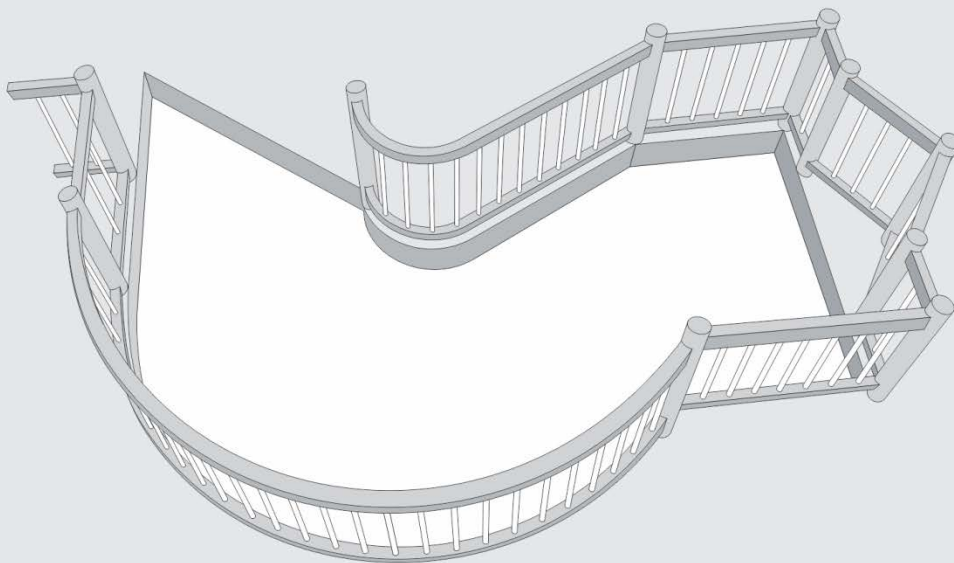




**Compass
Software**

CONSTRUCTION OF BALCONY RAILING



INSTRUCTION MANUAL

Construction of Balcony Railing

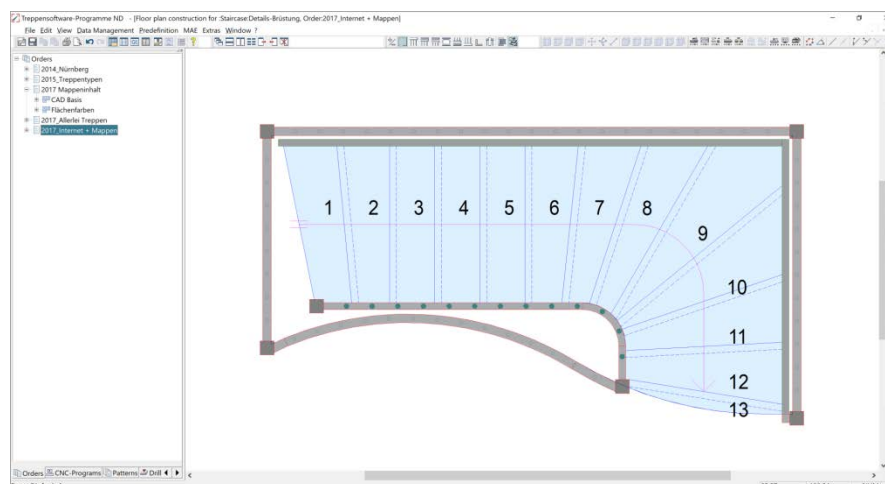
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1. General

The easiest way to ensure a swift generation of balcony railing constructions (just as with staircases) is to set neutral predefinitions for the groundplan and height construction. The groundplan construction defines the outline of the balcony railing and the height construction deals with the side view of the balcony. Just as with staircases, it is possible to insert connections for parts via the drilling patterns or to set them individually in the height construction.

The balcony railing construction is conducted in the same window as the groundplan construction of the staircase.

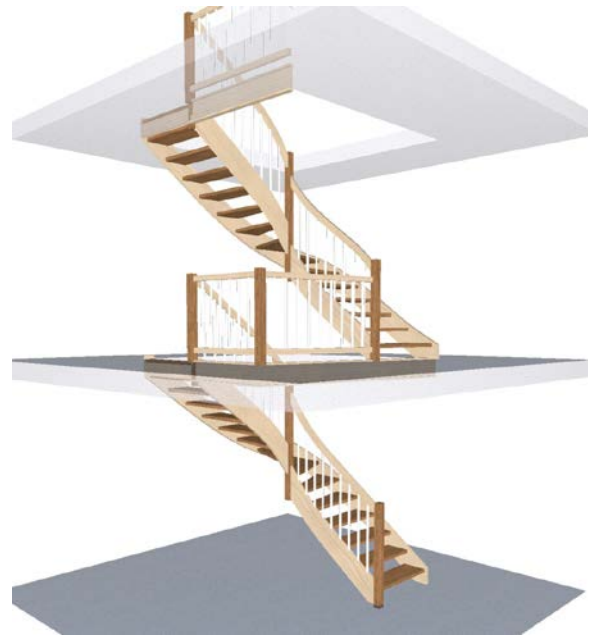


Construction of Balcony Railing

Connections with multi-story staircases

The connection railings in a multi-story construction recognize the exit post of the lower staircase and the entrance post of the upper staircase.

Thus, it is easy and convenient to plan the railings between two staircases.



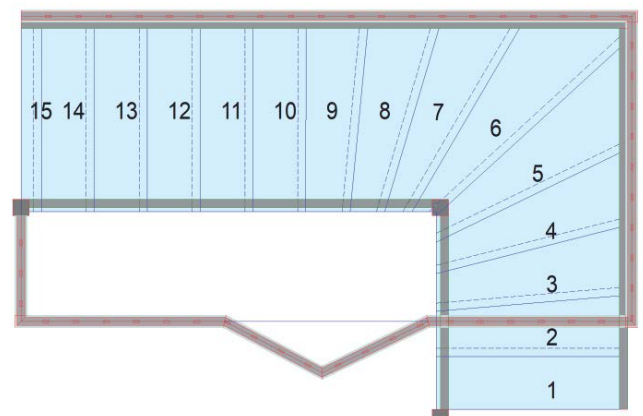
Another possibility is the connection of a staircase to a pitched roof.



This includes end posts and slanted Handrails along the pitched roof.

The freeform construction makes it possible to create balcony railings for staircases with shapes that are different than the shape of the well hole.

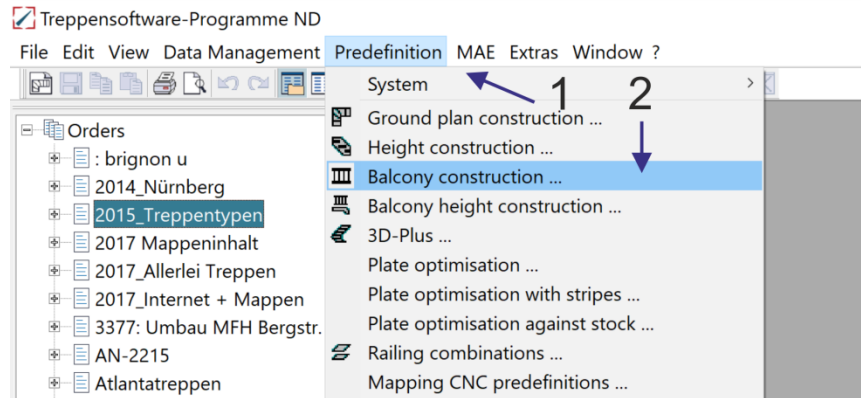
To do this disable all layers except the balcony railing layer and call up freeform construction. In the freeform construction use the tools to make the desired adjustments to the railing shape.



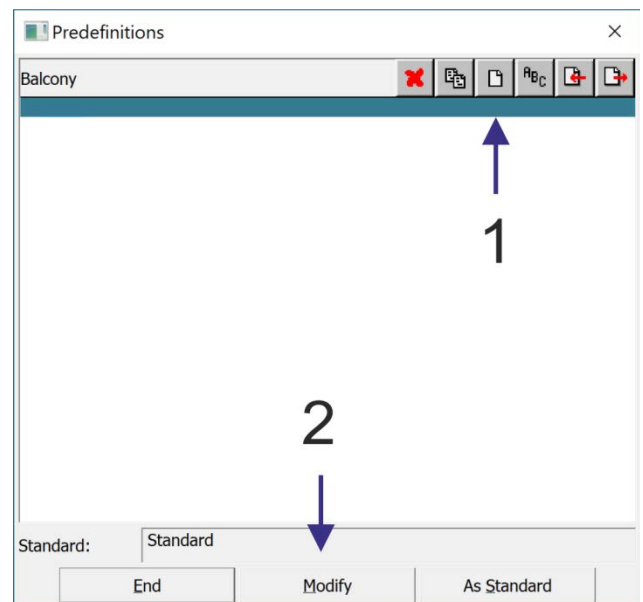
Construction of Balcony Railing

2 Predefinition Balcony Groundplan

Go to Predefinition (1) and then select Balcony construction (2).

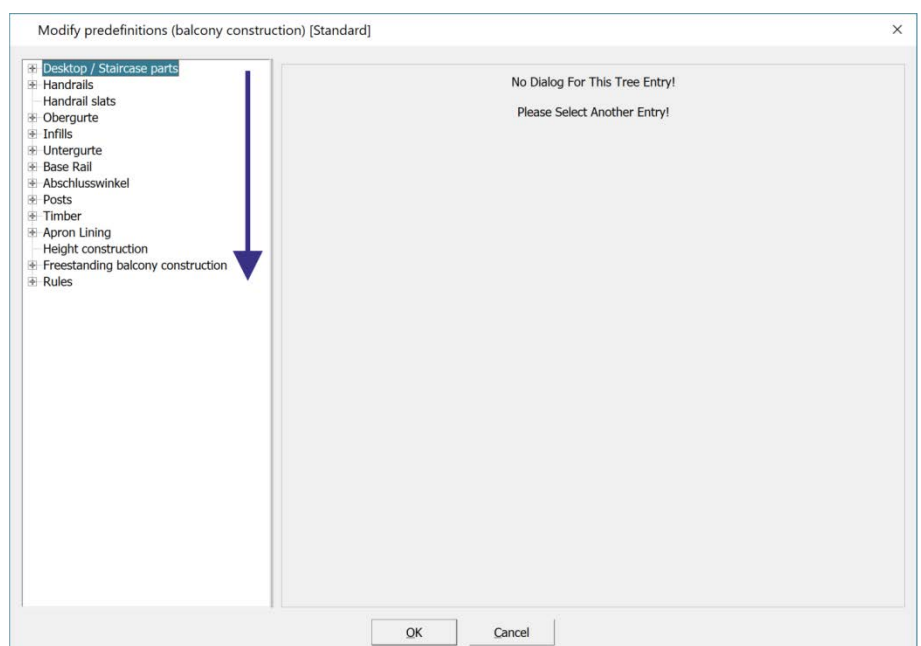


Create a new predefinition (1) in the menu that appears.



You can open the setting by clicking “modify” (2) or “double clicking” on the name of the predefinition you created.

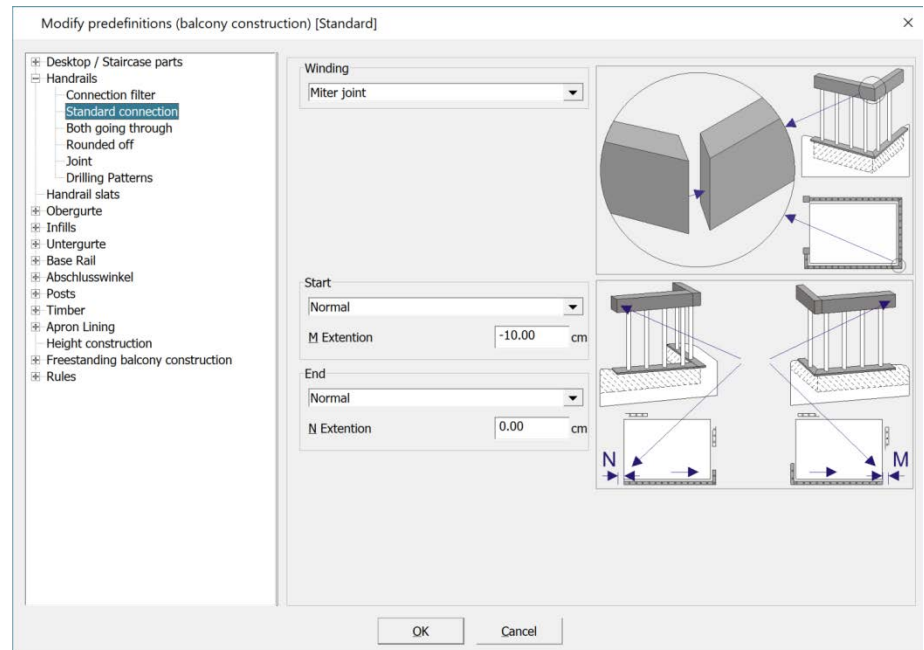
The organization of the dialog is the same as that for staircase predefinitions.



Go through all the menu points from top to bottom and adjust the settings according to your production standards.

Construction of Balcony Railing

The individual menus have self-explanatory help pictures.



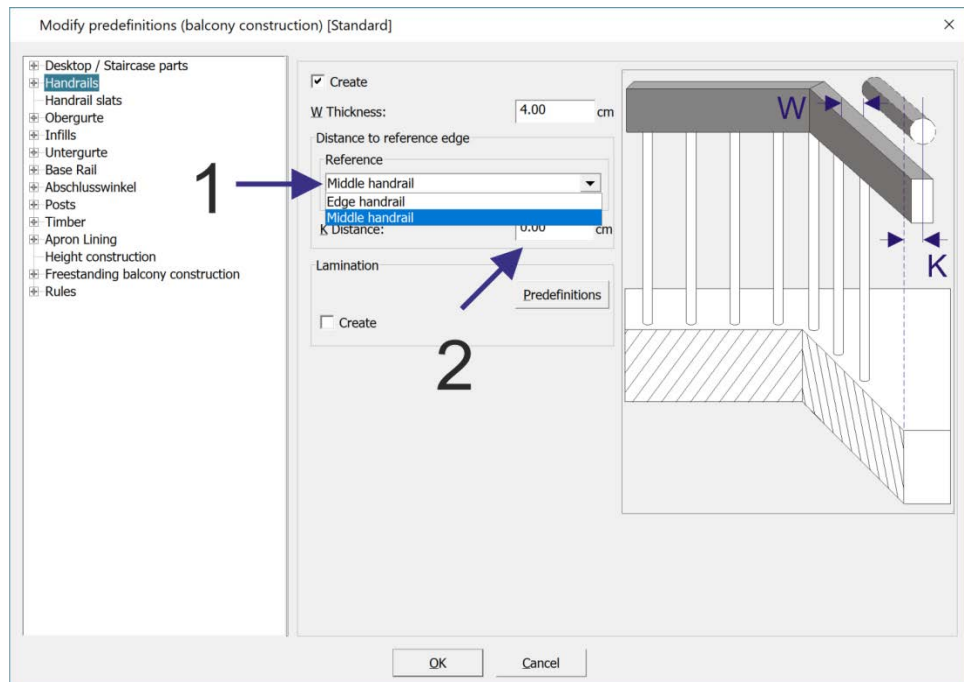
If you select “create” (3 next page) in the individual construction part menus then it will be possible to create this element later in the construction either via the construction wizard during the initial calculation of the balcony railing or by selecting “all elements”.

This is important, since you will have two possibilities on how to proceed during construction later!

1. Select “create with initial calculation“ in the construction wizard. The software will generate all elements that have been checked with “create” in the predefinitions in the layer “shape balcony”. Now you only have to delete those parts you do not want with a few clicks.
2. Do not select “create with initial calculation” in the construction wizard. The software will start construction with an empty well hole. Now the user has to select “shape balcony” to create a balcony railing. The railing either has to be created by generating each part individually or by clicking “all elements” which will inset all construction parts that have been checked with “create” in the predefinitions.

Construction of Balcony Railing

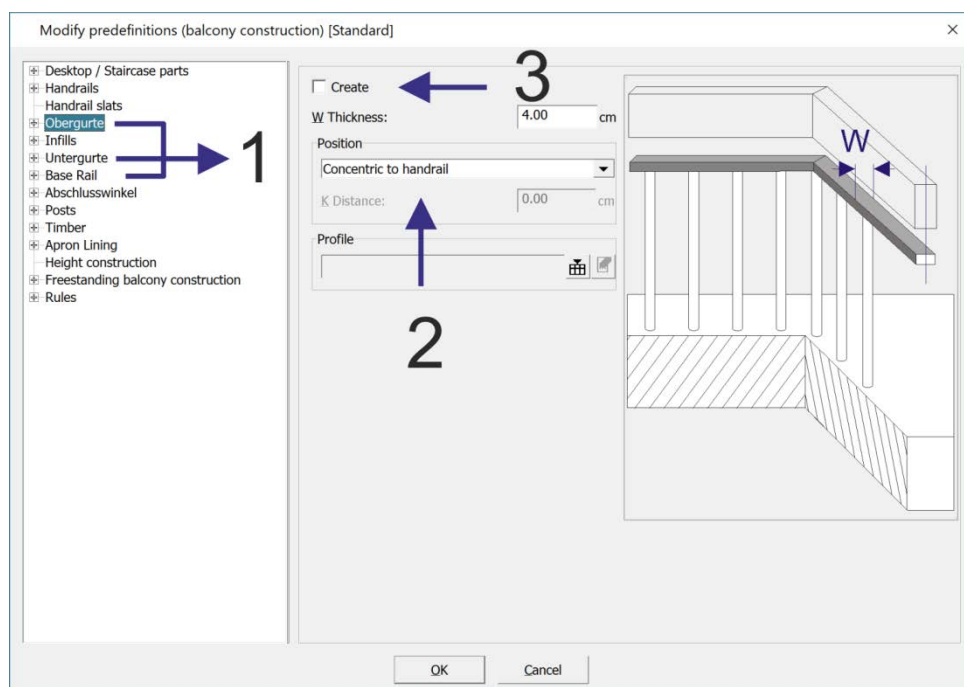
The handrail is a part that is always present in the balcony railing and follows its shape. Therefore, it is important to define in the predefinitions how this part is to be constructed in reference to the edge (1), as well as the distance to the reference edge (2).



The other construction parts (1) are below the handrail and usually run centered towards the handrail.

Set these construction parts “concentric to the handrail” (2).

If you move the handrail later during construction, these parts will automatically move with it and won’t have to be moved individually.

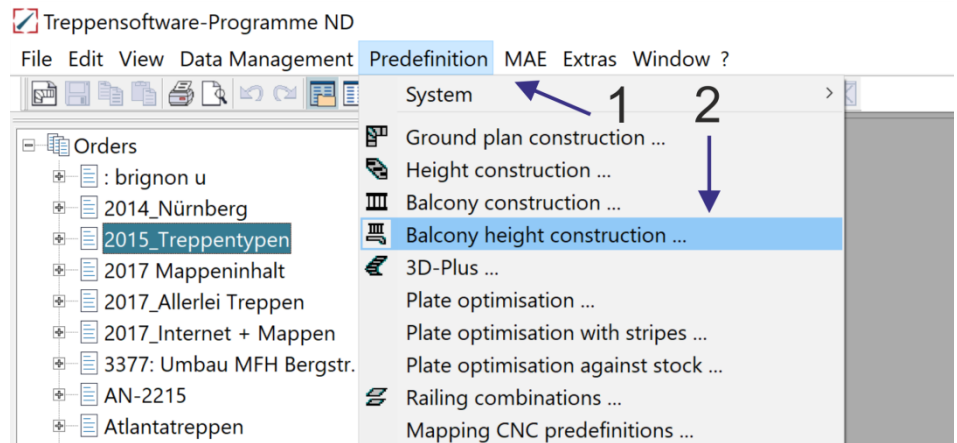


Once all data has been entered for the groundplan construction, save by clicking “OK”.

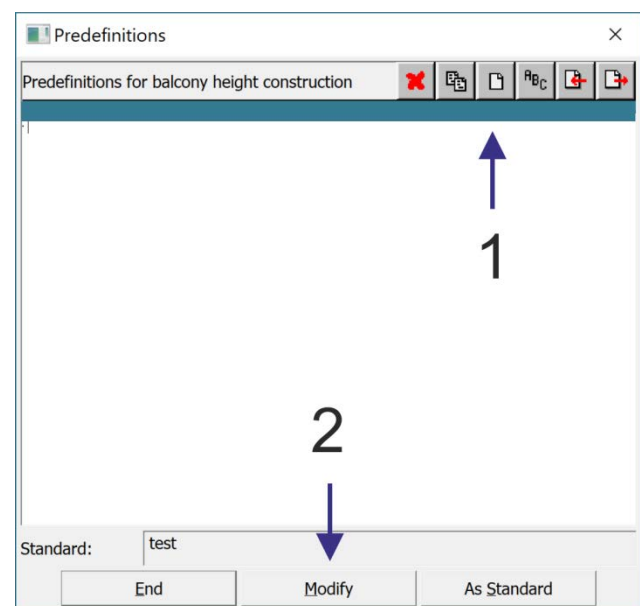
Construction of Balcony Railing

3. Predefinition Balcony Height Dialog

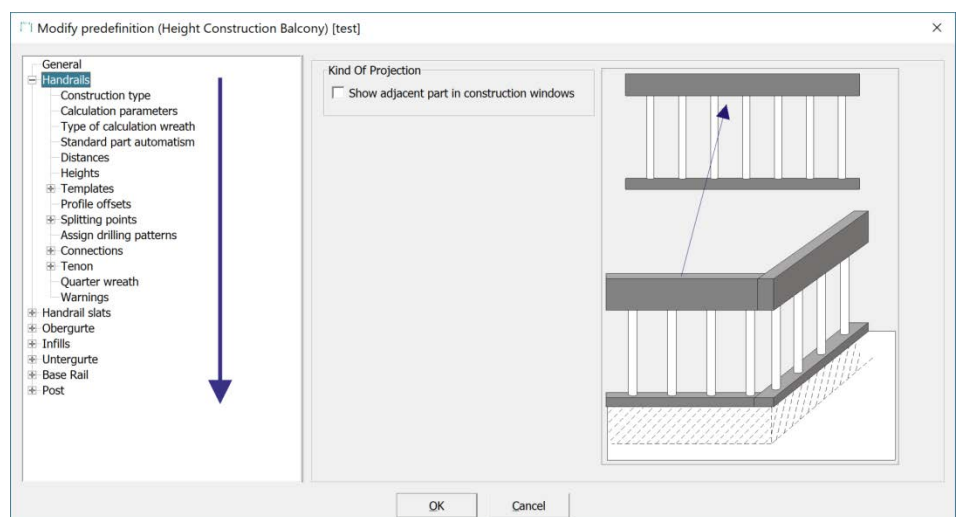
Select Predefinition (1) and then Balcony height construction (2).



Create a new entry in the menu that appears (1).



Open the new entry by clicking “modify” (2) or “double clicking” on its name.

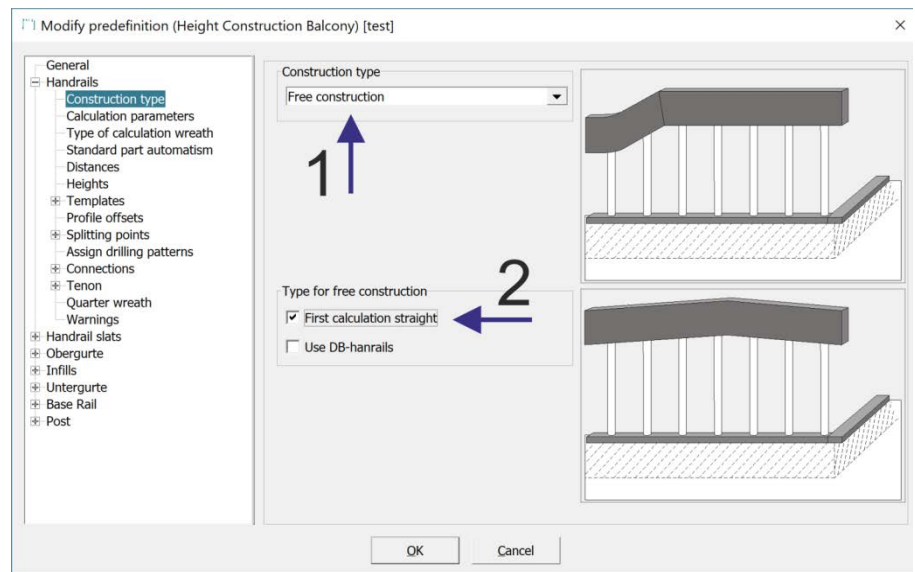


The dialog is designed in the same way as the previous predefinitions. Therefore, please follow the same steps as before.

Construction of Balcony Railing

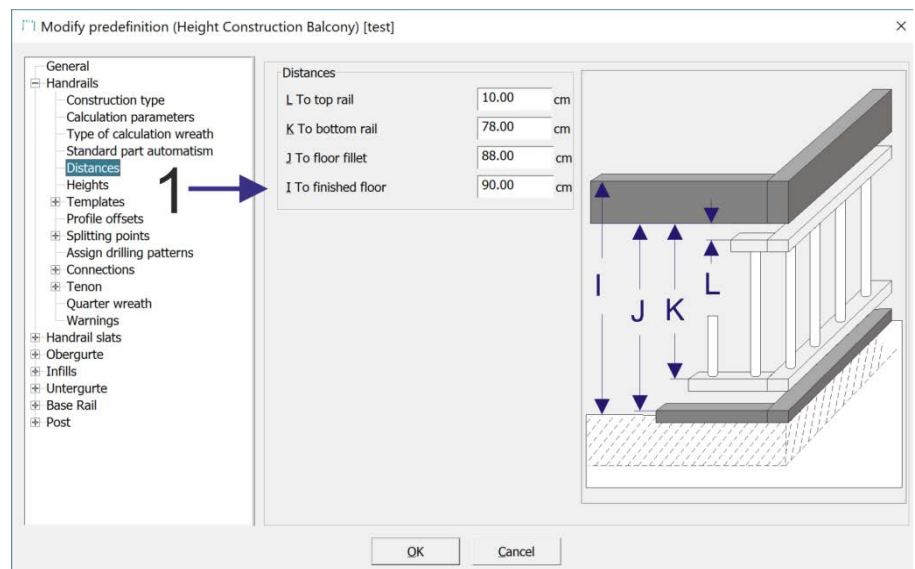
The handrail is the determining part in the balcony railing, since skirting boards, bottom rails and top rails vary from one customer to the next as well as manufacturing standards.

The easiest way to construct is to select “free construction” (1) and “first calculation straight” (2) for the type.

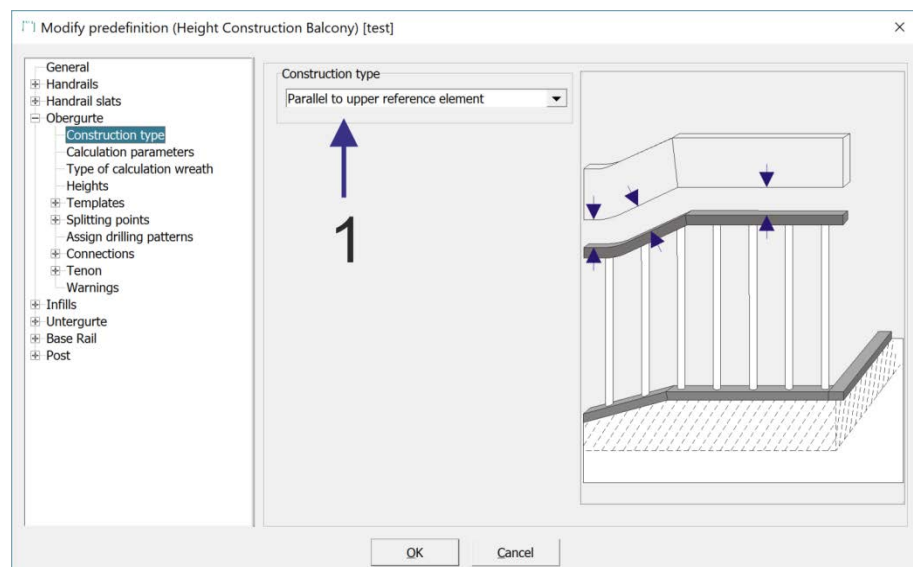


The handrail construction is done in reference to the floor, e.g. 90 cm from the “finished floor” (1). This ensures that the upper edge of the handrail remains in a constant height.

The 90 cm mark is derived from the value for the kink that is defined in the height construction for exit handrails. The values have to be the same so that the balcony railing connection will have the same height as the stair handrail at the exit point.



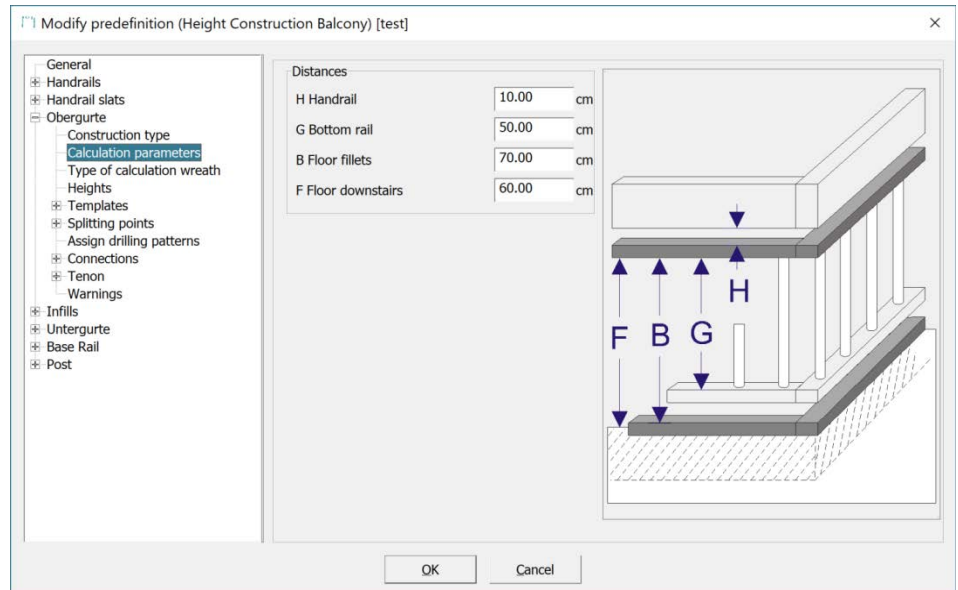
All other construction parts can be set to “parallel to upper reference element” (1) under construction type.



Construction of Balcony Railing

The software is now taking the distances to the construction parts from the values that are put in the calculation parameters.

It's easiest to determine the right distances between construction parts by creating a sketch.

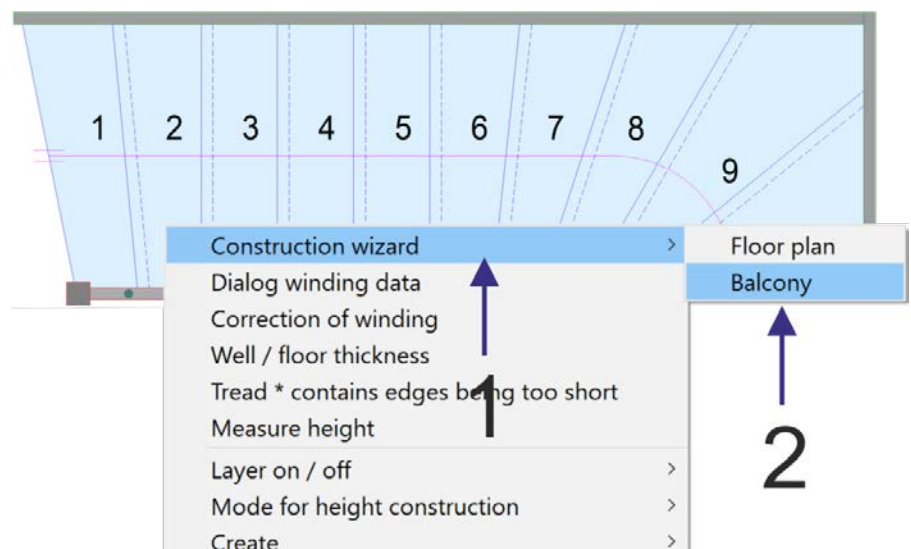


Simply draw the dimensions of the construction parts and the distances and convert the values to the predefinitions.

4. Construction of Balcony Groundplan

Finish constructing the staircase or building project first.

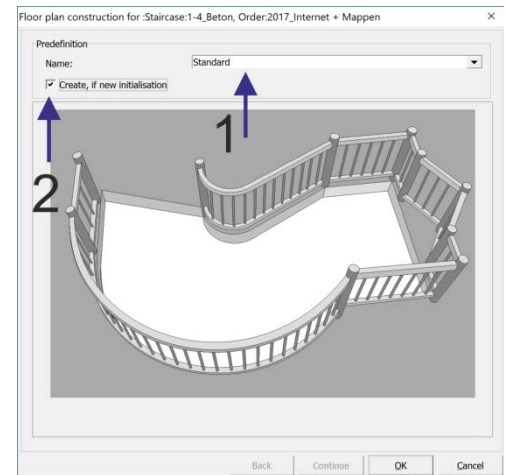
Then right click into the empty space next to the staircase and open the menu. Select the construction wizard and then balcony to open the construction wizard for the balcony railing.



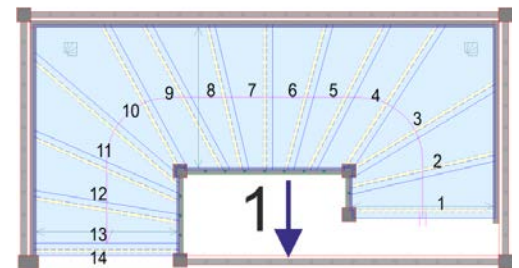
Construction of Balcony Railing

Now you can select any predefinition (1) as well as check the box to activate “create if new initialization” (2), which has been explained above.

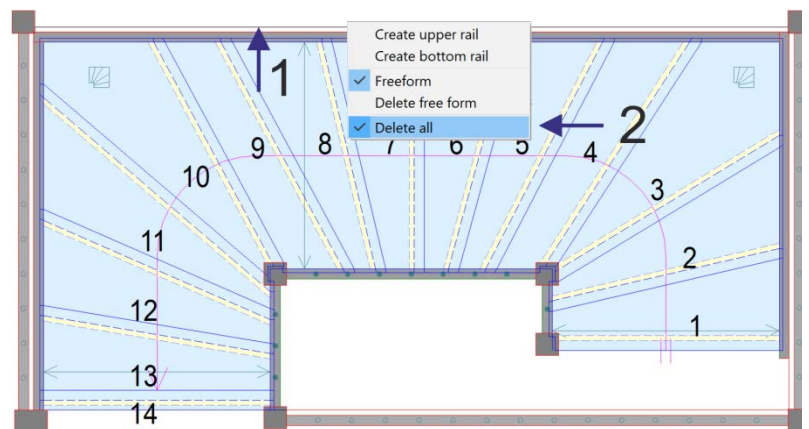
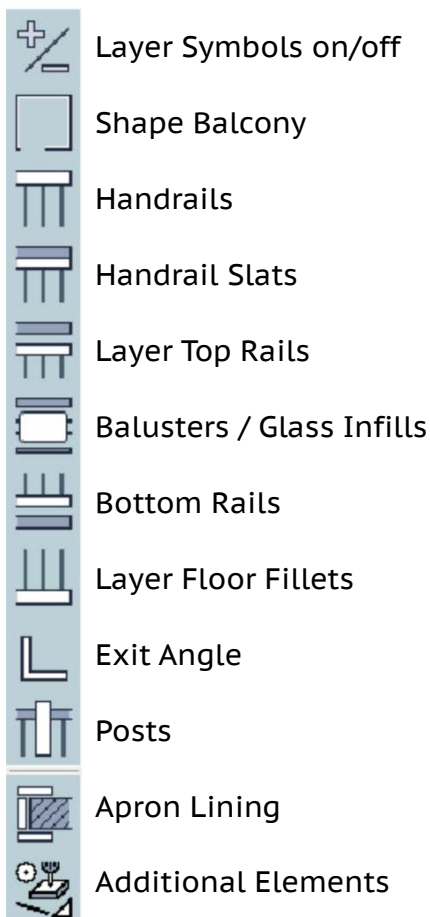
Confirm by clicking OK and construction will automatically start.



The railing of the balcony (1) will be displayed. The system displays different layers that can be switched on and off to display.



Icon bar balcony:



Example delete parts.

Turn off all layers.

Turn on only the layer for “Shape Balcony”.

Click right on those lines (1) that should not be included as a railing. A menu will open which gives the option “delete all” (2). This deletes all elements on this layer.

This menu (2) will also show the elements that can be created on this line. Select the option “free form” if the shape of the railing should not follow the shape of the well hole.

Construction of Balcony Railing

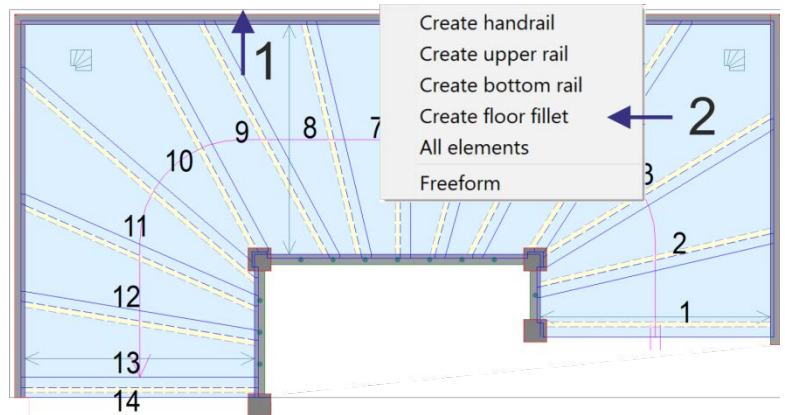
If you do not select the box “create if new initialization” for the initial calculation (see page above), you will be able to select all balcony elements individually.

You can call up a selection by clicking right (1) or into the open space. There you can select individual balcony railing elements or the entire balcony.

By clicking right on the balcony railing layer (1) you call up the menu (2) that gives you the options for the selected area.

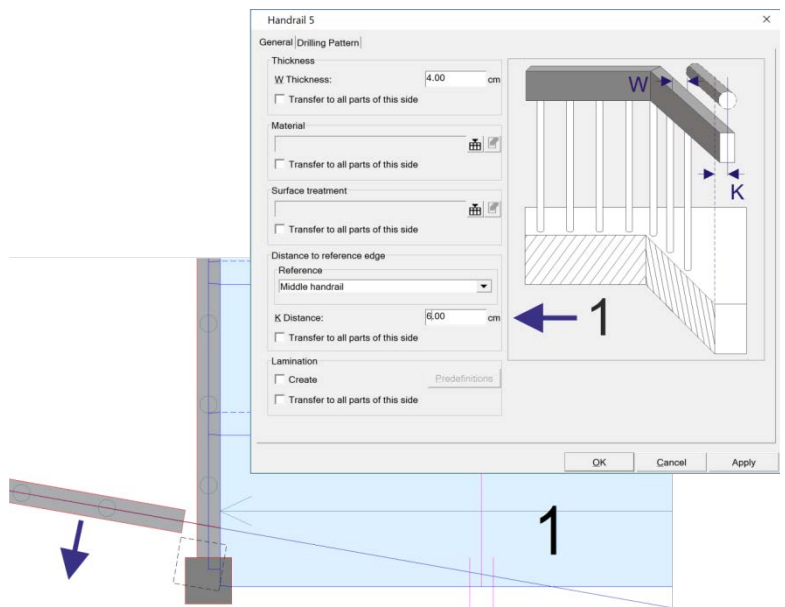
If you select „all elements“ the system will create only those elements that are selected to be “created” in the predefinitions.

Free form construction gives you the ability to create the balcony railing shape independent of the well hole shape.



Different construction parts or connections can be changed or adapted just as it is possible with the staircase construction. Click right on the contour of the part or the connection to call up the menu that displays the construction part properties and options.

Connection railings between two staircases, which have been created as part of a building project, automatically identify the entrance post of the upper staircase to determine the length and only have to be connected to the post by defining the distance to the ceiling edge.

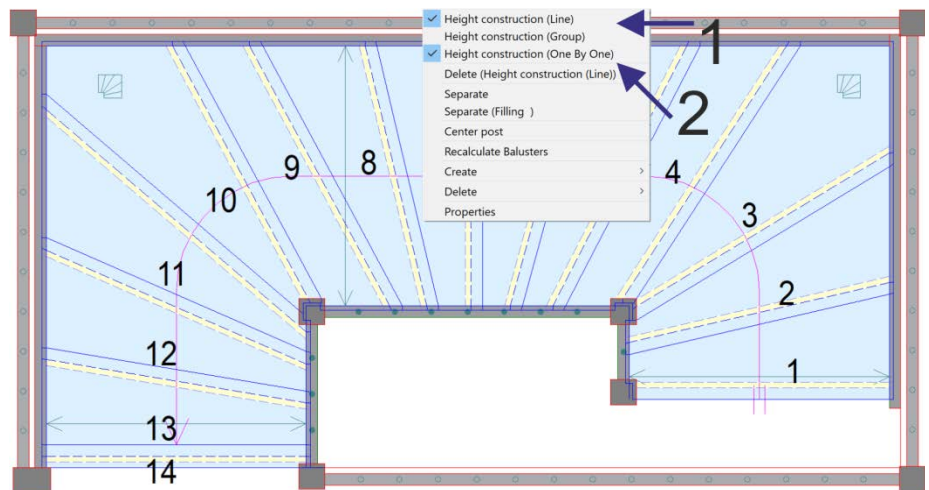


The entrance post of the upper staircase is not displayed. Therefore, it is necessary to determine the distance to the well hole from the upper staircase to get the desired connection. The connection can be controlled visually in the 3D-Plus view of the building project. The connectors to the entrance post of the upper staircase can be added in the height construction view of the balcony railing.

Construction of Balcony Railing

5. Construction of Balcony Height Construction

Once the balcony railing has been completed in the groundplan construction, you can call up the height construction with a right click on the handrail.



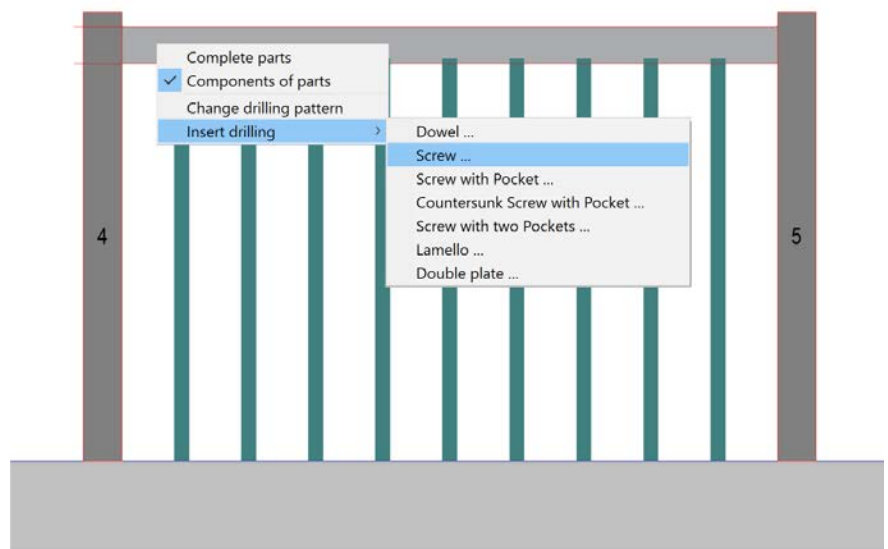
When you have several parts it makes the most sense to choose the line (1) view to get a comprehensive overview.



It is also possible to view each individual part in the side view (2).

Control of drillings or adjustments, e.g. to a slanted ceiling, have to be made within the individual construction part as it is with staircases.

The functions and construction are mostly the same as with the staircase height construction, which makes this function easy and fast to work with.



Construction of Balcony Railing

6. Adjusting the Balcony Railing to Pitched Roof

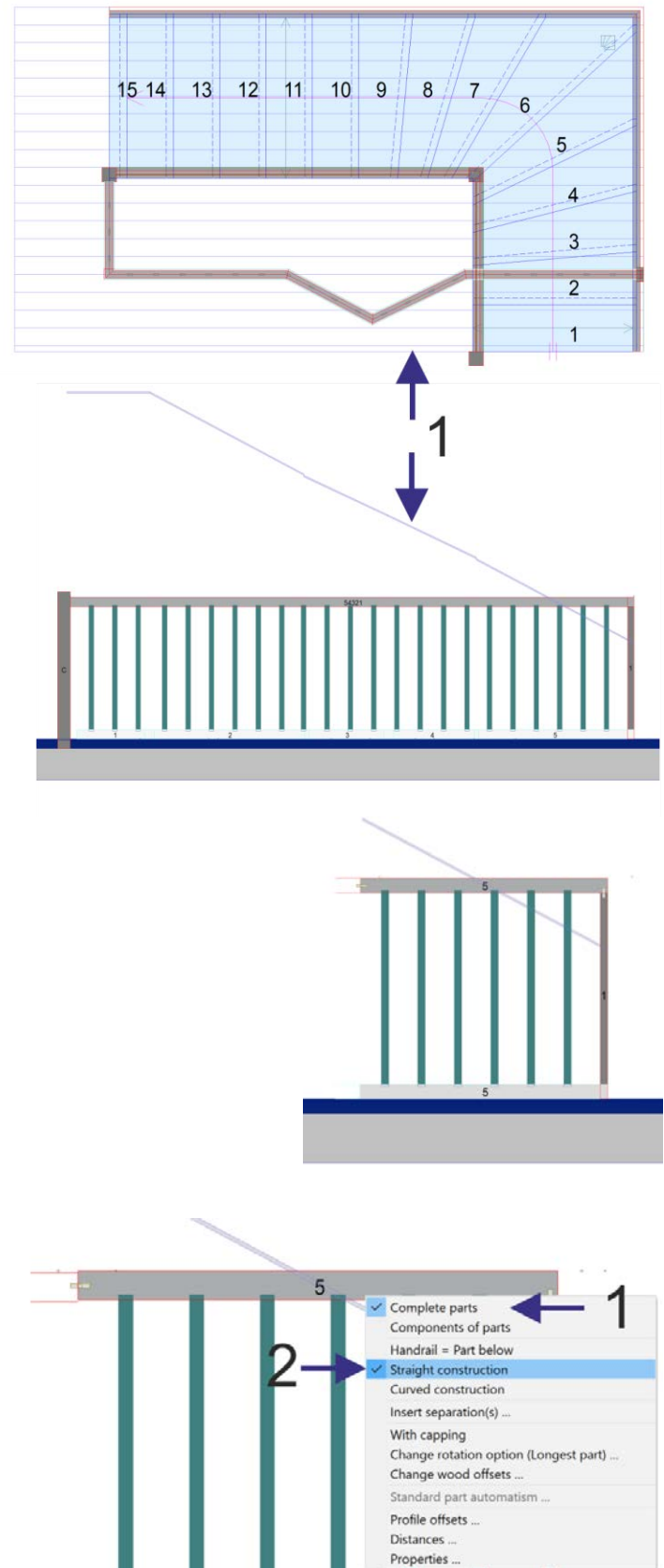
To adjust the balcony to a pitched roof (1) open the railing in the line view and check whether the connection to the staircase is correct and whether all construction parts are available at the correct height.

You can change all settings for the handrails through the “properties” menu.

The drilling patterns that are assigned for each connection can be checked by looking at the individual construction parts.

In “height construction one by one” you will be able to edit all existing construction parts.

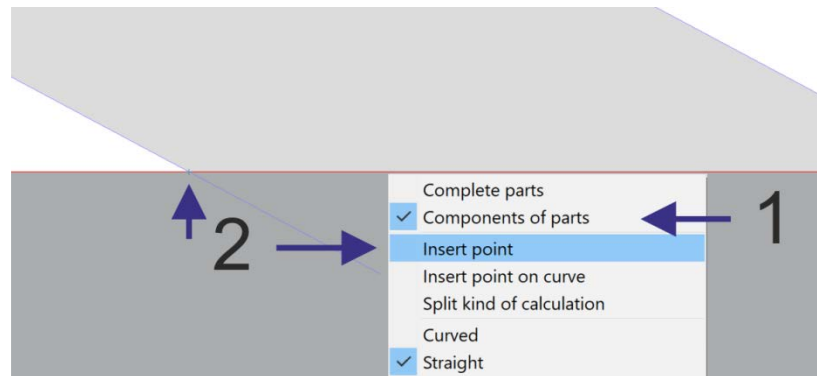
To adjust the handrail to the pitched roof it has to be set as a “complete part” (1) and as a “straight construction” (2).



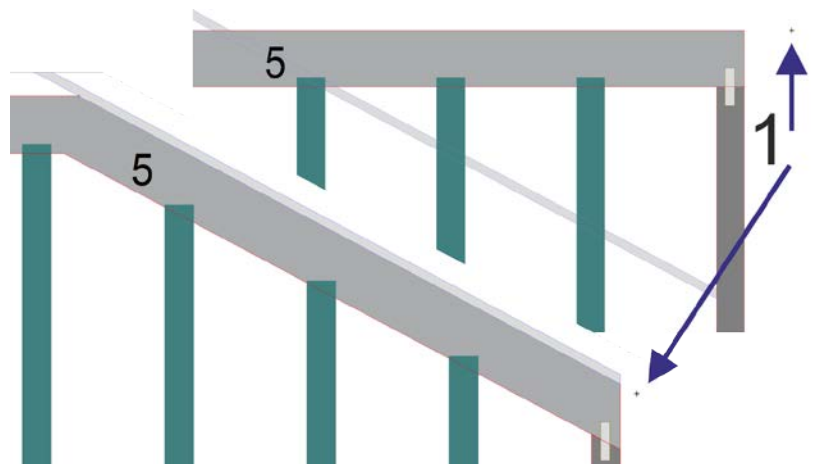
Construction of Balcony Railing

Afterwards go to “components of parts” (1) and use “insert point” (2) at the intersection between the handrail and the pitch.

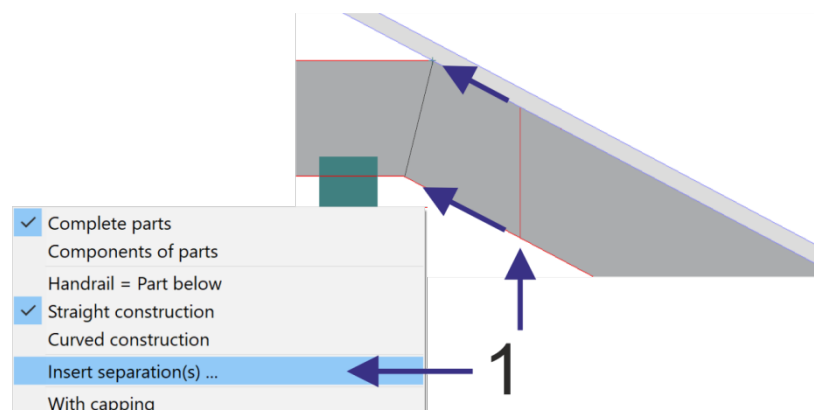
It’s easiest to do this when enlarging the view. This will enable you to move the point exactly to the intersection.



On the right you will find a cross (1) over which the handrail will be kinked into the pitched roof. Click left and keep holding down with the mouse to move this point.



To finalize you can insert a separation. The position of the separation can be set freely and moved around as desired. The snapping function (press down CTRL key) makes it possible to position the separation exactly at the spot of the kink on top or below.



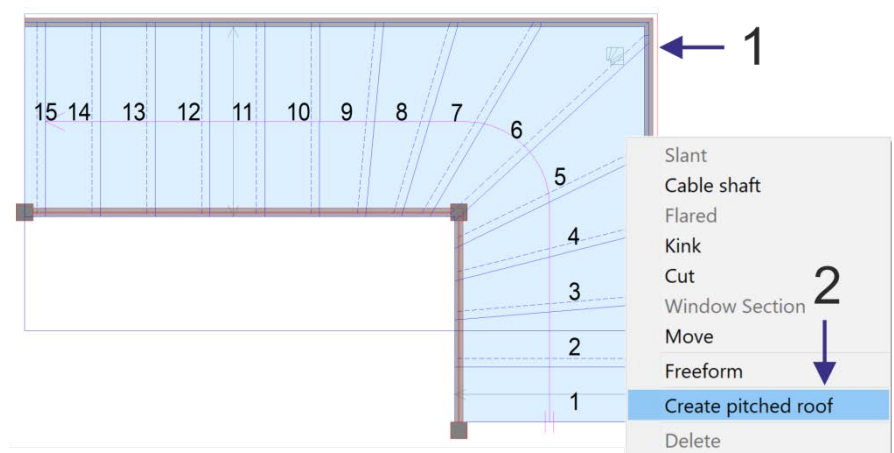
Construction of Balcony Railing

7. Construction of Pitched Roofs

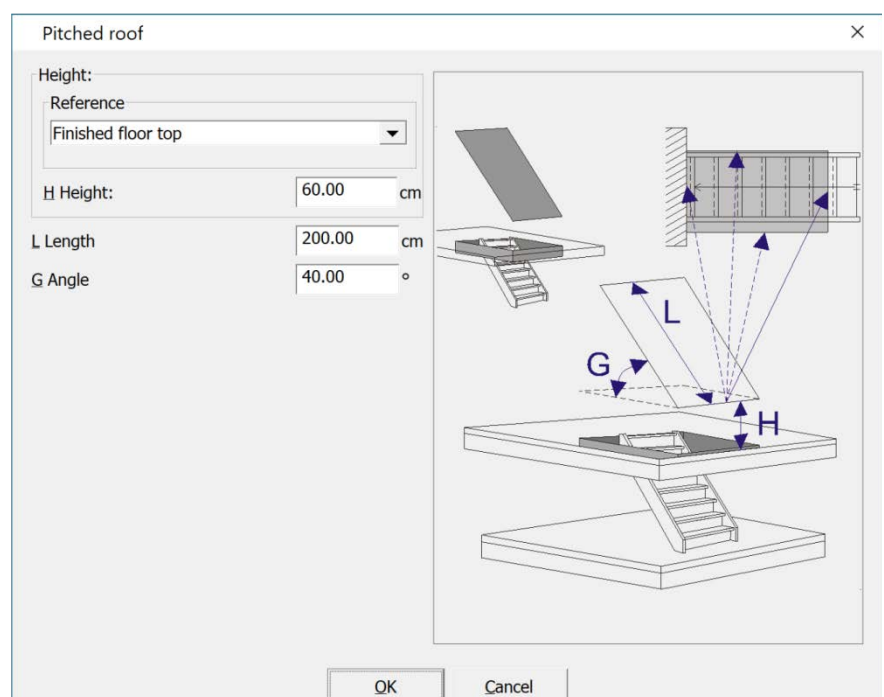
The construction of pitched roofs can be initiated through the reference edge and the well hole of the staircase or through the free form construction.

Create a pitched roof through the reference edge.

To create via the reference edge or the well hole it's easiest to turn all other layers off. Click right on the reference edge (1) and select "create pitched roof".

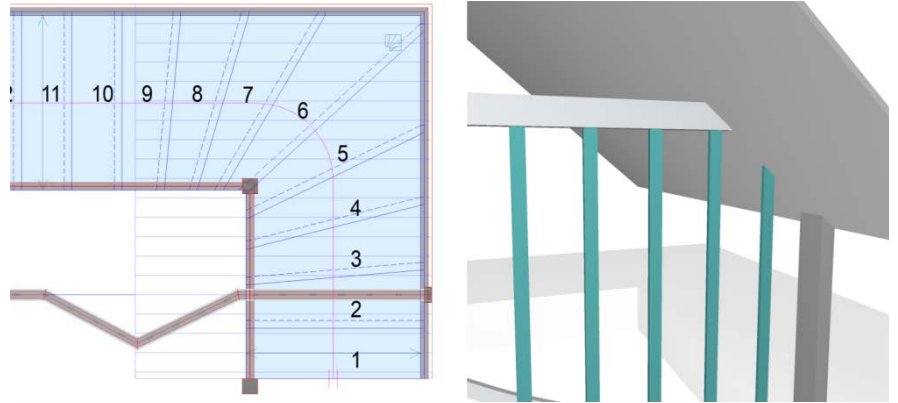


The menu "pitched roof" gives the possibility to change the reference point for the height on the start point, the length of the pitch which runs parallel to the reference edge, as well as the angle.

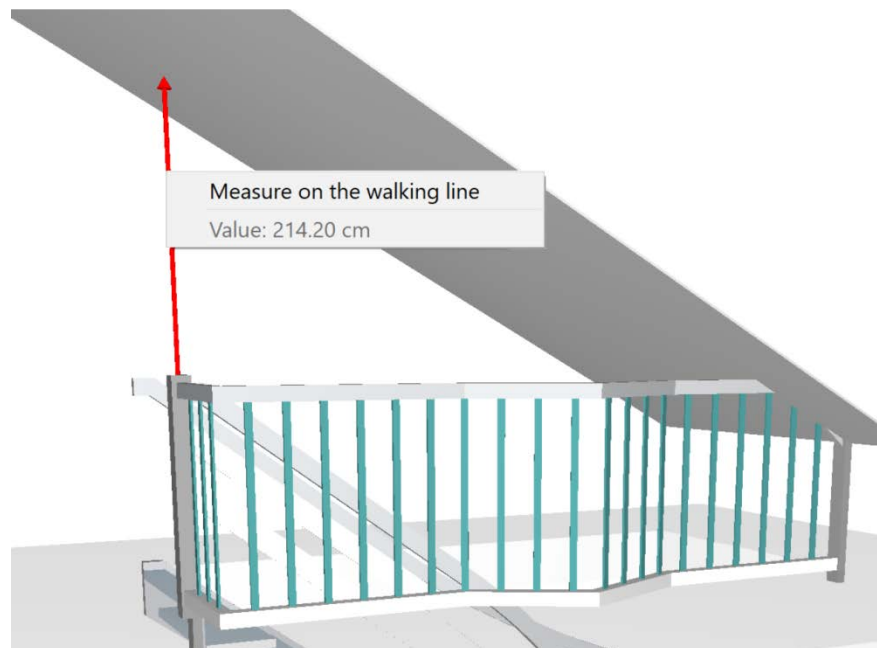


Construction of Balcony Railing

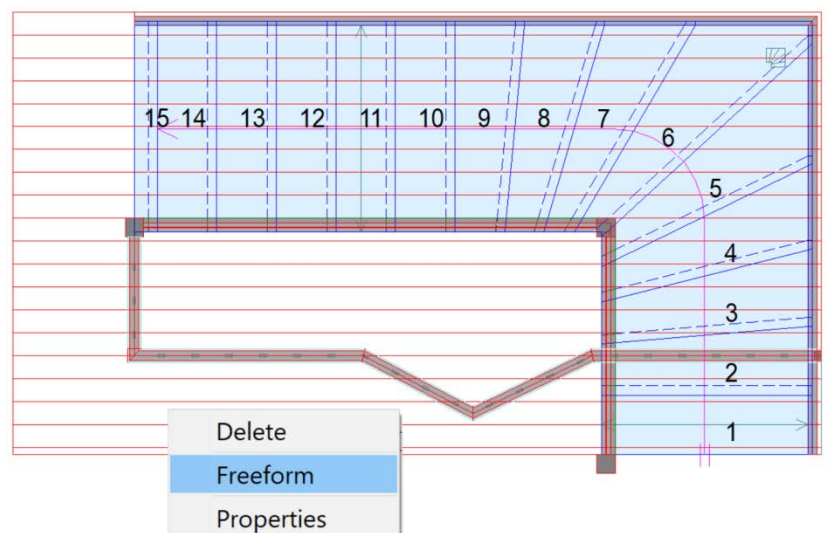
Topview and 3D-Plus view.



By clicking right on the arrow, you can check the current head space.



To change details, you have the possibility to click right on an already existing pitched roof and start the free form construction (1). There you can change the pitched roof further.

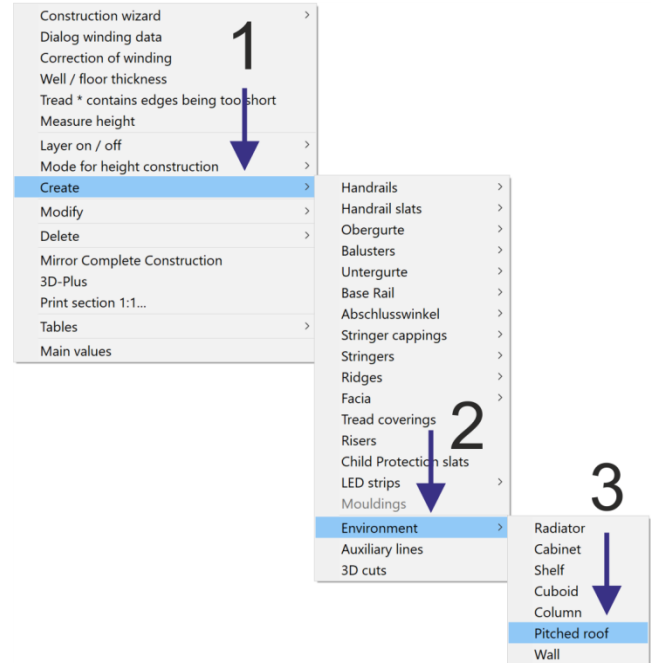


Construction of Balcony Railing

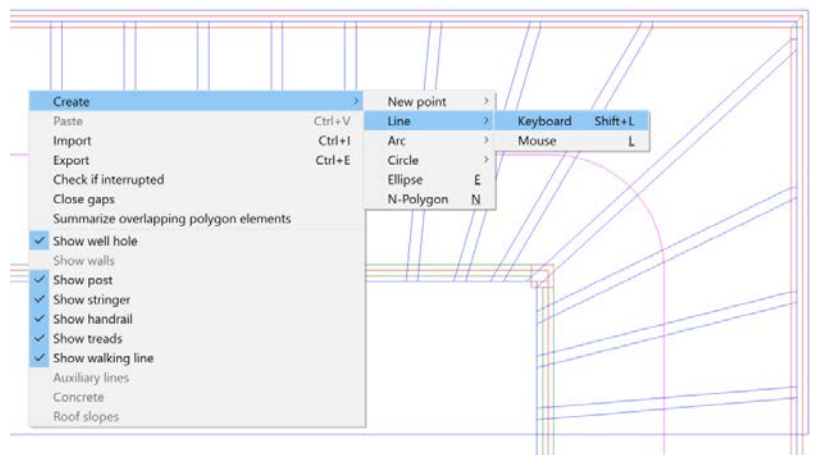
7.1 Construction of Pitched Roofs with Freeform

Creating the entire pitched roof via the free form construction.

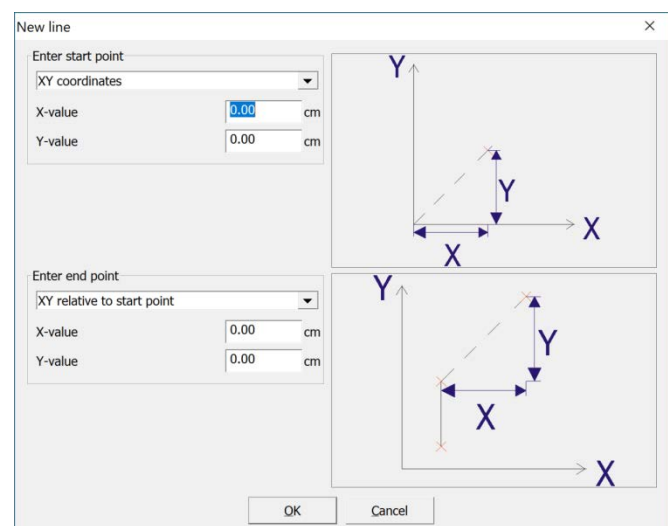
To do this click right next to the stair and select “create” (1) and then environment (2) and “pitched roof” (3).



Define the first line of the pitched roof. The example will do this via coordinates. To do this select “create” (1), “line” (2) and then “keyboard” (3).

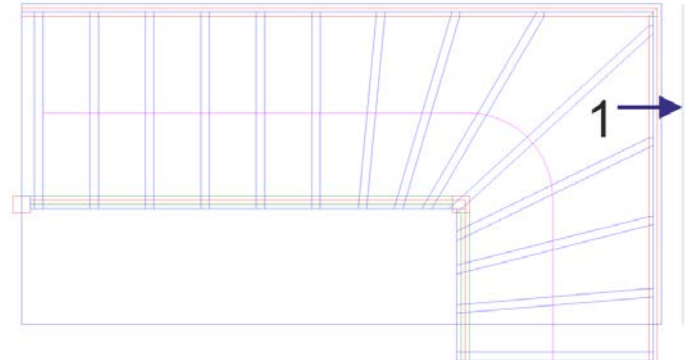


Enter the coordinates there.

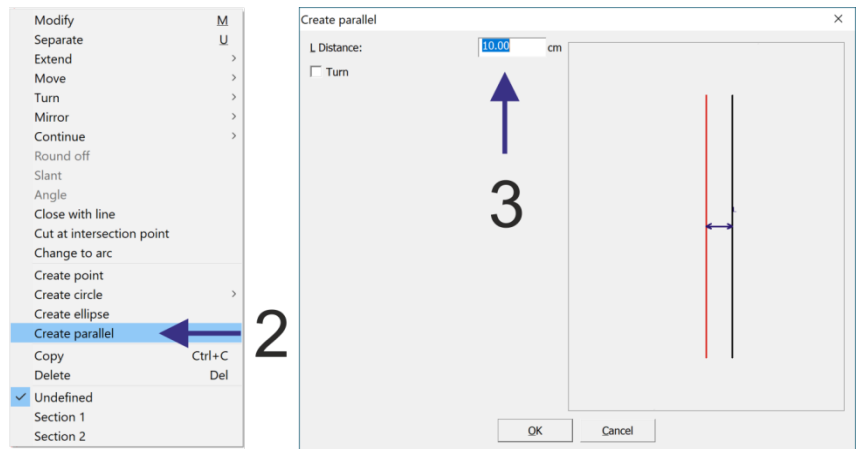


Construction of Balcony Railing

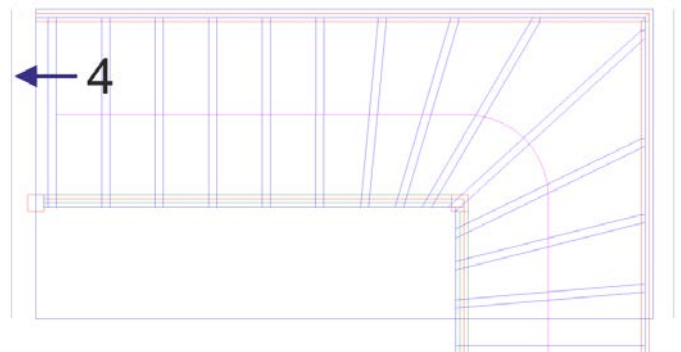
The first line will appear (1).



Click right on the first line to call up the menu and select „create parallel” (2). Enter the distance (3) between the two lines in the dialog that appears.

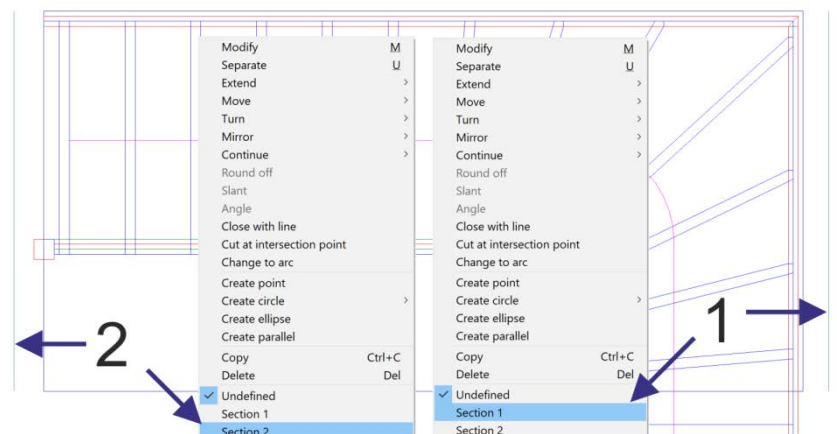


The second line will appear (4).



Now click right onto the right line (1) and confirm that this is “section 1”.

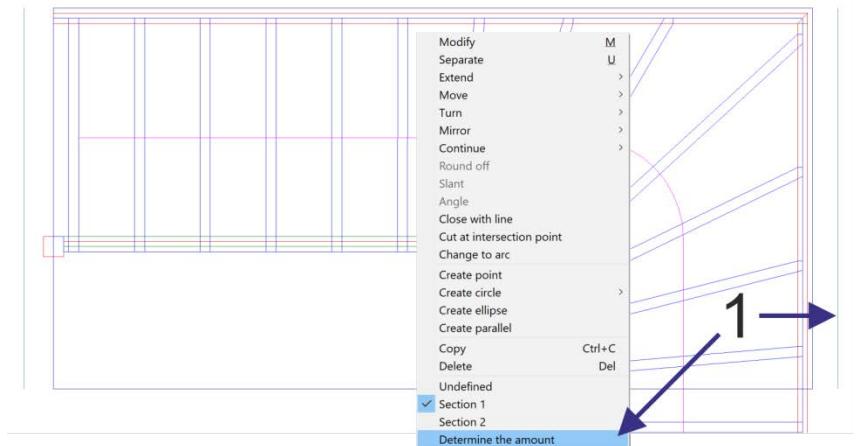
Afterwards, do the same with the left line (2) and select “section 2”.



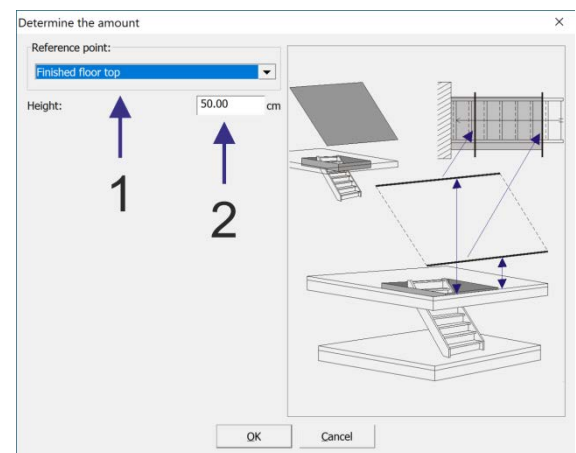
Construction of Balcony Railing

Now you have to define the height of the two lines.

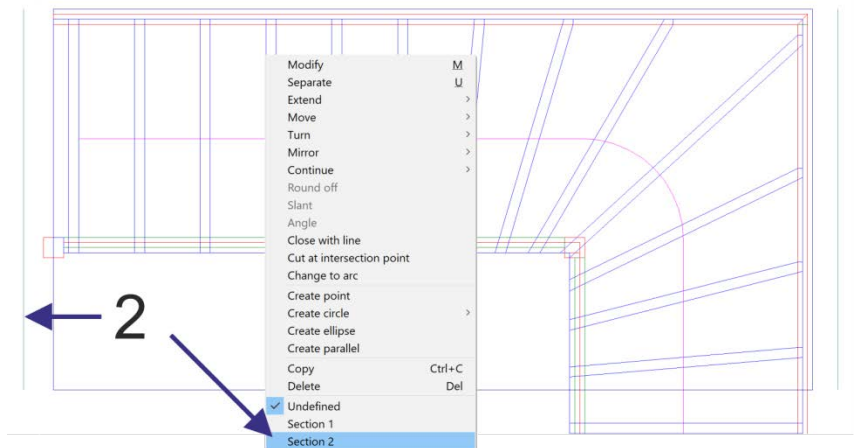
To do this once again click right on the right line (1).



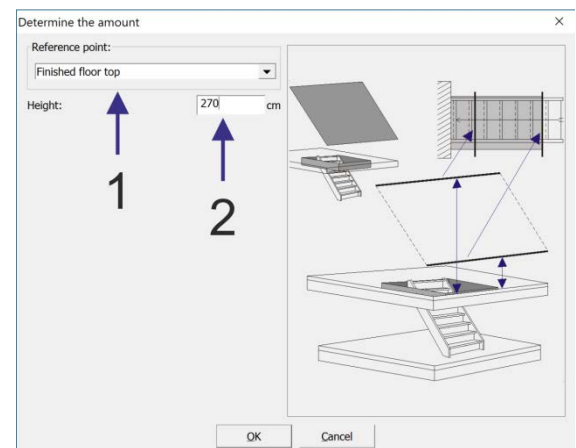
Pick a reference point (1) in the menu that appears and enter the desired height (2).



Afterwards, do the same for the left line (2).



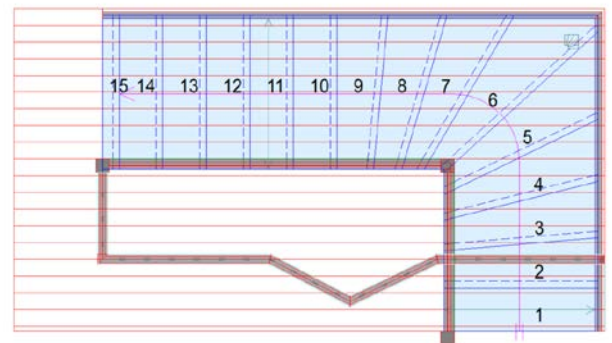
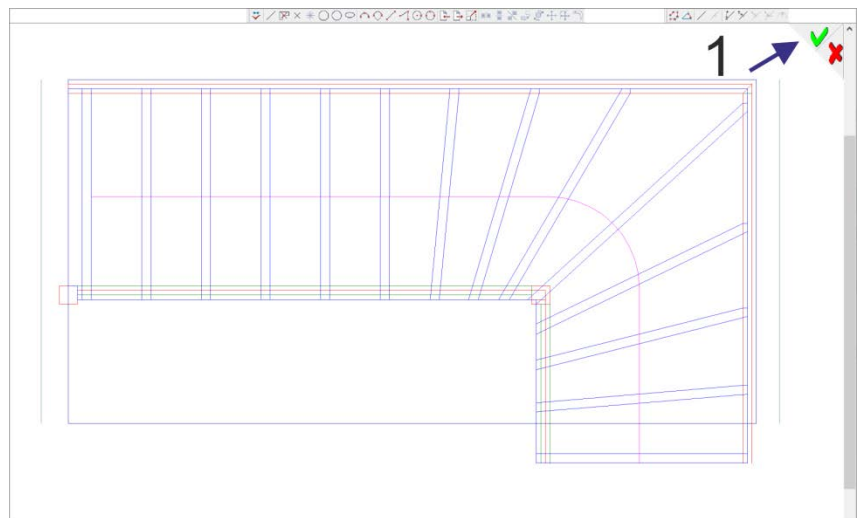
Enter the reference point (1) again in the menu and the desired height (2).



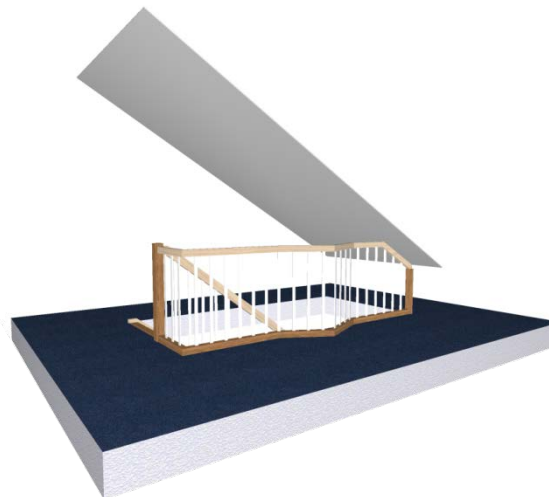
Construction of Balcony Railing

Now you have defined the start and endpoint of the pitched roof. You can close the free form construction by clicking on the green checked icon (1).

The software will now calculate your pitched roof.



The result.



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