mm in the general properties of the text.
- Place the text with variables. E.g. Drawing name, drawing name
  Make sure that the variable does not contain accent or special characters.
- Now turn this text to variables beginning with „$" character:
  From the local menu select „*Convert to variable*" command.



Add regular texts, images etc. to the plot stamp, which will be the same in all plan:
For the first field add an image containing the Logo.



- Now drag and drop an image on the plot stamp and set the size.

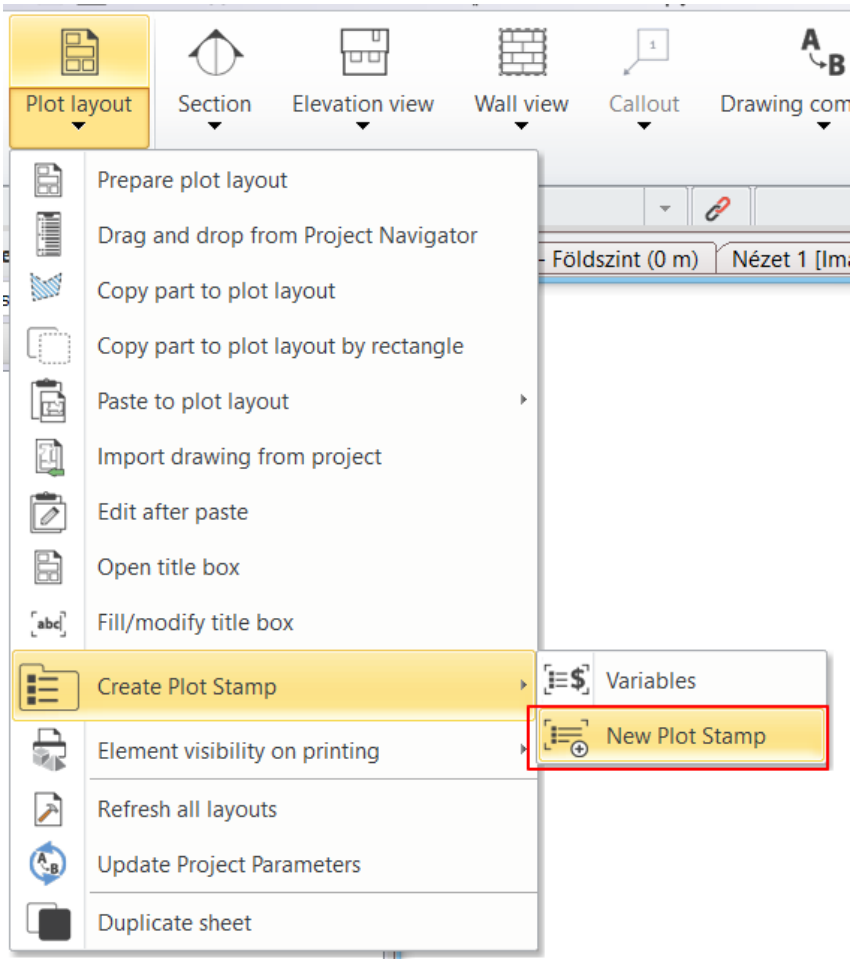


- Delete the vertical guide lines.

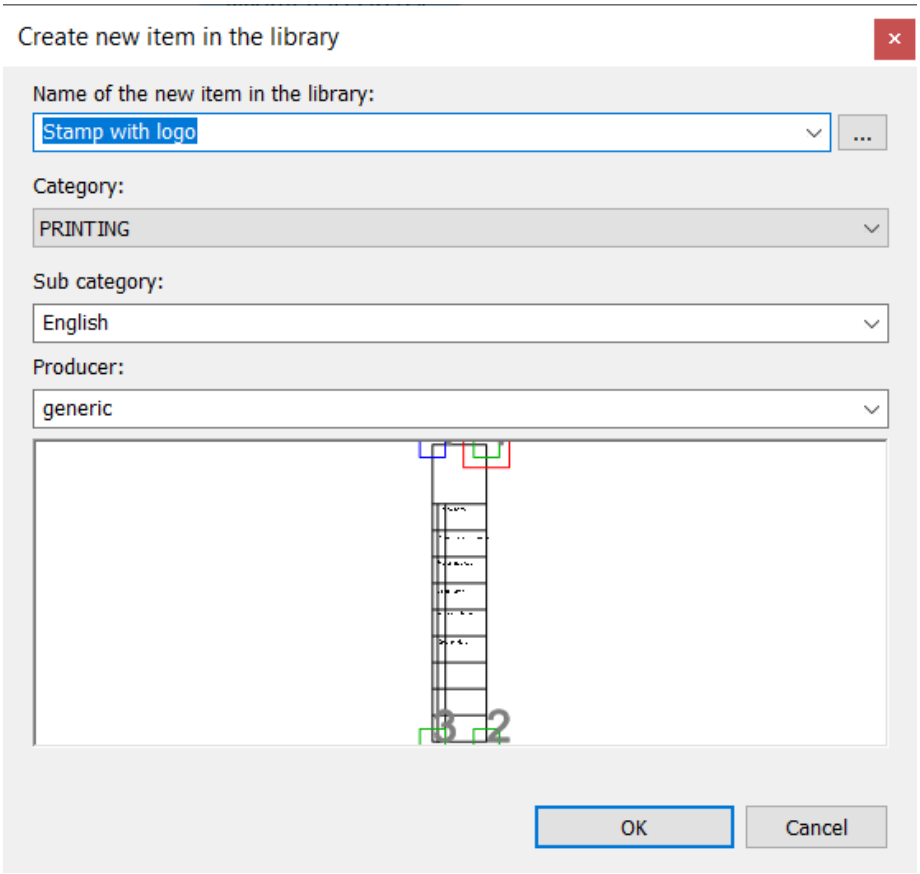
3. Save plot stamp in the library

Save the plot stamp in the library as a new group:

- Select **Plot layout / Create plot Stamp / New plot stamp** command.
- Select items, and close selection by pressing Enter.
- The specify two reference points, now press Enter.
  When the plot layout is created the program will place the plot stamp at the second reference point in the bottom right corner of the drawing sheet.



- Enter name, category, sub-category and producer in the appearing dialog.

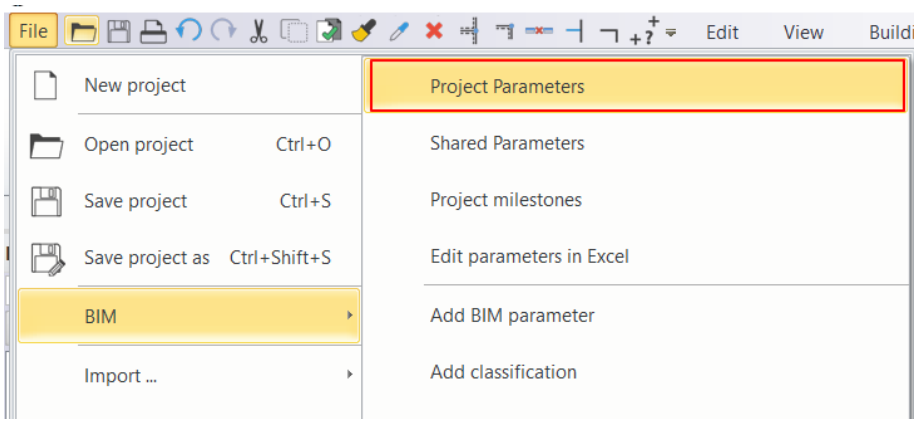


The new stamp is created here: Desing Center > Building > Group > Printing > Other.

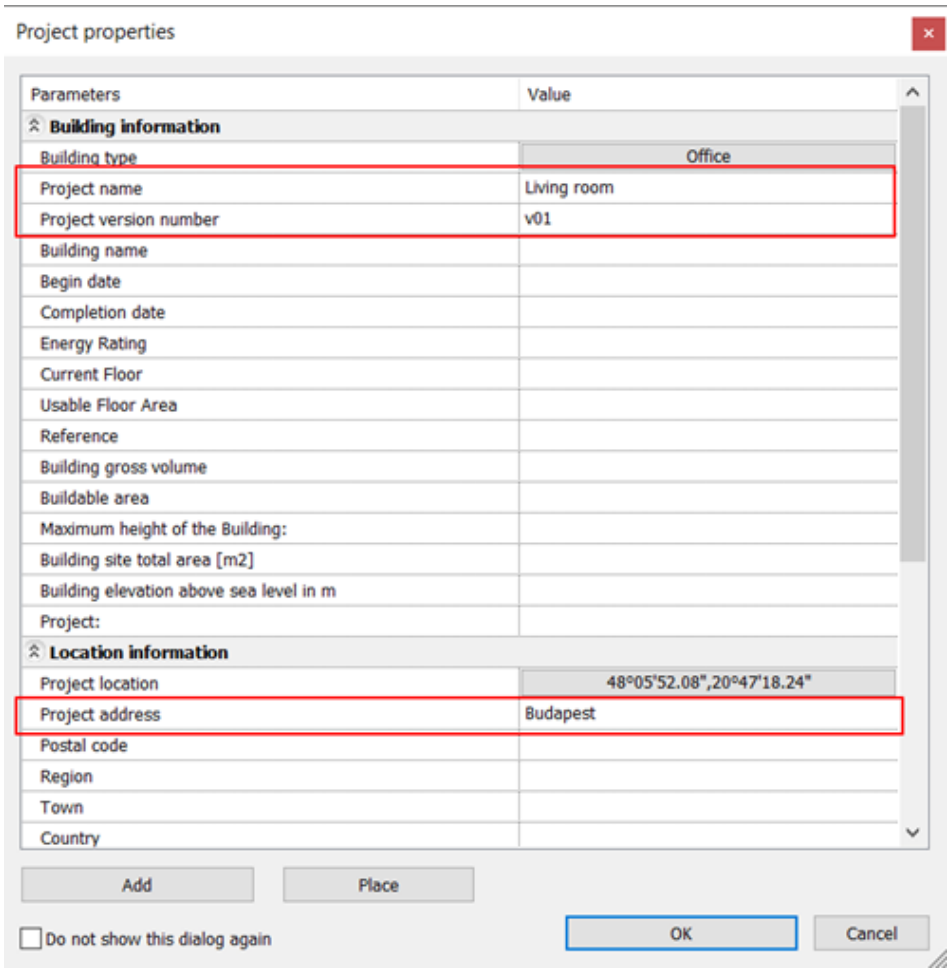
Uploading project data

When you create a new project, the program automatically asks to add the project data. If you do not do this at that time, later you can complete it in the Project properties. This way, the plot stamp will be filled with project parameters automatically.

- Select File – BIM – Project Parameters.



- Enter project parameters:

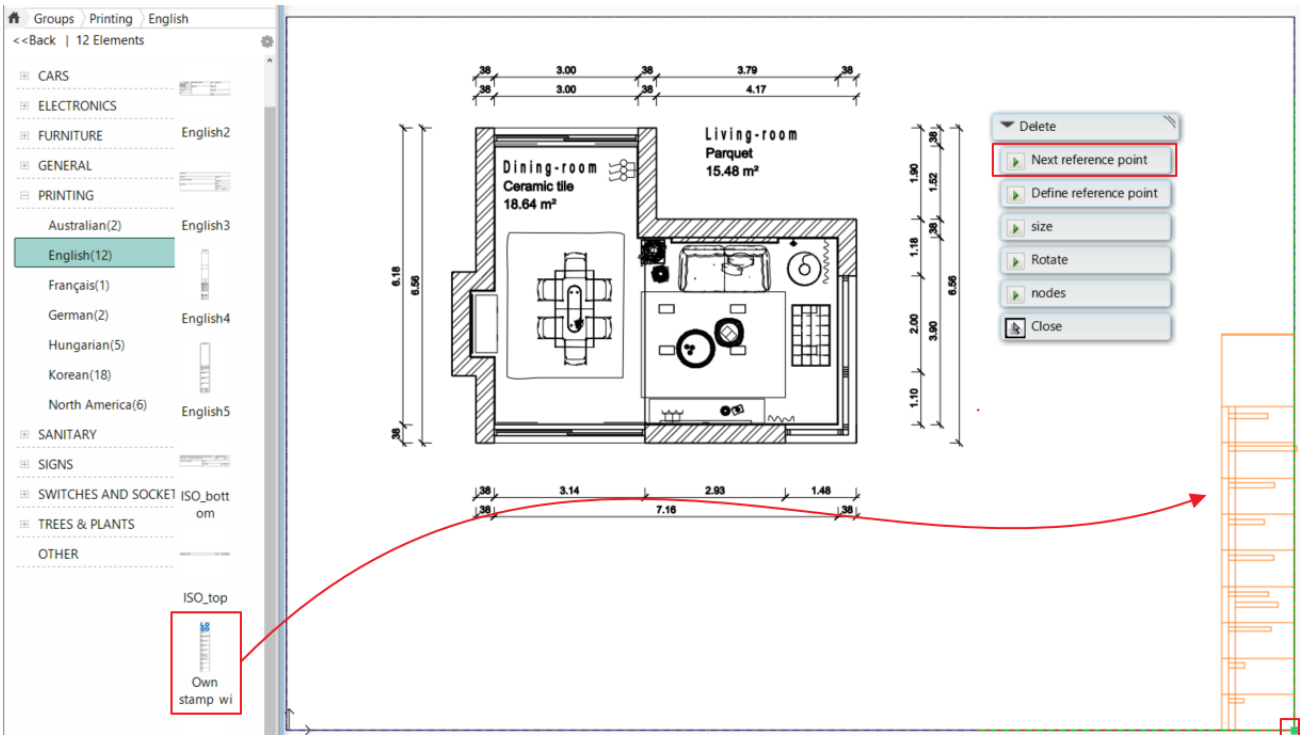


Use customized plot stamp on the plot layout

We replace the default plot stamp to a customized one on the plot layout.

- Delete the original plot stamp.
- Drag and drop the new plot stamp from the *Desing Centre* > *Building* > *Group* > *Printing* > *Other* to the plot layout.

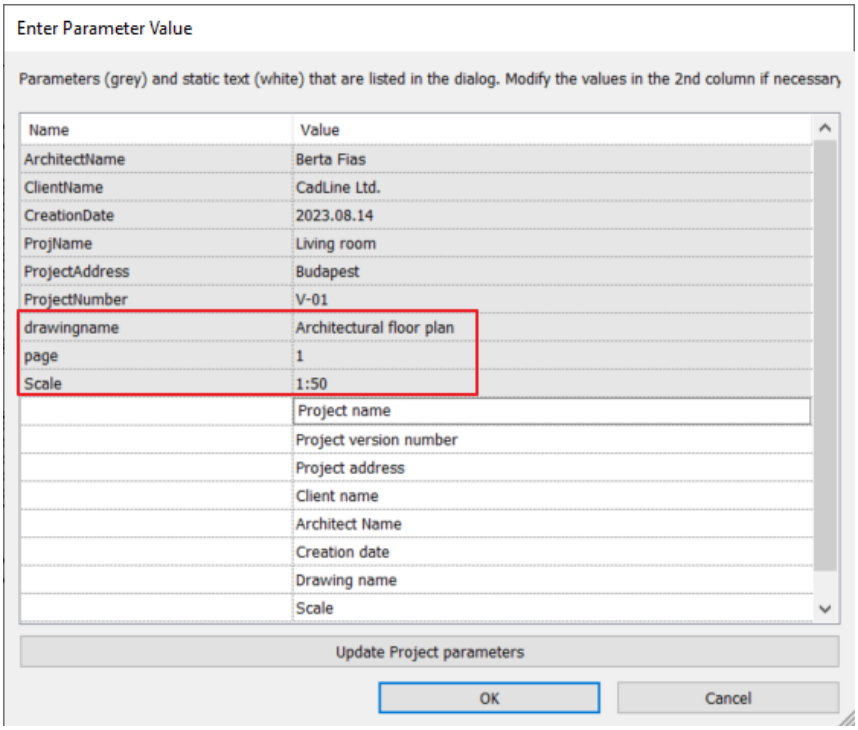
- Select the *Next reference point*.
- With its right bottom corner point place the plot stamp in the right bottom corner of the rectangle (printable area) marked with blue dashed line.



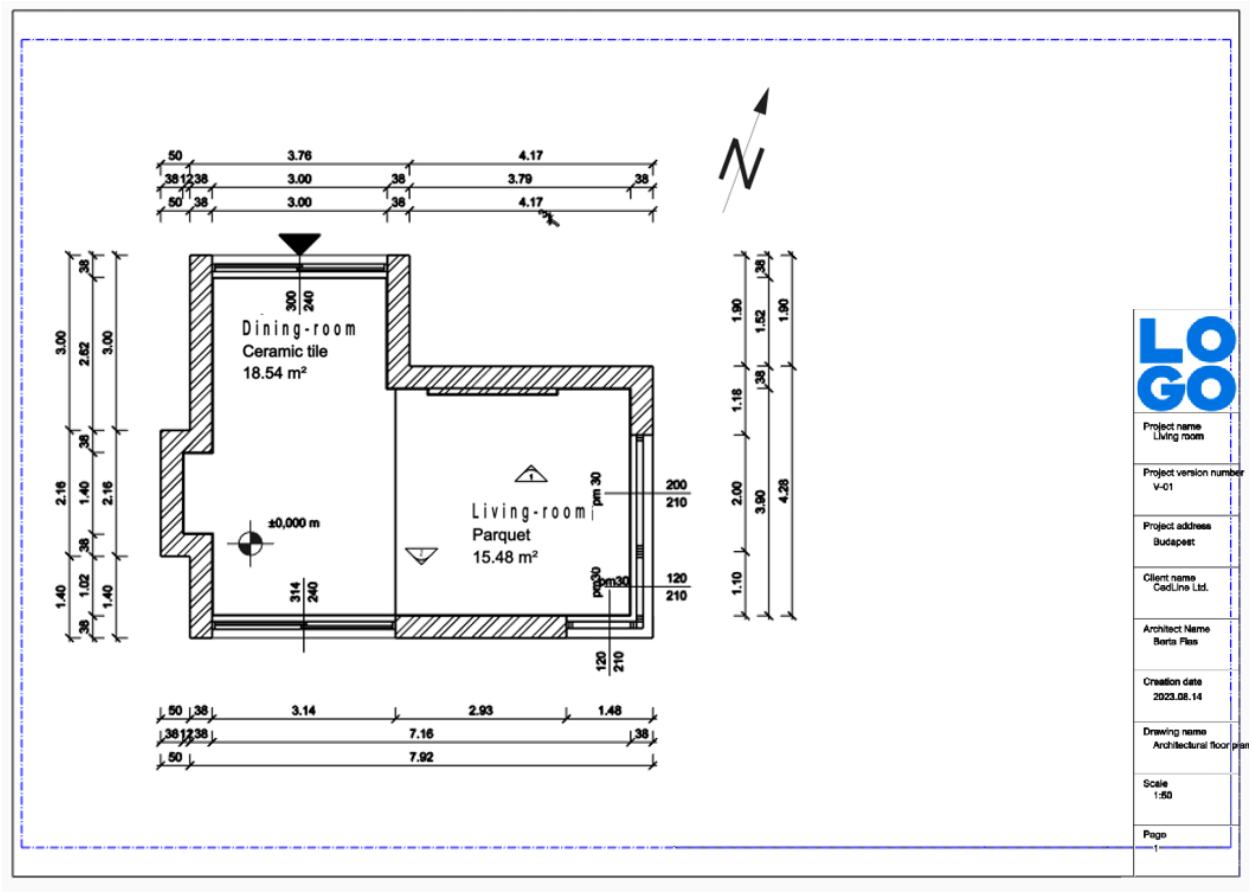
- Select Documentation – Plot layout – Update Project Parameters command. Now the Project Parameters dialog window will appear. OK.

All plot stamps data is updated with project data on the plot layout.
We also fill in the missing information on the stamp:

- Select Documentation – Plot layout – Fill / modify title box command
- Enter the missing data: Page, Drawing name, Scale factor.

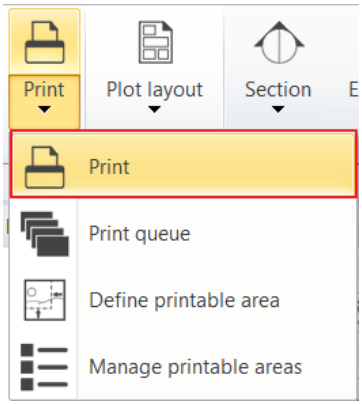


Project data can also be updated here.



5.8. Everything you need to know about printing - Summary

The print dialog on the Dashboard makes printing with ARCHLine.XP quick, easy and straightforward.
Command location: Documentation / Print / Print

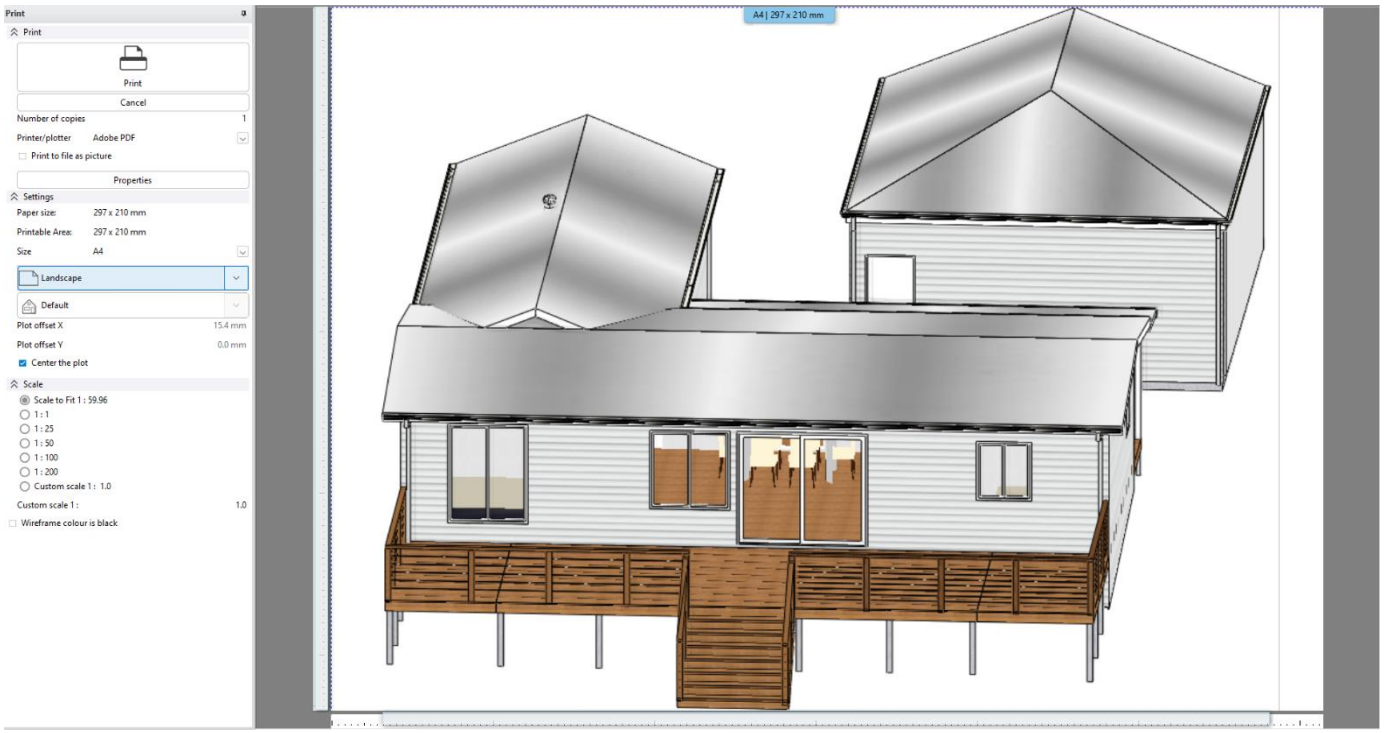


Click on the **Print** icon and select any drawing or printable area you want to print or create a PDF file from. When printing is activated, the other parts of the interface are hidden. To go back to the project, click on the Cancel button.

Print	When all settings are done, click on this button to start the printing process or to create the PDF file.
Cancel	Exit the print dialog
Number of copies	Set the number of copies you want to create from the printing.
Printer/Plotter	Select the printer/plotter available on your computer to use for printing the created sheet.
Browse/Properties	In case of PDF files you need to specify the path of the file. In case of printers/plotters you can change the settings of the printer/plotter.
Size	Select the paper size.
Orientation	Set the sheet orientation (portrait/landscape).
Printed area	Select the whole drawing or the printable area you want to print. You have the option to automatically create a print queue from the available printable areas.
Color setting	Select the grayscale, black and white or color option to fit the requirements of your printer.
Drawing orientation	You can rotate or mirror the content of the sheet.
Plot offset	you can move in horizontal and vertical directions the drawing on the sheet.
Center the plot	When activated, the drawing's center and the sheet's center will be aligned.
Scale settings	Set the right scale for the drawing. Use Scale to fit if you want the drawing to fit perfectly on the sheet. Select the preset values if you want it to be scalable after printing. Select the custom scale if you need a specific drawing size.
Scale line weight with scale factor	This command only takes effect if the Plot line weight on/off below it is turned on. This scales the line thickness according to the scale settings on the print sheet.
Plot line weight on/off	When enabled, the program takes into account the line thickness assigned to each element.
Replace halftone with thin lines	Replaces the half tones with thin lines to save ink.
Draw bounding rectangle	When activated, a grey rectangle replaces the drawing. It is useful in case your computer is too slow while setting up the print properties.

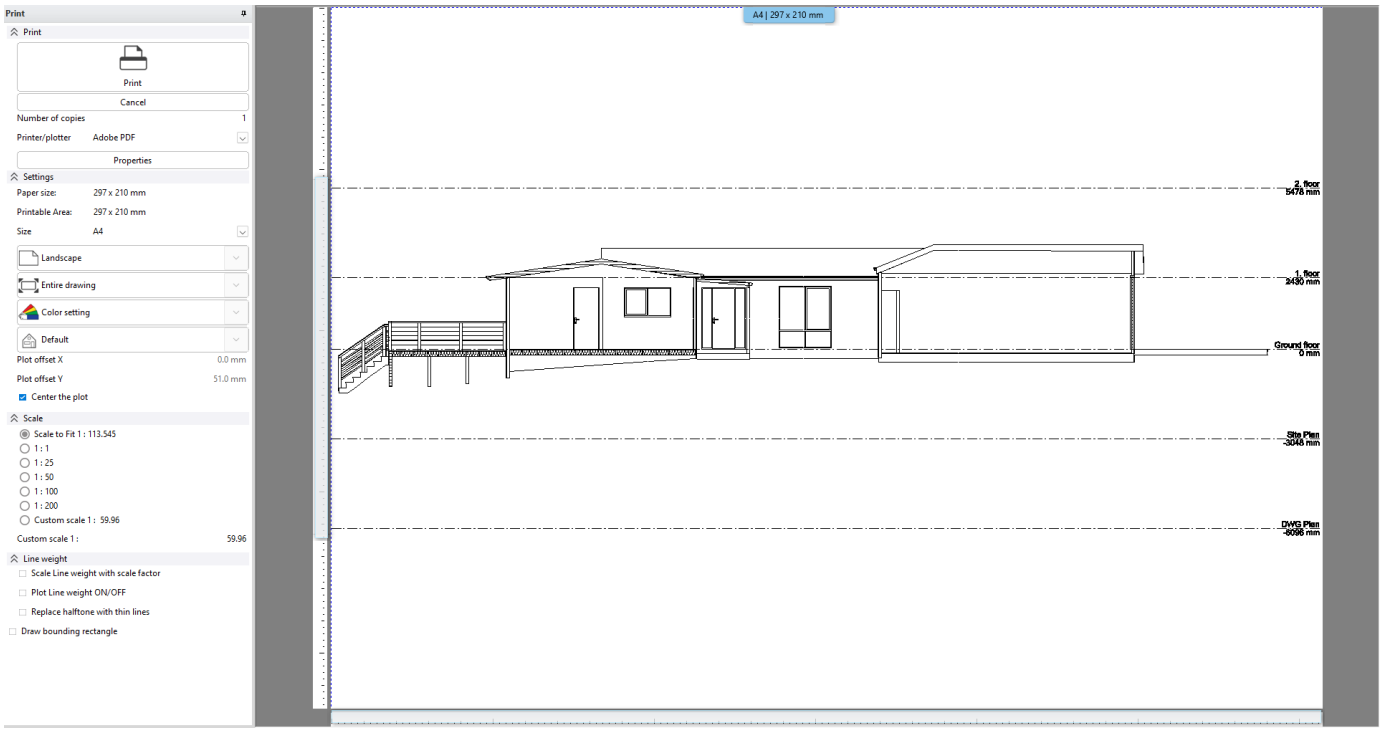
5.8.1. 3D printing

You can directly print the current 3D view into a PDF file or with a printer/plotter. This way you can easily share the 3D model views of your project with others.



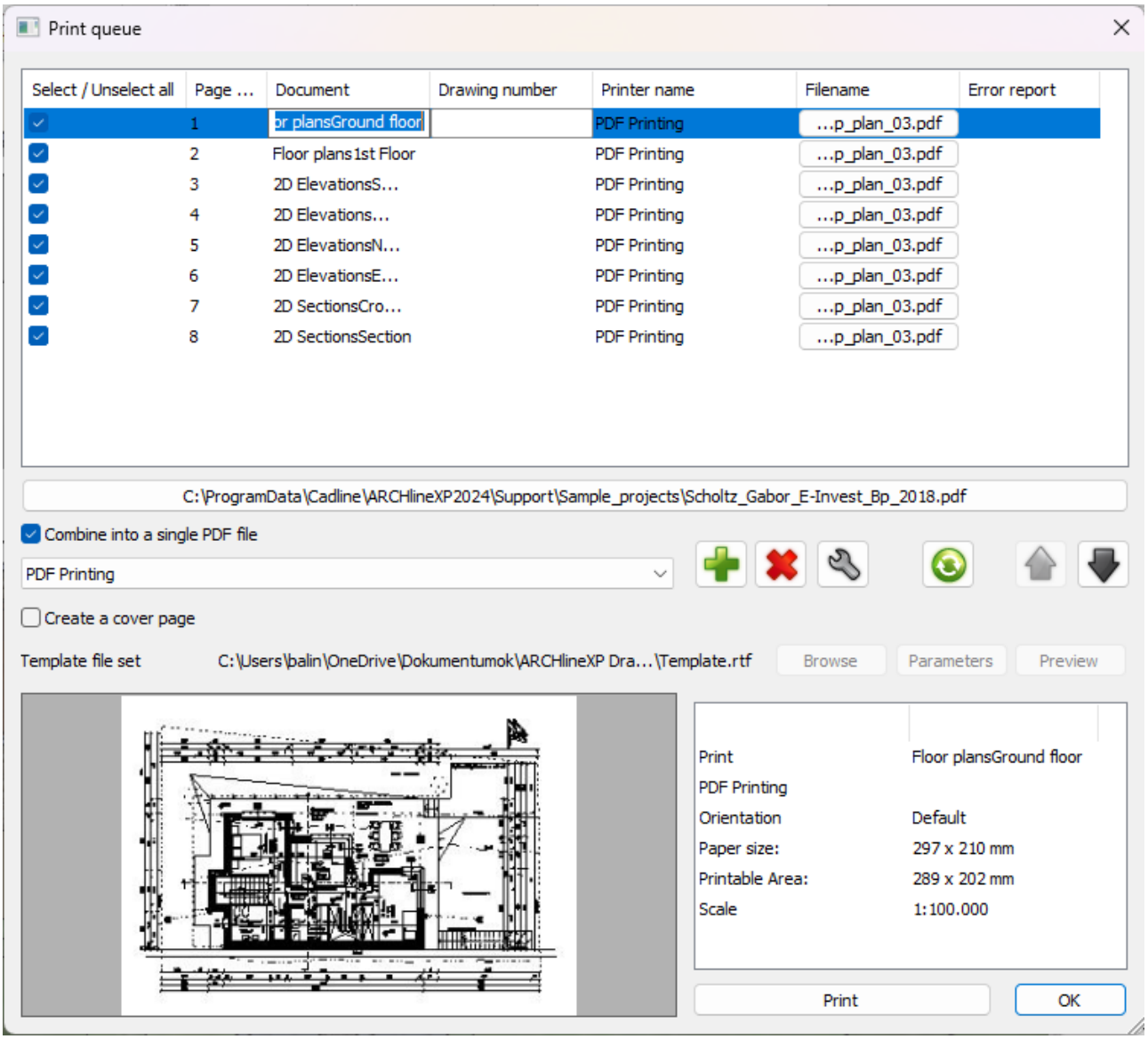
5.8.2. Section printing

You can print image and vector sections with the new print dialog. In case of vector sections, you can create printable areas, thus you can set the areas of section you want to print. In case of image sections, the printable area command is not available.



5.8.3. Print queue

You can create a set of print sheets that will be printed into one file or into separate files. Create the print sheets, the set the print properties for each one. In the preview you can see what the final print will look like.



Select/unselect all	With this button you can select/unselect all rows or you can click on the check box to select/unselect a row.
Page number	Automatically created numbering for the pages.
Document	The name of the print sheet.
Drawing number	You can set a drawing number for the pages.
Printer name	Displays the selected printer.
Filename	Displays the name of the file that will contain the print sheet.
Error report	Any error messages regarding the print sheet are displayed here.
Path	Set the folder where you want to save the PDF file.

Combine into a single PDF file	When activated, all the listed drawings will be combined into one PDF file.
Printer	Select the printer.
	Add a new print sheet.
	Delete the selected print sheets.
	Change the print sheet settings.
	Refresh all print sheets with the settings.
	Move print sheet up.
	Move print sheet down.
Create a cover page	Add a cover page to the combined PDF.
Browse	Select the used RTF file.
Parameters	Set the project parameters.
Preview	In the preview you can see the automatically created cover page.
Print	When all settings are ready, create the PDF file with this button.
OK	Save all settings and exit the Print queue dialog.

5.8.4. Printable area

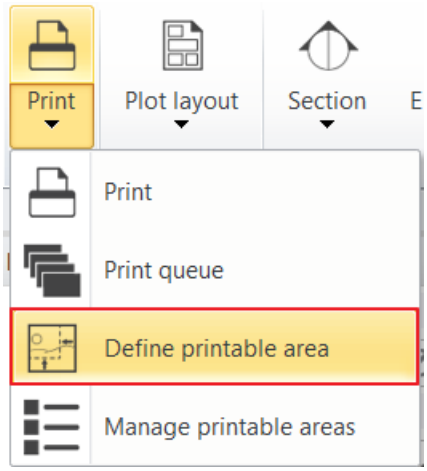
Define printable area

The “printable area” is a part of the view that you mark for printing if you do not want to print the entire view.
If you select a printable area in the Print dashboard, only what you see in the rectangular part will be printed, not the entire view. A view can have several printable areas.

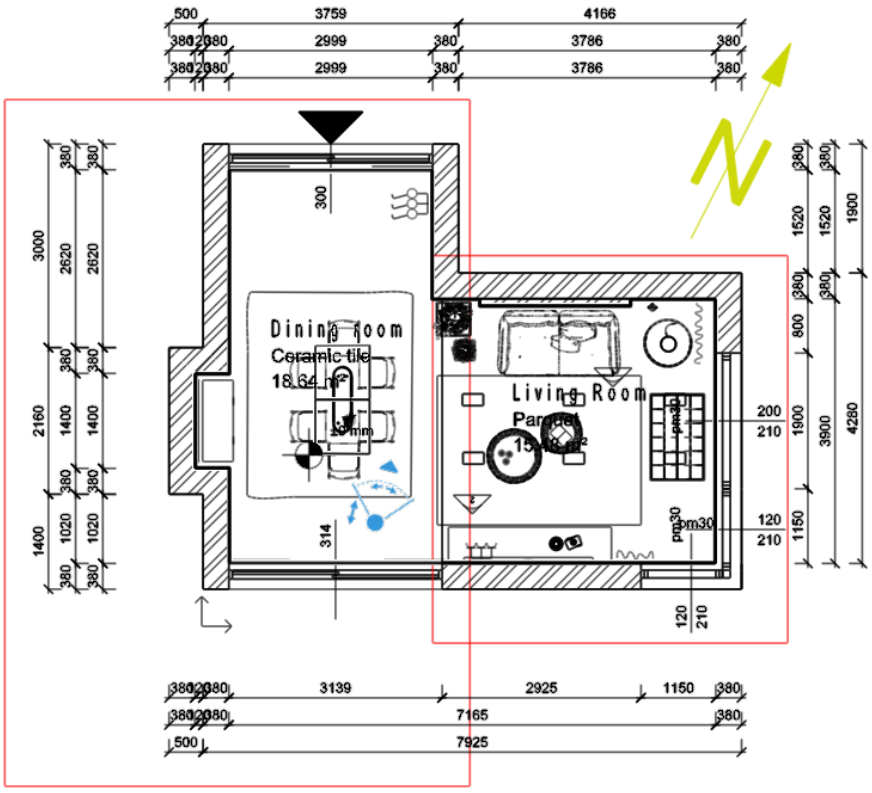
Drawing sheets placed on a print layout view are automatically listed as separate printable areas in the Print dashboard.
It can be used on floor plan and section views.

Printable areas make it easy to specify the plan details you want to print.

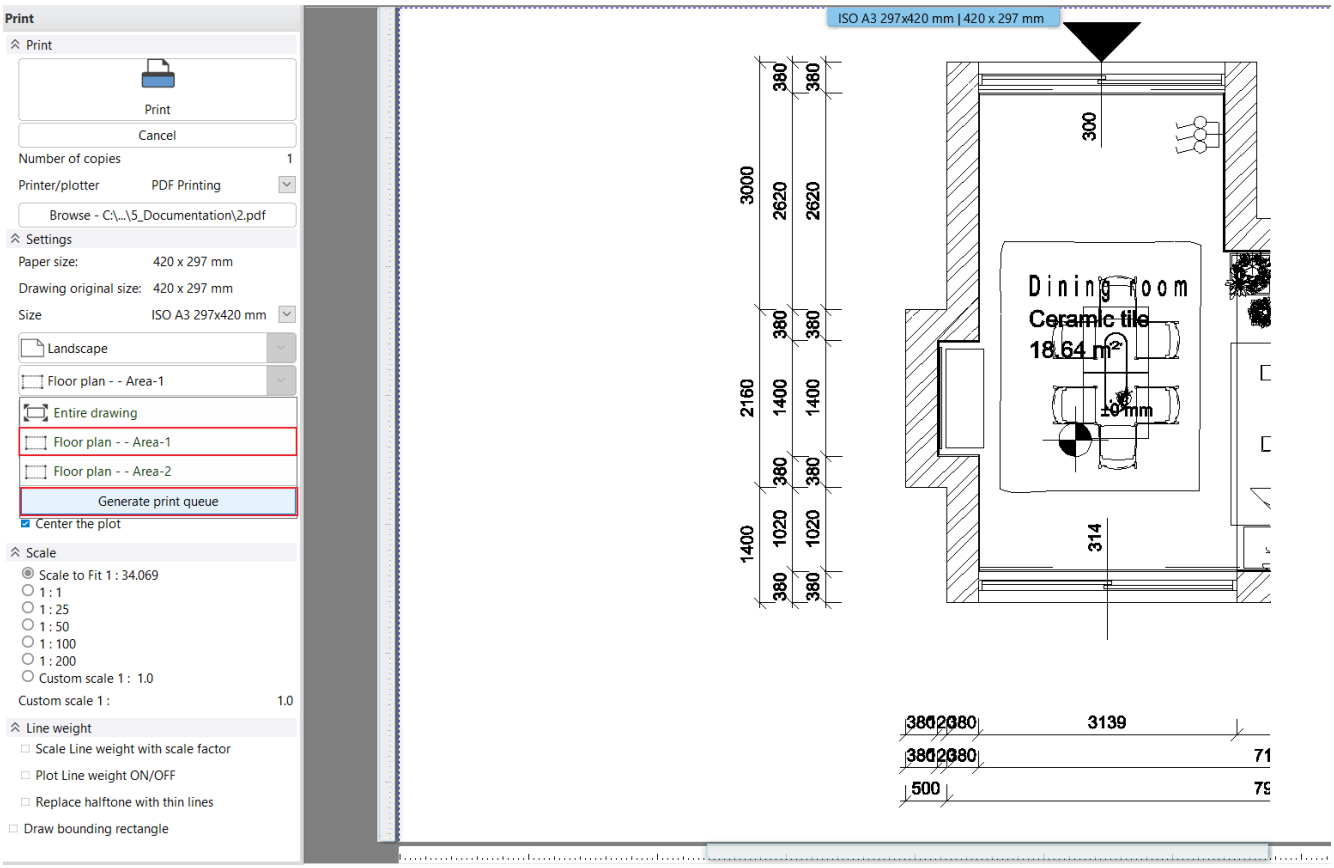
Command location: Documentation > Print > Define printable area



Printable areas are marked in red in the image:



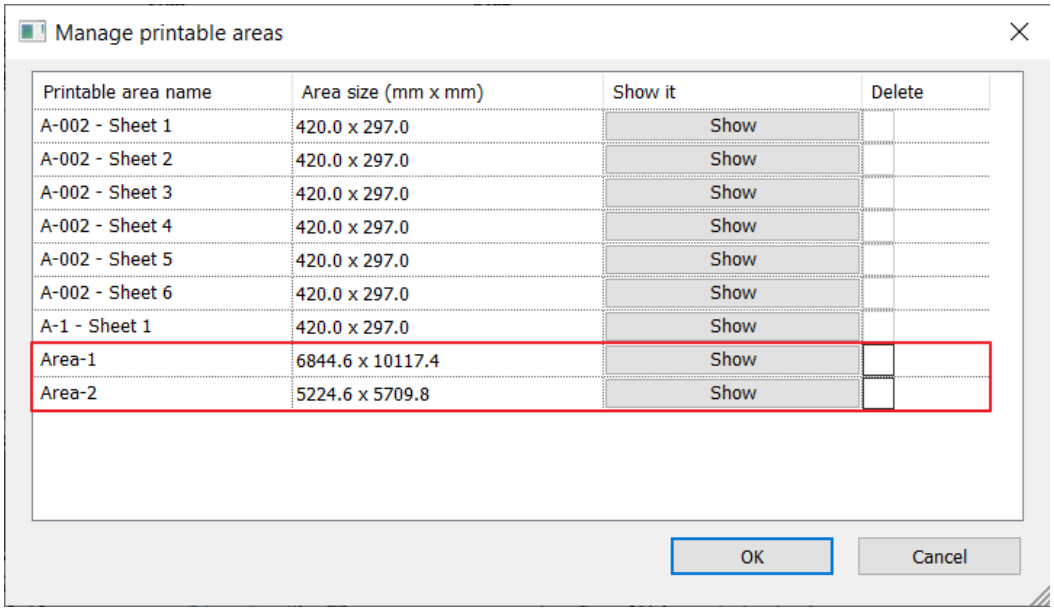
The Print dashboard displays the print areas, which can also be printed as a print queue.



Manage printable areas

In the Manage Printable Areas dialog, you can simply rename the created printable areas, locate them in the project with the click of a button or delete unused printable areas.
Automatically created printable areas cannot be deleted.

The Manage printable areas dialog has four columns. In the first column you can change the name of the area to be printed. This helps you to find the right area during the printing process, so that you can quickly and easily select the right area from a list of several to be printed. The area size column shows the width and height of the selected area. In the third column, click on the Show button and the program immediately shows you where the selected area to be printed is located in the project. In the Delete Area column, first select the areas you want to delete, then click OK to close the dialog and delete the selected areas from both the list and the project.



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.

Open your browser and watch the "**Lights**" tutorial video.

Please download **Preliminary Course - Workshop Projects 2024** from our website and install it. It includes all projects for all preliminary workshops.

Start

- Start ARCHLine.XP.
- Click on the **Open project** button.
- Open the following project: *Documents\ARCHlineXP Draw\2024\ Workshop_Preliminary\6_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:

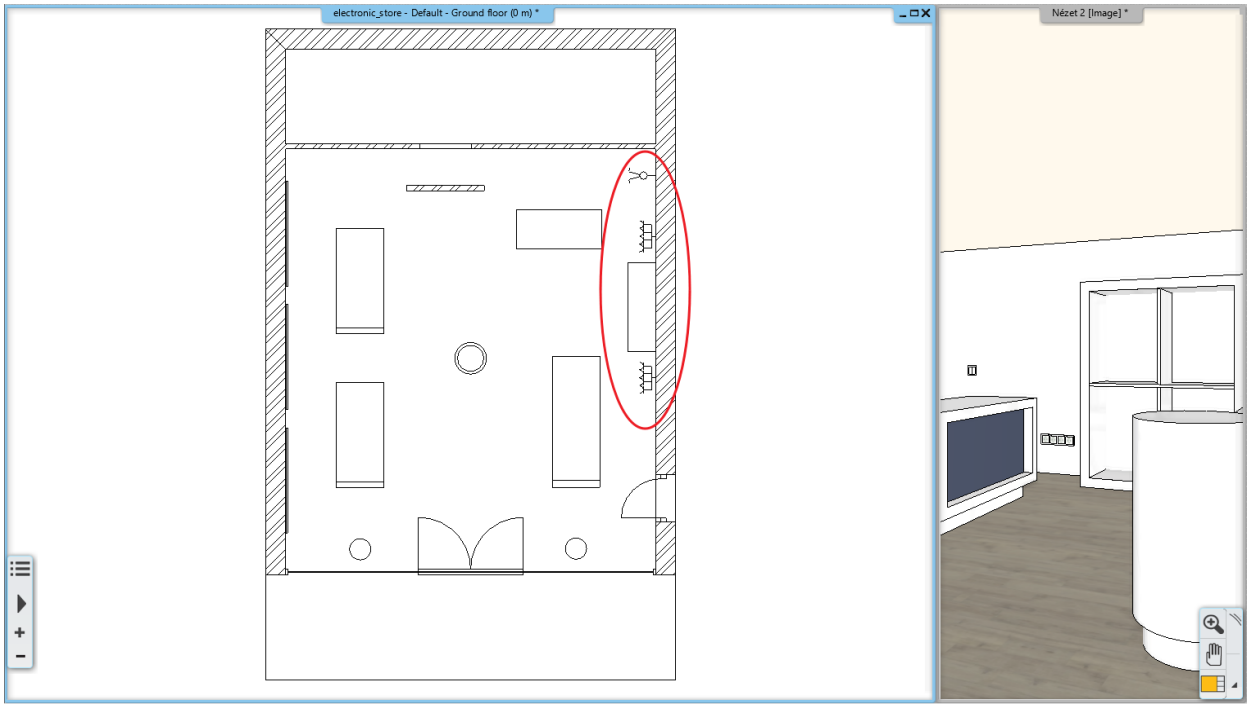
Light source: A special point, line or area from where light beams start and spread in the space.
Lamp: This is an object with one or more light sources.

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

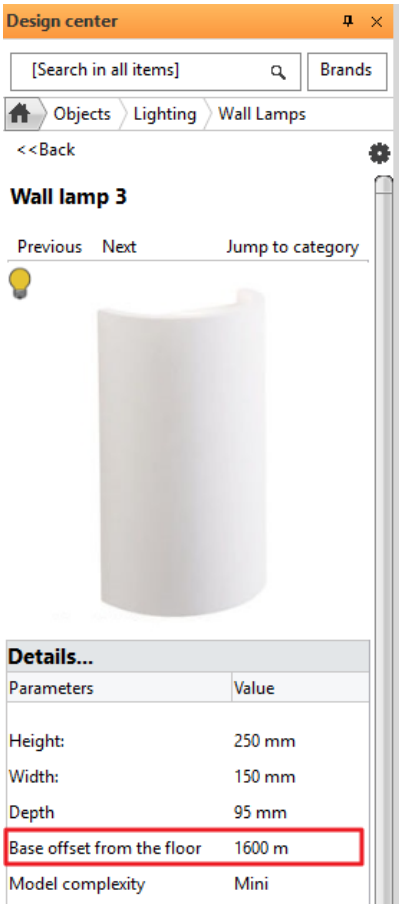
- Activate the 2D window. In the 3D window select a perspective view, from where the right wall is visible and lamps will be placed on.

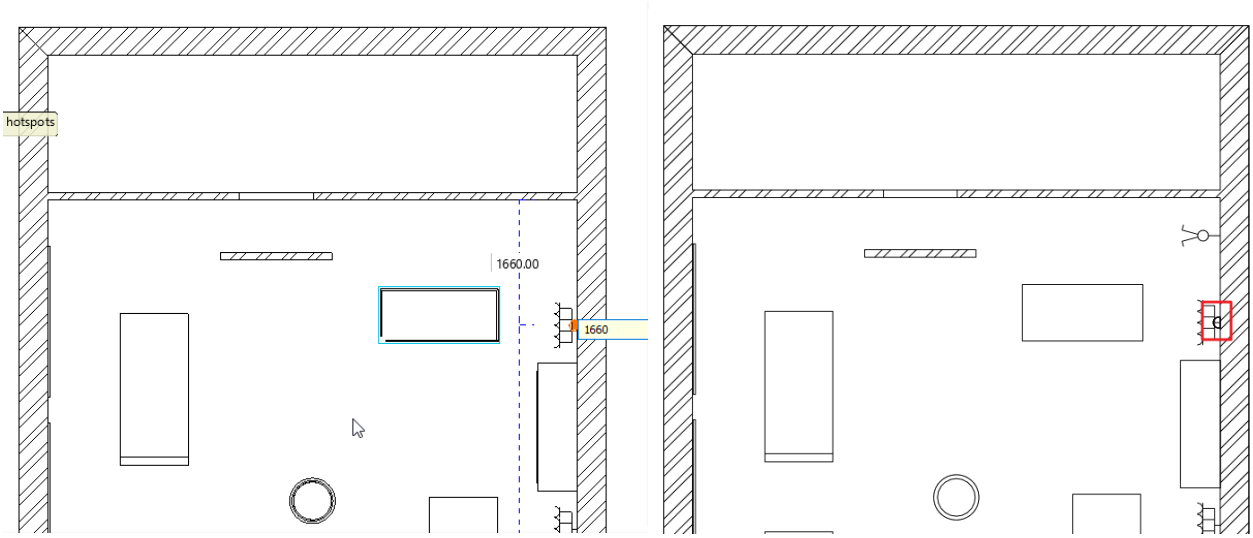


- Zoom in the upper corner of the right wall on the floor plan.
- Select from the **Design Center / Catalogue / Objects / Lighting / Wall lamps** library the object named “Wall lamp 3”. Click on it.
- Before placing the lamp, modify its base offset from the floor to 1600 mm, then hit Enter.

- 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.

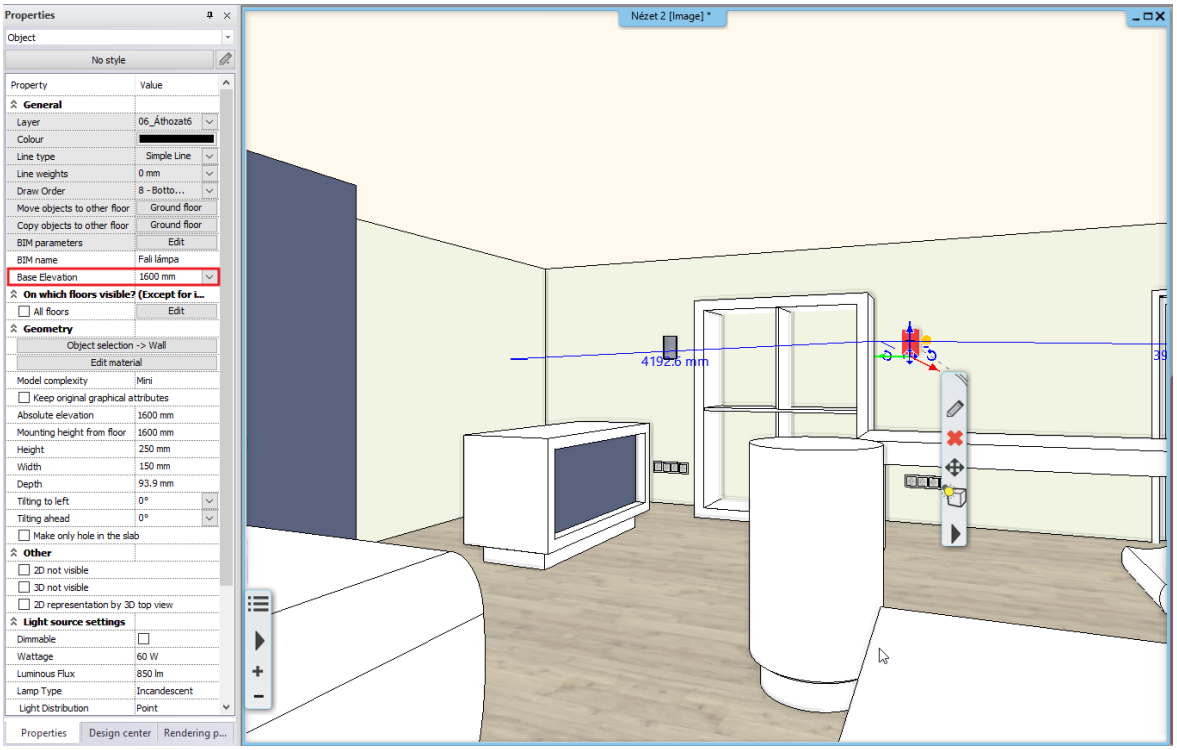




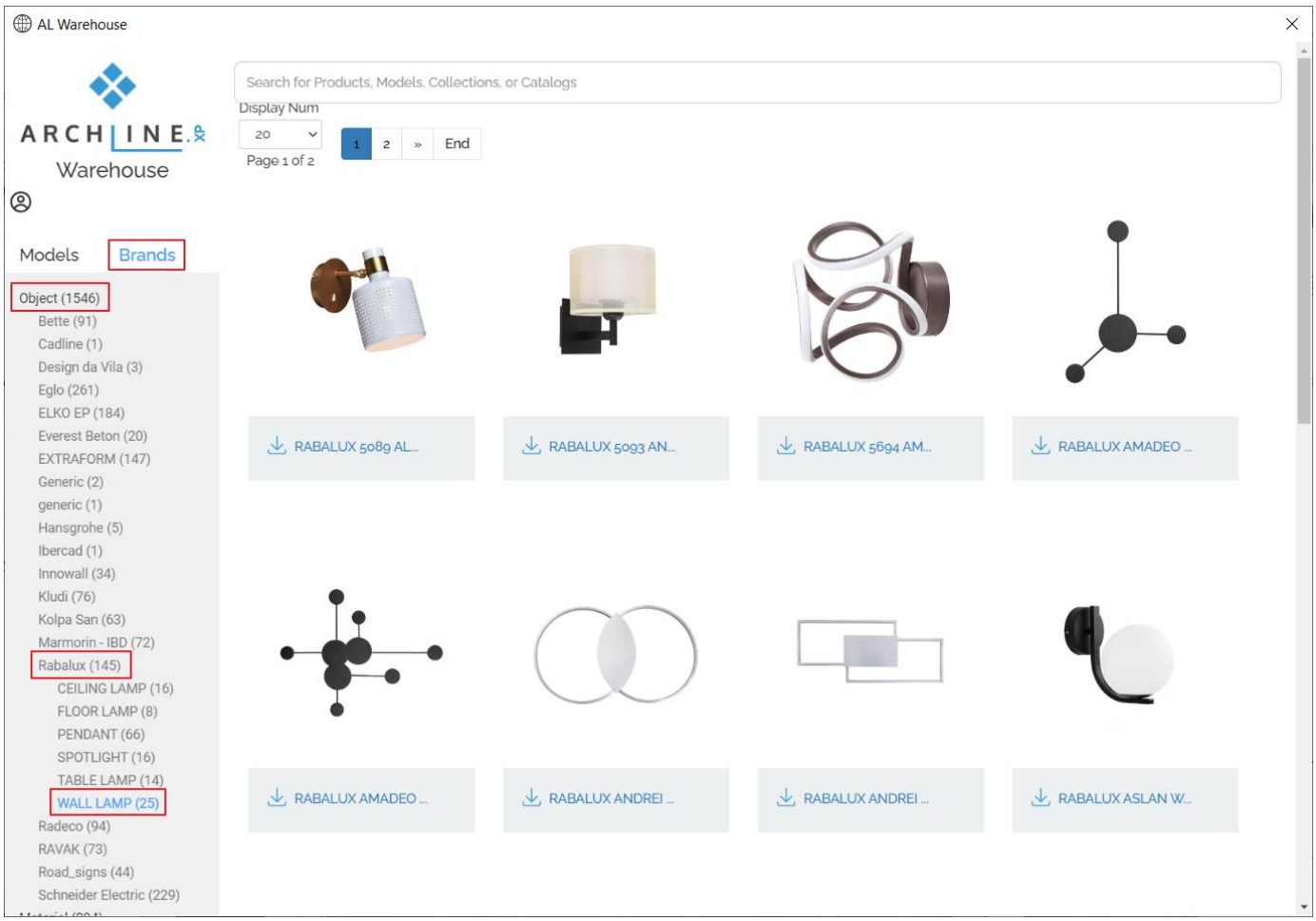
6.1.2. Placing lamp in 3D

- 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.

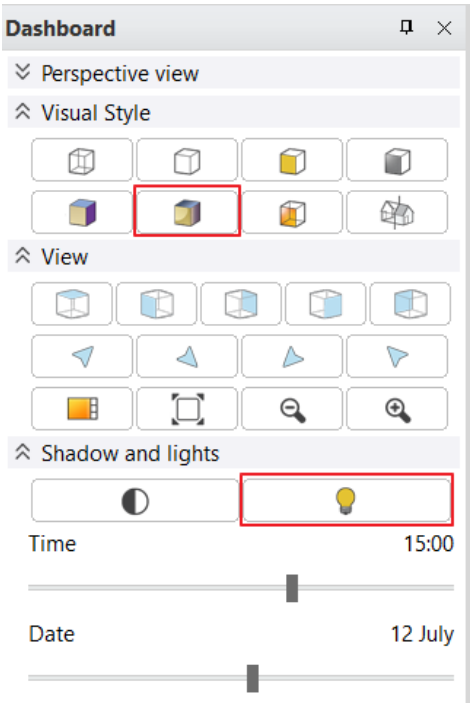


You can choose from more lamps under *Design Center / Catalogues / AL Warehouse* or *Interior menu / AL Warehouse*.
Here you can search by model or by Brand (Manufacturer).
In the case of brands, you can select Eglo or Rabalux, for example.



Light effect

If the Realistic representation mode is active, you can use the Light effect to see the light of the 2 wall lights in 3D:



- Make sure the 3D window is active, no items selected. In the Dashboard, the Visual Style should be Realistic representation.
- Make light sources visible.

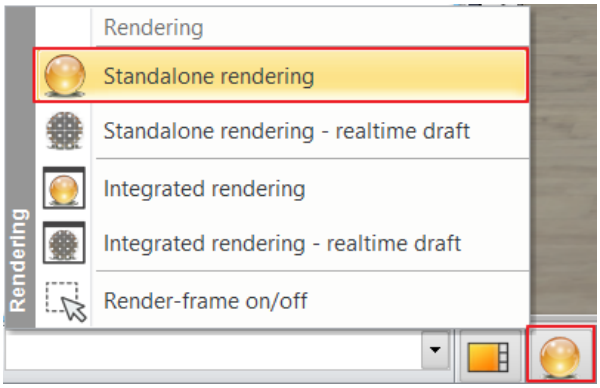
- Turn off Lights.
  (Light Effect does not work with DirectX 9.)

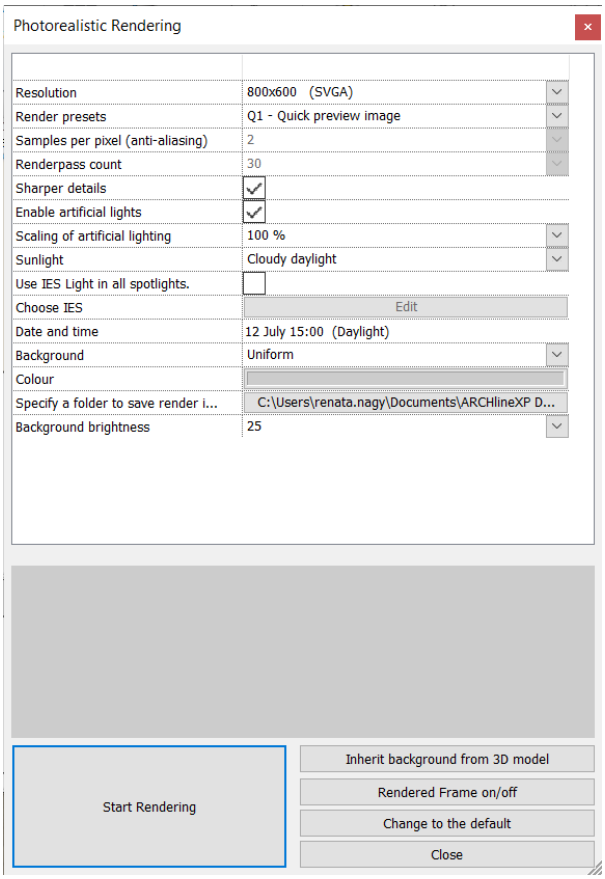
- The light effect displays point and spot lights in 3D. The limitation is that it only displays the light from the Led strip as a spot light.
- For full display, we recommend Rendering.

Standalone rendering

In addition to the Light effect, you can also check the light of the lamp in the Render image.
During the workshop we will use the *Standalone rendering*.

- Start the Standalone rendering command from the Rendering icon in the Status bar.
- Do not change the render settings. OK.
- Save the completed image.

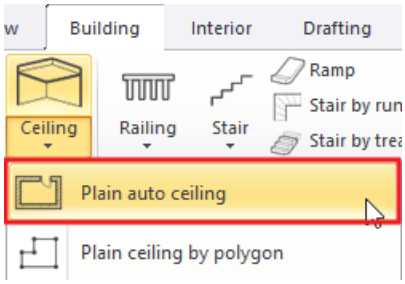




6.2. Recessed spot lamps

Let's place spot lamps on the ceiling. First, we have to create the ceiling of the store.

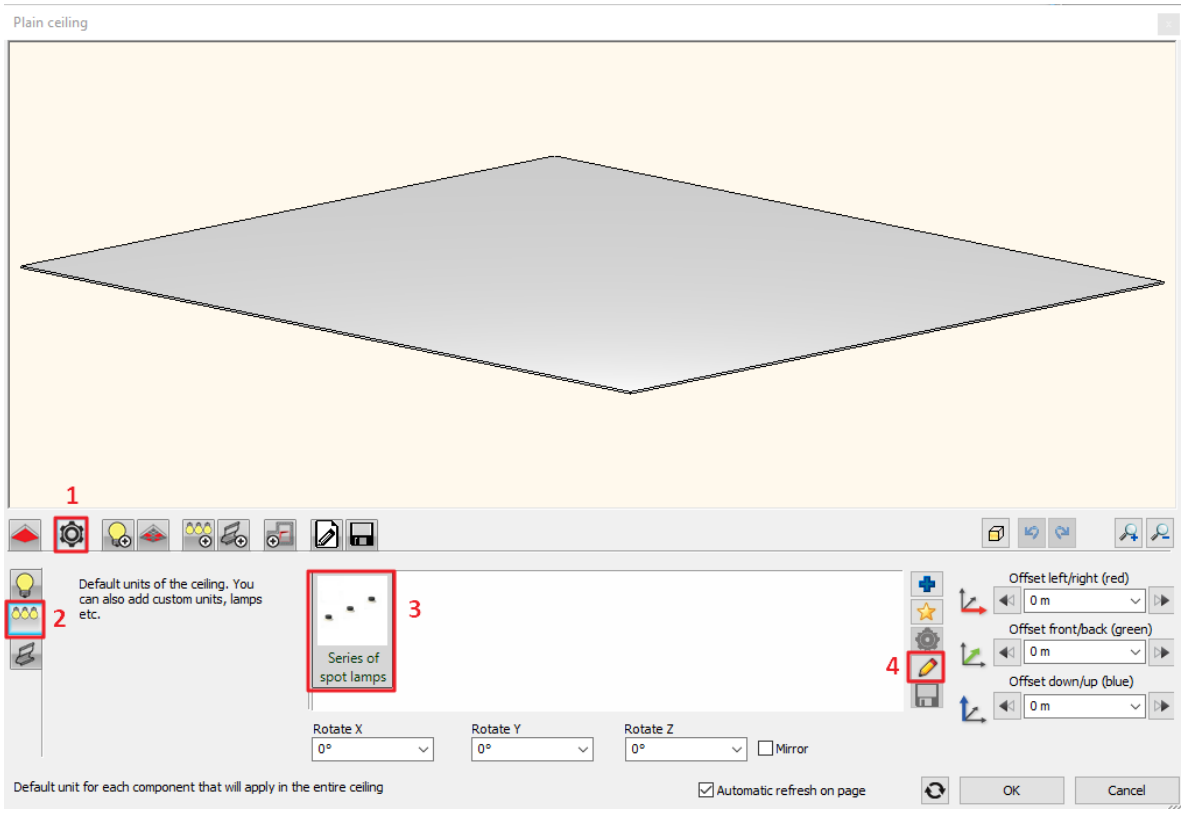
- Activate the 2D window.
- Click on the **Ribbon Bar / Building / Ceiling / Plain auto ceiling** command. When clicking into the room the ceiling is automatically created.



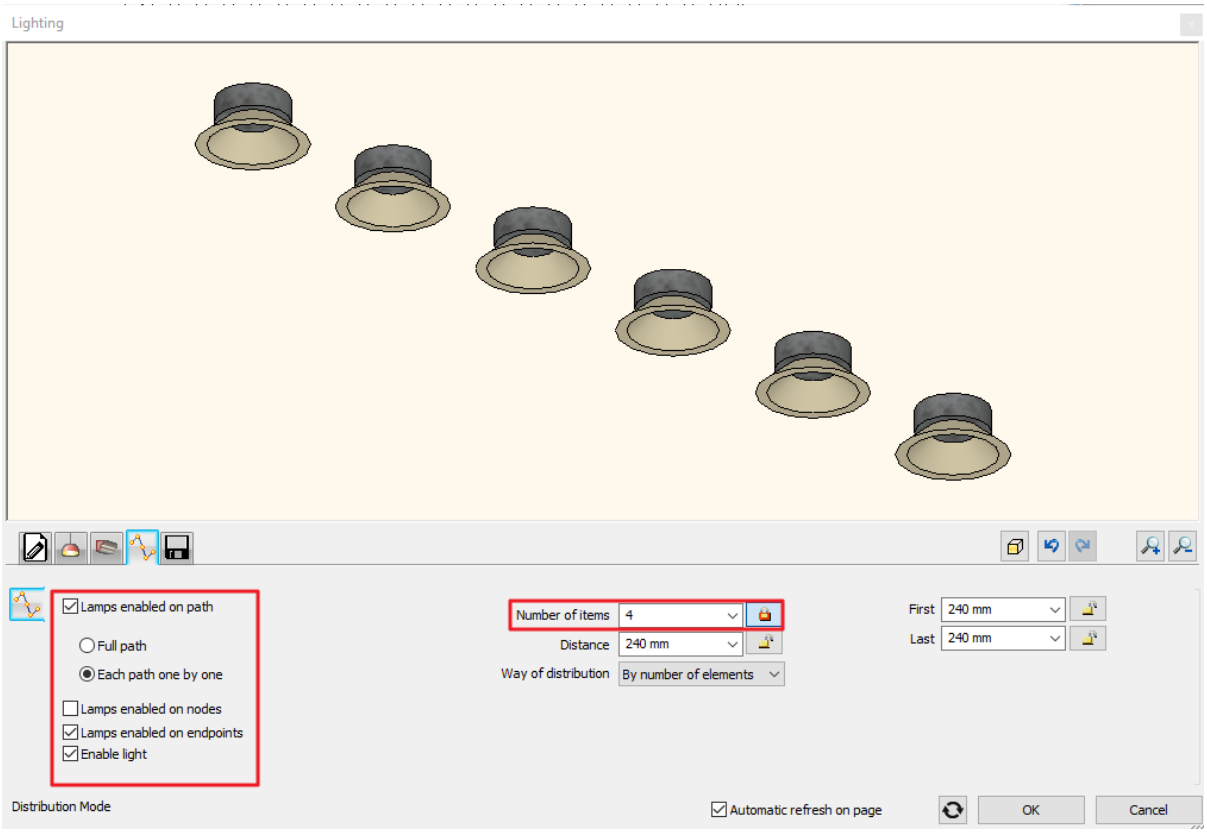
- Modify the base offset of the ceiling. Select the ceiling and rewrite its Base Elevation to 2680 mm on the Properties panel on the left side.
- Open the properties of the ceiling by selecting it and clicking on the pencil icon on the appearing Local menu.

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.

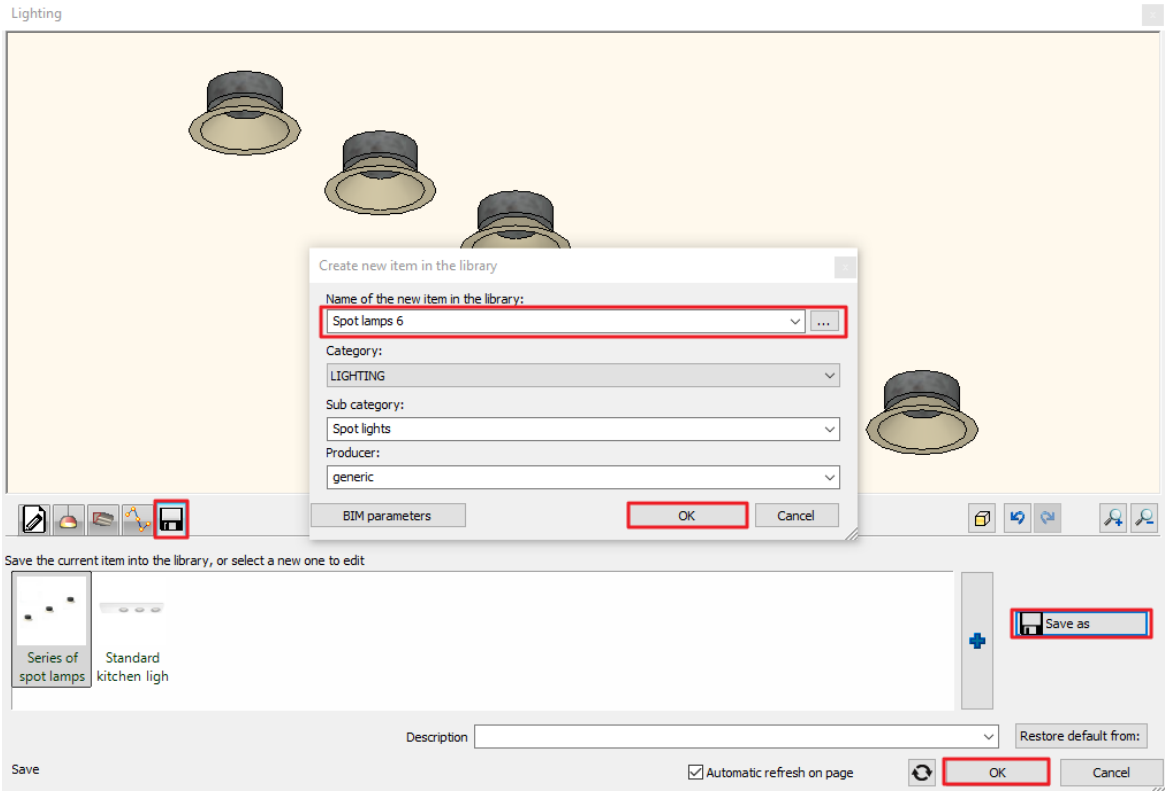
- Select the Default unit tab (1). From the Lighting tab (2) select the lamp named “Series of spot lamps 600 mm” (3).
- By clicking on the pencil icon, you can further modify the selected element (4).



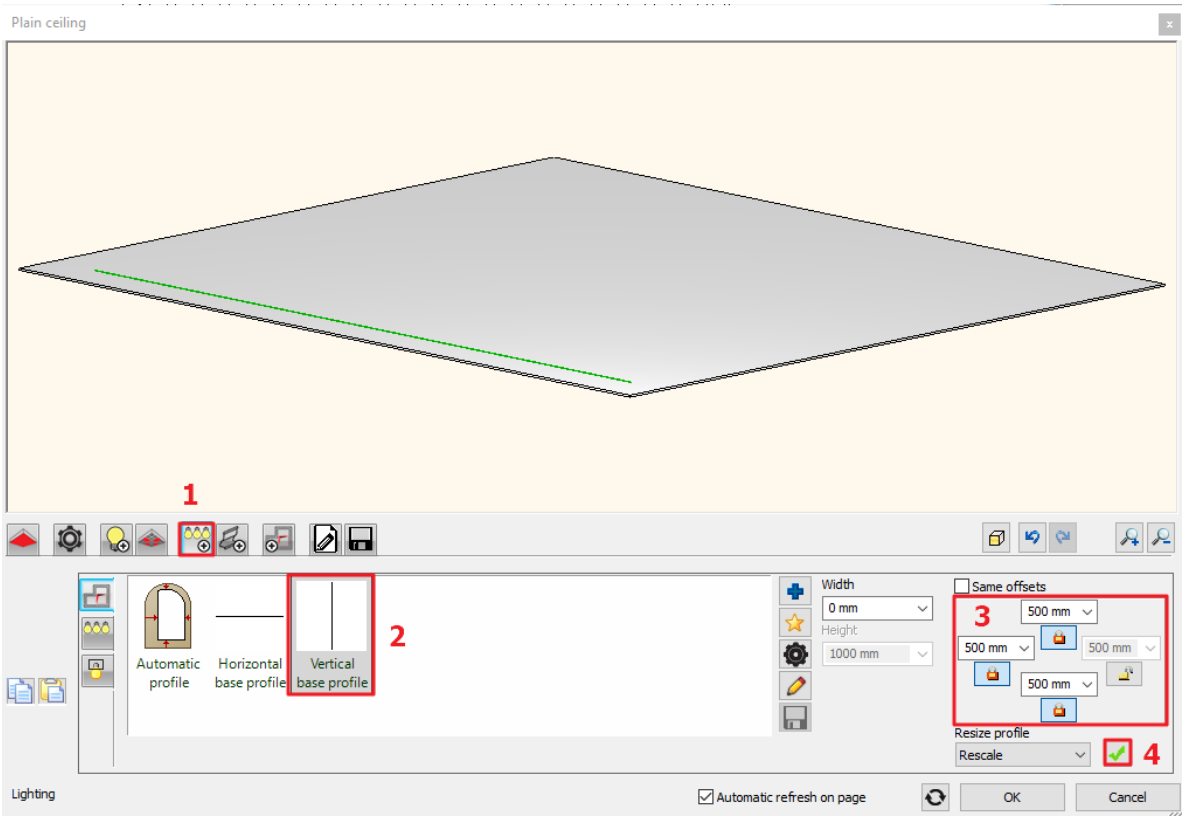
- On the Distribution Mode tab left the **Lamps enabled on path** option on, and below that activate the **Each path one by one** option.
- Switch off the **Lamps enabled on nodes** option.
- Left the **Lamps enabled on endpoints** option on and rewrite the **Number of elements** to 4. Left the other options on the default settings.



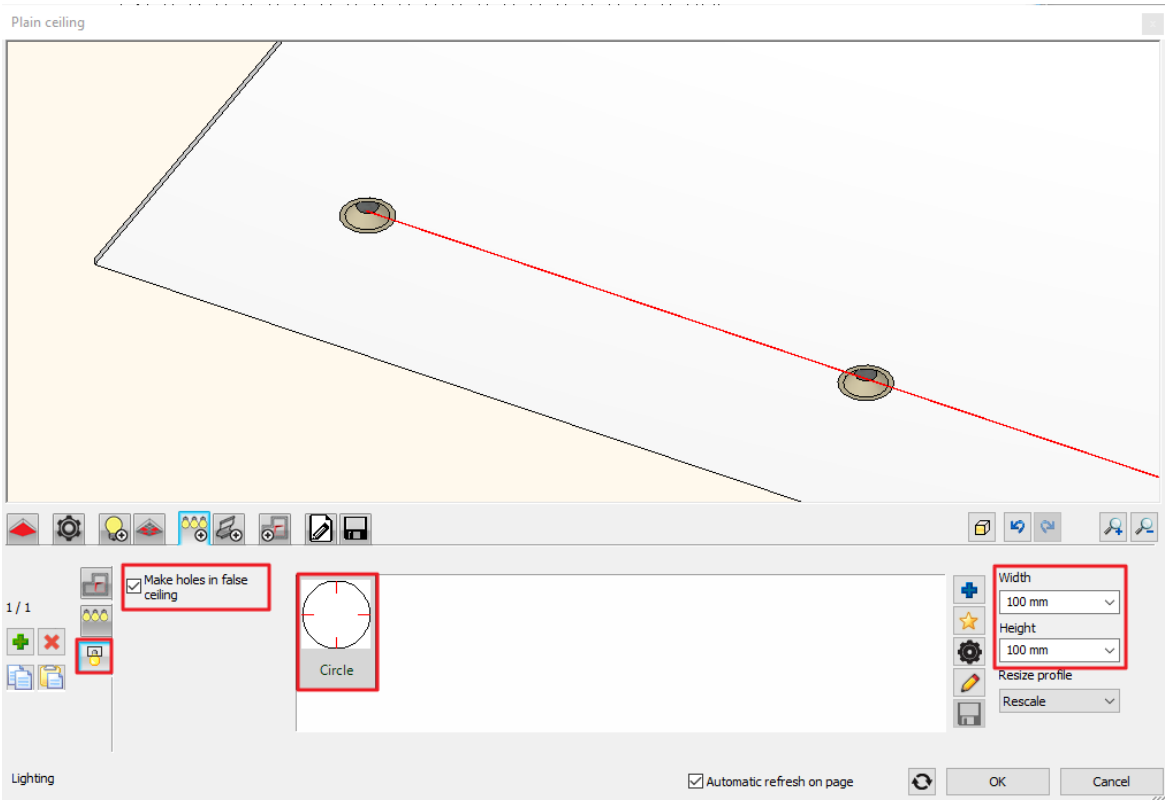
- Save the lamp group on the Save tab as “Spot lamps 6” then return to the ceiling by clicking on the OK button.



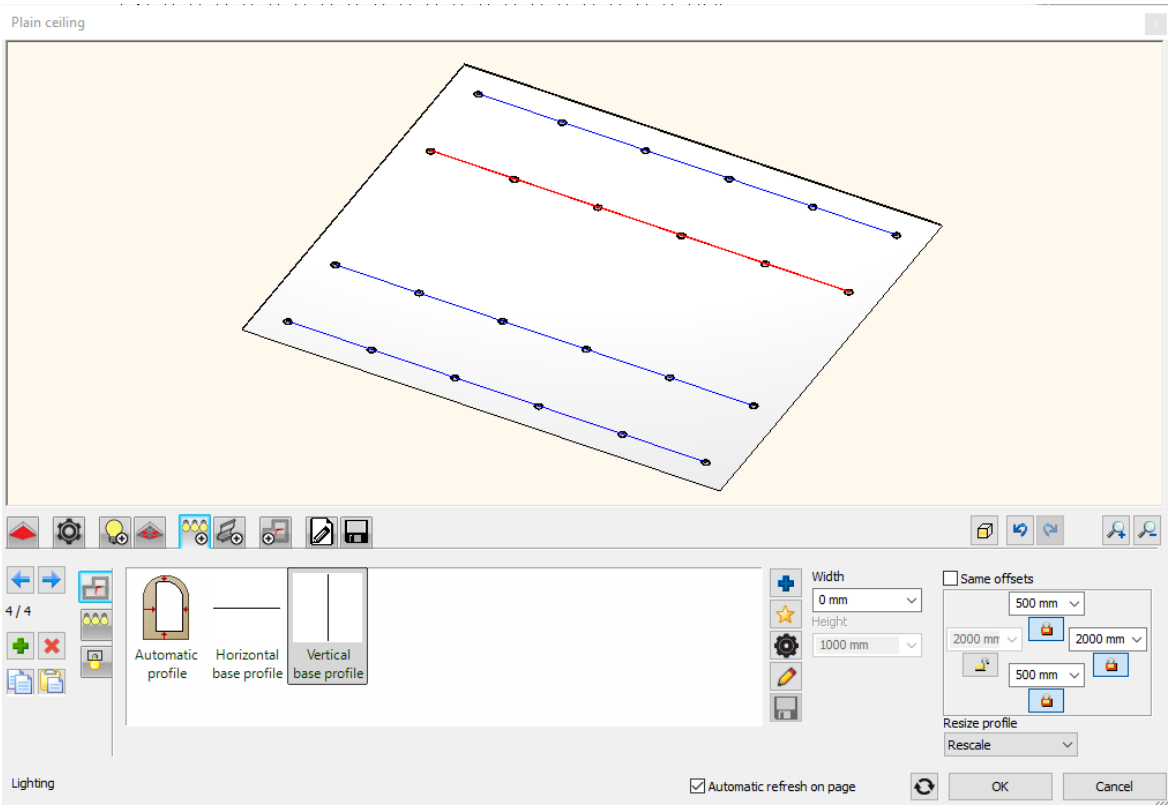
- Let’s sink the spot lamps **40 mm** into the ceiling. Rewrite the value of **Offset down / up** to **40 mm**.
- Let’s go to the Lighting tab (1).
- The path of the lamp group will be a straight line. Select the profile named “Vertical base profile 1” (2).
- The first and the last lamp should be 500 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) by clicking on the lock icon on the right, then with the green tick place the first lamp group (4).



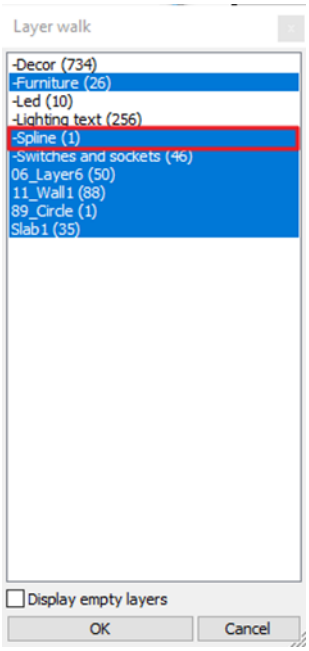
- On the Cut tab activate the **Make holes in false ceiling** option.
- Modify the parameters of the cut. Select the Circle profile, rewrite the Width and Height values to 100 mm.



- 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.

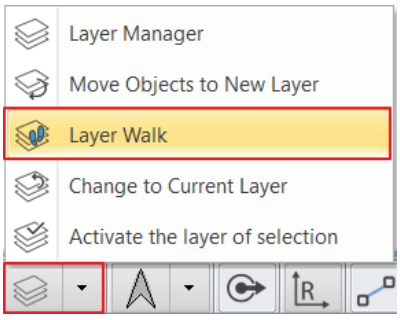


6.2.1. Placing spots to a given profile - optional

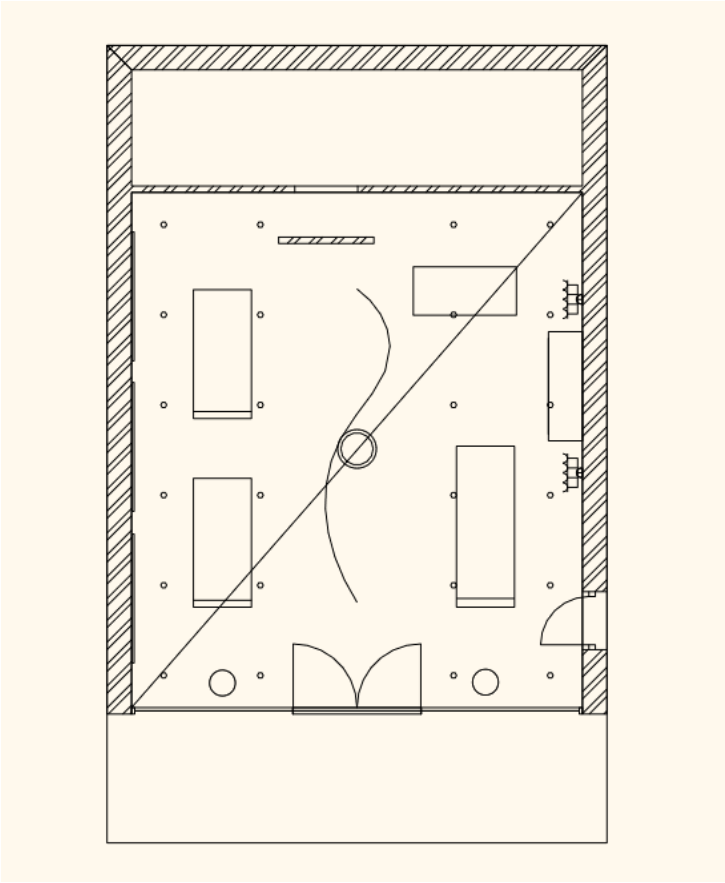


The next step is to place 10 spot lamps to a previously drawn arc in the middle of the ceiling. Allocate to the plain ceiling 5 lamps, that contains 10 spot lamps.

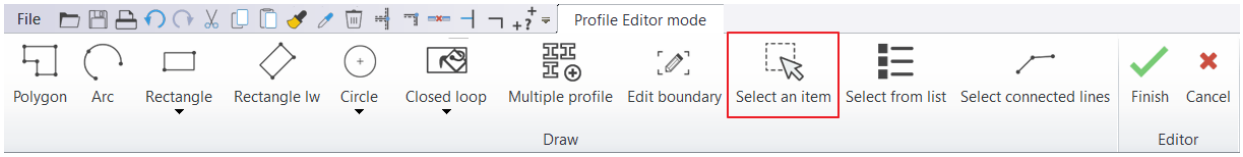
- Activate the 2D window.
- Select the previously drawn profile by clicking on the Layer walk icon and while holding the CTRL key, activate the Spline layer.



- With the OK button close the Layer walk and the arc appears.



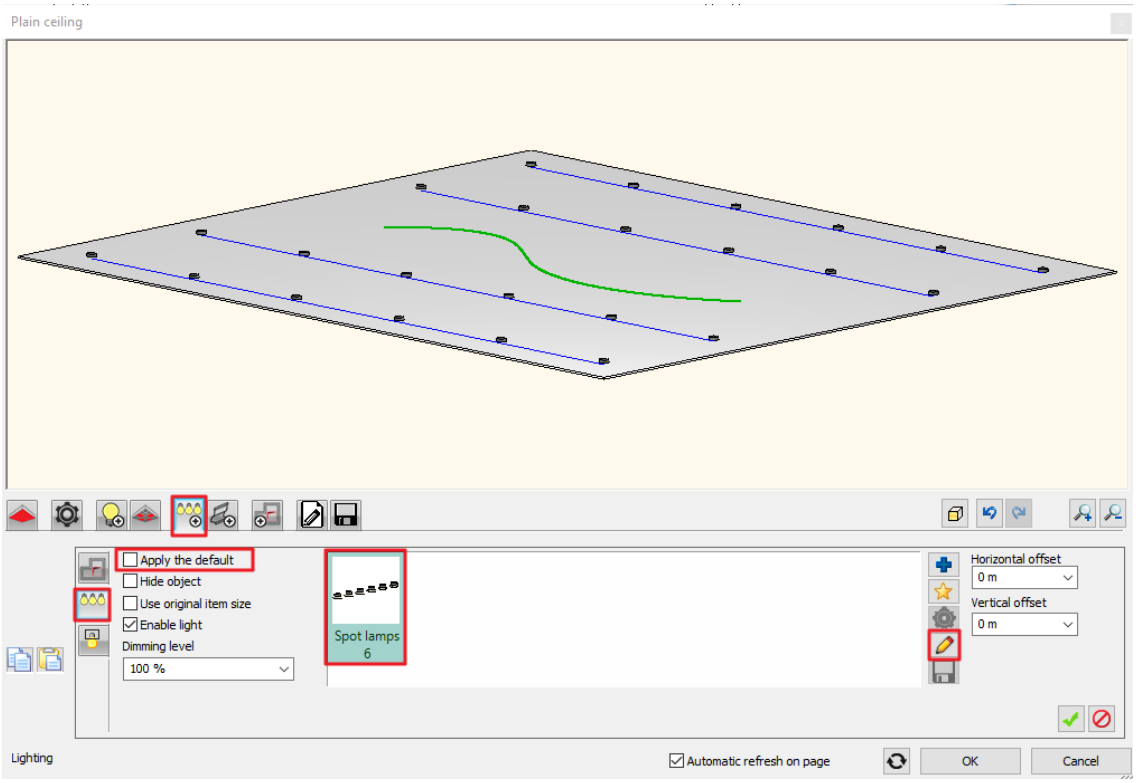
- Open the properties of the ceiling again.
  Go to the Lighting tab and add a new profile by clicking on the green plus icon. This will not be a simple straight line so click on the Define profile button.  .
- Chose the **Select an item** option from the Ribbon Bar.



- Click on one point of the previously drawn arc close to its endpoint.

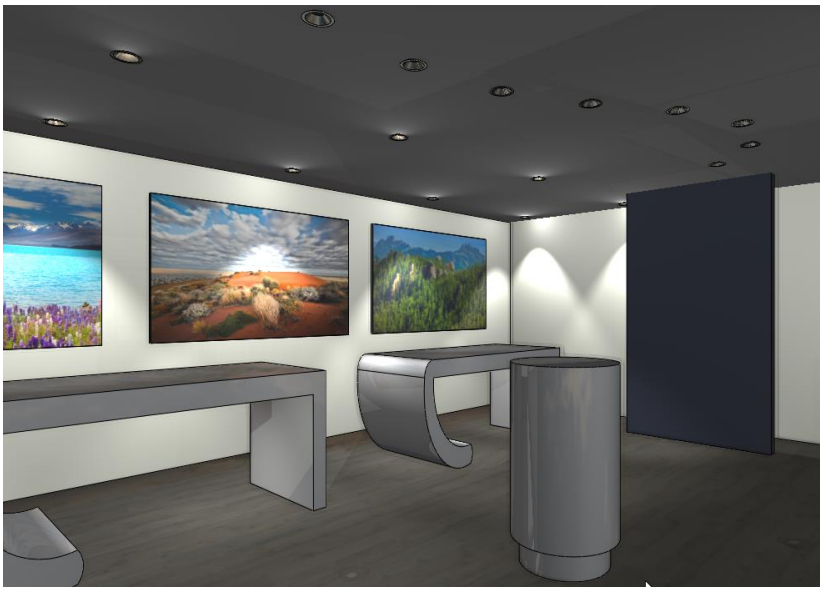
  Do not use the “Spot lamps 6” lamp group here, add a new one.

- Go to the Lighting / Pattern tab and untick the default settings.
- Select the “Spot lamps 6” lamp group and click on the pencil icon.

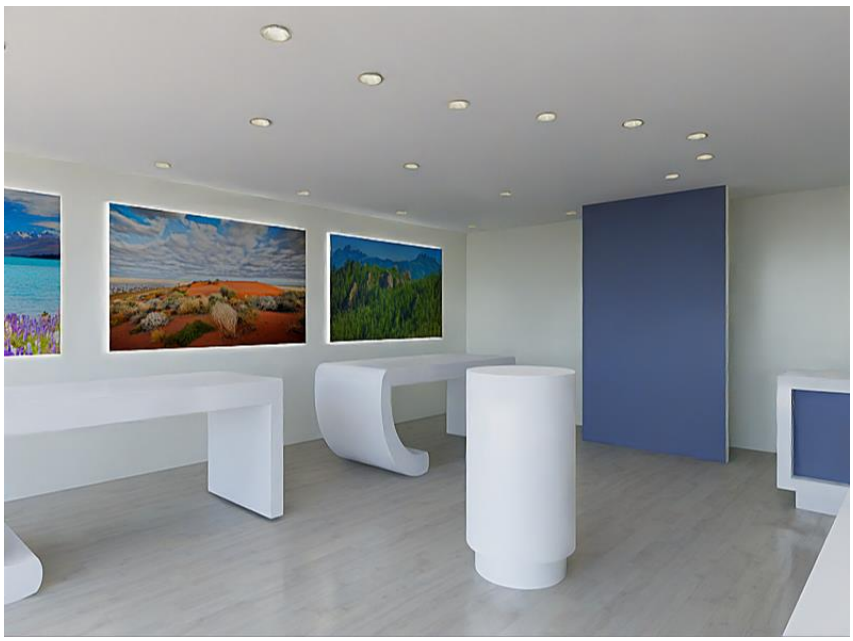


- On the Distribution Mode tab set the **Number of items** to 8 and tick the **Full path** option and torn off the Lamps enabled on nodes option.
- Left the other settings unchanged. Close the dialogue with the OK button. Click on Yes in the appearing dialogue.
- Sink the spot lamps 40 mm into the ceiling here as well. Rewrite the value of the **Vertical offset** to **40 mm**.
- Click on the green plus to create the lamps and close the dialogue with the OK button.
- In the 3D window, set View_5.

- Turn on the Light effect, then turn it off.



- Restart the Standalone rendering command.



Save the image.

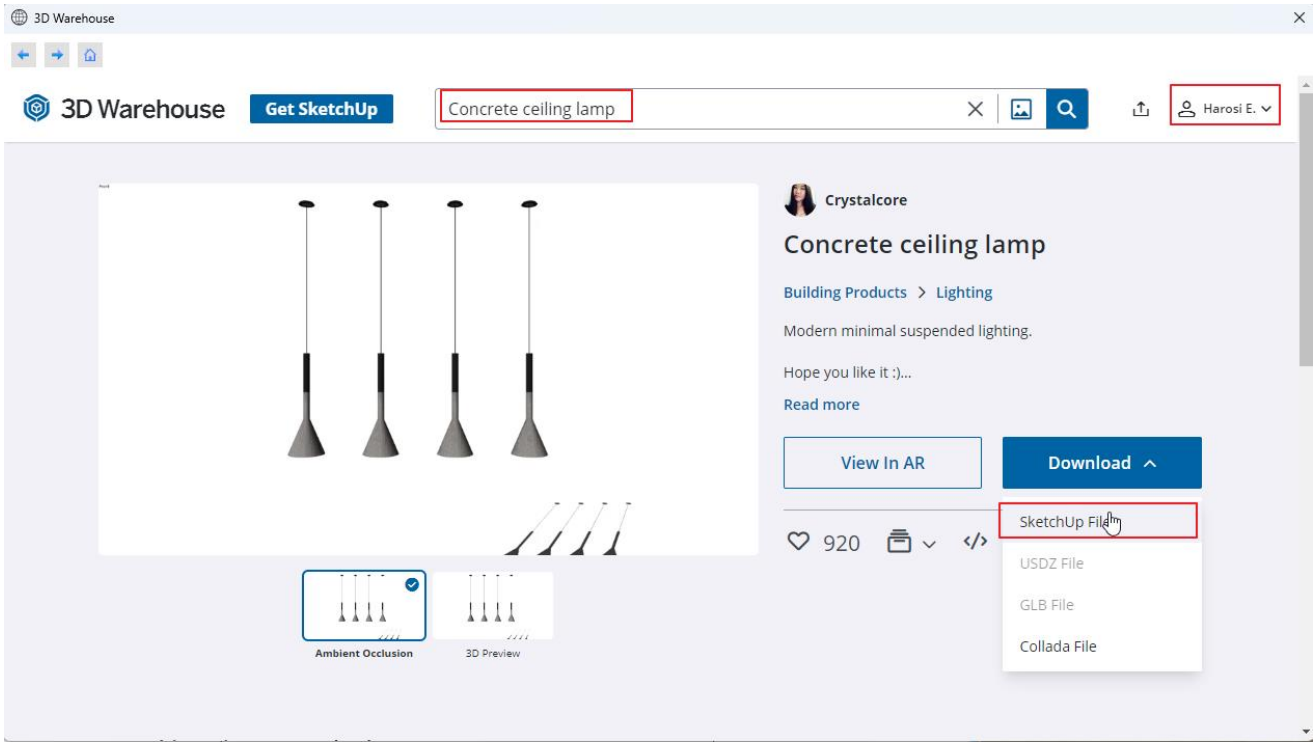
6.3. Creating new lamp

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.

Let's see the process of creating a new lamp.

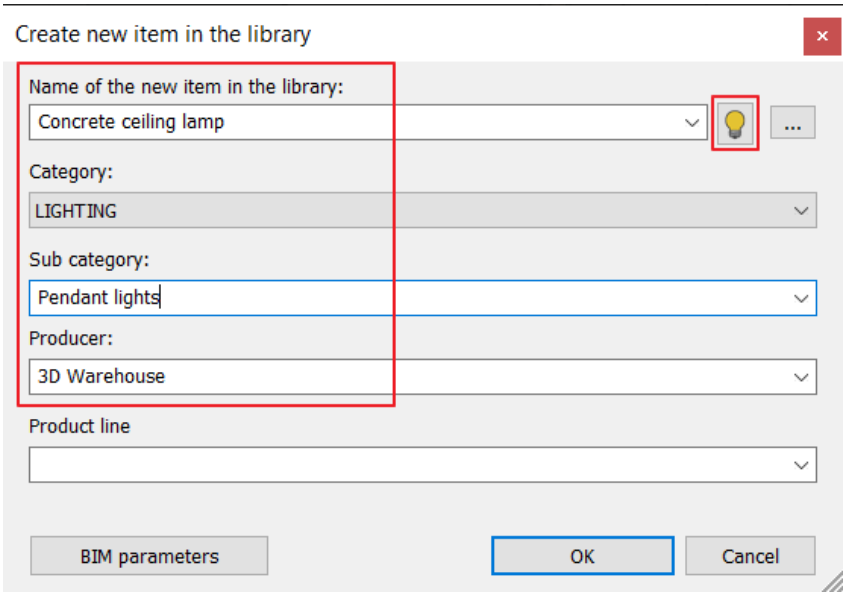
- Click on the **Design Center / Catalogue / 3D Warehouse** icon, sign in.
- Download the object named the following: "Concrete ceiling lamp".



- Untitledxxx appears in the element name. Enter the name of the lamp: Concrete ceiling lamp
- Select the appropriate category, subcategory.

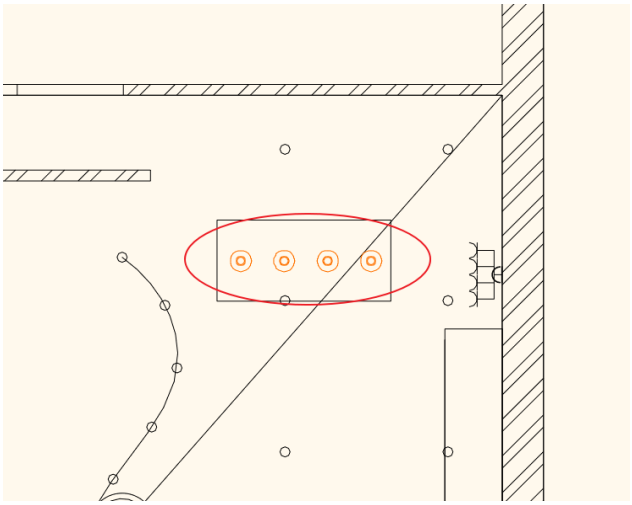
The object to download is a lamp to which we will assign a light source.

- Select the "Add light source" icon. The program will then automatically place a light source at the bottom center point of the item. Its position will be changed afterwards.



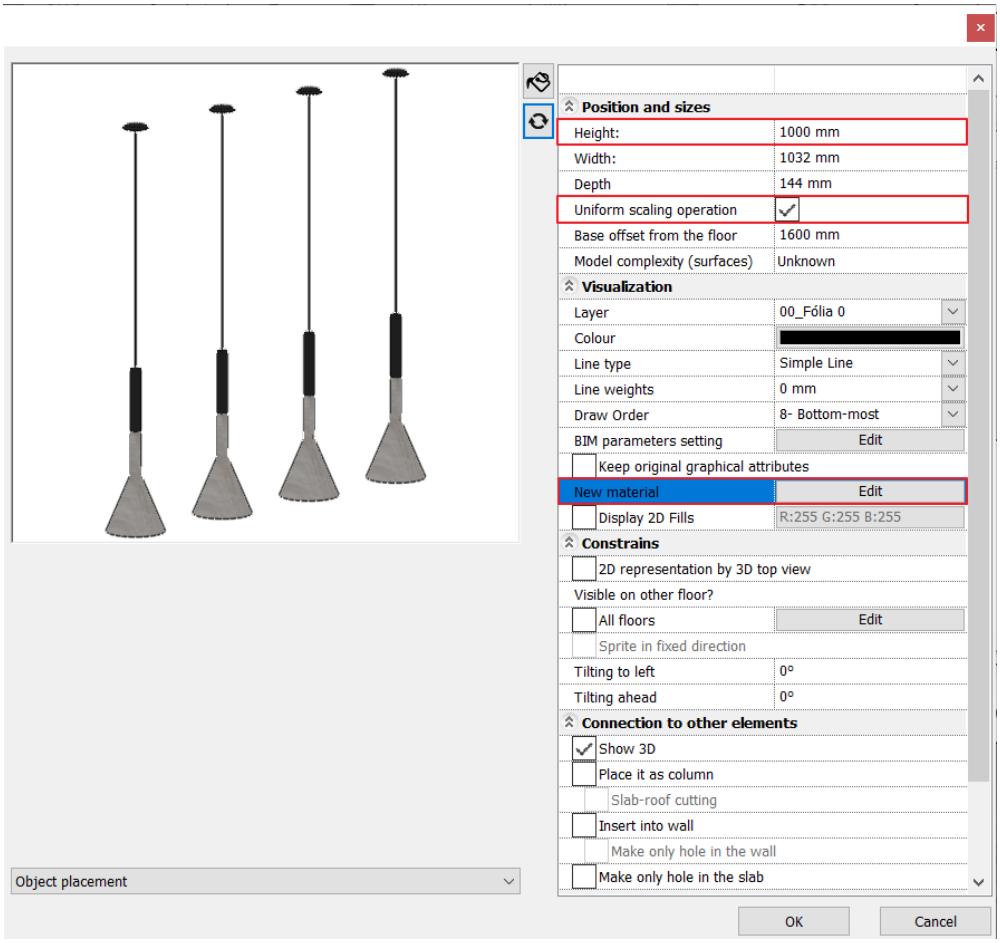
If the light source icon was on, i.e. the element is a lamp, a window will pop up. In this window, set the lighting type to Ceiling. This parameter will be used later by the program when creating the lighting plan.

- After download, place the new object near to the right corner of the store, above the desk. Enter.

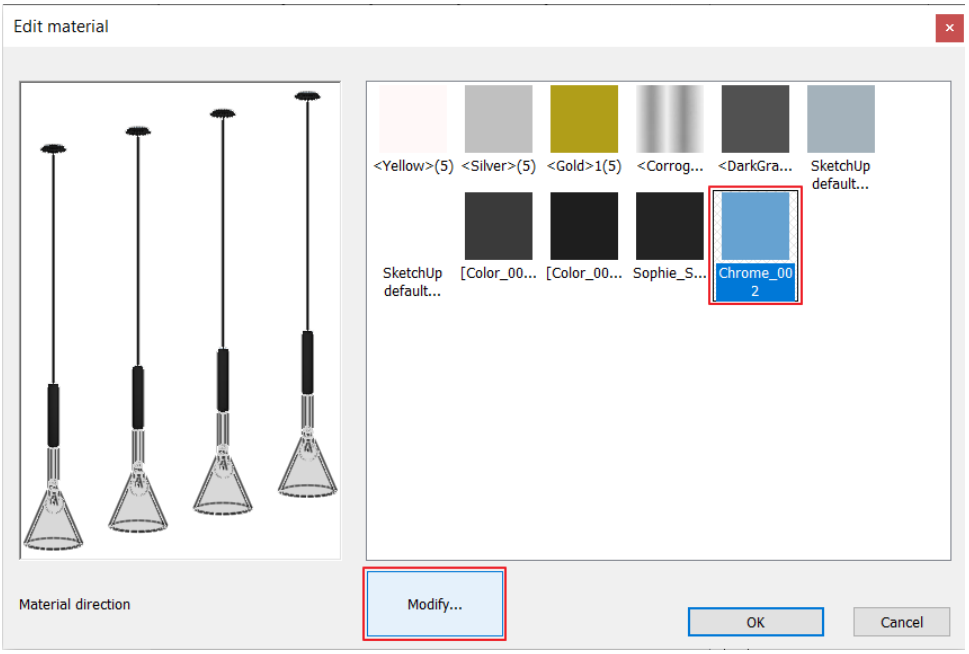


The size of the downloaded lamp is too big, thus we will modify it.

- Select it, then open its properties by clicking on the pencil icon.
- Before modifying any of the values, tick the **Uniform scaling operation** option.
- 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.



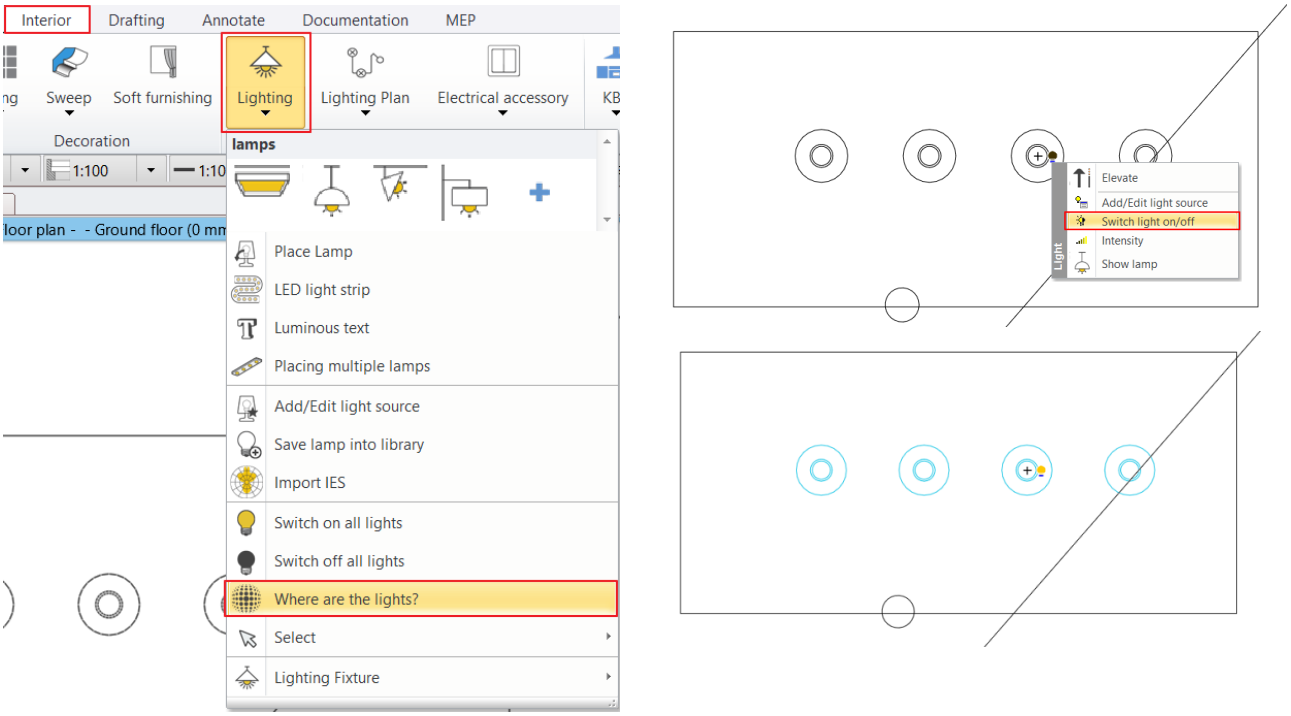
- Select the “Chrome_002” material from the Material library.
- Close the dialogues with the OK button.

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.

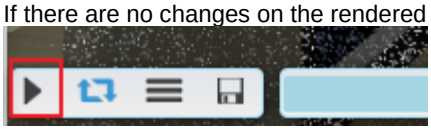
Switch off all the lamps in the store, except the previously placed one.

- Select the 2_View_2 perspective view and activate the floor plan window.
  Select **"Switch off all lights"** command under **Ribbon menu / Interior / Lighting**.
- Select "**Where are the lights?**" command under **Ribbon menu / Interior / Lighting**. On the floor plan, all light sources appeared with a black icon, because we turned them all off.
- Turn on the lights you just placed by clicking on the light bulb icon. The icon will turn yellow, indicating that it is on.



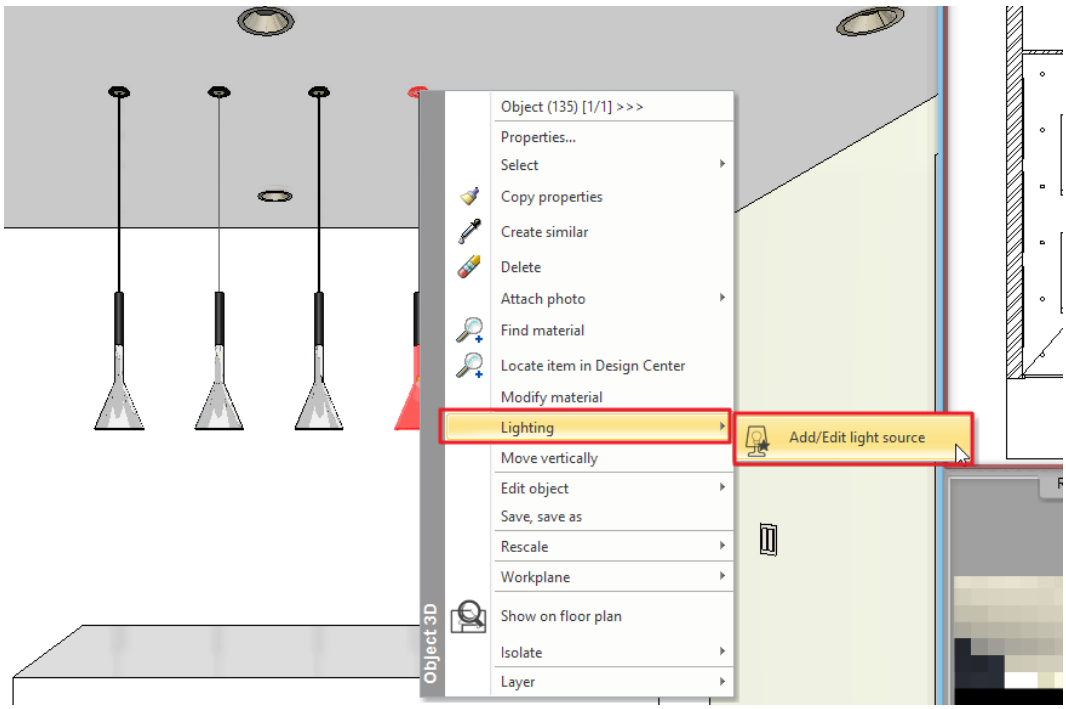
The Show all lights command can be used in 2D and in 3D.

If there are no changes on the rendered image, then it worth to refresh the rendered image by pressing the play button.

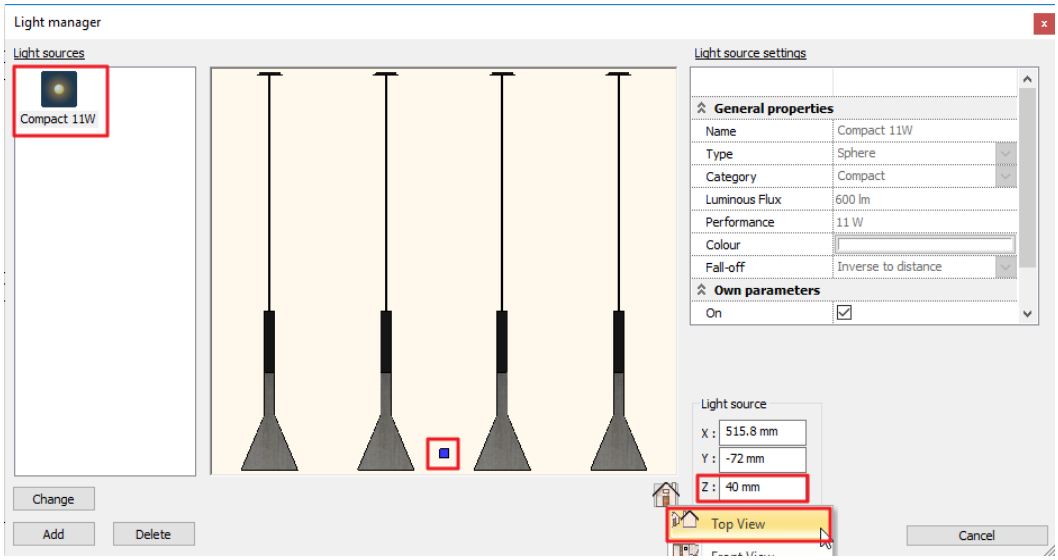


6.3.1. Adding light source

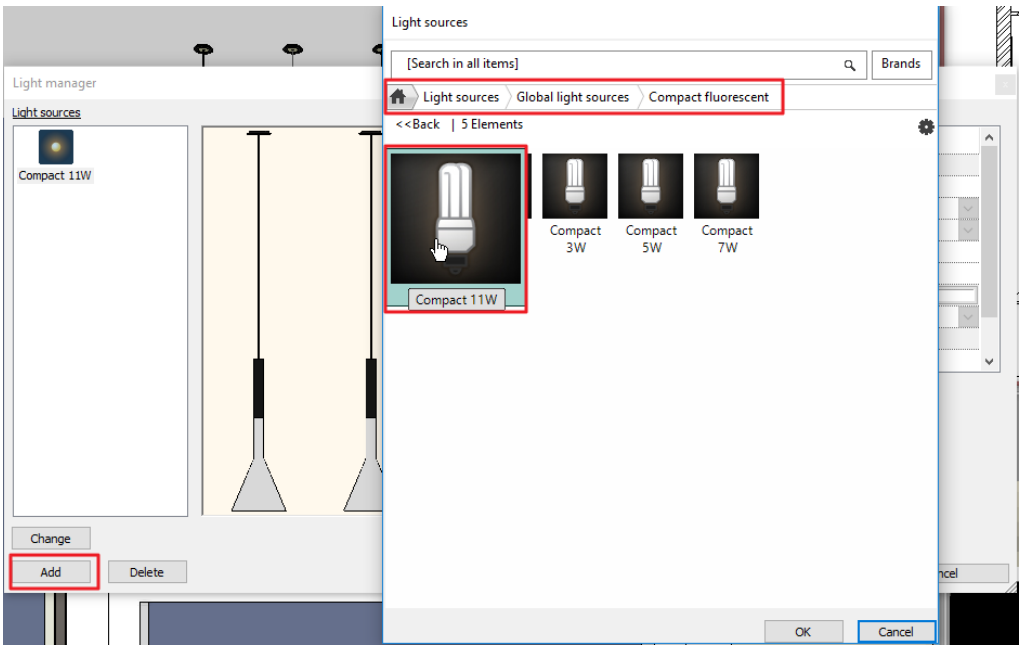
The name of the downloaded object contained the “lamp” word; therefore, the program automatically added a light source to the bottom center point. This is visible now on the picture. Obviously, it is not on the right place, therefore we have to add three more light sources.



- 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.

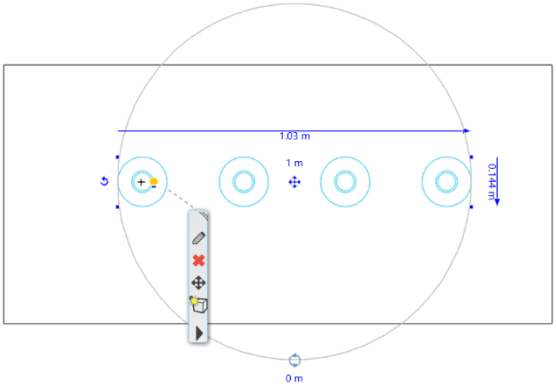
  Check the modifications in the render window as well. Now the first two lamps from left are turned on.

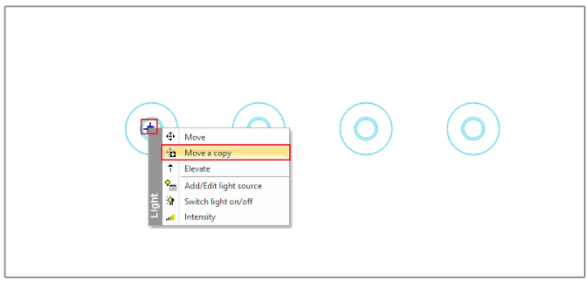
- In the 3D window, set View_1.
- Start the Standalone rendering command again.

Copy light sources on floor plan

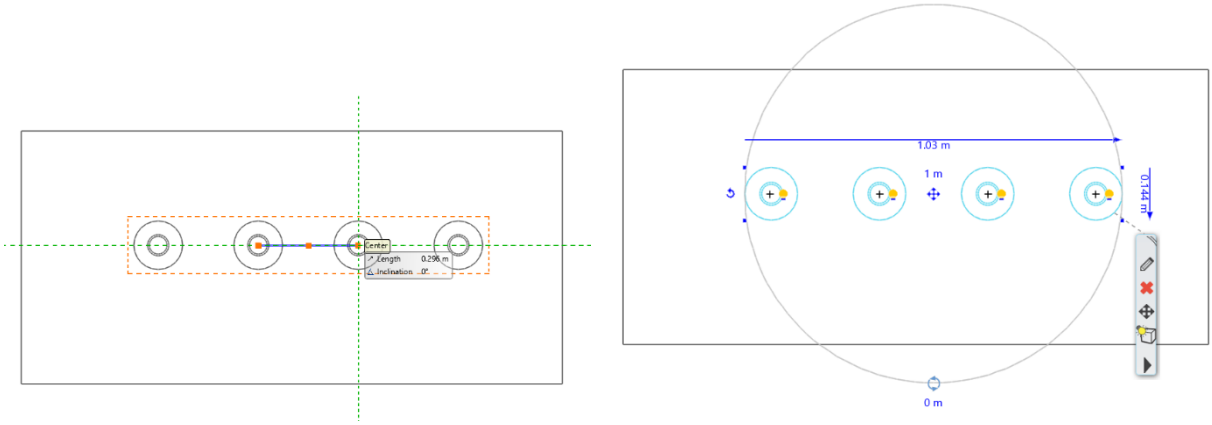
The missing lights sources will be copied from the existing lampshades.

- Select the ceiling lights on the floor plan.
- Click on the second light sources.
- Click on the blue markers and choose "**Move a copy**" command.





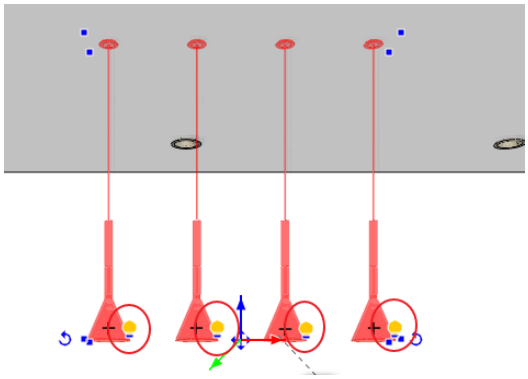
- Click in the middle of the third lampshade.



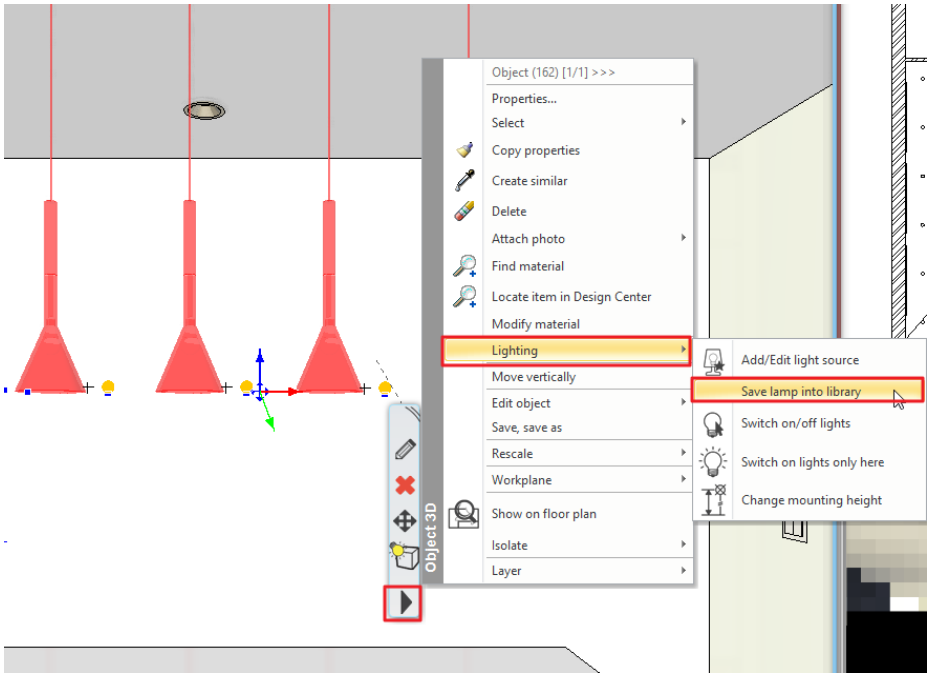
- Repeat the same on the last lampshade.

6.3.2. Save lamp to Design Center

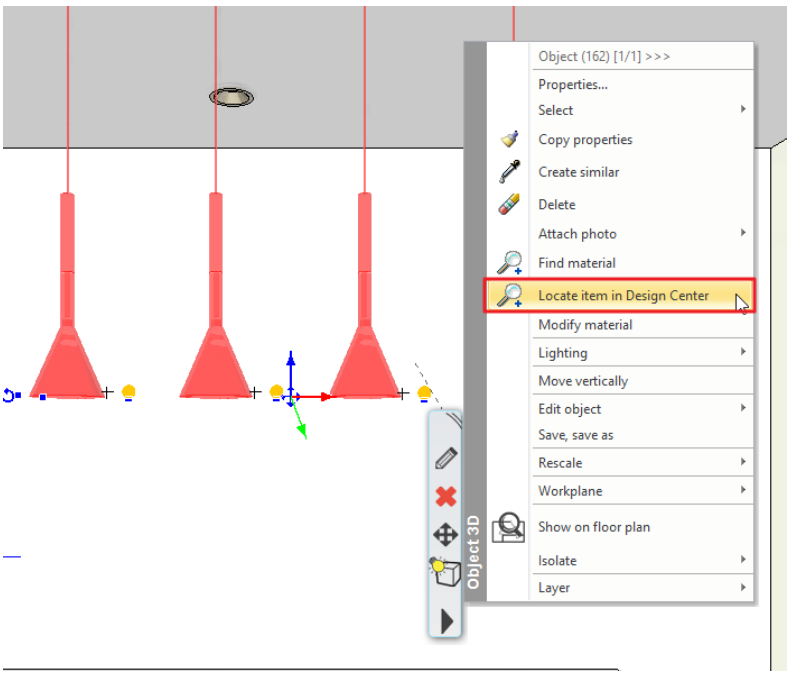
- Select the lamp. 4 yellow light bulbs appear next to the lamps. These indicate the light sources.



- To save the lamp to the library select the **Lighting / Save lamp into library** command from the Local menu.

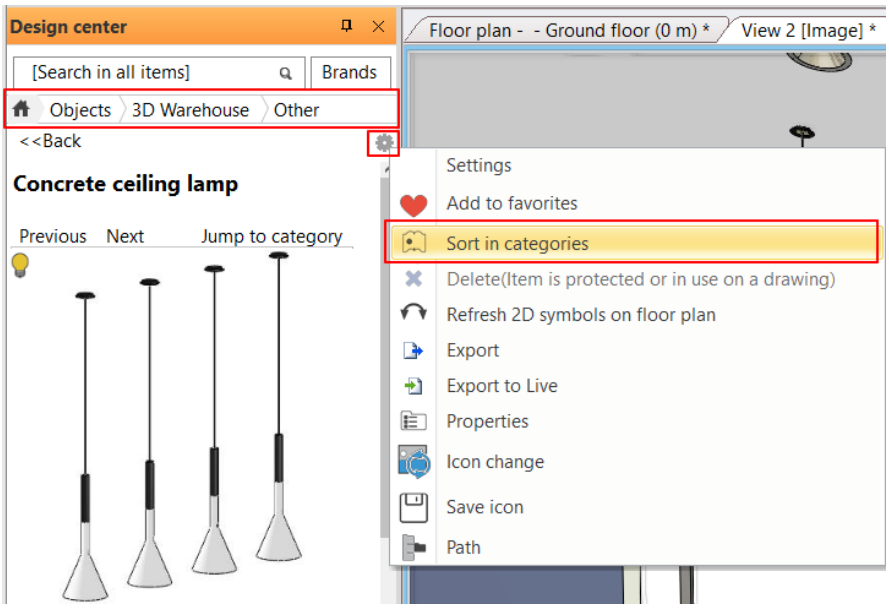


- The program asks whether you want to overwrite the original object. Click on Yes.
- The next questions are about the original 2D and 3D view. Here, click on No both times.
- Search for the saved lamp in the Design Center. The quickest way to do it is to select the object and from its Local menu, select the **Locate item in Design Center** option.

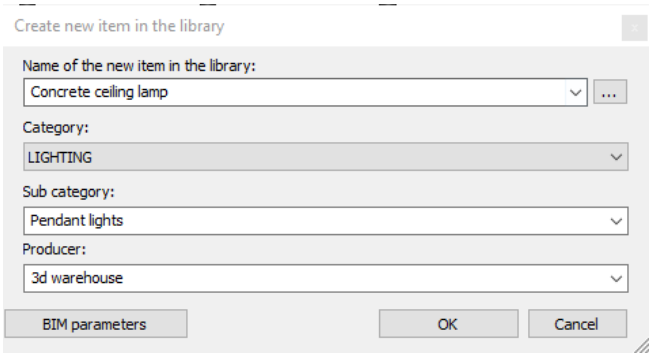


The object appears on the left with its properties. On the top, next to the house icon its path can be seen. Let's relocate it to the right category.

- Click on the cogwheel icon. Select the Sort in categories command from the appearing menu.

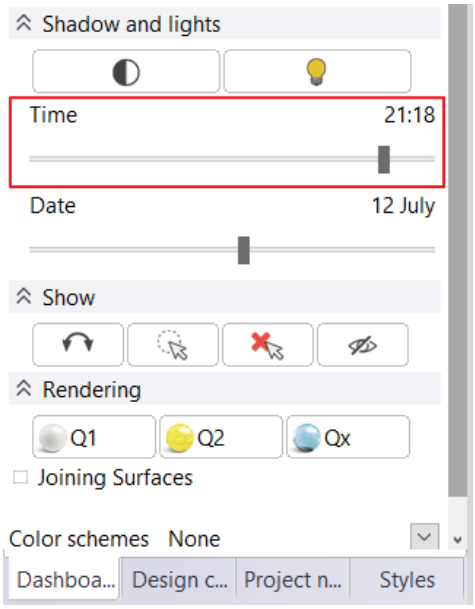


- You can rename the lamp. Keep LIGHTING as the main category and Pendant lights as the sub category. The producer could remain the 3D Warehouse too, but you can specify another manufacturer as well.



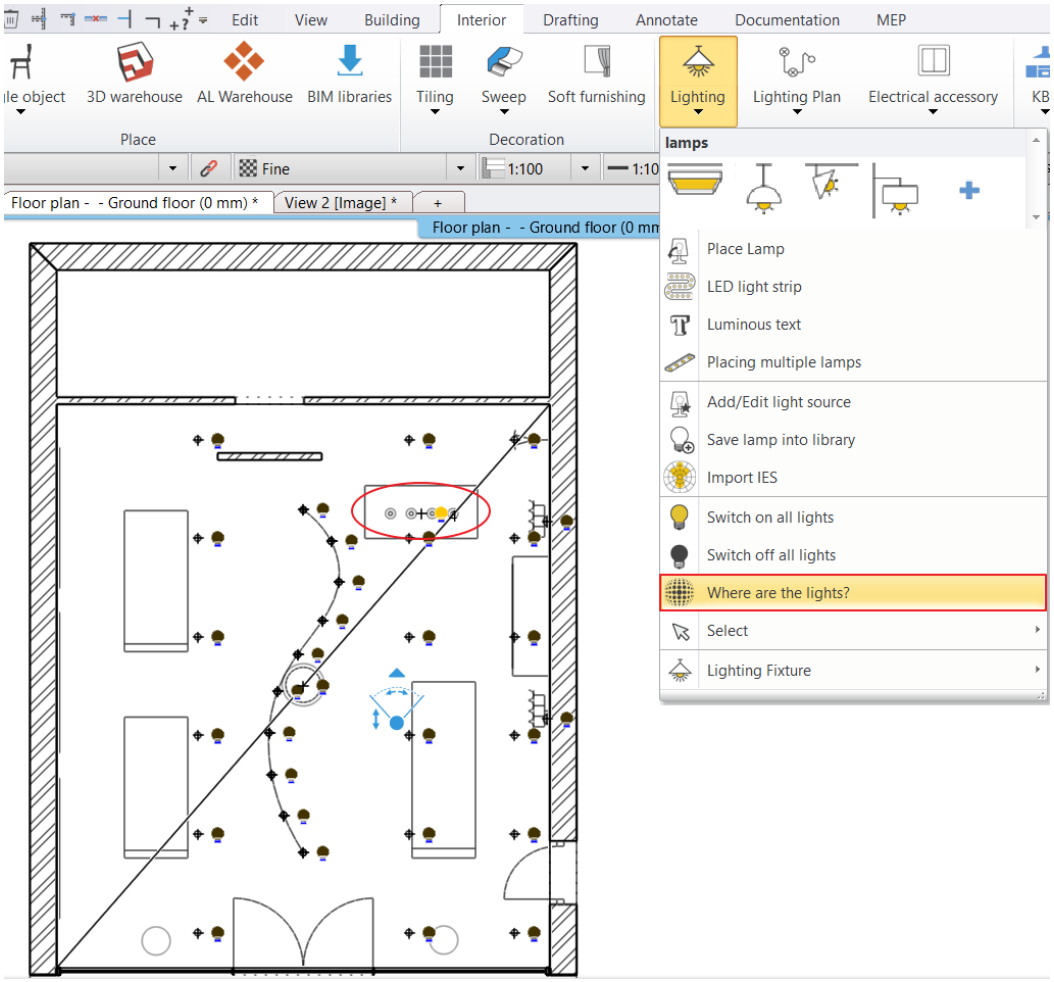
This lamp is accessible from this folder for future projects as well.

- Set an evening time on the Dashboard.
- Restart the Standalone rendering command.



In the evening picture you can clearly see that only the new lamp is lit:

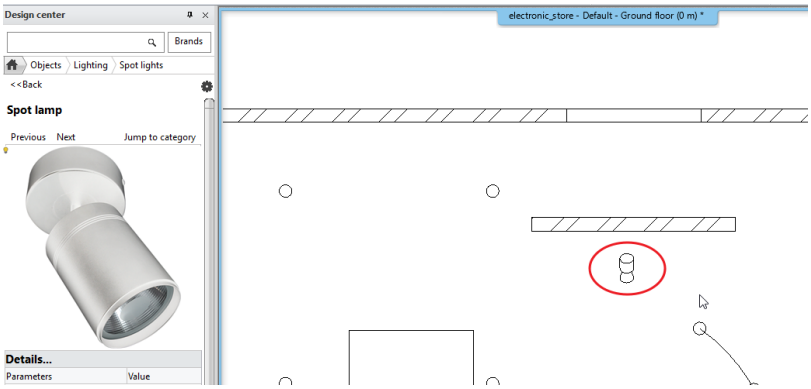
Make the floor plan window active. The Interior menu / Lighting / Where are the lights? command will then display the light sources of the lamps on the plan, indicating which are lit and which are not:



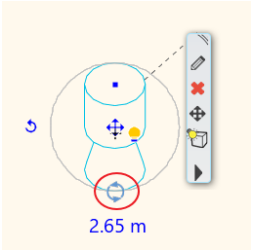
6.4. Changing direction of spot lights

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 lamp” 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.

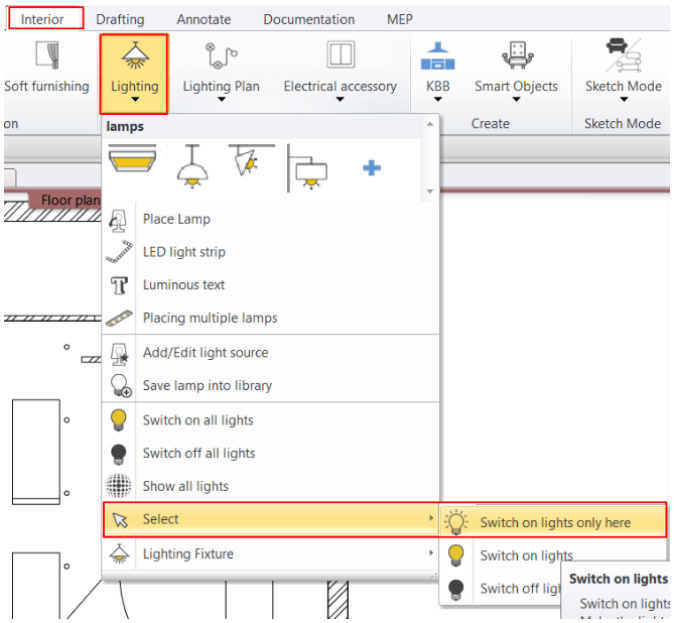


Optional:

- Go to the 3D window and turn on the **Light effect** in the Dashboard.

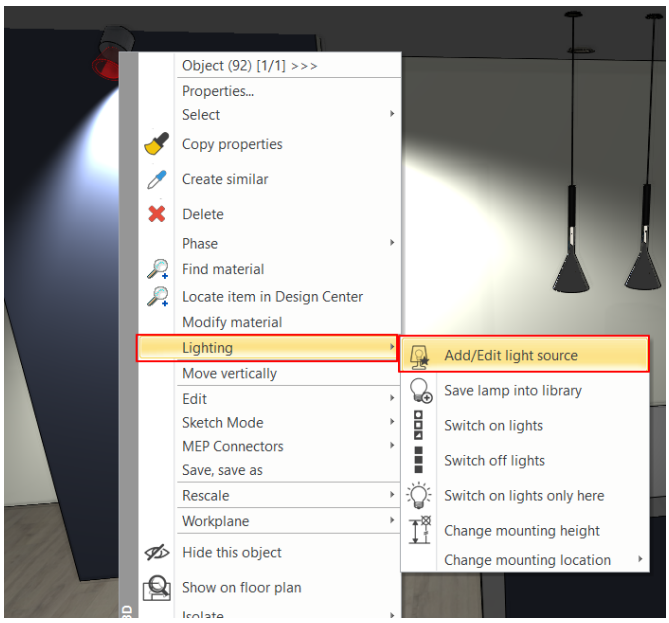
The light effect will then also appear in the 3D view.
The pendant and spotlight will now be lit. To light only the spot lamp, do the following:

- Go to **Ribbon bar / Interior / Lighting / Select** and choose the **Switch on lights only here** command.
- Select the last spot lamp you placed. This is the result:

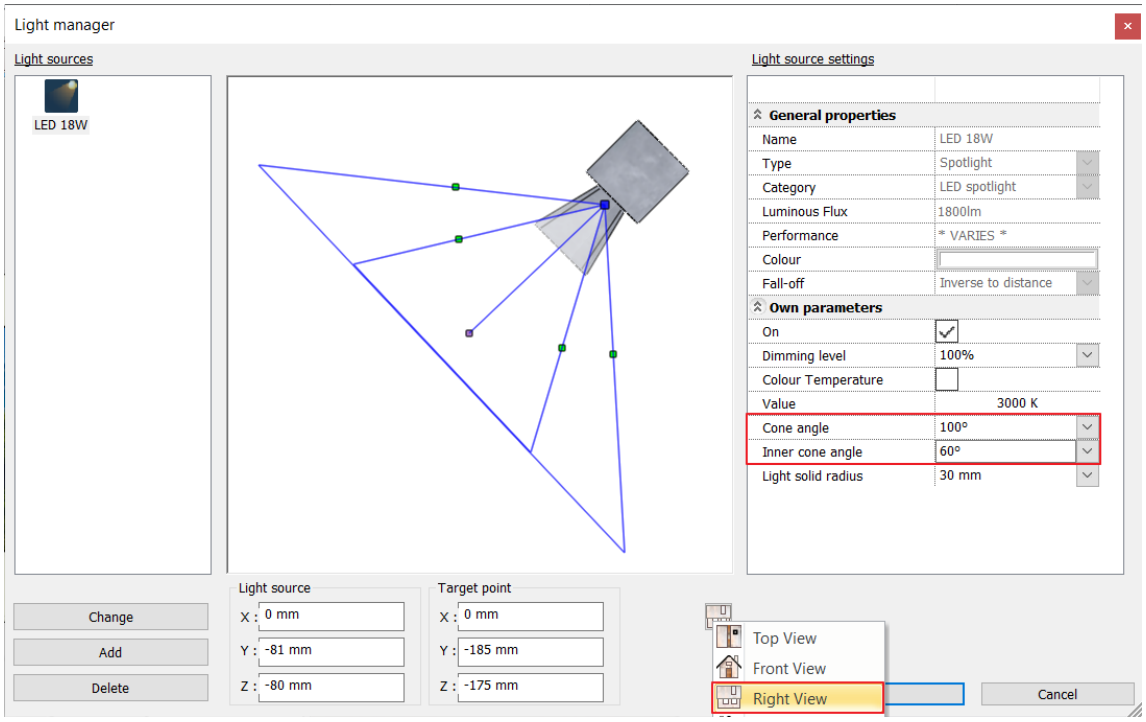


Let’s change the direction of light.

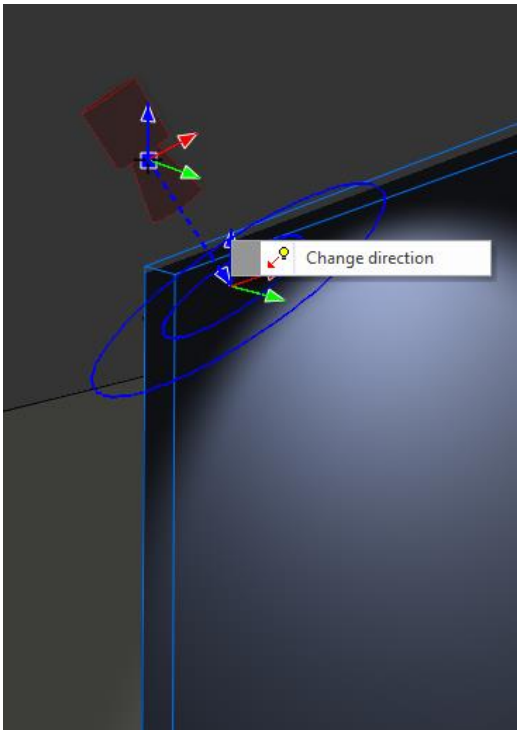
- Select the spot lamp and from the Local menu select **Lighting / Add / Edit light source** command.



- The Light manager dialog 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.

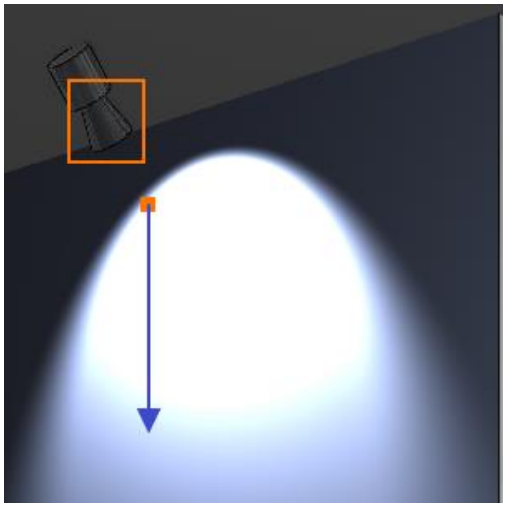


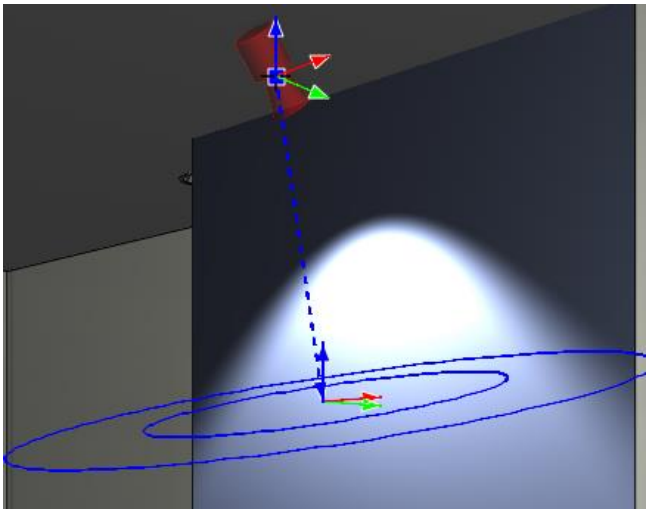
- With the OK button close the dialogue.
- Select the spot lamp and click on the yellow light bulb icon. Now modify the direction of light with the appearing arrows.
- Click on the blue arrow pointing downwards, then the change direction icon.



- With the help of the appearing orange point pull the arrow lower.

  This way the light on the wall is moved lower.





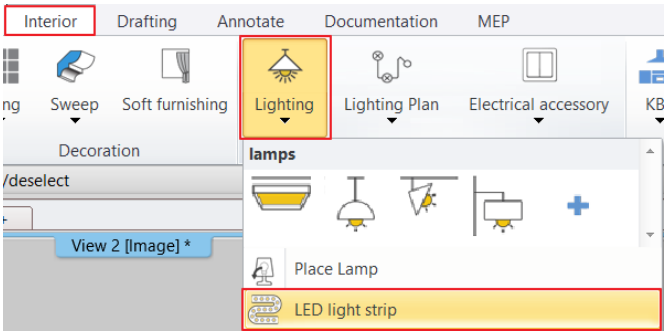
Turn off the Light effects.
We won't need the spot lamp anymore, thus you can delete it.

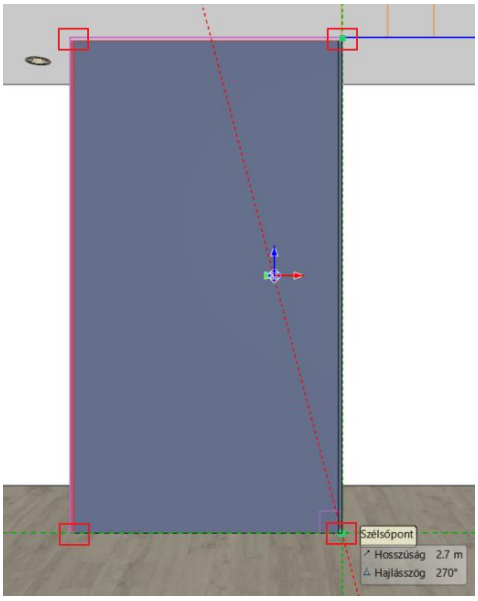
6.5. LED strips

Let's place LED strips to the blue wall and 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.

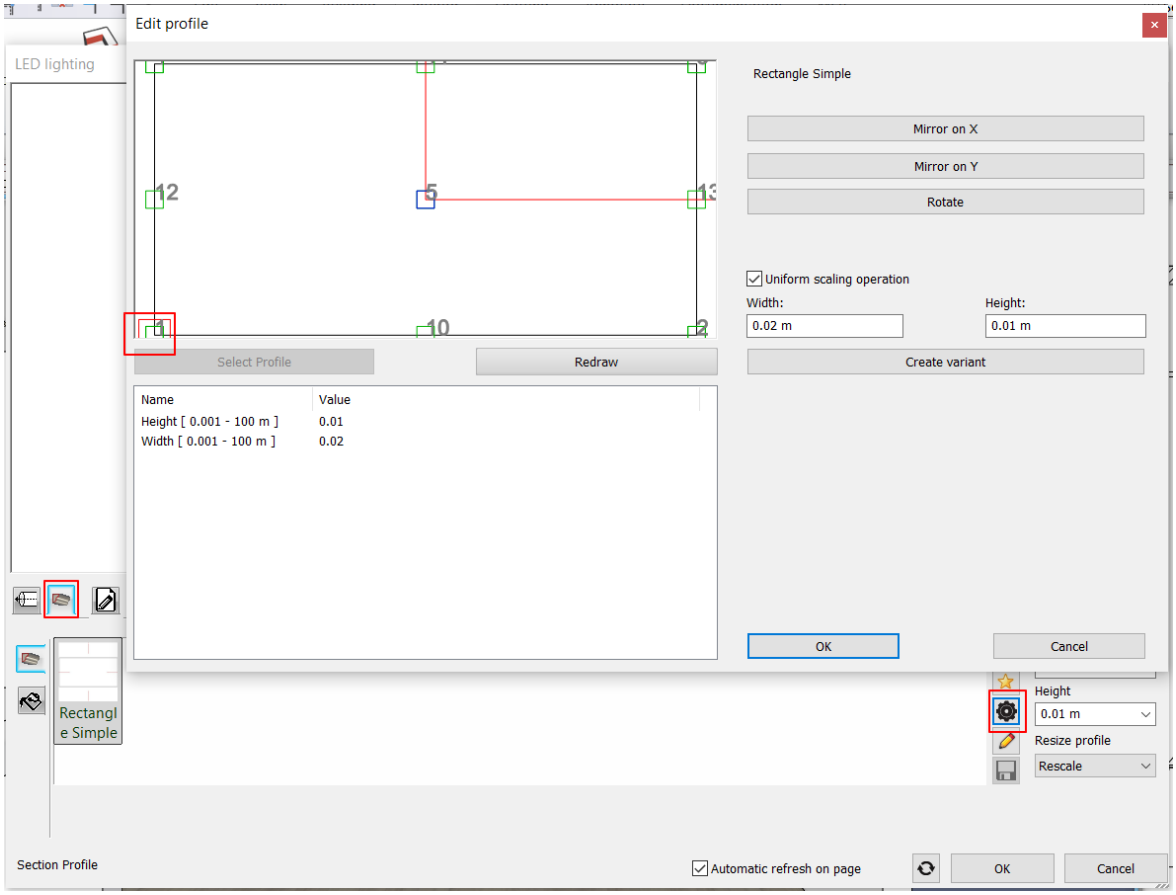
- Activate the 3D window and set the view to 1_View_1. Zoom in on the blue wall.
- Select **Ribbon Bar / Interior / Lighting / LED light strip**.
- Select the blue wall, then click along the nodes of the wall starting from the bottom left point. Enter.





Once you have placed the LED strip, the LED lighting dialogue box will appear.
The light properties can be set on the **Size and lighting parameters** tab.

- In the dialog box, set the Dimming level to 60%. In the **Section Profile** tab, under Profil properties, move the reference point to the bottom left corner point.



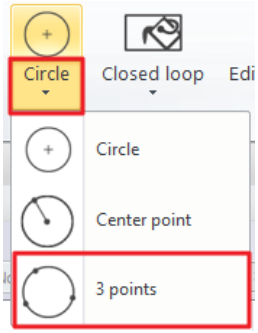
The LED strip around the wall is finished. Now we will place a circular LED strip around the counter.

Activate the 2D layout. In the 3D window select a perspective view from where the cylinder-shaped desk is visible.

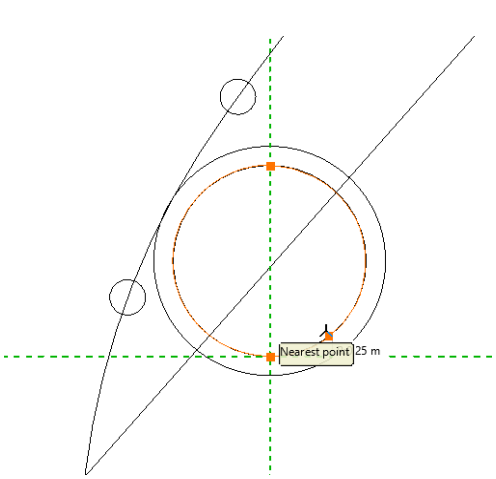
- In the 2D window zoom it in, then start the **LED light strip** command from **Ribbon bar / Interior / Lighting**.

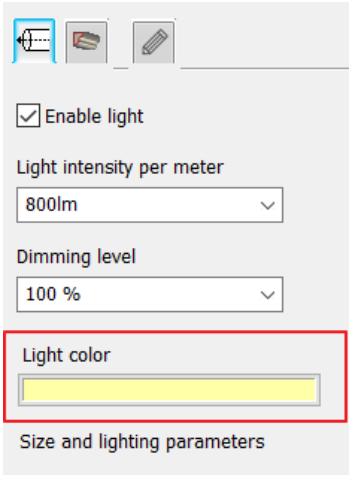
The LED stripe path will be given by a circle passing through three points.

- From the appearing menu select Circle - 3 points command.

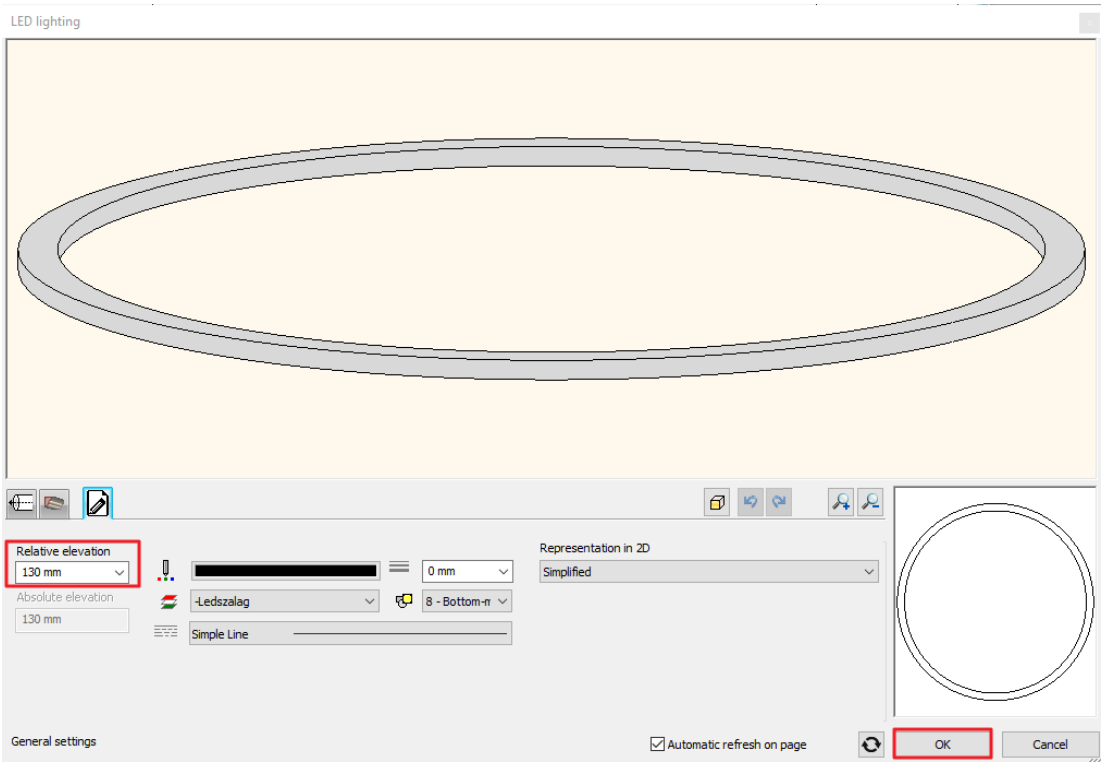


- Define three points on the inner circle of the desk.





- Set the Light color to light yellow.
- Then go to the **General settings** tab.
- Set the value of Relative elevation to 130 mm, so the LED strip is placed at the bottom of the counter. Click OK to close the window.



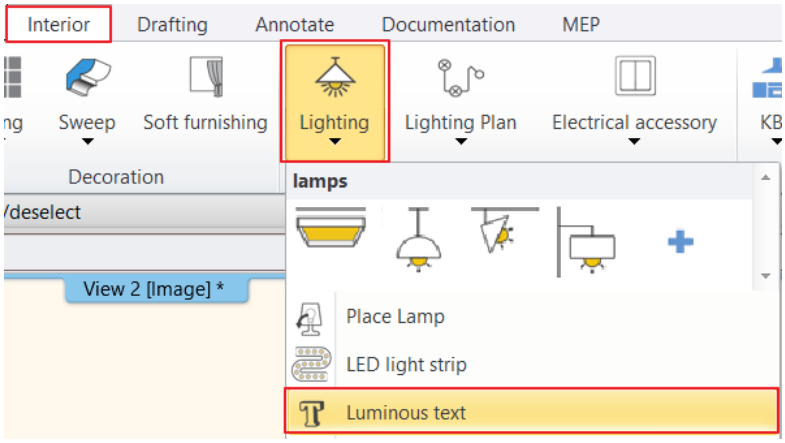
Close the integrated rendering window and start a stand-alone rendering. When the process is over, the result is clearly visible:

6.6. Luminous text

Let's place luminous text on the portal and on the 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.

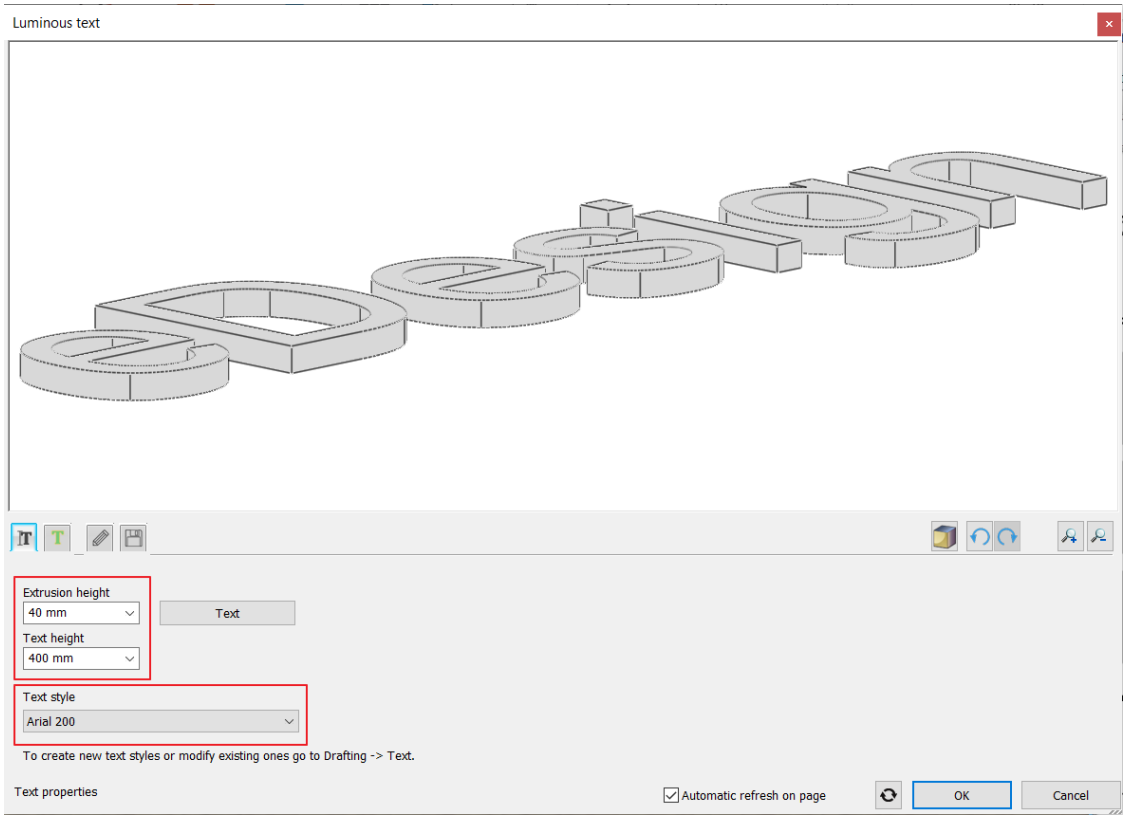


- In the appearing window type the text: "eDesign". Hit OK to close the dialogue.
- Select the surface, next select where you want to place the text, then with a third point determine its direction. By pressing Enter the direction will be 0°.

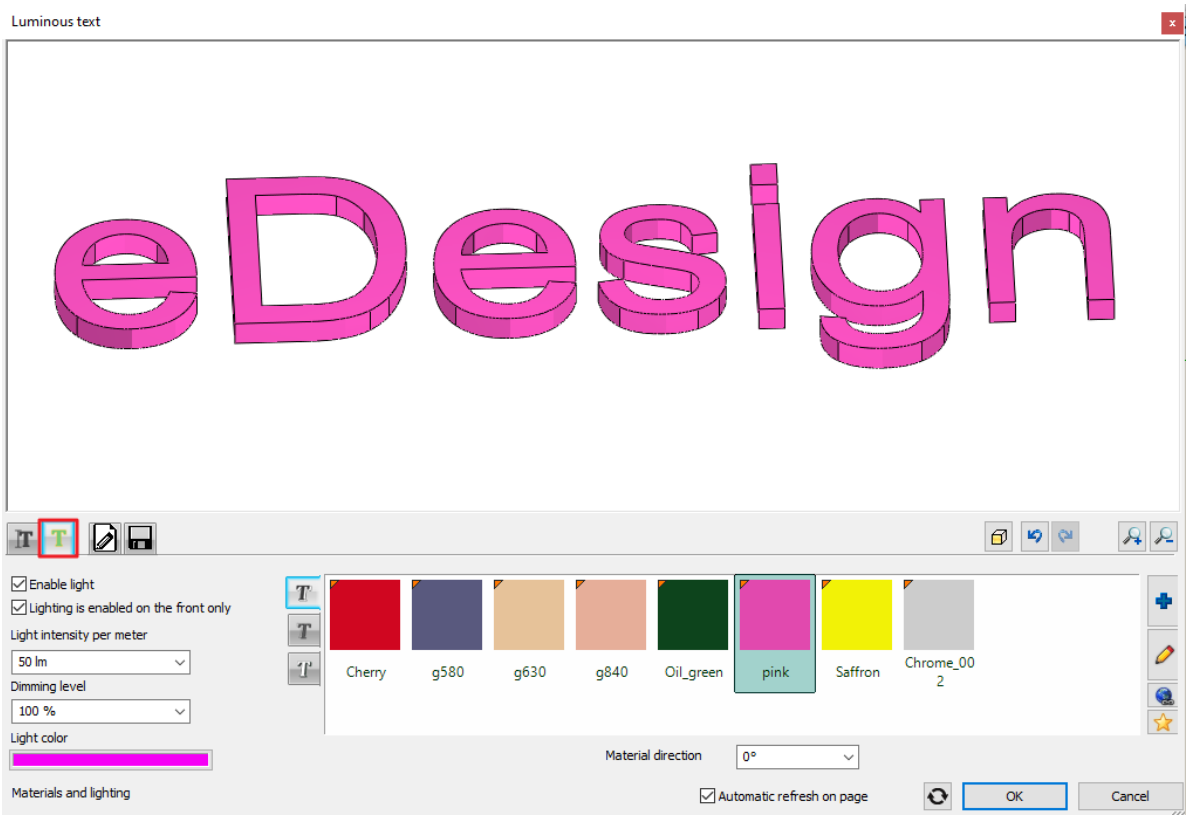
In the appearing properties dialogue set the following:

- Enter the value for the thickness of the text, i.e. the extrusion height: 40 mm.
- Set the height of the text to 400 mm.
- Under Text style you can select the font type. The user set text height overwrites the font size settings of the text style.

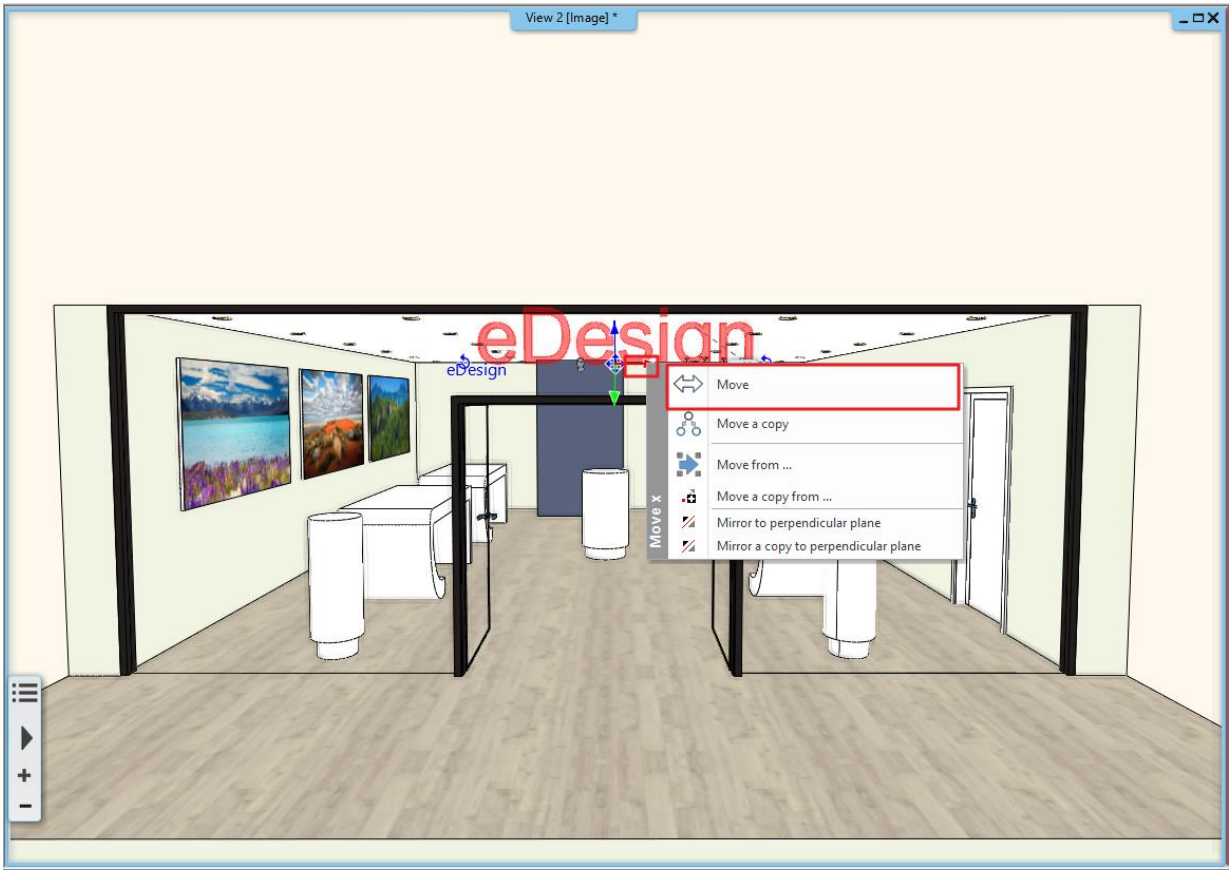
Here you can only choose predefined text styles. New style can be created under *Draft / Properties / Text*.



- Go to the Materials and lighting tab.
- Activate the **Enable light** and **Lighting is enabled on the front only** options.
- Modify the color of the light to “purple”. (By clicking on the stripe under Light color you can choose any from the color palette.)
- For the text color select Pink.
- Close the dialogue with the OK button.

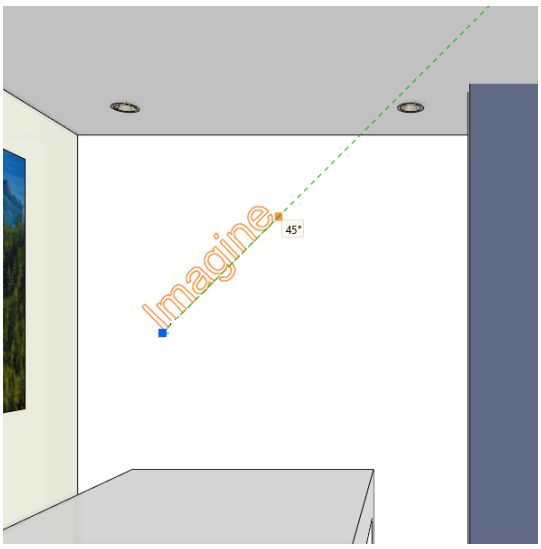


If the text is not at the right place, it can be moved afterwards with the markers or arrows or under Properties on the left side.


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.

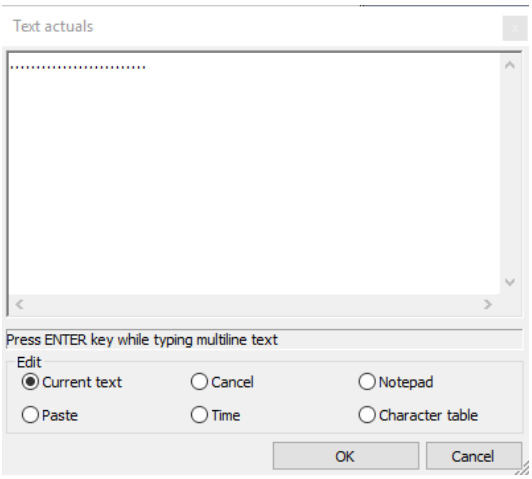
- Activate the 3D window and select a perspective view so the wall we want to work on is visible.
- Select **Ribbon bar / Interior / Lighting / Luminous text** command again.
- Type in a word and place it diagonally, not horizontally this time.

- Set the extrusion height to 20 mm.
- In the appearing property window set its height to 200 mm.
- Go to the Materials and lighting tab.
- Activate the **Enable light** and **Lighting is enabled on the front only** options and choose a color to the text.
- Hit OK to close the dialogue and place more texts in any direction.

The result should be similar to this image:

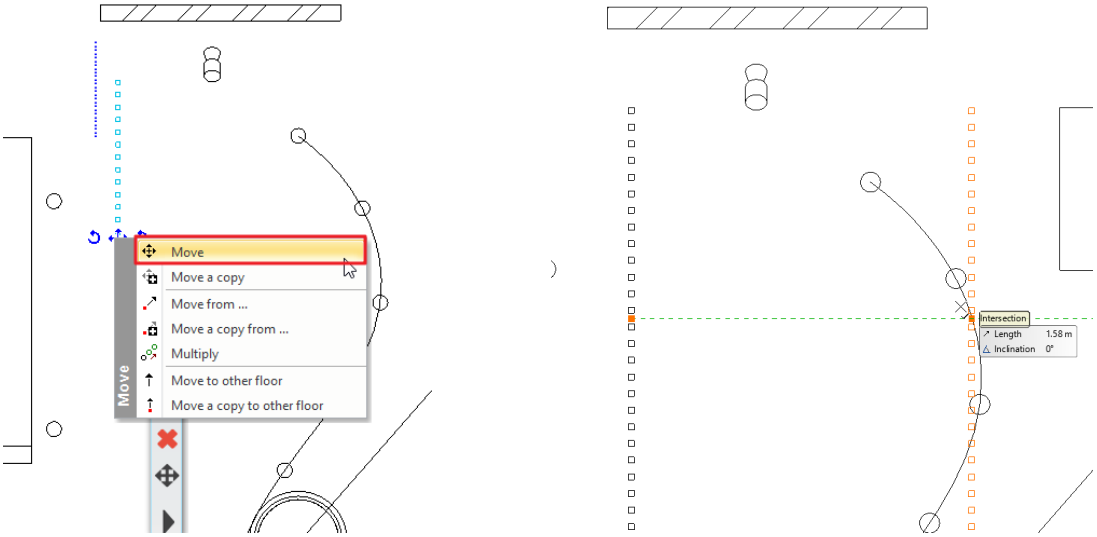
Luminous decorative strips on the floor

Let's place decorative strips on the floor with the Luminous text command.

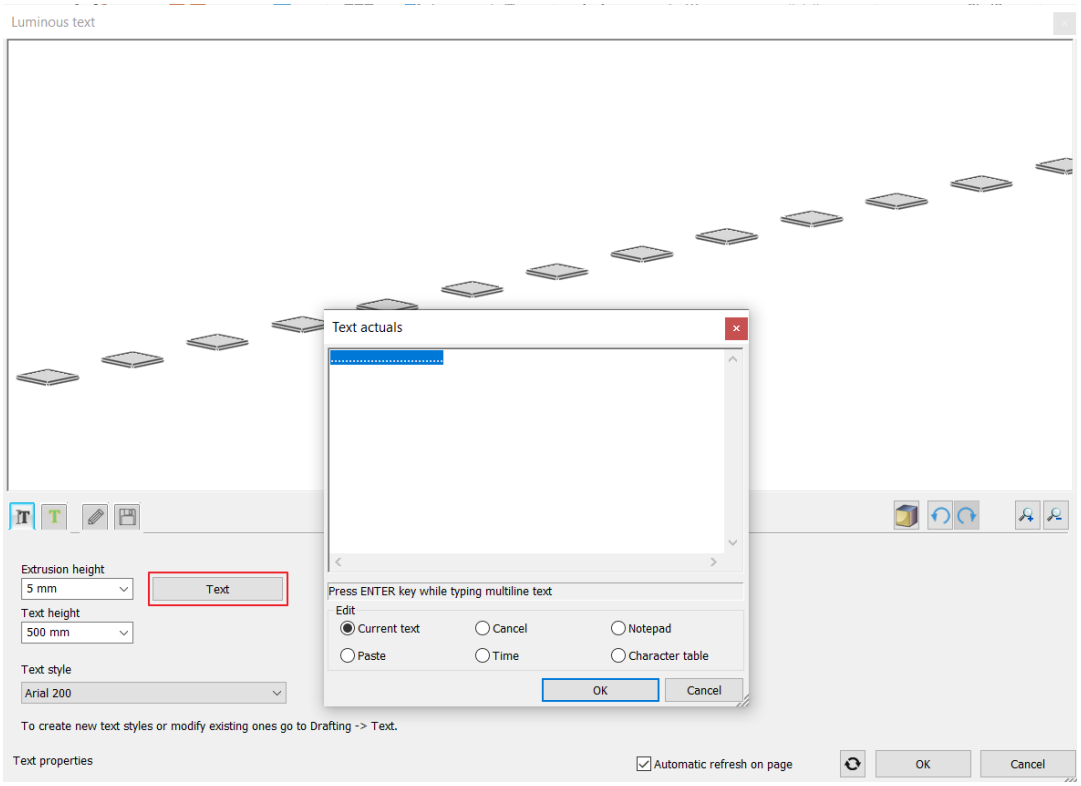


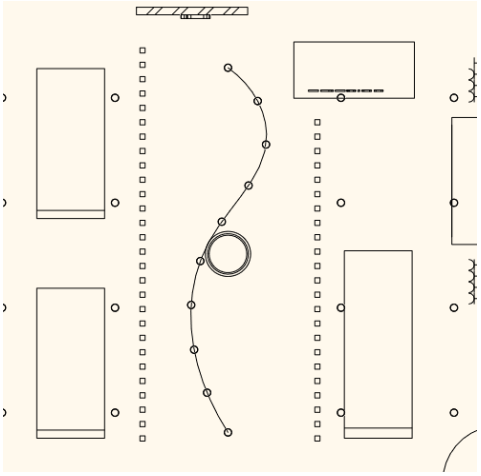
- After starting the command type in points and not text to the appearing window.
- Select the floor and define the starting point and direction of the luminous strips.

- 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 you can easily place any luminous text, decorative strips or shapes in your project.
Turn on the layers named “Decor” and “Led” and rebuild the 3D. The project is finished:

Workshop 7: Rendering

7. Workshop: Rendering

Taking a good quality photorealistic picture is not a matter of pressing a button.
You have to learn how to deal with light and shadow, know the physical properties of the materials, find the ideal point of view and build up a photorealistic image that looks realistic, step by step.

Now you will learn the technical requirements and rendering settings needed to make a good interior and architectural render.

During the workshop we will discuss the following topics:

- Project settings
- Render settings
- Render styles
- Render effects
- Render list

- Open your browser and watch the **Rendering workshop** video.

- Please download **Preliminary Course - Workshop Projects 2024** from our website and install it. It includes all projects for all preliminary workshops.

Start

- Start ARCHLine.XP.
- Click on **Open project.**
- Open the following project:
  .../Documents\ARCHlineXP DRAW\2024\Workshop_Preliminary\7_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.

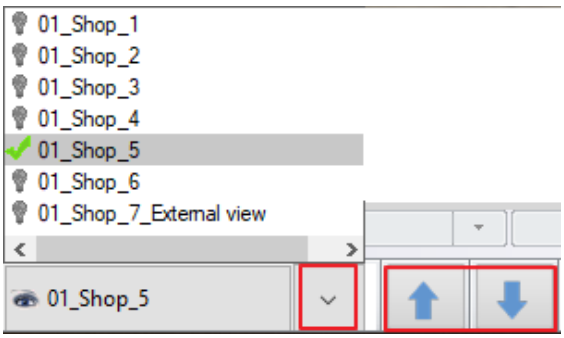
7.1. Default settings

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.

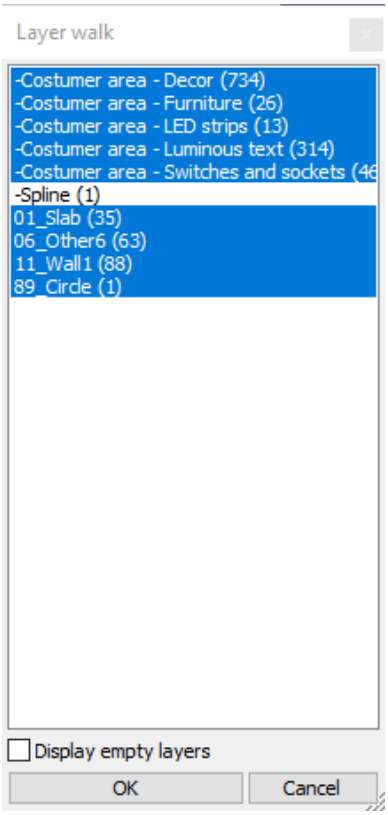


It is recommended to set up the views in a room clockwise so they are traceable and understandable to everyone. Create more views in a room and when naming them, first type in the name of the room then the number of the view (e.g.: Kitchen_01). If we have a multi-storey building, type in the number of 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".

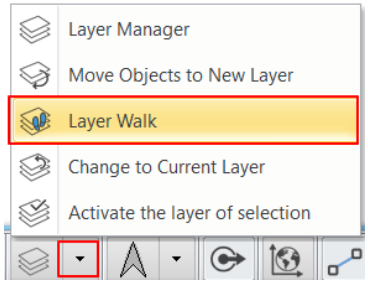
When setting the perspective, make sure that the camera and the subject are at the same height. The recommended height is 1100 mm -1400 mm. The angle of view of the camera should be 60-70 degrees. Deviate from this rule only if there is a reason to do so.

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.

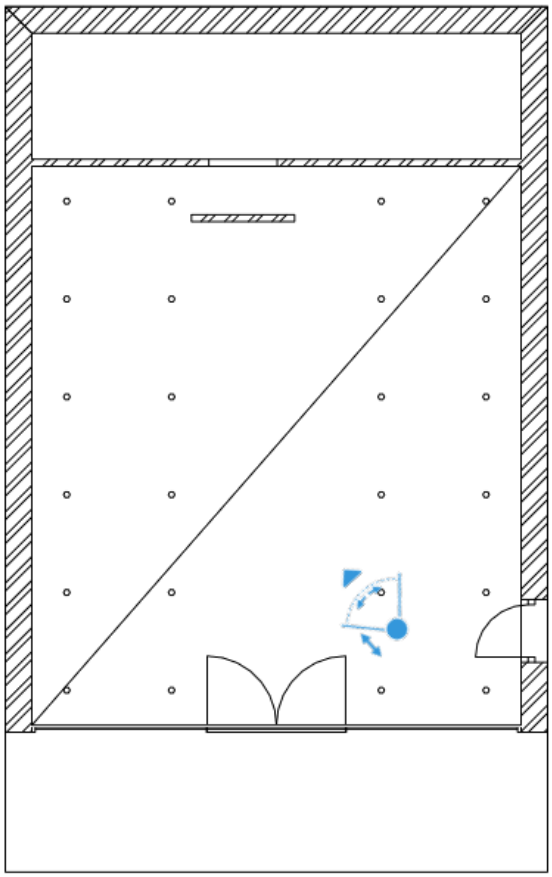
If you do not deal with a layer (do not create a new layer) during the work (e.g.: walls, slabs), the program automatically places these items on a pre-created layer. You can also turn them off and on.

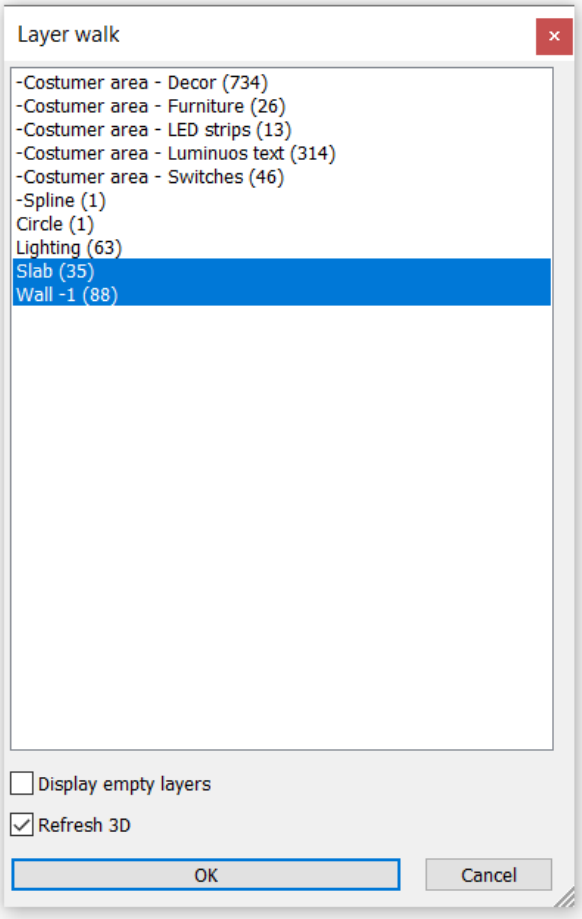
! The 3D and the 2D can have different layer lists so we always change the layer settings on the floor plan.

Simplification of the model

- 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 floor plan has been changed accordingly, and from this you can rebuild the model by clicking on the 3D hammer icon  on the bottom status bar.



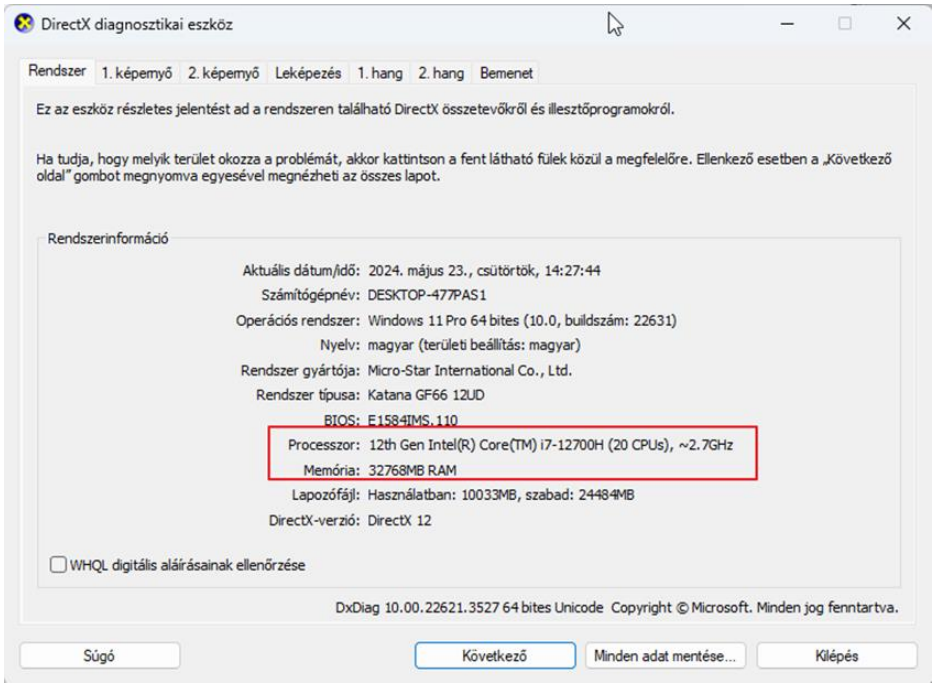


7.2. Render settings

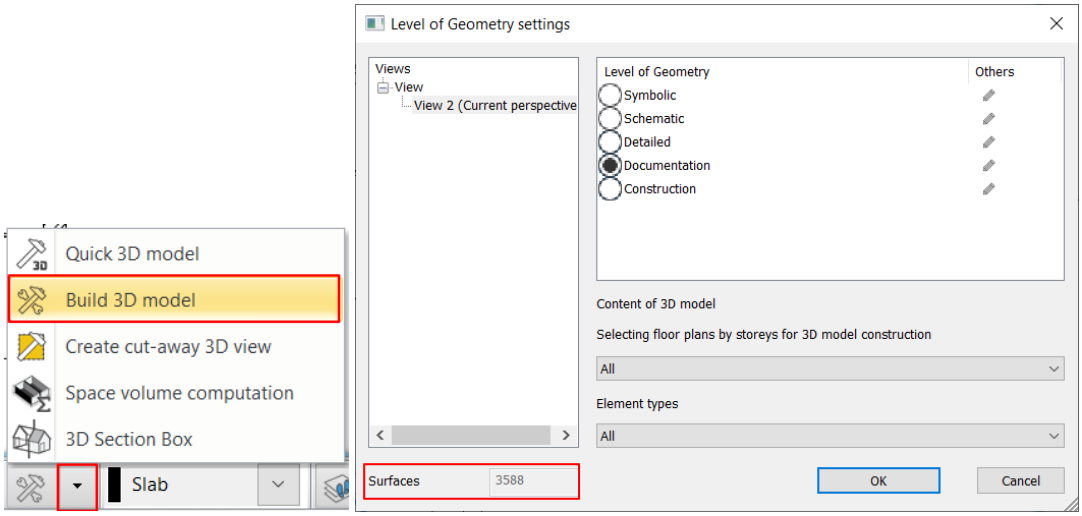
7.2.1. Render time

Which factors define the render time?

1. **The computer you are working on** (processor speed, memory size).
   There are several ways to get information about your computer's parameters in Windows.
   One option:
   Click the Windows start icon and type **DXDIAG**, then run the command. (Do not request online access.)
   In the System window that appears, you will find detailed information about the processor and memory:



2. Project size (number of surfaces).
You can check the surface area of the model by clicking on the Build 3D model command.



A medium-performance computer can work efficiently up to about 1 million surfaces. If the number of surfaces exceeds 2 million, and then 5 million, the program sends a warning. At this point, it makes sense to replace objects with a high number of surfaces for optimal performance.

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:

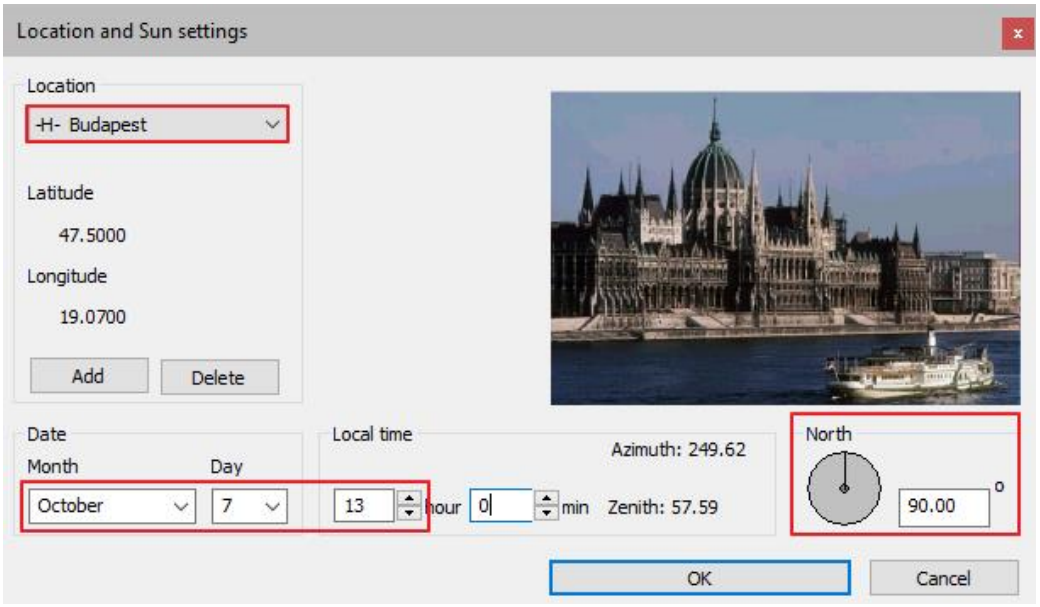
Phase 1:
With the help of layers, now we only display the architectural items together with the lighting, we start to render them. The render is quickly done. Then we can make the necessary changes.
Phase 2
Switch on the furniture layer too, now on the rendered image the furniture will be also displayed 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

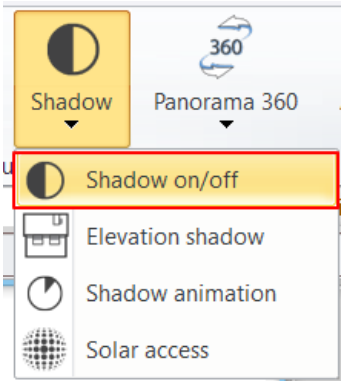
Set sunlight (shading) and the North direction for natural lighting. The geolocation is also important basic setting for the right light effects, so let's start with it.

- Activate the 3D window.
- Select **Ribbon bar / View / Sun / Sun position** command.
- In the appearing dialogue window choose "H-Budapest" for location and set date and time: 7. October 13 h.
- 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.

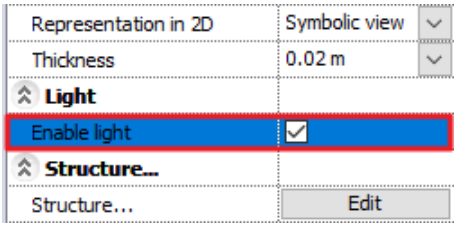
- Activate the 3D window.
- Go to **Ribbon bar / View / Shadow** and click on **Shadow on/off** command to display shadows.



- Turn off the shadow.

Check that the spots on the ceiling are switched on:

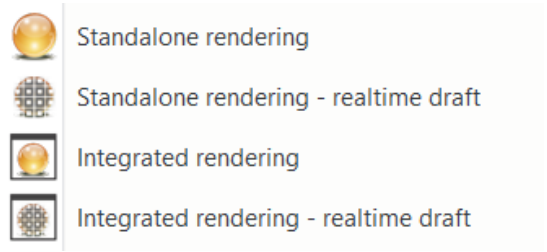
- Click on the false ceiling and check if the Enable light option is active on the appearing Properties panel on the left side.



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 Status bar 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.

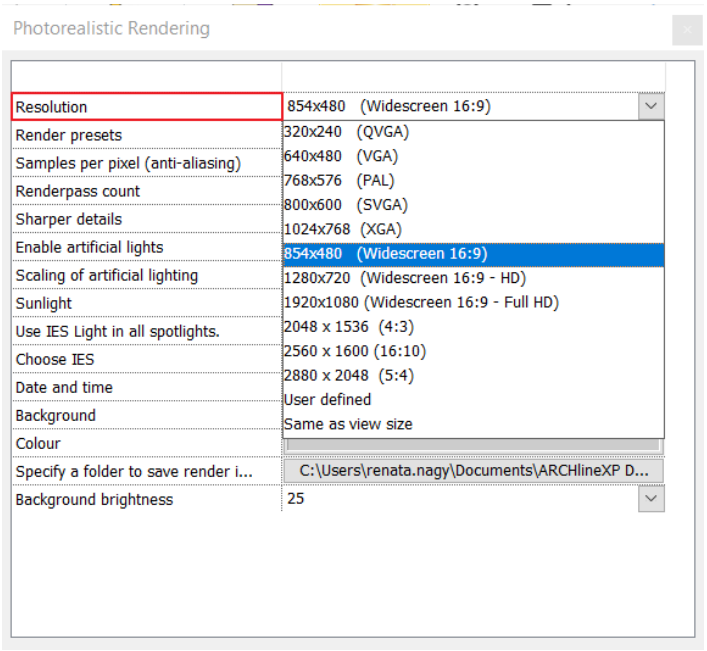
You can start these two modes as real-time draft, which are in a live connection with the content of the 3D window and can react immediately to several modifications, and display the draft of the result in a short time.

The *Integrated Rendering – Realtime draft* mode does not work on all computers that meet the system requirements. In this case, it is recommended that you use the *Standalone rendering – Realtime draft*. The result differs from the previous one in that the render window cannot be inserted between the ARCHLine.XP windows, but can be accessed by clicking on the Render icon in the taskbar, but we see the same fast rendering image that always matches the current scene.

Click on the **Standalone 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.

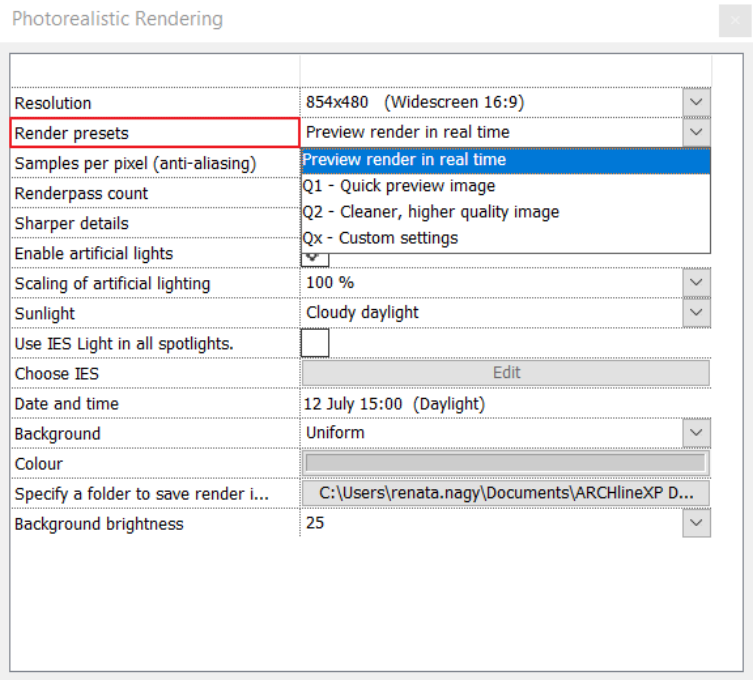


Among the predefined options there are low-resolution, so-called work sizes, and there are higher-resolutions that can be presented to the client.
It is recommended to use sizes smaller than Full HD in the inter-work condition, while it is advisable to give the customer Full HD or larger.

- Select 854x480 resolution.

The render presets

We can influence the quality of rendering with render presets. The sets generate images of increasingly higher quality and less noise. Each set is expected to take three times longer to render than the previous one.



Render presets:

- ❖ Preview render in real time
- ❖ Q1 – Quick preview image
- ❖ Q2 – Cleaner, higher quality image
- ❖ Qx – Custom settings

Preview render in real time

The *Preview render in real time* option produces a blown-up but almost instantly rendered image. It is intended to provide a quick working state display. Its speed makes it a good option for creating *working renders*. It can save you a lot of time when setting up your materials. Changes in the project are automatically tracked by the renderer and the image is regenerated.
For the final render to be submitted to the client, you will have to choose from the other options:

Q1 - Quick preview image:

It is recommended to use this setting at the beginning of the render process, with a low resolution (e.g. 800*600 pixels) it quickly produces a work-quality image.

Q2 - Cleaner, higher quality image:

The next stage of the render process, setting for scenes approaching the final image, at a medium resolution (e.g. 1280*720 pixels).

Qx - Custom settings:

The setting can be adjusted to the user's needs, values can be specified individually based on the number of light sources and the complexity of the model. With its basic setting (Pixel 10, Render pass 30), it is suitable for creating the final image at FullHD or higher resolution (1920*1080 pixels).

- Select the *Preview render in real time* option.

Samples per pixel:

The number of ray-tracing samples computed per pixel of the output image.
Adjusts anti-aliasing, which will smooth away the "jaggies" you see along the edges of objects and shadows.
Increasing Pixel Samples will result in a cleaner, higher quality image.

Suggestion:
Higher value (> 10): useful for final scenes with complex lighting, fine textures.
Lower value (< 5): useful for preview or quick scenes.
Samples per pixel and Render pass count are the most important settings for quality rendering.

You can only change the samples per pixel value when selecting Qx - Custom settings.

Render pass count:

The render engine uses a progressive rendering method, which further refines the generated image during each rendering pass. Increasing the render pass number will increase the time required to perform rendering but will also increase the image's quality per each single pass. The default value is 30.

You can only change the number of render pass count when you select Qx - Custom settings.

Sharper details:

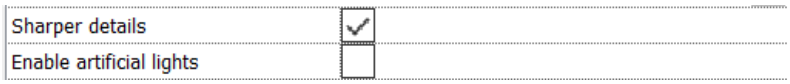
Reduce noise and get the sharper details in your render image. It removes image noise while recovering and enhancing the details. The effect of the switch is immediately visible in the picture.

- Turn on the *Sharper details* option.

Enable artificial lights

It is a master switch that allows you to turn off all the lights even if you have turned on any of them before.

- Turn off *Enable artificial lights* option, because the first renders are made in natural light.



Scaling of artificial lights:

You can control the intensity of artificial lighting.

- Choose 100% option.

Sunlight

The Sunlight setting is a fundamental determinant of the nature and intensity of the external light effects on the scene.

Clear daylight means undisturbed sunlight.
Choosing *Cloudy daylight* means that the sunlight is less dominant, while artificial lights have a stronger effect on the scene, just as they would on a cloudy day.
In the *Sunset* setting, the red and orange of the sky is more pronounced in the atmosphere, just as it would be in a photo taken at dawn or sunset.
The *Outdoor Night* scene is an outdoor night scene lit by dark artificial light.

If the room is poorly lit, the render image will have a bluish tint. This can be avoided by using the "Cloudy daylight" option in the render window instead of the "Clear daylight" option.

- Select *Cloudy daylight* option.

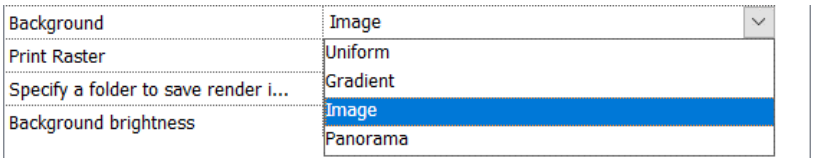
Night render:

To set up the night renderer, you need to follow these steps:

1. In the Sun position setting, select Night time.
2. It makes sense to choose a night background image if the scene also shows the external environment.
3. Background Brightness should be set to low.
4. For Sunlight, it is recommended to set the Outdoor night scene.

Background

You can choose a color 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). Panorama pictures can be downloaded from the internet, their extension is .hdr.



- To continue, now select Image and choose the background "City sky - Cloudy".

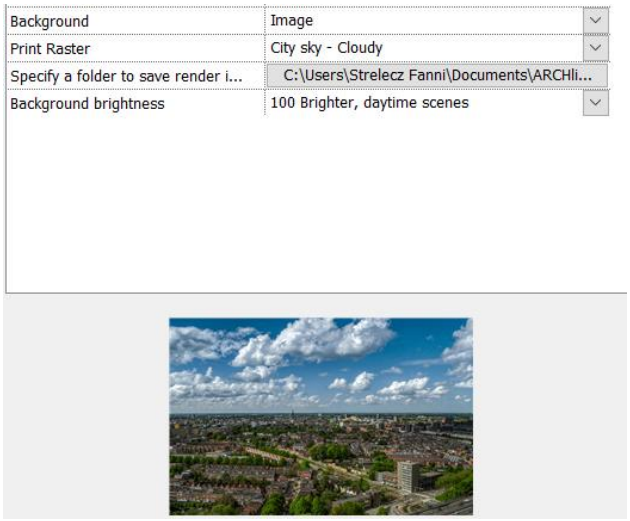
Specify a folder to save render images

This is basically a back-up save path, where the program creates a back-up of the last state of each image. It is recommended to set the folder, where the project is saved.

Background brightness

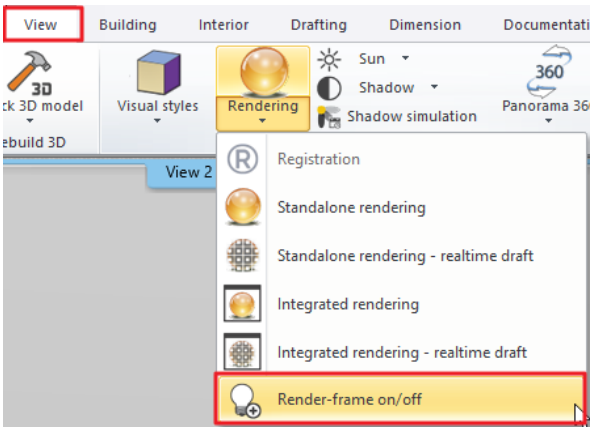
The brightness of the background should be adjusted according to the time of day.
The recommended value for a day scene is 100, for an evening or night scene the lower value of the scale is recommended.

- Set the background brightness to 100.



Accept the settings by clicking Close.

The render command can be also accessed from the **Ribbon bar**. Click on the **View tab / Rendering** icon. Now the rendering commands 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.

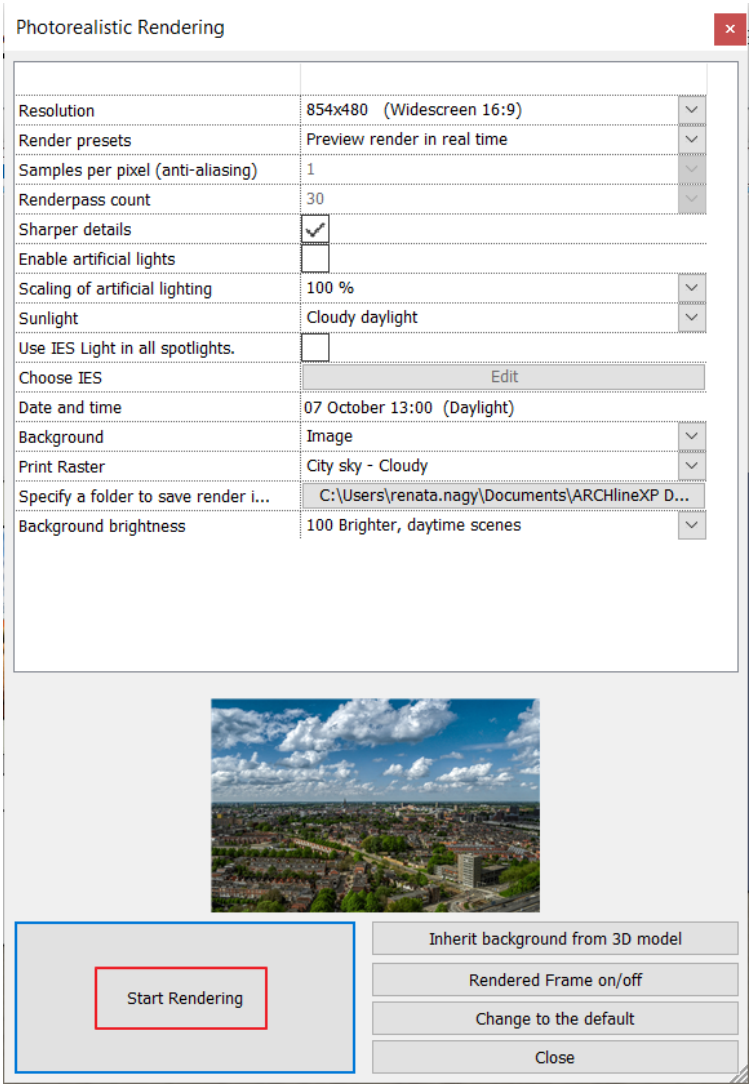
This function is useful to set the perspectives precisely, because you can define exactly which will be visible in the final render.

- Turn off the frame.

7.2.4. Create the first rendered image

We are in the first phase of rendering. According to the layers setting only the architectural and lighting layers are switched on.
After reviewing the different render settings, start the *Standalone rendering – Realtime draft* command**.**
You will see the same settings you have just set.

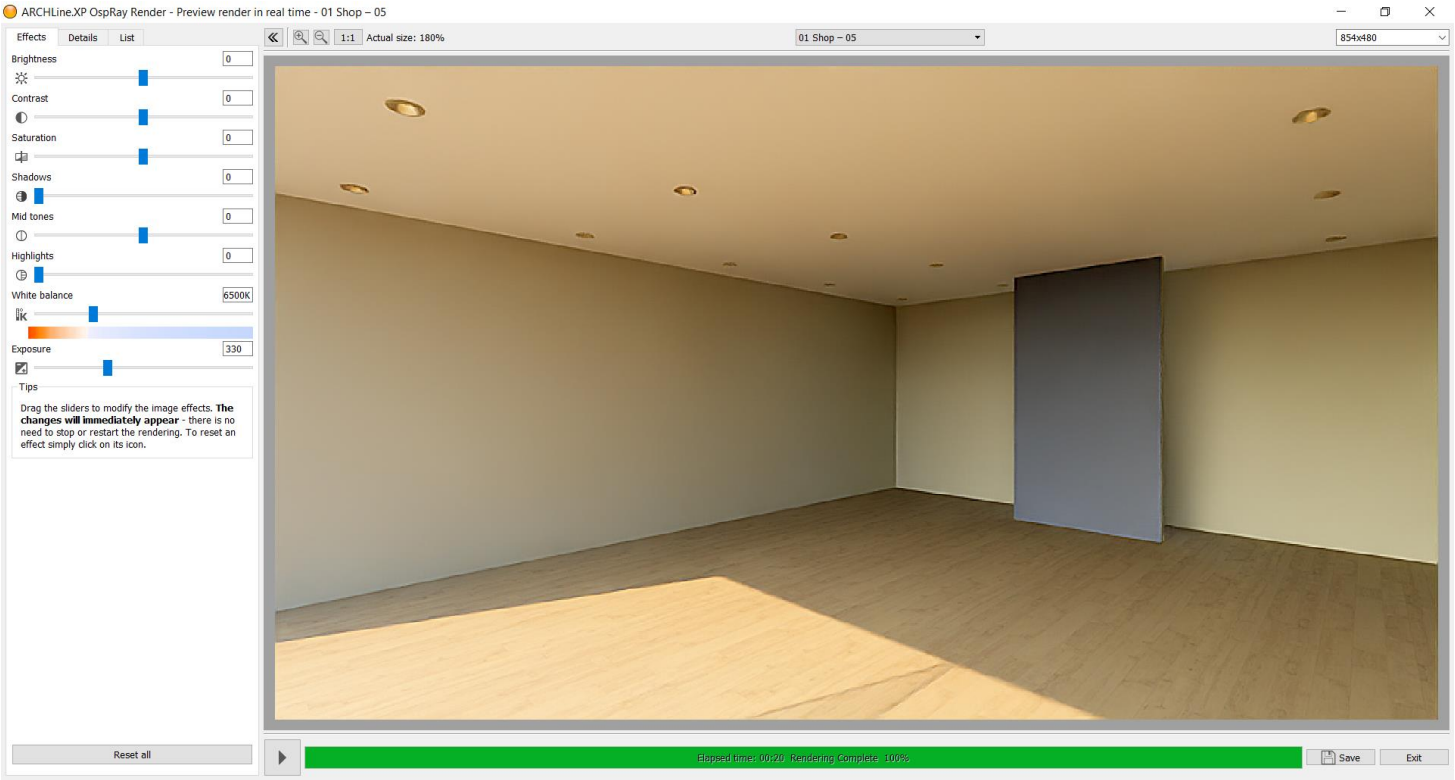
- Click the **Start Rendering** button.



Denoiser

At the end of rendering or when it is stopped, the module denoises the entire scene. Image noise means the graininess or blurriness of the image. After denoising, you will get a clearer image, which will allow you to further adjust the material settings.

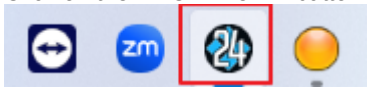
You can stop the rendering process at any time. If the rendering process has not yet reached 50%, you can turn the noise filter off. If you stop the process, a dialog box will appear asking you if you want to apply the denoiser. If you select NO, the rendering process will stop immediately.



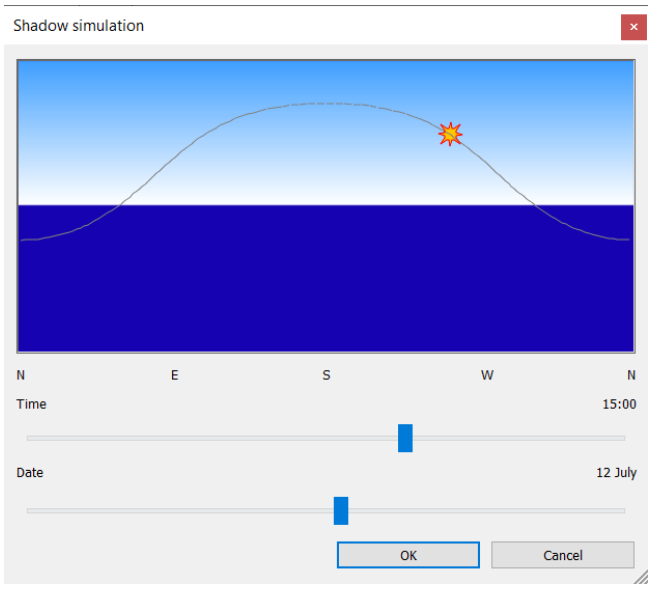
- Click Save to save the render image: **Render_01**.
  Do not close the Render window.

  You can see that the sunlight penetrates too deep into the interior, so it is quite contrasty. Since we started a real-time render, we can easily modify this.

- Click on the ARCHLine.XP button on the taskbar.

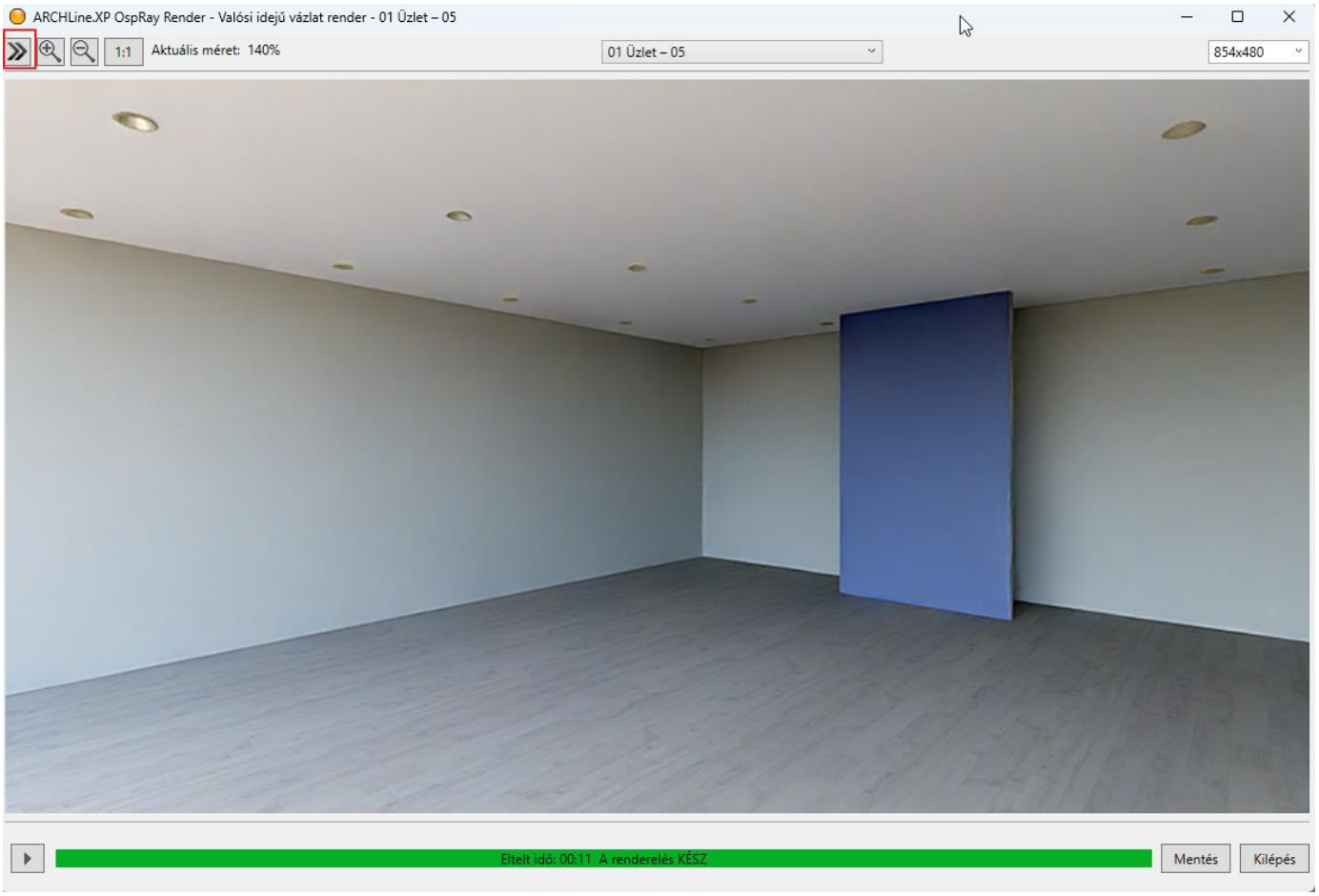


- Activate the 3D window.
- Click on the **Ribbon bar / View / Sun / Sun and Shadow simulation** button and with the slides, modify the date and time, so that it does not infiltrate into the room so deeply. Set the time to 12. July, 3:00 pm.
- Hit OK to accept the changes.



- Click the *Render* button on the taskbar.

- The render window will appear, which will immediately follow the changes, as the interactive Realtime draft has been launched.
  With the new sun setting, the lighting conditions have changed significantly. The strong yellowish effect is gone.



- Click Save to save the render image: **Render_02**

  Compare with Render_01:

Render_01: sun setting: 10.07. 13:00

Render_02: sun setting: 07.12. 15:00

Do not turn off the Render application.

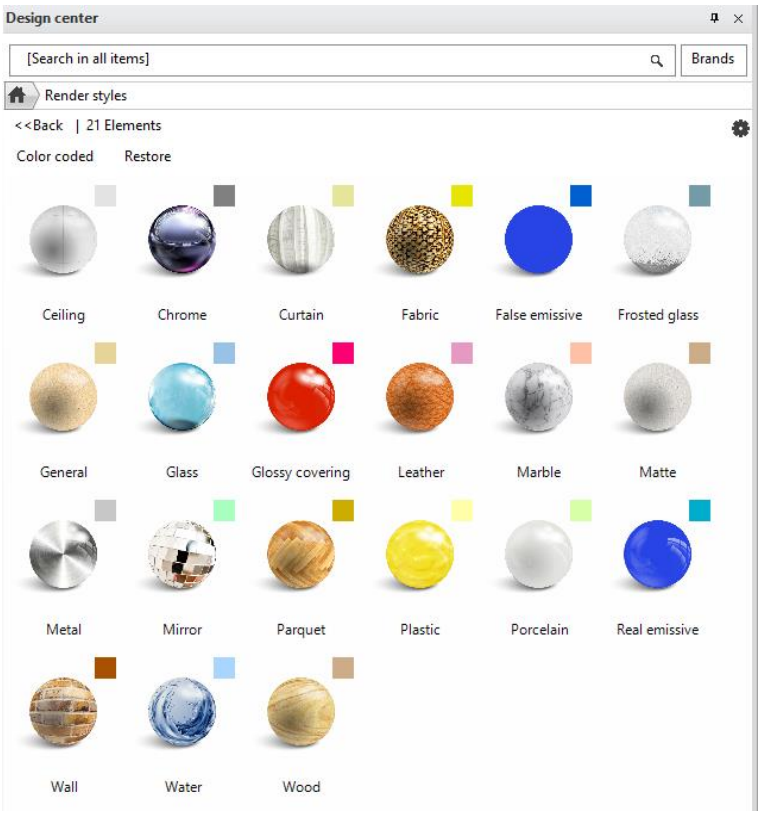
- Click the ARCHLine.XP button on the taskbar.

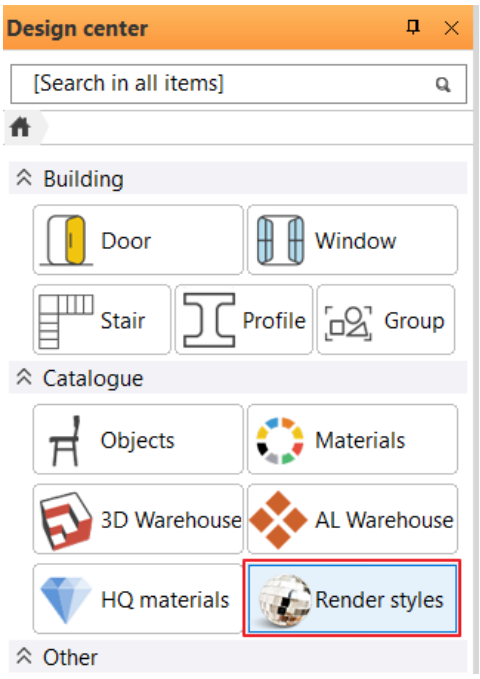
Try several sun settings, compare the results and choose which setting is the best. Make sure the setting creates a contrast between light and shadow, but not too strong. Don't brighten scene too much by having the light come from too low behind the camera or choosing a low angle of sunlight that brighten the whole interior. Try to find the right light/shadow balance!

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

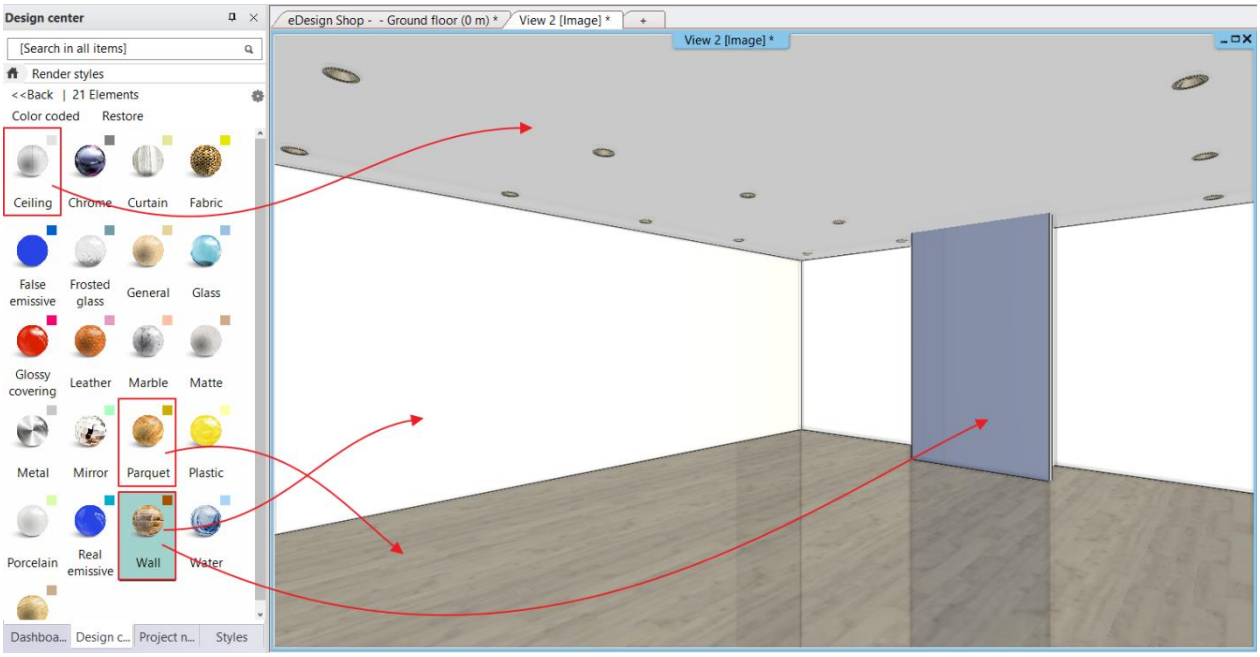
In our example, for better understanding, we set *Matt* property to materials.
In the render image made earlier, only matt materials appear on the floor, walls and ceiling.

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, "Wall" to the wall, the “Ceiling” render style to the ceiling.

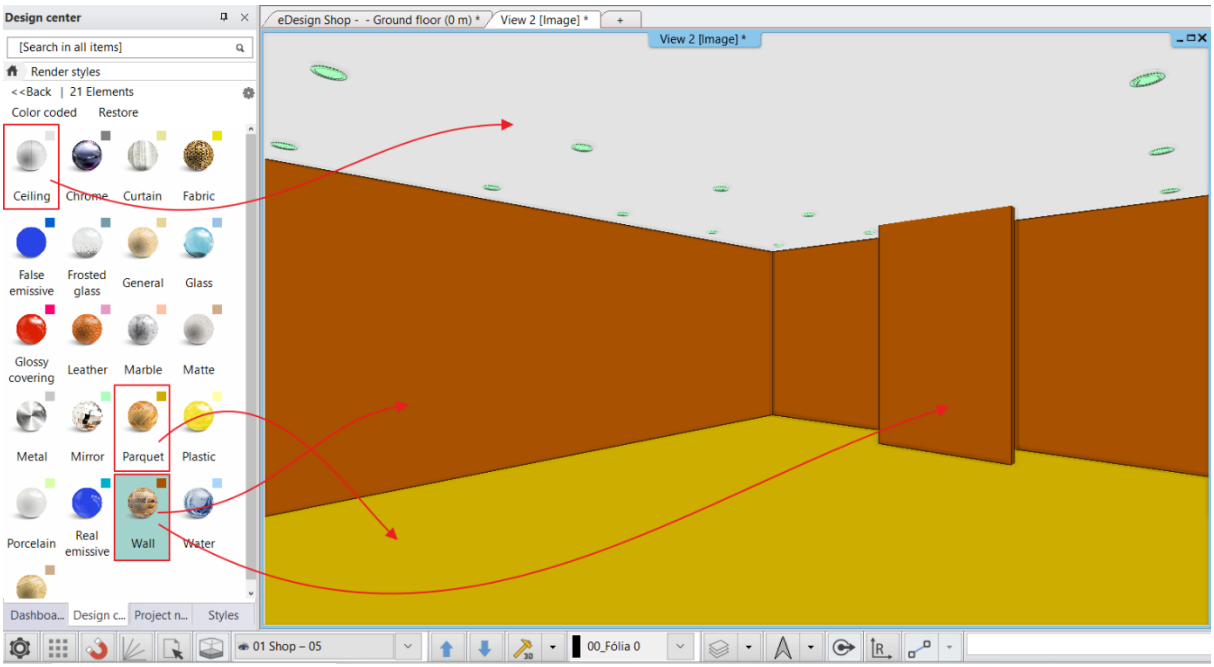


On 3D model using “Color coded” representation mode we can quickly check if we didn't leave any surface out.

Color coded representation

The color coded view allows you to display the render styles in a classified way. The assigned color codes are shown on the top right corner of the render style icons.
Clicking on “**Color coded”** word in Design Center the model appears in the colors assigned to the different render styles. This way we can easily check the currently assigned render styles through colors.

- Click on the word “**Color coded”**. On 3D view surfaces appear in clear colors assigned to render styles.



- Click on “**Restore**” to view the original representation mode.

2nd Step Render Test

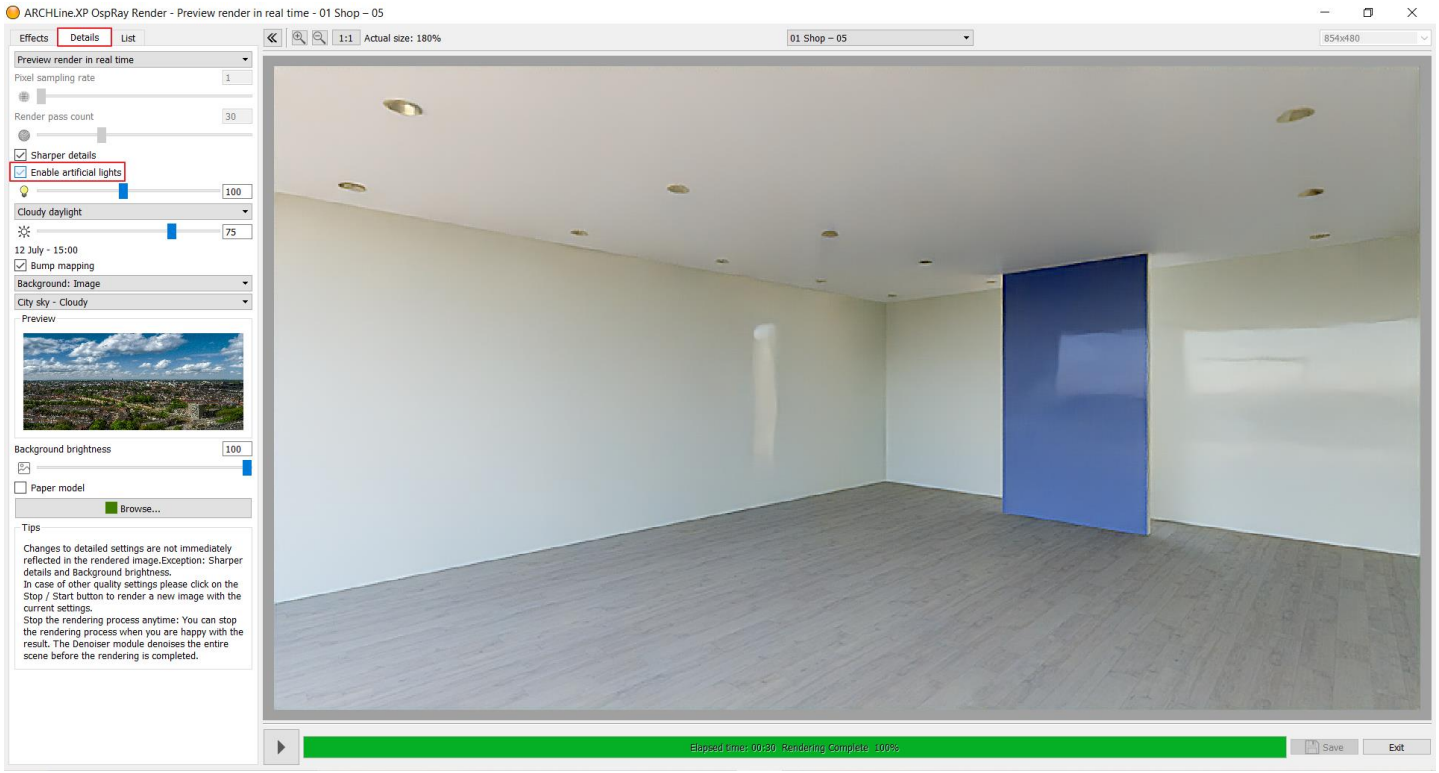
Click the *Rendering* button on the taskbar.
In the interactive draft render, you can see the result of Render_03. Compare it with Render_02:
The ceiling is " whiter ", the wall is brightened, reflecting the glass wall opposite, the floor is slightly reflective.

Render_02: matte render style

Render_03: using render styles

Rendering with lights:

In the Render window, on the Details tab, turn on the *Enable artificial lights* option. The spotlights are displayed on the wall.
The change is quite slight, as daylight is filtering in through the window.



- Click Save to save the render image: Render_04

  This will be our 4th render image. Compare it with render 3:

Render_03: without lights

Render_04: with spotlights

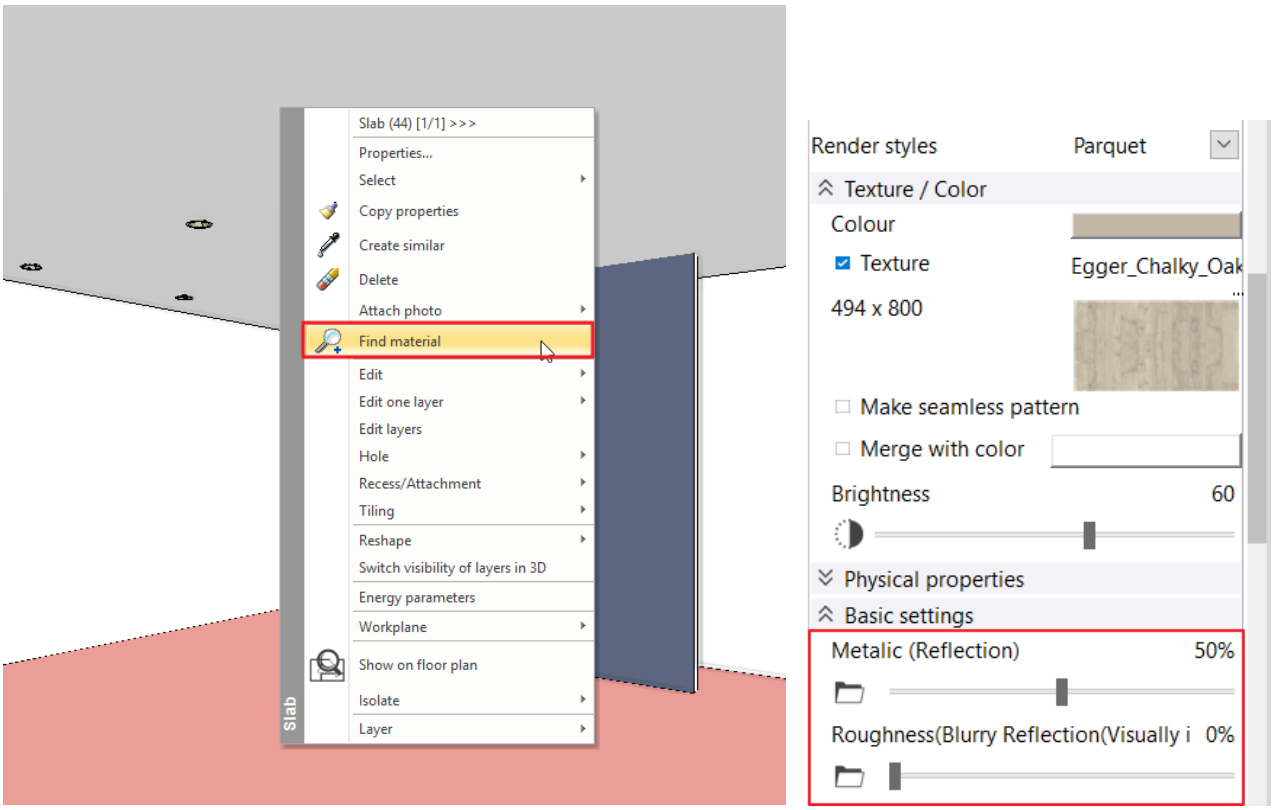
- Do not turn off the Render application.
- Click the ARCHLine.XP button on the taskbar.

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.



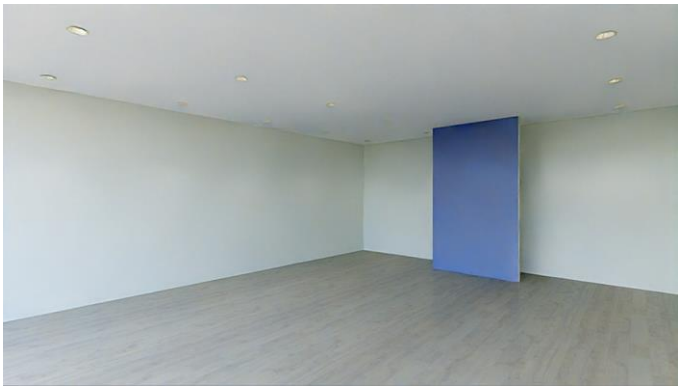
The Egger floor material appears on the left side with its properties, which can be modified here.

- Increase the **Reflection** from 25% to around 50% and check the changes in the render window.
- The next step is to decrease the **Blurriness of reflection** to 0% from 5%. The reflection on the floor is sharper now.

- You can also change the reflection of the walls: take it down to 1%:
  Save render image: Render_05

This will be our 5th render image. Compare it with render 4:

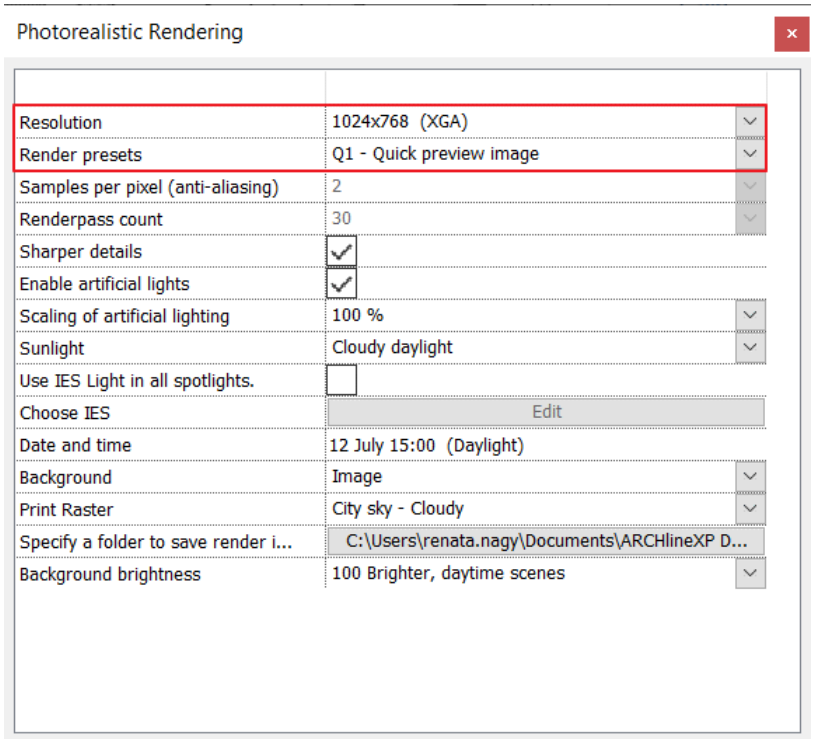
Render_04: spotlights



Render_05: with spots and fine tuning of material

At this point, it is worth turning off the real time draft and choosing a better quality render set.

- Select Q1 - Quick preview image with 1024x768 resolution.



Here the rendering time will be longer. When the image is ready, save it: Render_06
A better quality image will make it easier to decide whether the material settings were correct or whether you need to refine it any further.

Render_06: Q1 – 1024x768

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/Albedo

50% 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.

Bump mapping

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**).

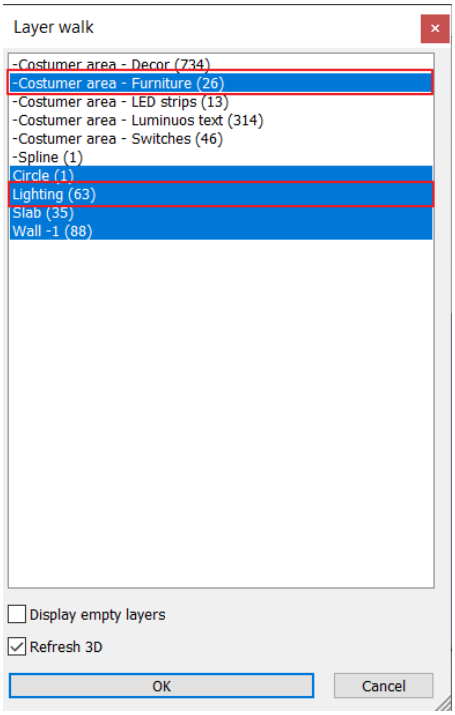
General type

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 floor plan and with the help of “Layer walk” command turn on the layer “Customer area – Furniture” and “Lighting”.
- The Refresh 3D option should be enabled.

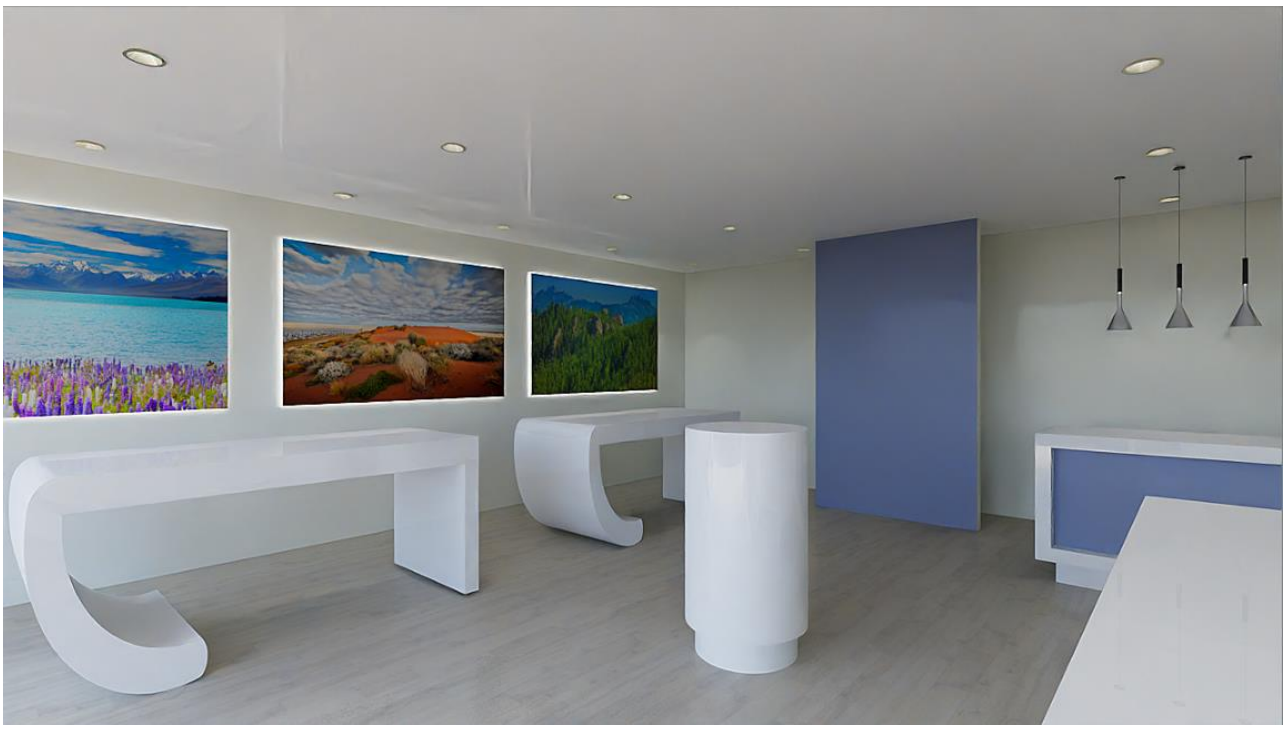


Try different render styles on furniture:

- Restart the **Standalone rendering – Realtime draft** render command.
- 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 with Q1 – 1024x768 resolution:

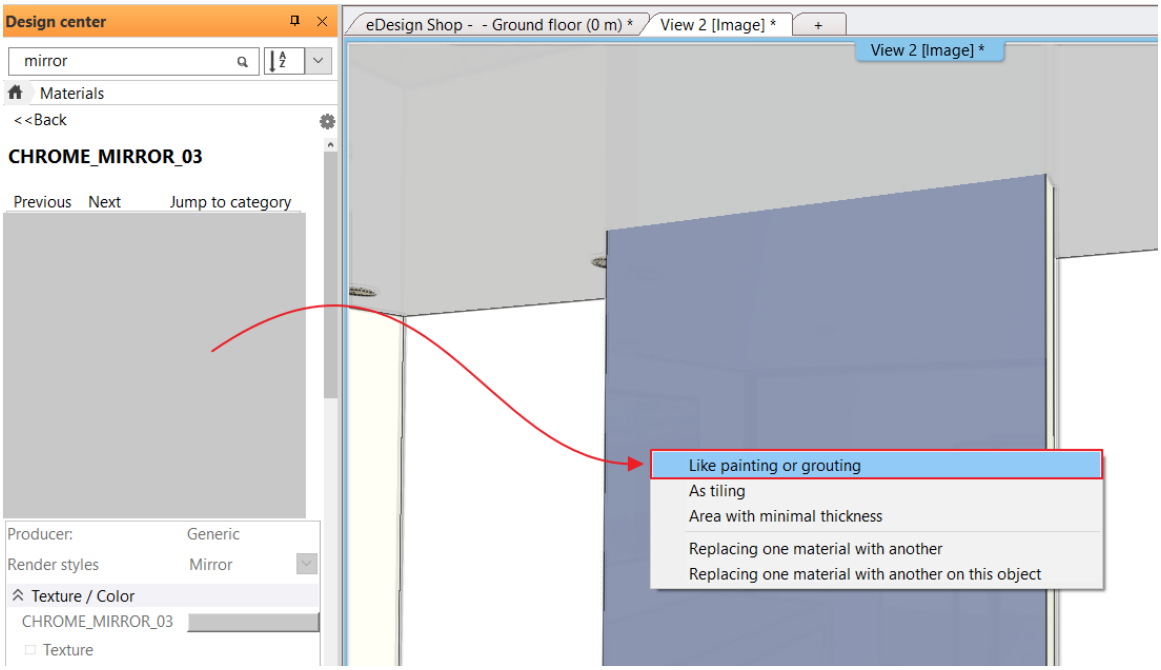


Render_07: Q1, 1280x720

7.3.3. Replace material

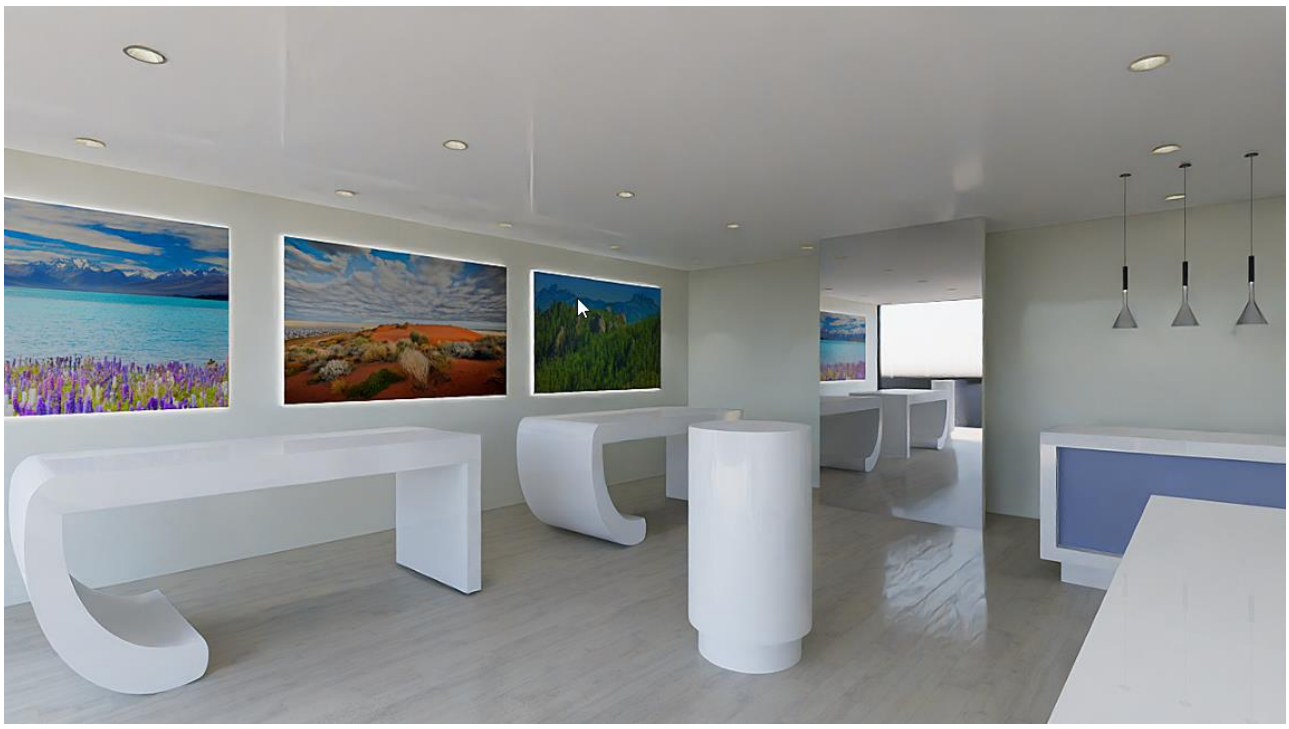
Let’s see another example of modifying a material. We will replace an existing material to another one.

- Open the Main page of the Design Center.
- Type in to the Search field above: mirror. (Be sure that the search is started from the start page of the Design Center).
- Select the material " CHROME_MIRROR_03" from the options under "Materials".
- Using the “drag and drop” method and place it on the dark grey wall. From the appearing menu select the “Like painting or grouting” option.



- Click on the wall surface.
  Check the render window for changes.

This is how you can easily change one, already placed material to another one on an object or element.



Render_08: Q1, 1280x720

- Undo this last step and activate the 2D layout.

7.3.4. Display decoration

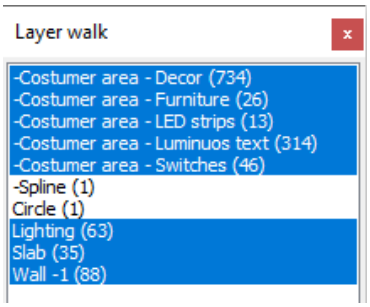
Until now, only the architectural items and furniture have been shown on the rendered image. If we are satisfied with the settings so far, we can enter Phase 3, we will display additional elements, e.g. the decorative items.

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 – Decor" layer as well.
- Rebuild the 3D model.
- Drop the "Real emissive" render style on screens.
- Try the "Glossy covering", "Plastic" or "Metal" material type for the body of the computers and screens on display.

Render_09: Q1, 1280x720

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 floor plan.
- Click on the Layer walk icon and turn all the layers except the –“Spline” and the “Circle” layers. With the OK button close the window.
- Activate the render window, now you still have an option to make further changes before starting the final render.

Standalone rendering - Q2 cleaner, higher quality image

Let's move on to the Q2 render set. Here we use the Standalone rendering.

- Turn off the integrated renderer.
- Activate the 3D window.
- Select *Render - Standalone render – Q2 – Cleaner, higher quality image* render preset.

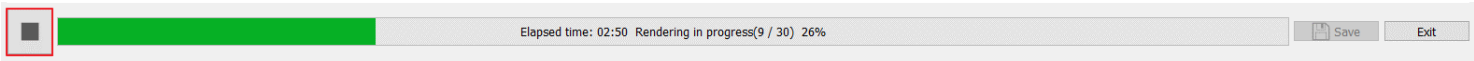
7.4. Render effects

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 ceiling (white colors) is 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.

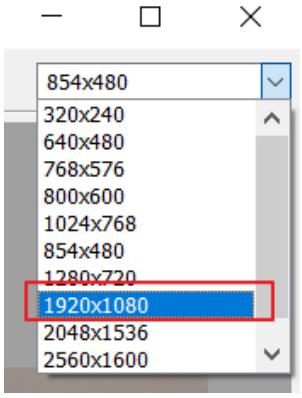
Resolution

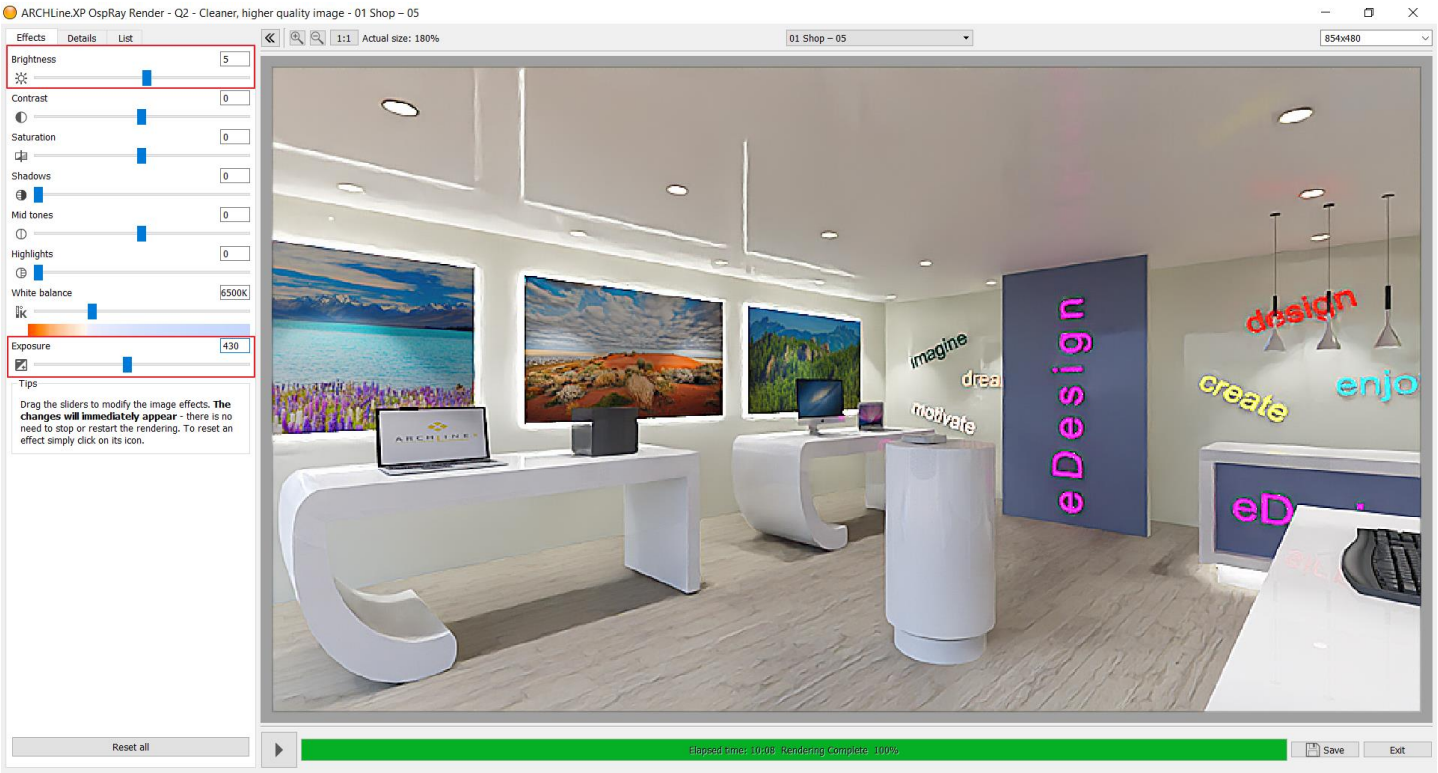
The final rendering will be made in Full HD resolution.

If the previous render has not been completed yet, click the "stop" button to stop it.

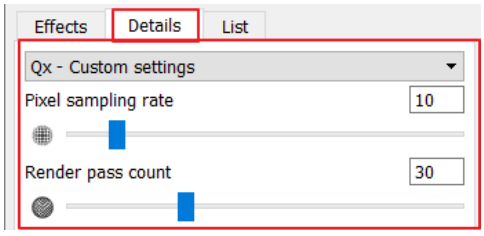


- You can change the resolution by clicking the arrow in the upper right corner. Select 1920x1080.



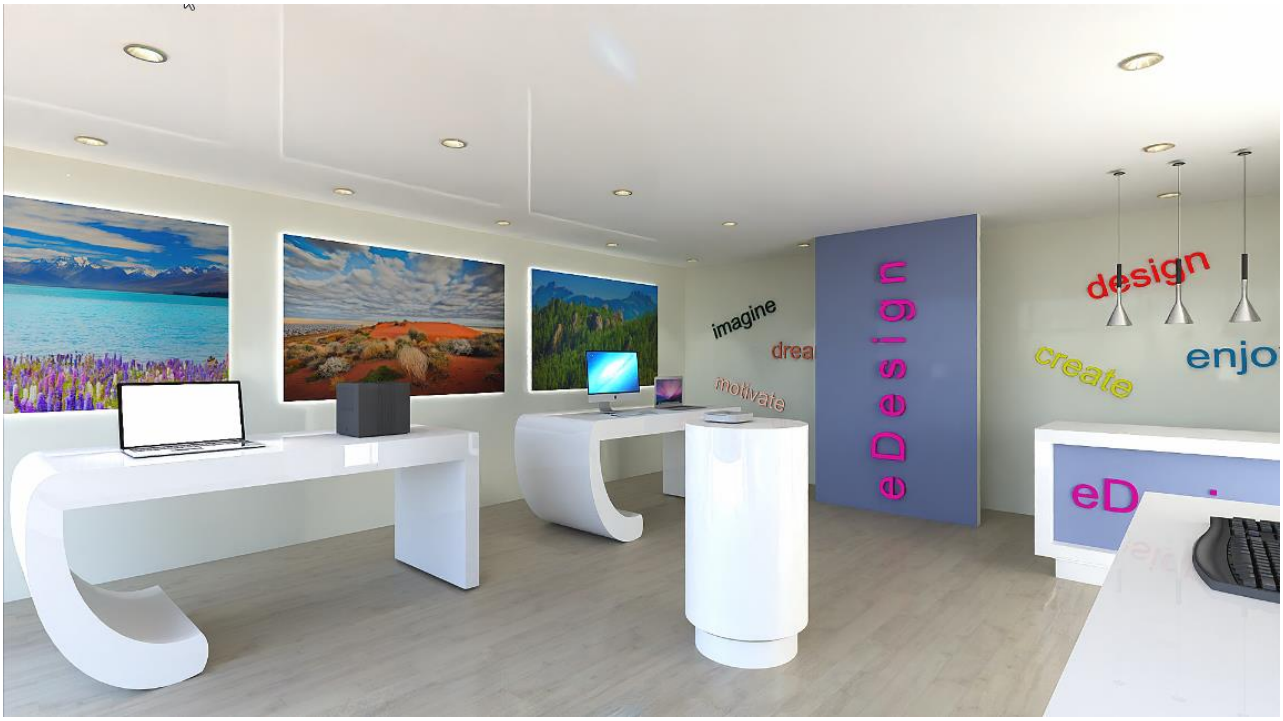


On the *Details* tab, select *Qx - Custom settings*. Leave the *Pixel sampling rate* setting at 10 and the *Render pass count* at 30.



- Restart the rendering.

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.

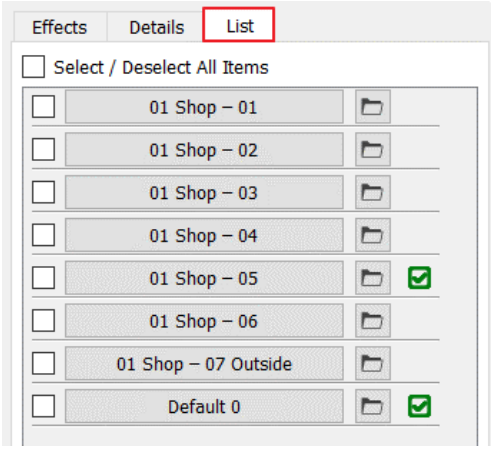


Final render

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.

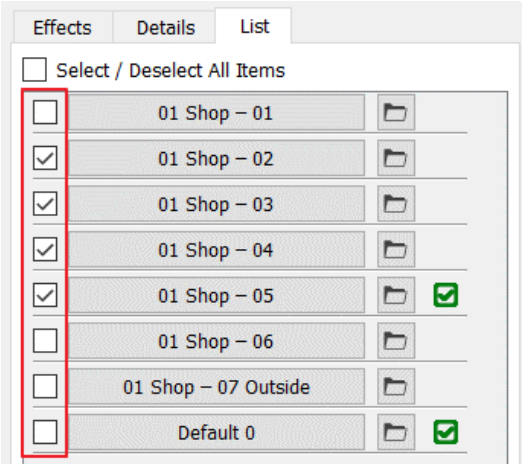
- Click on the **List** tab, this is a render list.
- The previously saved perspective views appear here.



- 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.

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. Rendering guide

As we have seen, creating a good photo-realistic image requires a longer process. You can create attractive, realistic images with a series of steps below.

1. Use layers. Architectural elements, large furniture, lights, additional objects should be on separate layers.
2. Set up 2-3 perspective views from which the scene can be well presented.
   Recommended values: Camera and subject at the same height (between 1100 - 1400 mm), angle of view between 60-75 degrees.
3. Turn off all layers until we get a clean architectural model (Phase 1). Only walls, floors, ceilings, doors, and windows should remain visible. These will be the large surfaces in the scene, so their display settings should be adjusted first.
4. Set a clear day position. Turn on the shadows to display clear shadows, but not too strong. Make corrections. Start a quick preview rendering and if you don't like the scene, find a new sun position.
5. Use the drag and drop method to assign rendering styles to them as a starting point.
6. Create a Realtime draft render. Based on the result, fine-tune the materials of the architectural elements.
7. Start the Standalone rendering. Use a low resolution (maximum 800x600), in Q1 mode, for quick preview.
8. Focus on adjusting the white walls. Turn off reflections, and brightness between 0.5 and 0.8.
9. Parquet usually requires a lot of experimentation. Have reflection, but not excessive, reflection blur is minimal.
10. Turn on the layers containing large elements (e.g., furniture, Phase 2) and perform the same assignment.
11. Zoom in on the characteristic elements (e.g., sofa, table, kitchen counter, etc.) and fine-tune the texture material properties if the result is not satisfactory. The brightness and reflections, which should first clarify. Always check the new settings with a new rendering.
12. Focus on metals and fabrics. Approach the selected object again and repeat the 12th step accordingly. Fabrics benefit from the application of bump mapping (unevenness), while metals generally have high reflection (0.4) and refraction (3-4).
13. Turn on the lights to provide sufficient brightness, but avoid over-illuminating the scene with artificial lights. The scene benefits from the synchronized effect of interior artificial lights and sunlight.
14. If everything has been going according to expectations so far, turn on the layers containing all the remaining elements (Phase 3).

15. Start another test render, this time with a higher resolution, such as 1280x720, and use the Q2 set for a cleaner, higher-quality image.

16. If the test render is successful, it's time for the final render image! Choose a high resolution (Full HD, 1920x1080 or higher), use the Q2 or the Qx preset, and adjust the values based on the number of light sources and the complexity of the scene. Rendering can take up to 60 minutes depending on your computer, the scene, and the chosen resolution. Higher resolutions increase rendering time.

17. Use effects! Post-processing is a crucial step in the rendering process performed by professionals. Adjusting parameters such as brightness, contrast, saturation, and white balance can significantly improve the quality of the final image, for example, by making it warmer or cooler. Small changes of 5-10% can have a significant impact on the final scene.

18. Try out the sharper details function! Enabling the effect can create impressive, highly detailed images. Disabling it results in a softer, more subtle appearance.

Anyone who follows the above workflow will be able to generate high-quality photorealistic images. Of course, this brief guide cannot cover all the intricacies, as rendering is a process that requires learning and experimentation with any rendering program.