

Allplan 2014

Step by Step

For internal use only

Fit for CAD Architecture

This documentation has been produced with the utmost care.

Nemetschek Allplan Systems GmbH and the program authors have no liability to the purchaser or any other entity, with respect to any liability, loss, or damage caused, directly or indirectly by this software, including but not limited to, any interruptions of service, loss of business, anticipatory profits, or consequential damages resulting from the use or operation of this software. In the event of discrepancies between the descriptions and the program, the menu and program lines displayed by the program take precedence.

Information in this documentation is subject to change without notice. Companies, names and data used in examples are fictitious unless otherwise noted. No part of this documentation may be reproduced or transmitted in any form or by means, electronic or mechanical, for any purpose, without the express written permission of Nemetschek Allplan Systems GmbH.

Allfa® is a registered trademark of Nemetschek Allplan Systems GmbH, Munich.

Allplan® is a registered trademark of Nemetschek AG, Munich.

Adobe® and Acrobat PDF Library™ are trademarks or registered trademarks of Adobe Systems Incorporated.

AutoCAD®, DXF™ and 3D Studio MAX® are trademarks or registered trademarks of Autodesk Inc., San Rafael, CA.

BAMTEC® is a registered trademark of Häussler, Kempten, Germany.

Microsoft®, Windows® and Windows Vista™ are either trademarks or registered trademarks of Microsoft Corporation.

MicroStation® is a registered trademark of Bentley Systems, Inc.

Parts of this product were developed using LEADTOOLS, (c) LEAD Technologies, Inc. All rights reserved.

Parts of this product were developed using the Xerces library of 'The Apache Software Foundation'.

fyiReporting Software LLC developed parts of this product using the fyiReporting library, which is released for use with the Apache Software license, version 2.

Allplan update packages are created using 7-Zip, (c) Igor Pavlov.

All other (registered) trademarks are the property of their respective owners.

© Nemetschek Allplan Systems GmbH, Munich. All rights reserved.

2nd edition, December 2013

Document no. 131eng01s02-2-BM1213

Contents

Unit 4.....	1
-------------	---

Exercise 1: importing the project backup and starting Allplan	3
---	---

Task 1: importing the project backup.....	3
---	---

Overview.....	3
---------------	---

Solution	3
----------------	---

Task 2: starting Allplan and loading the project.....	7
---	---

Overview.....	7
---------------	---

Solution	7
----------------	---

Exercise 2: first upper floor.....	15
------------------------------------	----

Task 1: floor plan and height	16
-------------------------------------	----

Overview.....	16
---------------	----

Solution	18
----------------	----

Task 2: furnishing the first upper floor.....	49
---	----

Overview.....	49
---------------	----

Solution	50
----------------	----

Task 3: rooms.....	53
--------------------	----

Overview.....	53
---------------	----

Solution	54
----------------	----

Task 4: calculating the area for the first upper floor	68
--	----

Overview.....	68
---------------	----

Solution	69
----------------	----

Task 5: room groups.....	73
Overview	73
Solution.....	74
 Exercise 3: top floor	77
Task 1: floor plan.....	77
Overview	77
Solution.....	78
Task 2: variant of second upper floor (optional)	85
Overview	85
Solution.....	86
 Exercise 4: stairs.....	107
Task 1: straight stair.....	107
Introduction.....	107
Overview	108
Solution.....	109
Task 2: section of stair.....	117
Overview	117
Solution.....	118
Task 3: copying the stair to other stories.....	120
Overview	120
Solution.....	121
 Exercise 5: balcony railing (optional)	125
Task 1: balcony railing on the first upper floor	125
Overview	125
Solution.....	126

Unit 5..... 131**Exercise 1: sections, elevation and perspective views... 133**

Task 1: vertical sections	133
Overview	133
Solution	134
A note on using sections for creating views	137
Task 2: north elevation.....	138
Introduction	138
Overview	139
Solution	140
Task 3: copying and modifying the north elevation.....	145
Introduction	145
Overview	145
Solution	147
Task 4: sections	150
Introduction	150
Overview	150
Solution	152
Task 5: modifying sections (optional).....	157
Introduction	157
Overview	157
Solution	158
Task 6: elevation dimensioning	160
Overview	160
Solution	161
Task 7: perspective view.....	164
Overview	164
Solution	164
A note on saving perspective views to drawing files.....	169

Exercise 2: analyzing areas and rooms..... 171

Task 1: area calculations.....	171
Introduction.....	171
Overview	172
Solution.....	174

Exercise 3: finish specifications and special surfaces.... 183

Introduction.....	183
Task 1: modifying the bathroom finish.....	184
Solution.....	184
Task 2: modifying the finish of several rooms.....	194
Overview	194
Solution.....	194
Task 3: vertical surfaces for plumbing components.....	199
Solution.....	199
Task 4: special surfaces	201
Overview	201
Solution.....	201

Exercise 4: using schedules for analyses205

Task 1: analyzing quantities	205
Overview	205
Solution.....	206
Task 2: assigning materials later	208
Overview	208
Solution.....	208
Task 3: labeling components later	212
Overview	212
Solution.....	212
Task 4: labeling rooms using label styles.....	217

Introduction	217
Overview	218
Solution	219
 Exercise 5: quantity takeoff (optional).....	223
Task 1: quantity takeoff across stories.....	223
Overview	223
Solution	224
Task 2: transferring quantities to Allplan BCM	233
Introduction	233
Overview	233
Solution	233
A note on the transferring quantities to Allplan BCM.....	238
 Exercise 6: material catalogs (optional)	239
Task 1: assigning material catalogs.....	239
Introduction	239
Overview	240
Solution	241
A note on material catalogs from programs used for tendering, awarding and invoicing.....	242
Task 2: customized material catalogs.....	243
Introduction	243
Overview	243
Solution	243
Task 3: using catalogs to assign attributes.....	247
Introduction	247
Overview	247
Solution	248
 Index	253

For internal use only

Unit 4

For internal use only

For internal use only

Exercise 1: importing the project backup and starting Allplan

Task 1: importing the project backup

Overview

Use the following tool(s) to do this:

Function	How to activate it
 Services application	Icon in Quick Launch bar or in the Nemetschek Allplan group
Import - Projects	Data Backup menu in the Services application

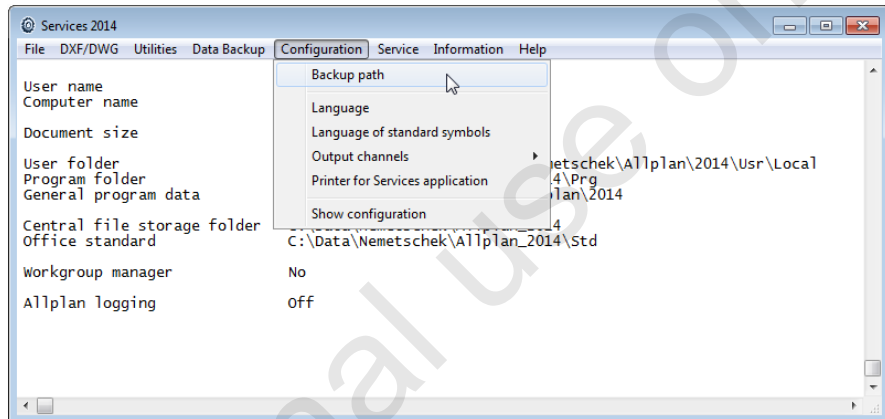
Solution

The result of "Fit for CAD - Basics" will serve as the basis for these architecture-specific units. The new project is given the name "Fit for CAD 2014 - Architecture".

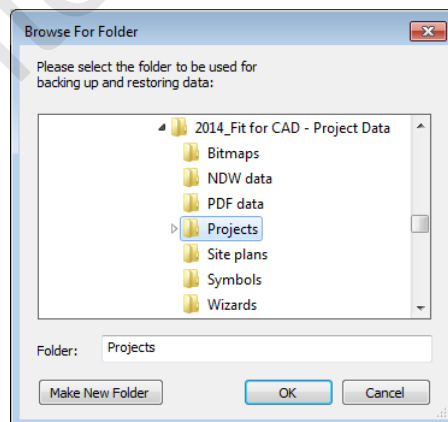
To import the project

➡ "Fit for CAD" CD inserted in the drive

- 1 If necessary, exit Allplan before you start importing the project data.
- 2 Start the  Services application.
- 3 On the **Configuration** menu, click **Backup path**.



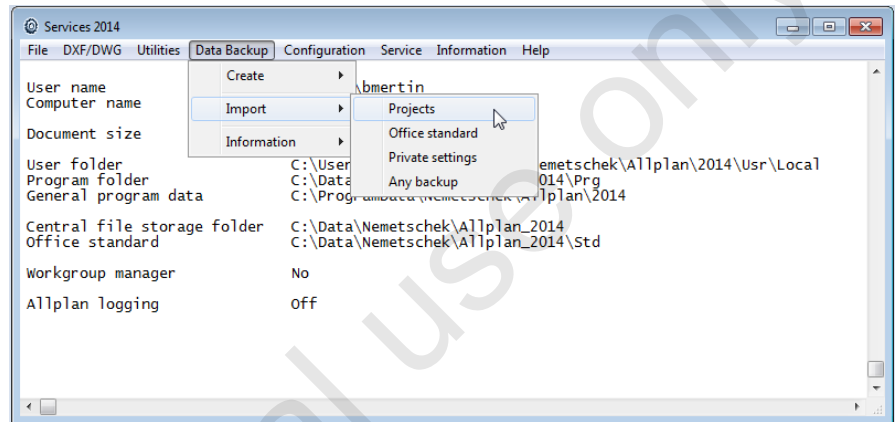
- 4 The **Browse for Folder** dialog box opens. Select the <cd>\projects folder.



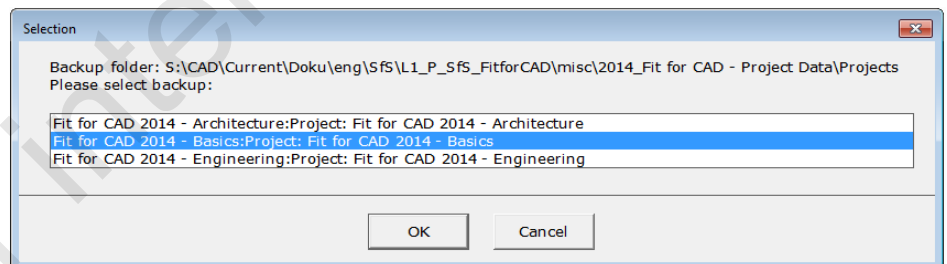
- 5 Click OK.

- 6 To import the backup of the "Fit for CAD 2014 - Basics" project, select the **Data Backup** menu in the Services application, point to **Import** and click **Projects**.

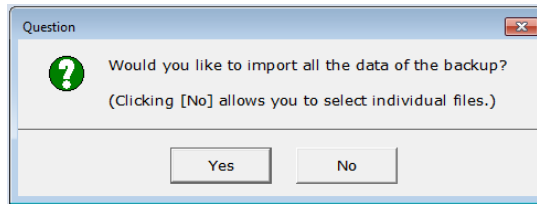
Note: If Workgroup Manager is installed along with Allplan, you need to be explicitly authorized to use this tool. Otherwise, it is not available.



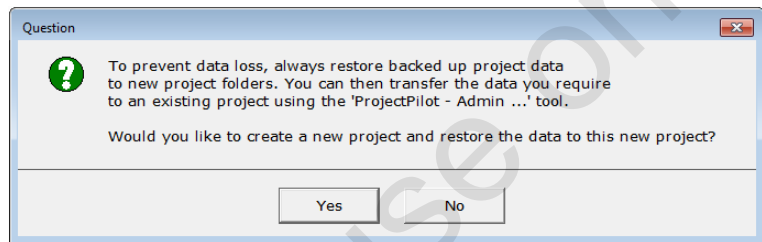
- 7 The **Select** dialog box opens. Choose the **Fit for CAD 2014 - Basics** project and click **OK** to confirm.



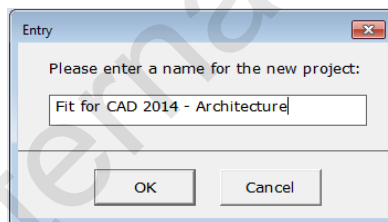
- 8 Click **Yes** at the following prompt.



- 9 Another prompt appears. Here, too, click Yes.



- 10 Enter **Fit for CAD 2014 - Architecture** for the name of the new project in the **Input** dialog box and click **OK** to confirm.



The data is extracted to the new project and checked.

- 11 Once the process is complete, the **Information** dialog box is displayed. Click **OK** to confirm.



Task 2: starting Allplan and loading the project

Overview

Use the following tool(s) to do this:

Function	How to activate it
 New Project, Open Project	Default toolbar
 Open on a Project-Specific Basis	Default toolbar
 Zoom All	At bottom left in the viewport border

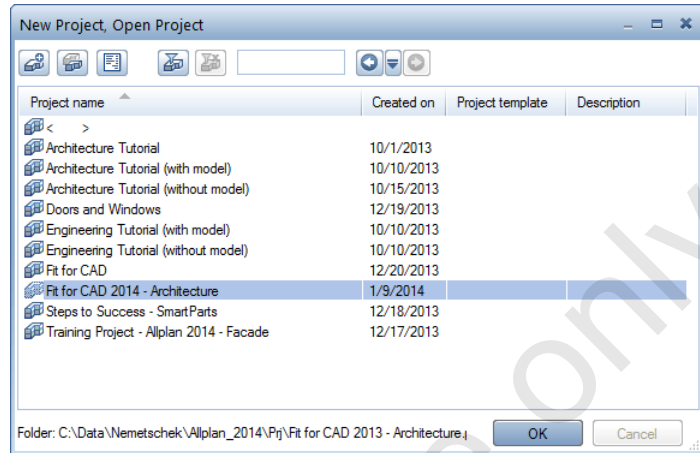
Solution

To start Allplan and load the project

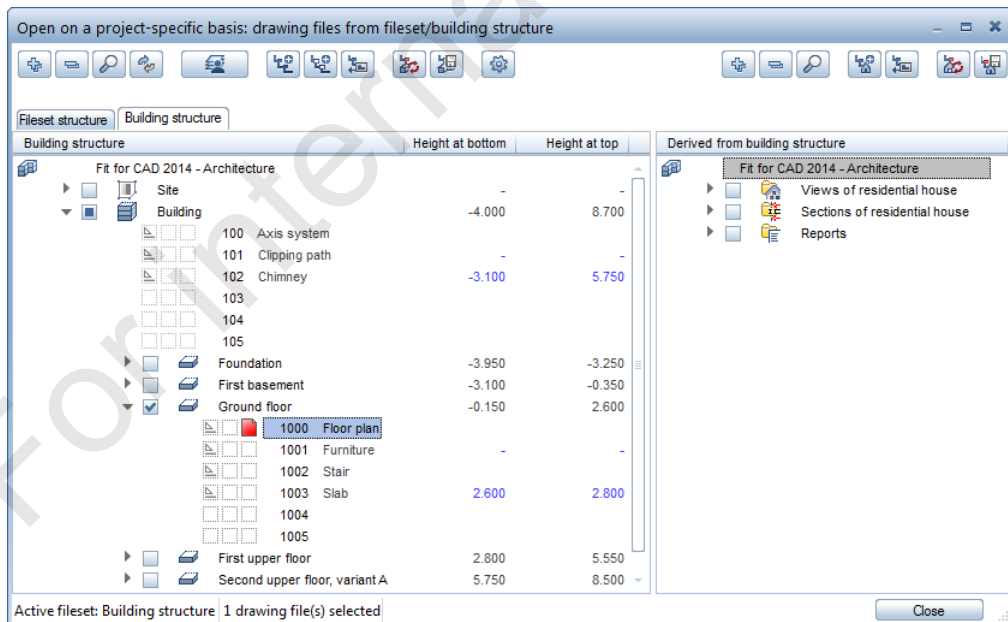
- 1 Open the Windows start menu and point to **All programs, Nemetschek, Allplan 2014** and click **Allplan 2014**.
- 2 Click  **New, Project, Open Project** (Default toolbar), select the **Fit for CAD 2014 - Architecture** project and click **OK** to confirm.

Note: If Workgroup Manager is installed along with Allplan, you can only see the project if you are authorized.

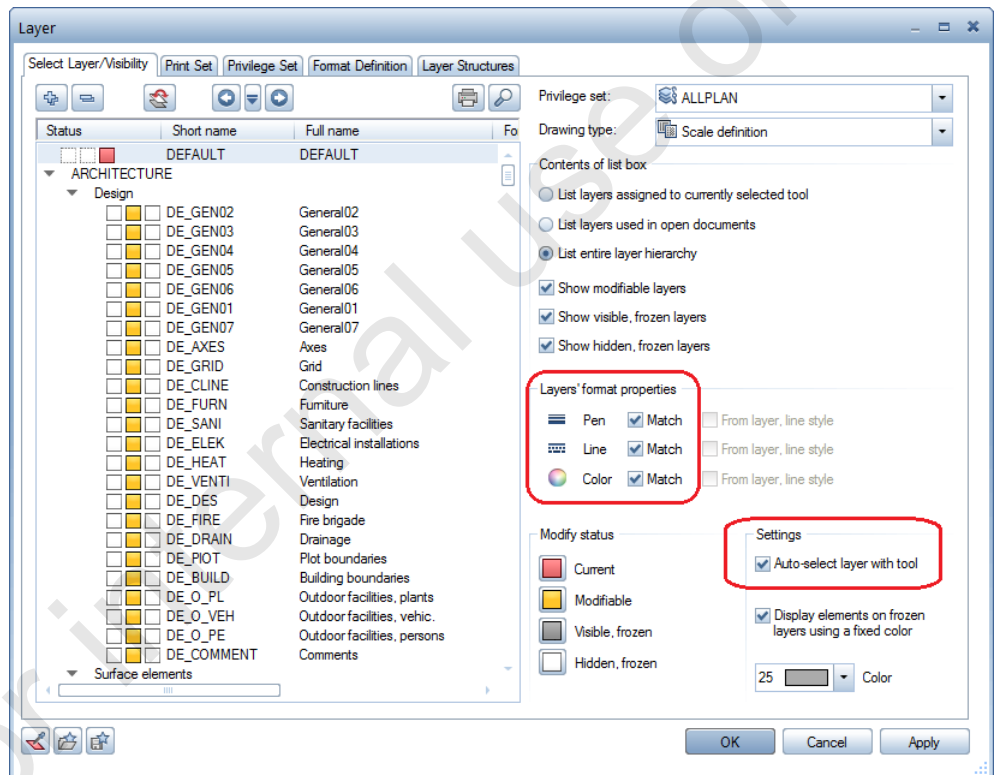
If the project is not available to you, you cannot access it until the CAD administrator has set up the required permissions.



- 3 Click  Open on a Project-Specific Basis (Default toolbar).
- 4 Select the Building structure tab.
- 5 Select the Ground floor structural level, make drawing file 1000 Floor plan current and click Close.

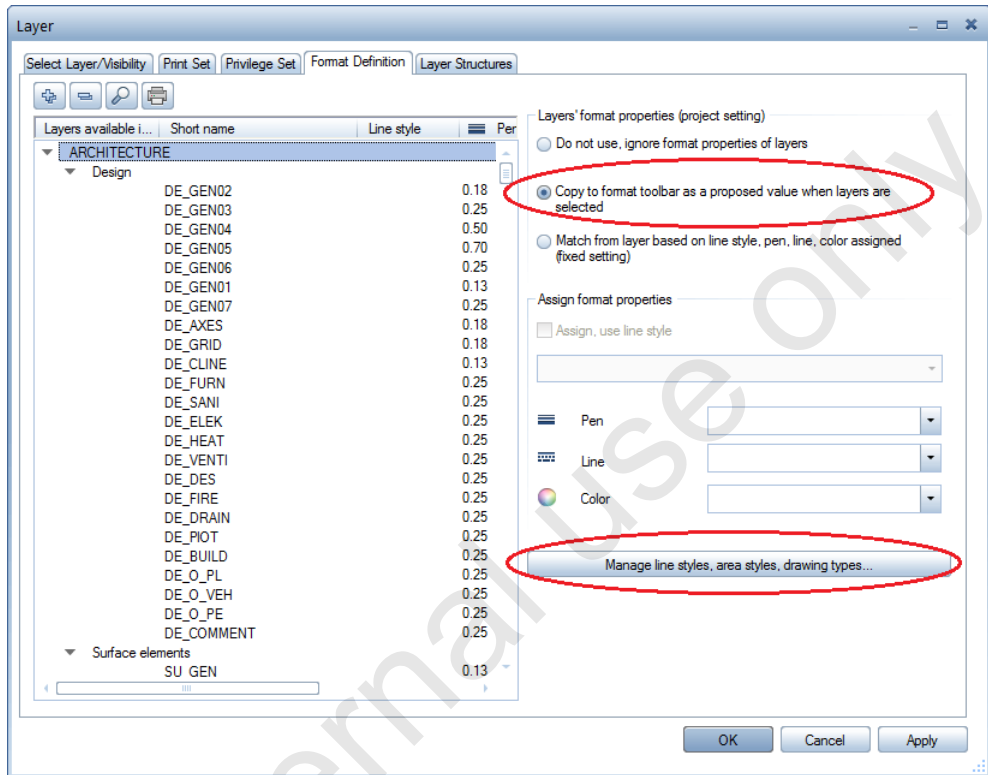


- 6 Check the information displayed in the title bar of the Allplan application window to see whether you have loaded the correct data.
- 7 Click  **Zoom All** at the bottom of the viewport (or press the F5 KEY) to display the entire floor plan.
- 8 Open the **Select Layer/Visibility** tab of the **Layer** dialog box (double-click the right mouse button) and make sure that all layers are modifiable. Check the other settings, too.

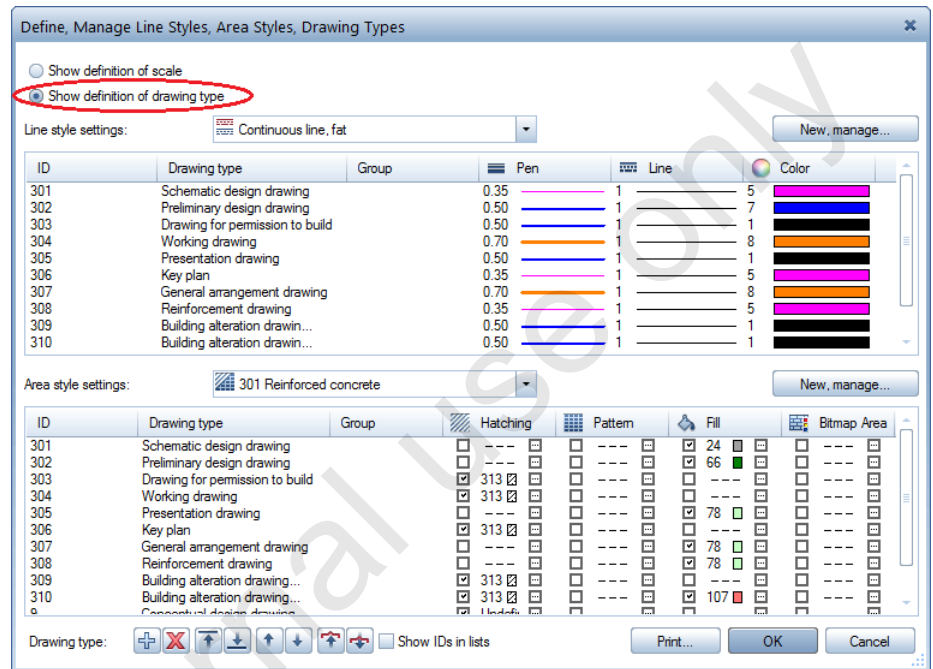


Note: If you cannot select the **Match** check boxes in the **Layers' format properties** area, have a look at the setting on the **Format Definition** tab (see step 9).

9 Open the Format Definition tab and check the settings.

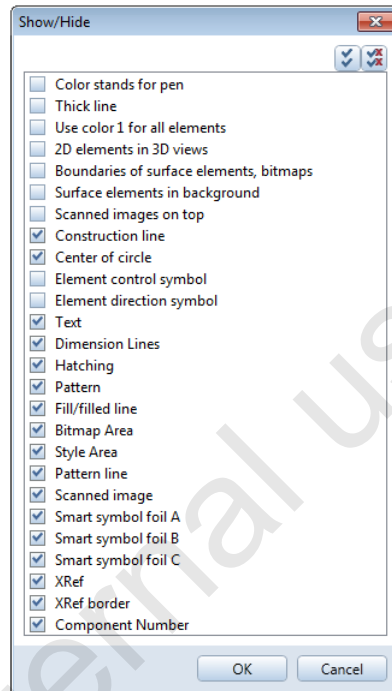


- 10 Click the **Manage line styles, area styles, drawing types...** button, check the setting and confirm this dialog box and the **Layer** dialog box by clicking **OK**.



- 11 Next, have a look at the settings in the status bar: drawing type set to **Schematic design drawing**; reference scale: **1:100**; unit of length: **m**; system angle: **0.00**; unit of angle: **deg**. Then click

 **Show/Hide** (View menu) and check the following settings:



- 12 Click **OK** to confirm the settings.
- 13 Open the Wizards palette. Select the **Fit for CAD** group (if it isn't active).
Click the various tabs to see whether the individual wizards are available.

Note: If they aren't, you need to copy them from the CD and then open them. Follow the description provided in "Fit for CAD - Basics".

- 14 Select the  **Line tool** (Tools palette - Basic family - Draft module - Create area) and check the settings in the dialog line:

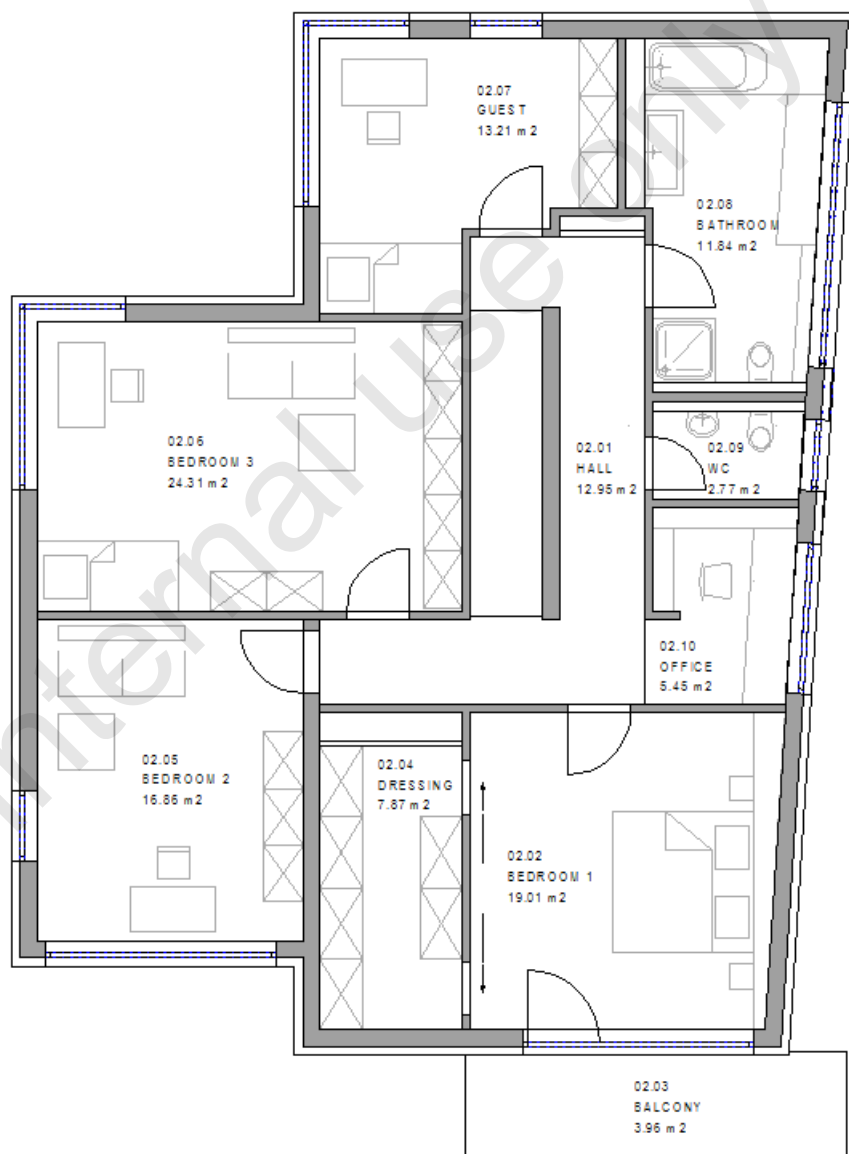
	Delta point:	on
	Track line:	on
	Rasterize length:	off
	Enter at right angles:	off
	Enter using cursor snap:	off

- 15 Click in the empty workspace with the right mouse button, select  **Point snap options** and  **Track tracing options** and, if necessary, customize the settings for your needs.

- 16 Press ESC to quit the  **Line tool**.
-

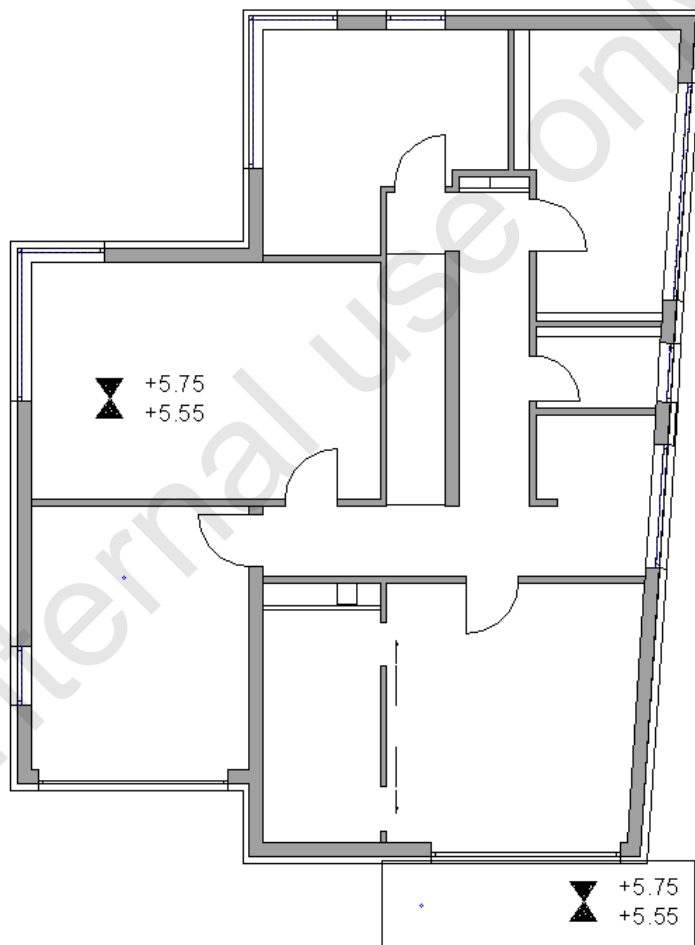
For internal use only

Exercise 2: first upper floor



Task 1: floor plan and height

Overview



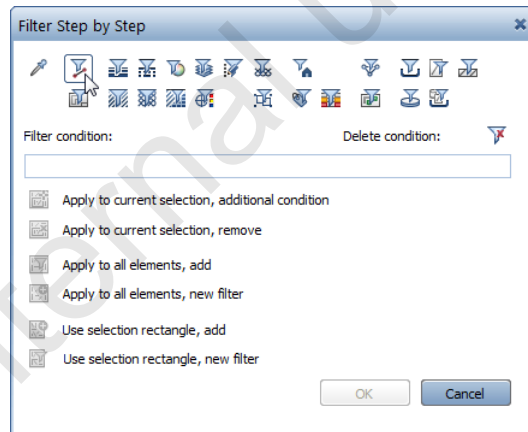
Use the following tool(s) to do this:

Function	How to activate it
 Filter Step by Step	Properties palette
 Paste to Original Position	Edit menu
 List Default Planes	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area
 Delete	Edit flyout
 Filter by Archit. Element Type	Filter Assistant toolbar
 Restore 3D View	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Change area
 Apply Archit. Component Properties	Tools palette - Architecture family - Basic: Walls, Openings, Components module - Change area
 Join Linear Components	Shortcut menu
 Join Linear Component with Line	Shortcut menu
 Insert Smart Symbol in Opening	Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area
 Open...	Default toolbar
 Copy	Edit menu
Close All	File menu
 Area detection	Input options
 Elevation Point	Shortcut menu
 Custom Planes	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area
 Modify Offset	Edit toolbar

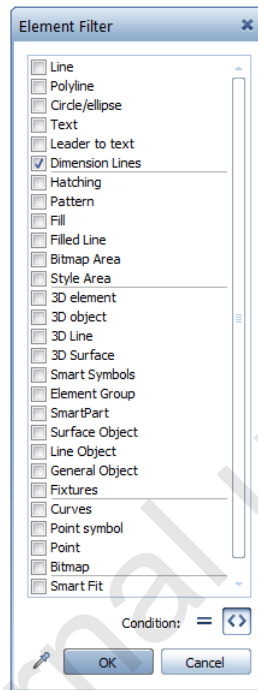
Solution

To copy drawing file 1000 to drawing file 1100

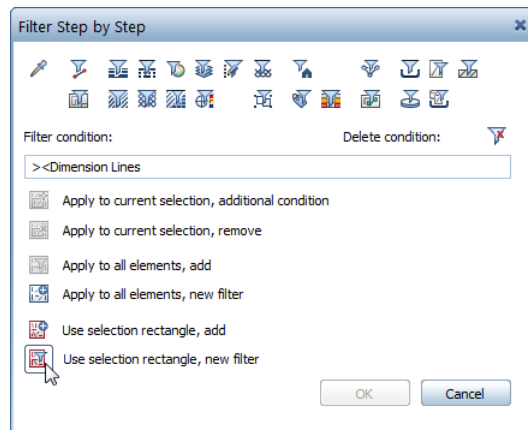
- Project: Fit for CAD 2014 - Architecture
 - Drawing file setting: **Ground floor** structural level active; drawing file **1000** current.
 - Layer setting: all layers are modifiable.
- 1 Copy the GF floor plan without dimensions from drawing file **1000 Floor plan** (in the **Ground floor** structural level) to drawing file **1100 Floor plan** (in the **First upper floor** structural level). To do this, open the Properties palette and click  **Filter Step by Step**.
 - 2 In the Filter Assistant, click  **Filter by Element Type**.



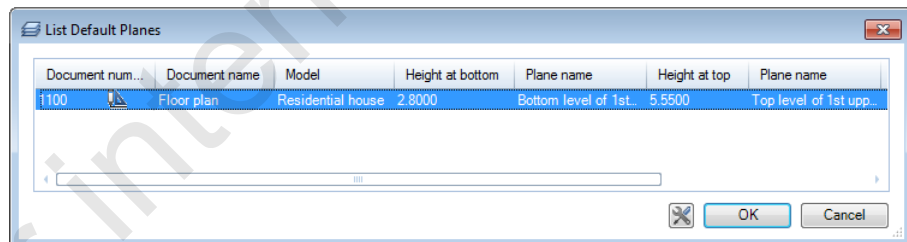
- 3 Set the following in the Element Filter dialog box and click OK to confirm.



- 4 Check the filter condition in the Filter Step by Step dialog box and click Use selection rectangle, new filter.



- 5 Make sure that the filter condition is displayed in the dialog line and select all the elements of the floor plan by enclosing them in a selection rectangle.
- 6 Check that all the elements (except the dimension lines) are displayed in the selection color. Then click  **Copy** (Edit menu) or press CTRL+C to copy the floor plan without dimension lines to the Clipboard.
- 7 Deactivate the **Ground floor** structural level, activate the **First upper floor** structural level and make drawing file 1100 current.
- 8 Select  **Paste to Original Position** (Edit menu) or press CTRL+ALT+V TO insert the contents of the Clipboard at the original position on the first upper floor.
- 9 As a result, the height settings of the architectural components have changed. Check this using the  **Elevation Point** tool (Tools palette - **Architecture** family - **General: Roofs, Planes, Sections** module - **Create area**).
- 10 Check the planes assigned to drawing file 1100. To do this, select the  **List Default Planes** tool (Tools palette - **Architecture** family - **General: Roofs, Planes, Sections** module - **Create area**).



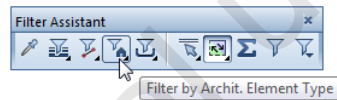
You can use this tool to check and, if necessary, modify the planes assigned to the current drawing file and files open in edit mode.

Deleting components on the first upper floor

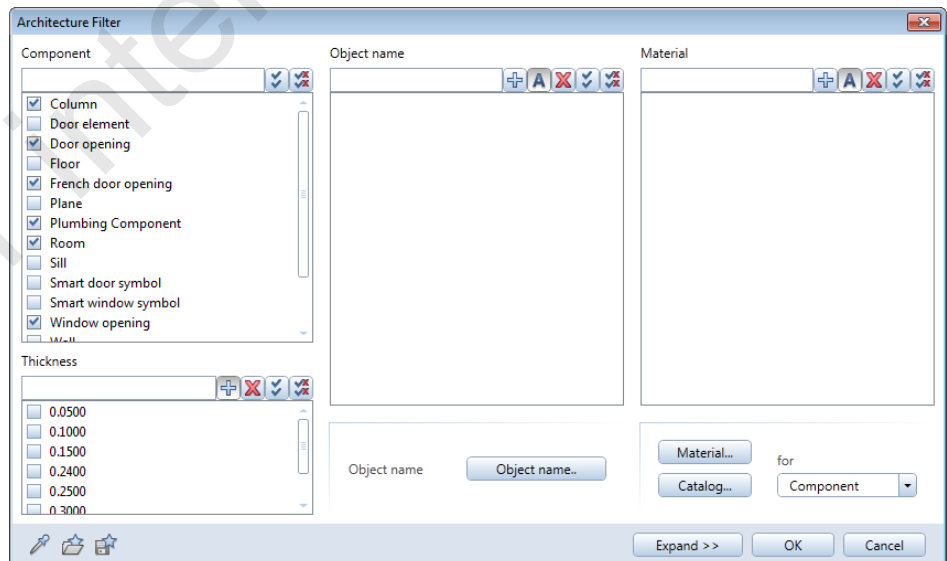
Before you start editing the first upper floor, you will delete some components that are no longer required. For this, you will use the filter assistant provided by Allplan

To delete components on the first upper floor

- Drawing file setting: First upper floor structural level active; drawing file 1100 current.
- Layer setting: all layers are modifiable.
- 1 Click  Delete (Edit toolbar).
- 2 Click  Filter by Archit. Element Type on the Filter Assistant toolbar.



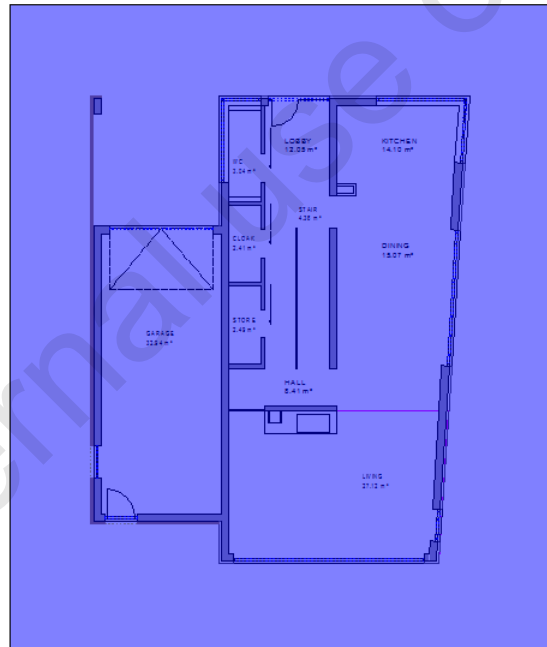
- 3 Select the components you want to delete in the Architecture Filter dialog box.



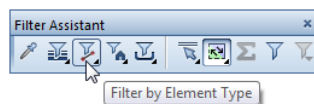
- 4 Click OK to confirm and check the dialog line to see if the filter condition is set correctly.

<Delete> Select element(s) you want to delete < Column Door opening French door opening Plane Plumbing Component Room Window opening >

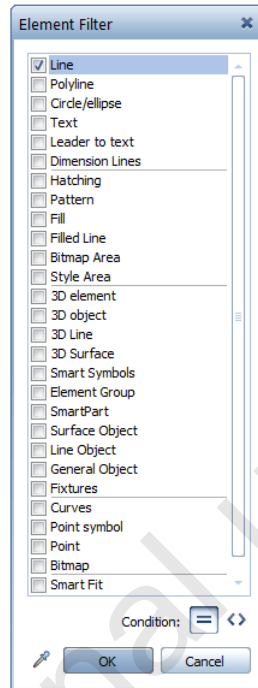
- 5 Select all the elements by enclosing the entire floor plan in a selection rectangle.



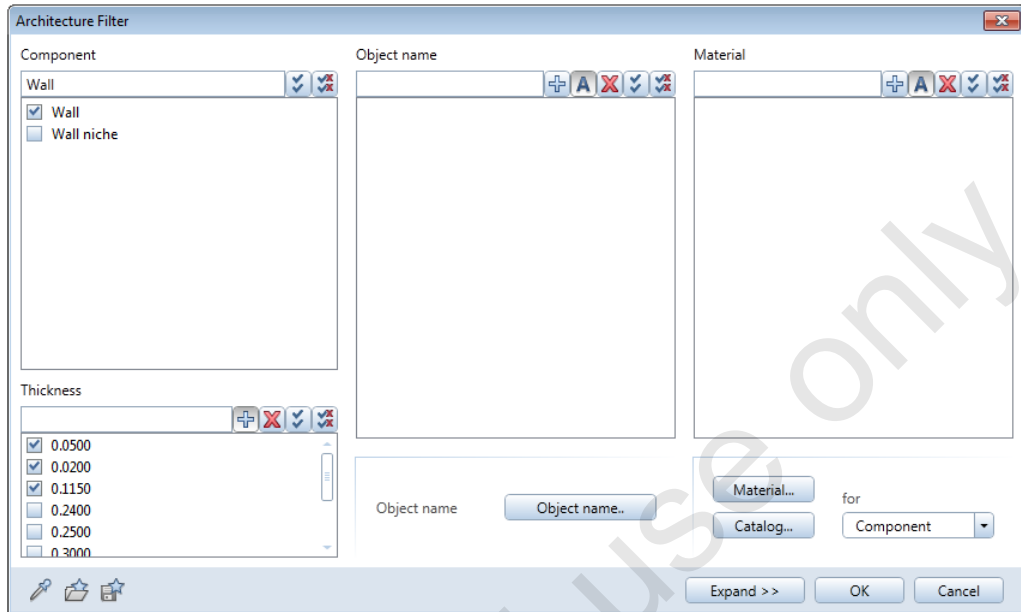
- 6 Next click  Filter by Element Type on the Filter Assistant toolbar.



- 7 Set the following in the Element Filter dialog box:

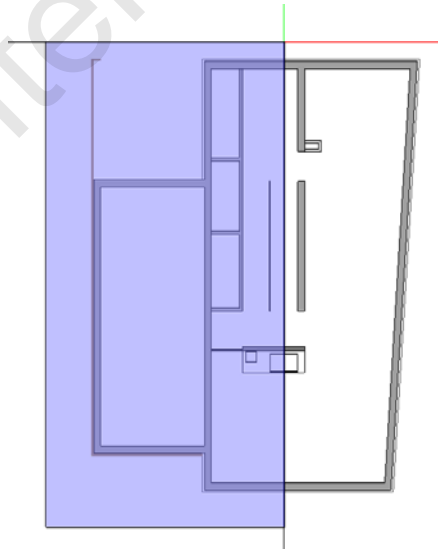


- 8 Click **OK** to confirm and check the filter condition in the dialog line again.
- 9 To add another filter condition, click  **Filter by Architect.**
Element Type on the Filter Assistant toolbar.
- 10 In the **Architecture Filter** dialog box, select the **Wall** component and the following thickness settings: **0.02**, **0.05** and **0.115**.
Finally, click **OK** to confirm.

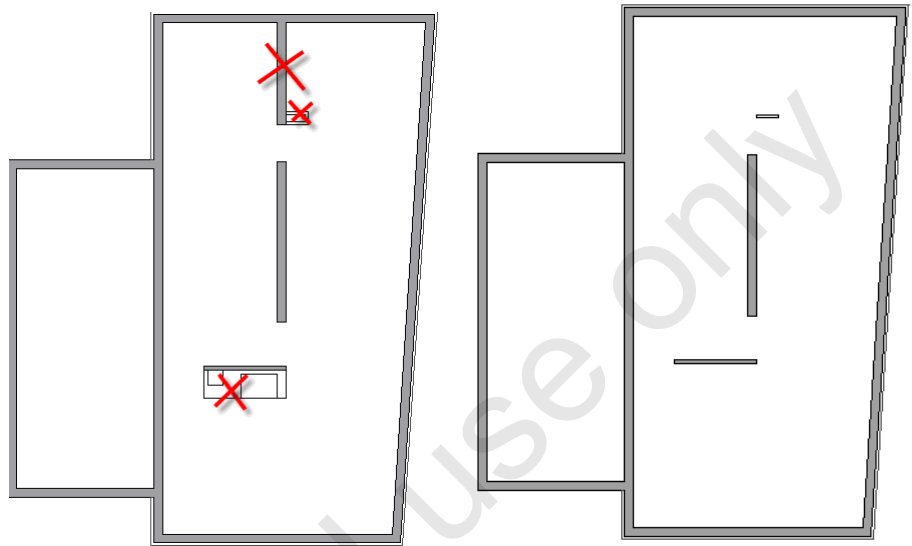


- 11 Once again, check the dialog line to see if the filter condition is set correctly. Then enclose the relevant region in a selection rectangle (from left to right!). Make sure that the wall for the open fireplace is *not* fully bounded by the selection rectangle.

Tip: You can also access the filters in Allplan by pressing the CTRL key and clicking the right mouse button (selection shortcut menu). This is very useful if you have hidden all toolbars (using CTRL+G).



12 Delete the other components one by one and check the result.



13 Press ESC to quit the tool.

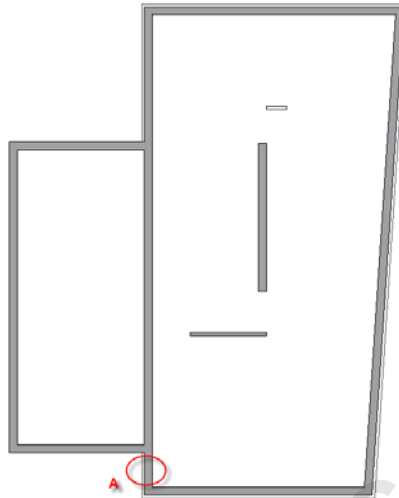
To modify the exterior walls on the first upper floor

➤ Drawing file setting: **First upper floor** structural level active; drawing file **1100** current.

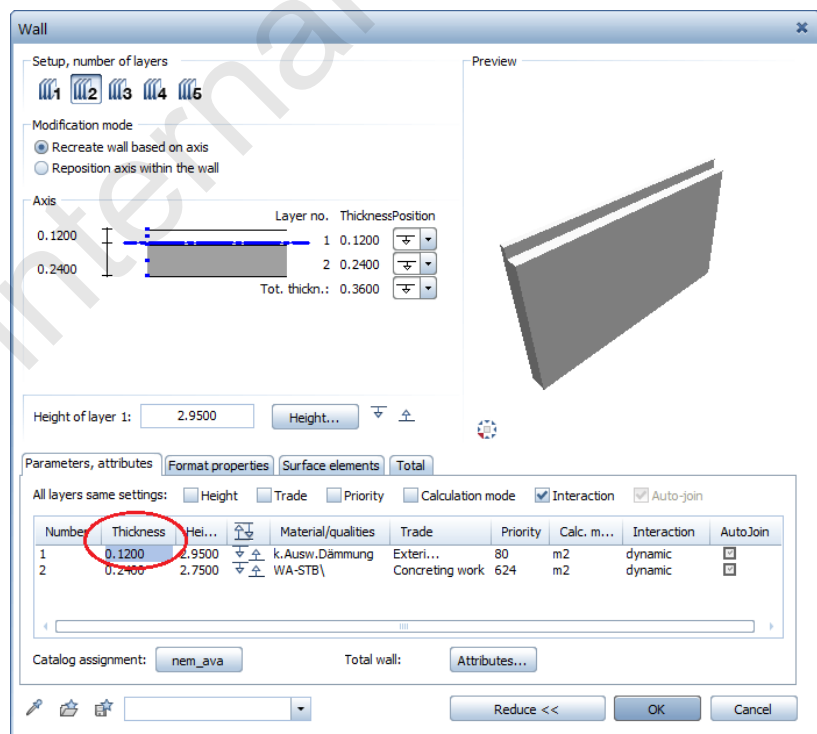
➤ Layer setting: all layers are modifiable.

1 Now you will change the setup of the exterior walls.

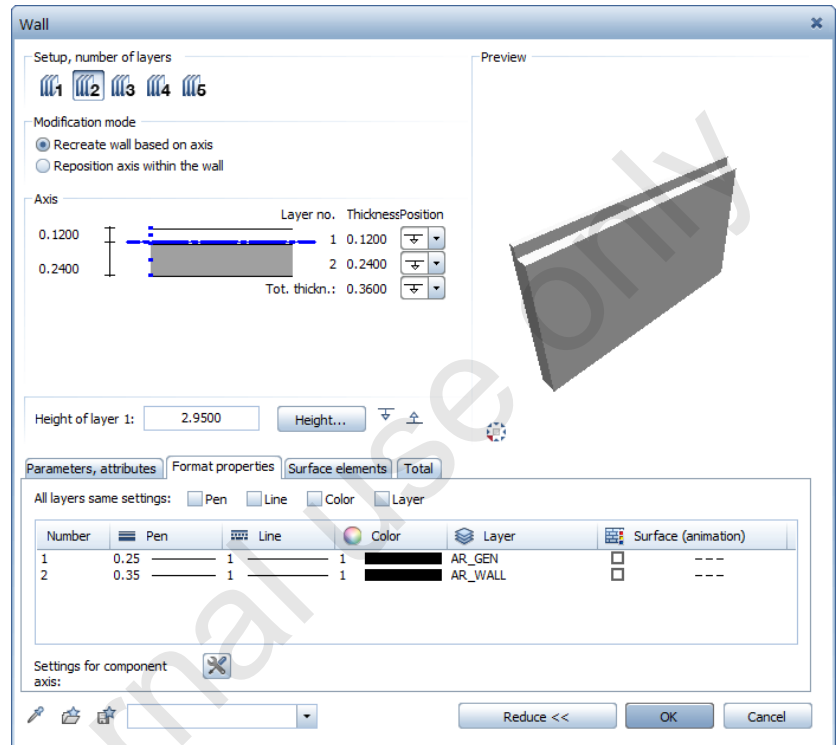
Using the left mouse button, double-click the exterior wall near point A.



- 2 The Wall dialog box is displayed. On the Parameters, attributes tab, change the Thickness of layer 1 to 0.12 m.



- 3 On the **Format properties** tab, change the color of layer 1 to 1.



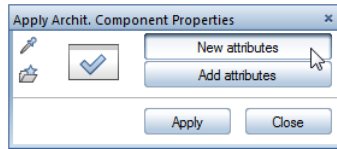
- 4 Click **OK** to confirm the Wall dialog box.
- 5 The next step is to apply these changes to all the other exterior walls.

To do this, select the  **Apply Archit. Component Properties** tool (Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area).

- 6 *Click the element whose settings you want to match*
Click the exterior wall you just modified (A).

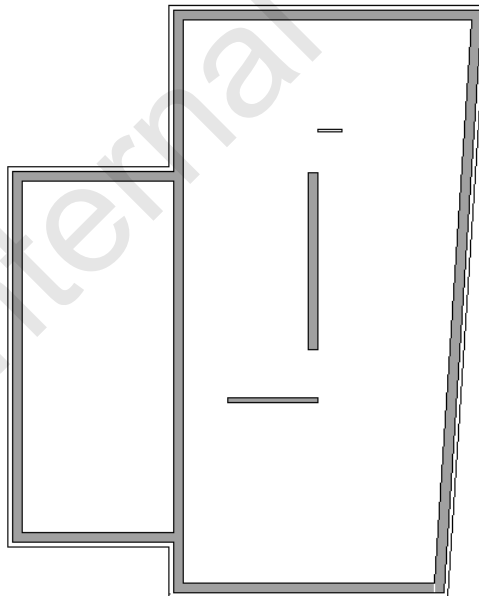
The Wall dialog box opens and you can check (and, if necessary, even change) the wall properties. Click **OK** to confirm the dialog box without further changes.

- 7 Click **New attributes** in the **Apply Archit. Component Properties** dialog box.



- 8 Select all the exterior walls and click **Apply**.
- 9 Press **ESC** to quit the tool.

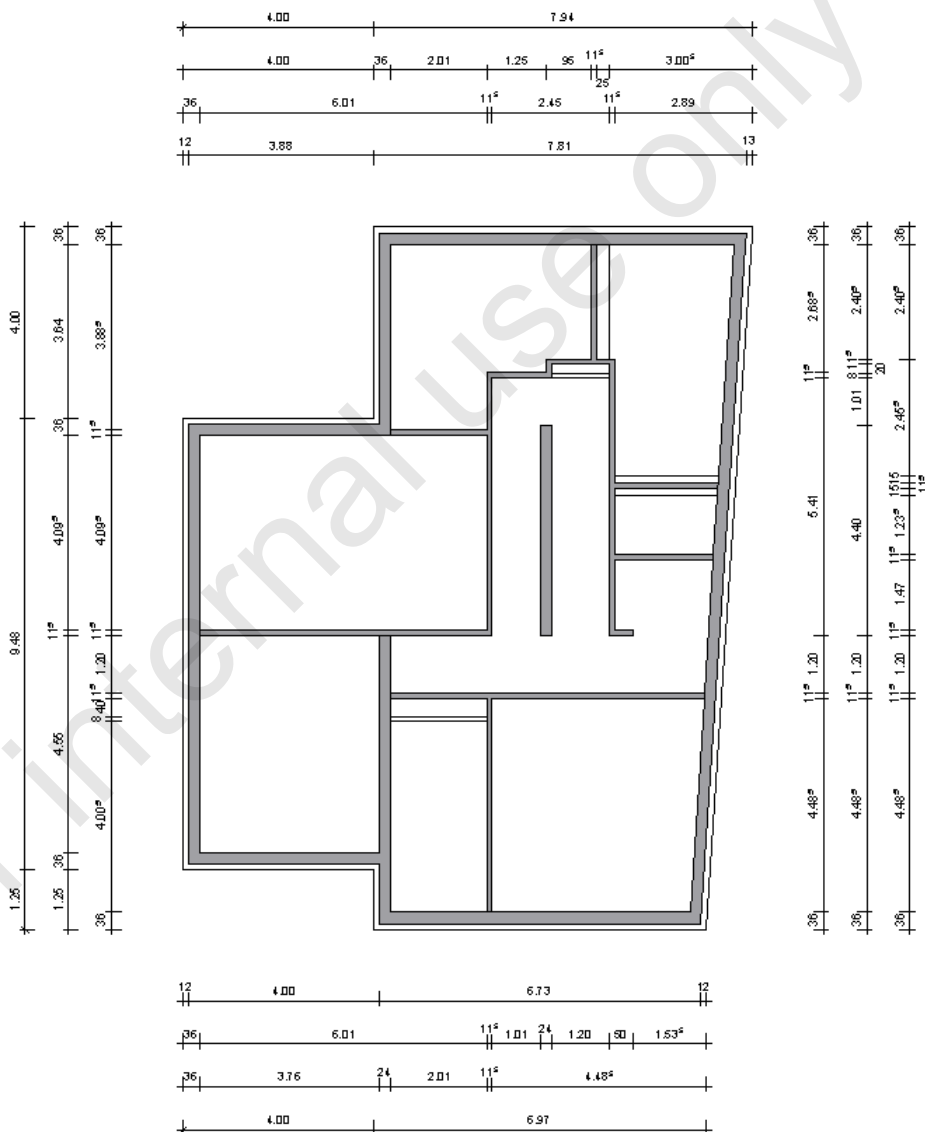
The first upper floor should now look like this:



Lengthening and shortening walls

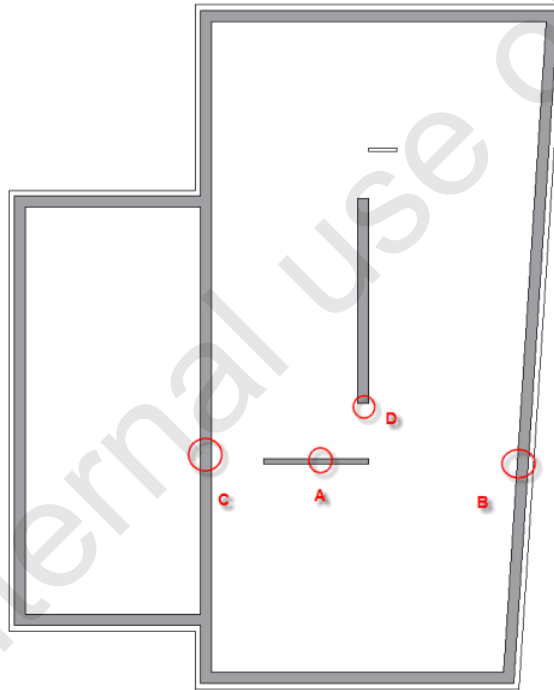
The next step is to shorten or lengthen all the walls on the first upper floor.

The result should look like this:



To lengthen and shorten walls

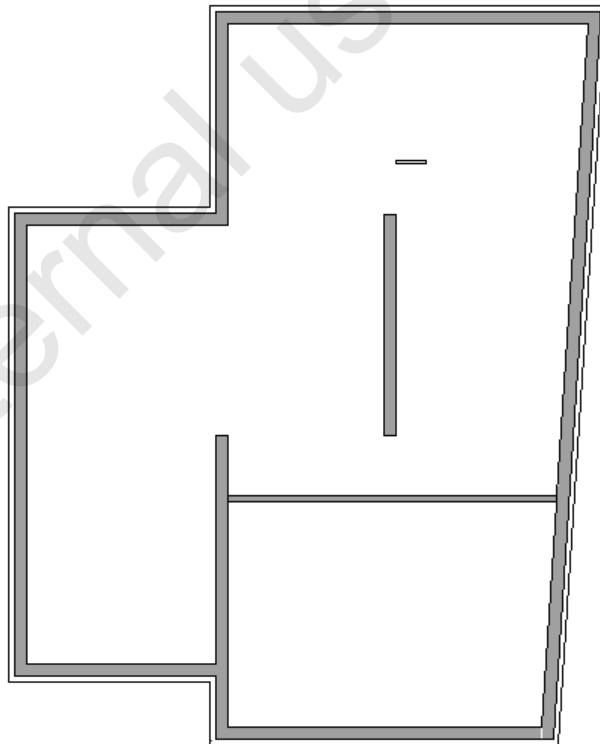
- Drawing file setting: First upper floor structural level active; drawing file 1100 current.
- Layer setting: all layers are modifiable.
- 1 Using the right mouse button, click the interior wall that is 0.115 m thick near point A.



- 2 Select  Join Linear Components on the shortcut menu.
- 3 Click the exterior wall on the right near point B.
- 4 *Click the component you want to join*
Click the wall you just lengthened again.
- 5 *Click similar component with which to join or enter width of joint*
Click the third wall near point C.

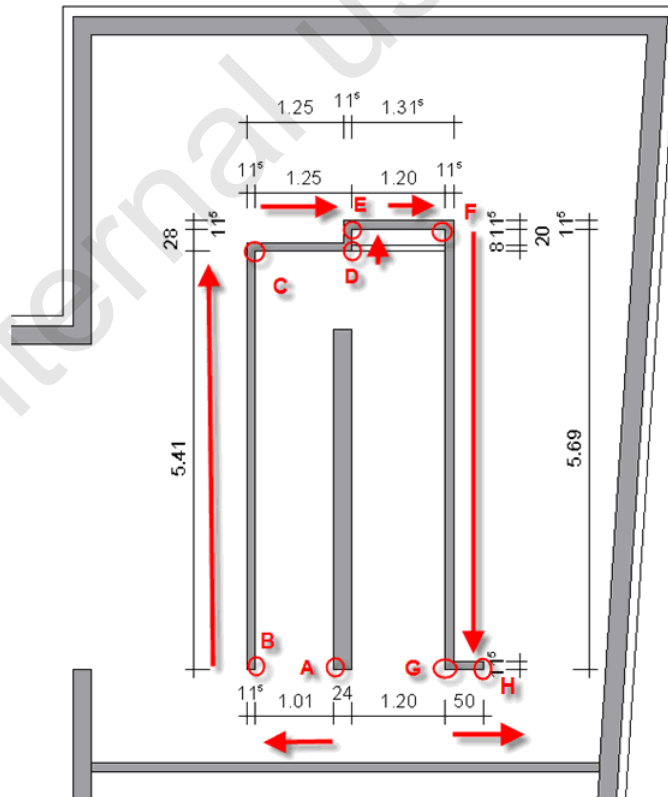
- 6 Press ESC to quit  **Join Linear Components.**
 - 7 Open the shortcut menu of the wall near point C and select  **Join Linear Component with Line.**
 - 8 *Click line with which to join or enter width of joint*
Click the short edge of the fourth wall (point D).
The redundant wall section is automatically deleted.
 - 9 Press ESC to quit  **Join Linear Component with Line.**
-

The first upper floor should now look like this:



To add walls for the staircase

- Drawing file setting: First upper floor structural level active; drawing file 1100 current.
 - Layer setting: all layers are modifiable.
- 1 Using the right mouse button, double-click the interior wall that is 0.115 m thick to create a new wall with the same properties.
Or:
Open the Wizards palette, select the FFC Structure wizard and double-click wall type 04 with the right mouse button.
 - 2 To create the first wall, start at point B at an offset of 1.01 m to point A.



To apply the offset to point A and quickly enter the new walls, you can switch on the  **Track line** tool in the dialog line.

If you prefer to work without track lines, you can also click point A with the right mouse button and select  **Additional point for entering offset** on the shortcut menu. Then enter the offset. In this case, it is a good idea to select the  **Enter using cursor snap** option, too.

- 3 Now enter the lengths of all the other walls.

Make sure that you check the length, angle and the position of the wall axis for each wall before you create it (by pressing ENTER or clicking).

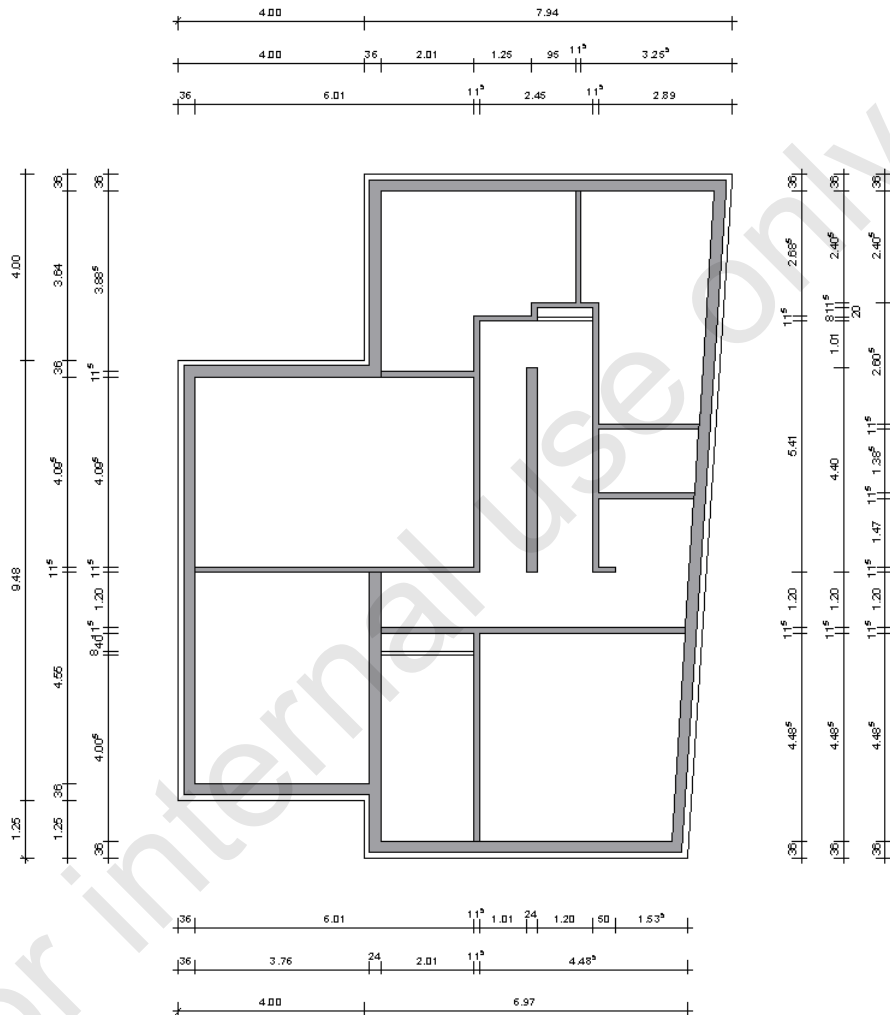
Start at point B and enter the following values for the angle and length:

90.0°	5.41 m
00.0°	1.25 m
90.0°	0.28 m
00.0°	1.20 m
90.0°	5.69 m
00.0°	0.50 m

Press ESC twice to finish.

- 4 Join the 0.08 m wall, which starts at point D, with the wall between points F and G.

5 Now enter all the other walls as shown below:

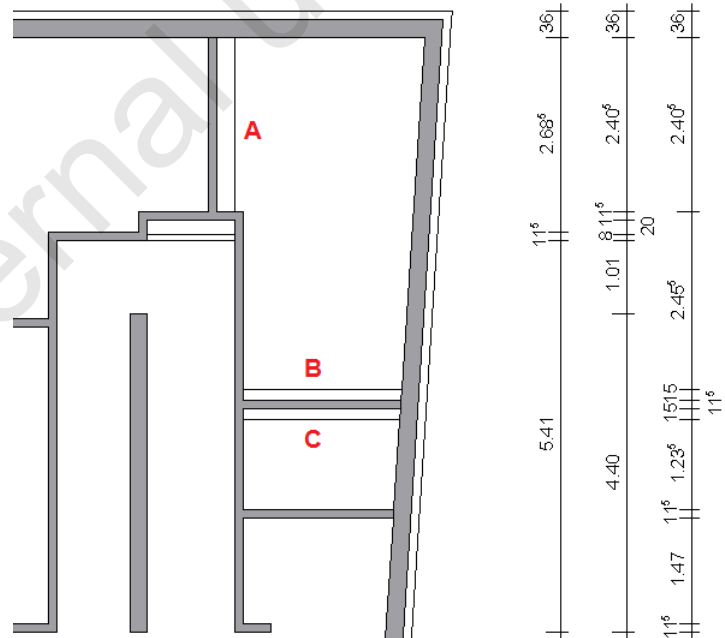
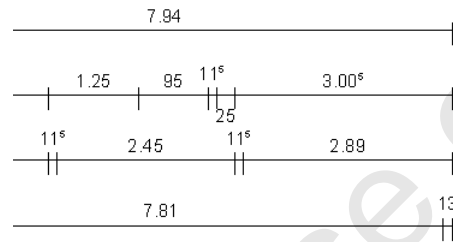


- 6 Create the plumbing walls in the bathroom and WC in the same way as the interior walls. Use the dimensions given and select the necessary components in the FFC Structure wizard.

A = 25 cm plumbing wall HH

B = 15 cm plumbing wall RH

C = 15 cm plumbing wall HH



- 7 Press ESC to finish entering walls.

- 3 On the Door Context toolbar, click  **Properties** and check the settings.



- 4 Set the anchor point as you need.
- 5 Check the settings in the dialog line.

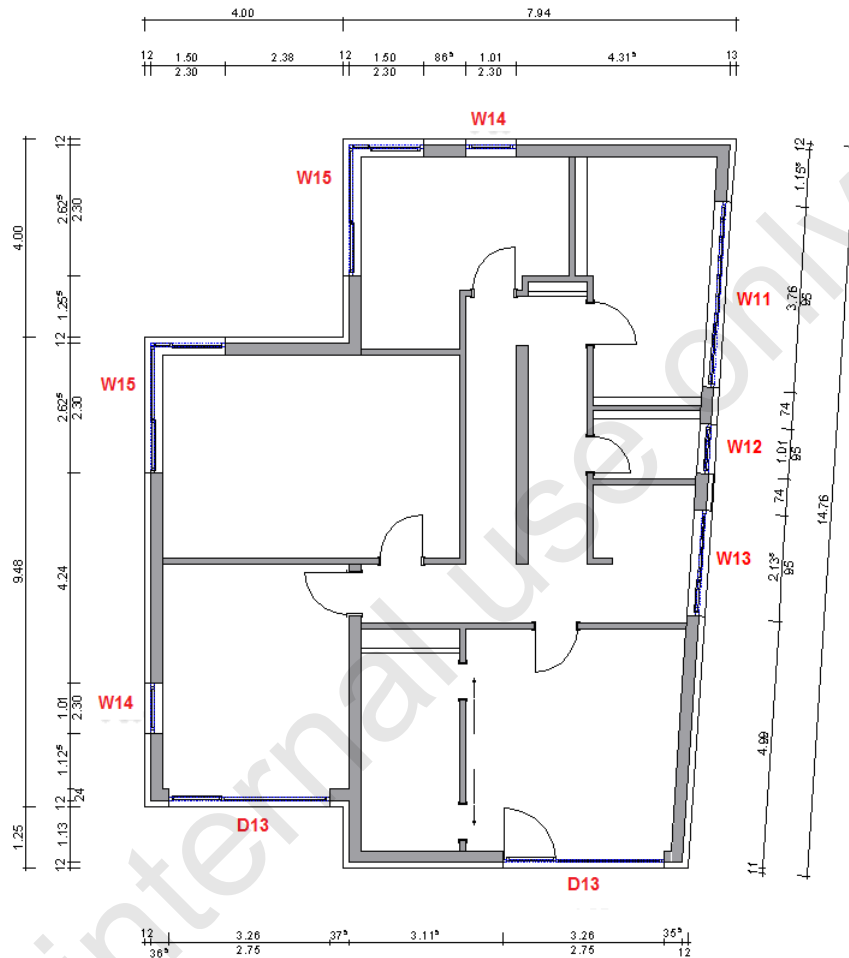
These settings are useful for entering the doors quickly:

- | | | |
|---|------------------------------|-----|
|  | Enter offset directly | off |
|  | Track line | on |
|  | Rasterize length | off |

- 6 *Place new reference point for smart symbol or confirm*
Bear in mind that the predefined doors in the wizard contain smart symbols indicating the door swing. Therefore, you first need to specify the opening direction of the door by clicking with the left mouse button before you confirm the smart symbol's reference point by clicking with the right mouse button.
- 7 Press ESC to finish entering doors.

To insert windows and French doors in the exterior wall

- Drawing file setting: **First upper floor** structural level active; drawing file 1100 current.
 - Layer setting: all layers are modifiable.
- 1 Check that you have selected the FFC 1UF wizard (Fit for CAD wizard group) in the **Wizards** palette. Create the windows and French doors in the exterior walls as shown below:



- 2 Double-click the required window type in the wizard with the right mouse button.
- 3 To simplify the process of selecting the reference point that defines the smart symbol's opening direction, set the **reference scale** to 1:50.
- 4 *Set properties or click a line of an exterior wall*
Click the **outer line** of the wall roughly where you want to create the opening. This ensures that the **outer reveal** and **outer sill** are created in the correct position.

- 5 On the **Window** or **Door** (for French doors) Context toolbar, click  **Properties** and check the settings.



- 6 Set the anchor point as you need.
- 7 Check the settings in the dialog line.
The following settings help you enter the windows and French doors quickly:

	Enter offset directly	off
	Track line	on
	Rasterize length	off

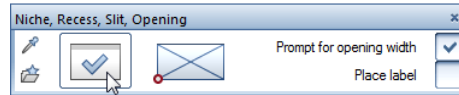
- 8 *Place new reference point for smart symbol or confirm*
Bear in mind that the predefined openings in the wizard may include smart symbols indicating the frame, casement and door swing. Therefore, you first need to specify the reference point of the smart symbol or of the door swing by clicking with the left mouse button before you confirm the smart symbol's reference point by clicking with the right mouse button.
- 9 Press ESC to finish entering the openings.

You will now create two niches between the windows W11, W12 and W13 and insert a smart symbol. For better orientation you will start by setting the drawing type to "building drawing".

To create niches in the exterior wall

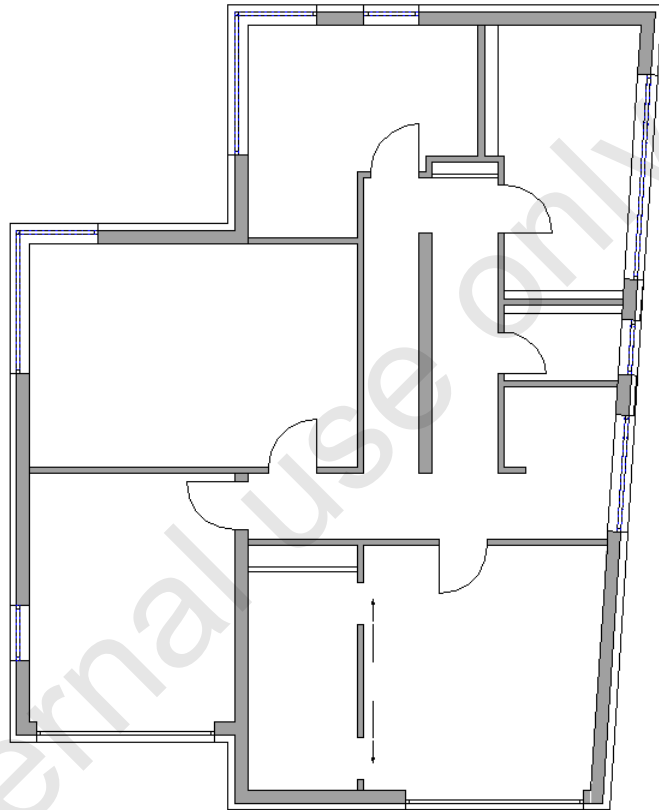
- Drawing file setting: **First upper floor** structural level active; drawing file 1100 current.
 - Layer setting: all layers are modifiable.
- 1 Click **Drawing type** in the status bar and select **Building drawing**.

- 2 In the FFC 1UF wizard, double-click component N11 Niche without smart symbol with the right mouse button.
- 3 Click the outer line of the wall where you want to create the niche.
- 4 On the Niche, Recess, Slit, Opening Context toolbar, click  Properties and check the settings.



- 5 Set the anchor point as you need.
- 6 Enter the niche in the same way as the other openings.
- 7 Allplan prompts for the depth of the niche. Enter 0.12 m and press ENTER to confirm.
- 8 Press ESC to finish creating niches.
- 9 Select the  Insert Smart Symbol in Opening tool (Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area).
- 10 *Select smart symbol to match*
Switch to the Wizards palette and click the S11 Facing smart symbol.
- 11 *Click opening in which to insert smart symbol*
Click within the niche. The smart symbol is inserted.
- 12 *Place new reference point for smart symbol or confirm*
Specify the position of the smart symbol (flush with the load-bearing structure) by clicking with the left mouse button. Then click the right mouse button to confirm.
- 13 Press ESC to finish inserting smart symbols.
- 14 In the status bar, set the reference Scale back to 1:100 and the Drawing type back to Schematic design drawing.

The first upper floor should now look like this:



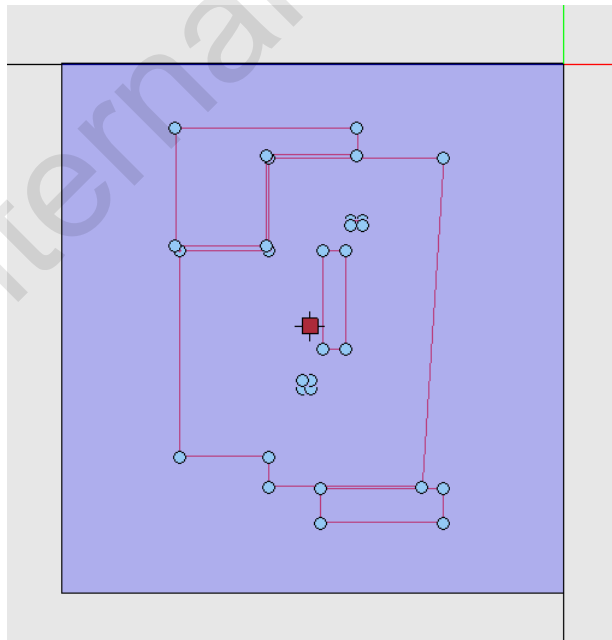
Creating additional slabs

The next step is to add two slabs to slab 1 you created in drawing file 1003. You will copy the outlines of the slabs from the GF slab outline.ndw file on the CD.

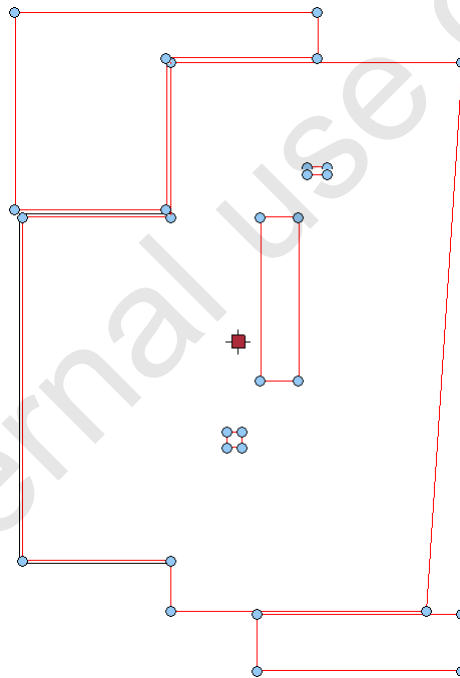
To create additional slabs

- Drawing file setting: **First upper floor** structural level active; drawing file **1100** current.
 - Layer setting: all layers are modifiable.
- 1 Deactivate the **First upper floor** structural level, activate the **Ground floor** structural level and make drawing file **1003 Slab** current.
 - 2 On the **Default** toolbar, select  **Open....**
 - 3 Select the **GF slab outline.ndw** file in the **\NDW data** folder on the training CD. Allplan opens the file and displays it in a separate NDW window.
 - 4 Select all the elements of the NDW file by enclosing them in a selection rectangle (do *not* use CTRL+A, as the settings of the planes are *not* to be copied). The selected elements are displayed in the selection color.

Tip: To choose the background color for NDW windows, select  **Options - Desktop environment - Display**.



- 5 Select the  **Copy** tool on the Edit menu (or press CTRL+C).
The elements are copied to the Clipboard.
- 6 On the File menu, click **Close All** to close the NDW window
Or:
Click  **Close** in the top right corner of the NDW window.
- 7 On the Edit menu, select  **Paste to Original Position**
(CTRL+ALT+V) to insert the GF slab outline in its original position in drawing file 1003.



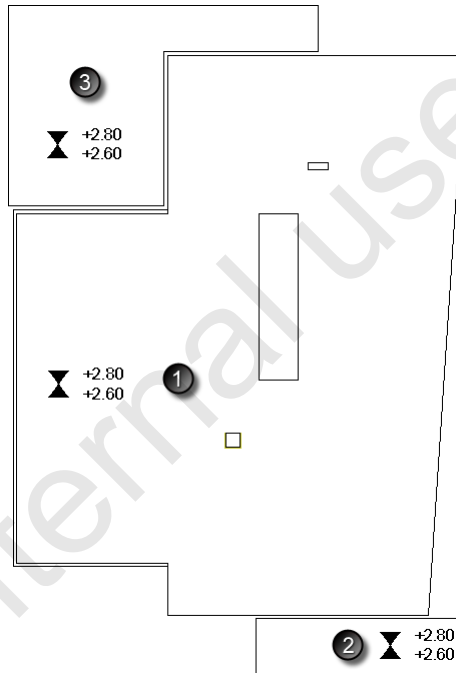
The outline of the slab is saved in construction line format on the DE_CLINE layer.

- 8 Select the FFC **Structure** wizard in the Wizards palette. Use component 14 **Slab RC** and  **Area detection (Input Options)** to create the two missing slabs.
- 9 Press ESC to finish entering the slabs.

- 10 Open the shortcut menu of a slab and select

 **Elevation Point.**

- 11 Select appropriate settings on the **Elevation Point** Context toolbar and in the **Input Options** and place the elevation specifications on the AR_ELEVA layer.
- 12 *Select component of which to determine elevation points*
Click the other slabs and place the elevation specifications as required.



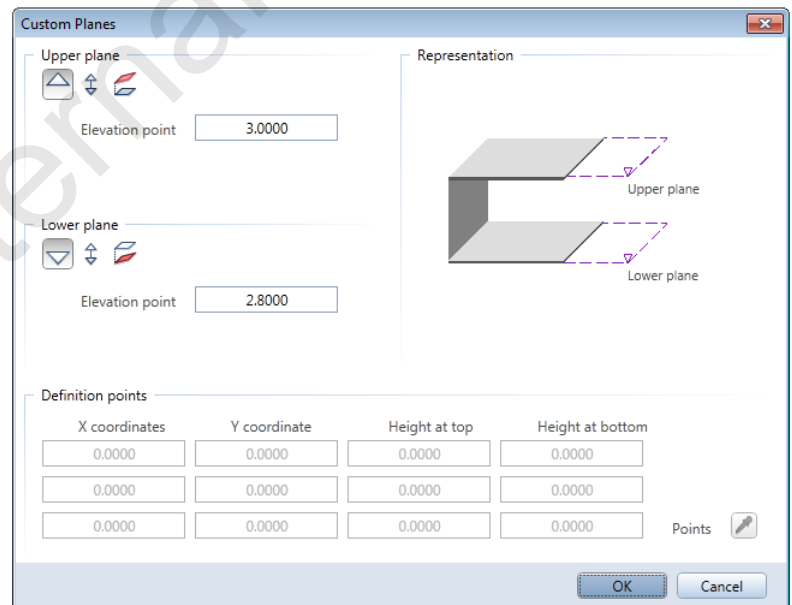
- 13 Press ESC to finish.

Changing the height of slab 3

The height of slab 3 needs to be changed. To do this, you will use the  Custom Planes tool.

To change the height of slab 3

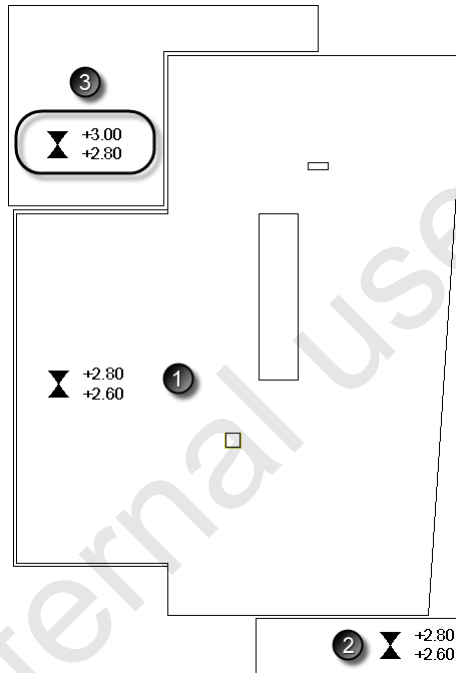
- Drawing file setting: **Ground floor structural level active**; drawing file **1003 Slab** current.
- Layer setting: all layers are modifiable.
- 1 Select the  Custom Planes tool (Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area).
- 2 Select  Single: enter a single closed area in the Input Options.
- 3 On the Custom Planes Context toolbar, click  Properties and define the following settings:



- 4 Click **OK** to confirm.

- 5 Use  **Area detection (Input Options)** to create the custom pair of reference planes for slab 3.
- 6 Press ESC to finish.

Check the elevation specifications. As you can see, the height of the slab has changed

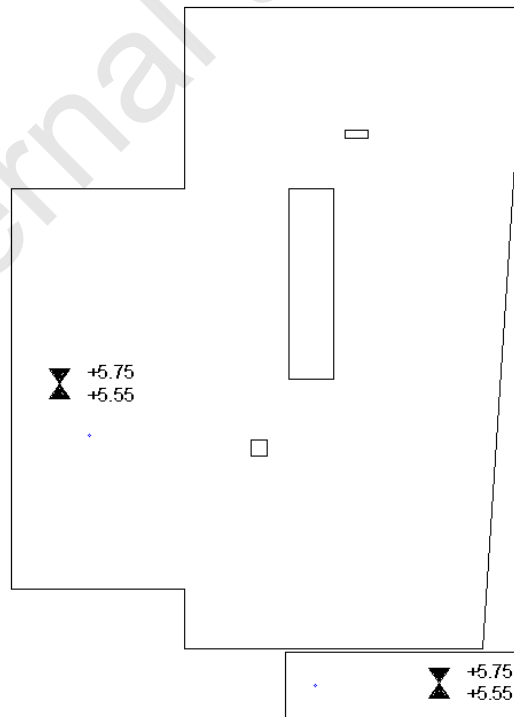


Copying slabs 1 and 2 to drawing file 1103

The next step is to copy the slabs 1 and 2 to drawing file 1103. Try to accomplish this task on your own. The main steps involved are described here:

To copy slabs 1 and 2 to drawing file 1103

- Drawing file setting: **Ground floor** structural level active; drawing file 1003 **Slab** current.
- Layer setting: all layers are modifiable.
- 1 Select slabs 1 and 2 (use the mouse and CTRL).
- 2 Copy the slabs to the Clipboard (using CTRL+C).
- 3 Switch to drawing file 1103 **Slab**
(deactivate the **Ground floor** structural level, select the **First upper floor** structural level, select drawing file 1103 **Slab**).
- 4 Insert the slabs at the original position in drawing file 1103 (using CTRL+ALT+V).
- 5 Check the height using the elevation specifications.

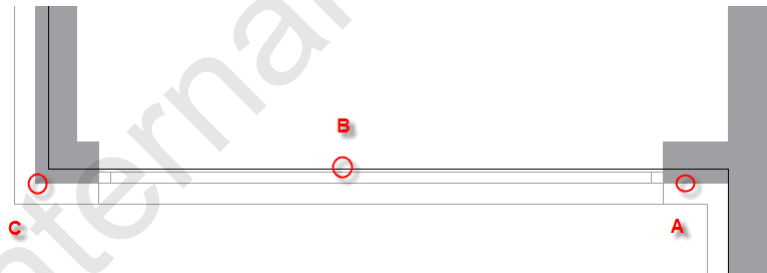


Modifying the slab outline in drawing file 1103

The slab above the garage is to extend as far as the outside edge of the load-bearing structure. To achieve this, you will modify the edge of slab 1 in this region. In addition, you will adjust the edge of slab 2 to the edge of the exterior wall.

To modify the slab outline in drawing file 1103

- Drawing file setting: First upper floor structural level active; drawing files 1103 Slab current and 1100 Floor plan open in reference mode.
- Layer setting: all layers are modifiable.
- 1 Select  **Modify Offset** (Edit toolbar) to modify the offset between the outside edge of the load-bearing structure at point A and the edge of the slab at point B. First click the line you do not want to change (A) and then the line to be modified (B).

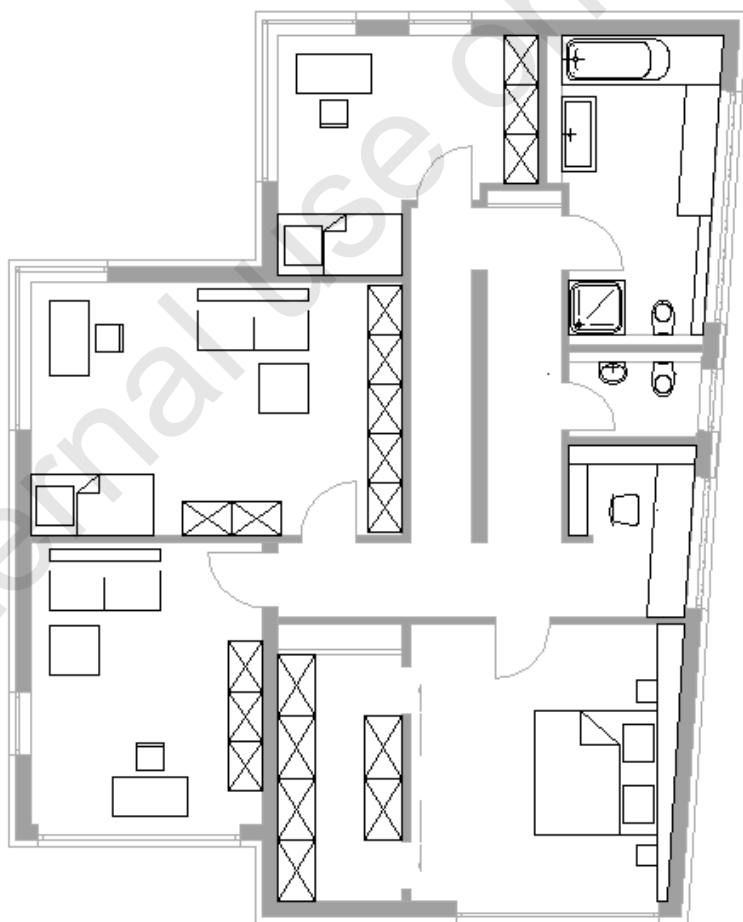


Tip: If you are not familiar with an Allplan tool, all you need to do is select this tool and press the F1 key. This opens the Allplan help, which is the main source of information for learning about and working with Allplan.

- 2 Enter the new offset between the parallel lines or click a point (C) to specify the new offset.
 - 3 Press ESC to finish. Modify the next offset in the same way.
- Note:** As an alternative, you can also modify the edge of the slab using the  **Stretch Entities** and  **Fold Line** tools (both on the Edit toolbar).
- 4 Press ESC to finish.
-

Task 2: furnishing the first upper floor

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Import PDF Data	File menu - Import
 Move	Edit toolbar
 Delete	Edit flyout
 Modify Format Properties	Edit toolbar

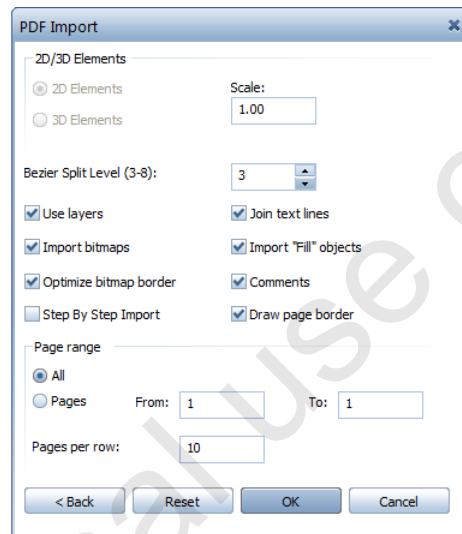
Solution

You will import the furniture for the first upper floor from a PDF file at a scale of 1:100. You can find this file on the "Fit for CAD" CD.

To import a PDF file

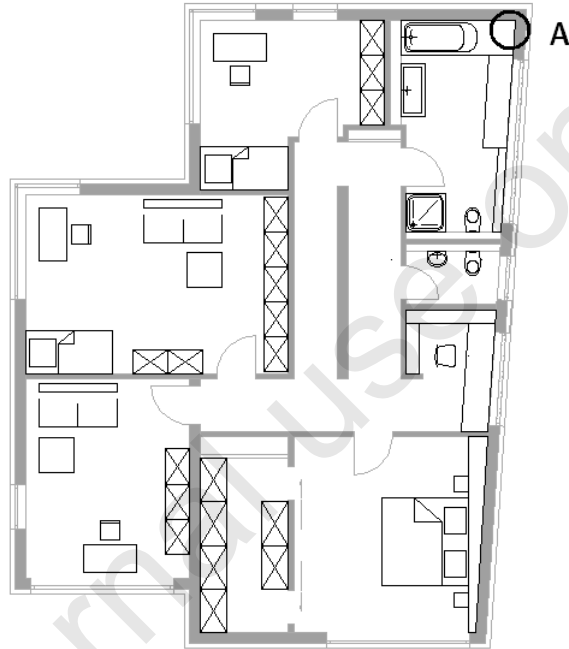
- Drawing file setting: **First upper floor** structural level active; drawing file **1101 Furniture** current; drawing files **1100 Floor plan** and **1103 Slab** open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Check that the reference scale is set to **1:100**.
 - 2 Open the File menu, point to **Import** and click  **Import PDF Data**

- 3 In the following dialog box, select the CD\PDF data\Furniture_1UF.pdf file and click **Open**.
- 4 The **PDF Import** dialog box is displayed. Make the following settings and click **OK** to confirm.



The file is imported to the drawing file.

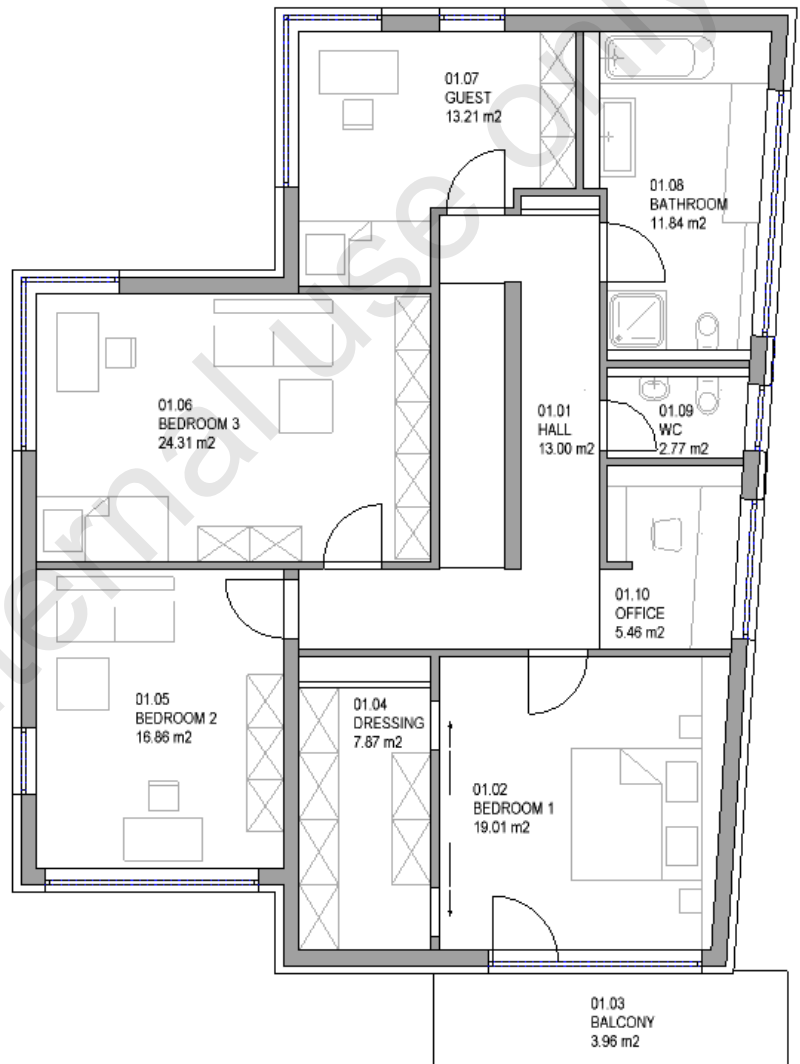
- 5 Select the  Move tool (Edit toolbar) and move the furniture to point A.



- 6 Select the  Delete tool (Edit toolbar) and delete the construction lines from drawing file 1101.
- 7 Check the layer assigned to the furniture and, if necessary, modify it using the  Modify Format Properties tool (Edit toolbar) or the Properties palette.
-

Task 3: rooms

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Auto-Room	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area
 Modify Layer Status	Shortcut menu
 Undo Layer Visibility	Format toolbar
 Layer Visibility	Format toolbar
 Room	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area
 Redefine Rooms, Surfaces, Stories	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area
 Split Surface Elements, Archit. Elements	Shortcut menu

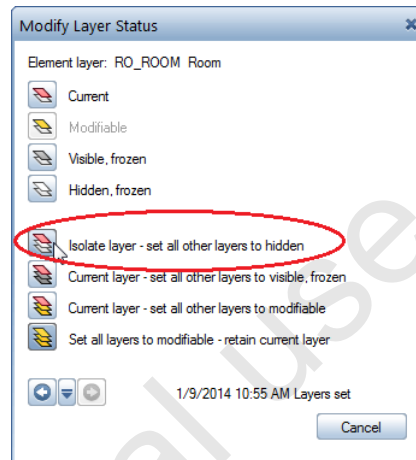
Solution

To create rooms on the first upper floor

- Drawing file setting: First upper floor structural level active; drawing file 1100 Floor plan current; drawing files 1101 Furniture and 1103 Slab open in reference mode.
- Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Click  Auto-Room (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
Check that layer RO_ROOM is current.
- 2 *Select the area in which you want to create rooms*
Check the value entered for the Height on the Auto-Room Context toolbar and select the entire floor plan

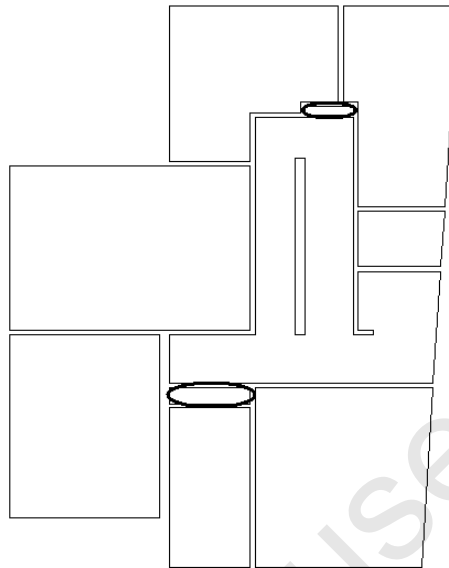
- 3 Make layer RO_ROOM modifiable and hide all the other layers.

Click in one of the rooms with the right mouse button and select  **Modify Layer Status** on the shortcut menu. In the **Modify Layer Status** dialog box, click **Isolate layer - set all other layers to hidden**.



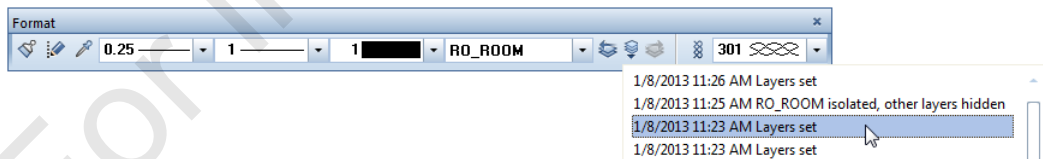
Now only the new rooms created in drawing file 1100 are visible.

- 4 As you can see, Allplan also created two rooms for the shafts. You can delete these rooms as they will not be included in subsequent area calculations.



- 5 As the balcony is not fully bounded by architectural elements, Allplan did not create a room in this area. Now set all layers to modifiable again (except AR_ELEVA).

Note: The layer setting "AR_ELEVA hidden, all other layers modifiable" had already been active before you isolated the RO_ROOM layer. Therefore you can now use  **Undo Layer Visibility** (Format toolbar) to restore the original layer setting or select a specific setting using  **Layer Visibility**.



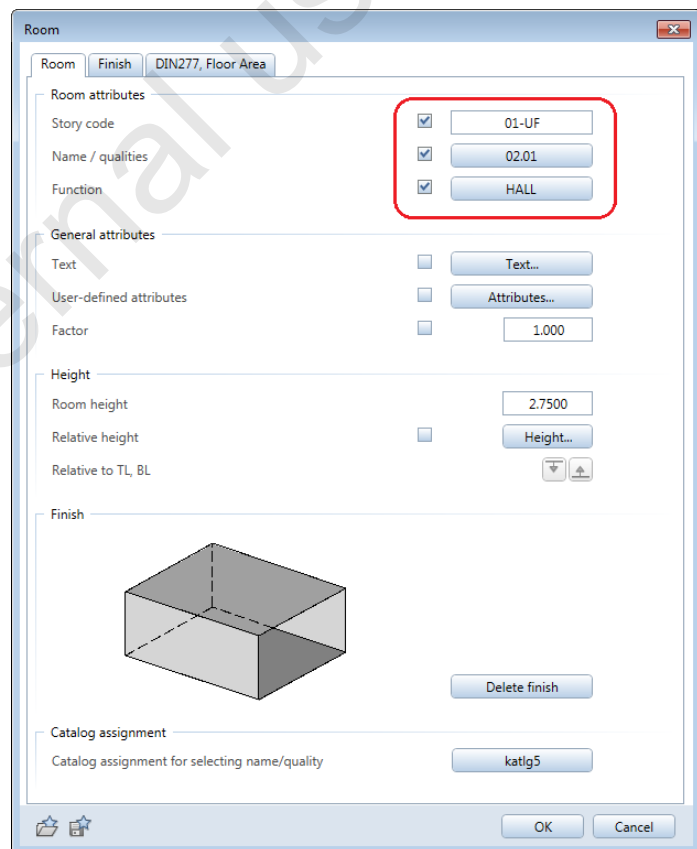
- 6 Create the room for the balcony manually using the  **Room** tool.

7 Place label

As you will modify and label the rooms in the next step, skip the prompt for the label and quit the tool by pressing ESC twice.

To modify and label rooms

- Drawing file setting: First upper floor structural level active; drawing file 1100 Floor plan current and drawing files 1101 Furniture and 1103 Slab open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Click  Redefine Rooms, Surfaces, Stories (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area).
 - 2 On the Redefine Rooms, Surfaces, Stories Context toolbar, click  Properties and enter the following label parameters in the Room dialog box:



Tip: Vertical surfaces and floors are required for correct area calculations.

You will learn how to define finish specifications later.

In order to enter the material name freely, you need to select catalogs **katlg2** (for vertical surfaces and ceilings) and **katlg3** (for floors) for materials in the **Attribute catalog assignment** area.

- 3 Switch to the **Finish** tab and enter a 1.5 cm layer for the lateral covering and a 15 cm layer for the floor covering.

Room

Room Finish DIN277, Floor Area

☒ Change vertical surface covering Thickness: 0.0150 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade
1		Wall covering	0.0150	1.0000	

☐ Change ceiling covering Thickness: 0.0000 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade

☒ Change floor covering Thickness: 0.1500 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade
1		Floor covering	0.1500	1.0000	

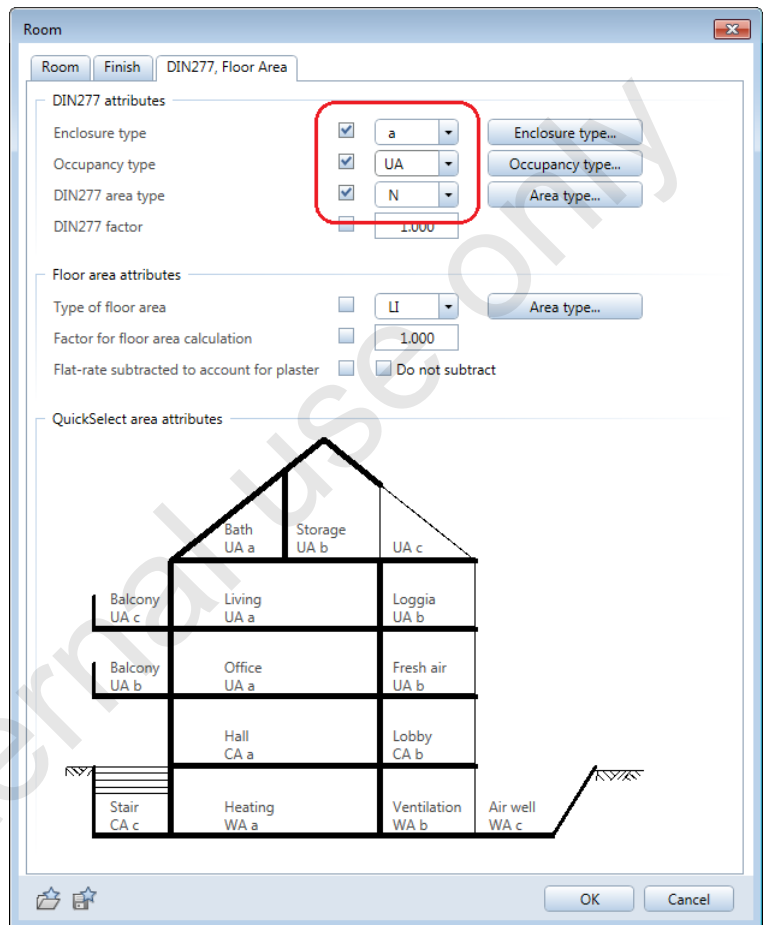
☐ Assign/remove baseboard   

No	Condition	Material/qualities	Factor	Trade

Total finish     Layer    Attribute catalog assignment  katlg2  katlg3

  OK Cancel

- 4 Open the DIN277, Floor Area tab and make the following settings:



- 5 Click OK to confirm.
- 6 *Select objects or confirm setting*
Click within the hall.
- The room is displayed in the selection color.

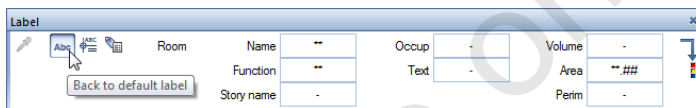
- 7 On the Redefine Rooms, Surfaces, Stories Context toolbar, click **Apply**.

The **Label** Context toolbar appears.

You can label these rooms in the same way as the rooms you created manually:

Tip: Press the F1 KEY to open the Allplan help, which provides detailed information.

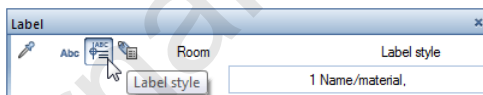
- To use simple text, click  **Back to default label** on the **Label** Context toolbar,



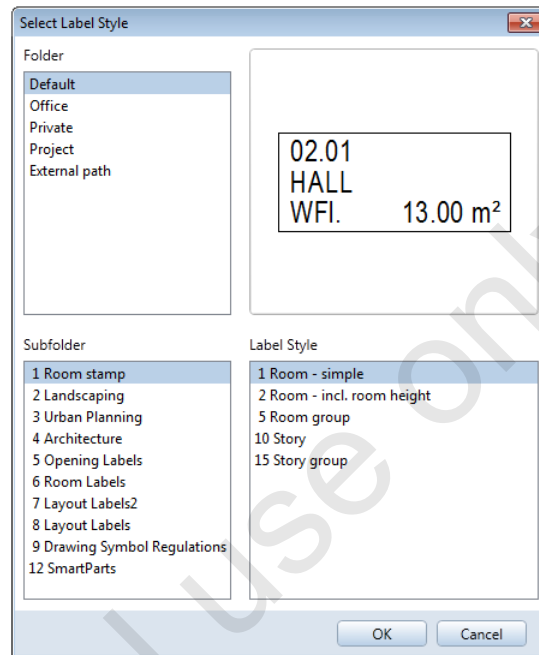
which then presents a series of fields for you to choose from - these define the contents and form of the label.

To set the text parameters, click  **Toggle**.

- To use a predefined label style, click  **Label style**:

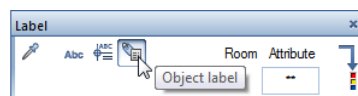


Then click the box below **Label style** to select a label style in the **Select Label Style** dialog box.

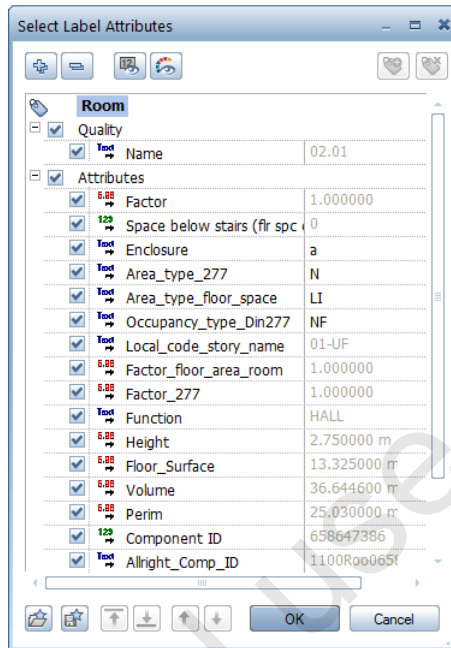


Note: When you use a label style for the label, the parameters are *predefined* and cannot be changed.

- To use the options provided by the **Object Manager** module, click  **Object label**:



Then click the box below **Attribute** to define the contents of the label in the **Select Label Attributes** dialog box.



Here, too, you can set the text parameters by clicking



Toggle.

Tip: You can also control the font size by entering a factor in the dialog line (Resize button in the **Input Options**).

8 Place label

Choose the label type you want to use, set parameters and make further settings in the **Input Options**, if necessary. Make layer AR_LABEL current and place the label as you need.

To create the label as shown in the "Overview" section at the beginning of this task, select the default label and the **Name**, **Function** and **Area** attributes.

9 Select objects or confirm setting

Click ☒ **Properties**. On the **Room** tab, change the **Function** to **Bedroom 1** and create and label this room.

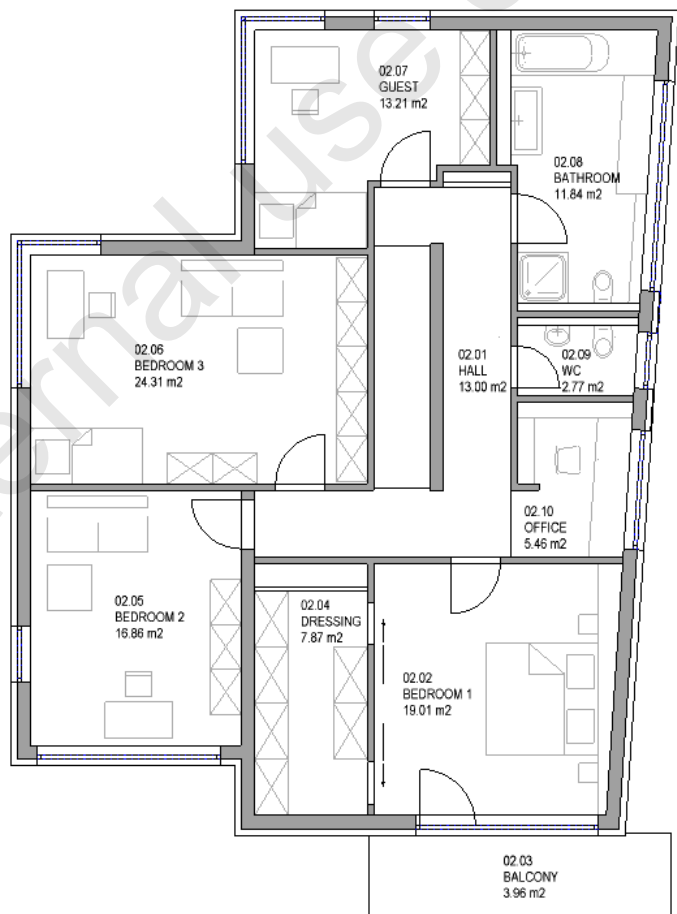
10 Select elements or confirm setting

Create and label all the other rooms in the same way (except 02.10 Office and 02.11 Stair).

When it comes to the balcony, do not define any coverings on the Finish tab. On the DIN277, Floor Area tab, make sure to specify a factor of 0.5 for area calculations.

11 Press ESC to quit the tool.

Result:

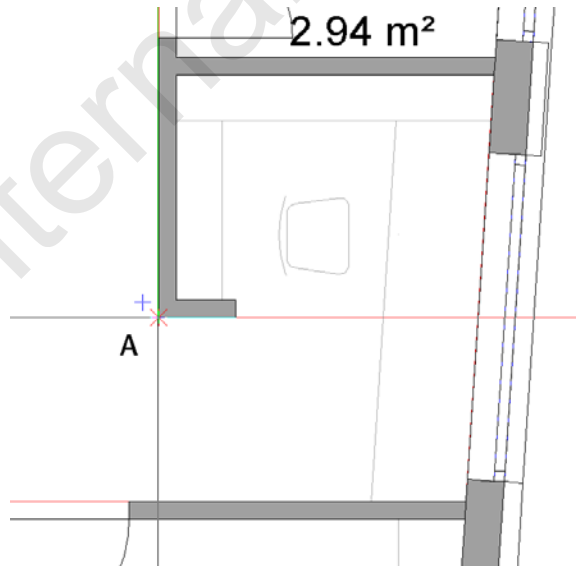


Separating rooms

Now you will separate the "Office" and "Stair" rooms from the hall in order to create them as independent rooms.

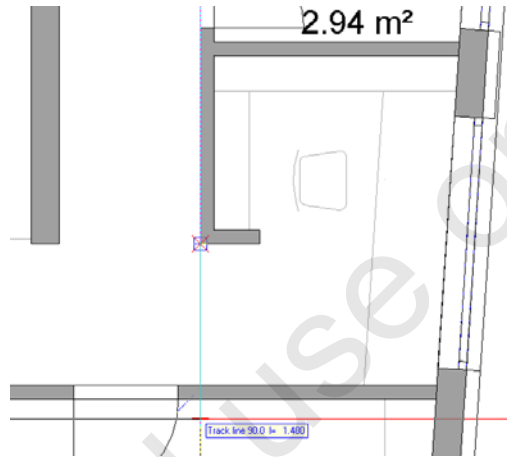
To separate rooms

- Drawing file setting: First upper floor structural level active; drawing file 1100 Floor plan current; drawing files 1101 Furniture and 1103 Slab open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Click within the hall with the right mouse button and, on the shortcut menu, select  Split Surface Elements, Archit. Elements.
 - 2 *From point or element*
Click point A.



3 To point or element

Enter a vertical division line. Move the mouse vertically downwards and click to specify the end point of the division line. The track line helps you.



4 Press ESC to finish.

Allplan divides the room along this line and automatically proposes the room label of the original room for the label of the new room.

5 Accept this label and place it in the new room. Then press ESC twice to quit the tool.

6 Double-click in the new room. The Room dialog box opens. Change the Name to 02.10 and the Function to Office. Then click OK to confirm.

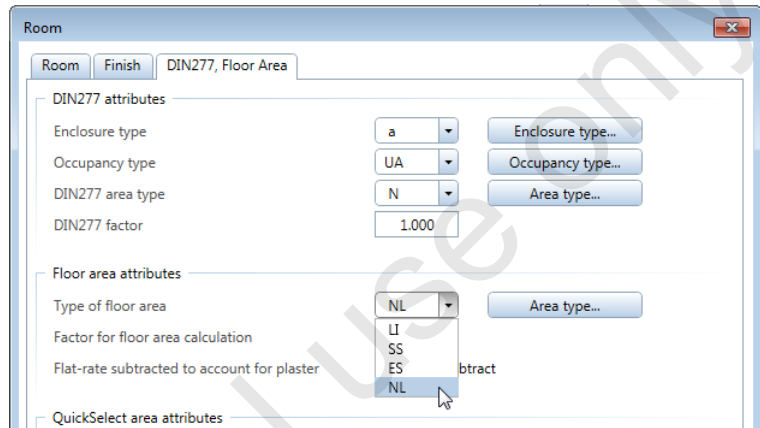
The label of the new room adapts automatically.

7 To create a new room for the stair, select the Room tool.

8 On the Room Context toolbar, click Properties. The Room dialog box opens. Enter 02.11 for the name and Stair for the function.

9 Open the Finish tab. Select Match in the Total finish area and click a room you have already defined to match its finish.

- 10 The Finish tab is still open. Select the floor covering and click  Delete layer.
- 11 Open the DIN277, Floor Area tab and set the Type of floor area to NL (no living space) to make sure that the stair is not included in area calculations.



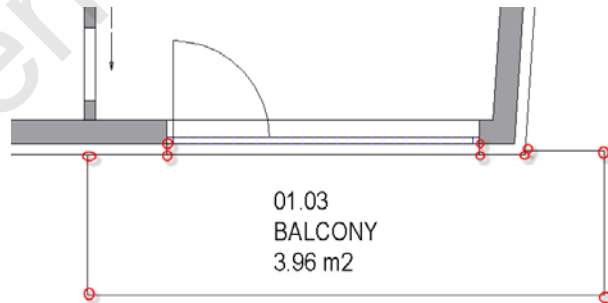
- 12 Click OK to confirm.
- 13 *Set properties, place polygon point 1, element or offset To point or element*
Enter the outline of the "stair" room.
- 14 *Place label*
Place the label in the same way as for the other rooms.
- 15 Press ESC to finish.
The hall is automatically reduced by the area of the stair.

Creating floor covering for the balcony

As an alternative to the room tool, you will now define the floor covering of the balcony by entering a separate slab.

To create floor covering for the balcony

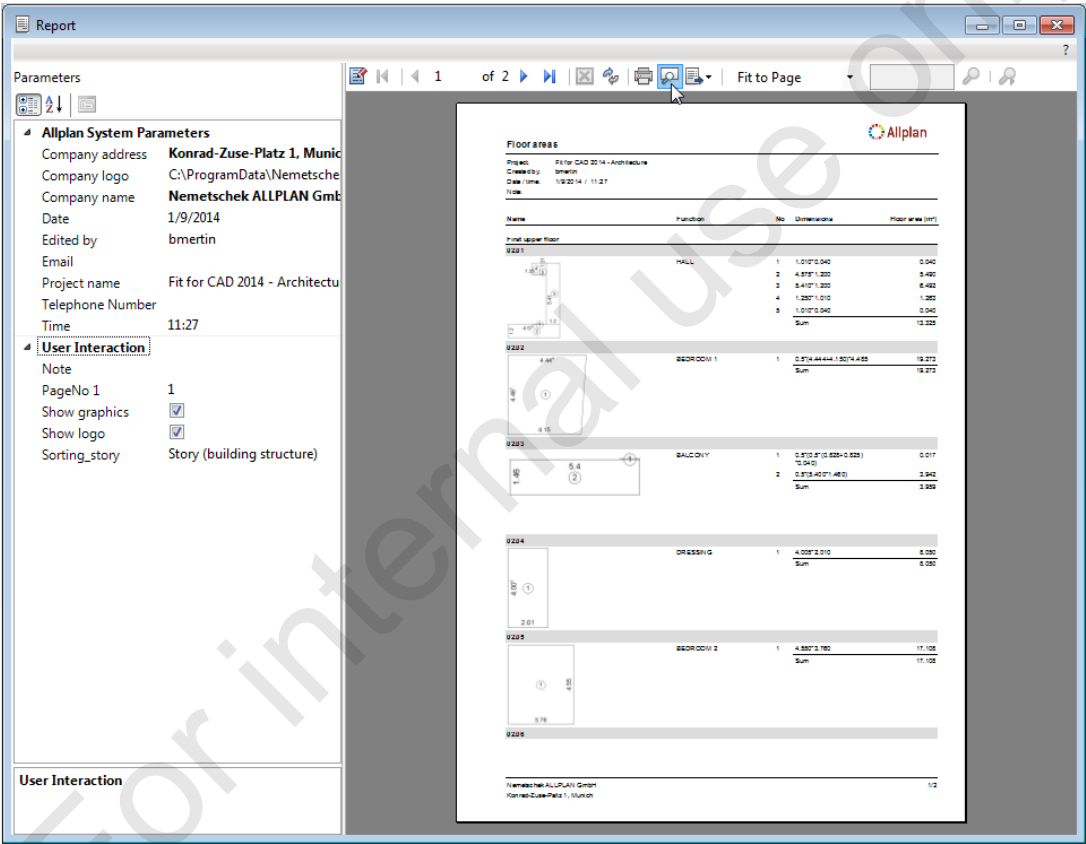
- Drawing file setting: First upper floor structural level active; drawing file 1100 Floor plan current; drawing files 1101 Furniture and 1103 Slab open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Open the Wizards palette and select the FFC Structure wizard.
 - 2 Double-click component 15 Slab, floor covering for balcony with the right mouse button.
 - 3 *Set properties, place polygon point 1, element or offset*
Select  **Single**: enter a single closed area in the Input Options and check the properties of the slab.
 - 4 Enter the outline of the slab.



- 5 Press ESC to finish.
-

Task 4: calculating the area for the first upper floor

Overview



Use the following tool(s) to do this:

Function

How to activate it



Area Calculation,
Application

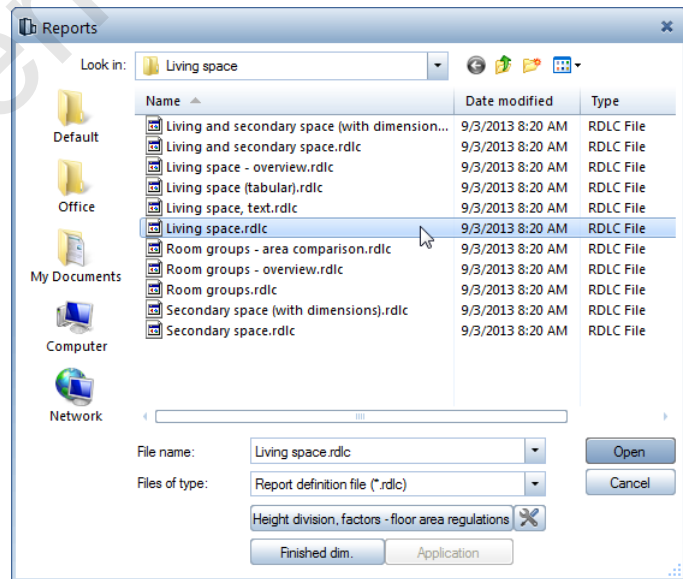
Tools palette - Architecture family -
Rooms, Surfaces, Stories module -
Create area

Solution

In Allplan, you can carry out area calculations straight from a drawing file or you can use the objects derived from the building structure. Here, you will calculate the area of the first upper floor from the current drawing file.

To calculate the area of the first upper floor

- Drawing file setting: **First upper floor** structural level active; drawing file **1100 Floor plan** current; drawing files **1101 Furniture** and **1103 Slab** open in reference mode.
 - Layer setting: **AR_ELEVA** is hidden; all the other layers are modifiable.
- 1 Click  **Area Calculation**, Application (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
 - 2 The Reports dialog box opens. Click in the **Look in** box at the top and open the **Living space** folder (Reports -> Eng -> Rooms, Surfaces, Stories). Then select the **Living space** report.



3 Specify how the areas are to be calculated.

Click the button below **File type** (as shown in the illustration above) and make the following settings in the **Type of Area Calculation, Height Division** dialog box.

Type of Area Calculation, Height Division

Type of area calculation

- ☒ Height division, factors acc. to residential space ordinance
- ☐ No height division (overall area, DIN277 2005-02)
- ☐ Simple height division with factors

Height division, add to floor area

To be added to floor area:

Windows and open wall niches down to the floor and whose depths exceed

Columns, chimneys, plumbing components whose floor area is less than or equal to

Plumbing components whose heights are less than or equal to

Room height > height 2

Room height < height 2

Room height < height 1

Height 2

Height 1

2.0000

1.0000

Factor 0

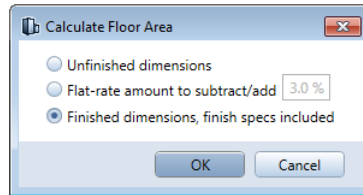
Factor 1

Factor 2

OK Cancel

4 Click OK to confirm the dialog box.

- 5 Click the button below the Height division, factors - floor area regulations button. The Calculate Floor Area dialog box opens. Select the Finished dimensions, finish specs included option.



- 6 Click **OK** to confirm the setting.
- 7 Click **Open** in the **Reports** dialog box.
- 8 *Select elements for list, 2x right mouse button = all*
Select the rooms of which you want to calculate and list the floor area by enclosing them in a selection rectangle or by clicking **All** in the **Input Options**.

The report is created and displayed in the **Report Viewer** on screen.

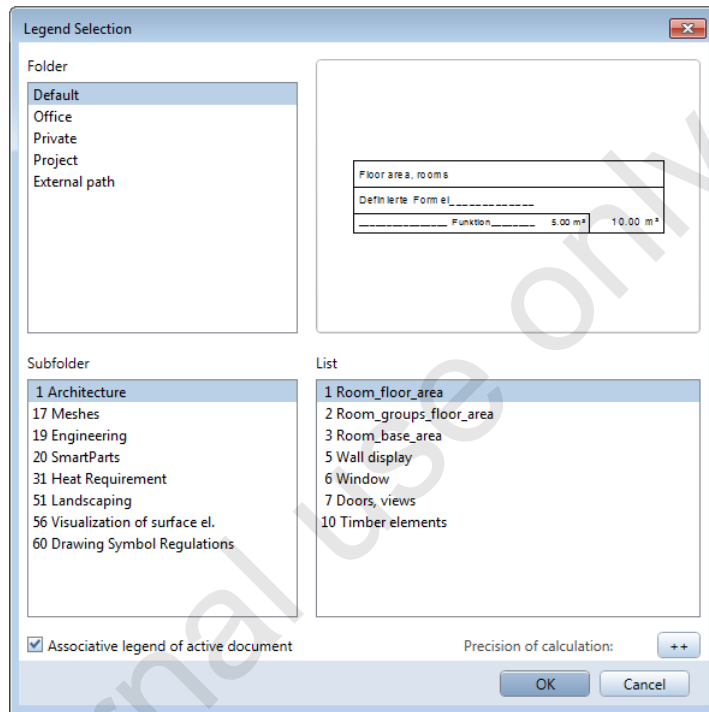
Use the arrows at the top to navigate between the pages. To print the report, click  **Print**. To transfer the report to Allplan or Excel or to create a PDF file, use the options in the  **Export** area (see illustration at the beginning of this task).

In addition, you can change parameters (such as the project name) and open the  **Layout Designer** by clicking the corresponding button.

- 9 Close the **Report Viewer** by clicking  **Close**.
- 10 You can also use the  **Legend** tool (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area) to analyze the floor area of the first upper floor.

Select this tool.

11 Make the following settings and click OK to confirm.

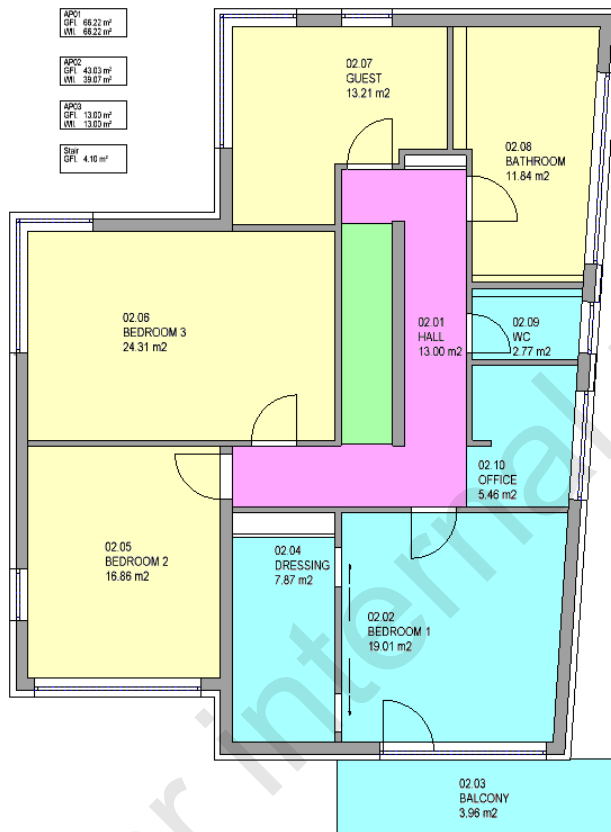


12 Drop-in point

The legend is created and can be placed in the drawing file.

Task 5: room groups

Overview



AP01			
02.05	BEDROOM 2	16.86 m²	66.22 m²
02.06	BEDROOM 3	24.31 m²	
02.07	GUEST	13.21 m²	
02.08	BATHROOM	11.84 m²	
AP02			
02.02	BEDROOM 1	19.01 m²	39.07 m²
02.03	BALCONY	3.96 m²	
02.04	DRESSING	7.87 m²	
02.09	WC	2.77 m²	
02.10	OFFICE	5.46 m²	
AP03			
02.01	HALL	13.00 m²	13.00 m²

Use the following tool(s) to do this:

Function

How to activate it



Group Rooms, Stories

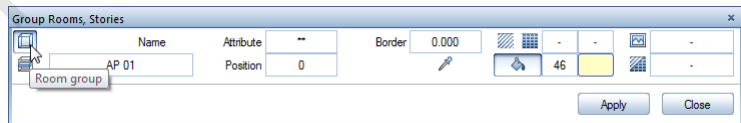
Tools palette - Architecture family -
Rooms, Surfaces, Stories module -
Create area

Solution

In Allplan, you can group rooms and stories. For example, you can combine all the rooms belonging to an apartment and then analyze and evaluate these rooms separately. The section that follows shows how to group rooms although this is not necessary to accomplish this training project.

To combine rooms into groups

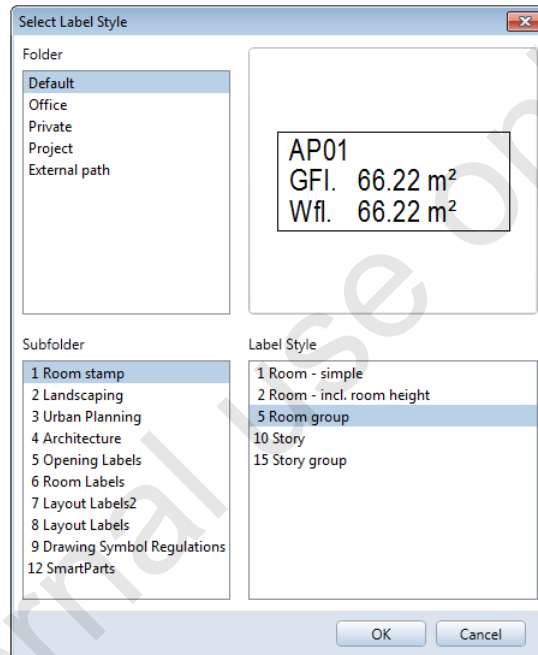
- Drawing file setting: First **upper floor** structural level active; drawing file **1100 Floor plan** current; drawing files **1101 Furniture** and **1103 Slab** open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Click  **Group Rooms, Stories** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
 - 2 Select the **Make** option in the **Input Options**.
The **Group Rooms, Stories** Context toolbar is displayed.
 - 3 Select the  **Room group** option.
 - 4 Enter **AP 01** for the name, select a fill color and specify the width of the border. This defines the area to be filled. Here, enter **0.000 m**, as the rooms are to be filled completely.



- 5 *Select rooms to group*
Select the rooms you want to group and click **Apply**.

6 Place label

If necessary, change the contents of the label (for example, use a label style) or the text parameters and place the label where you require.



7 Select rooms to group

Create another group of rooms and name it AP 02. Choose a different fill color for this group and press ESC to quit the tool.

Create a legend to check the result.

- 8 To ungroup rooms, click  **Group Rooms**, Stories again. But this time select Ungrp (ungroup) in the Input Options.

9 *Select groups to ungroup*

Select a room of the group you want to ungroup.

The *room* (*not* the entire group) is displayed in the selection color.

10 Click the right mouse button to confirm.

11 *Would you like to retain the surface properties?*

Acknowledge the following prompt with yes or no depending on whether you want to keep the fill colors.

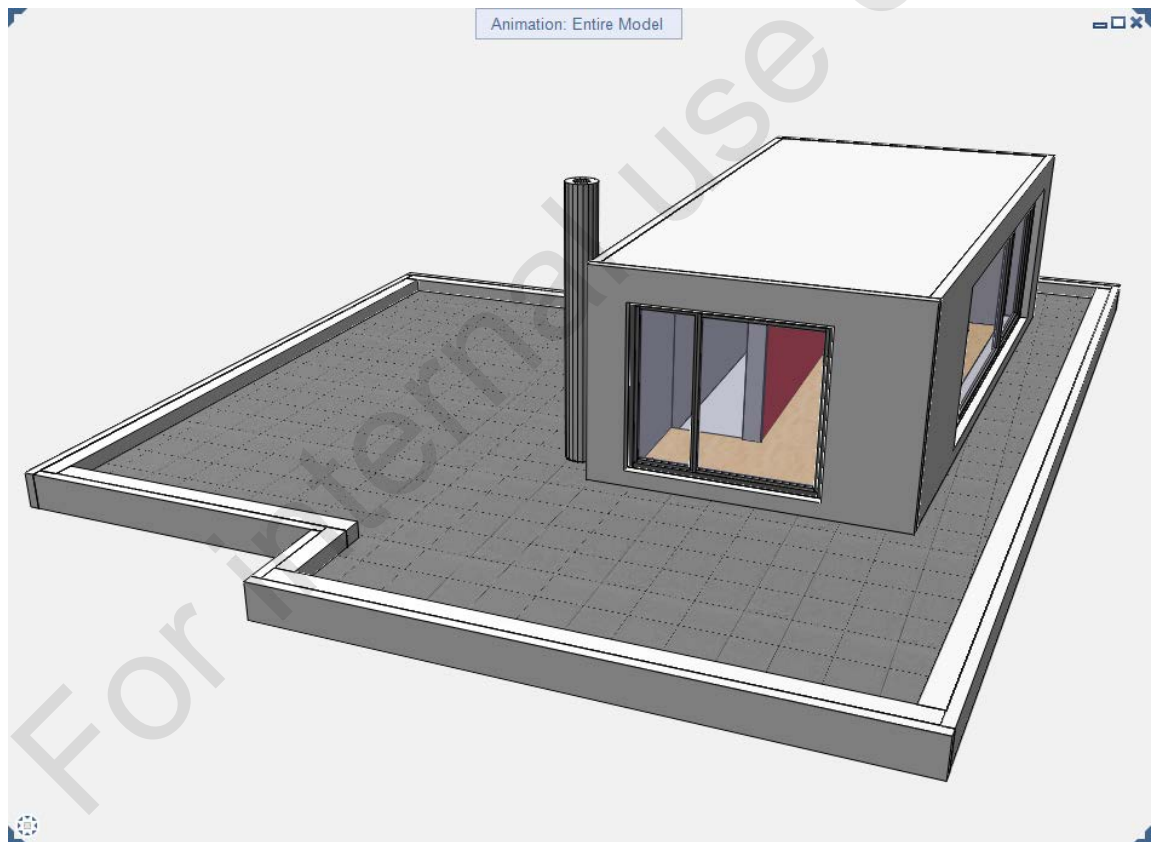
This ungroups the room.

12 Press ESC to quit the tool.

Exercise 3: top floor

Task 1: floor plan

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Open...	Default toolbar
 Paste to Original Position	Edit menu
 Change Archit. Properties	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area
 Show/Hide Junctions	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area
 Open on a Project-Specific Basis	Default toolbar

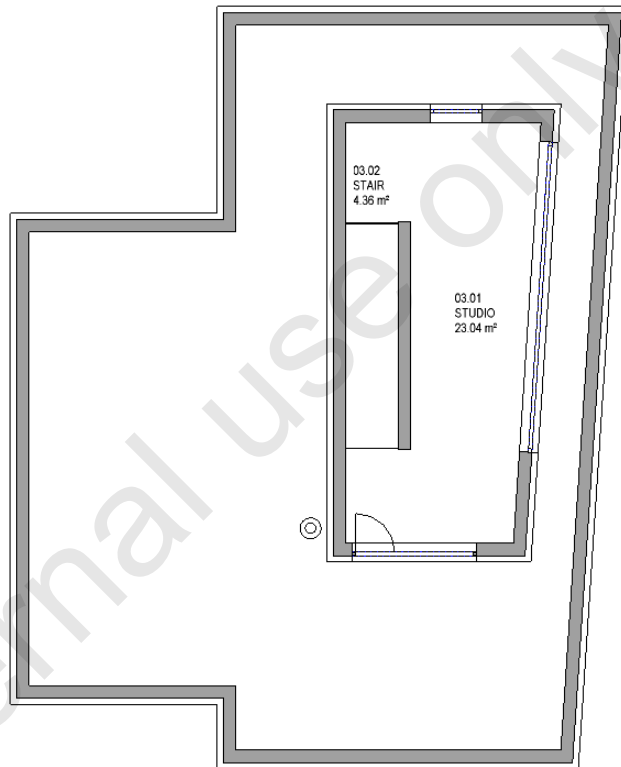
Solution

To import the top floor from CD

- Drawing file setting: First upper floor structural level active; drawing file 1100 Floor plan current; drawing files 1101 Furniture and 1103 Slab open in reference mode.
 - Layer setting: AR_ELEVA is hidden; all the other layers are modifiable.
- 1 Deactivate the First upper floor structural level, activate the Second upper floor structural level and make drawing file 1200 Floor plan current.
 - 2 On the Default toolbar, click  Open.
 - 3 In the following dialog box, select the CD\NDW data\TF floor plan.ndw file and click Open.
The floor plan is displayed in a separate window.
 - 4 Select all the elements of the floor plan by enclosing them in a selection rectangle.
 - 5 Copy the selected elements to the Clipboard (by using CTRL+C, for example).
 - 6 Close the window with the NDW file.

- 7 Click  **Paste to Original Position** on the Edit menu (or press CTRL+ALT+V).

The floor plan is inserted in its original position.

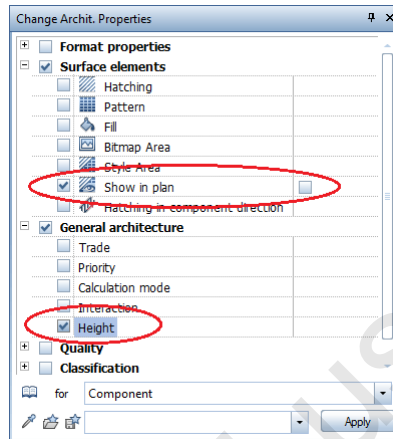


To modify the exterior walls on the top floor

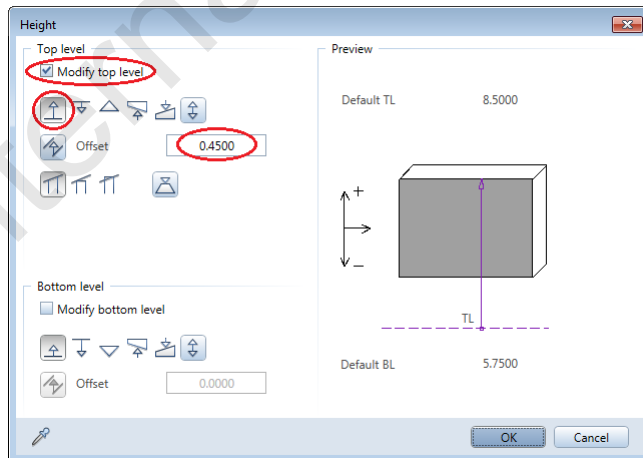
- Drawing file setting: **Second upper floor structural level active**; drawing file **1200 Floor plan** current.
 - Layer setting: all layers are modifiable.
- 1 Click  **Change Archt. Properties** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area).

2 Set properties, select elements you want to modify

In the **Change Archit. Properties** dialog box, select the **Show in plan** option in the **Surface elements** area and the **Height** option in the **General architecture** area.

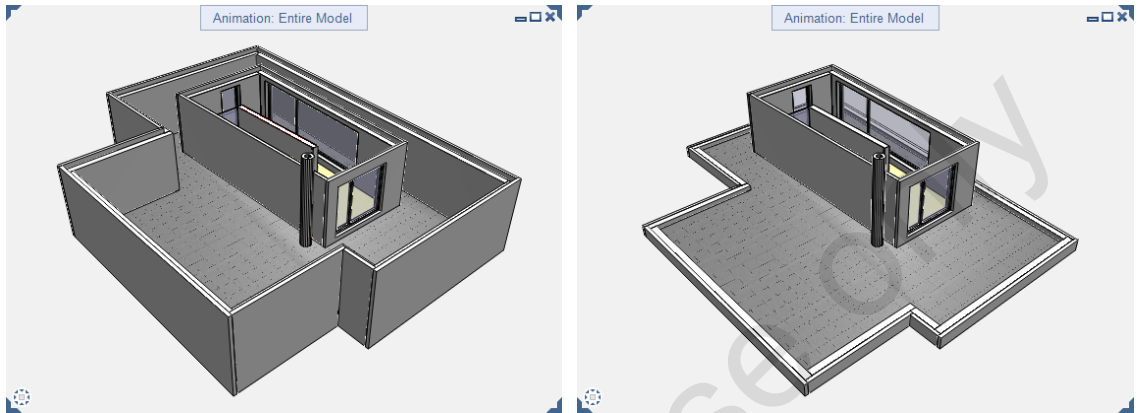


3 Make the following settings in the **Height** dialog box:



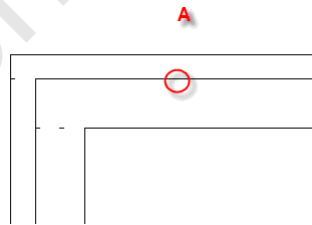
4 Click **OK** to close the **Height** dialog box.

- 5 *Set properties, select elements you want to modify*
Select all the exterior walls of the top floor and click **Apply**.



The exterior walls are lowered accordingly.

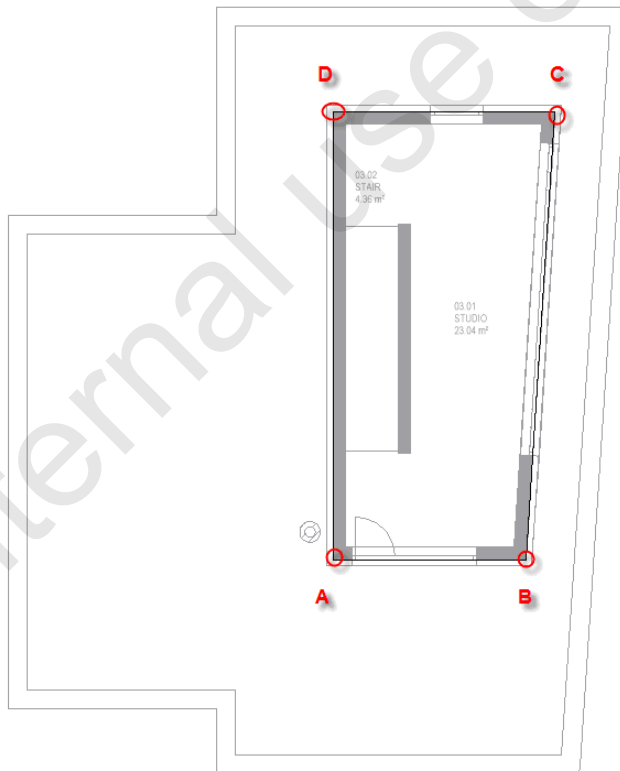
- 6 Press ESC to quit the tool.
- 7 Next select the  **Show/Hide Junctions** tool (Tools palette - **Architecture** family - **Rooms, Surfaces, Stories** module - **Change area**) and click the junction lines you want to hide.



- 8 Press ESC to finish.
-

To create the slab above the top floor

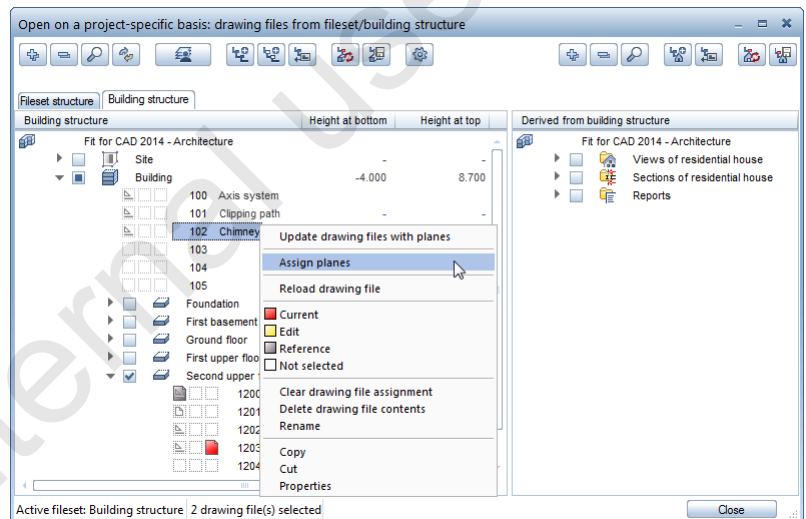
- Drawing file setting: **Second upper floor structural level** active; drawing files **1203 Slab** current and **1200 Floor plan** open in reference mode.
 - Layer setting: all layers are modifiable.
- 1 Create the slab above the top floor in drawing file 1203.
Open the Wizards palette, select the **FFC Structure** wizard and use component 14.



- 2 Press ESC to finish.

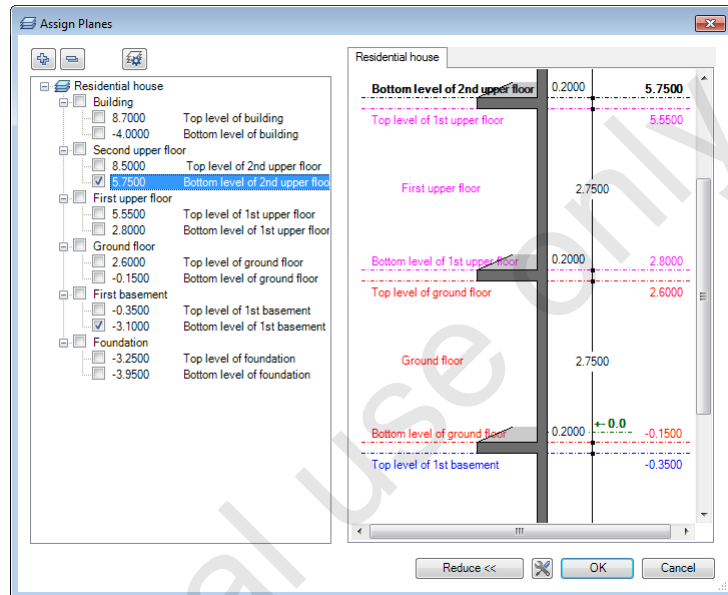
To change the planes assigned to drawing file 102 chimney

- Drawing file setting: **Second upper floor** structural level active; drawing files 1203 Slab current and 1200 Floor plan open in reference mode.
 - Layer setting: all layers are modifiable.
- 1 Click  **Open on a Project-Specific Basis (Default toolbar).**
 - 2 Select the **Building structure** tab.
 - 3 Open the shortcut menu of drawing file **102 Chimney** and click **Assign planes**.

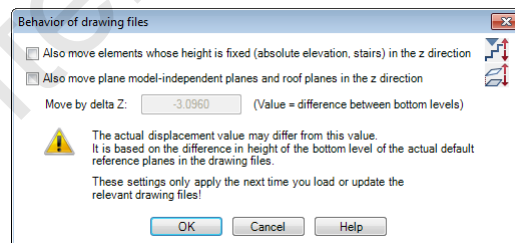


The Assign Planes dialog box opens.

- 4 Select the new pair of reference planes for drawing file 102 Chimney and click OK to confirm.



- 5 Click OK to confirm the Behavior of drawing files dialog box without selecting one of the options presented.

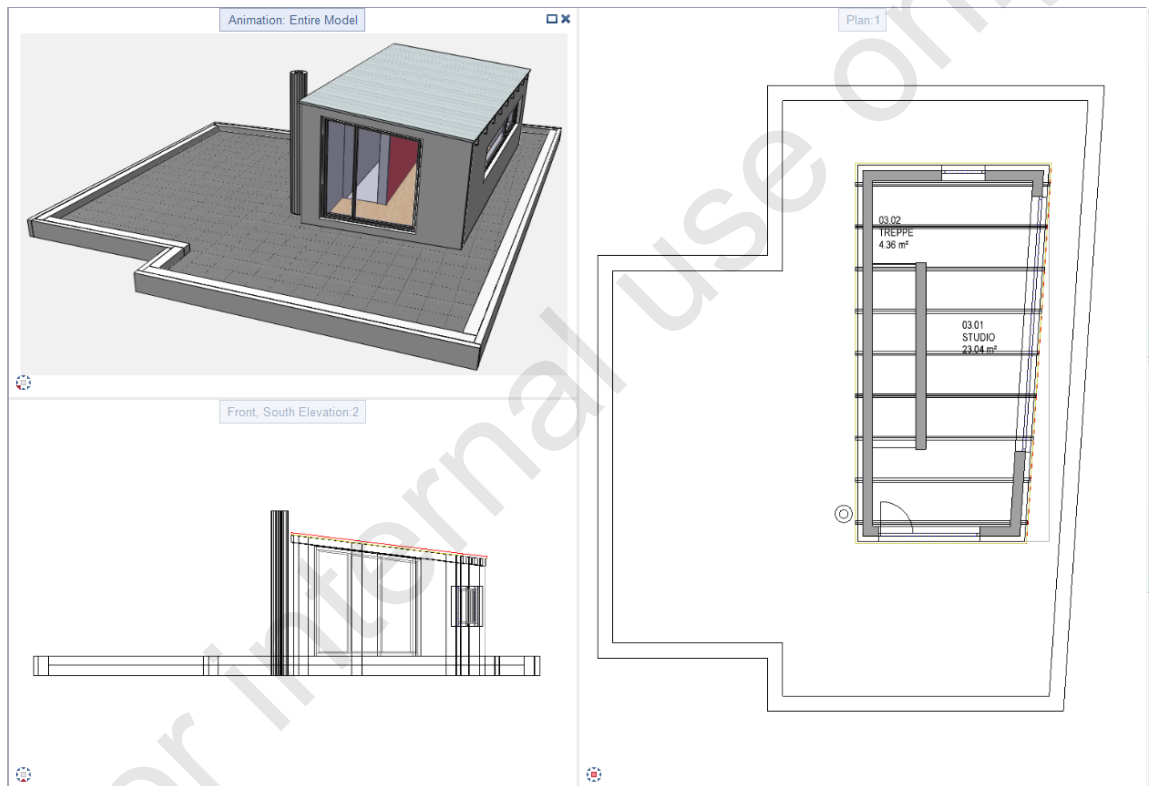


The selected height settings are assigned to drawing file 102 Chimney in the building structure.

- 6 Close the Open on a project-specific basis dialog box.

Task 2: variant of second upper floor (optional)

Overview



Use the following tool(s) to do this:

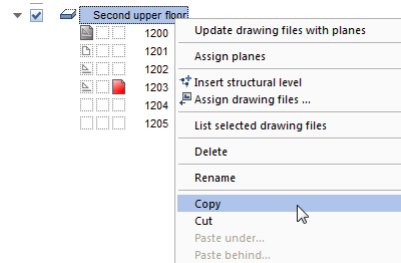
Function	How to activate it
 Open on a Project-Specific Basis	Default toolbar
 2+1 Animation Window	Window menu
 Change Archit. Properties	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area
 Filter by Archit. Element Type	Filter Assistant toolbar
 Roof Frame	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area
 Delete	Edit toolbar
 Rafters	Tools palette - Architecture family - Frame Construction: Rafters, Roof Beams, Posts module - Create area

Solution

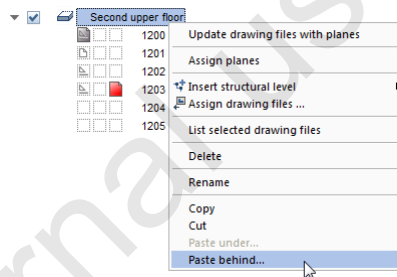
To copy the structural level of the second upper floor

- Drawing file setting: Second upper floor structural level active; drawing files 1203 Slab current and 1200 Floor plan open in reference mode.
 - Layer setting: all layers are modifiable.
- 1 Click  Open on a Project-Specific Basis (Default toolbar).
 - 2 Select the Building structure tab.

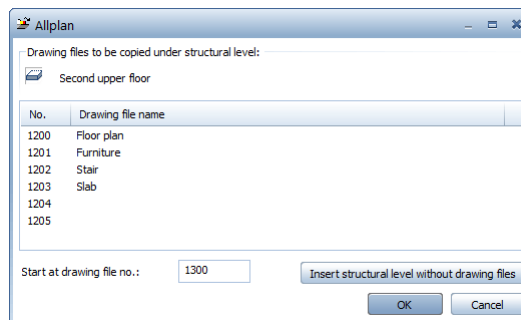
- 3 Open the shortcut menu of the **Second upper floor** structural level and select **Copy**.



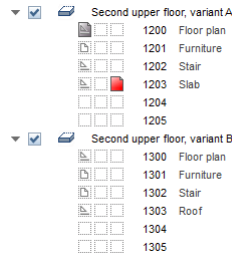
- 4 Open the shortcut menu of the **Second upper floor** structural level again and select **Paste behind....**



- 5 In the next dialog box, enter drawing file number 1300 for **Start at drawing file no.** and click **OK** to confirm.



6 Use the shortcut menu to rename the structural levels as follows:



7 Deactivate the **Second upper floor, variant A** structural level, activate the **Second upper floor, variant B** structural level and make drawing file **1300 Floor plan** current.

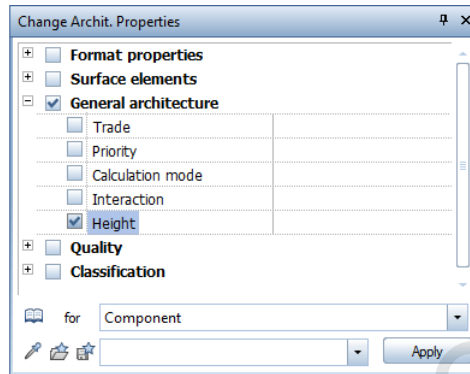
8 Click Close.

To modify the exterior walls on the second upper floor, variant B

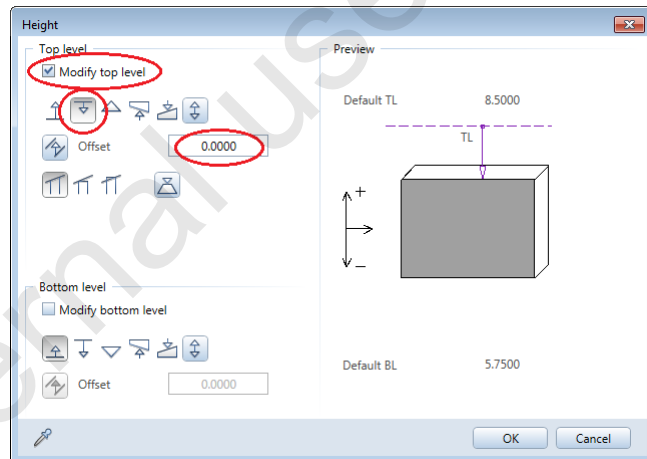
➤ Drawing file setting: **Second upper floor, variant B** structural level active; drawing file **1300 Floor plan** current.

➤ Layer setting: all layers are modifiable.

- 1 On the Window menu, click  **2+1 Animation Window**.
- 2 Click  **Change Archit. Properties** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area).
- 3 *Set properties, select elements you want to modify*
In the **Change Archit. Properties** dialog box, select the **Height** option in the **General architecture** area.



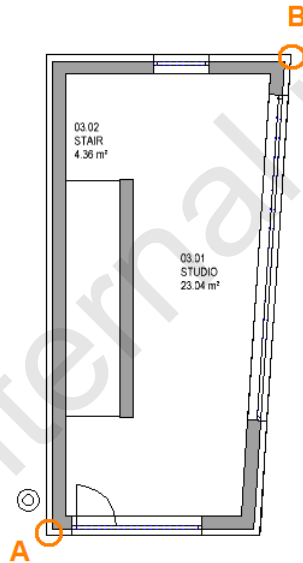
- 4 Make the following settings in the Height dialog box:



- 5 Click **OK** to close the Height dialog box.
- 6 *Set properties, select elements you want to modify*
 Use the  Filter by Archit. Element Type tool (Filter Assistant toolbar) to change the height of the 0.12 m thermal insulation applied to the exterior walls of the studio to the values displayed. Do not change the insulation of the other walls. Check the result.

To create a gable roof

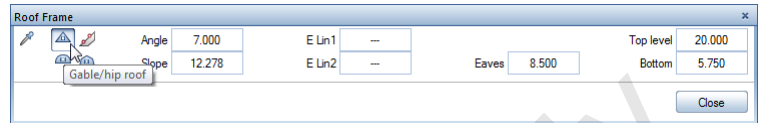
- Drawing file setting: **Second upper floor, variant B** structural level active; drawing file **1300 Floor plan** current.
- Layer setting: all layers are modifiable.
- 1 Click  **Roof Frame** (Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area).
- 2 Check that the layer **AR_ROOF** is current.
- 3 *Set properties, place polygon point 1, element or offset*
In the input options, select the  **Single: enter a single closed area** option and click point A and then point B.



- 4 Press **ESC** to finish entering the polyline.

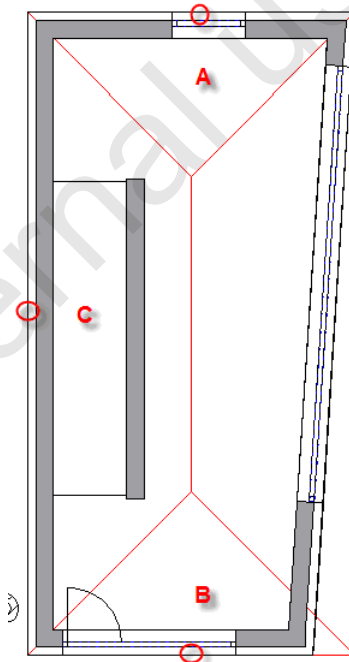
Allplan creates a rectangle based on the two diagonal points you entered.

- 5 On the **Roof Frame** Context toolbar, select the  **Gable/hip roof** option and make the following settings:



- 6 *Click edges of the roof frame to apply slopes*
Select *all* the edges of the roof frame by enclosing the entire roof frame in a selection rectangle.

This applies the angle of the roof pitch and the height of the eaves specified on the **Roof Frame** Context toolbar to all the edges. Now the roof should look like a hip roof:



- 7 *Click edges of the roof frame to apply slopes*
Change the **Angle** to 90° on the **Roof Frame** Context toolbar and click the edges A and B.

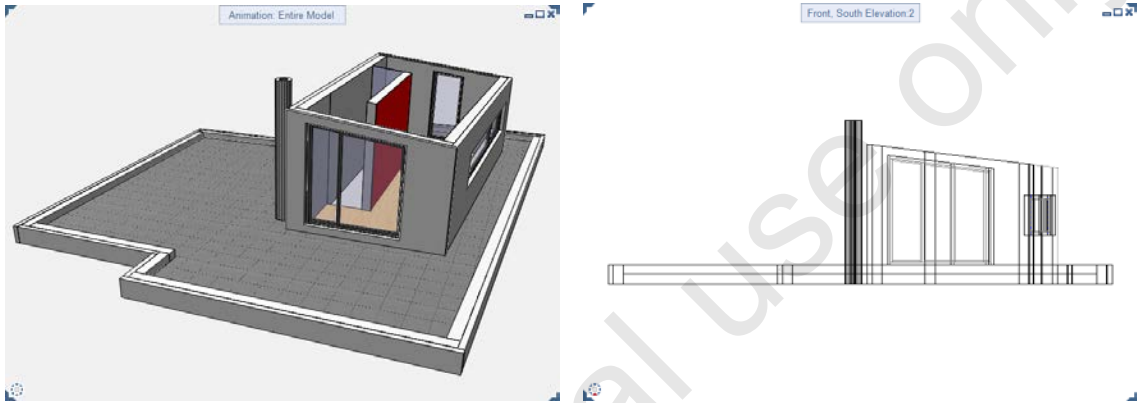
This turns the hip roof into a gable roof.

- 8 Click edges of the roof frame to apply slopes

Now click edge C.

The gable roof becomes a pitched roof.

- 9 Press ESC to finish. Allplan saves this roof shape and adapts the architectural elements of the drawing file to the new roof.
- 10 Check the result in the animation window and in elevation view.



To modify the height of the chimney

- Drawing file setting: Second upper floor, variant B structural level active; drawing file 1300 Floor plan current.
- Layer setting: all layers are modifiable.
- 1 Click  **Change Archit. Properties**.
- 2 *Set properties, select elements you want to modify*
In the **Change Archit. Properties** dialog box, select the **Height** option in the **General architecture** area.
- 3 The **Height** dialog box opens. Select the **Modify top level** option and click  **Match top level of component**.

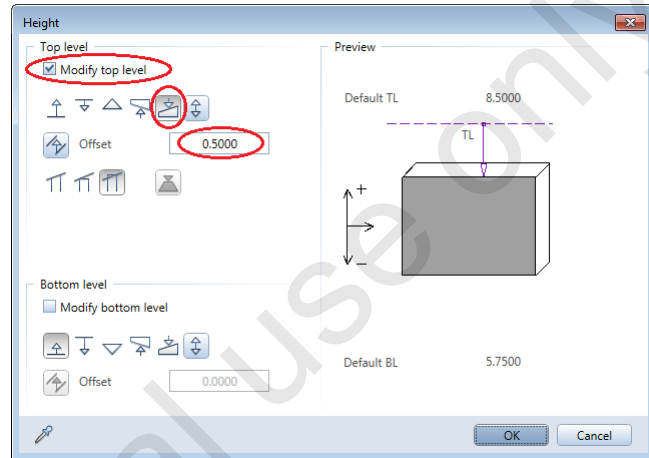
The **Height** dialog box closes temporarily.

Tip: Make sure that you do not accidentally click the slab below.

4 *TL of component*

Click the roof frame to associate the chimney with the upper roof plane.

- 5 The **Height** dialog box appears again. Click  **Chimney** and enter an offset of **0.500** m.



- 6 Click **OK** to confirm the **Height** dialog box.

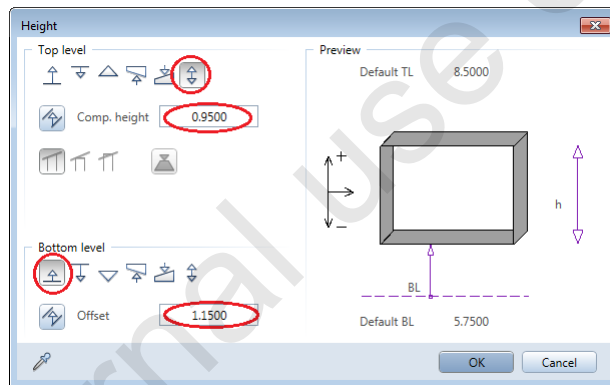
7 *Set properties, select elements you want to modify*

Select the chimney by enclosing it in a selection rectangle and click **Apply** in the **Change Archit. Properties** dialog box.

- 8 Press **ESC** to finish.

To modify the height of the window in the east facade

- Drawing file setting: Second upper floor, variant B structural level active; drawing file 1300 Floor plan current.
 - Layer setting: all layers are modifiable.
- 1 Double-click the window in the east facade with the left mouse button.
 - 2 In the **Window** dialog box, click the **Height...** button.
 - 3 Change the height association as follows:



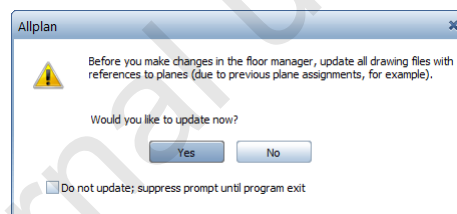
- 4 Click **OK** to confirm the two dialog boxes.

Inserting roofscapes in plane models

You will now integrate the roof planes as a "roofscape" in the plane model so that these planes are also available for other drawing files.

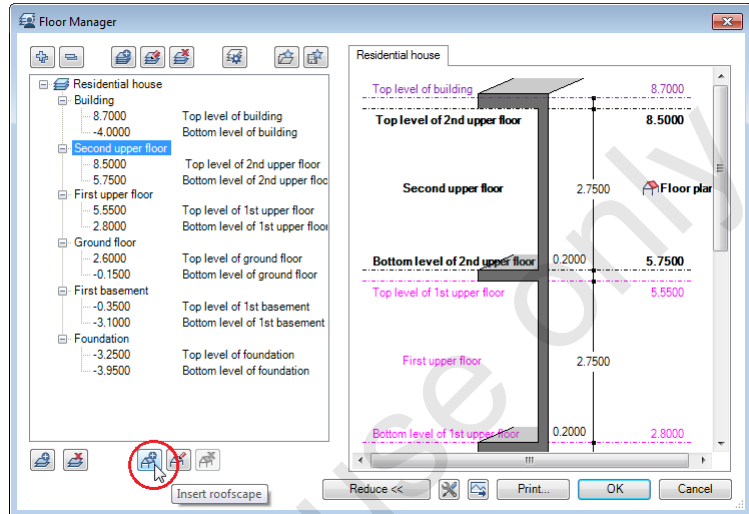
To insert roofscapes in plane models

- Drawing file setting: **Second upper floor, variant B** structural level active; drawing file **1300 Floor plan** current.
- Layer setting: all layers are modifiable.
- 1 Click  **Open on a Project-Specific Basis** (Default toolbar).
- 2 The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box opens. Click  **Floor Manager**.
- 3 Click **Yes** to confirm the next dialog box.

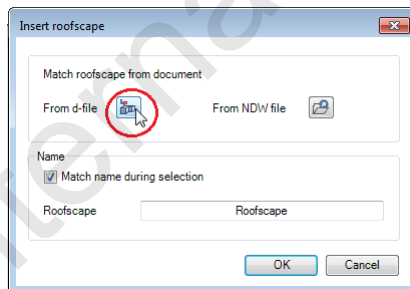


The Floor Manager dialog box opens.

- 4 Select Second upper floor and click  Insert roofscape.

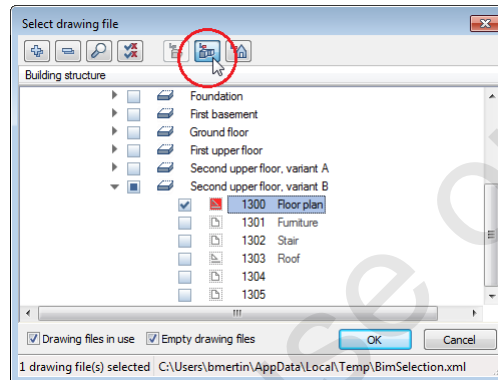


- 5 The Insert roofscape dialog box opens. Click  From d-file.

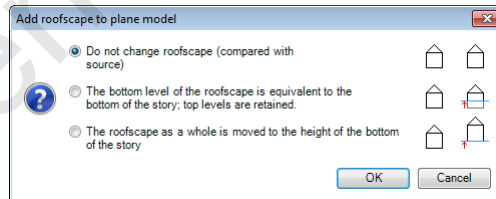


The Select drawing file dialog box is displayed.

- 6 Select the  **Building structure** option on the toolbar of the **Select drawing file** dialog box. Open the **Second upper floor, variant B** structural level and select the check box for drawing file **1300 Floor plan**. This drawing file contains the roof frame.

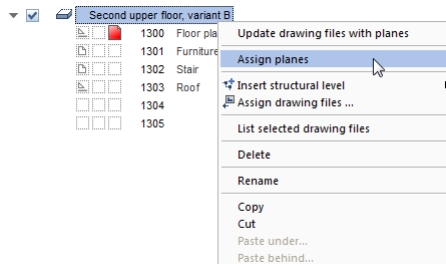


- 7 Click **OK** twice to confirm.
- 8 In the **Add roofscape to plane model** dialog box, select the **Do not change roofscape (compared with source)** option and click **OK** to confirm.

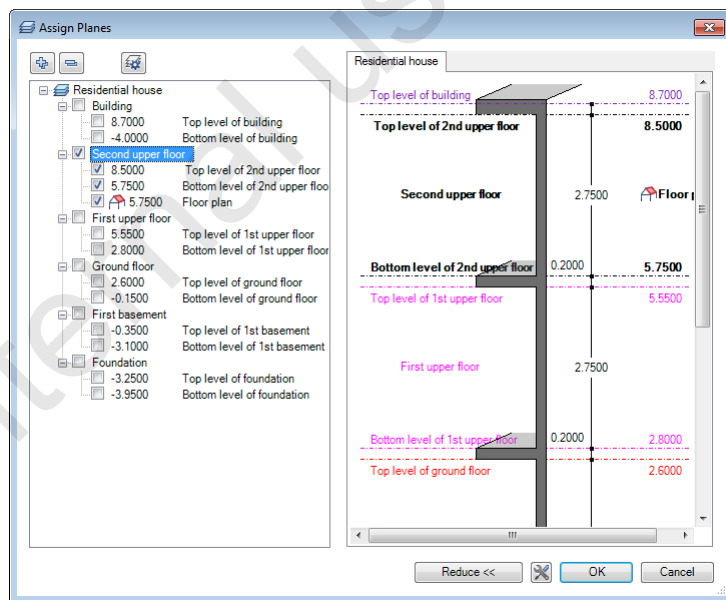


- 9 Click **OK** to close the **Floor Manager** dialog box.

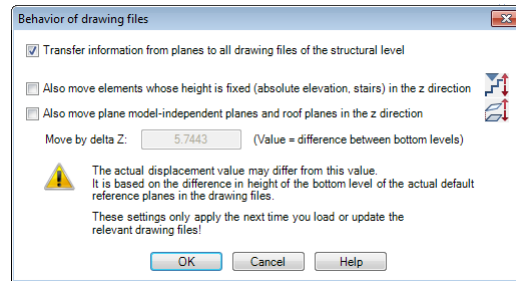
- 10 Open the shortcut menu of the **Second upper floor variant B** structural level in the building structure and click **Assign planes**.



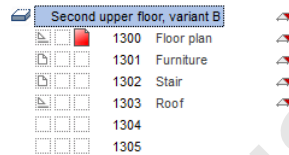
- 11 In the **Assign Planes** dialog box, select the **Second upper floor** check box and click **OK** to close the dialog box.



- 12 To apply the planes to all the drawing files of this structural level, select the following setting and click **OK** to confirm.



13 Check the result in the building structure.



14 Change the name of drawing file 1303 Slab to Roof.

15 Make drawing file 1303 Roof current and set drawing file 1300 Floor plan to reference mode. Then click Close.

16 Double-click the right mouse button to open the Layer dialog box. Check that the layer PLM_ROOFSC is visible and click OK to close the dialog box.

To delete the slab from drawing file 1303

➤ Drawing file setting: Second upper floor, variant B structural level active; drawing file 1303 Roof current and drawing file 1300 Floor plan open in reference mode.

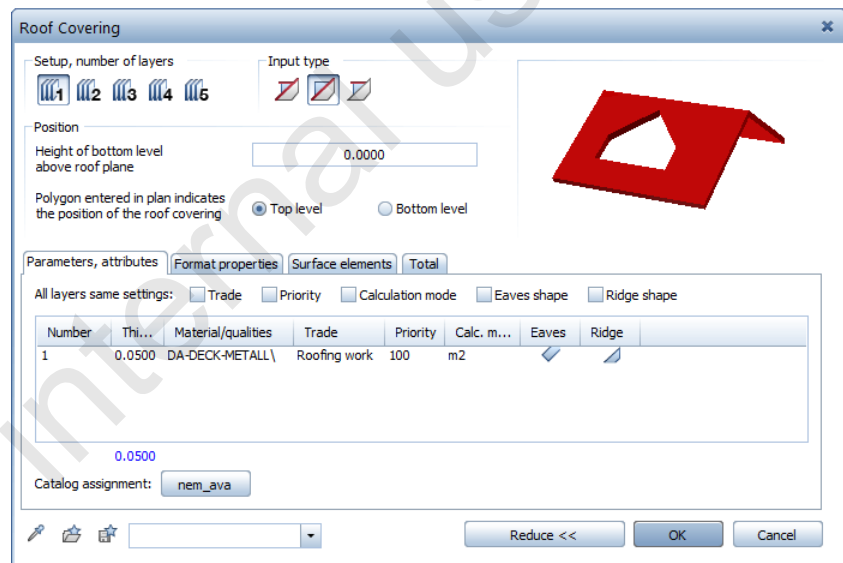
➤ Layer setting: all layers are modifiable.

1 Select Delete (Edit toolbar) and click the slab.

2 Press ESC to quit the tool.

To create a roof covering

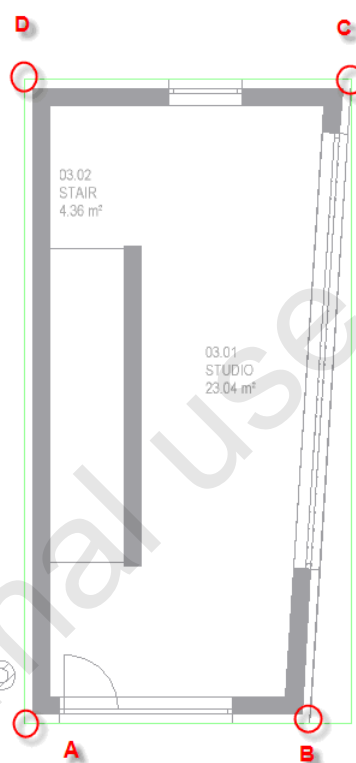
- Drawing file setting: Second upper floor, variant B structural level active; drawing file 1303 Roof current and drawing file 1300 Floor plan open in reference mode.
 - Layer setting: all layers are modifiable.
- 1 Select component 16 Roof covering, titanium zinc in the FFC Structure wizard (Wizards palette).
 - 2 *Set properties, place polygon point 1, element or offset*
In the **Input Options**, select the  **Single**: enter a single closed area option. Then click  **Properties** on the Roof Covering Context toolbar to check the parameters in the Roof Covering dialog box:



- 3 Click OK to confirm it.
- 4 *Set properties, place polygon point 1, element or offset*
Enter 0.050 m in the dialog line. This defines the distance between the outer edge of the exterior wall and the roof covering.

5 *Set properties, place polygon point 1, element or offset*

To define the outline of the roof covering, click points A to D one after the other. Finally, click point A again to close the polyline.



6 Press ESC to finish.

This creates the roof covering for the studio.

7 Press ESC to quit the tool.

To create rafters for the roof above the studio

- Drawing file setting: Second upper floor, variant B structural level active; drawing file 1303 Roof current and drawing file 1300 Floor plan open in reference mode.
- Layer setting: all layers are modifiable.
- 1 Click  Rafters (Tools palette - Architecture family - Frame Construction: Rafters, Roof Beams, Posts module - Create area).
- 2 Set the layer RA_GEN.
- 3 Select RCover (match roof covering) in the **Input Options**.
- 4 *Select roof covering*
Click the roof covering of the studio.
- 5 *Set properties, place a point to define start of placement*
On the Rafters Context toolbar, click  Properties and set the following parameters:

In the Eaves/ridge shape area:
 - Eaves:  Vertical
 - Ridge:  Vertical
In the Cross-section area:
 - Section:  take a section from a symbol catalog (for example, IPE 180).
In the Attributes area:
 - Trade: Steel construction work
 - Priority: 400

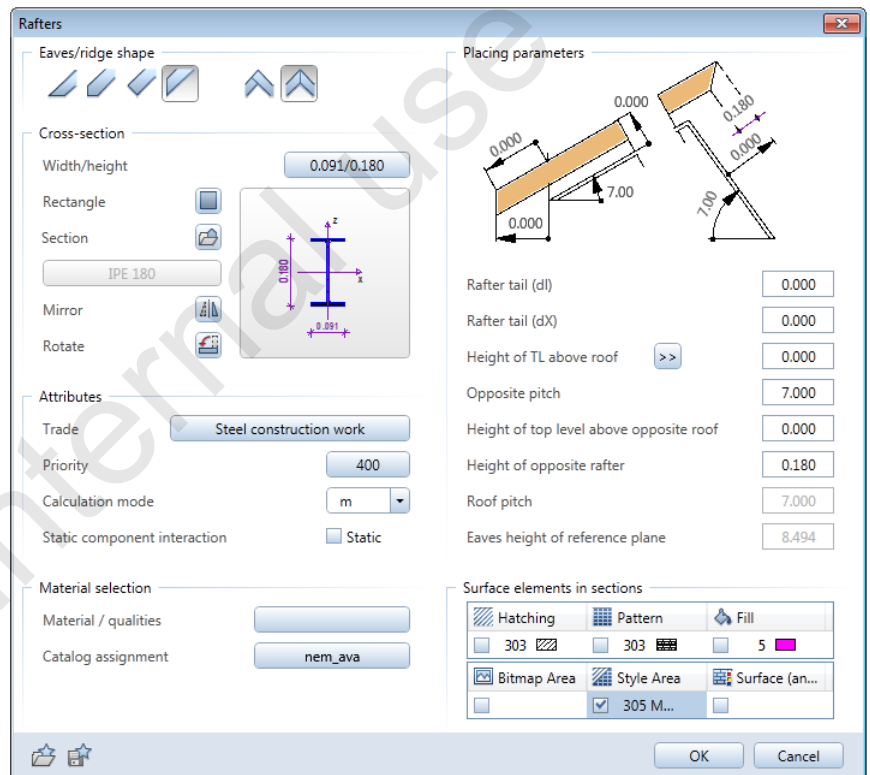
Tip: In the Symbols dialog box select Default -> Steel construction -> IPE 2D -> Steel section, angular, idealized -> IPE 180.

In the Placing parameters area:

- Rafter tail (dl) and Rafter tail (dX): 0.000 m
- Height of top level above roof: 0.000 m
- Opposite pitch: 7 °
- Height of top level above opposite roof: 0.000 m
- Height of opposite rafter: 0.180 m

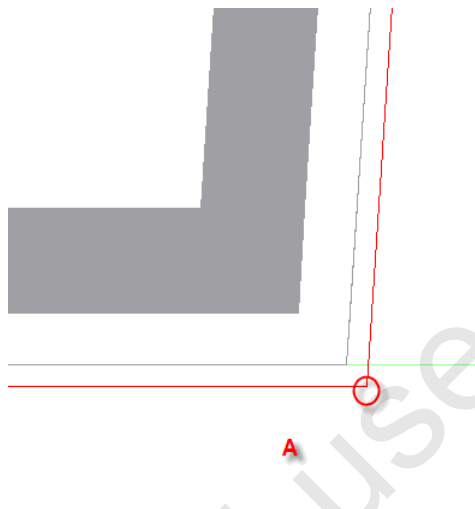
In the Surface elements in sections area:

- Style Area: 305 Metal

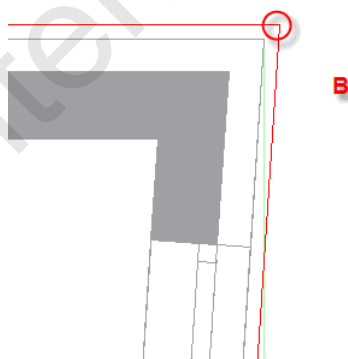


6 Click OK to confirm.

- 7 *Set properties, place a point to define start of placement*
Click point A.

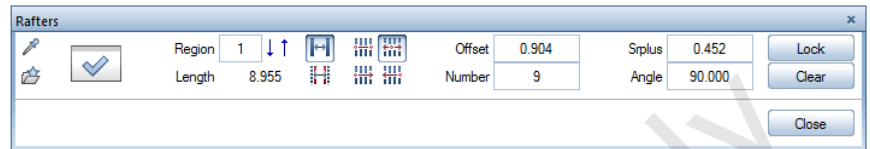


- 8 *Set properties, place a point to define end of placement*
Click point B.

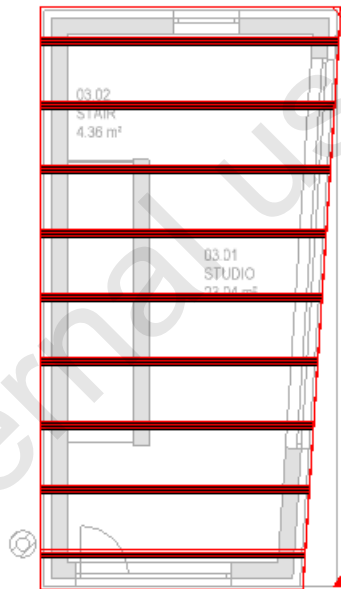


9 Set properties

Enter the following properties:



The rafters are placed at the offset you specified. Check the rafter placement in the preview.



10 Click Close to finish.

11 Rafter design will now finish.

Would you like to save the changes?

Confirm by clicking Yes.

The rafters are finally created.

12 Press ESC to quit the tool.

For internal use only

Exercise 4: stairs

Task 1: straight stair

Introduction

You will use the **Stairs** module to design two straight flight stairs between the ground floor and the first upper floor and between the hall and the dining area on the ground floor.

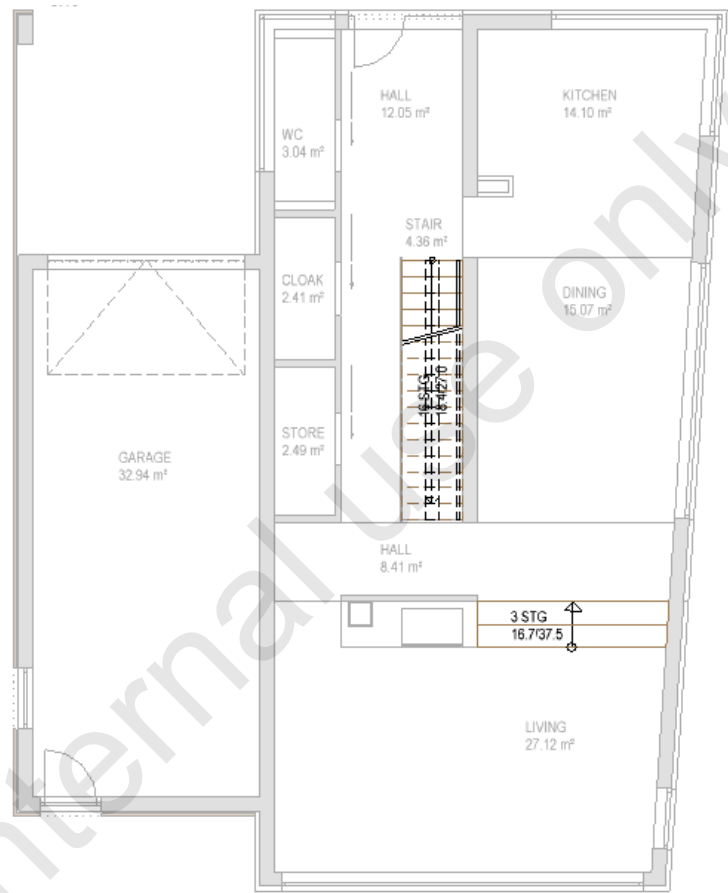
The stair outline you enter depends on the stair type you select. For example, if you select the straight stair type, the system will close the outline after you have placed four points. The outline of a U-type stair is defined by eight points. A spiral stair is defined by two arc radii and a free-form stair can be based on as many points and shapes as you want - even splines.

So far, the stair is represented by treads only. You can add stair components if you want. The program presents these components and offers options for displaying them in a single, easy-to-use dialog box.

Stair symbols

- Large arrows on the steps indicate that the components are at different heights.
- Small arrows on a short line indicate that two components (steps or landings) are at the same height.

Overview



Use the following tool(s) to do this:

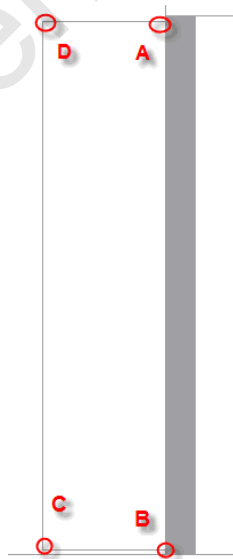
Function	How to activate it
 Straight Stair	Tools palette - Architecture family - Stairs module - Create area

Solution

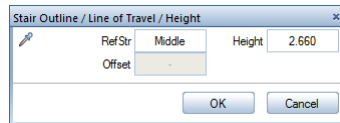
You drew the outline of the stair between the ground floor and the first upper floor when you created the slab above the first upper floor. Now you will design the stair based on this outline.

To design a straight flight stair between the ground floor and the first upper floor

- Drawing file setting: **Ground floor** structural level active; drawing files **1002 Stair** current and **1000 Floor plan** open in reference mode.
- Layer setting: **AR_ELEVA**, **DL_GEN** and **DL_50** are hidden; all the other layers are modifiable.
- 1 Click  **Straight Stair** (Tools palette - Architecture family - Stairs module - Create area).
- 2 Check that the layer **AR_STAIR** is current.
- 3 *First point of stringer (from bottom)*
Start at point A and click the corners of the stair outline one after the other.



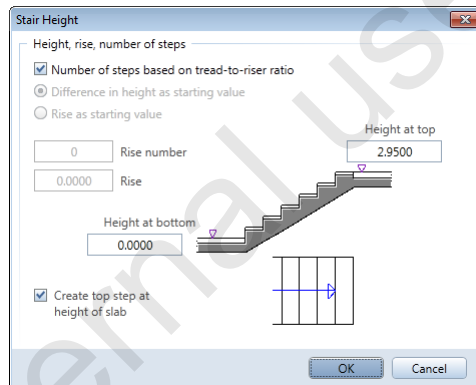
The **Stair Outline / Line of Travel / Height** Context toolbar appears.



- 4 *Change properties, click right mouse button to confirm*
Click in the **Height** box.

The **Stair Height** dialog box appears.

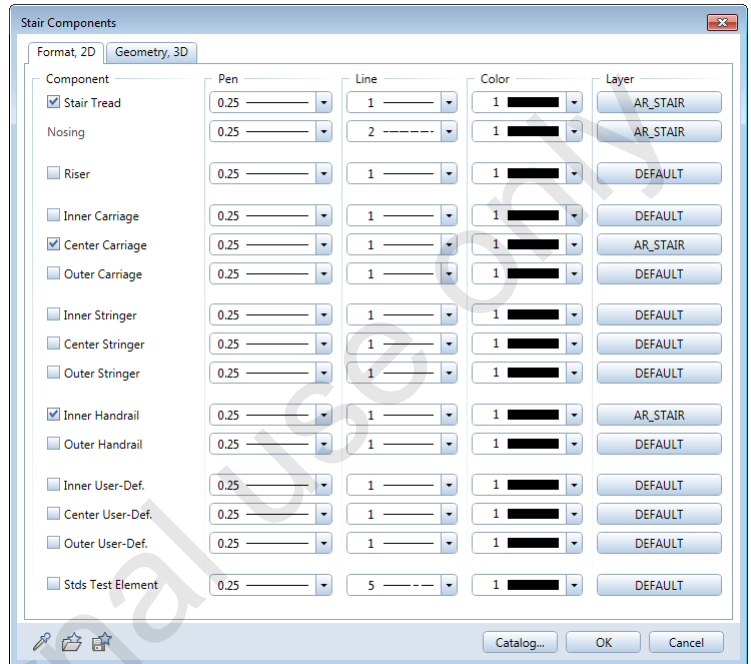
- 5 Enter the following properties.



- 6 Click OK to confirm both the **Stair Height** dialog box and the **Stair Outline / Line of Travel / Height** dialog box.

The **Stair Geometry** Context toolbar is displayed.

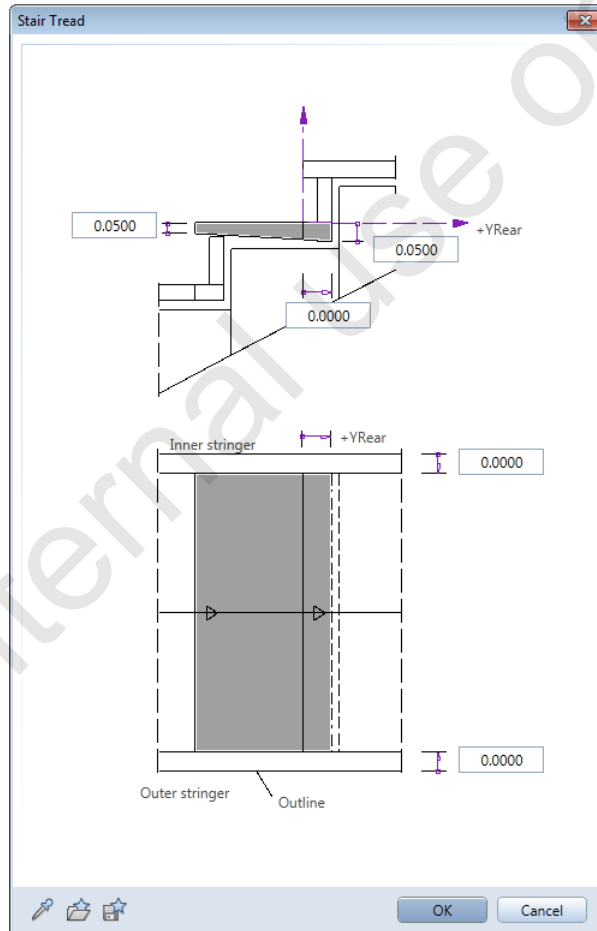
- 7 Click  **Stair components and properties** and select the stair components you want to display on the **Format, 2D** tab.



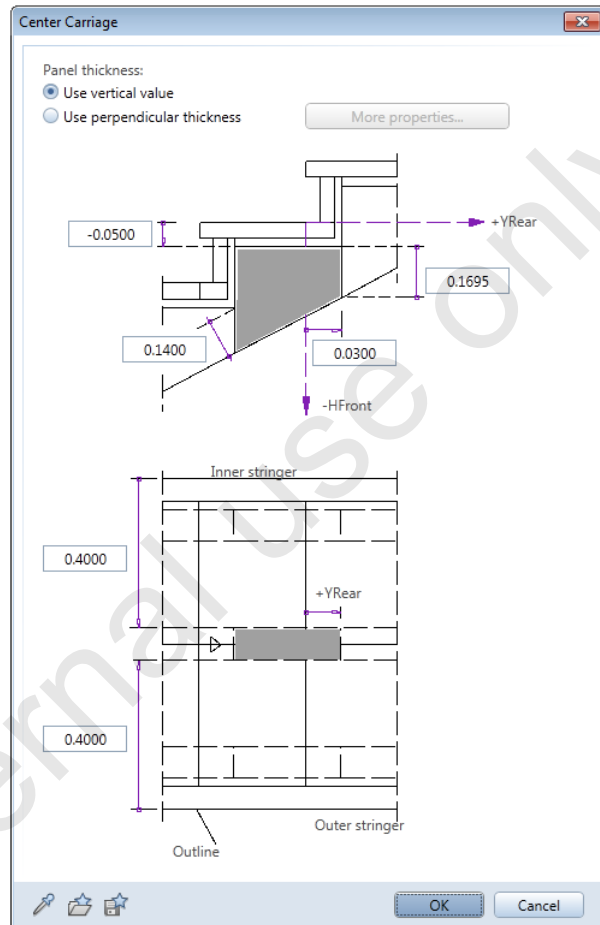
- 8 Open the **Geometry**, **3D** tab and enter the parameters for the selected stair components.

To do this, click the components one after the other, make the relevant settings and click **OK** to confirm.

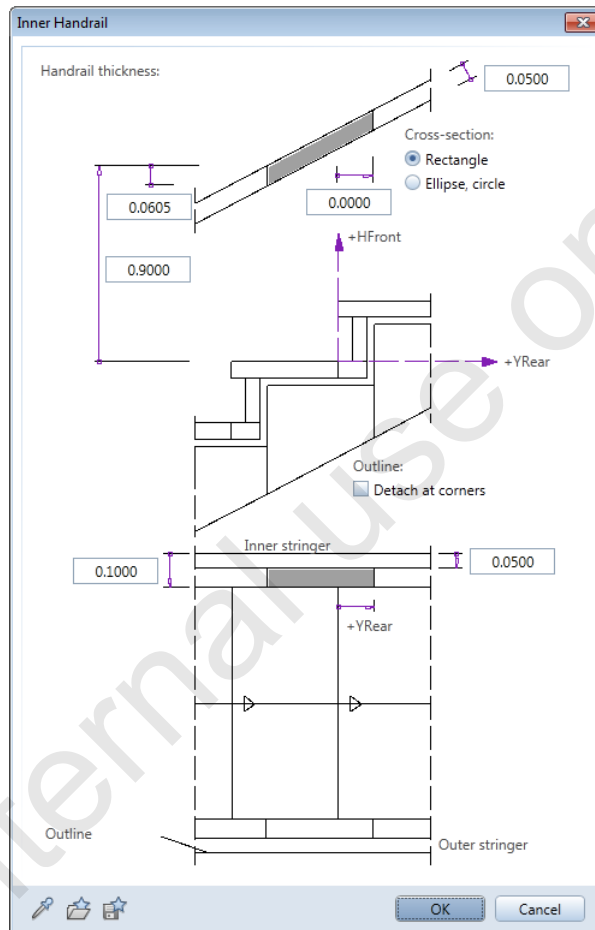
For the Treads:



For the Center Carriage:



For the Inner Handrail:



9 Click OK to confirm the **Stair Components** dialog box.

The stair is displayed.

10 Click Close on the **Stair Geometry** Context toolbar.

11 *Stair design will now finish.*

Would you like to save the changes?

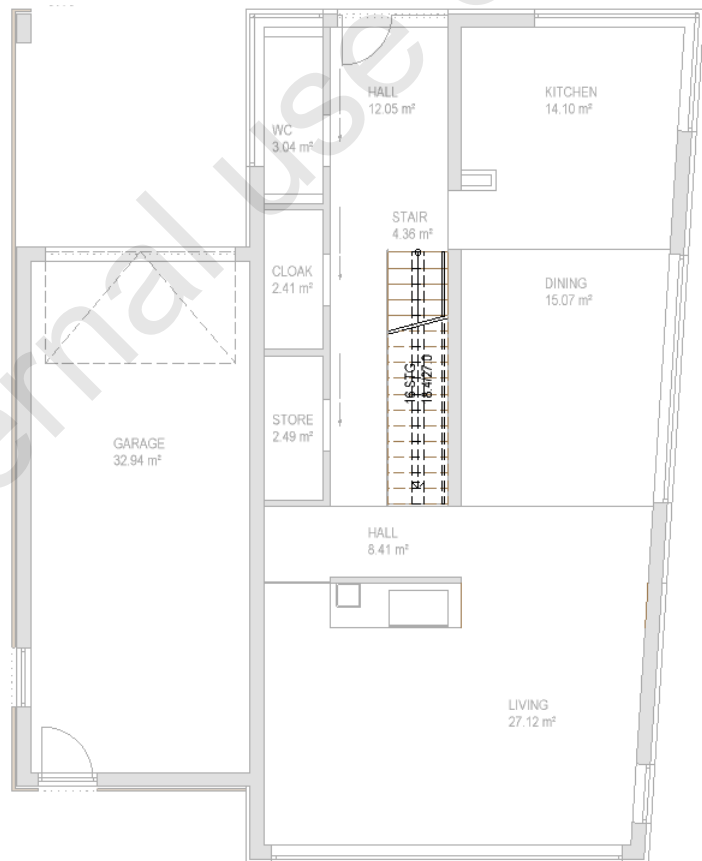
Confirm by clicking Yes.

Tip: Allplan provides the same options for labeling stairs as for rooms and smart symbols: you can use default labels, label styles and object labels.

12 *Place label*

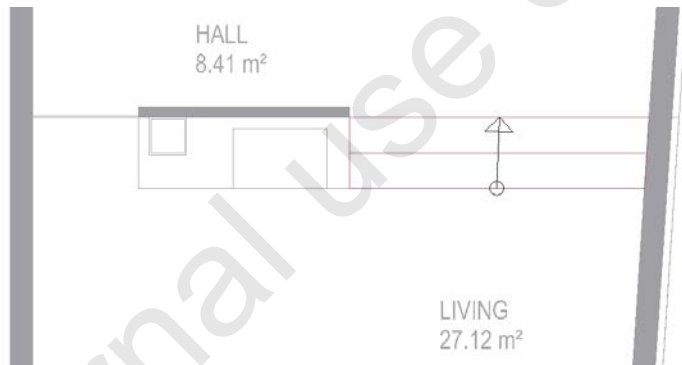
On the **Label Context** toolbar, Allplan presents a series of fields for you to choose from - these define the contents and form of the label.

13 Select **Angle** in the **Input Options** and click a wall edge to specify the direction line. Select the layer **AR_LABEL** and place the label where you require.

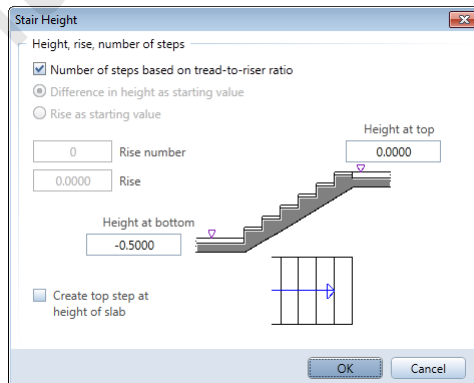


To design a straight flight stair between the hall and the dining area

- Drawing file setting: Ground floor structural level active; drawing files 1002 Stair current and 1000 Floor plan open in reference mode.
 - Layer setting: AR_ELEVA, DL_GEN and DL_50 are hidden; all the other layers are modifiable.
- 1 Try to create a simple stair between the hall and the dining area yourself.

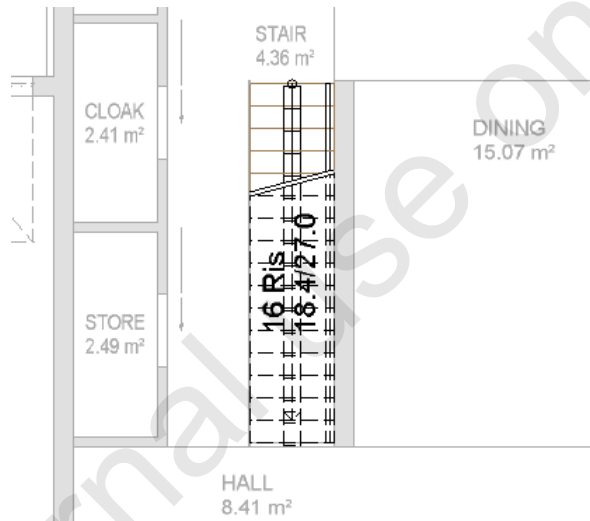


- 2 Use the illustration above and make the following settings for the height:



Task 2: section of stair

Overview



Use the following tool(s) to do this:

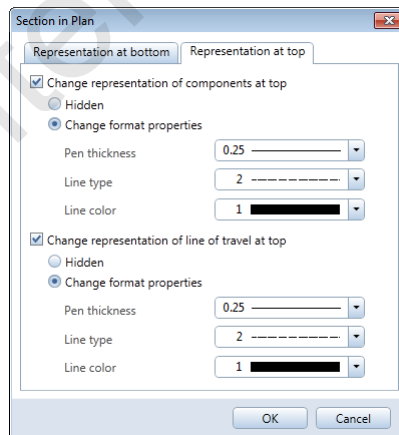
Function	How to activate it
 Section in Plan	Tools palette - Architecture family - Stairs module - Change area

Solution

To create a section in plan

- Drawing file setting: **Ground floor** structural level active; drawing files **1002 Stair** current and **1000 Floor plan** open in reference mode.
 - Layer setting: AR_ELEVA, DL_GEN and DL_50 are hidden; all the other layers are modifiable.
- 1 Open the shortcut menu of the flight of stairs between the ground floor and the first upper floor and click  **Section in Plan**.
 - 2 On the **Section in Plan** Context toolbar, click  **Properties**.
The **Section in Plan** dialog box is displayed.
 - 3 The section of the stair that is below the clipping line is to be represented by a continuous line. As this line type is already set, you do not need to make any changes in the **Representation at bottom** tab.

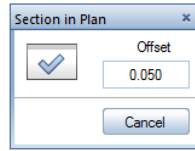
The section of the stair that is above the clipping line is to be represented by a dashed line. Select the **Representation at top** tab and make the following settings:



Tip: To hide a section of the stair, choose **Hidden**.

- 4 Click **OK** to close the **Section in Plan** dialog box.

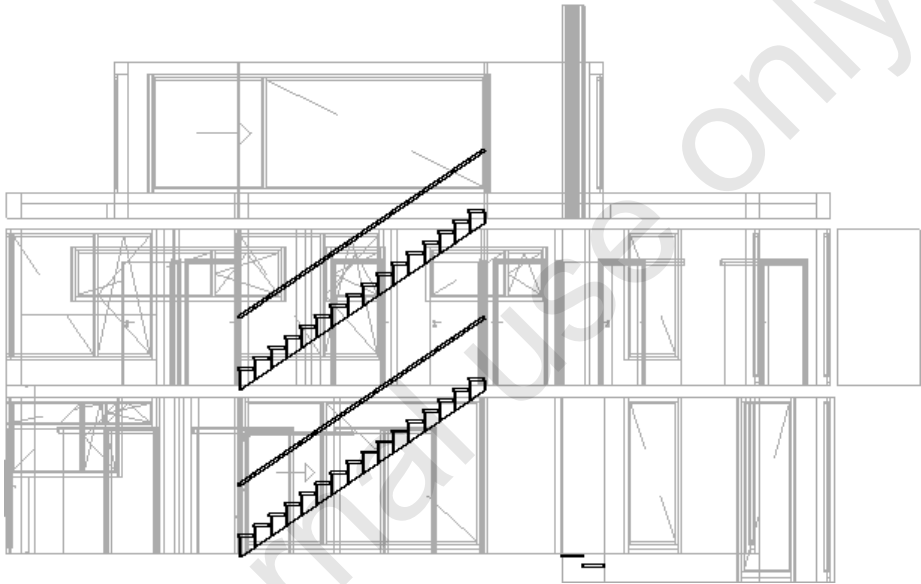
- 5 Enter 0.050 for the offset.



- 6 *1st point of section line / 2nd point of section line*
Define the section line by clicking two points on the stair outline.
In plan, the display will change automatically while the appearance of the stair in elevation and isometric views stays the same.
-

Task 3: copying the stair to other stories

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Copy	Edit menu
 Paste to Original Position	Edit menu
 Section in Plan	Tools palette - Architecture family - Stairs module - Change area
 Convert Elements	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area

Solution

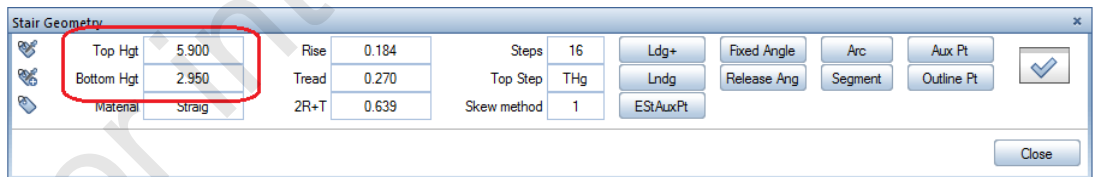
Next, you will copy the stair between the ground floor and the first upper floor to drawing files 1102 and 1202. After this, you will modify the height of the stair.

To copy the stair to drawing files 1102 and 1202

- Drawing file setting: **Ground floor** structural level active; drawing files **1002 Stair** current and **1000 Floor plan** open in reference mode.
- Layer setting: all layers are modifiable.
- 1 Select all the elements of the stair between the ground floor and the first upper floor by clicking its line of travel.
- 2 Select  **Copy** (Edit menu) or press CTRL+C.
- 3 Deactivate the **Ground floor** structural level; activate the **First upper floor** structural level and make drawing file **1102 Stair** current. This is the drawing file to which the stair is to be copied.
- 4 Select  **Paste to Original Position** (Edit menu) or press CTRL+ALT+V.

The stair is inserted in its original position.

- 5 Select the stair by double-clicking its line of travel and change the **Bottom Hgt** and **Top Hgt** to the values displayed:



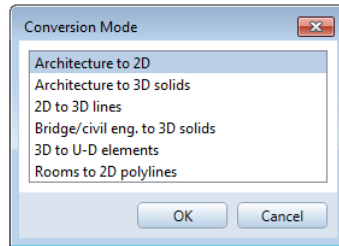
- 6 Click Close.

7 *Stair design will now finish.*

Would you like to save the changes?

Click Yes at the prompt.

Note: If the **Restore section in plan** option is active, the section in plan is retained. If this option is not active, you can use the  **Section in Plan** tool to create a new section of the stair later.



8 If necessary, change the stair label and place it in the workspace.

9 Deactivate the **First upper floor** structural level; activate the **Second upper floor** structural level and make drawing file 1202 Stair current. This is the drawing file to which the stair is to be copied as well.

10 Here, too, use CTRL+ALT+V to place the stair in its original position in drawing file 1202.

11 Select the stair by double-clicking its line of travel and click **Close**.

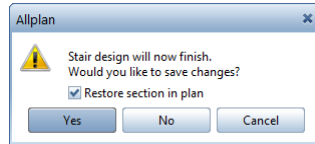
12 As the stair section is not required on this floor, clear the **Restore section in plan** check box and then click **Yes** to confirm the prompt.

13 Here, you do not need to label the stair. Press ESC to finish.

14 The next step is to convert the stair to 2D.

Click  **Convert Elements** (Tools palette - Architecture family - Stairs module - Create area).

15 Select **Architecture to 2D** and click **OK** to confirm.



16 *Select architectural elements you want to convert to 2D*
Select the entire stair by enclosing it in a selection rectangle.

The stair is converted to 2D.

17 *Select architectural elements you want to convert to 2D*
Click **Cancel** to quit the tool.

For internal use only

Exercise 5: balcony railing (optional)

Task 1: balcony railing on the first upper floor

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Maximize	In the top right corner
 Navigation Mode	On the viewport toolbar at the bottom
 Railing	Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area
 Minimize	In the top right corner

Solution

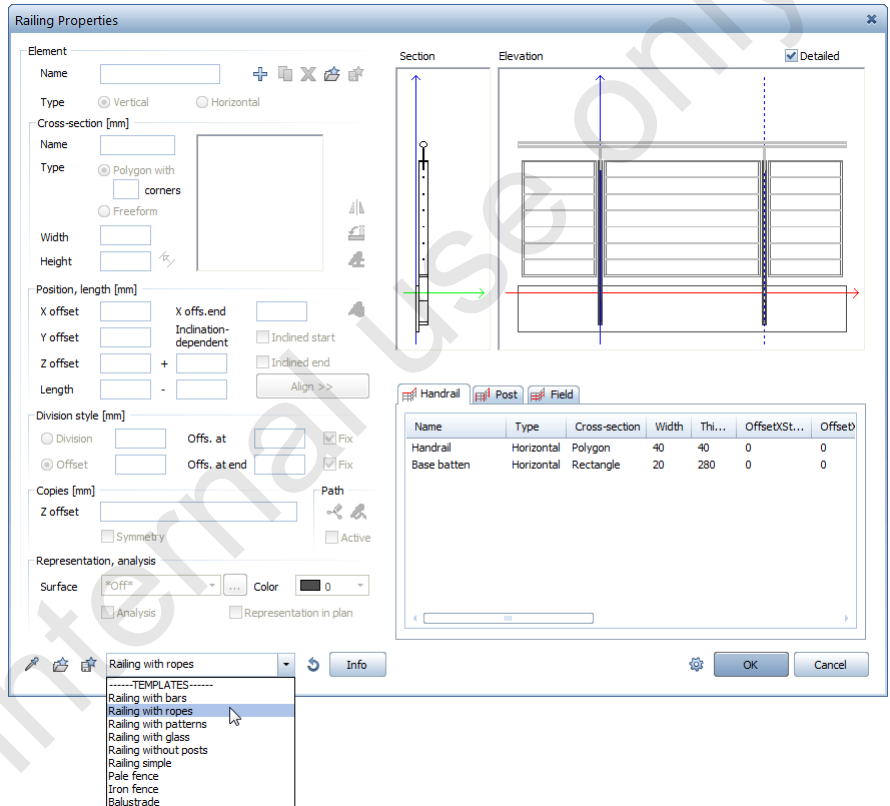
To create a railing for the balcony on the first upper floor

- Drawing file setting: **First upper floor** structural level active; drawing files **1104 Railing** current and **1100 Floor plan** open in reference mode.
- Layer setting: **AR_LABEL** and **RO_ROOM** are hidden; all the other layers are modifiable.
- 1 Open an animation window (F4 KEY).
Or:
Load the "Fit for CAD" viewport arrangement.
- 2 Click  **Maximize** in the top right corner of the **Animation: Entire Model** viewport.
- 3 Select a view that clearly shows as many corners of the balcony's floor covering as possible. To do this, use  **Navigation Mode** (on the toolbar of the animation window) and the mouse buttons.
- 4 Once you have found a view that you like, deactivate  **Navigation Mode** so that you can snap to points directly in the animation window.
- 5 Select track tracing, which helps you enter offset values.

- 6 Click  Railing (Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area) and then click  Properties on the Railing Context toolbar.

The Railing Properties dialog box is displayed.

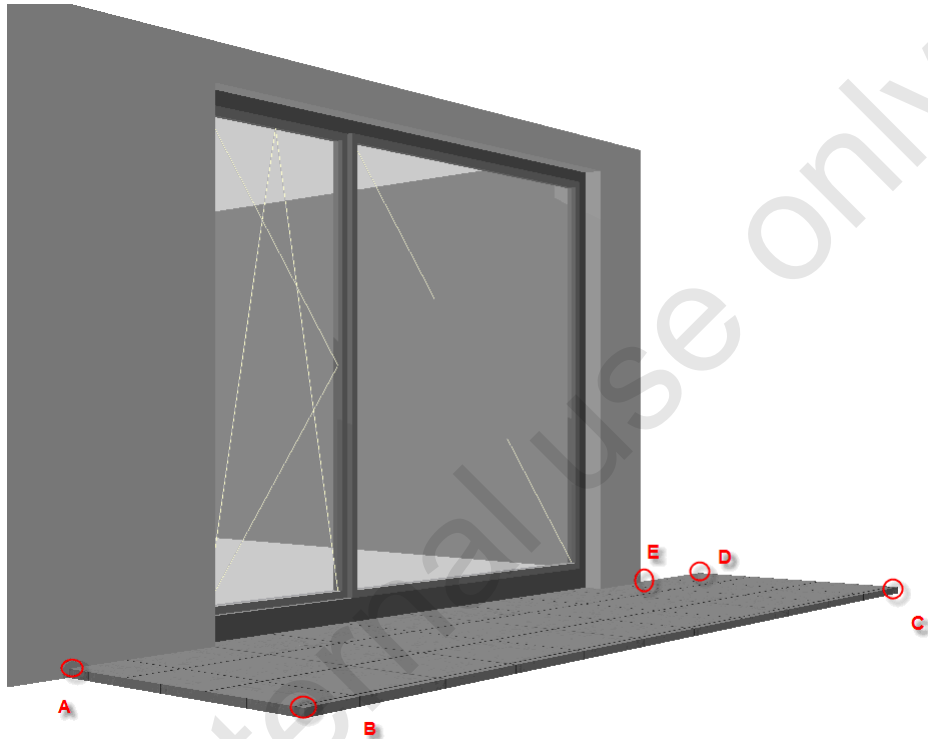
- 7 Select Railing with ropes.



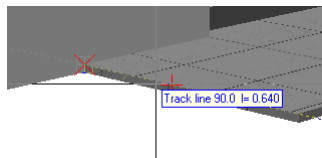
- 8 Confirm the Railing Properties dialog box by clicking OK.

9 *Enter first point of path*

Point to point A for at least 500 milliseconds to define it as a track point, then move the crosshairs in the direction of point B.

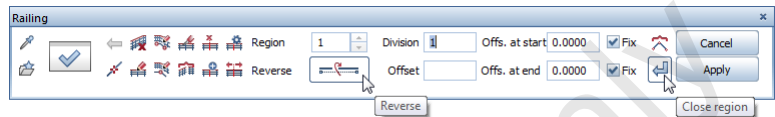


10 To define the offset to point A, enter 0.02 m in the dialog line and press ENTER to confirm.

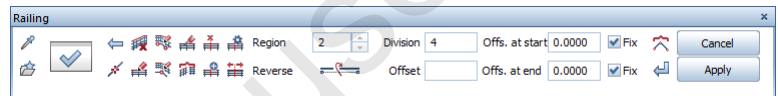


11 Enter next point of path

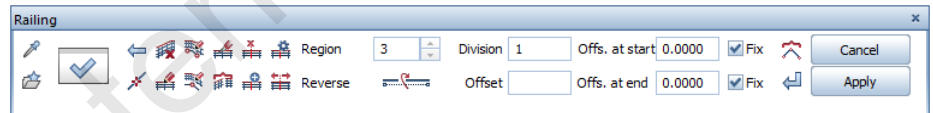
On the Railing Context toolbar, click  **Reverse** to mirror the position of the railing across the line defined by points A and B and check the other settings.

**12 Click point B and then click Close region.****13 Enter next point of path**

Change the Division to 4 for the second region.

**14 Click point C and then click Close region again.****15 Enter next point of path**

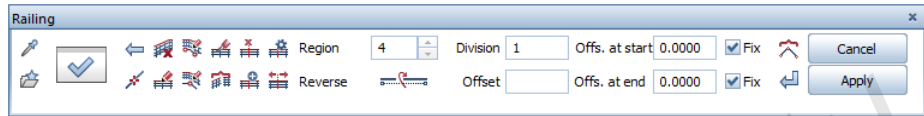
Set the Division back to 1 for the third region.

**16 Click point D and then click Close region again.****17 Enter next point of path**

To enter the last region, you probably need to change the view so that you can see point E clearly.

Activate  **Navigation Mode**, change the view and deactivate  **Navigation Mode** again.

18 The **Division** is still set to 1. This value is also used for the fourth region.



19 Point to point E for at least 500 milliseconds to define it as a track point, then move the crosshairs in the direction of point D.

20 Here, too, enter 0.02 m in the dialog line to define the offset to point E. Then press ENTER to confirm.

21 Click  Close region again.

22 *Enter next point of path*
Press ESC twice to quit the tool.

23 Now activate  **Navigation Mode** again to check the result.

24 To restore the animation window to its original size, click  **Minimize** in the top right corner.

Unit 5

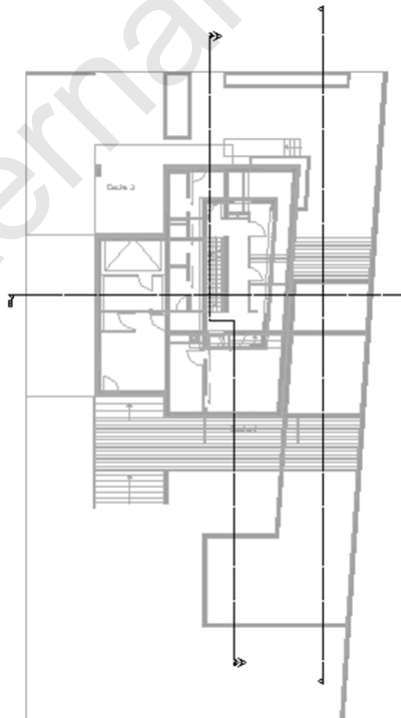
For internal use only

For internal use only

Exercise 1: sections, elevation and perspective views

Task 1: vertical sections

Overview



Use the following tool(s) to do this:

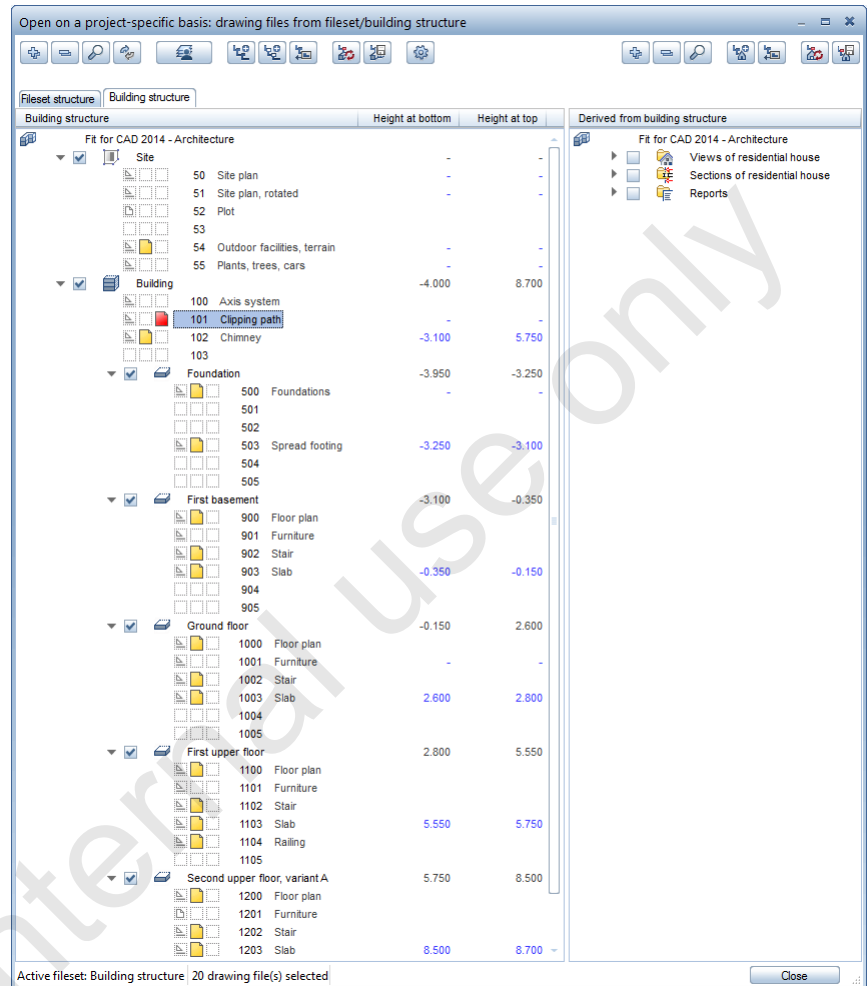
Function	How to activate it
 Clipping Path	Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area

Solution

First, all the drawing files with the elements you want to include in the section need to be opened in edit mode and the layers have to be made visible. The clipping path itself is in a separate drawing file, which is current. It is defined by setting parameters.

To define sections A-A and B-B and the east elevation

- Drawing file setting: several structural levels active; drawing file 101 current and drawing files 54, 102, 500, 503, 900, 902, 903, 1000, 1002, 1003, 1100, 1102, 1103, 1104, 1200, 1202 and 1203 open in edit mode (see following illustration).



- Layer setting: AR_ELEVA, DL_GEN, DL_50 and AR_LABEL are hidden; all the other layers are modifiable.
 - Drawing file 55 Plants, trees, cars is closed (this reduces compute time)!
 - Select only one variant of the second upper floor (variant A in this example)!
- 1 Click  Clipping Path (Tools palette - Architecture family - General: Roofs, Planes, Sections module - Create area).
 - 2 Check that the layer AR_SECT is current.

- 3 On the Clipping Path Context toolbar, click



Properties.

The Architectural Section dialog box is displayed.

- 4 Set the following parameters:

In the Type area:

- Vertical section

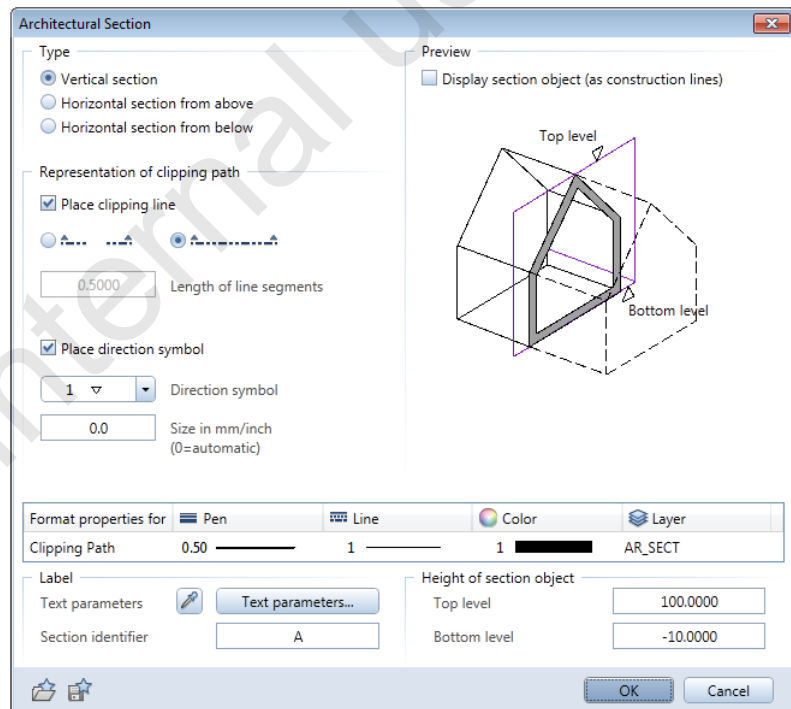
In the Label area:

- Section identifier: A

In the Height of section object area:

- Top level: 100.000 m
- Bottom level: -10.000 m

Tip: To produce a section which shows the *entire* building, you need to set the upper edge of the section at least 20 cm above the ridge and the lower edge of the section at least 20 cm below the bottom of the building.



Tip: The clipping path can have right angular bends in it. All you need to do is enter the **end point** of the next section of the clipping line. Allplan will add the right angular bend automatically. If the end point of the next section is perpendicular to the existing clipping line, Allplan will issue a message indicating that the **point entered is illegal**.

- 5 Click **OK** to confirm.
 - 6 *First point of clipping path*
Second point to point
Next point
Define the clipping path for section A-A so that it is more or less the same as the clipping path shown in the illustration at the beginning of this task.
 - 7 *Next point*
Press **ESC** to finish entering the clipping path.
 - 8 *Depth / viewing direction*
Define the viewing direction by clicking.

This also defines the depth of the section; in other words, the elements that are displayed in the section.
 - 9 Use the same approach to define the clipping path for section B-B and the East elevation.
-

A note on using sections for creating views

You can also use sections (cf. task 4) to create any exterior view. Place the clipping path outside the building and define the viewing direction so that you can see the entire building (see step 8 in the description above).

Like "normal" sections, exterior views can be saved as wireframe models or hidden line images in separate drawing files.

Task 2: north elevation

Introduction

The building structure also provides drawing files for views and sections. You can find these drawing files in the **Views of residential house** and **Sections of residential house** folders in the **Derived from building structure** area on the right in the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box ( **Open on a Project-Specific Basis** tool). You can create views and sections using the shortcut menus of these drawing files.

The smart window and door symbols used include specific opening symbols. If you do not want to include these symbols in views and/or sections, all you need to do is switch off the **Smart symbol foil A** option (**Show/Hide dialog box**) before you create a view or section.

Basically, creating a view always involves the following six steps:

1st step: select the destination drawing file for the result

2nd step: select the source drawing files

3rd step: make layer settings and select the print set

4th step: make settings for the view

5th step: generate the view

6th step: update the result (if there are changes)

Overview



Use the following tool(s) to do this:

Function	How to activate it
 Show/Hide	Default toolbar
 1 Viewport	Window menu
 Open on a Project-Specific Basis	Default toolbar

Solution

Tip: It is a good idea to *open* the source drawing files *in advance*. This makes selection easier.

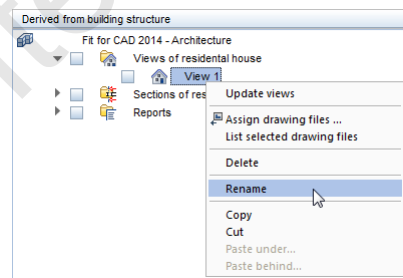
To calculate and save views

- Drawing file setting: several structural levels active; drawing file 101 current and drawing files 54, 102, 500, 503, 900, 902, 903, 1000, 1002, 1003, 1100, 1102, 1103, 1104, 1200, 1202 and 1203 open in edit mode.
 - Layer setting: AR_ELEVA, DL_GEN, DL_50 and AR_LABEL are hidden; all the other layers are modifiable.
- 1 Click  **Show/Hide (Default toolbar)** and use the **Smart symbol foil A, B and C** options to specify whether and with which display foil the opening symbols of the windows and doors are to be displayed.

- 2 Open the **Window** menu and click  **1 Viewport**.
- 3 Click  **Open on a Project-Specific Basis (Default toolbar)**.

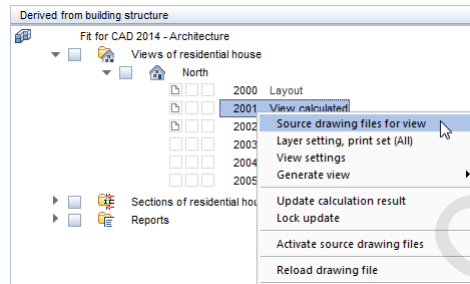
The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box is displayed.

- 4 In the **Derived from building structure** area on the right, open the **Views of residential house** folder.
- 5 Open the shortcut menu of **View 1** and click **Rename**.

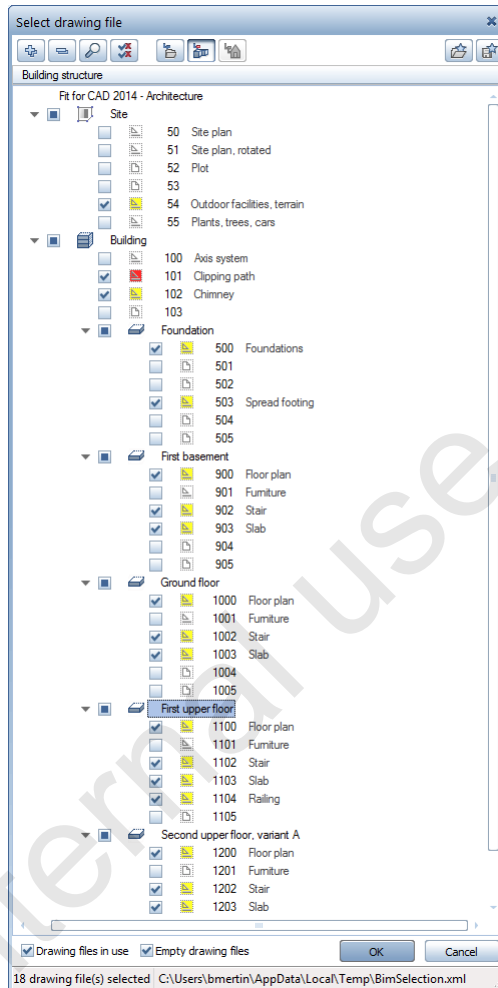


- 6 Enter **North** for the name of the view and press **ENTER** to confirm.

- 7 Open the **North** folder and click drawing file **2001** with the right mouse button. On the shortcut menu, select **Source drawing files for view** for view.



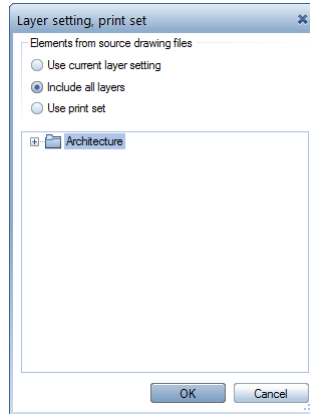
- 8 Select the check boxes of all the drawing files you opened in the building structure beforehand. You can see which drawing files are open: their icons are highlighted in color (gray, yellow, red).



9 Click OK to confirm.

10 Open the shortcut menu of drawing file 2001 and click Layer setting, print set.

- 11 Select **Include all layers** and click **OK** to confirm.

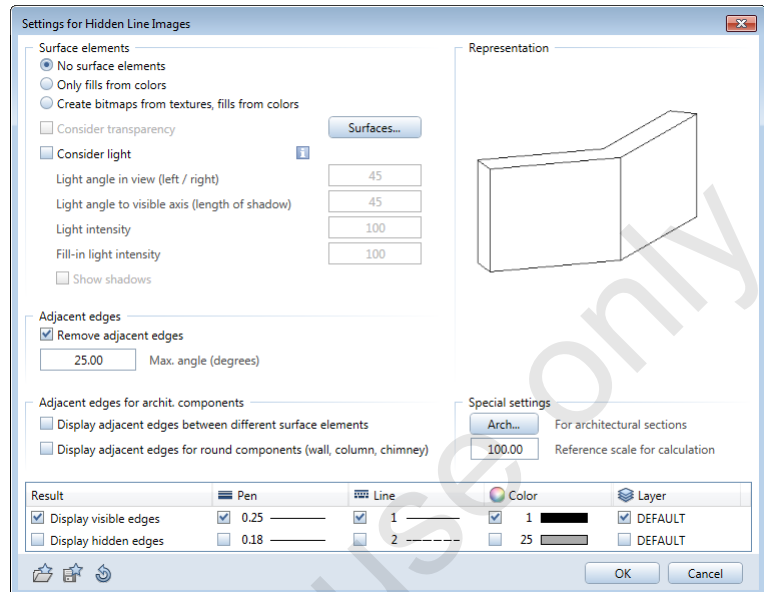


- 12 Open the shortcut menu of drawing file 2001 again and click **View settings**.

The **Settings for Hidden Line Images** dialog box is displayed.

- 13 Set the parameters for the hidden line image as shown and click **OK** to confirm.

Note: When you create hidden line images of *sections*, it is usually useful to *switch off* the **Remove adjacent edges** option. When it comes to creating hidden line images of *views*, on the other hand, you are advised to *select* this option to make sure that the edges between different surface elements are not displayed.



- 14 Open the shortcut menu of drawing file 2001 again, point to **Generate view** and select **Rear, North Elevation**.

Allplan calculates this view and saves it in the destination drawing file (2001 in this example).

- 15 To quickly switch to the drawing file with the view and to close all the other drawing files, double-click drawing file 2001 with the left mouse button. This closes the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box.

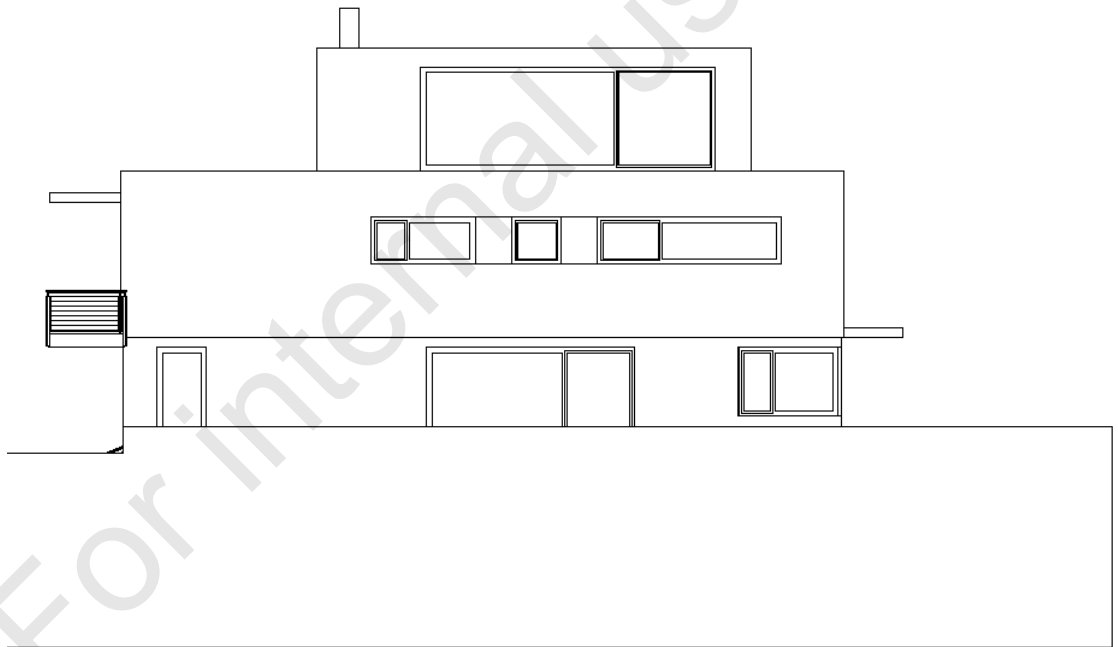
The result should now look like the illustration at the beginning of this task.

Task 3: copying and modifying the north elevation

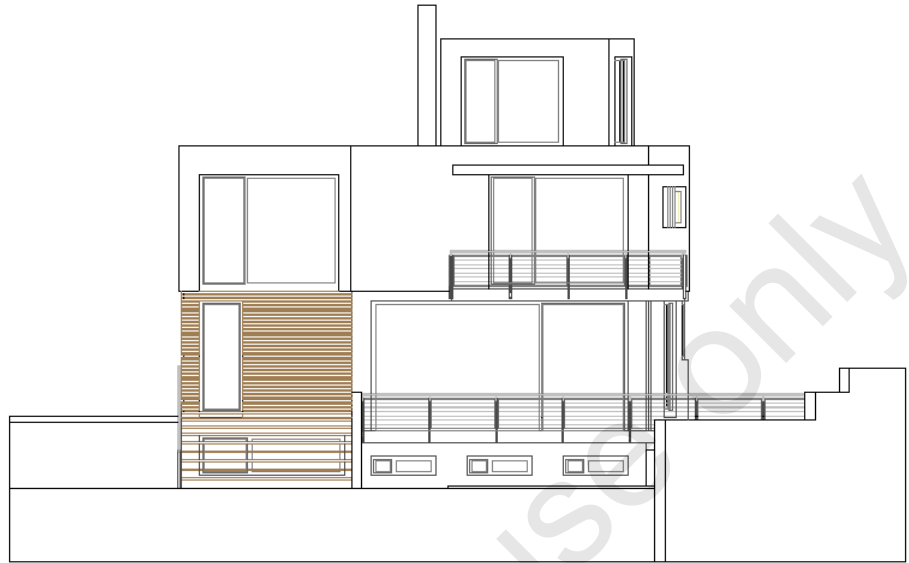
Introduction

One of the quickest ways to create a new view is to copy an existing view and then change the viewing direction.

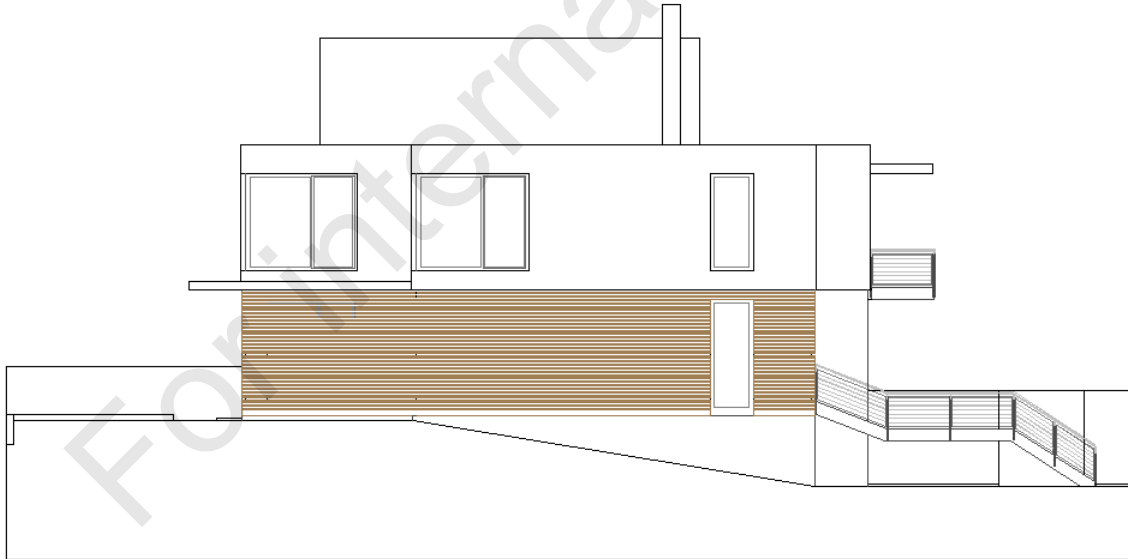
Overview



East elevation (part)



South elevation



West elevation (part)

Use the following tool(s) to do this:

Function	How to activate it
 Show/Hide	Default toolbar
 Open on a Project-Specific Basis	Default toolbar

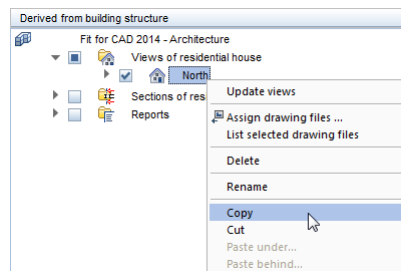
Solution

Tip:

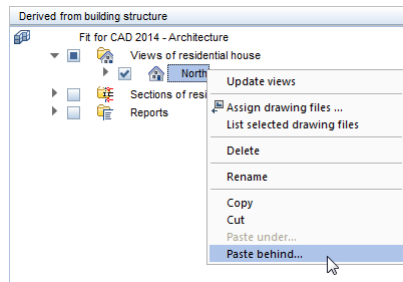
You can quickly select all the source drawing files of a destination drawing file in the building structure: open the shortcut menu of the destination drawing file and click **Activate source drawing files**.

To calculate and save views

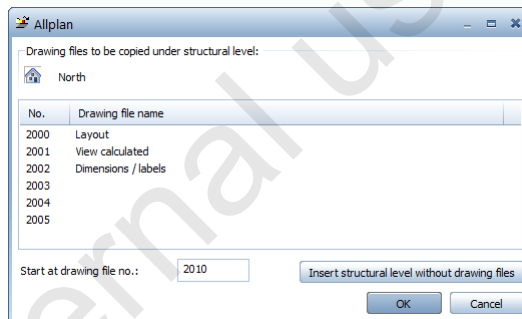
- Drawing file setting: several structural levels active; drawing file 101 current and drawing files 54, 102, 500, 503, 900, 902, 903, 1000, 1002, 1003, 1100, 1102, 1103, 1104, 1200, 1202 and 1203 open in edit mode.
 - Layer setting: AR_ELEVA, DL_GEN, DL_50 and AR_LABEL are hidden; all the other layers are modifiable.
- 1 Click  **Show/Hide** (Default toolbar). Here, too, use the Smart symbol foil A, B and C options to specify whether and with which display foil the opening symbols of the windows and doors are to be displayed.
 - 2 Click  **Open on a Project-Specific Basis** (Default toolbar).
 - 3 The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box is displayed. Open the **Views of residential house** folder in the **Derived from building structure** area on the right.
 - 4 Open the shortcut menu of the **North** folder and click **Copy**.



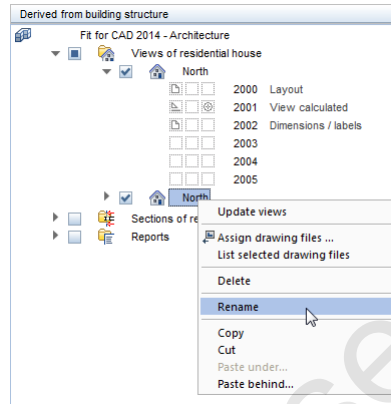
- 5 Open the shortcut menu of the North folder again and click Paste behind.



- 6 In the dialog box that opens, enter number 2010 for Start at drawing file no. and click OK to confirm.



- 7 Open the shortcut menu of the *copy* of the **North** folder and click **Rename** (or press the F2 KEY).



- 8 Enter **East** for the name of the next view and press ENTER to confirm.
- 9 Open the shortcut menu of drawing file **2011**, point to **Generate view** and select **Right, East Elevation**.

Allplan calculates this view and saves it in the destination drawing file (**2011** in this example).

- 10 To quickly switch to the drawing file with the view and to close all the other drawing files, double-click drawing file **2011** with the left mouse button.
- 11 Use the same approach to create the views for the **South** and **West** elevations (follow steps 3 to 9).

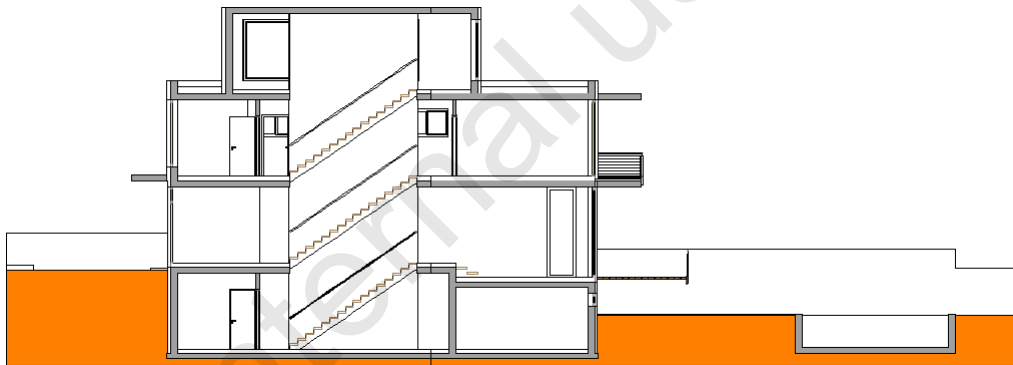
And remember: You can select all the source drawing files of a destination drawing file in as fast a manner as possible by opening the shortcut menu of the destination drawing file and clicking **Activate source drawing files**.

Task 4: sections

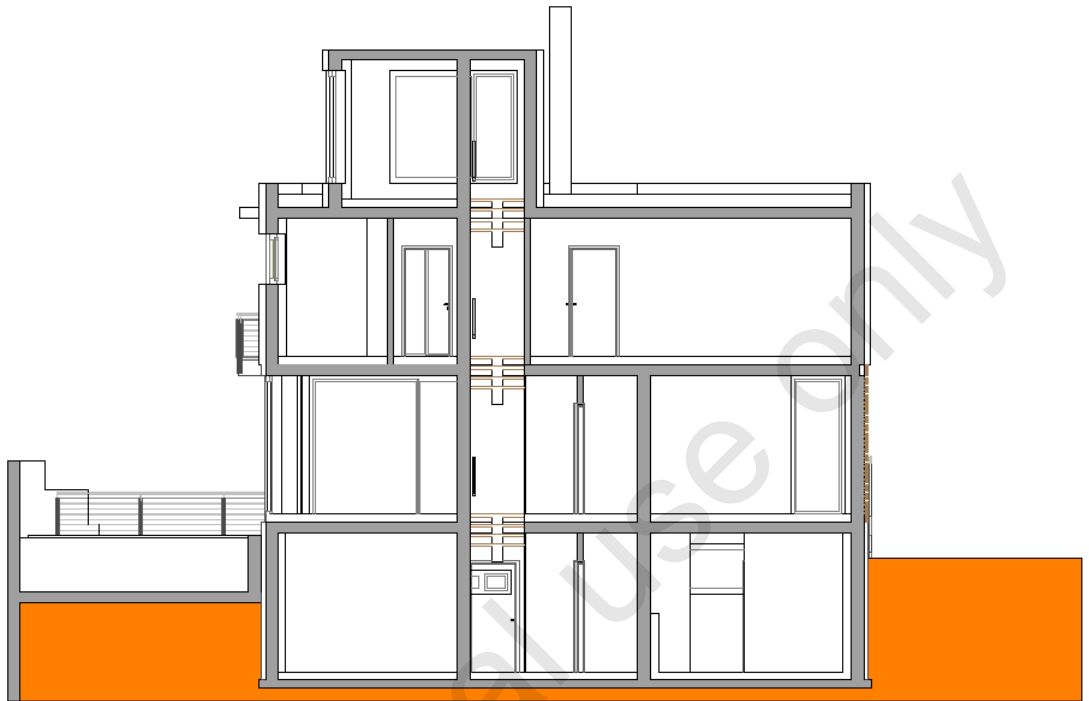
Introduction

You may have noticed that the facade is hidden by other components in the view you generated for the East elevation. Or there may be times when you will find that you need a view seen from any direction. Sections solve these problems.

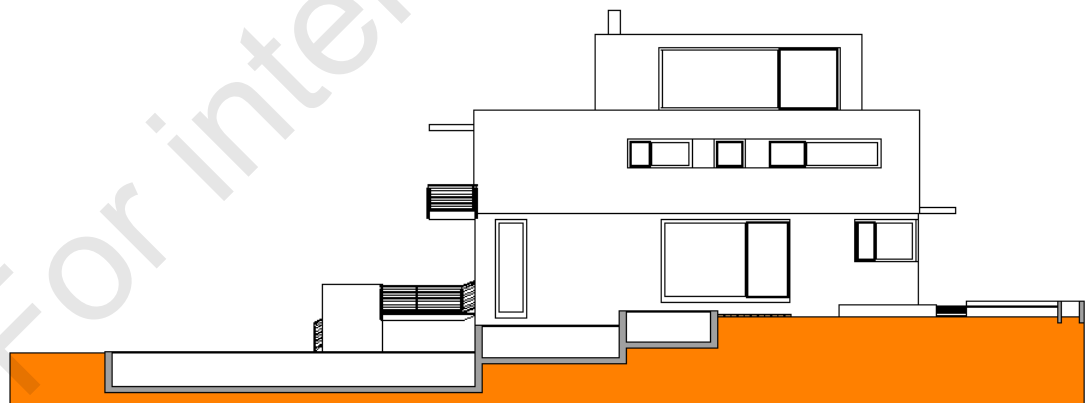
Overview



Section A-A



Section B-B



Section of east elevation

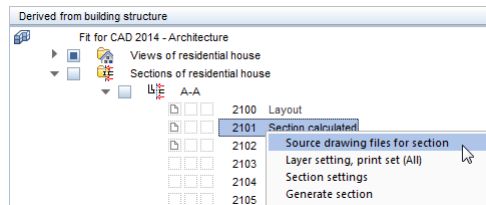
Use the following tool(s) to do this:

Function	How to activate it
 Show/Hide	Default toolbar
 Open on a Project-Specific Basis	Default toolbar
 Plan	At bottom left in the viewport

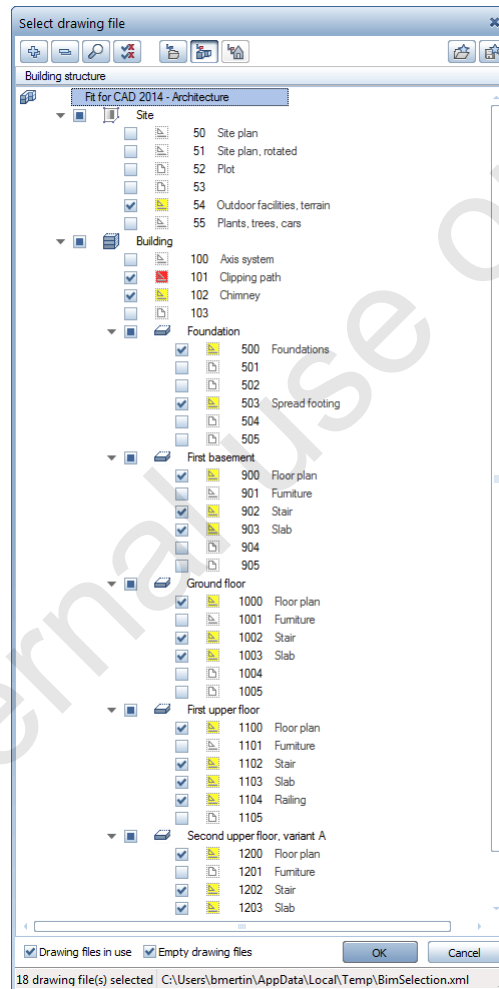
Solution

To calculate and save sections

- 1 Click  Show/Hide (Default toolbar) and use the Smart symbol foil A, B and C options to specify whether and with which display foil the opening symbols of the windows and doors are to be displayed in the sections.
- 2 Click  Open on a Project-Specific Basis (Default toolbar).
- 3 The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box is displayed. Open the **Sections of residential house** folder in the **Derived from building structure** area on the right.
- 4 Open the shortcut menu of **Section 1** and click **Rename**.
- 5 Enter A-A for the name of the section and press ENTER to confirm.
- 6 Open the shortcut menu of drawing file 2101 and click **Source drawing files for section**.



- 7 Select the check boxes of all the drawing files you opened in the building structure beforehand. You can see which drawing files are open: their icons are highlighted in color (gray, yellow, red).

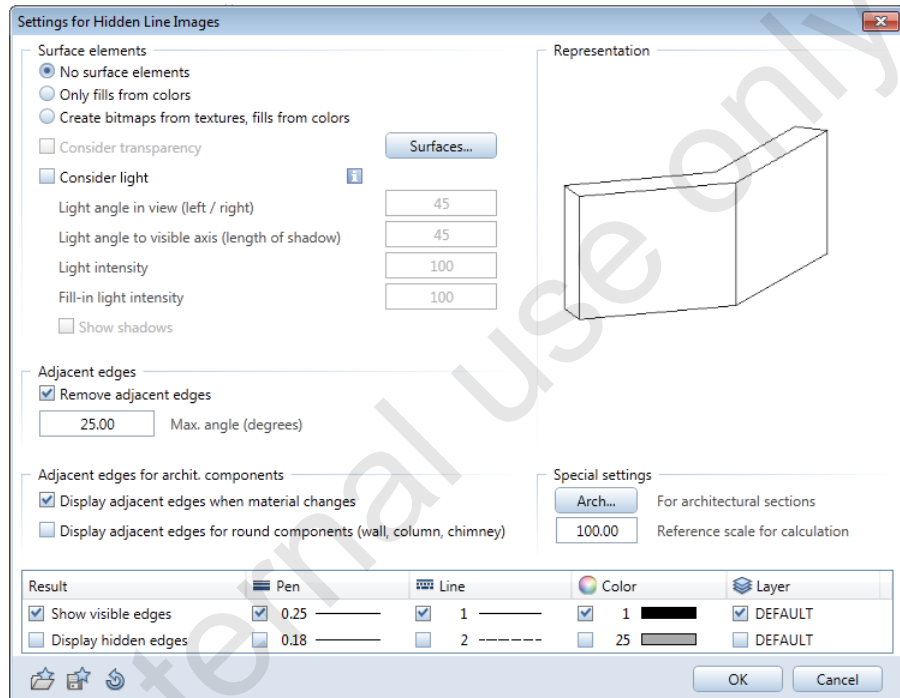


- 8 Click OK to confirm.
- 9 Open the shortcut menu of drawing file 2101 and click Layer setting, print set.
- 10 Select Include all layers and click OK to confirm.

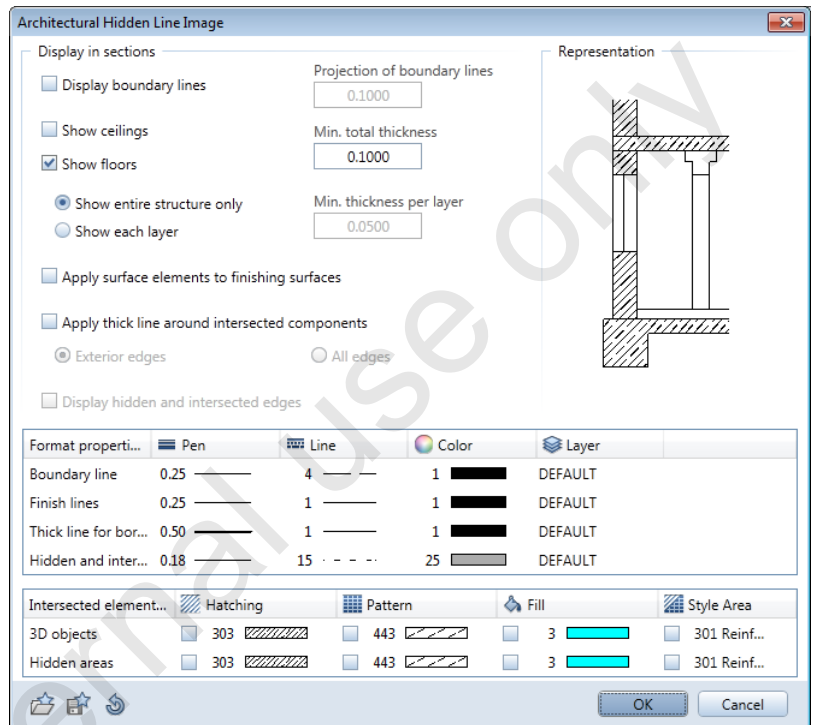
11 Open the shortcut menu of drawing file 2101 again and click **Section settings**.

The **Settings for Hidden Line Images** dialog box is displayed.

12 Set the parameters for the hidden line image as shown.



- 13 Click the **Arch...** button in the **Special settings** area and set the parameters specific to hidden line images of architectural elements.

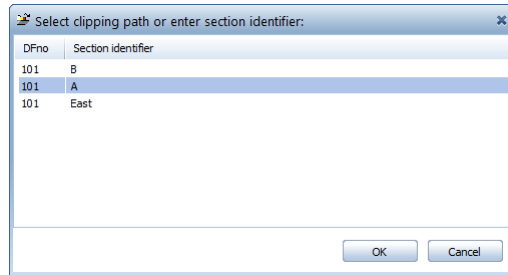


- 14 Click **OK** to confirm the two dialog boxes.

- 15 Open the shortcut menu of drawing file 2101 and click **Generate section**.

16 Select clipping path A and click OK to confirm:

Tip: So that the section is presented for selection, you need to make sure that you specify the drawing file where the clipping path was defined (101 in this example) as a source drawing file for the section.



Tip: The section view will not update automatically to reflect alterations you make to the floor plan. You need to update the calculation result (shortcut menu).

Tip: As the section or view derived produces a 2D result of a 3D design, you need to set the view to  **Plan** to make sure that you can see the results.

Allplan calculates section A-A and saves it in the destination drawing file (2101 in this example).

17 To quickly switch to the drawing file with the section and to close all the other drawing files, double-click drawing file 2101 with the left mouse button.

18 Use the same approach to create section B-B and the section of the East elevation.

Copy a section (section B-B from drawing file 2110; section of East elevation from drawing file 2120) by using the **Copy**, **Paste behind** and **Rename** tools on the shortcut menu see task 3) and generate the section afterwards.

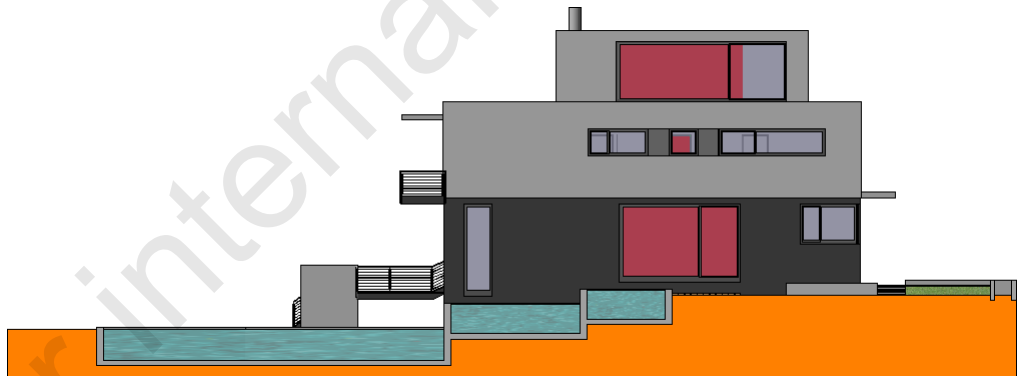
Task 5: modifying sections (optional)

Introduction

Allplan provides a wide range of options for calculating views and sections. Using these options, you can create a lot of different results. Presenting the variety of these options, however, is beyond the scope of this seminar. If this sparks your interest, it is a good idea to attend other seminars such as **Allplan Visualization and Presentation**.

If you have time, you can now try out an alternative.

Overview



Use the following tool(s) to do this:

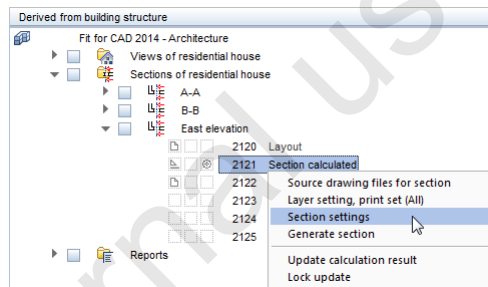
Function	How to activate it
Open on a Project-Specific Basis	Default toolbar



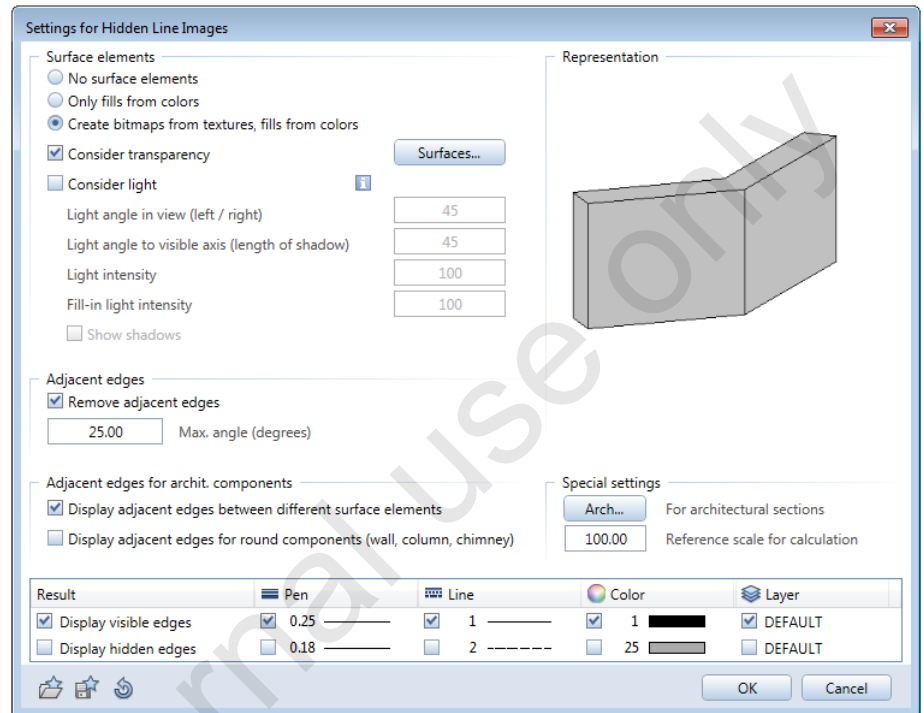
Solution

To change the sections settings and update the result

- 1 Click  **Open on a Project-Specific Basis** (Default toolbar).
- 2 The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box is displayed. In the **Derived from building structure** area on the right, open the **Sections of residential house** folder and then the **East elevation** folder (or any other folder containing a destination drawing file with a result).
- 3 Open the shortcut menu of drawing file 2121 (or of any other destination drawing file with a result) and click **Section settings**.



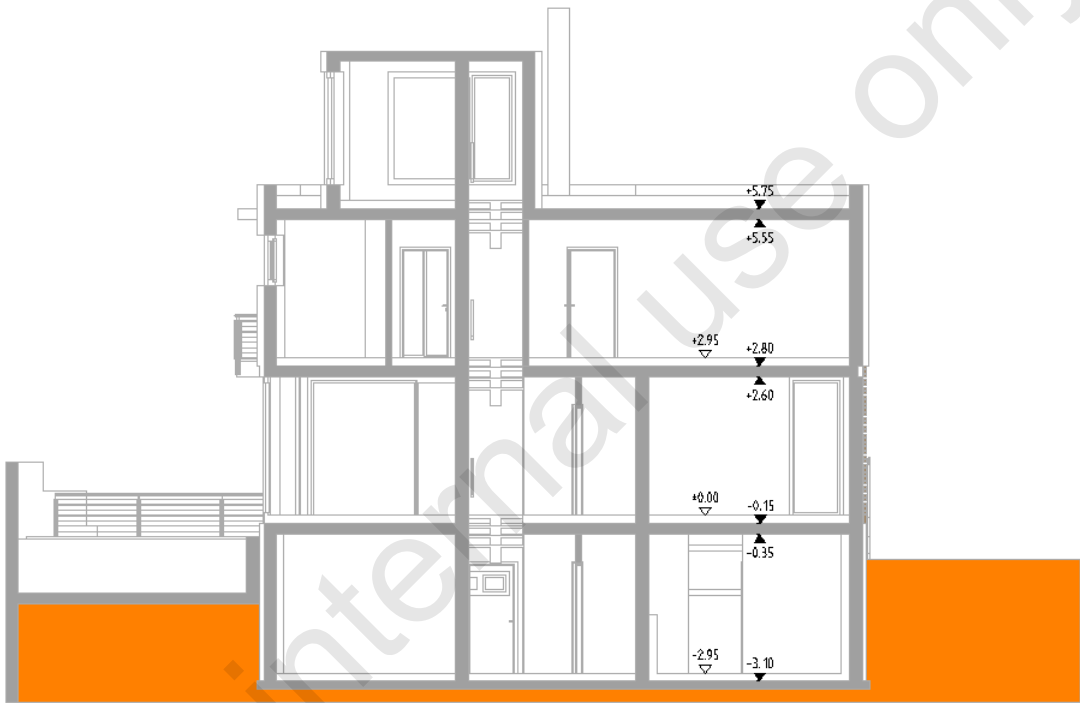
- 4 Change the parameters for the hidden line image as follows and click **OK** to confirm.



- 5 Open the shortcut menu of drawing file 2121 (or of any other destination drawing file with a result) again and click **Update calculation result**.
This can take some time (depending on the computing power).
- 6 To quickly switch to the drawing file with the updated section and to close all the other drawing files, double-click drawing file 2121 (or the other destination drawing file with the result) with the left mouse button.

Task 6: elevation dimensioning

Overview



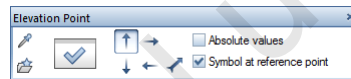
Use the following tool(s) to do this:

Function	How to activate it
 Elevation Point	Tools palette - Basic family - Dimension Lines module - Create area

Solution

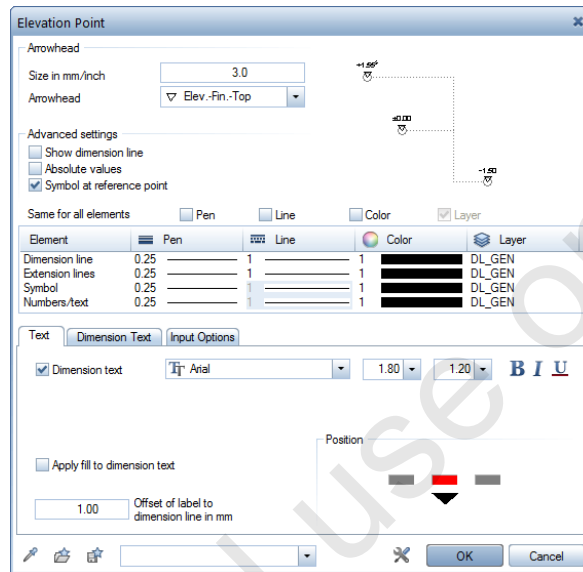
To create elevation dimensioning

- Drawing file setting: section B-B structural level active; drawing file 2112 Dimensions / labels current and drawing file 2111 Section calculated open in edit mode.
- Layer setting: all layers are modifiable.
- 1 Click  Elevation Point (Tools palette - Basic family - Draft module - Create area).
- 2 The Elevation Point Context toolbar appears. Select the  Vertically upwards option and the Symbol at reference point option. The latter makes it possible to place the elevation symbols and values measured directly at the point clicked.

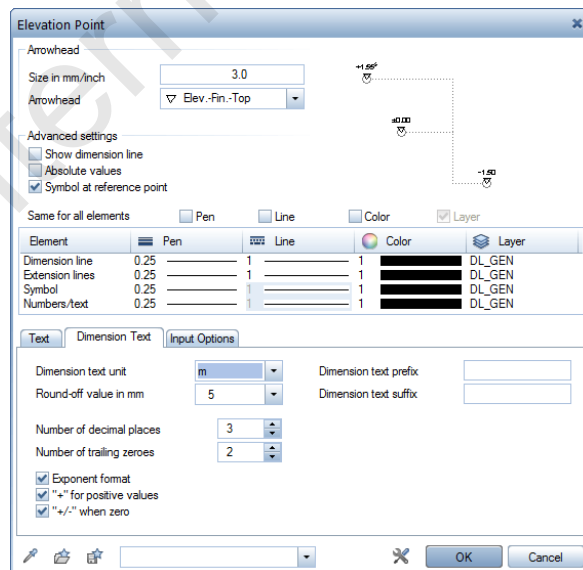


- 3 *Through point or click dimension line*
Click  Properties and set the following parameters in the Elevation Point dialog box:

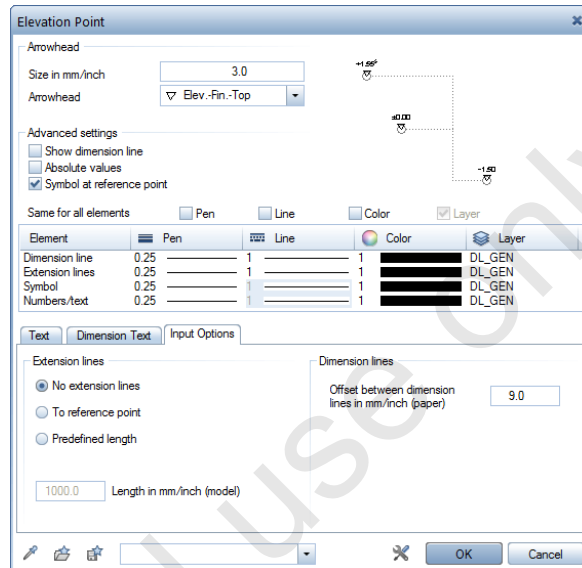
- On the Text tab:



- On the Dimension Text tab:



- On the Input Options tab:



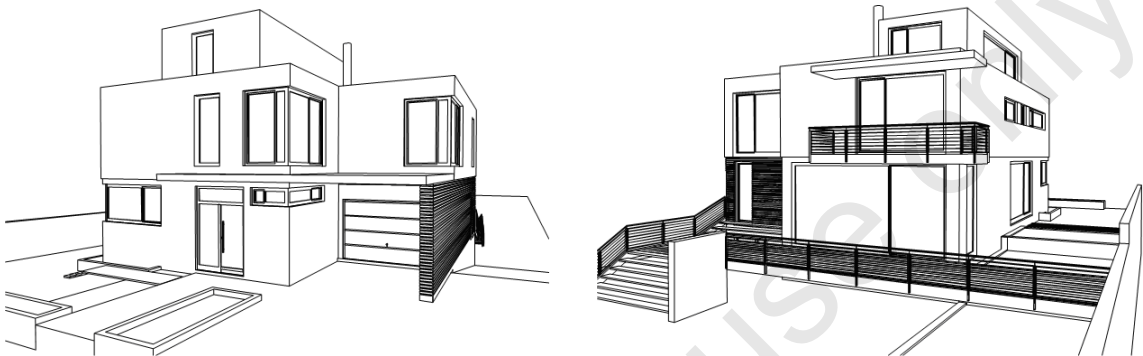
- Click OK to confirm.
- Through point or click dimension line*
Place a point through which the dimension line is to pass.
- Reference point*
Enter 0.0000 for the base value on the Elevation Point Context toolbar. Then, in the section, click the reference point to which you want to assign this base value.

In this example, click a point at the height of the top level of the finished floor on the ground floor.
- Point to dimension*
Click all the points you want to include in this first dimension string.
- Now you can add more dimension strings.

For example, use the list box on the Elevation Point Context toolbar to change the arrowhead to Elevation, unfinished, top and place the next dimension string.
- Press ESC twice to quit the tool.

Task 7: perspective view

Overview



Use the following tool(s) to do this:

Function	How to activate it
 3D View	On the viewport toolbar at the bottom
 View Type	On the viewport toolbar at the bottom
 Refresh	View menu
 Section Display	On the viewport toolbar at the bottom
 Export 3D PDF...	Shortcut menu in animation window
 1 Viewport	Window menu

Solution

You can use the 3D View tool to display the three-dimensional building model in any parallel projection or central perspective.

To create a 3D View

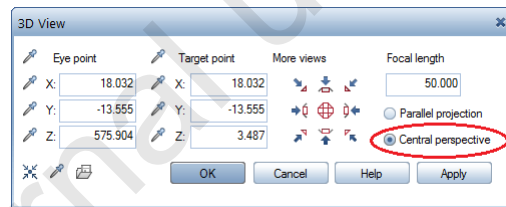
- Drawing file setting: several structural levels active; drawing file 101 current and drawing files 54, 102, 500, 503, 900, 902, 903, 1000, 1002, 1003, 1100, 1102, 1103, 1104, 1200, 1202 and 1203 open in edit mode.
 - Layer setting: AR_ELEVA, DL_GEN, DL_50 and AR_LABEL are hidden; all the other layers are modifiable.
- 1 Open an animation window in addition to the design viewport and arrange the two windows side by side by clicking **Tile Vertically** on the **Window** menu.

Tip: You can save and retrieve the current drawing file status as a favorite (right mouse button -> shortcut menu) both in the building structure and in the **Derived from building structure** area.

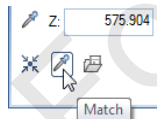
Or:

Right-click the destination drawing file of a view or section and select **Activate source drawing files** on the shortcut menu.

- 2 Select an elevation or isometric view in the design viewport and then click  **3D View** (on the viewport toolbar at the bottom).
- 3 In the 3D View dialog box select **Central perspective**.



Tip: It is often easier to find the perspective view you need in the animation window. You can even use  **Match** to transfer the perspective view between viewports.



- 4 Define the eye point and the target point in one of the following ways:
 - Enter the X, Y and/or Z values in the boxes provided in the **Eye point** and **Target point** areas.
 - Click  **Match** and click a point in the drawing in order to match its values. You can match either all the coordinates or just the X, Y or Z value. Please note that in a 3D view, it is important that you click a "genuine" point.
- 5 Click **OK** to confirm the 3D View dialog box.

- 6 Click **View Type** on the viewport toolbar at the bottom of the central perspective and select **Hidden Line Image**.



- 7 You can also display a section in the various Allplan viewports.

Click **Section Display** on the viewport toolbar at the bottom of the relevant viewport and select the section you need.

Or:

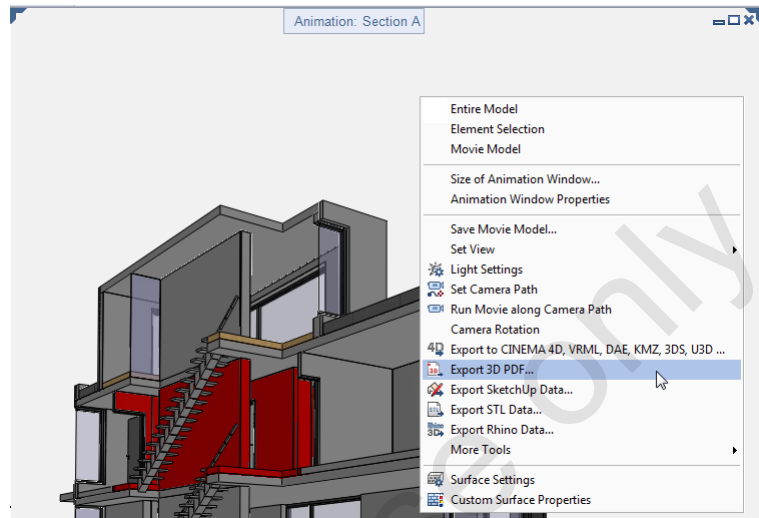
Click **Select** and enter the section identifier in the dialog line (for example, A for section A-A). If the clipping path is displayed (only possible with the **Wireframe** view type), you can also click the clipping line directly.

The section is displayed. In this example, you can see section A-A in the animation window.

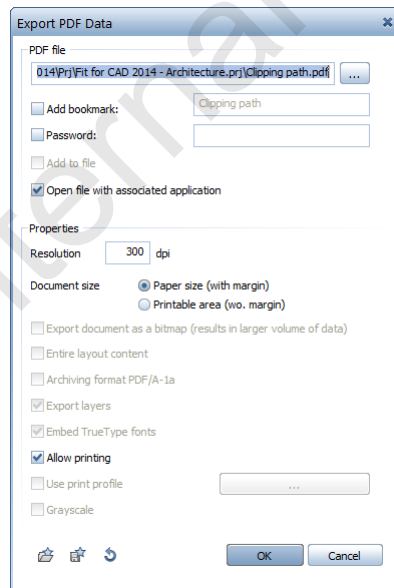


Drag the mouse to view the section from all sides. Experiment with the three mouse buttons.

- 8 Once you have found a view that you like, click in the animation window with the right mouse button and choose  Export 3D PDF... on the shortcut menu.

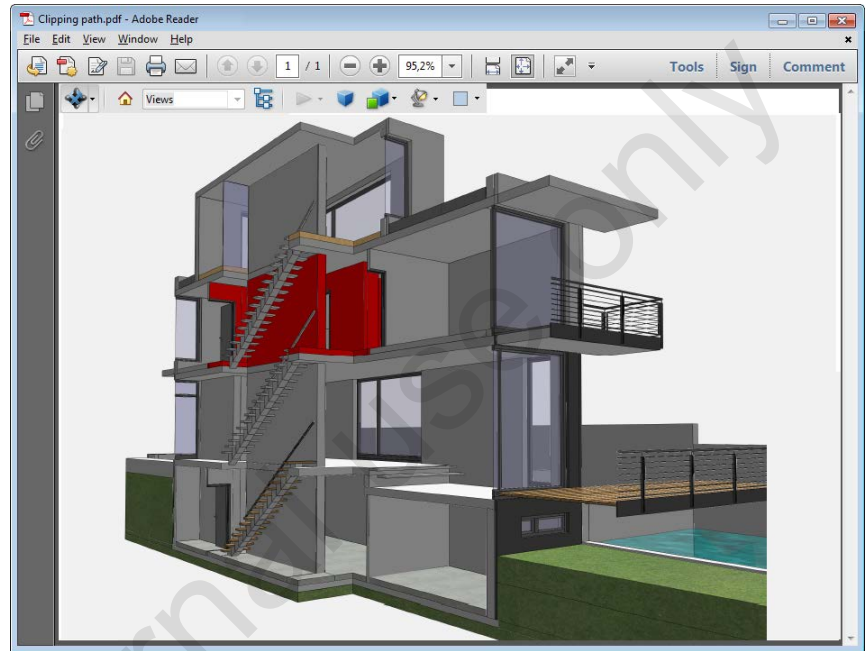


- 9 A dialog box opens. Make the required settings and click **OK** to confirm.



The building model is exported to the PDF file, which is then loaded by the corresponding program.

- 10 To handle the model in the PDF file, you first need to activate it.
If you work with a current Adobe program, it is enough if you click it.



You can then use all the options provided by the PDF program to move the model and to view it from all sides. You can even edit it.

- 11 Close the PDF program and return to Allplan.

- 12 On the Window menu, click  1 Viewport.

A note on saving perspective views to drawing files

Like sections (see task 4), you can save perspective views as wireframe models or hidden line images in separate drawing files.

Click  Hidden Line Image, Wireframe (Default toolbar) and proceed as described in task 4.

For internal use only

Exercise 2: analyzing areas and rooms

Task 1: area calculations

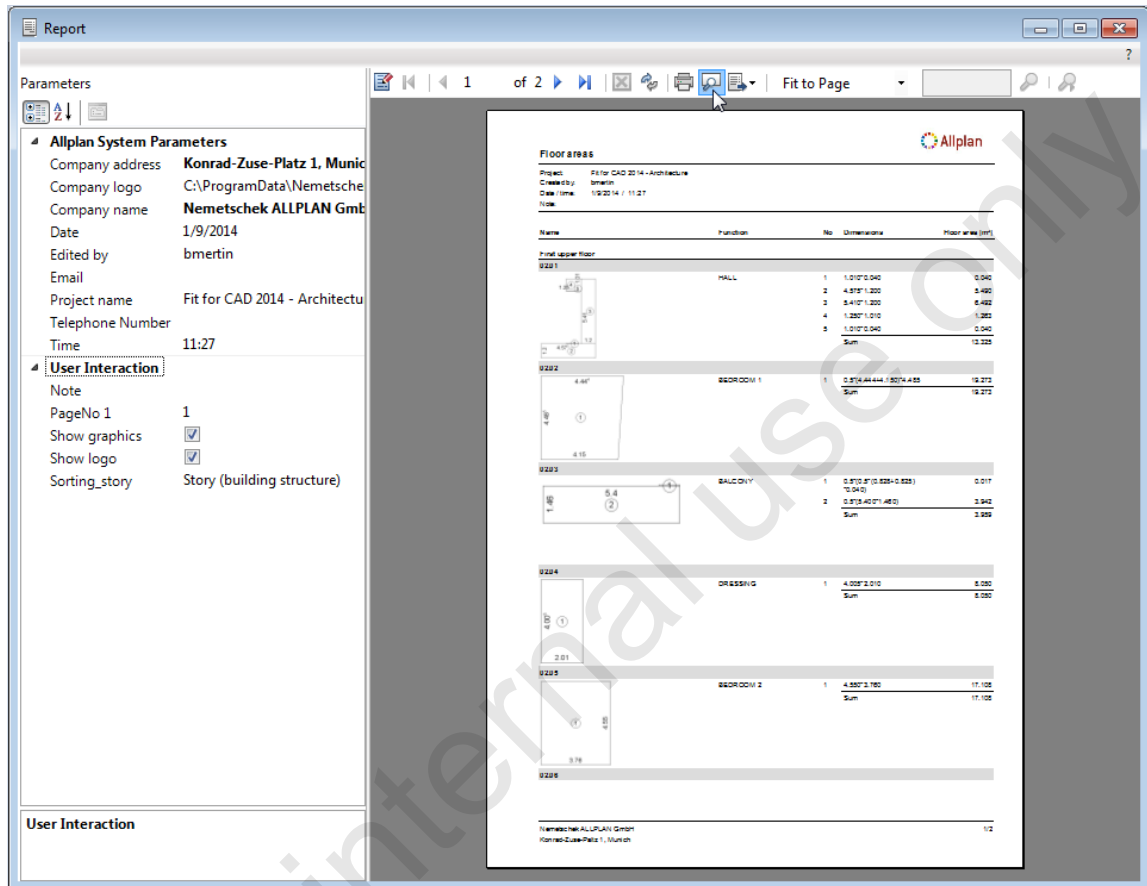
Introduction

Allplan comes with various reports you can use to analyze areas and rooms.

The following options are available in each report:

- Area of structure (based on **unfinished dimensions**)
- A value subtracted to account for plaster and covering (based on **unfinished dimensions less / plus a percentage**) or
- Precise finished dimensions, provided finish specifications and/or vertical, floor and ceiling areas have been defined (based on **finished dimensions**, without subtracting a percentage).

You can analyze individual rooms, groups of rooms, stories or the entire building.



Report

Parameters

Allplan System Parameters

Company address: Konrad-Zuse-Platz 1, Munich
 Company logo: C:\ProgramData\Nemetschek\...
 Company name: Nemetschek ALLPLAN GmbH
 Date: 1/10/2014
 Edited by: bmertin
 Email:
 Project name: Fit for CAD 2014 - Architecture
 Telephone Number:
 Time: 10:05

User Interaction

Enclosure type: Not defined, a
 Note:
 Nutzungsart: Not defined,NF,VF
 PageNo: 1
☒ Show graphics
☒ Show logo
 Sorting_story: Story (building structure)

Show graphics
 Here you can hide the graphics

1 of 6 | Fit to Page

Net floor area according to DIN 277

Project: Fit for CAD 2014 - Architecture
 Created by: bmertin
 Date / time: 1/10/2014 / 10:05
 Note:

Occupancy type	Name	Function	Area	NFA [m²]
NF	00.09	TERRACE	a	46.801
	00.10	PATIO	a	10.823
	Sum NF			67.624
Sum				67.624
First upper floor				
NF	02.01	HALL	a	12.999
	02.02	BEDROOM 1	a	19.010
	02.03	BALCONY	a	7.917
	02.04	DRESSING	a	7.871
	02.05	BEDROOM 2	a	16.860
				1/6

Nemetschek ALLPLAN GmbH
 Konrad-Zuse-Platz 1, Munich

Use the following tool(s) to do this:

Function

How to activate it



Open on a Project-Specific Basis

Standard toolbar

Solution

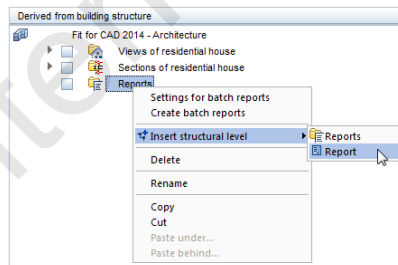
Allplan provides various options for calculating areas, rooms and quantities. You have already encountered a method for calculating the floor area.

Now the following section shows how to use the objects derived from the building structure for area calculations.

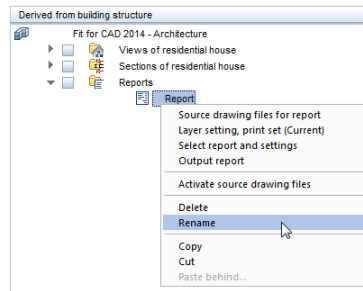
When you open the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box, you can see that the **Reports** folder has already been created in the **Derived from building structure** area on the right in the building structure.

To calculate floor area using the objects derived from the building structure

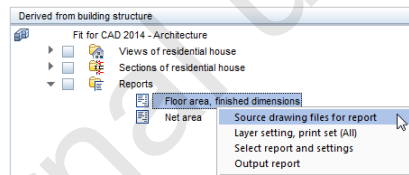
- 1 Click  **Open on a Project-Specific Basis** (Default toolbar).
- 2 In the **Derived from building structure** area on the right in the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box, open the shortcut menu of **Reports**, point to  **Insert structural level** and click  **Report**.



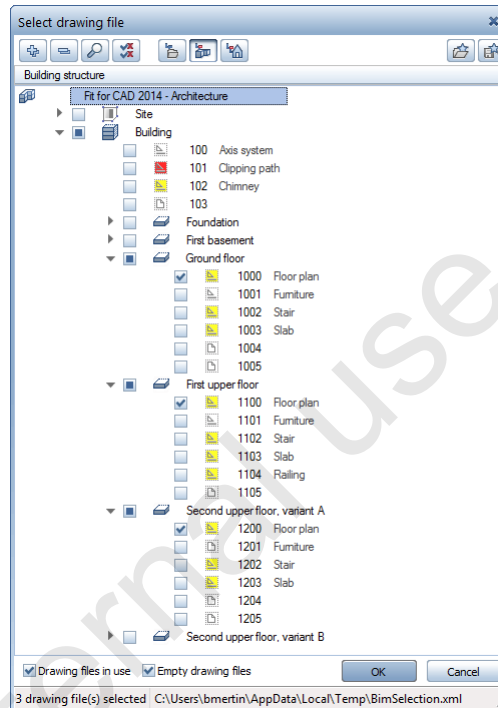
- 3 Open the shortcut menu of the new report and click **Rename**.



- 4 Enter **Floor area, finished dimensions** for the name and press ENTER to confirm.
- 5 Open the shortcut menu of **Floor area, finished dimensions** and click **Source drawing files for report**.

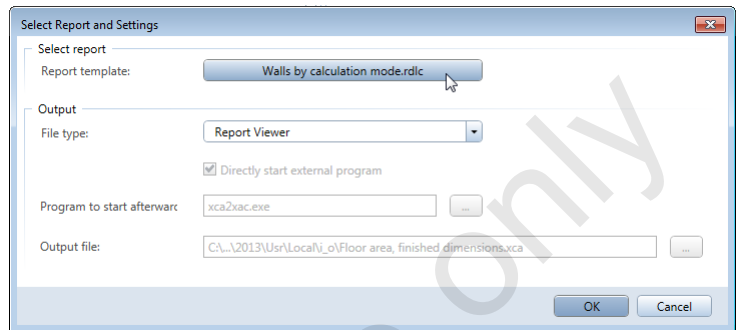


- 6 Start by selecting the  **Building structure** option on the toolbar of the **Select drawing file** dialog box. After this, select the check boxes for the drawing files with the rooms required for calculating the floor area.

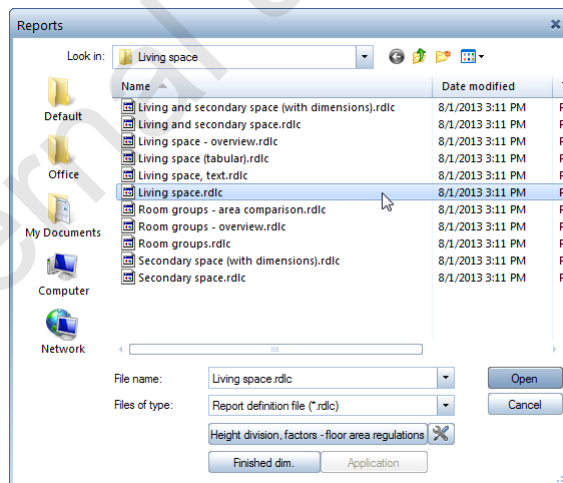


- 7 Click **OK** to confirm the **Select drawing file** dialog box.
- 8 Open the shortcut menu of the **Floor area, finished dimensions** report and select **Layer setting, print set**.
- 9 In the **Layer setting, print set** dialog box, select the **Include all layers** option and click **OK** to confirm.
- 10 Open the shortcut menu of the **Floor area, finished dimensions** report again and click **Select report and settings**.

- 11 The Select Report and Settings dialog box opens. In the Select report area at the top, click the button beside Report template.

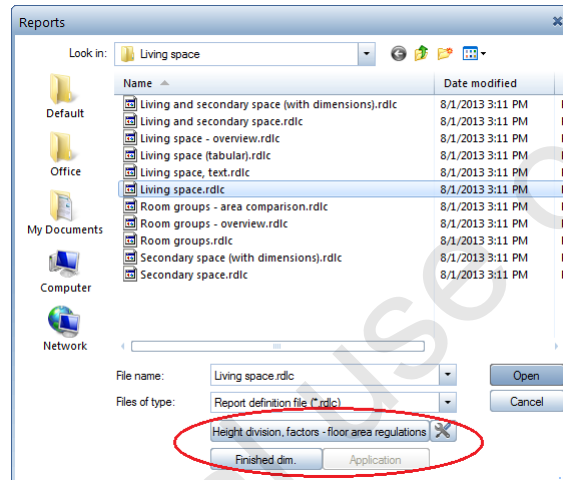


- 12 The Reports dialog box opens. Click in the Look in box at the top and open the Living space folder (Reports -> Eng -> Rooms, Surfaces, Stories). Then select the Living space report.



- 13 Check the various settings that determine how the area is to be calculated.

If necessary, click the corresponding button and correct the settings.



- 14 Click **Open** in the **Reports** dialog box.
- 15 In the **Output** area of the **Select Report and Settings** dialog box, set the **File type** to **Report Viewer** and click **OK** to confirm the dialog box.
- 16 Open the shortcut menu of **Floor area, finished dimensions** and click **Output report**.

The report is displayed in the **Report** dialog box (see illustration in the **Overview** section). Use the arrows at the top to navigate between the pages.

You can print the report, transfer it to Excel or save it as a PDF file.

Clicking  opens the **Layout Designer**. You can use the **Layout Designer** to change and save report templates. You can modify the layout and, to a certain degree, the contents of existing cells.

Using the **Parameters** palette, you can change the Allplan system parameters, such as the project name. By default, these parameters are taken from the Allplan attributes. In the **User Interaction** area, you can show and hide the graphics and the logo as well as control page numbering.

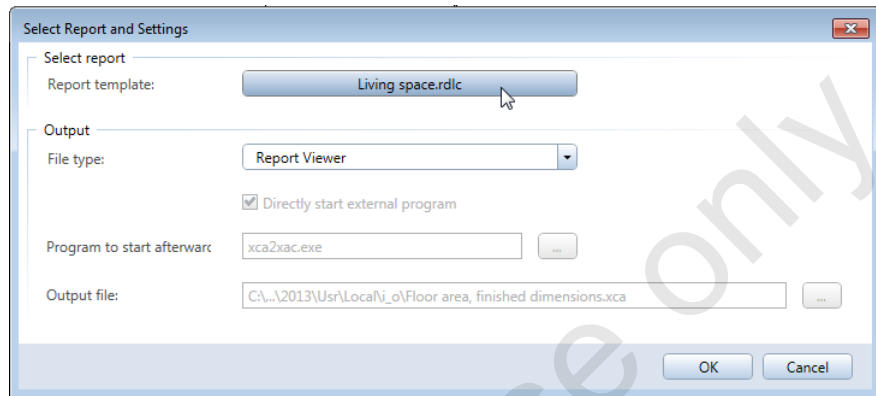
The palette is only displayed when the report contains parameters that can be changed.

17 Close the **Report Viewer** by clicking  **Close**.

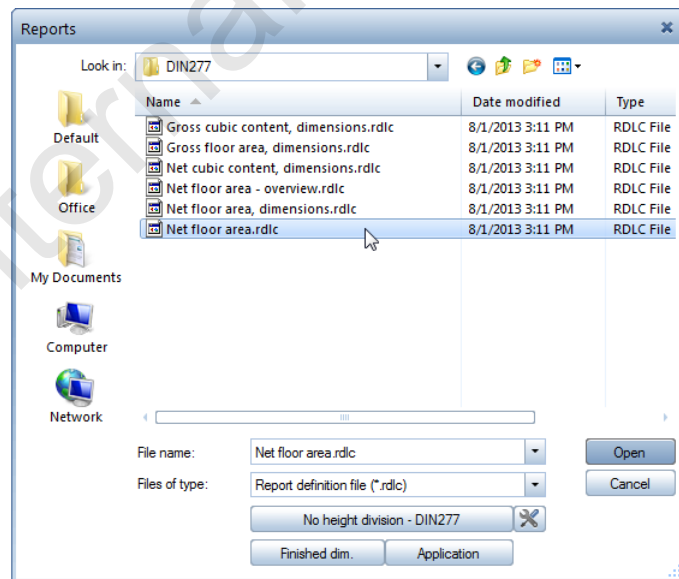
To calculate the net area

- The **Open on a project-specific basis: drawing files from fileset/building structure** dialog box is still open.
- 1 In the **Derived from building structure** area on the right in the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box, open the shortcut menu of **Floor area, finished dimensions** and click **Copy**.
- 2 Open the shortcut menu of **Floor area, finished dimensions** again and click **Paste behind...**
- 3 Now open the shortcut menu of the *copied* report, click **Rename** and enter **Net area** for the name of the new report.
- 4 Open the shortcut menu of **Net area** and click **Source drawing files for report**.
- 5 Select drawing file **900 Floor plan** in the **First basement** structural level in addition to the selected drawing files and click **OK** to confirm.
- 6 Open the shortcut menu of **Net area** and click **Select report and settings**.

- 7 The Select Report and Settings dialog box opens. In the Select report area at the top, click the button beside Report template.



- 8 The Reports dialog box opens. Click in the Look in box at the top, open the DIN277 folder (Reports -> Eng -> Rooms, Surfaces, Stories) and double-click the Net floor area report.



- 9 In the **Select Report and Settings** dialog box, check that the **File type** is still set to **Report Viewer** in the **Output** area and click **OK** to confirm the dialog box.

- 10 Open the shortcut menu of **Net area** and click **Output report**.

The report is displayed in the **Report** dialog box (see illustration in the **Overview** section). Use the arrows at the top to navigate between the pages.

You can print the report, transfer it to Excel or save it as a PDF file.

- 11 Close the **Report Viewer** by clicking  **Close**.

You are back in the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box.

For internal use only

Exercise 3: finish specifications and special surfaces

Introduction

To prepare for subsequent quantity takeoff operations, you will now define the wall and floor coverings on the first upper floor. To accomplish this task quickly, Allplan provides various options.

You can specify the basic structure of walls and floors on the **Finish** tab of the **Room** tool (vertical surface covering, ceiling covering, floor covering, baseboard) when you define rooms or later by making modifications. Special surfaces, on the other hand, need to be entered separately using the **Vertical Surface**, **Floor** and **Ceiling** tools.

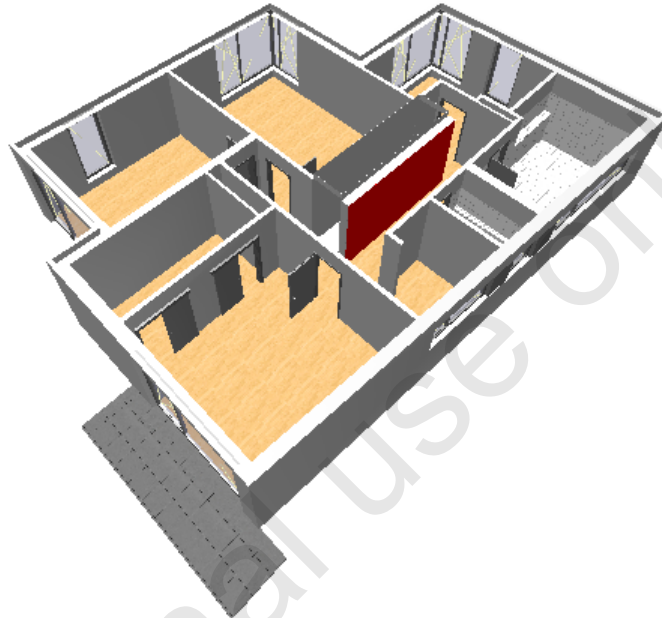
As finish specifications and special surfaces have an immediate and direct effect on quantity takeoff operations, area calculations, sections and animation, it may be a good idea to use the animation features for checking the design while you are entering these surfaces.

As the quantity results can be transferred to a program for tendering, awarding and invoicing, the task that follows includes two approaches, depending on whether you want to transfer the quantities to Allplan BCM or to a different program or to none at all.

The rooms on the first upper floor are to be given a parquet floor and the vertical surfaces and ceilings are to be plastered.

In the bathroom and WC, the floors are to be tiled and the vertical surfaces are to be plastered and tiled (up to a room height of 2 m). In addition, you will enter coverings for the plumbing components.

The wall between the hall and the stair will be given a special vertical surface.



Task 1: modifying the bathroom finish

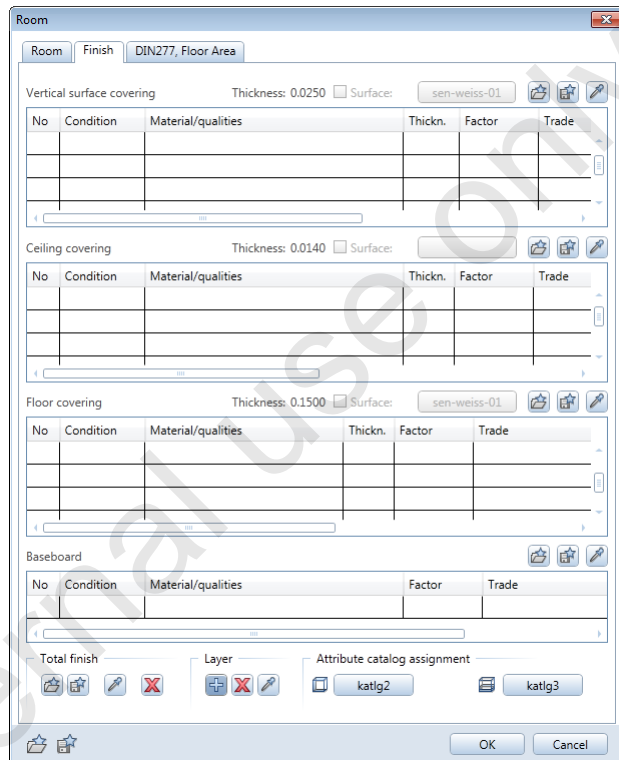
Solution

To define finish specifications later for transferring data to a program used for tendering, awarding and invoicing

- Drawing file setting: 1100 current
- Layer setting: all layers are modifiable.
- An animation window and a normal viewport are open and arranged side by side.

Tip: Once you have defined finish specifications, you can save and retrieve them as you need by clicking  and .

- 1 Double-click within the **Bathroom** with the left mouse button.
- 2 Open the **Finish** tab and check the settings in the **Attribute catalog assignment** area.



Room

Room Finish DIN277, Floor Area

Vertical surface covering Thickness: 0.0250 Surface: sen-weiss-01

No	Condition	Material/qualities	Thickn.	Factor	Trade

Ceiling covering Thickness: 0.0140 Surface:

No	Condition	Material/qualities	Thickn.	Factor	Trade

Floor covering Thickness: 0.1500 Surface: sen-weiss-01

No	Condition	Material/qualities	Thickn.	Factor	Trade

Baseboard

No	Condition	Material/qualities	Factor	Trade

Total finish Layer Attribute catalog assignment

katlg2 katlg3

OK Cancel

- 3 Only if the catalogs set differ from those displayed:
In the **Attribute catalog assignment** area, click the button beside  Floor, Ceiling, Vertical Surface and/or  Baseboard.
- 4 In the **Attributes for Quality Selection** dialog box, click in the box beside **Material**. This opens the **Catalog assignment** dialog box. In the **Pulldowns** area, select **katlg2** for  Floor, Ceiling, Vertical Surface and/or **katlg3** for  Baseboard.



- 5 Click OK to confirm the two dialog boxes.
- 6 You can now assign the materials.

Room

Room Finish DIN277, Floor Area

Vertical covering, inside Thickness: 0.0250 ☐ Surface: sen-weiss-01

No	Condition	Material/qualities	Thickn.	Factor	Trade
1		Plaster	0.0150	1.0000	Plaster an
2		Tiles	0.0100	1.0000	Tiling wor

Ceiling covering Thickness: 0.0140 ☐ Surface:

No	Condition	Material/qualities	Thic...	Factor	Trade
1		Plaster	0.0140	1.0000	Plaster and

Floor covering Thickness: 0.1500 ☐ Surface: sen-weiss-01

No	Condition	Material/qualities	Thic...	Factor	Trade
1		Impact sound insulation	0.0150	1.0000	
2		Thermal insulation	0.0700	1.0000	
3		Screed	0.0400	1.0000	

Baseboard

No	Condition	Material/qualities	Factor	Trade
1			1.0000	

Total finish

Layer

Attribute catalog assignment

katlg2 katlg3

OK Cancel

Room

Room Finish DIN277, Floor Area

Vertical covering, inside Thickness: 0.0250 Surface: sen-weiss-01

Thickn.	Factor	Trade	Attribu...	Surface (a...	H...
0.0150	1.0000	Plaster and stucco work	**		
0.0100	1.0000	Tiling work	**	FFC\FLIESEN\FF...	

Ceiling covering Thickness: 0.0140 Surface:

	Attribu...	Surface (a...	Hat...	Patt...	Fill	Styl...
Plaster and stucco work	**		☒	☐	☐	..

Floor covering Thickness: 0.3300 Surface:

	Attribu...	Surface (a...	Hat...	Patt...	Fill	Styl...
	**		☒	☐	☐	..
	**		☒	☐	☐	..
	**		☒	☐	☐	..

Baseboard

No	Condition	Material/qualities	Factor	Trade
1			1.0000	

Total finish Layer Attribute catalog assignment

katlg2 katlg3

OK Cancel

7 Enter a fourth layer for floor covering:

Floor covering Thickness: 0.3300 Surface: sen-weiss-01

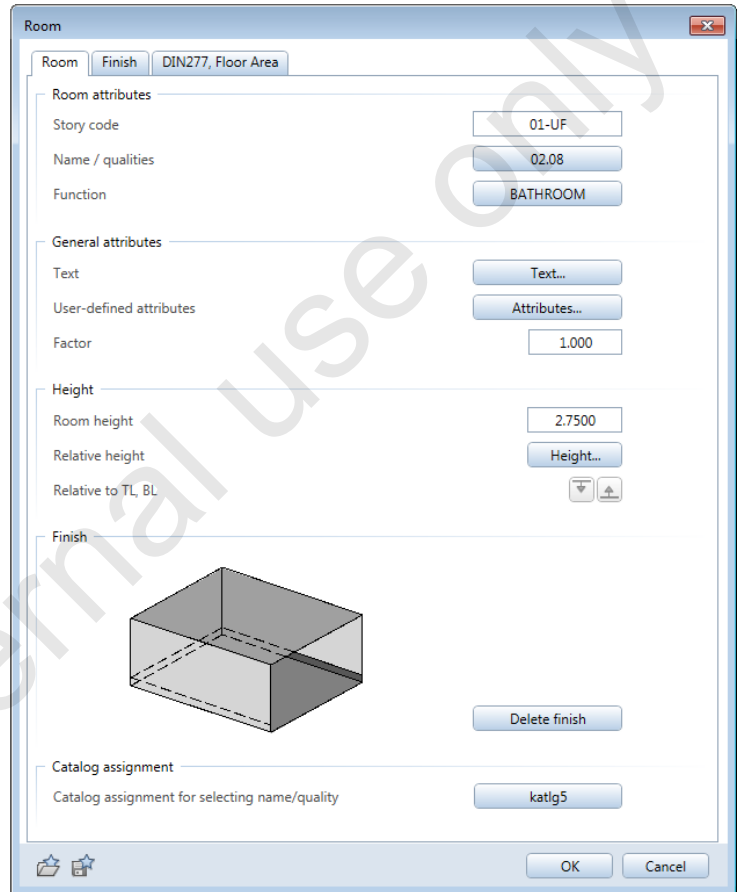
No	Condition	Material/qualities	Thic...	Factor	Trade
2		Thermal insulation	0.0700	1.0000	
3		Screed	0.0400	1.0000	
4		Tiles	0.0250	1.0000	

Floor covering Thickness: 0.3300 Surface:

	Attribu...	Surface (a...	Hat...	Patt...	Fill	Styl...
	**		☒	☐	☐	..
	**		☒	☐	☐	..
	**	FFC\FLIESEN\FF...	☒	☐	☐	..

- 8 After you have assigned the materials, switch back to the **Room** tab.

A graphic preview of the finish specifications you have defined is displayed.

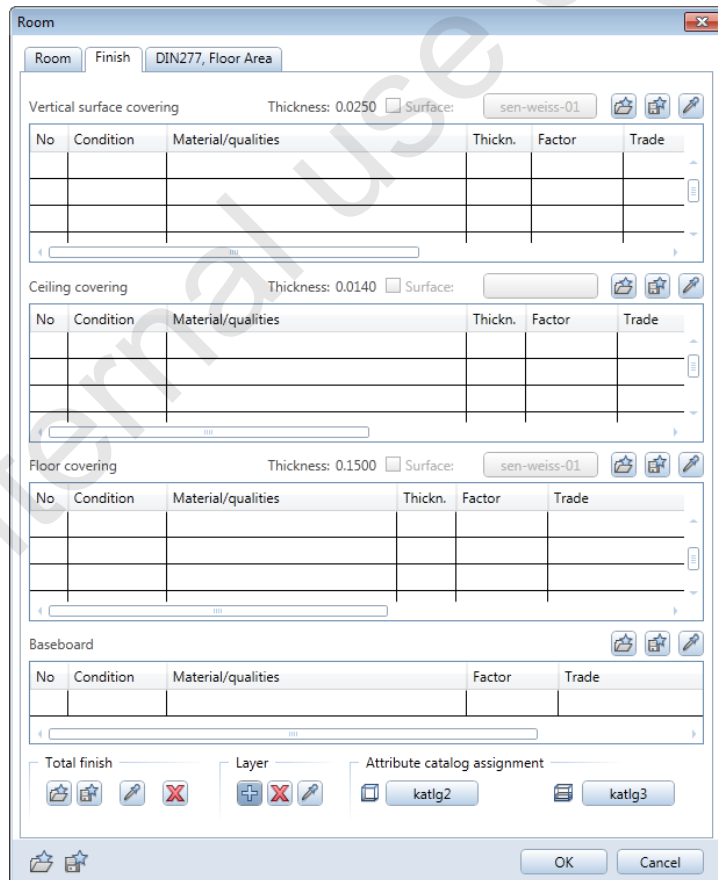


- 9 Click **OK** to confirm.

To define finish specifications later for transferring data to Allplan BCM

- Drawing file setting: 1100 current
 - Layer setting: all layers are modifiable.
 - An animation window and a normal viewport are open and arranged side by side.
- 1 Double-click within the **Bathroom** with the left mouse button.
 - 2 Open the **Finish** tab.

Tip: Once you have defined finish specifications, you can save and retrieve them as you need by clicking  and .



Room ✕

Room Finish **DIN277, Floor Area**

Vertical surface covering Thickness: 0.0250 ☐ Surface: sen-weiss-01   

No	Condition	Material/qualities	Thickn.	Factor	Trade

Ceiling covering Thickness: 0.0140 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade

Floor covering Thickness: 0.1500 ☐ Surface: sen-weiss-01   

No	Condition	Material/qualities	Thickn.	Factor	Trade

Baseboard   

No	Condition	Material/qualities	Factor	Trade

Total finish    

Layer    

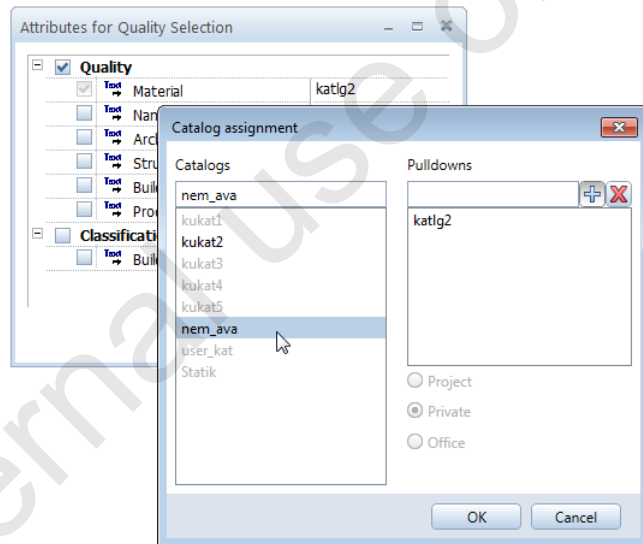
Attribute catalog assignment  katig2  katig3

  OK Cancel

- 3 In the **Attribute catalog assignment** area, select the Allplan BCM catalog.

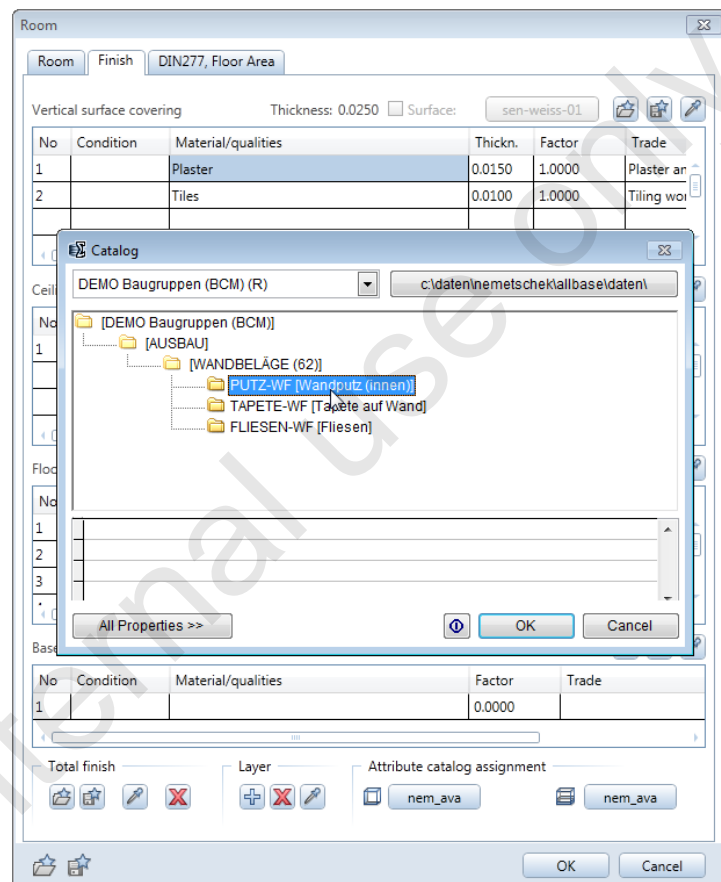
To do this, click the button beside  Floor, Ceiling, Vertical Surface and  Baseboard.

- 4 In the **Attributes for Quality Selection** dialog box, click in the box beside **Material**. This opens the **Catalog assignment** dialog box. In the **Catalogs** area, select **nem_ava** for both  Floor, Ceiling, Vertical Surface and  Baseboard.



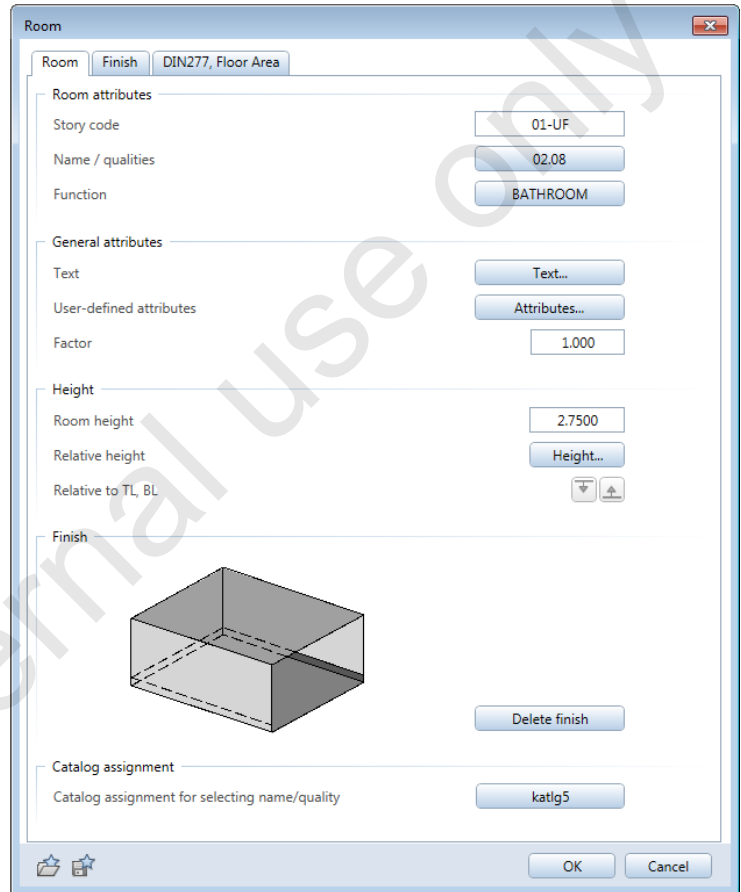
- 5 Click **OK** to confirm the two dialog boxes.
- 6 You can now assign the materials.

On the **Finish** tab of the **Room** dialog box, click in the **Material/qualities** column, select finish specifications in the **Catalog** dialog box and click **OK** to confirm.



- 7 After you have assigned the materials, switch back to the **Room** tab.

A graphic preview of the finish specifications you have defined is displayed.



- 8 Click **OK** to confirm.

Task 2: modifying the finish of several rooms

Overview

Use the following tool(s) to do this:

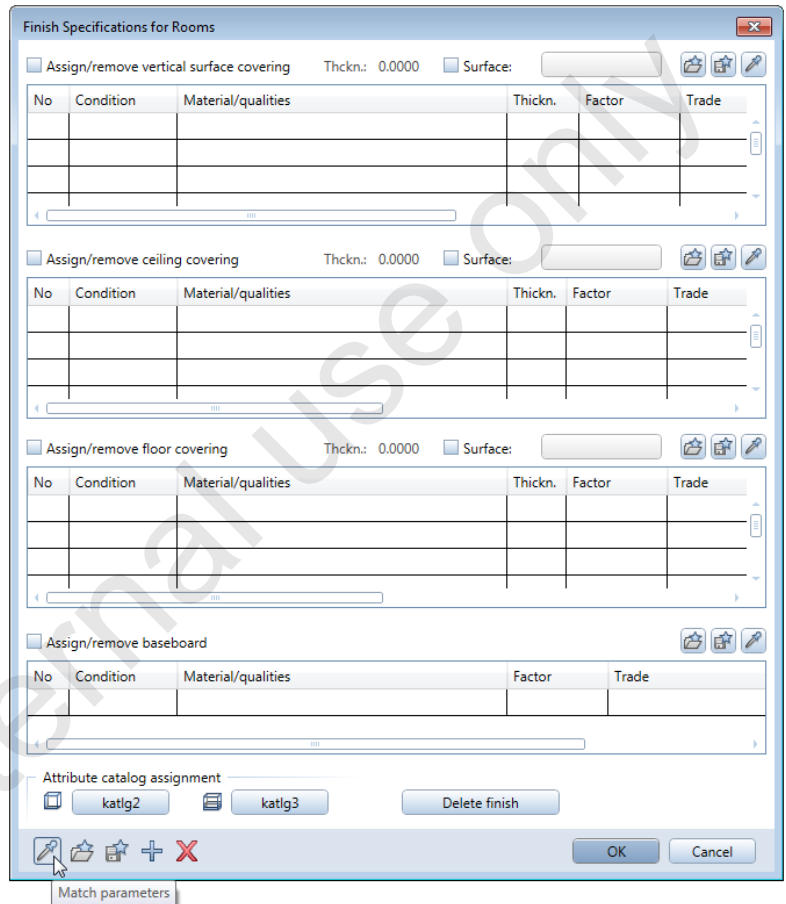
Function	How to activate it
 Finish Specifications	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area

Solution

To define finish specifications for several rooms later

- Drawing file setting: 1100 current
 - Layer setting: all layers are modifiable.
 - An animation window and a normal viewport are open and arranged side by side.
- 1 Select the  Finish Specifications tool (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area).

- 2 In the **Finish Specifications for Rooms** dialog box, click  **Match parameters** at bottom left to match the finish specifications of a different room (the bathroom, in this example).



- 3 Click the element whose settings you want to match
Click inside the bathroom.

The finish specifications you defined in task 1 are entered in the **Finish Specifications for Rooms** dialog box.

Finish Specifications for Rooms

☒ Assign/remove vertical surface covering Thckn.: 0.0250 ☐ Surface: sen-weiss-01

No	Condition	Material/qualities	Thckn.	Factor	Trade
1		Plaster	0.0150	1.0000	Plaster and
2		Tiles	0.0100	1.0000	Tiling work

☒ Assign/remove ceiling covering Thckn.: 0.0140 ☐ Surface:

No	Condition	Material/qualities	Thckn.	Factor	Trade
1		Plaster	0.0140	1.0000	Plaster and

☒ Assign/remove floor covering Thckn.: 0.1500 ☐ Surface: sen-weiss-01

No	Condition	Material/qualities	Thckn.	Factor	Trade
1		Impact sound insulation	0.0150	1.0000	
2		Thermal insulation	0.0700	1.0000	
3		Screed	0.0400	1.0000	

☐ Assign/remove baseboard

No	Condition	Material/qualities	Factor	Trade
----	-----------	--------------------	--------	-------

Attribute catalog assignment

- 4 Click OK to confirm.
- 5 *Select objects, click right mouse button to confirm*
Click in the WC.
The room is displayed in the selection color.
- 6 *Select objects, click right mouse button to confirm*
Confirm by clicking the right mouse button.
- 7 *Define new finish specifications for rooms*
Define the properties for the other rooms in the Finish Specifications for Rooms dialog box and click OK to confirm.

Finish Specifications for Rooms

☒ Assign/remove vertical surface covering Thckn.: 0.0150 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade
1		Plaster	0.0150	1.0000	Plaster anc

☒ Assign/remove ceiling covering Thckn.: 0.0140 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade
1		Plaster	0.0140	1.0000	Plaster and

☒ Assign/remove floor covering Thckn.: 0.1500 ☐ Surface:   

No	Condition	Material/qualities	Thickn.	Factor	Trade
2		Thermal insulation	0.0700	1.0000	
3		Screed	0.0400	1.0000	
4		Parquet	0.0250	1.0000	

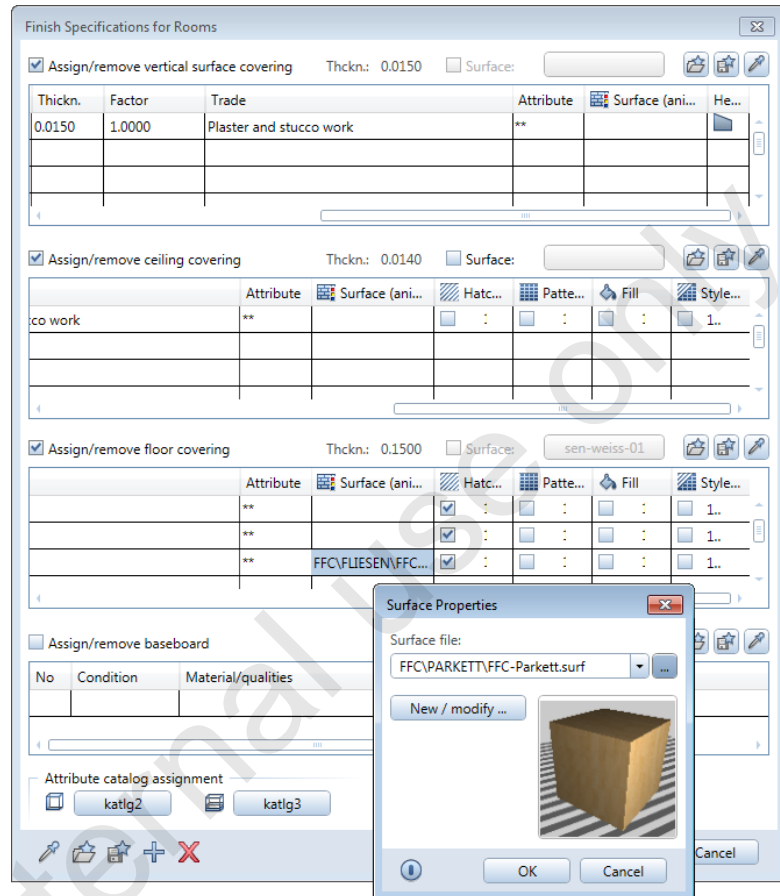
☐ Assign/remove baseboard   

No	Condition	Material/qualities	Factor	Trade

Attribute catalog assignment



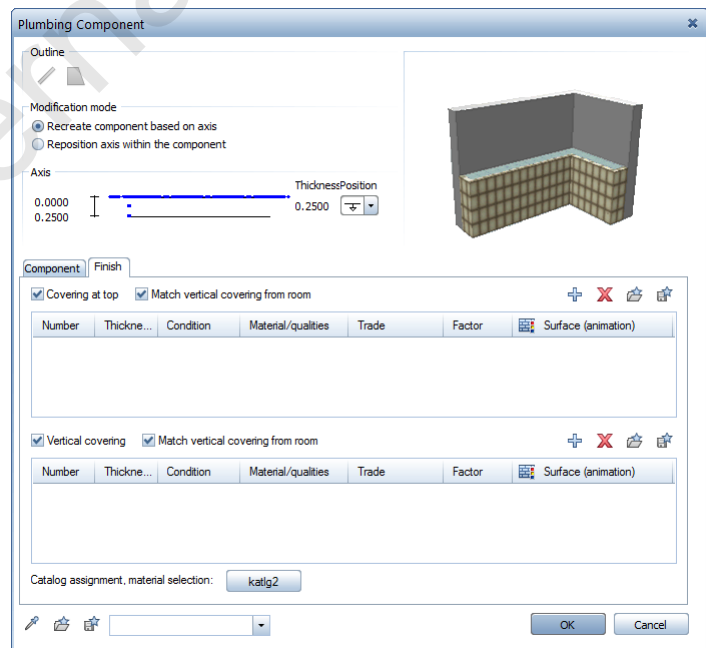
- 8 *Select objects, click right mouse button to confirm*
Click within the rooms that are to be given a parquet floor.
The rooms are displayed in the selection color.
- 9 *Select objects, click right mouse button to confirm*
Confirm by clicking the right mouse button.
- 10 Press ESC to quit the tool.

Task 3: vertical surfaces for plumbing components

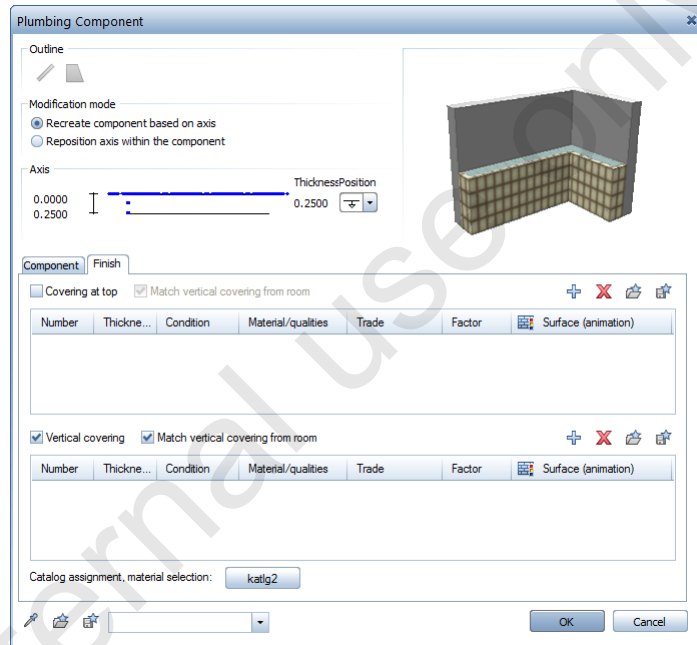
Solution

To modify plumbing components

- ➔ Drawing file setting: 1100 current
 - ➔ Layer setting: all layers are modifiable.
 - ➔ An animation window and a normal viewport are open and arranged side by side.
- 1 Double-click the plumbing component that is half the height of the **Bathroom** with the left mouse button.
 - 2 Open the **Finish** tab in the **Plumbing Component** dialog box and make the following settings:



- 3 Click **OK** to confirm.
- 4 Now do the same with the plumbing component that is half the height of the WC.
- 5 Make the following settings for the plumbing component that is as high as the **Bathroom** and click **OK** to confirm.



- 6 Check whether the coverings are displayed correctly in the areas of the plumbing components.

If the representation is not correct, click  **Restore 3D View** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - **Change area**), select the area you want to update by enclosing it in a selection rectangle and press ESC to quit.

Task 4: special surfaces

Overview

Use the following tool(s) to do this:

Function	How to activate it
 Vertical Surface	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

Solution

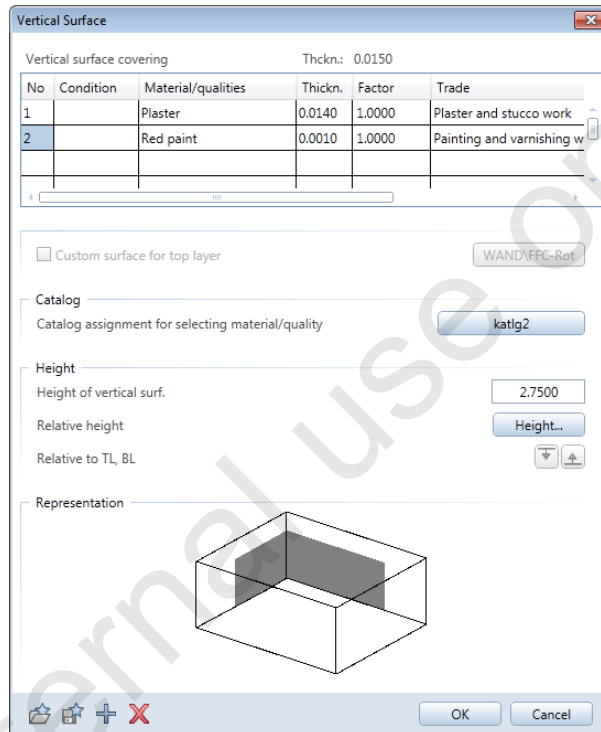
Now you will modify the covering of the wall between the hall and the stair. The 24 cm concrete wall is to be plastered and painted.

To enter wall covering as a special surface

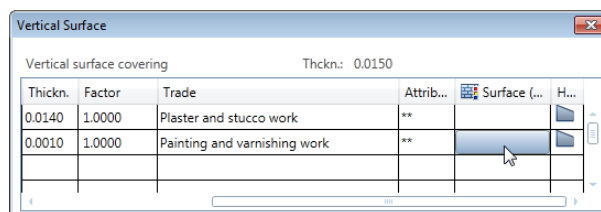
- Drawing file setting: 1100 current
 - Layer setting: AR_ELEVA, DL_GEN and DL_50 are hidden; all the other layers are modifiable.
 - An animation window and a normal viewport are open and arranged side by side.
- 1 Click  Vertical Surface (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).

2 Set properties, place polygon point 1, element or offset

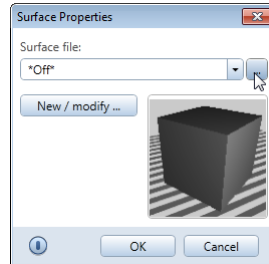
Click  **Properties** on the Vertical Surface Context toolbar and specify the lateral covering for the wall.



3 Click in the **Surface (animation)** column for the Red paint layer.

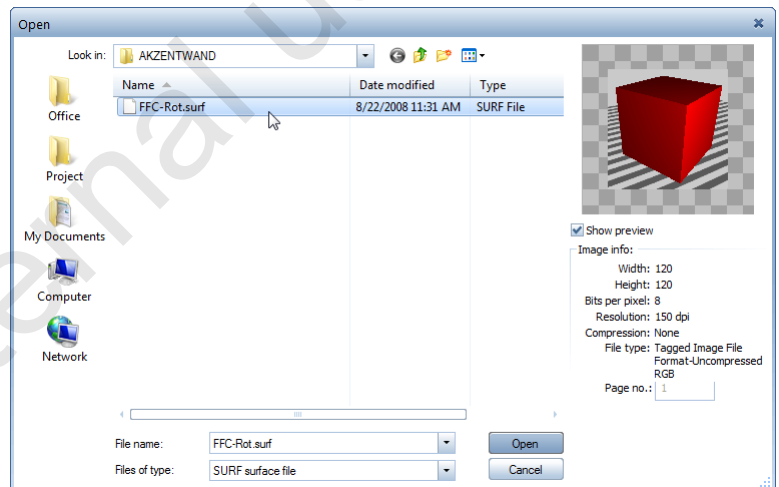


- 4 Click  in the **Surface Properties** dialog box.



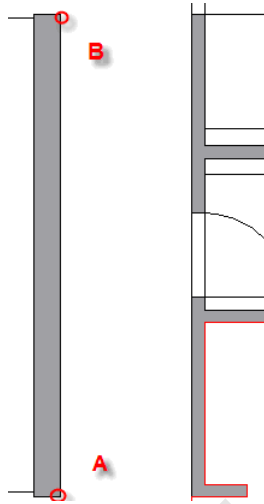
The **Open** dialog box appears.

- 5 Click in the **Look in** box at the top and select the **AKZENTWAND** folder (Fit for CAD 2014 - Architecture -> Design -> FFC) and double-click the **FFC Red** surface file.



- 6 Click **OK** to confirm the **Surface Properties** dialog box.
- 7 Click **OK** to confirm the **Vertical Surface** dialog box.
- 8 Check that the layer **RO_VERSU** is active.

- 9 *Set properties, place polygon point 1, element or offset*
Enter the vertical surface in plan and press ESC to finish.



- 10 *Place label*

You can place the label on the AR_LABEL layer or press ESC to finish.

Exercise 4: using schedules for analyses

Task 1: analyzing quantities

Overview

The screenshot displays the Allplan Report window. On the left, the 'Parameters' panel is visible, showing 'Allplan System Parameters' and 'User Interaction' settings. The main area shows a report titled 'Vertical finish surfaces' for the project 'Fit for CAD 2014 - Architecture'. The report includes two tables: 'Material per story [vertical surfaces]' and 'Material per story [reveal length]'. Below these, a detailed schedule table lists materials, room names, trades, dimensions, thickness, area, and reveal for 'First upper floor' items: Wall covering, Red paint, and Plaster. Each item includes a small diagram and a calculation.

Parameters

- Allplan System Parameters**
 - Company address: Konrad-Zuse-Platz 1, Munich
 - Company logo: C:\ProgramData\Nemetschek\
 - Company name: Nemetschek ALLPLAN GmbH
 - Date: 1/10/2014
 - Edited by: bmartin
 - Email:
 - Project name: Fit for CAD 2014 - Architecture
 - Telephone Number:
 - Time: 10:58
- User Interaction**
 - Material: Plaster, Red paint, Tiles, Wall covering
 - PageNo 1: 1
 - Show graphics: ☒
 - Show logo: ☒
 - Show matrix: ☒

Vertical finish surfaces

Project: Fit for CAD 2014 - Architecture
Created by: bmartin
Date / time: 1/10/2014 / 10:58
Note: All openings are taken into account.

Material per story [vertical surfaces]	First upper floor	Total
Plaster	m² 307.355	307.355
Red paint	m² 12.100	12.100
Tiles	m² 37.991	37.991
Wall covering	m² 25.892	25.892

Material per story [reveal length]	First upper floor	Total
Plaster	m 57.835	57.835
Red paint	m 0.000	0.000
Tiles	m 2.000	2.000
Wall covering	m 0.000	0.000

Material	Room name	Trade	Dimensions	Thick. [cm]	Area [m²]	Reveal [m]
First upper floor						
Wall covering	01.15		(2*(1.010*0.200)+2*(4.320*2.950))	3.00	25.892	0.000
Sum Wall covering						25.892 0.000
Red paint	02.01	Painting and varnishing work	(4.400*2.750)	0.10	12.100	0.000
Sum Red paint						12.100 0.000
Plaster		Plaster and stucco work	(2.158*1.250)	1.50	2.697	0.000

Use the following tool(s) to do this:

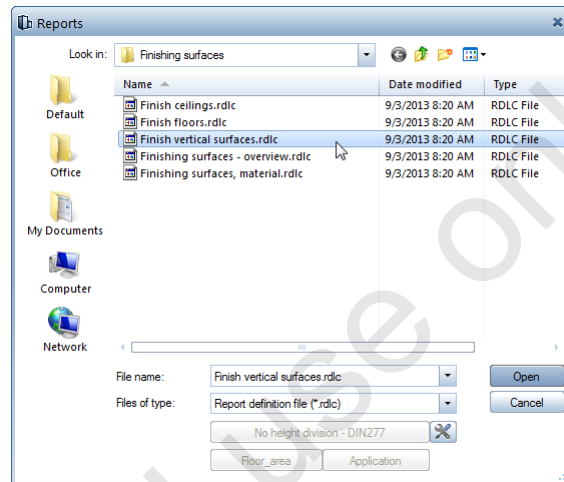
Function	How to activate it
 Reports	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

Solution

To create a report

- Drawing file setting: 1100 current
 - Layer setting: AR_ELEVA, DL_GEN and DL_50 are hidden; all the other layers are modifiable.
- 1 Open the drawing files with the elements to be included in the calculation (in this example, only drawing file 1100 is open).
 - 2 Click  Reports (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).

- 3 The Reports dialog box opens. Click in the Look in box at the top, open the Finishing surfaces folder (Reports -> Eng -> Finish) and double-click the Finish, vertical surfaces report.



- 4 Click **Open**.
- 5 *Select elements for list*
Click **All** in the **Input Options**.

The report is created and displayed in the Report dialog box.

- 6 Click  **Print** to print it.

Or:

Close the Report dialog box and try experimenting with the various reports provided.

Task 2: assigning materials later

Overview

Now you will modify the materials of some walls. The material assigned to the 24 cm exterior walls is to be changed from 'vertical coring brick' to 'perforated lime sand brick'.

Use the following tool(s) to do this:

Function	How to activate it
 Options	Default toolbar
 Change Archit. Properties	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area
 Filter by Archit. Element Type	Filter Assistant toolbar

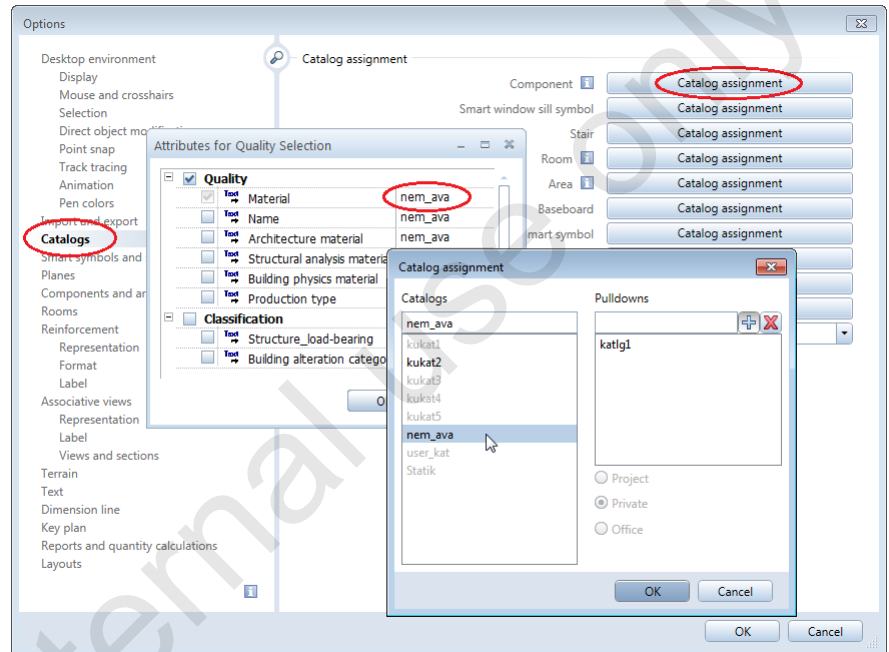
Solution

To modify materials

- Drawing file setting: 1100 current
- Layer setting: AR_ELEVA, DL_GEN and DL_50 are hidden; all the other layers are modifiable.
- 1 Check the catalog assignment for materials.
Click  Options (Default toolbar).
- 2 Select the **Catalogs** page in the **Options** dialog box.
- 3 Make settings for the individual elements (component, room, area, baseboard and so on) by clicking the corresponding **Catalog assignment** button.

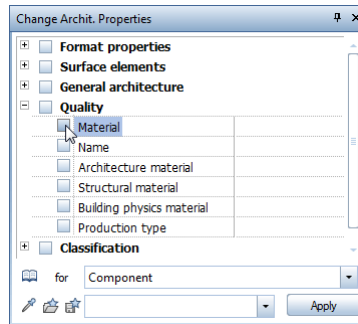
- 4 Check the entry for Material in the Attributes for Quality Selection dialog box.

If necessary, click in the box beside Material. This opens the Catalog assignment dialog box. Select the catalog you need (in this example select `nem_ava` in the Catalogs area).

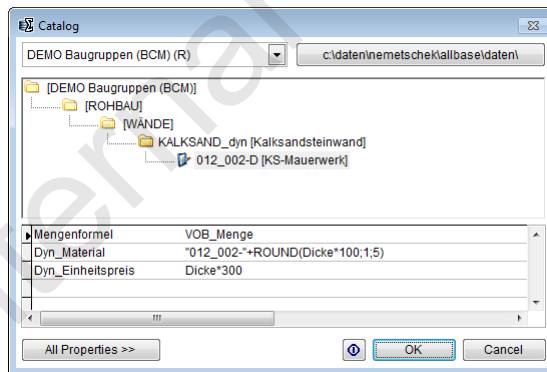


- 5 Click OK to confirm the three dialog boxes.

- 6 Click  **Change Archit. Properties** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Change area) and select the **Material** check box in the **Change Archit. Properties** dialog box.

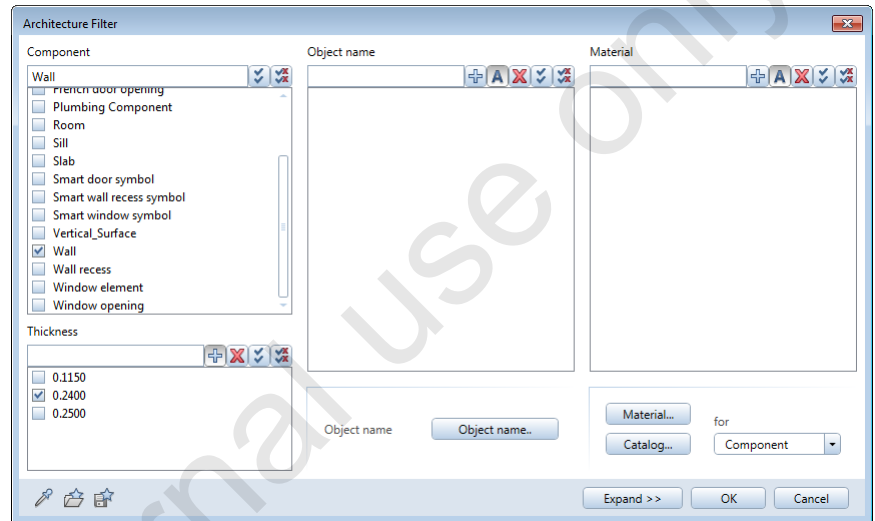


- 7 Select the material you want to use in the **Catalog** dialog box and click **OK** to confirm.



The material is transferred to the **Change Archit. Properties** dialog box.

- 8 *Set properties, select elements you want to modify*
Click  **Filter by Archit. Element Type** (Filter Assistant toolbar).
- 9 The **Architecture Filter** dialog box opens. Select **Wall** in the **Component** area and **0.240** for the **Thickness**. Then click **OK** to confirm the dialog box.



- 10 *Set properties, select elements you want to modify <Wall 0.240>*
Select the entire floor plan.

Check that Allplan only displays the 24 cm walls in the selection color.

- 11 Click **Apply** in the **Change Archit. Properties** dialog box.

The new material is assigned to all 24 cm walls.

- 12 Press **ESC** to quit the tool.

Task 3: labeling components later

Overview

Some architectural elements (rooms, for example) are labeled immediately on creation. The Label tool lets you label components retroactively.

These components can be evaluated in trade reports that are calculated in compliance with VOB (German construction contract procedures) or in summary reports. In this example, you will analyze the 11.5 cm walls.

Use the following tool(s) to do this:

Function	How to activate it
 Label	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area
 Reports	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

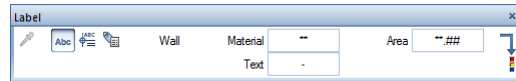
Solution

To label components later

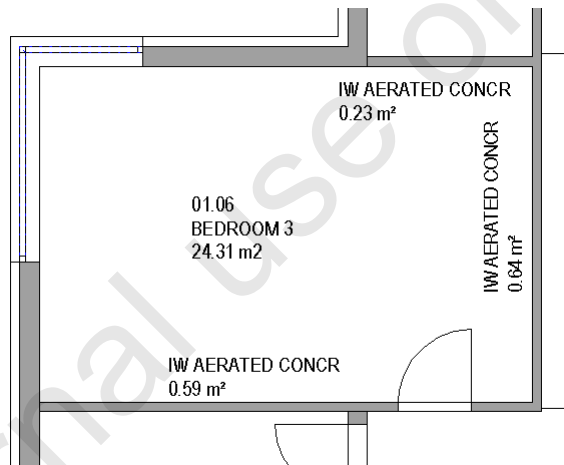
- Drawing file setting: 1100 current
- Layer setting: RO_ROOM and RO_VERSU are hidden; all the other layers are modifiable.
- 1 Click  Label (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 2 *Select component you want to label*
Select all 0.115 m walls and click the right mouse button to confirm.

Tip: Allplan provides the same options for labeling components as for rooms and smart symbols: you can use default labels, label styles and object labels.

- 3 Select the label type on the Label Context toolbar.

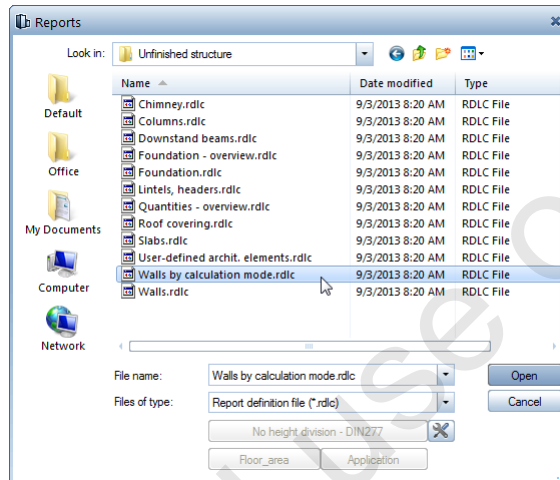


- 4 Place the labels one after the other beside the component displayed in the selection color. When you have finished placing labels, press ESC to quit the tool.



- 5 Click  Reports (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).

- 6 In the Reports dialog box, open the Unfinished structure folder (Reports -> Eng) and double-click the Walls by calculation mode report.



- 7 *Select elements for list*

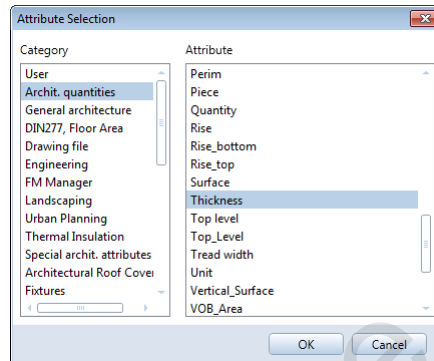
Click Find Elements in the Input Options.

- 8 Specify the filter condition in the Filter Architectural Elements dialog box.

The first criterion is Object=Wall. In the Selection criterion area, click Object=, select Wall and click OK to confirm.

- 9 In the Operators area, click &t ("and") and then, in the Selection criterion area, click Attribute....

- 10 In the **Archit. quantities** category, select the **Thickness** attribute and click **OK** to confirm.

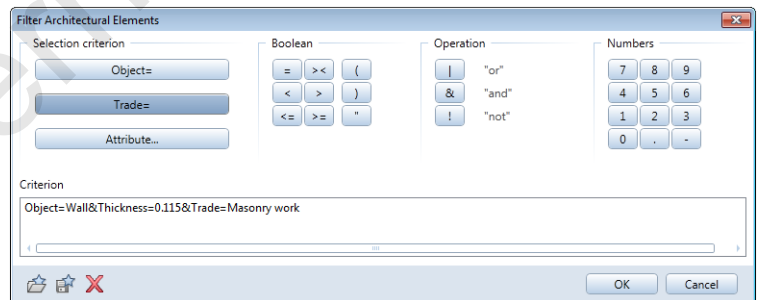


- 11 Use the buttons to enter **=0,115&** (without any blanks).

- 12 Click **Trade=** and select **Masonry work**.

After you have entered these criteria, the input line should look like this:

Object=Wall&Thickness=0.115&Trade=Masonry work

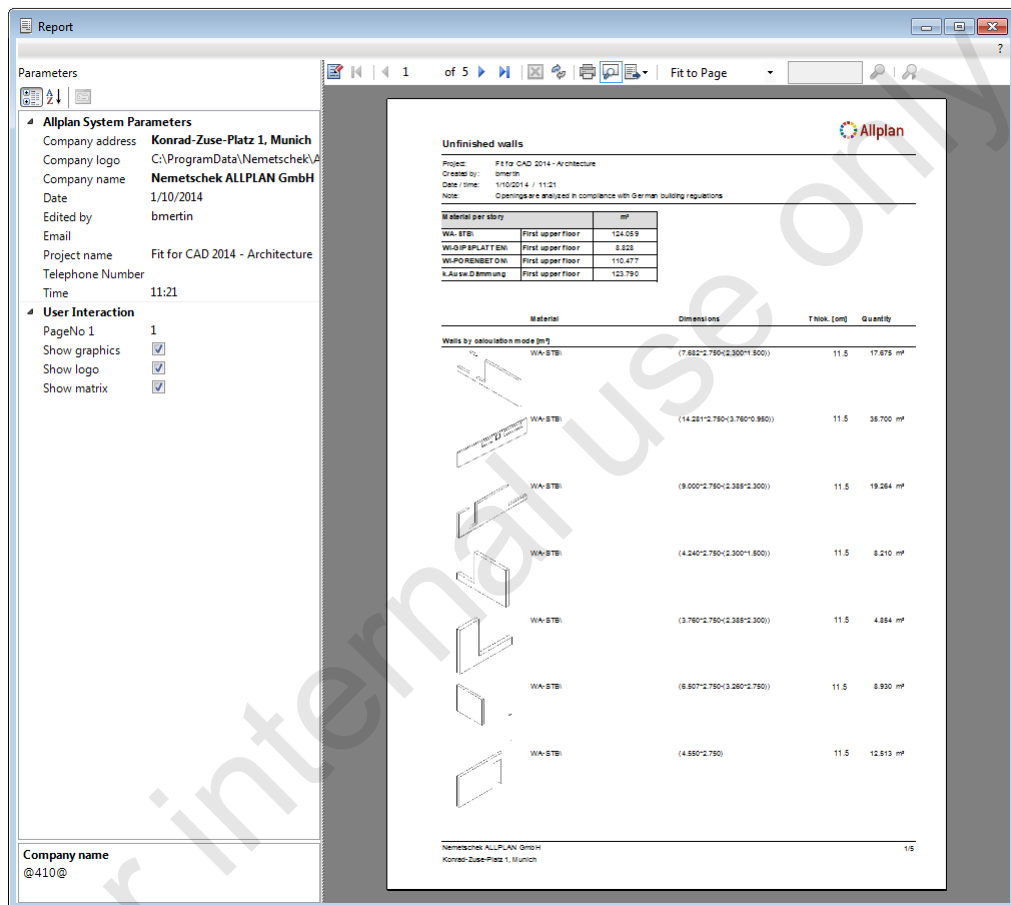


- 13 Click **OK** to confirm.

14 Define area

Click **All** in the input options.

The report is created and displayed in the **Report** dialog box.



15 Click **Print** to print it.

Or:

Close the **Report** dialog box and try experimenting with the various reports provided.

Task 4: labeling rooms using label styles

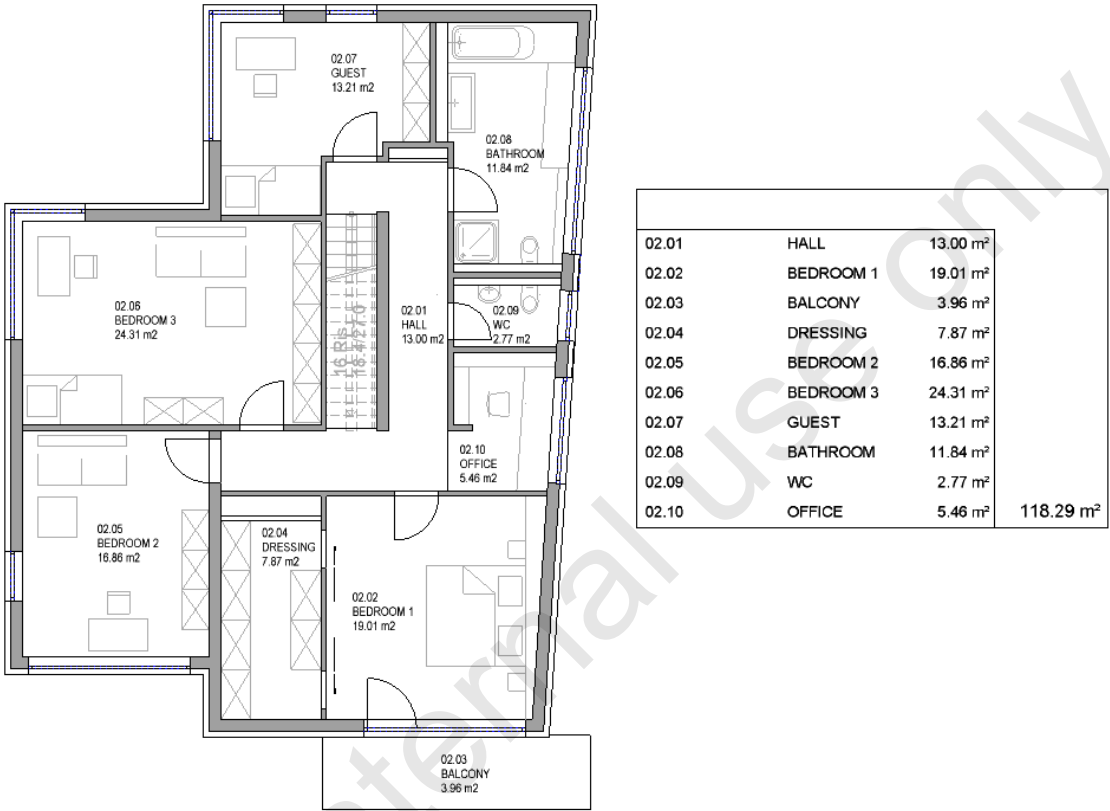
Introduction

Remember: when you labeled the rooms, you used default labels, which only specify the area of rooms. To create custom labels, which also include the floor area based on finished dimensions (or based on unfinished dimensions less a percentage to account for plaster) and the room heights, you need label styles.

Allplan comes with a number of label styles that meet various requirements. In this task, however, you will define your own label style.

Note: It is a good idea to use a separate drawing file for creating your own label styles. The following task, however, uses drawing file 1100 to demonstrate how label styles and room labels interact.

Overview



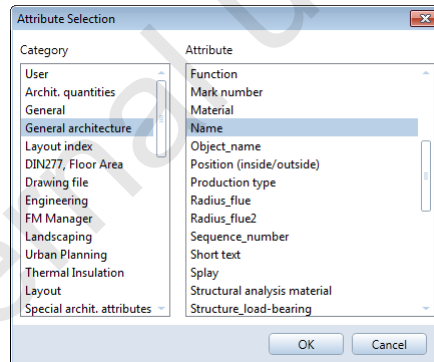
Use the following tool(s) to do this:

Function	How to activate it
 Label Style	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area
 Label	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

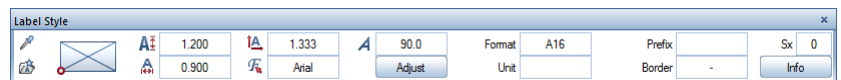
Solution

To define a label style

- Drawing file setting: 1100 current; 1101 and 1102 open in reference mode.
- Layer setting: all layers are modifiable.
- 1 Click  Label Style (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 2 *Define/modify label style*
On the Label Style Context toolbar, click Attribute.
- 3 The Attribute Selection dialog box is displayed. In the General architecture category, select the Name attribute and click OK to confirm.



- 4 Define the text parameters and the format.



- 5 *Place label*
Place the text beyond the floor plan in the workspace.

Tip: You can complete the appearance of the text block as you want using the tools in the **Draft** module (lines, fills etc.).

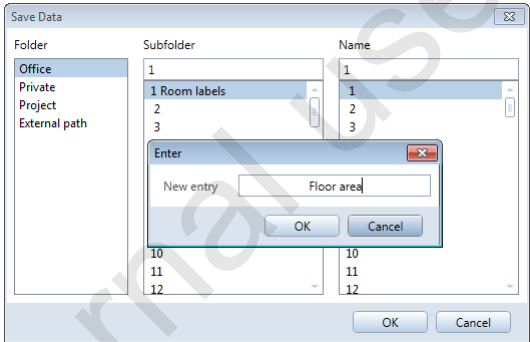
6 Define more attributes of the following format:

Category	Attribute	Format
General architecture	Function	A16
Archit. quantities	Floor_area_finished_dimensions	F8.2

7 Click DefFol (= define foil) on the Label Style Context toolbar.

8 *Define smart symbol foil 1, press ESC to finish*
Select all three lines of text and define the reference point.

9 Enter a name for the label style, **Floor area**, for example, and save it in the **Room labels** subfolder.

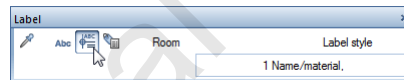


10 Click **OK** to confirm the **Save Data** dialog box and press **ESC** to quit the tool.

Analyzing and labeling the rooms on the first upper floor again

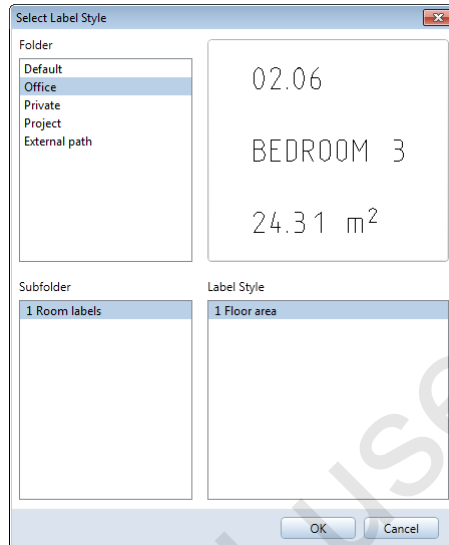
To analyze and label the rooms on the first upper floor again

- ➡ Drawing file setting: 1100 current
- ➡ Layer setting: all layers are modifiable.
- 1 Delete all the labels for the rooms on the first upper floor.
- 2 Click  Label (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 3 *Select component you want to label*
Click in the room you want to label and press the right mouse button to confirm.
- 4 Click  Label Style.



- 5 Click the field below Label Style.
The Select Label Style dialog box opens.

- 6 Select the label style you just defined and click **OK** to confirm.



- 7 *Place label*
Place the label and repeat these steps for all the other rooms on the first upper floor.
- 8 Press **ESC** to finish.
-

Exercise 5: quantity takeoff (optional)

Task 1: quantity takeoff across stories

Overview

The screenshot displays the Allplan Report window. The left pane shows the 'Parameters' section with 'Allplan System Parameters' and 'User Interaction' settings. The right pane shows the 'Unfinished walls' report, which includes a table of material quantities across different floors and a summary table at the bottom.

Parameters

- Allplan System Parameters**
 - Company address: Konrad-Zuse-Platz 1
 - Company logo: C:\ProgramData\Nemetschek\VA
 - Company name: Nemetschek ALLPLAN GmbH
 - Date: 1/10/2014
 - Edited by: bmertin
 - Email:
 - Project name: Fit for CAD 2014 - Architecture
 - Telephone Number:
 - Time: 11:38
- User Interaction**
 - PageNo 1
 - Show graphics: ☒
 - Show logo: ☒
 - Show matrix: ☒

Unfinished walls

Project: Fit for CAD 2014 - Architecture
Created by: bmertin
Date / time: 1/10/2014 / 11:38
Note: Openings are analyzed in compliance with German building regulations

Material category		m²
FA-S-MV-TRENNFUG	Ground floor	5.244
Profilewand	Ground floor	46.423
VA-4TBI	First basement	160.327
	Ground floor	132.449
	First upper floor	124.059
	Second upper floor, variant A	83.875
VA-GIPSPLATTEM	Ground floor	3.850
	First upper floor	8.828
VA-PORENBETON	First basement	88.205
	Ground floor	37.100
	First upper floor	110.477
XXX-F-LÄSCHE-VERI	First basement	12.100
	Ground floor	15.194
	Second upper floor, variant A	2.778
K.Ausew_Kamin	Ground floor	6.013
K.Ausew_Kamin gas	Ground floor	0.750
K.Ausew_Dämmung	First basement	154.417
	Ground floor	69.505
	First upper floor	123.790
	Second upper floor, variant A	81.650

Material	Dimensions	Thick. (m)	Quantity
Values by calculation mode [m²]			
FA-S-MV-TRENNFUG	(3.450*0.380)	2.0	1.311 m²
FA-S-MV-TRENNFUG	(3.450*0.400)	2.0	1.380 m²

Use the following tool(s) to do this:

Function	How to activate it
 Open on a Project-Specific Basis	Standard toolbar
 Building Lists	File menu

Solution

As with area calculations (see exercise 2: analyzing areas and rooms), you can perform quantity takeoff operations in two different ways:

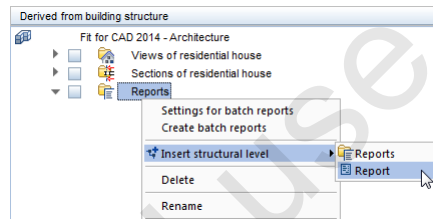
- You can use the objects derived from the building structure or
- You can use the  Building Lists.

The section that follows describes both methods.

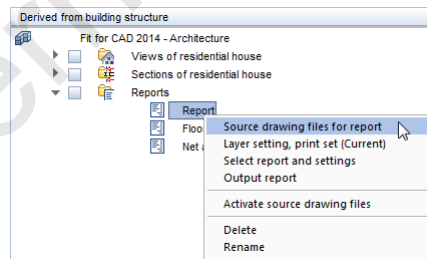
Option 1: quantity takeoff operations using the objects derived from the building structure

To carry out quantity takeoff operations using the objects derived from the building structure

- 1 Click  Open on a Project-Specific Basis (Default toolbar).
- 2 In the Derived from building structure area on the right of the dialog box, open the shortcut menu of Reports, point to  Insert structural level and click  Report.

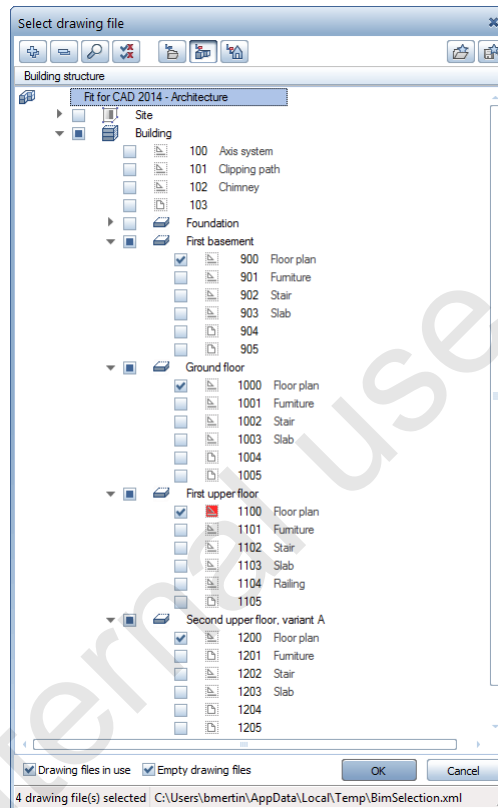


- 3 Open the shortcut menu of Report and click Source drawing files for report for report.



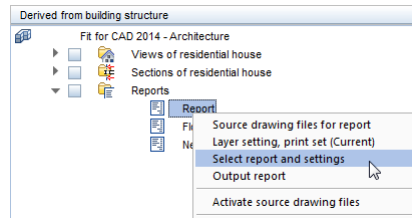
The Select drawing file dialog box is displayed.

- 4 Select the  **Building structure** option on the toolbar of the **Select drawing file** dialog box. After this, select the check boxes for drawing files 900, 1000, 1100 and 1200.

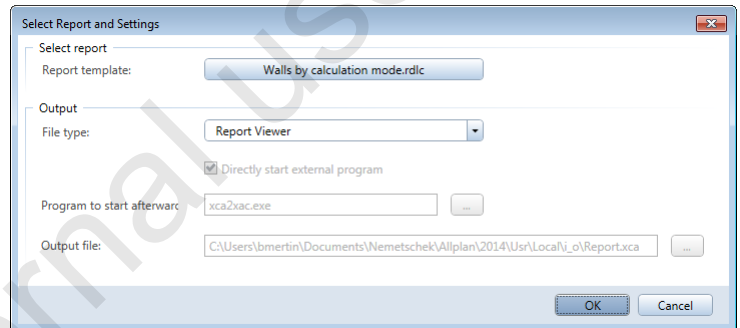


- 5 Click OK to confirm the **Select drawing file** dialog box.

- 6 Open the shortcut menu of **Report** again and click **Select report and settings**.

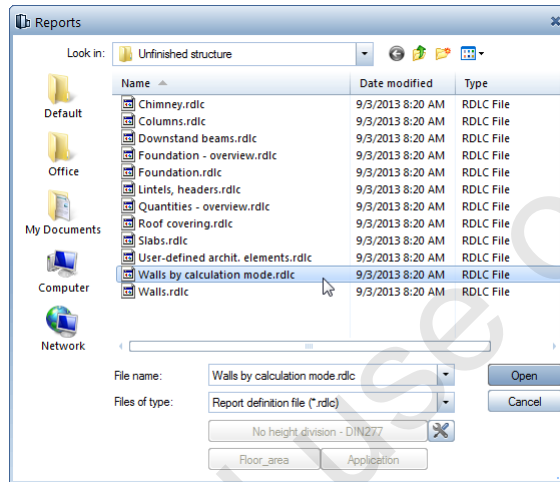


- 7 In the **Select Report and Settings** dialog box, check that the **Report Viewer** is selected in the **Output** area and that the **Walls by calculation mode** report is selected for the **Report template**.

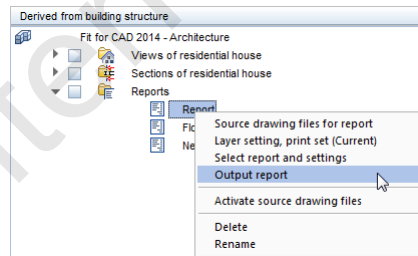


If these settings are not correct, set the **File type** to **Report Viewer** in the **Output** area and click the button beside **Report template** in the **Select report** area.

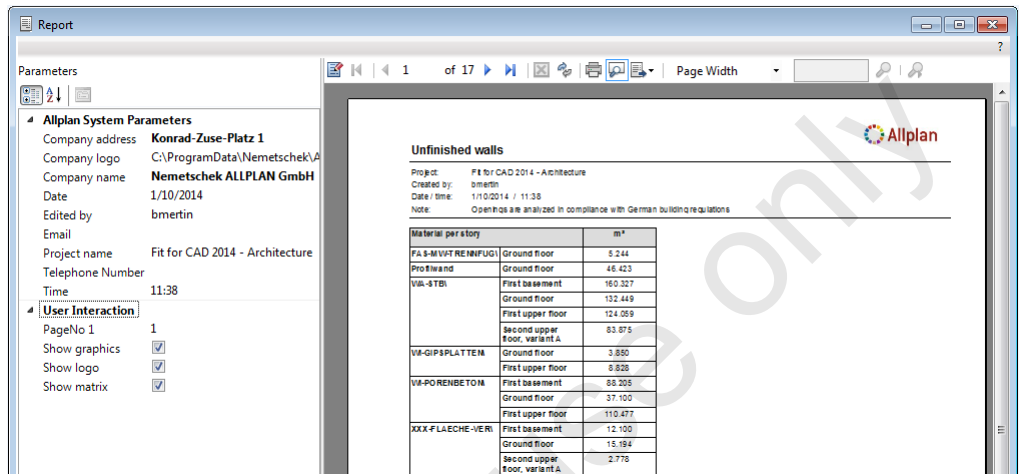
In the **Reports** dialog box, click in the **Look in** box at the top, open the **Unfinished structure** folder (Reports -> Eng) and double-click the **Walls by calculation mode** report.



- 8 Click **OK** to close the **Select Report and Settings** dialog box.
- 9 Open the shortcut menu of **Report** and click **Output report**.



The report is displayed in the Report dialog box on screen. To scroll, use the icons at the top right in the report.



You can edit the report as follows:

- You can print it.
- You can place it in the current document.
- You can save it in PDF or Excel format.
- You can modify it using the Layout Designer (changes can be saved as a new template in RDLC format).

Print or save the report.

10 Close the Report Viewer by clicking  Close.

You are back in the Open on a project-specific basis: drawing files from fileset/building structure dialog box.

11 Enter a name for the report you just created, Unfinished walls, for example.

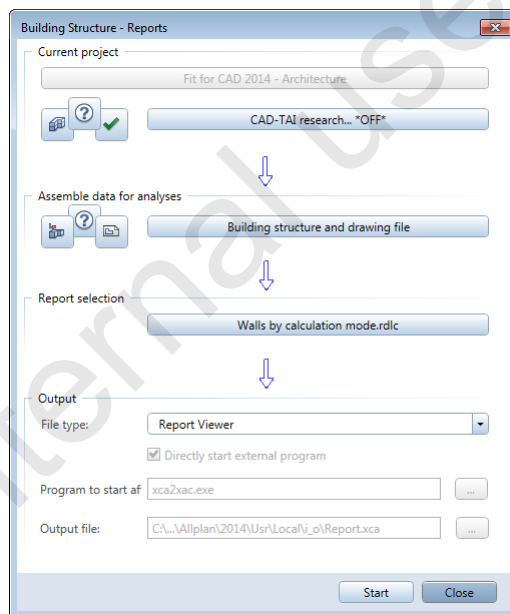
12 Close the Open on a project-specific basis: drawing files from fileset/building structure dialog box.

Option 2: quantity takeoff operations using building lists

Building lists are provided for performing quantity takeoff operations for stories, building sections or entire projects.

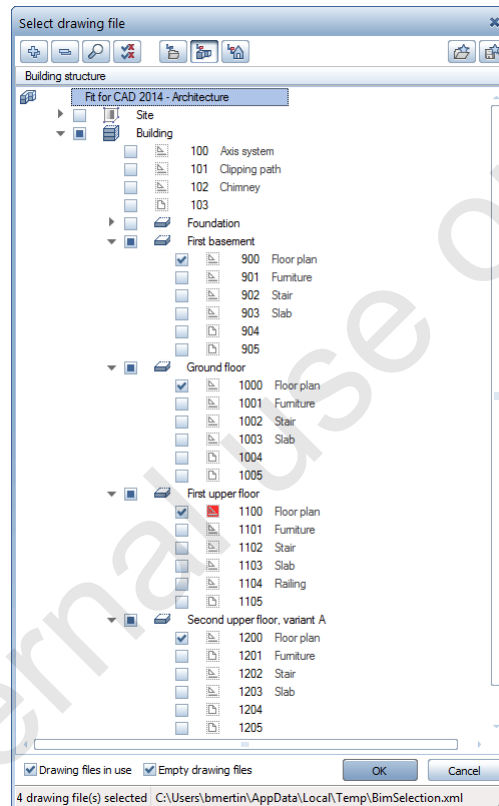
To carry out quantity takeoff operations using a building list

- 1 On the File menu, click  Building Lists....
- 2 Check the project selected: Fit for CAD 2014 - Architecture



- 3 Click Building structure and drawing file.
The Select drawing file dialog box is displayed.

- 4 Select the  **Building structure** option on the toolbar of the **Select drawing file** dialog box. After this, select the check boxes for drawing files 900, 1000, 1100 and 1200.

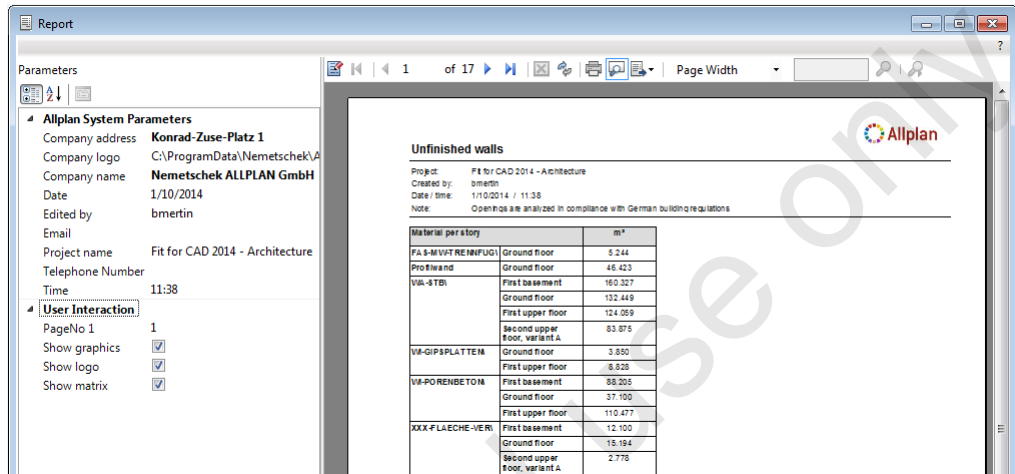


- 5 Click **OK** to confirm the **Select drawing file** dialog box.
- 6 In the **Building Structure - Reports** dialog box, check that the **Walls by calculation mode** report is selected in the **Report selection** area.

If the report is not set correctly, click in the **Look in** box at the top of the **Reports** dialog box, open the **Unfinished structure** folder (**Reports -> Eng**) and double-click the **Walls by calculation mode** report.

- 7 In the **Output** area, select **Report Viewer** for the File type.
- 8 Click **Start**.

The report is created and displayed in the **Report** dialog box.



- 9 Click Print to print it.

Or:

Close the Report Viewer by clicking Close.

Task 2: transferring quantities to Allplan BCM

Introduction

You can use special reports, which are tailored to the requirements of Allplan BCM, to transfer quantity takeoff results to Allplan BCM and process them there.

Overview

Use the following tool(s) to do this:

Function	How to activate it
 New Project, Open Project	Default toolbar
 Reports	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

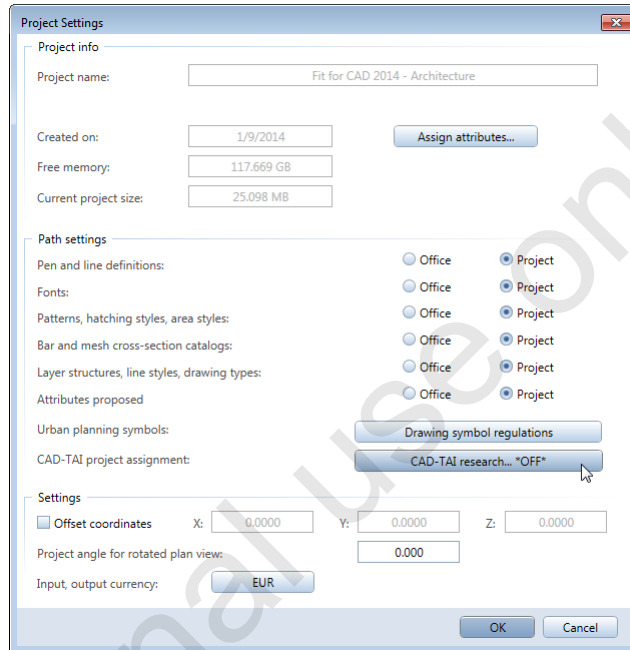
Solution

Before you transfer quantities to Allplan BCM, it is a good idea to specify an Allplan BCM research project in Allplan's CAD-TAI project assignment.

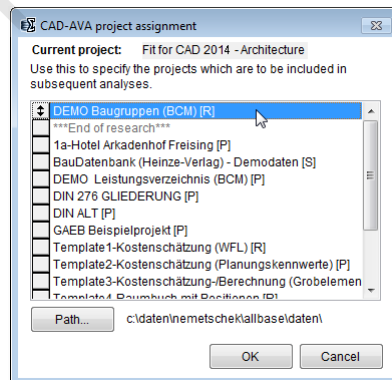
To transfer quantities to Allplan BCM

- 1 Click  New Project, Open Project (Default toolbar).
- 2 Open the shortcut menu of the Fit for CAD 2014 - Architecture project and click Properties....

- 3 In the **Project Settings** dialog box, click the button beside **CAD-TAI project assignment** in the **Path settings** area.

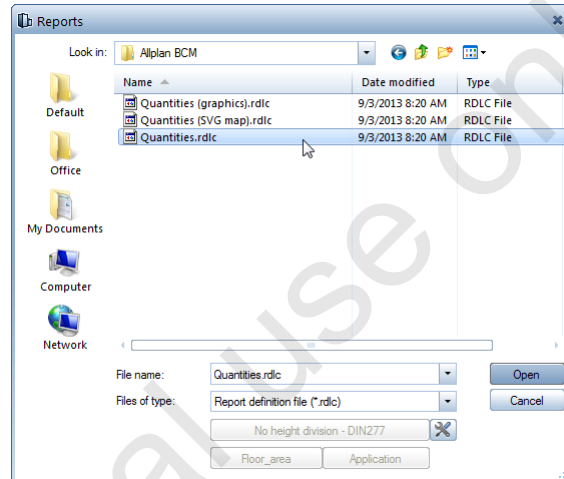


- 4 The **CAD-TAI project assignment** dialog box opens. Use the box on the left to move the project you want to research in Allplan BCM upward so that it is above the *****End of research***** entry.



- 5 Click **OK** to confirm all the dialog boxes that are open.

- 6 Click  Reports (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 7 In the Reports dialog box, click in the Look in box at the top, open the Allplan BCM folder (Reports -> Eng) and double-click the Quantities report.

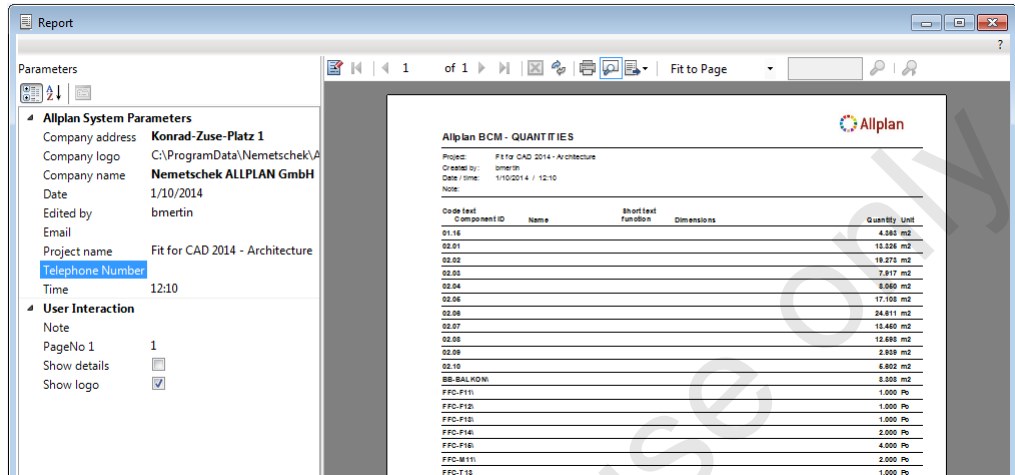


- 8 *Select elements for list*
Click All in the Input Options.

Or:

Click  Find Elements in the Input Options and specify filter criteria.

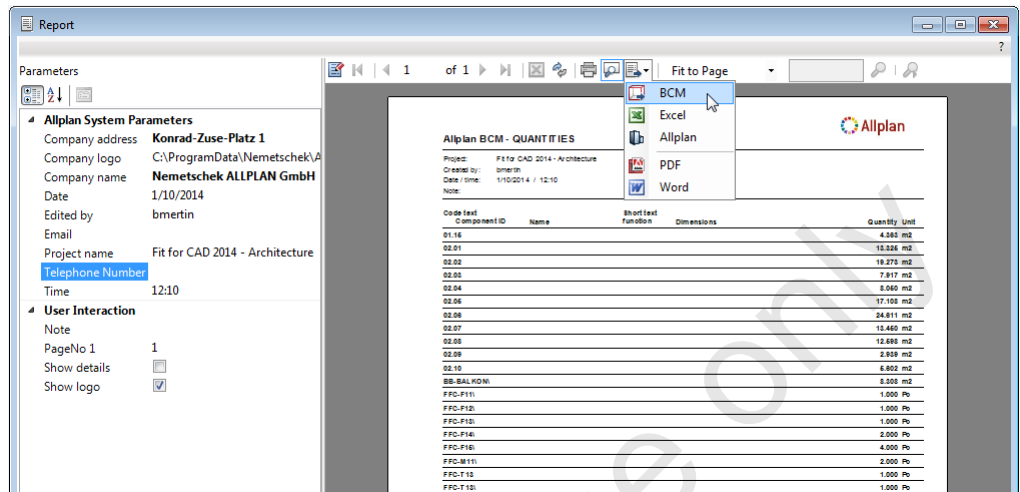
The report is created and displayed in the Report dialog box.



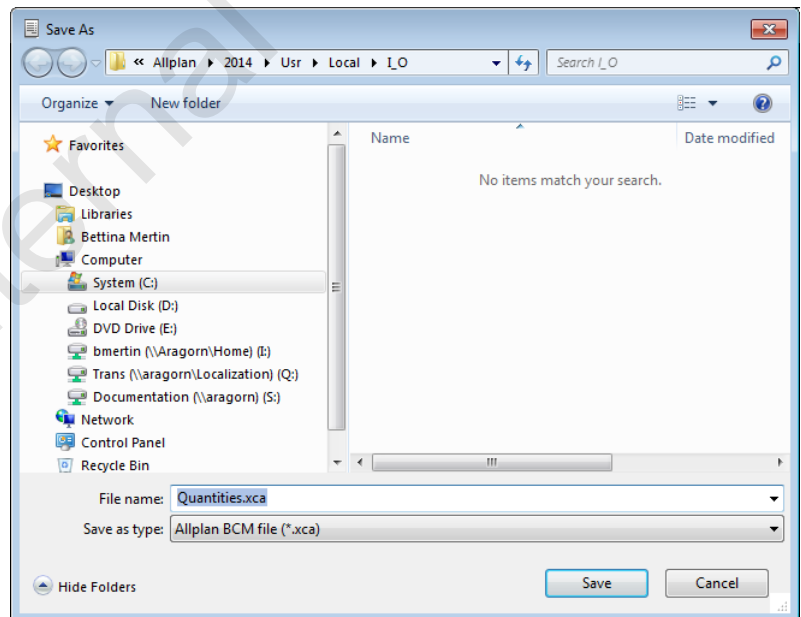
You can edit the report as follows:

- You can print it.
- You can place it in the current document.
- You can save it in PDF, Excel or BCM format.
- You can modify it using the Layout Designer (changes can be saved as a new template in RDLC format).

9 Click  **Export** on the toolbar of the Report dialog box and then click **BCM**.



10 If necessary, specify the folder, enter a name for the file (extension: .xca) and click Save to confirm.



11 Close the Report Viewer by clicking  Close.

A note on the transferring quantities to Allplan BCM

Using the Allplan BCM reports, you can transfer all the defined quantities for the unfinished structure and finish specifications to Allplan BCM. First, though, component numbers should be assigned so that individual components can be transferred and quantities can be assigned correctly to the components. To do this, use the [123](#) **Component Number** tool.

Furthermore, you can use the building lists (described earlier) to perform quantity takeoff operations across multiple stories and drawing files and then transfer the results to Allplan BCM.

Exercise 6: material catalogs (optional)

Task 1: assigning material catalogs

Introduction

In the **Options** you can define catalog assignments for components. You can specify whether materials are entered in custom list boxes that expand with each new material that you enter. Or you can specify whether user-defined or ready-made and imported catalogs are used.

You can set the catalog assignment for components to **Catalogs** or **Drop-down menus**.

Drop-down menus

Here, you can open (+) or delete (-) your own catalog lists. With these catalogs you can define new materials as well as select existing ones when creating architectural elements.

Catalogs

You can transfer catalogs from tendering, awarding and invoicing applications or you can define your own catalogs. These catalogs generally have a hierarchical structure and can be assigned additional properties such as wall thickness or building trade.

The following catalogs are available:

- **katlg1** is used for normal architectural elements (walls, columns, beams, slabs and so on).
- **katlg2** is used for surfaces (vertical surfaces, ceilings, floors).
- **katlg3** is used for for baseboard.
- **katlg5**: is used for **rooms**. The **Name ++** option means that the room number is automatically incremented by 1 with each new entry.
- **kukat 1-5** are "customer catalogs". These can be defined by the user.
- **nem_pos** is the Allplan BCM item catalog in Allplan catalog format. You can import it using the Services application.
- **nem_ele** is the Allplan BCM element schedule in Allplan catalog format. You can import it using the Services application.
- **nem_ava** provides direct access to Allplan BCM projects. You do not need to import this catalog.

Overview

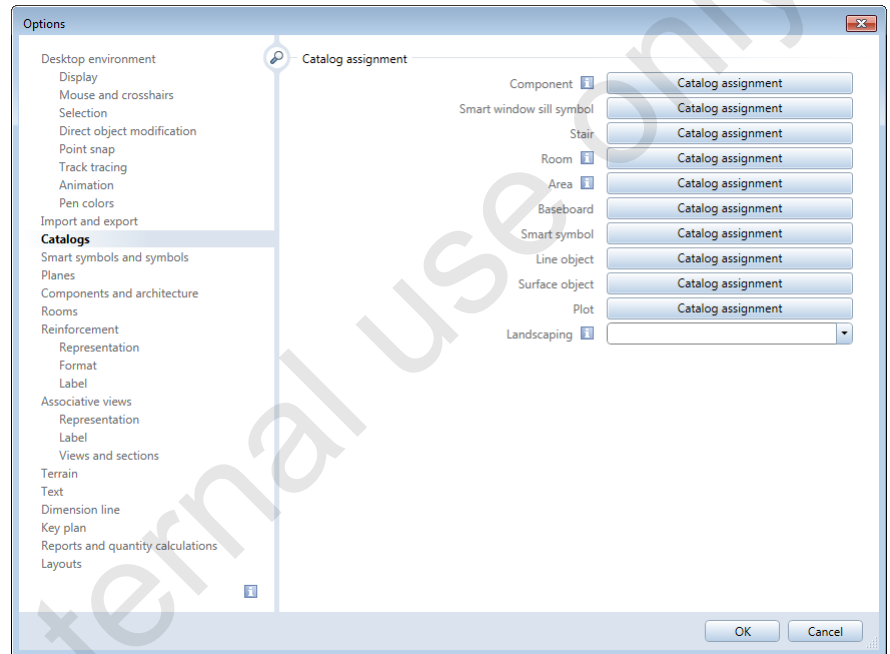
Use the following tool(s) to do this:

Function	How to activate it
 Options	Standard toolbar

Solution

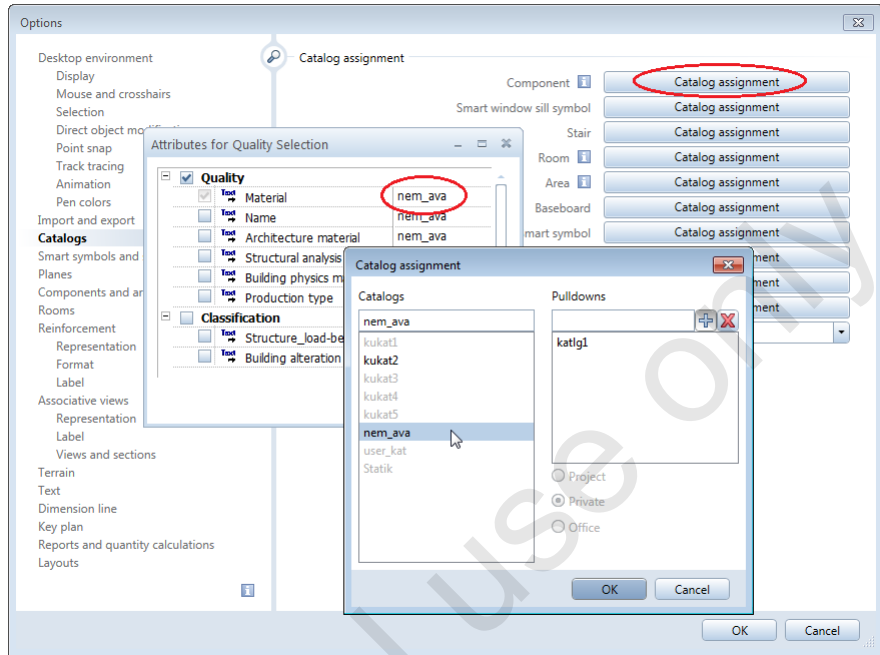
To assign material catalogs

- 1 Click  Options (Default toolbar).
- 2 Select the Catalogs page in the Options dialog box.



- 3 Make settings for the individual elements (component, room, area, baseboard and so on) by clicking the corresponding **Catalog assignment** button.
- 4 Check the catalog assignment for all the *selected* attributes in the **Attributes for Quality Selection** dialog box.

If necessary, click in the box (right column) beside the relevant attribute, select the required catalog in the **Catalog assignment** dialog box and click **OK** to confirm.



- 5 Click OK to close the **Attributes for Quality Selection** dialog box.
- 6 Use the same approach to check and, if necessary, correct the catalog assignment for the other elements.
- 7 Finally, click OK to confirm the **Options** dialog box.

A note on material catalogs from programs used for tendering, awarding and invoicing

All Allplan BCM catalogs can be accessed straight from Allplan - provided Allplan and Allplan BCM are installed on the same computer or on a common network. Consequently, you can directly access tenders or master files available in Allplan BCM. A big advantage is that duplicate data storage is avoided. These catalogs can be found in the **nem_ava** catalog assignment.

Task 2: customized material catalogs

Introduction

Allplan has 5 empty catalogs (kukat1 to 5) that can be custom designed.

Overview

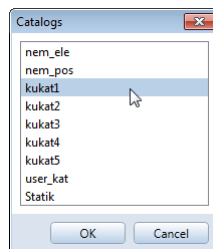
Use the following tool(s) to do this:

Function	How to activate it
 Catalog	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area

Solution

To create your own material catalog

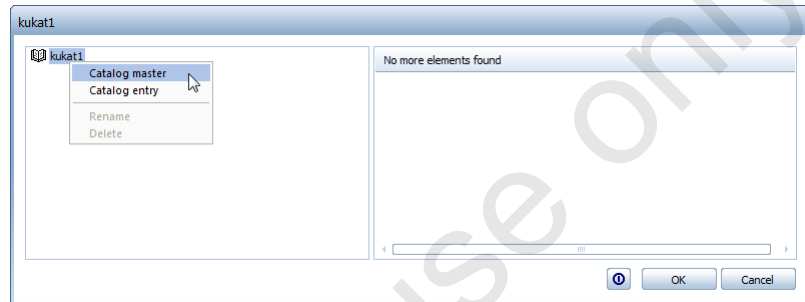
- 1 Click  Catalog (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 2 The Catalogs dialog box opens. Select the catalog kukat1 (you can use the "customer catalogs" kukat1 to kukat5 for custom catalogs).



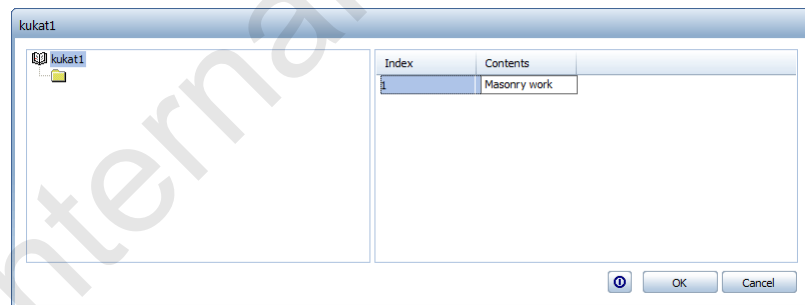
3 A catalog can consist of several levels and catalog references:

- Catalog master
- Catalog branch

In the **kukat1** dialog box, click **kukat1** with the right mouse button and select **CTLG Master** on the shortcut menu.



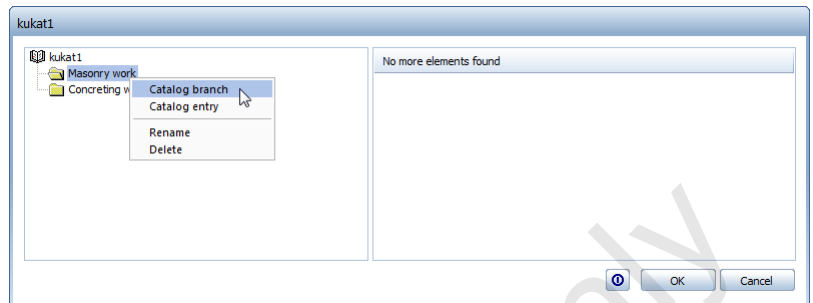
4 Enter **Masonry work** for the **Contents**.



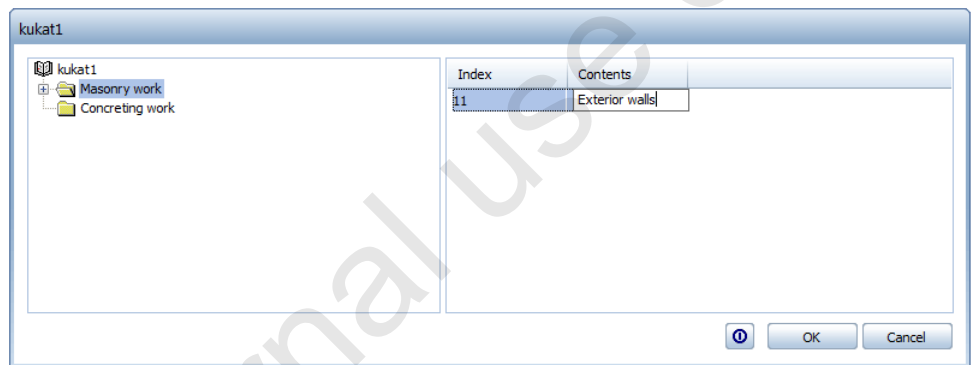
5 Create a master called **Concreting work** in the same way.

You have now created two empty master structures.

6 Click **Masonry work** with the right mouse button and select **CTLG Branch** on the shortcut menu.

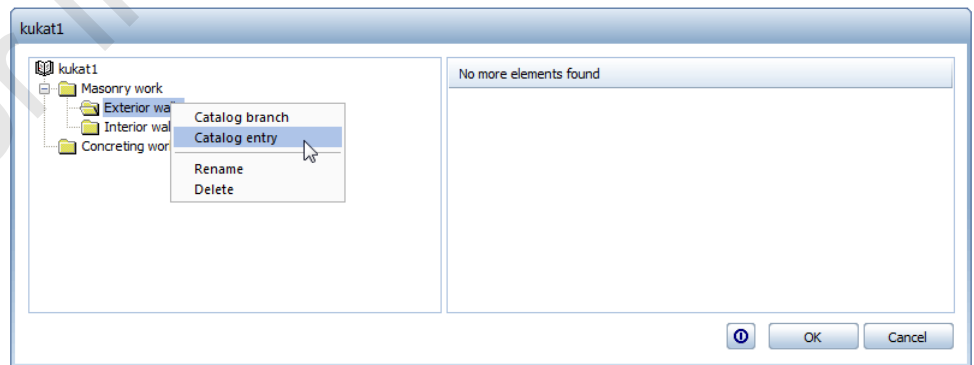


7 Enter Exterior walls for the Contents.

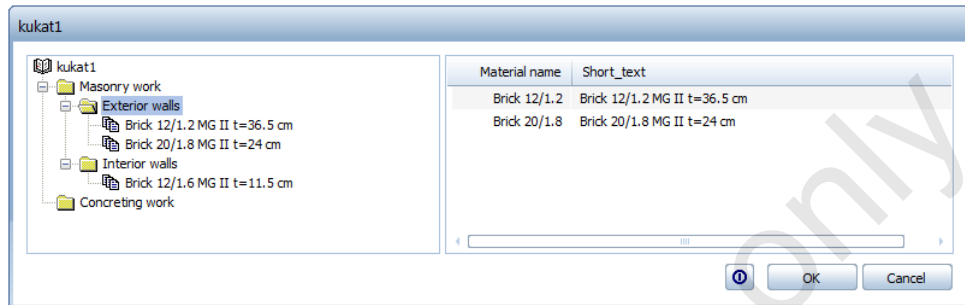


8 Create a catalog branch called **Interior walls** in the same way.

9 Click **Exterior walls** with the right mouse button and select **CTLG Entry** on the shortcut menu.



- 10 Enter Brick 12/1.2 - MG II, d=36.5 cm for the Brief text and Brick 12/1.2 for the Material name.



- 11 Create a second catalog entry for Exterior walls:

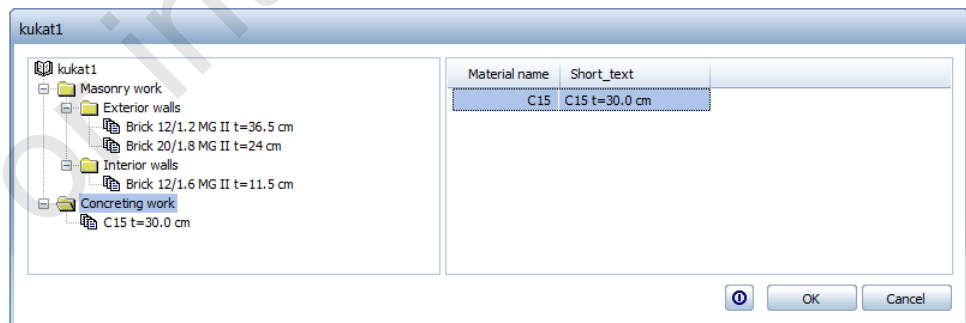
- Brief text: Brick 20/1.8 – MG II, t=24 cm
- Material name: Brick 20/1.8

- 12 Create the following catalog entry for Interior walls:

- Brief text: MZ 12/1.6 – MG II, t=11.5 cm
- Material name: Brick 12/1.6

- 13 Create the following catalog entry for Concreting work:

- Brief text: B15, t=30.0 cm
- Material name: B15



- 14 Click OK.

Task 3: using catalogs to assign attributes

Introduction

After you have defined the catalog entries, they can be assigned attributes to facilitate the design process in the **Walls, Openings, Components** module.

Overview

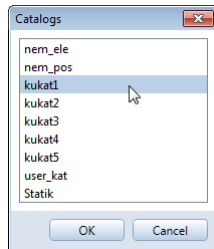
Use the following tool(s) to do this:

Function	How to activate it
 Catalog	Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area
 Wall	Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area

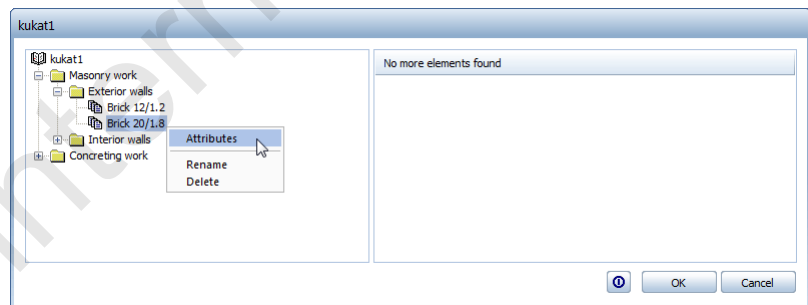
Solution

To define attributes for components

- 1 Click  **Catalog** (Tools palette - Architecture family - Rooms, Surfaces, Stories module - Create area).
- 2 In the **Catalogs** dialog box, click the **kukat1** catalog you created in task 2.

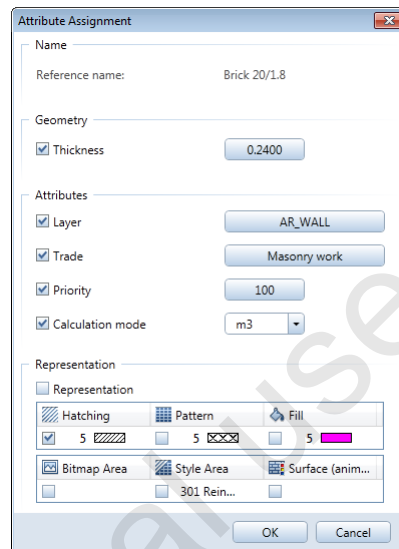


- 3 Open the **Masonry work** folder, click the **Brick 20/1.8** entry with the right mouse button and select **Attributes** on the shortcut menu.



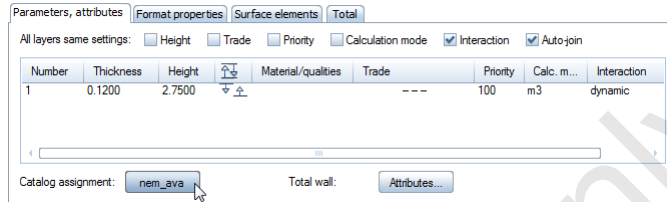
- 4 Define attributes in the **Attribute Assignment** dialog box.

For example, you can assign the following attributes for a 24 cm exterior wall:



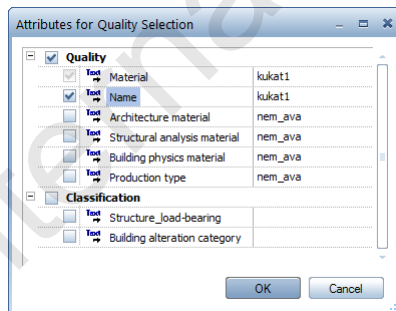
- 5 Click **OK** twice to quit the tool.
- 6 Click  **Wall** (Tools palette - Architecture family - Basic: Walls, Openings, Components module - Create area) and then click  **Properties** on the Wall Context toolbar.

- 7 In the Wall dialog box, **Parameters**, attributes tab, click the button beside **Catalog assignment**.

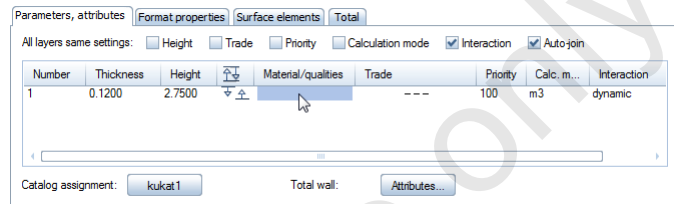


The **Attributes for Quality Selection** dialog box is displayed.

- 8 Select the attributes in the column on the left. These are the attributes Allplan presents when you select the component's material.
- 9 Click in the right column of the attribute to which you want to assign a catalog. The **Catalog assignment** dialog box opens. Select the catalog to which you have added the attributes (**kukat1** in this example) and click **OK** to confirm.

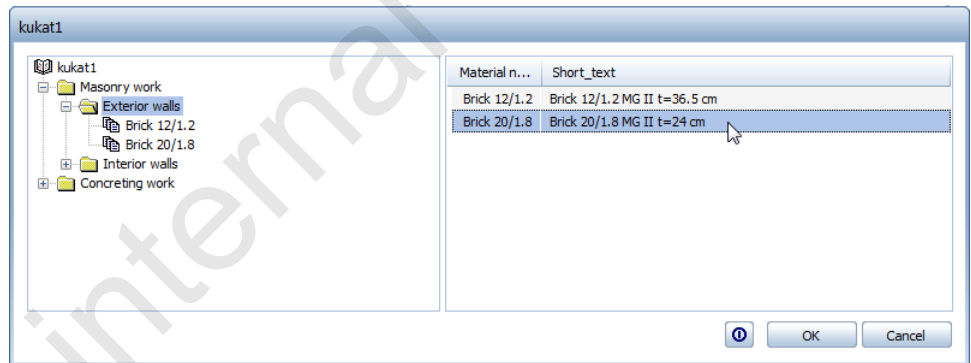


- 10 When you have assigned catalogs to all the *selected* attributes, click **OK** to confirm the **Attributes for Quality Selection** dialog box.
- 11 In the **Wall** dialog box (**Parameters, attributes** tab), click in the **Material/qualities** column.



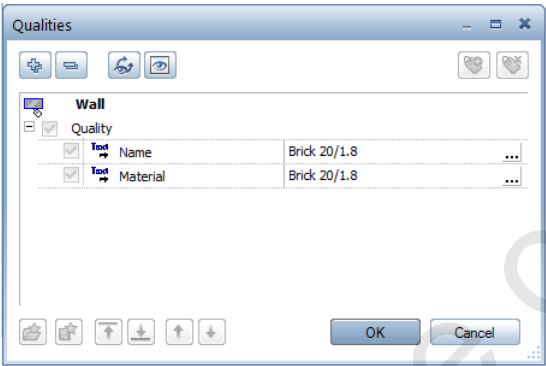
The **Qualities** dialog box is displayed.

- 12 Click  in the line of the relevant attribute, select the required material in the **Catalog** dialog box and click **OK** to confirm.

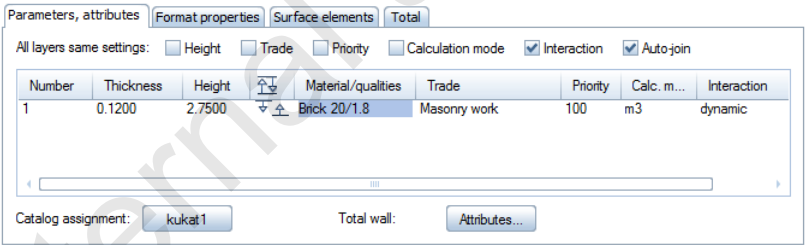


The attributes you defined for the material are entered in the **Qualities** dialog box.

13 When you have selected the material for all the *selected* attributes, click **OK** to confirm the **Qualities** dialog box.



All the attributes you defined for the material are added to the wall properties:



14 Draw the wall.

Index

1

- 1st UF
 - area calculations 54
 - room groups 69, 74
 - rooms 50
- 1st upper floor 7
 - floor plan 7
 - furniture 21
 - height 7

3

- 3D view 164

A

- analyzing
 - areas 169
 - floor area using the objects
 - derived from the building structure 174
 - quantities 205
 - quantities using building list 230
 - quantities using the objects
 - derived from the building structure 225
 - quantities, across stories 223
 - rooms 169
- analyzing quantities 219
- applying architectural component properties 21
- area
 - area calculation 171
 - finish specifications 183
 - finish specifications, defining 184, 194
 - floor area 174
 - special surfaces 183
 - special surfaces, defining 201
 - vertical surfaces, defining 199
- area calculation, application 69
- area calculations 54
- assigning attributes 247

- auto-room 54

B

- balcony
 - floor covering 54
- building list 230

C

- catalog 248
- catalogs
 - Allplan BCM 242
 - assigning 241
 - assigning attributes 247
 - assignment 239
 - catalog types 240
 - creating, custom 243
 - drop-down menus 239
 - material catalogs, general information 238
 - programs for tendering, awarding and invoicing 242
- changing archit. properties 78, 86
- changing planes assigned 78
- chimney 78, 86
 - modifying height 86
- component
 - deleting 21
 - labeling retroactively 212
- component number 238
- copying
 - drawing file 18, 50
 - GF slabs 21
- copying GF slabs 21
- creating
 - French doors of 1st UF 21
 - interior doors of 1st UF 21
 - niches of 1st UF 21
 - slab of top floor 78
 - slabs of ground floor 21
 - walls of 1st UF 21
 - windows of 1st UF 21

- creating a gable roof 86
- creating French doors 21
- creating interior doors 21
- creating niches 21
- creating slabs 21, 78
- creating walls 21
- creating windows 21
- custom planes 21

D

- defining section
 - vertical 134
- deleting 21
 - component 21
- dimension line
 - elevation dimensioning 160
- dimensions
 - elevation dimensioning 160
- document legend 69
- drawing file
 - copying 18, 50

E

- elevation 161
- elevation dimensioning 160
- eye point 164

F

- filter by archit. element type 208
- filtering
 - by archit. element type 208
- finish specifications
 - defining 184
 - general information 183
 - modifying 194
 - special surfaces 201
 - standard finish specifications
 - 184, 194
 - vertical surfaces 199
- floor area 174
- floor plan of 1st UF 7
- floor plan of top floor 74
- floor plan of top floor, variant
 - 78
- furniture 21

G

- ground floor
 - stair 107

H

- hidden line image 164
- hidden line image, wireframe
 - 169

J

- joining wall with line 21
- joining walls 21

L

- label style 54, 217, 219
 - creating, label style 219
- labeling 212, 219
 - component, retroactively 212
 - label style 54, 219
 - object labels 54
 - room 54
 - room, label style 217
- line 7
- lists/schedules
 - building lists 230
 - reports 206
- loading
 - project 3

M

- material
 - assigning attributes 247
 - defining retroactively 208
 - material catalogs, assigning
 - 239
 - material catalogs, general
 - information 238
 - modifying 208
- modification
 - exterior walls of 1st UF 21
 - exterior walls of TF 78
 - exterior walls of TF, variant B
 - 86
 - walls of 1st UF 21
- modify archit. properties 208
- modifying
 - archit. properties 78, 86
 - general archit. properties 208
 - material definition 208
 - outline of 1st UF slab 21
 - room 54
 - rooms, surfaces, stories 54

- slab height 21
- modifying exterior walls 21, 78, 86
- modifying outline of 1st UF slab 21
- modifying slab height 21
- modifying walls 21

O

- object labels 54
- options 208, 241

P

- perspective view 164
 - creating 164
 - saving 169
- plane model
 - integrating a roofscape 86
- planes
 - custom planes 21
- project
 - loading 3

Q

- quantities
 - analyzing across stories 223
 - component number 238
 - quantity takeoff operations 205
 - transferring to Allplan BCM 233
- quantity takeoff 219, 225

R

- rafters 86
- railing for balcony on 1st UF 121
- redefining rooms, surfaces, stories 54
- regen 164
- reports 206, 212
- restoring 3D view 21
- roof
 - creating a gable roof 86
 - designing rafters 86
 - importing from CD 78, 86
 - roof covering 86
- roof covering 86
- room 50

- creating automatically 54
- grouping rooms 74
- labeling 54
- labeling, label style 217
- modifying 54
- room group 69
- separating 54
- room group 69, 74
- room labels
 - label style 217

S

- section
 - calculating sections 152
 - changing section settings 158
 - modifying sections 157
 - saving sections 152
 - sections 150
 - updating result 158
 - vertical section 134
- Services application 3
- showing/hiding junctions 78
- special surfaces
 - defining 201
 - general information 183
- splitting surface elements, archit. elements 54
- stair 109
 - general information 107
 - section in plan 118, 121
 - stair components 109
 - straight 109
 - symbols 107
- stair design 107
- stairs
 - straight 86
- starting Allplan 3

T

- target point 164
- top floor 74
 - floor plan 74
 - floor plan, variant 78
 - height 7

U

- upper floor
 - analyzing areas 219
 - labeling rooms 219

V

- vertical surface 201
- vertical surfaces
 - defining 199
- view
 - 3D view 164
 - calculating and saving 140, 147
 - creating 137
 - creating using sections 137
 - modifying sections 157
 - perspective view 164
 - regen 164
 - sections 150
- views 138
 - copying and modifying 145

W

- wall 248
 - to wall 21
 - with line 21
- window
 - modifying height 86