GEBERIT

GEBERIT BIM PLUG-IN 2022

TRAINING MANUAL

KNOW HOW INSTALLED

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Geberit International AG

Schachenstrasse 77

CH-8645 Jona, Switzerland

Email: documentation@geberit.com

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1 ABOUT THIS DOCUMENT

With the aid of the planning examples in this training manual, you will learn how to handle the Geberit BIM Plug-in.

An overview of the topics:

- Installing the plug-in
- Using the plug-in

This training manual was created in 2020 with Autodesk® Revit®. The designation of individual functions and the visualisation of training examples may vary if you work with a different version of Autodesk® Revit®.

1.1 Signs and symbols

The following signs and symbols are used in the training manual:

Symbol	Designation	Meaning
	Info	Reference to additional information on the subject under Help or in another training manual
	Hint	Hint for an easier or better approach
	Note	Basic information on a specific procedure
▶	Action	Instruction for action consisting of only one step
1. **2.**		Instruction for action consisting of several steps
✓	Result	Result of an action

1.2 Highlighted Passages

Keyboard shortcuts appear in the text as follows: **STRG** + **C**. The corresponding shortcut for keyboards with English keys appears in brackets (**CTRL**+**C**).

Software dialog elements are shown as follows: **Tab** or **Window** or **Menu entry**.

Software buttons are shown as follows: **OK**.

2 PREPARATIONS

2.1 Installing the plug-in

If you have not already done so, you need to install the Geberit BIM Plug-in on the computer on which Autodesk® Revit® is also installed.

Administrator rights for the PC are required for the installation of the plug-in.

1. Double-click on the installation file.
   ✓ The installation wizard starts up.

2. Follow the instructions on the screen.

2.1.1 Licensing

The **Catalogue** and **Assistants** modules can be used without a separate licence. In order to be able to use the **Pluvia** and **Installation systems** modules, you need to have a valid Geberit ProPlanner license.

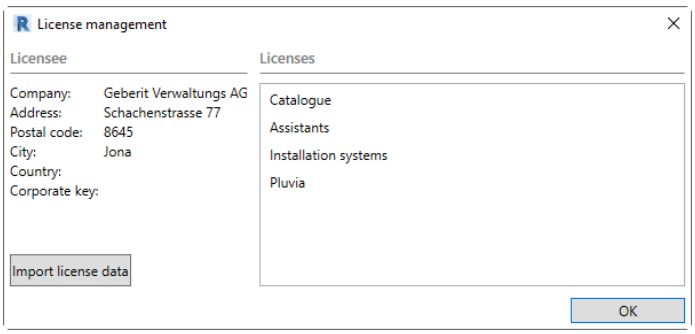
If need be, you can export the Geberit ProPlanner license and transfer it to another computer.

2.1.1.1 Exporting the Geberit ProPlanner license

1. Start Geberit ProPlanner.
2. Click on **License management** in the **Help** menu.
   ✓ The **License management** window appears.
3. Click on **Export license data** and save the license file.

2.1.1.2 Importing the Geberit ProPlanner licence

1. Start Autodesk® Revit®.
2. Show the **Add-Ins** tab in the menu bar.
3. Click on **Help** in the **Geberit BIM Plug-in** area and select **License management**.
   ✓ The **License management** window appears.
4. Click on **Import license data**.
5. Navigate to the Geberit ProPlanner licence file and click on **Open**.
   ✓ The available licences are displayed in the **License management** window.

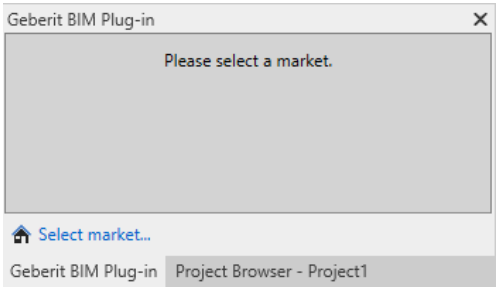


6. Click on **OK**.

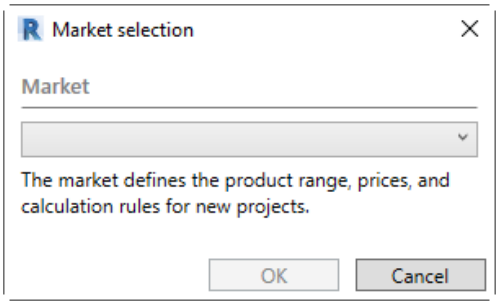
2.2 Selecting the market

You must select the market before you can use the Geberit BIM plug-in. Selecting the market defines the elements available for the planning and calculation.

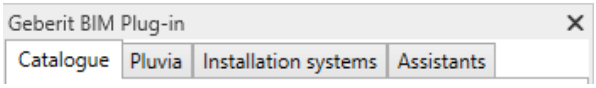
1. Create a new Autodesk® Revit® project or open an existing Autodesk® Revit® project.
2. Show the **Add-Ins** tab in the Autodesk® Revit® menu bar.
3. Click on **Show/hide plug-in** in the **Geberit BIM Plug-in** area to show the **Geberit BIM Plug-in** window.
   ✓ The **Geberit BIM Plug-in** window appears.
   ✓ The message **Please select a market** appears in the **Geberit BIM Plug-in** window.



4. Click on **Select market**.
   ✓ The **Market selection** window appears.



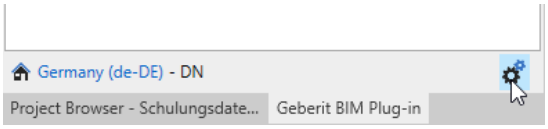
5. Select your preferred market.
6. Click on **OK** to save the setting.
   ✓ The tabs of the available modules appear depending on the imported licence.



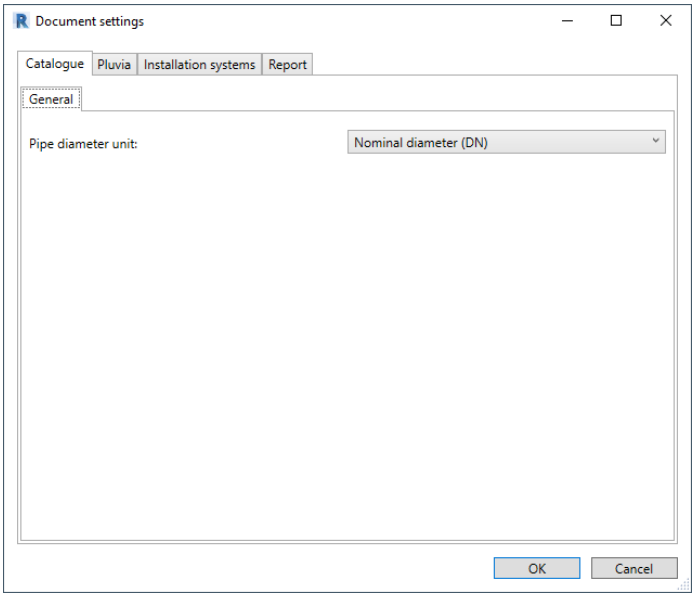
2.3 Selecting the pipe diameter unit

Pipe diameters are specified as standard as nominal diameters (DN) or outer diameters (OD) depending on the selected market. The nominal diameter (DN) should be used for this training manual.

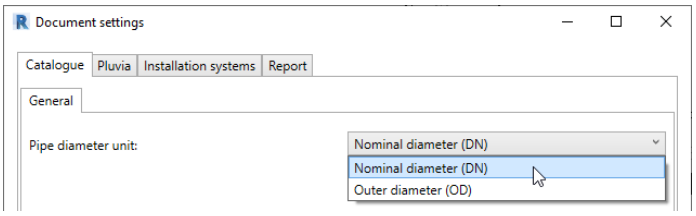
1. Click on **Settings**.



✓ The **Document settings** window appears.



2. Show the **Catalogue** or **Pluvia** tab.
3. Select the **Nominal diameter (DN)** setting as the **Pipe diameter unit** in the **General** tab.



4. Click on **OK** to save the settings.

You can only use the **Outer diameter (OD)** or **Nominal diameter (DN)** setting within a document. It is not possible to use both settings at the same time.

3 TRAINING EXAMPLES – GEBERIT BIM PLUG-IN

You can use the Geberit BIM Plug-in to insert BIM objects from the Geberit product catalogue into Autodesk® Revit® and to create and calculate Pluvia systems and installation systems.

The examples in this training manual will help you to learn the basic ways of working and the fundamental functions of the Geberit BIM Plug-in.

3.1 Training example – catalogue

In the training example for the **Catalogue** module, you insert a BIM object from the Geberit product catalogue into an Autodesk® Revit® project.

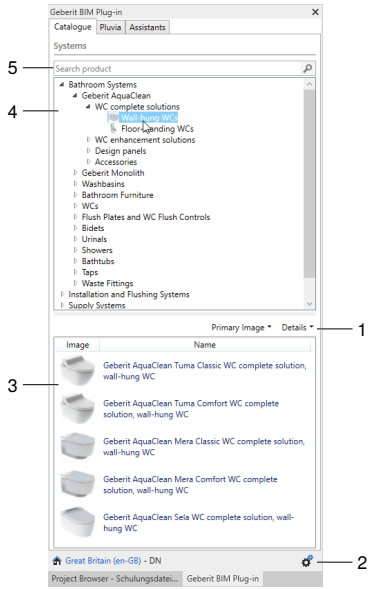
This chapter covers the following topics:

- Selecting and inserting products
- Anonymising product information
- Turning connection bends
- Connecting discharge pipes

3.1.1 Overview

All of the products available in the product range are listed in a tree structure. The tree structure corresponds to the structure in the online catalogue of the respective market.

Not available products are shown in grey.

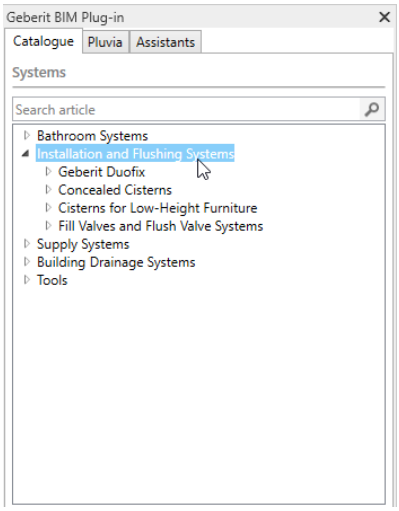


1 Customise the view of available products
2 Call up the document settings
3 Available and not available products
4 Tree structure of the product groups
5 Search by Geberit article number or article description

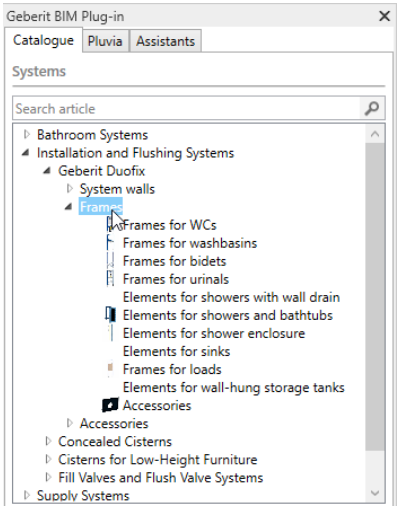
3.1.2 Inserting a BIM object

3.1.2.1 Selecting a Duofix element

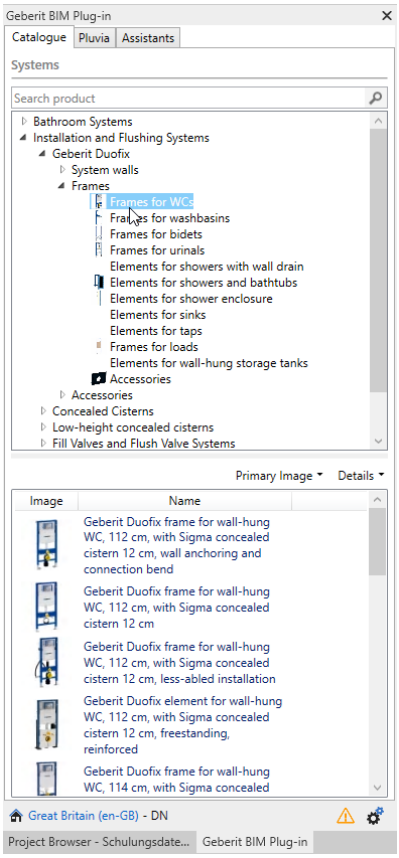
1. Click on the triangle (▷) in the tree structure to open the **Installation and Flushing Systems** entry.



2. Open the **Geberit Duofix** product category in the same way and navigate to the Installation Elements product group.



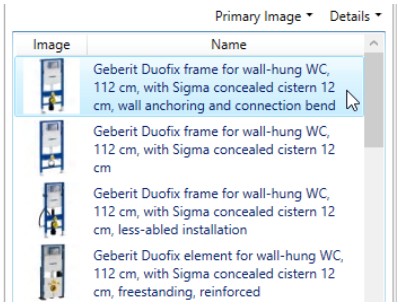
3. Click on the **Elements for WCs** product group.
   ✓ The available products in the **Products of category** area appear once you have marked the product group.



Alternatively, you can search for the article number of a product in the **Search product** field.

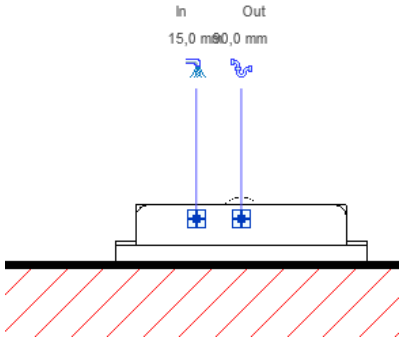
3.1.2.2 Inserting a Duofix element

1. Double-click on the **Geberit Duofix frame for wall-hung WC, 112 cm** in the **Products of category** area.



   ✓ The BIM object of the Duofix element is downloaded from the Geberit PIM system.

2. Click on the required position in your BIM planning to insert the Duofix element.



3. Press **ESC** twice to exit the function.

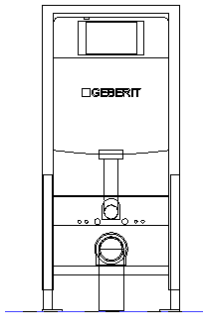
3.1.3 Adjusting a Duofix BIM element

3.1.3.1 Setting the height offset

The Geberit Duofix installation elements can be aligned vertically using the height-adjustable leg support set. It is possible to compensate for a height offset of 0–20 cm in the floor construction.

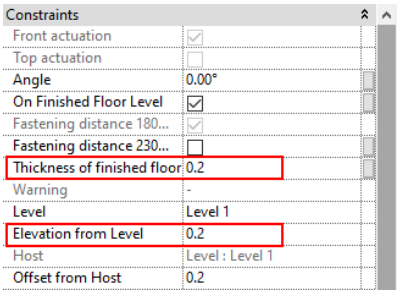
The plug-in allows you to set this height offset individually for each instance of a product and the specification of the reference level. The reference level can be the unfinished floor (default setting) or the finished floor.

1. Show the front view of the Duofix element.

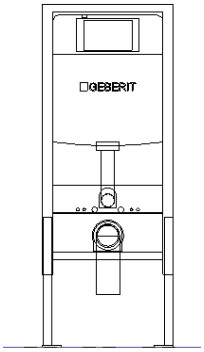


2. Highlight the Duofix element in your BIM planning.
3. Show the **Properties** window.

4. Enter a value up to **200 mm** in the **surface height** and **Elevation from Level** fields in the **Constraints** area.



5. Click on **Apply** to apply the settings.

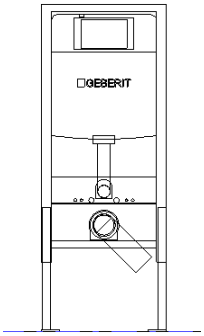


3.1.3.2 Turning connection bends 45°

In order to be able to connect the waste water in the next step, turn the connection bend of the installation element 45°.

1. Show the **Properties** window.
2. Enter the value **-45°** in the **Angle** field in the **Constraints** area.

3. Click on **Apply** to apply the settings.
   ✓ The connection has been turned -45°.



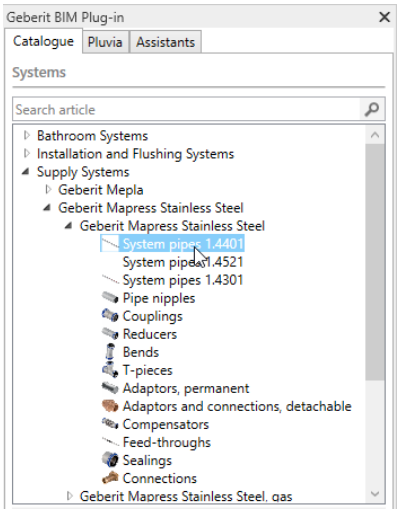
3.1.3.3 Connecting pipes

At the end, you can connect the element for wall-hung WC to a drinking water pipe and a discharge pipe.

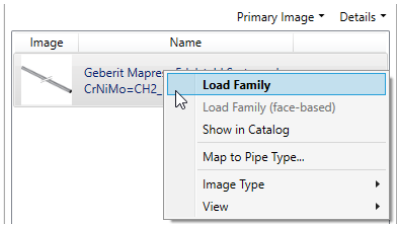
3.1.3.3.1 Connecting drinking water

You first need to load a suitable Geberit to be able to connect a drinking water pipe to the element for wall-hung WC.

1. Select the supply system **Geberit Mapress Stainless Steel** > **System pipes 1.4401** in the tree structure of the BIM catalogue.



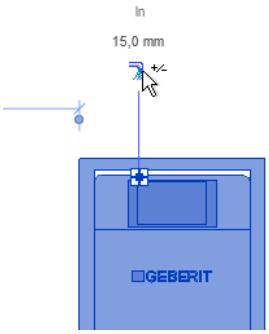
2. Right-click on **Geberit Mapress Stainless Steel system pipe CrNiMo** in the **Products of category** area and select **Load Family** in the pop-up menu.



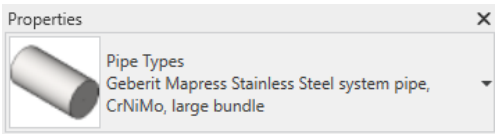
✓ Load the BIM content of the Geberit family with all pipes and fittings.
✓ The drawing function is started.

3. Press **ESC** to cancel the drawing function.

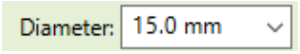
4. Mark the Duofix installation element and click on the pipe symbol.



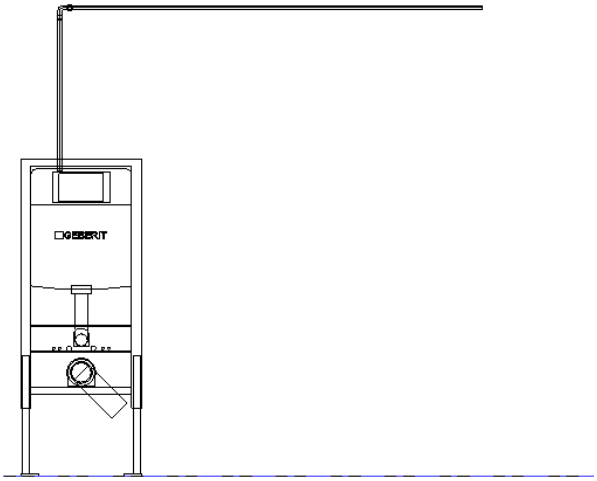
5. Make sure that the **Geberit Mapress Stainless Steel system pipe** is selected in the **Properties** window.



6. Enter the value **15 mm** in the options bar in the **Diameter** field.

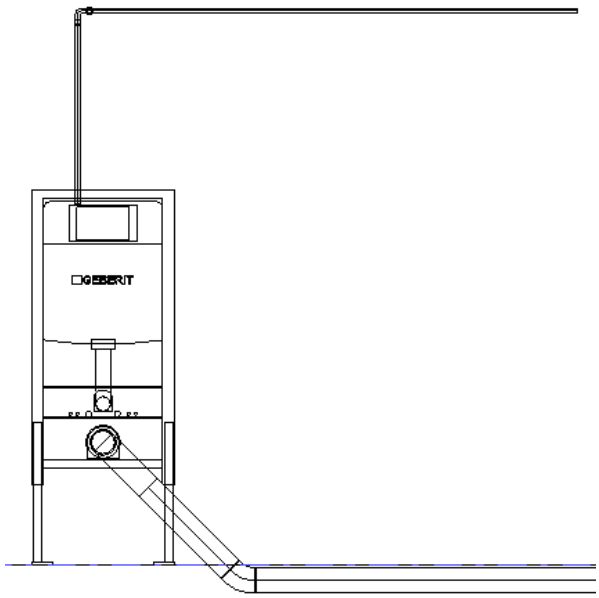


7. Draw the drinking water pipe and press **ESC** twice to exit the drawing function.



3.1.3.3.2 Connecting waste water

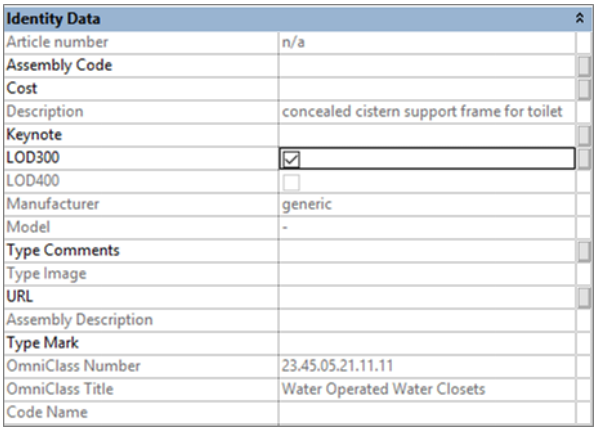
1. Connect the discharge pipe to the element for wall-hung WC as described for the drinking water pipe.
2. To do this, load a suitable Geberit family from the Building Drainage Systems area, e.g. Geberit **HDPE**.
3. Connect a discharge pipe with a diameter of 90 mm or 100 mm.



3.1.3.4 Displaying manufacturer-neutral Geberit BIM content

Public sector tenders usually require manufacturer-neutral planning. The plug-in allows you to switch between neutral (LOD300) or manufacturer-specific product information (LOD400).

1. Highlight the Duofix element in your BIM planning.
2. Click on **Edit Type** in the **Properties** window.
   ✓ The **Type Properties** window appears.
3. Activate **LOD300** in the **Identity Data** area.
   ✓ Information, such as **Article number**, **Manufacturer**, **Model** and **Description** is replaced by neutral information in all available instances of the product.



4. Click on **OK** to confirm the setting.

Alternatively, you can use the **Manufacturer-Neutral View** wizard to switch between neutral (LOD300) or manufacturer-specific product information (LOD400).

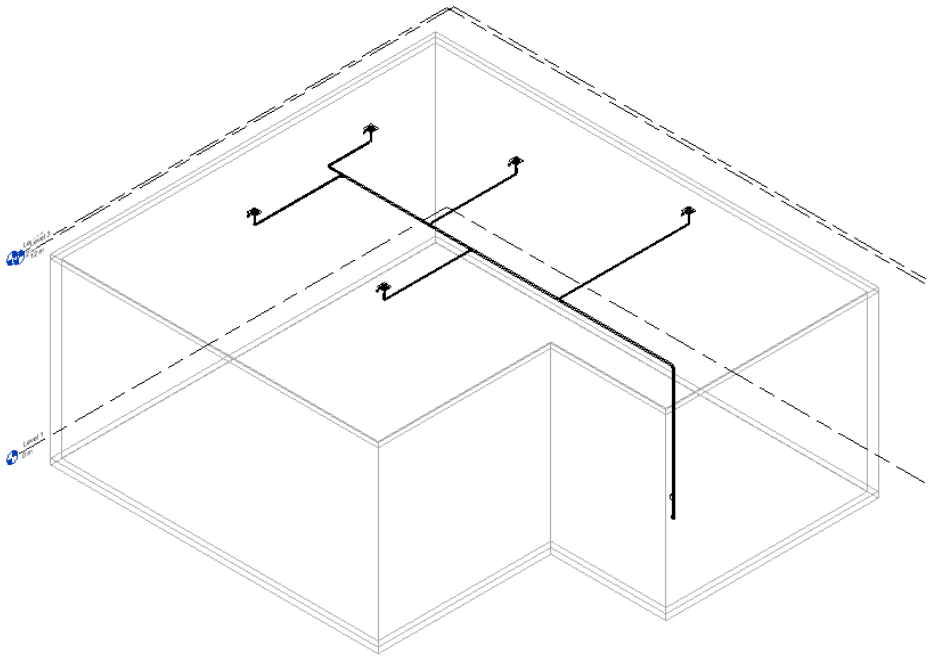
3.2 Roof drainage system training example

In the training example for the **Pluvia** module you can create and calculate a simple pipe system for the drainage of a building roof.

This chapter covers the following topics:

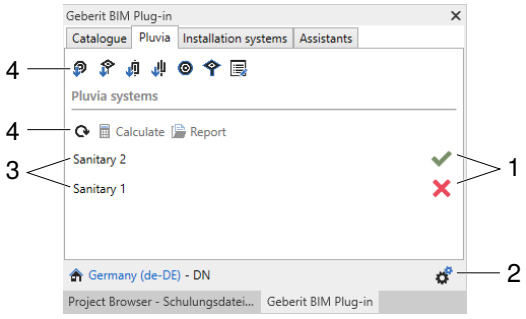
- Inserting a level for drawing the pipe system
- Inserting reference levels
- Drawing a pipe system
- Calculating a pipe system
- Adapting properties and troubleshooting
- Displaying a material list
- Exporting calculation results

Once you have completed all the planning steps, the system should look like this:



3.2.1 Overview

You will find the functions for the calculation of Pluvia systems in the **Pluvia** tab.



1 Status of the calculation
Open the **Calculation results** window

2 Call up the document settings

3 Available Pluvia systems in the model

4 Planning and calculation functions

3.2.1.1 Calculation status

Symbol	Meaning
	Calculation successful
	Calculation faulty
	Calculation is processing
	Calculation has been cancelled
	Calculation is no longer up-to-date

3.2.1.2 Planning and calculation functions

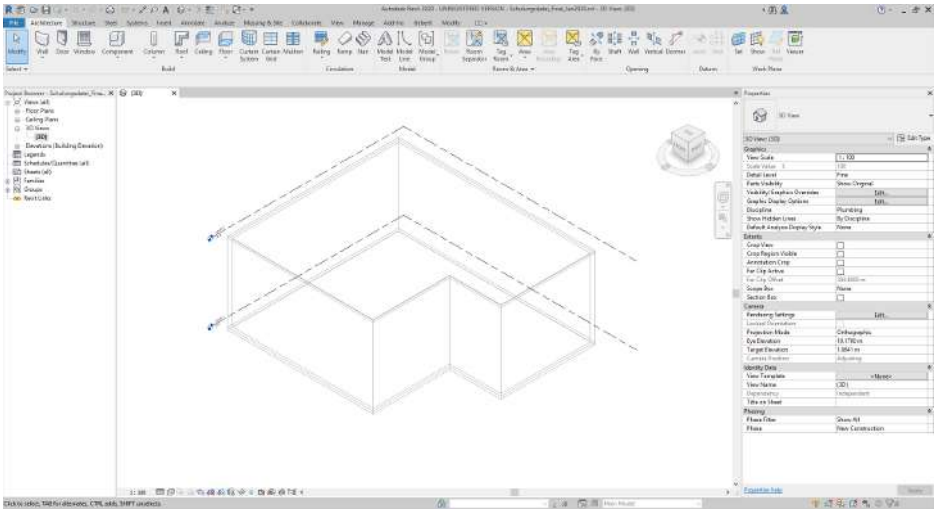
Button	Function
	Place an underground pipe connection
	Assign a roof outlet
	Assign an access pipe
	Assign an expansion socket
	Highlight the underground pipe connection in the model
	Highlight the roof outlets in the model
	Display and adjust the properties of one or more marked elements
	Update the list of calculable Pluvia systems in the model
	Calculate the system
	Export the calculation in PDF or Excel format

3.2.2 Opening projects

To create the Pluvia system for this training example, you can create the building yourself or use a prepared Autodesk® Revit® file as described below. All the necessary elements to draw the pipe system in addition to the building are included in the Autodesk® Revit® file.

Download the training file from the following address if you do not have it: https://buildv1geberit.blob.core.windows.net/e-learning/Revit/Geberit.rvt.

► Open the **Geberit.rvt** training file in Autodesk® Revit®.

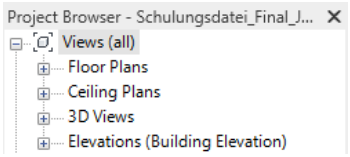


3.2.3 Inserting a level

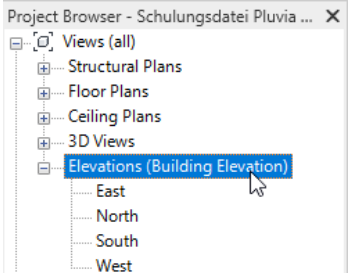
The pipe system is drawn on its own level.

3.2.3.1 Showing south view

1. Open the **Views (all)** entry in the **Project Browser** window.



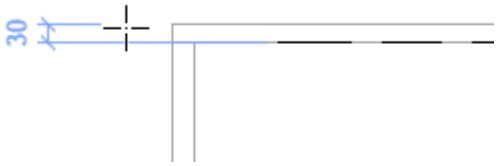
2. Open the **Elevations (Building Elevation)** entry.



3. Double-click on **South**.

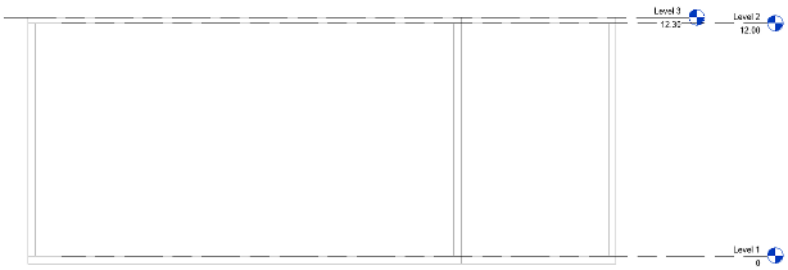
3.2.3.2 Inserting a level

1. Show the **Architecture** tab.
2. Click on **Level** in the **Datum** area.
3. Position the cursor to the left of the building at the height of the edge of the roof. Make sure that the dimensions show a distance of 0.30 m.



4. Click in the drawing area.
5. Move the cursor to the right next to the outer wall and click in the drawing area.
6. Press **ESC** twice to exit the function.

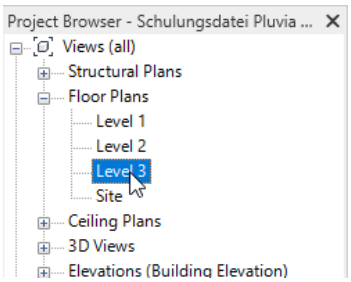
✓ **Level 3** has been inserted.



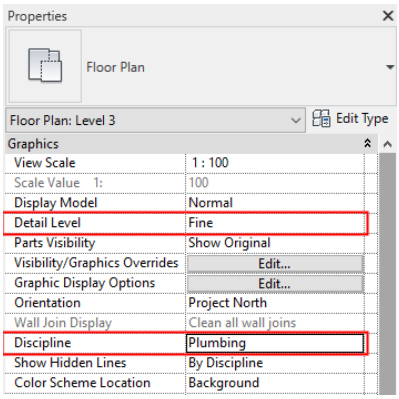
3.2.3.3 Adjusting level properties

Adjust the properties of the new level so that all elements and the building of the model are visible when drawing the pipe system.

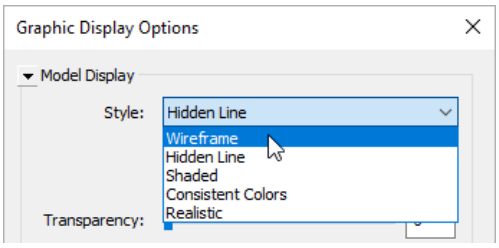
1. Double-click on **Level 3** in the **Project Browser** to show the level.



2. Select the following settings in the **Properties** window in the **Graphics** area:
   - **Detail Level**: **Fine**
   - **Discipline**: **Plumbing**

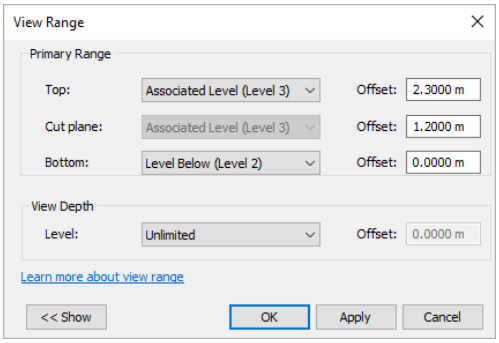


3. Click on **Edit** in the **Graphic Display Options** field.
   ✓ The **Graphic Display Options** window appears.
4. Select the **Wireframe** setting in the **Style** field and click on **OK**.

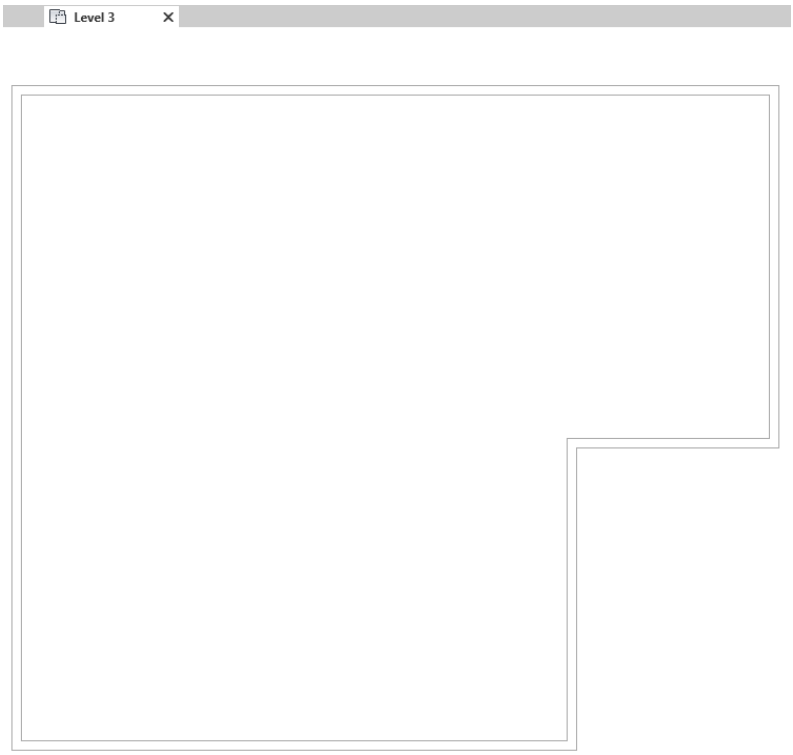


5. Click on **Edit** in the **View Range** field in the **Extents** area.
   ✓ The **View Range** window appears.

6. Select the following settings:
   - **Top**: **Associated Level (Level 3)**
   - **Bottom**: **Level Below (Level 2)**
   - **Level**: **Unlimited**

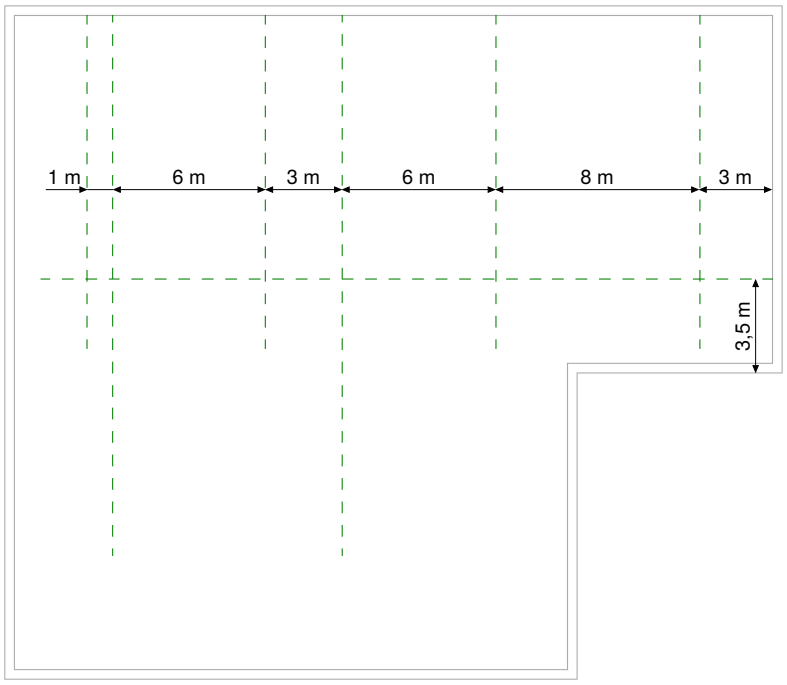


7. Click on **OK**.
8. Click on **Apply** in the **Properties** window to save the level settings.
   ✓ The building is displayed in **Level 3**.



3.2.4 Creating reference levels

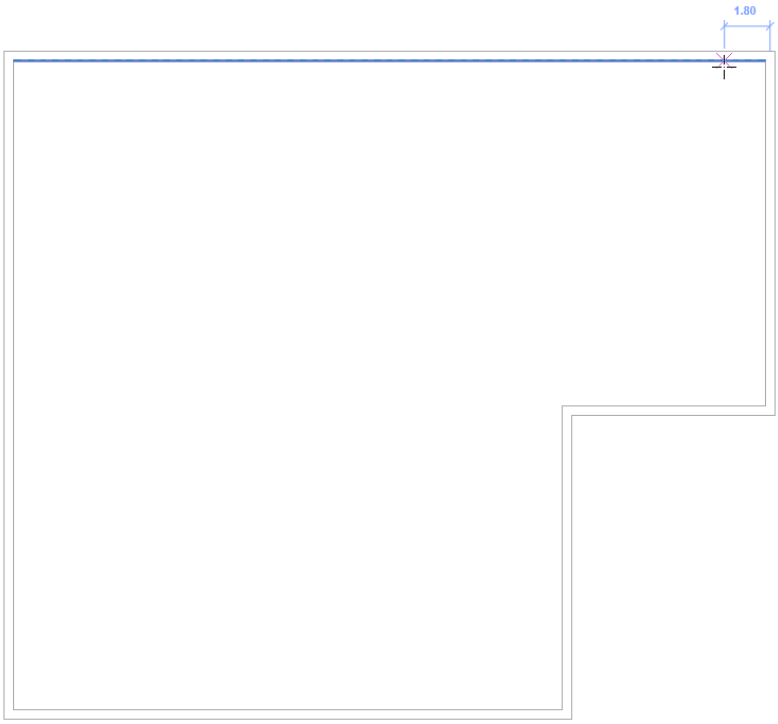
Create reference levels at defined distances as auxiliary lines to be able to draw pipes at the correct distances.



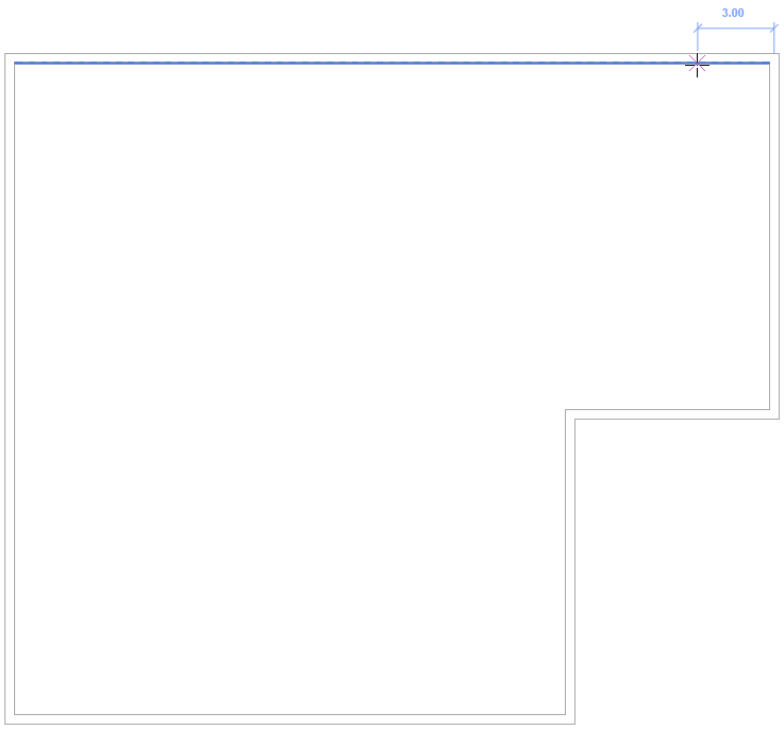
3.2.4.1 Creating vertical reference levels

1. Show the **Systems** tab.

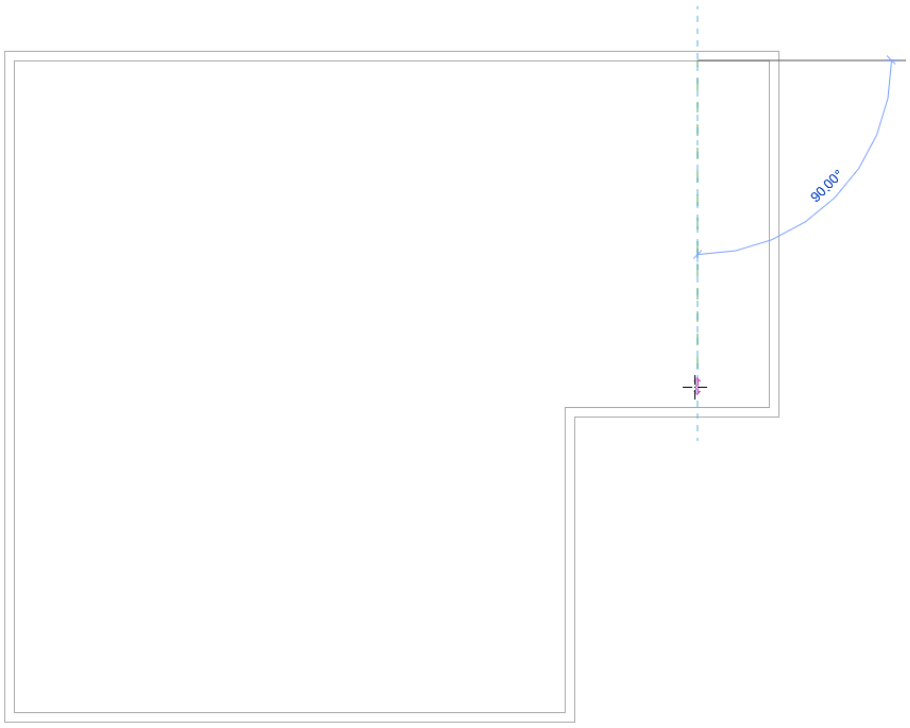
2. Click on **Ref Plane** in the **Work Plane** area.
3. Position the cursor at the upper wall.
   ✓ The dimensions show the distance to the right wall.



4. Move the cursor to the left or right until the dimensions show a distance of **3.00 m**.



5. Click in the drawing area and move the cursor down to define the length of the reference level.

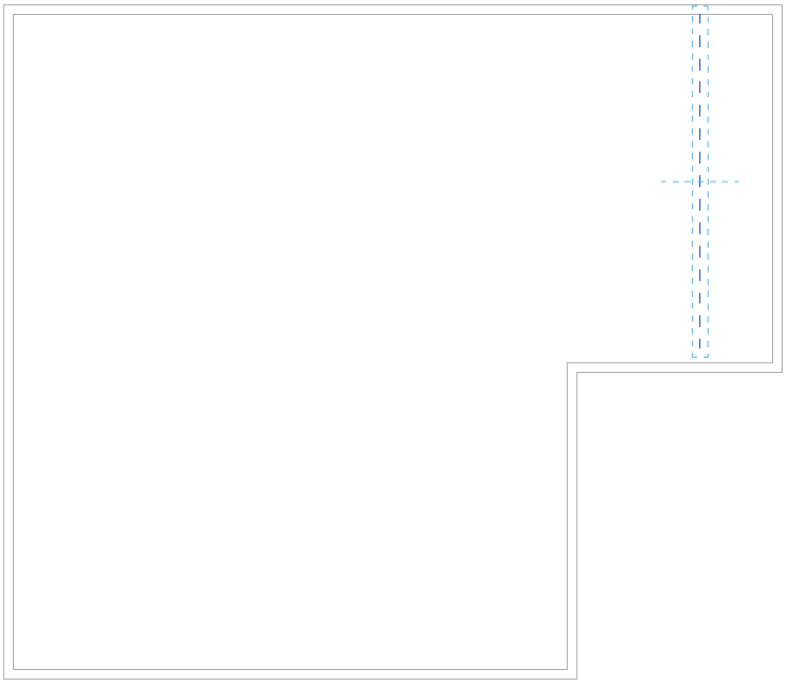


6. Click in the drawing area to create the reference level.

7. Press **ESC** twice to exit the function.

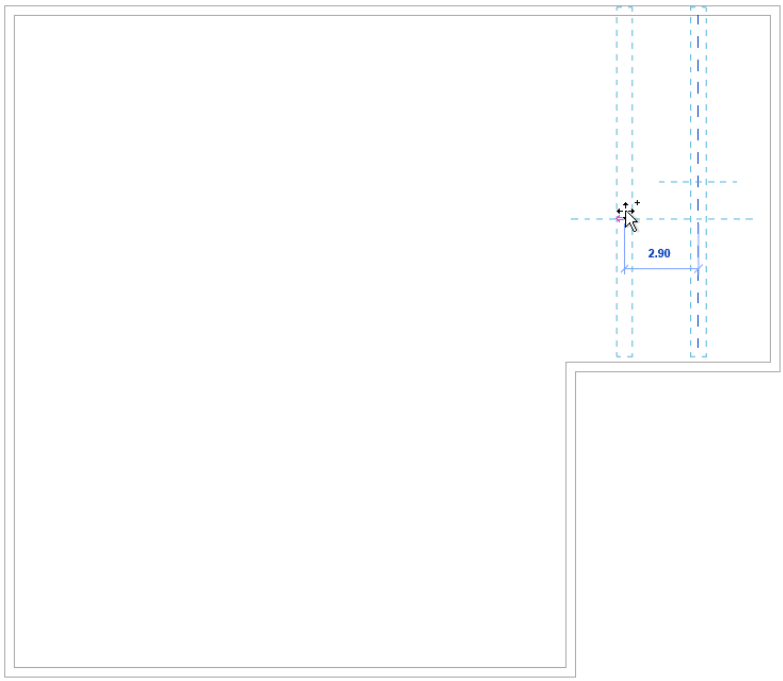
8. Mark the reference level.

9. Click on **Copy** in the **Modify** area in the **Modify | Place Reference Plane** tab.
   ✓ A copy of the reference level is inserted.

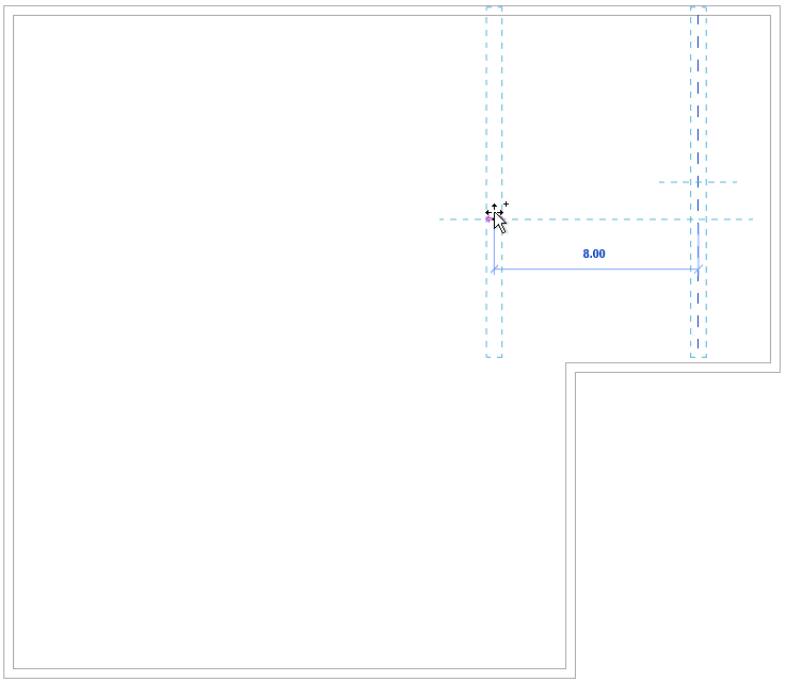


10. Click on the copied reference level.

✓ The reference level is attached to the cursor.

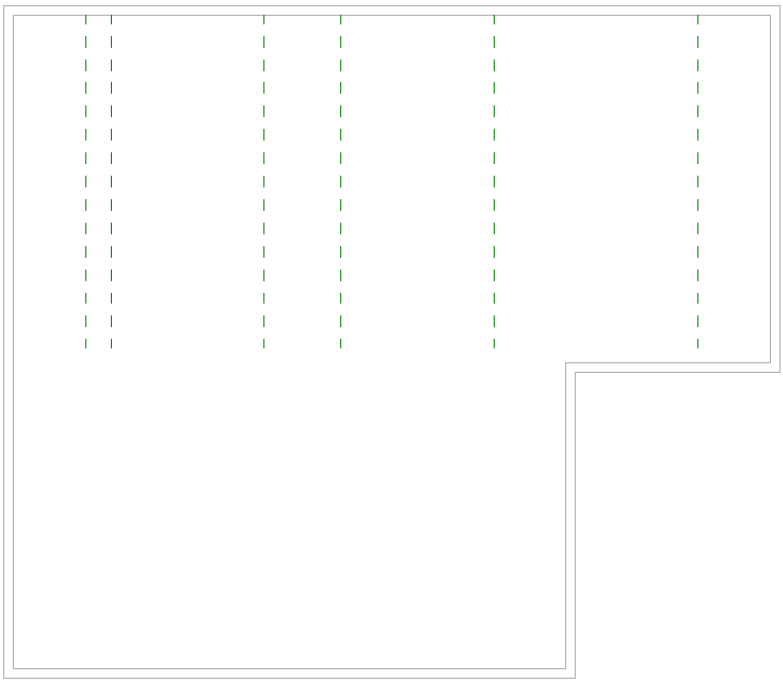


11. Move the reference level to the left until the distance between both reference levels is **8.00 m** and click in the drawing area.



Alternatively, you can move the reference level to the left, enter a distance of **8.00 m** on the keyboard and press Enter.

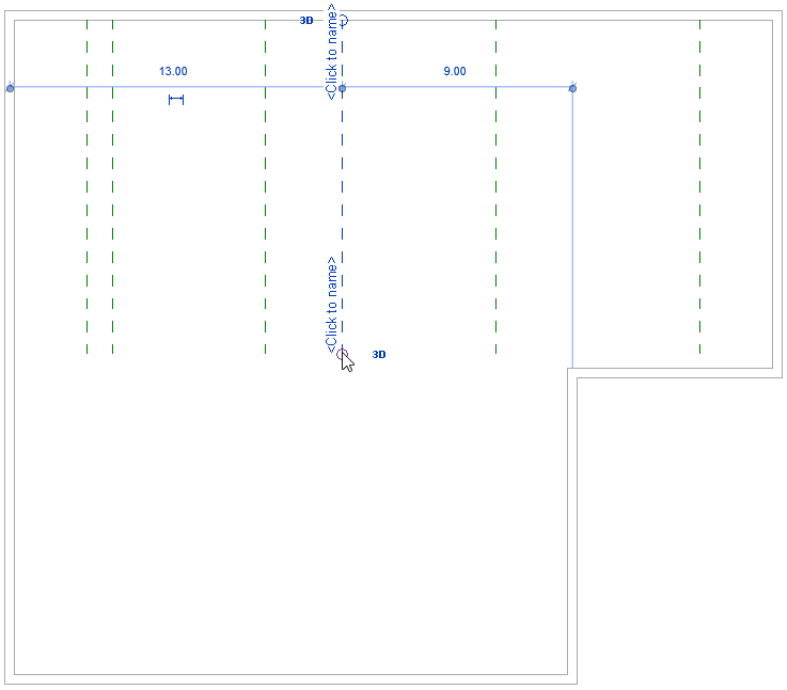
12. Create all other vertical reference levels at the corresponding distances in the same way, see "Creating reference levels", page 25.
13. Press **ESC** twice to exit the function.



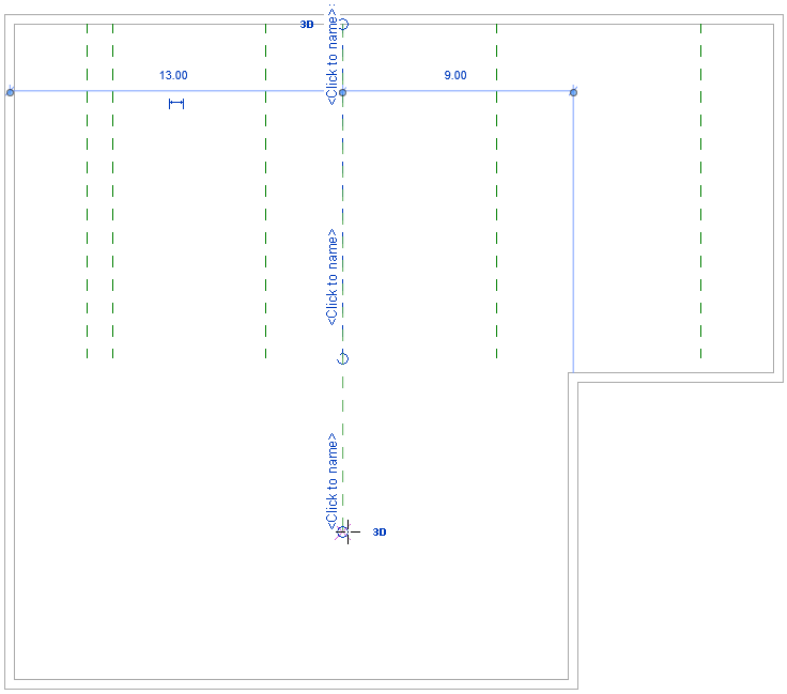
3.2.4.2 Extending reference levels

You need to extend two reference lines to be able to draw the pipes correctly at a later stage.

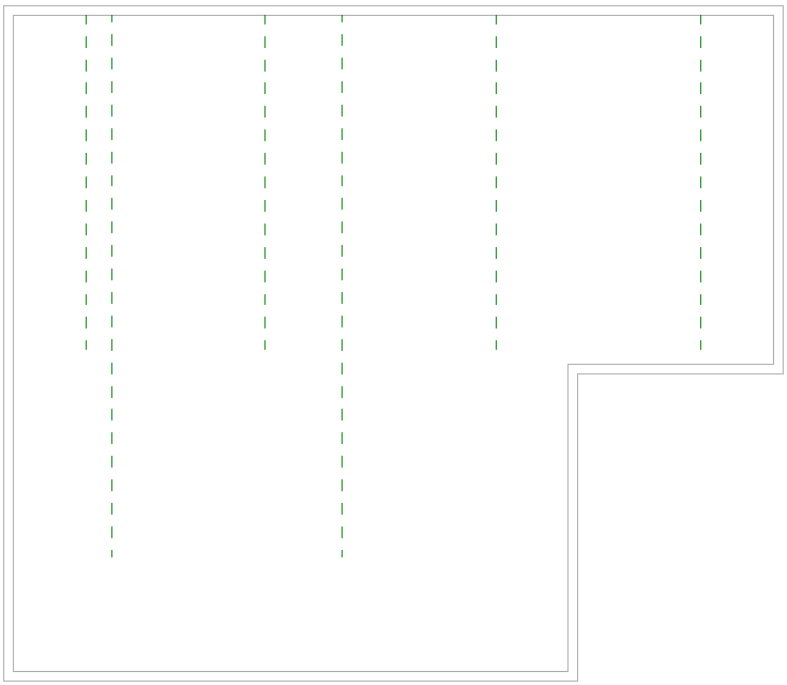
1. Highlight the reference level shown.
2. Click on the circle at the end of the reference level.



3. Press and hold the left mouse button and pull the end of the reference level downwards.

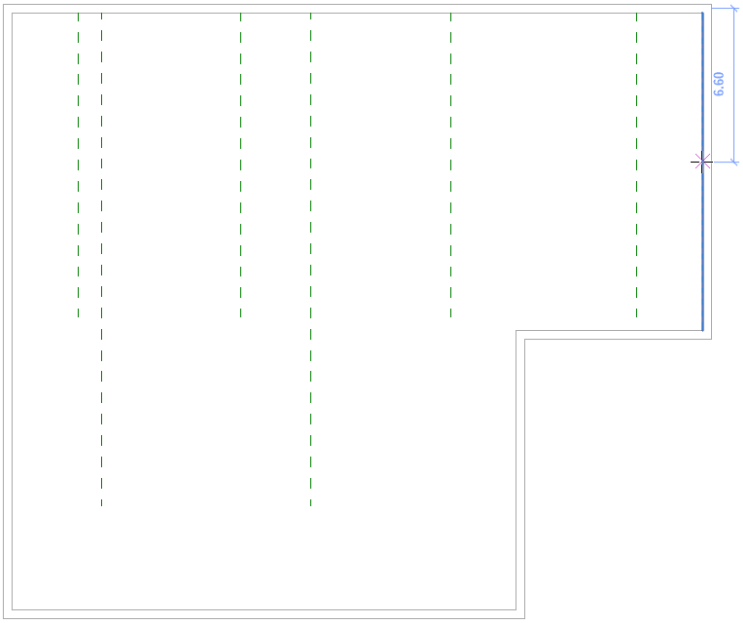


4. Release the left mouse button.
5. Also extend the second reference level from the left in this way.



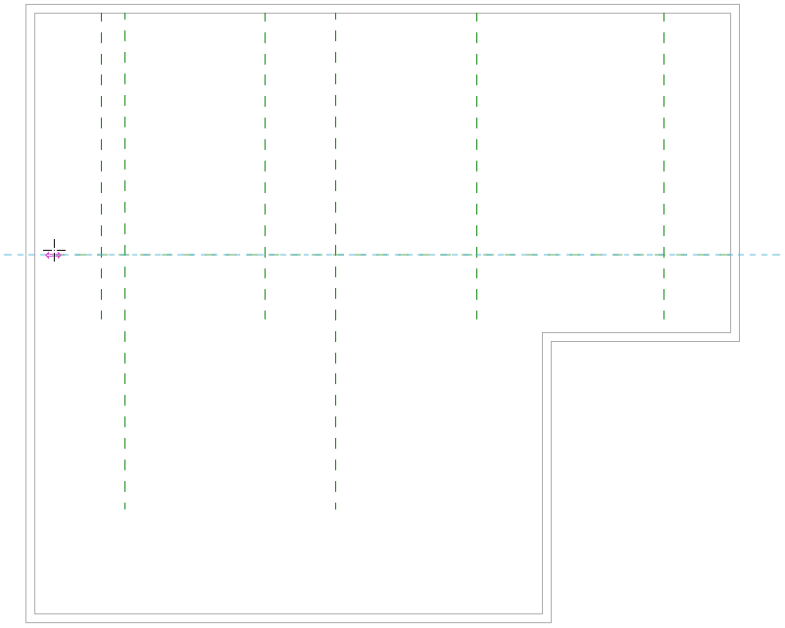
3.2.4.3 Creating a horizontal reference level

1. Click on **Ref Plane** in the **Work Plane** area in the **Systems** tab.
2. Position the cursor at the right wall.
   ✓ The dimensions show the distance to the upper or lower wall.

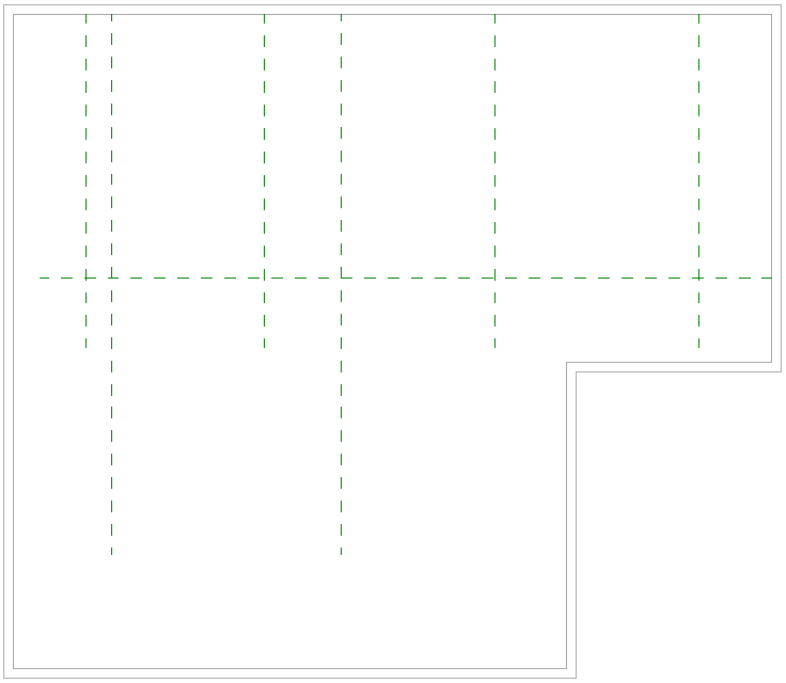


3. Move the cursor up or down until the dimensions show a distance of **3.50 m** to the lower wall.

4. Click in the drawing area and move the cursor to the left wall to define the length of the reference level.



5. Click in the drawing area to create the reference level.
6. Press **ESC** twice to exit the function.

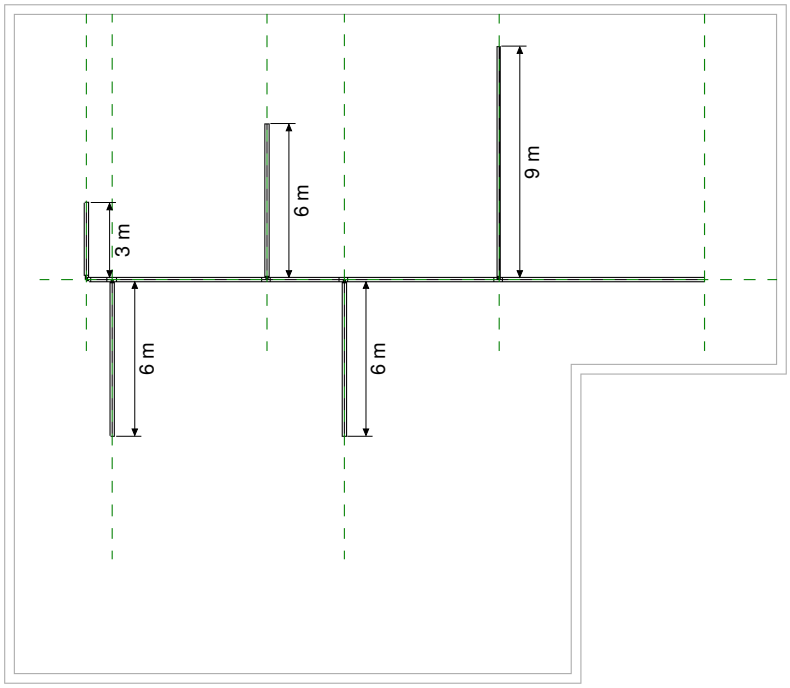


3.2.5 Drawing a pipe system

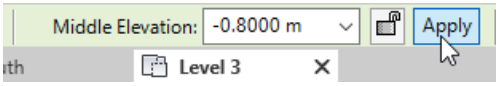
The pipe system in this training manual is drawn with Geberit pipes. The necessary families are already included in the training file.

You can also draw the pipe system with standard pipes. In the calculation, the standard pipes from the plug-in are replaced by the corresponding Geberit pipes.

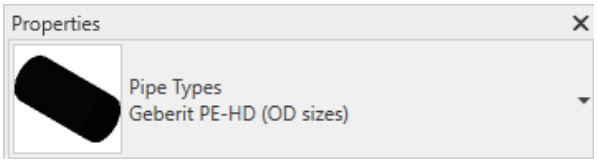
The following pipe lengths are intended for the training example:



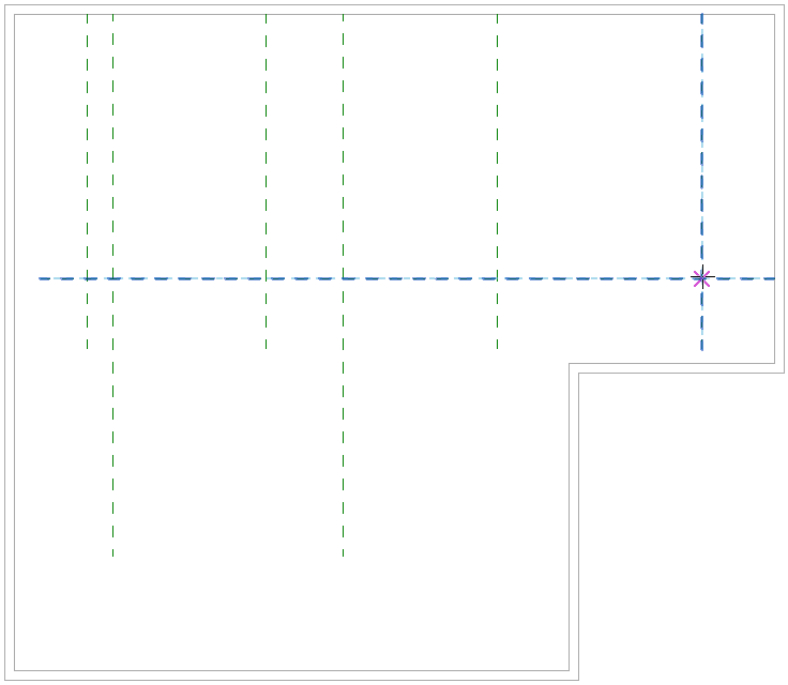
1. Click on **Pipe** in the **Plumbing & Piping** area in the **Systems** tab.
2. Enter the value **-0.8 m** in the **Middle Elevation** field in the options bar so that the pipes under the roof are drawn.
3. Click on **Apply** in the options bar.



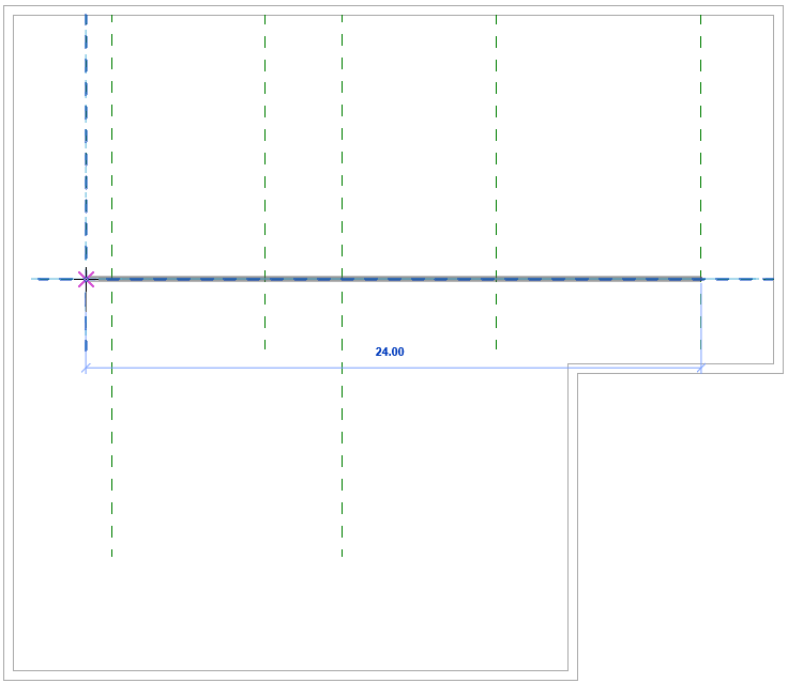
4. Select the **Geberit PE-HD** entry under **Pipe Types** in the **Properties** window.



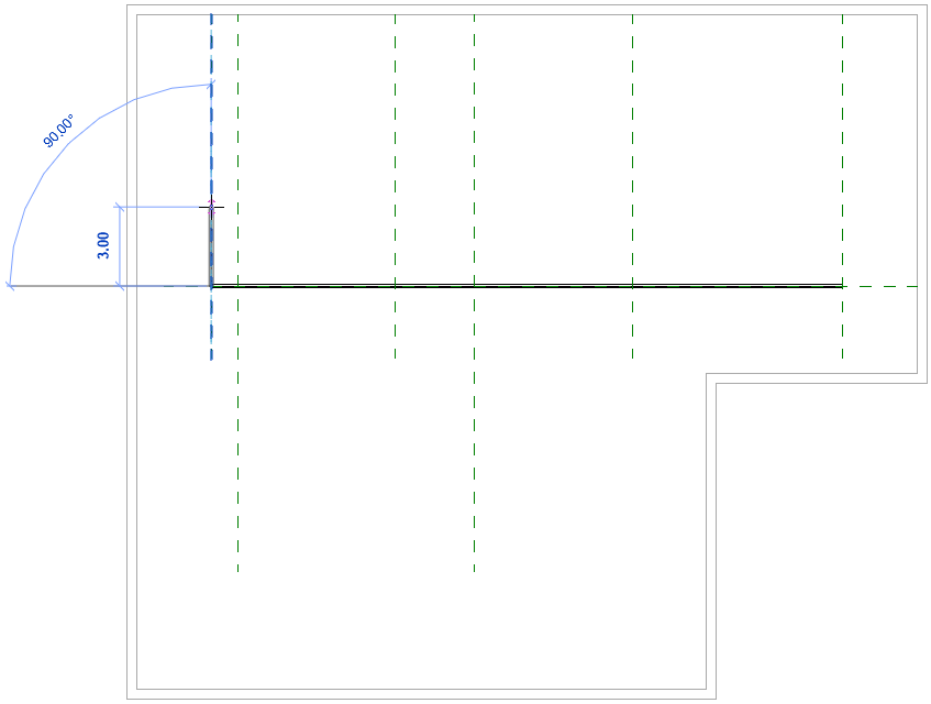
5. Click on the point of intersection of the right and horizontal reference level in the drawing area.



6. Pull the pipe as far as the outer left reference level.
7. Click on the point of intersection of the left and horizontal reference level.

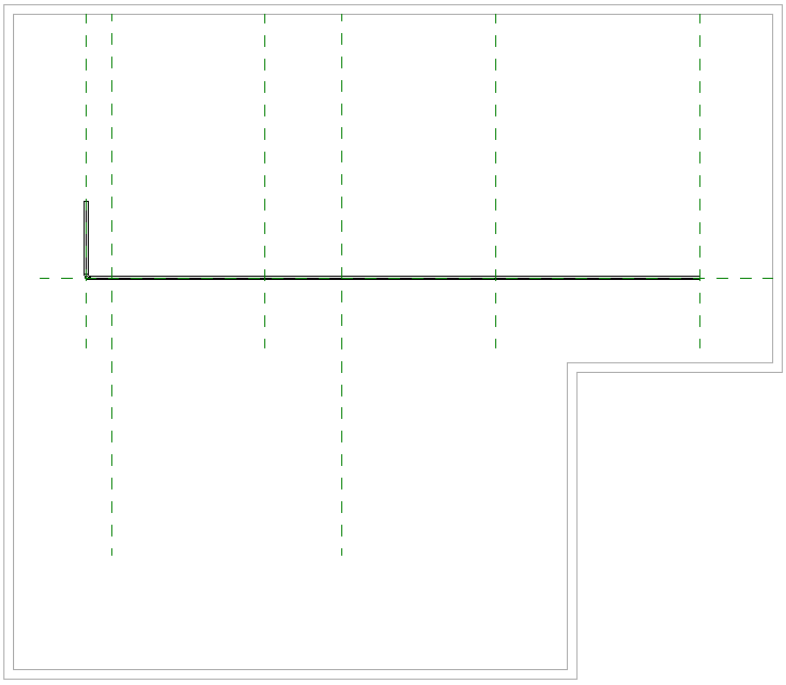


8. Draw the pipe **3.00 m** upwards.

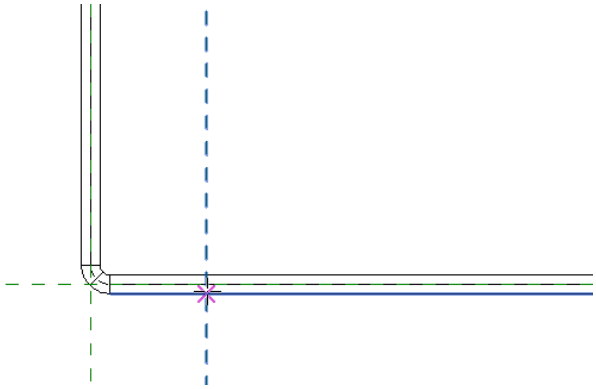


9. Click in the drawing area.

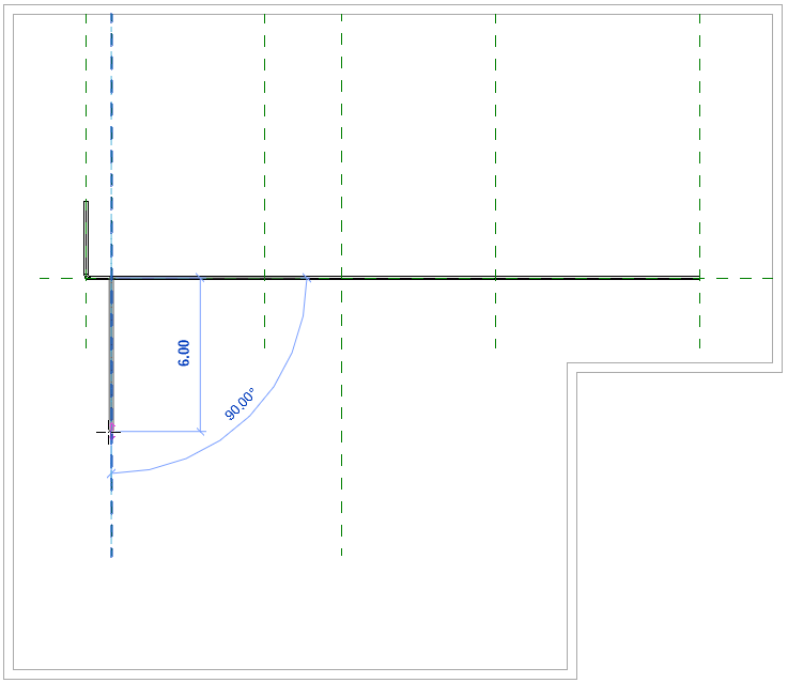
10. Press **ESC** to exit the pipe drawing.



11. Click on the point of intersection of the second reference level from the left and the horizontal reference level on the outer edge of the pipe.

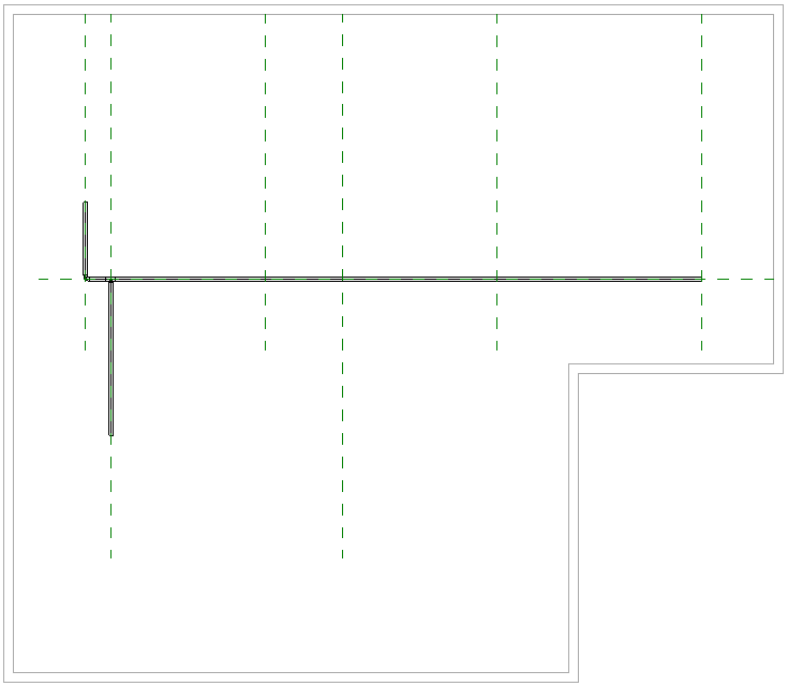


12. Move the cursor down until the pipe is **6.00 m** in length.



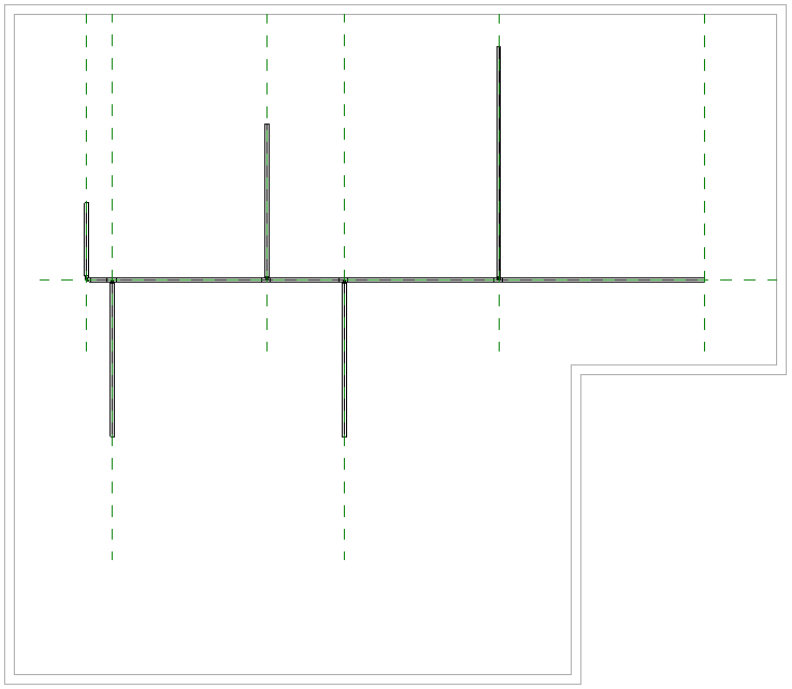
13. Click in the drawing area.

14. Press **ESC** to exit the pipe drawing.



15. Draw all other pipes in the intended lengths in this way, see "Drawing a pipe system", page 33.

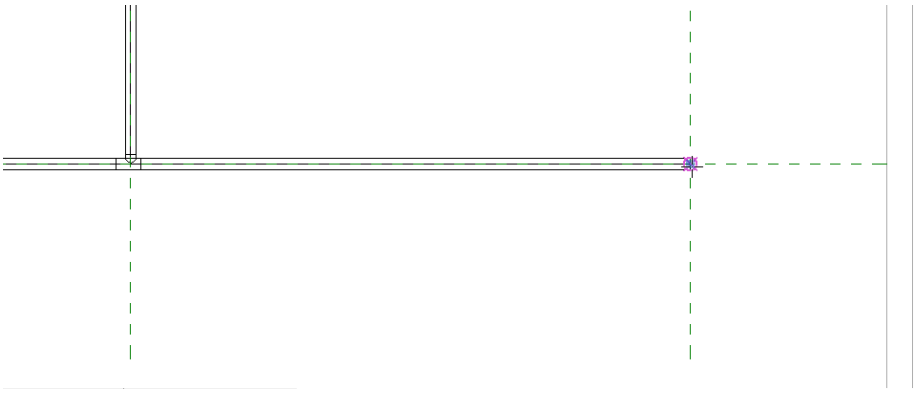
16. Press **ESC** twice to exit the drawing function.



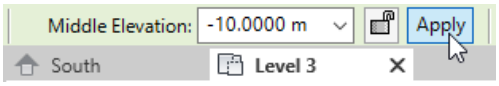
3.2.5.1 Drawing a stack

1. Click on **Pipe** in the **Plumbing & Piping** area in the **Systems** tab.

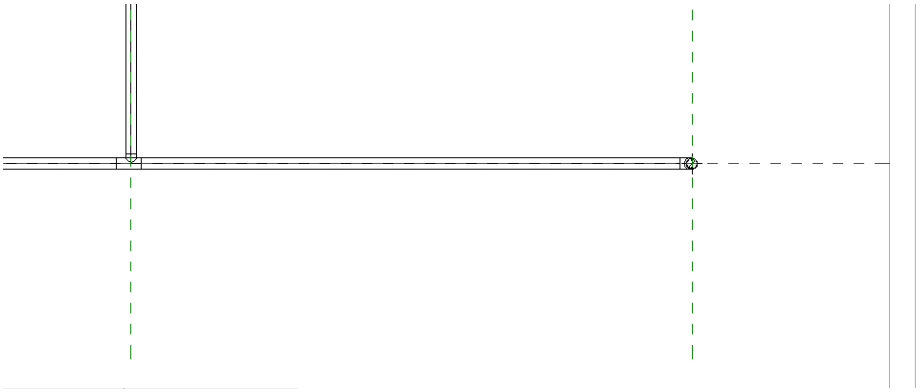
2. Activate the **Inherit Elevation** option in the **Placement Tools** area in the **Modify** | **Place Pipe** tab.
3. Click on the open end of the continuous pipe.



4. Enter the value **-10.0 m** in the options bar in the **Middle Elevation** field and confirm with **Enter** or press the **Tab key** and click on **Apply**.



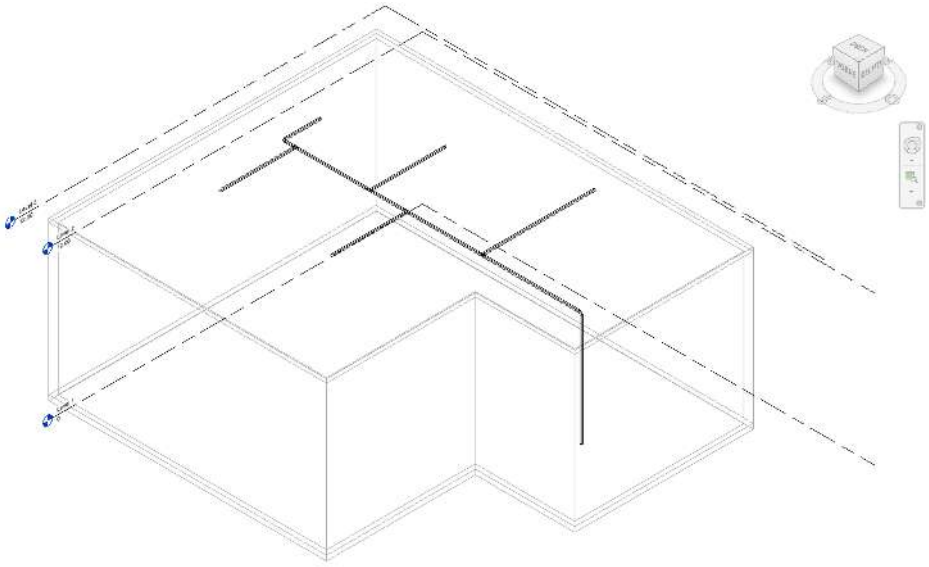
5. Move the cursor back into the drawing area.
   ✓ The stack is inserted.



3.2.5.2 Checking a pipe system in 3D view

You can call up the 3D view to check whether the pipe system has been drawn correctly.

► Show the **{3D}** view.
✓ The 3D view of the model is shown.

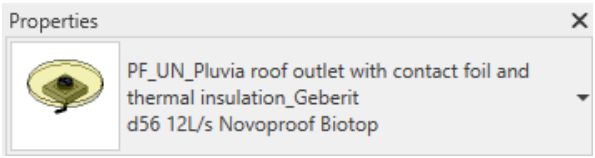


3.2.5.3 Inserting roof outlets

You can insert roof outlets once you have drawn the pipe system.

1. Show **Level 3**.

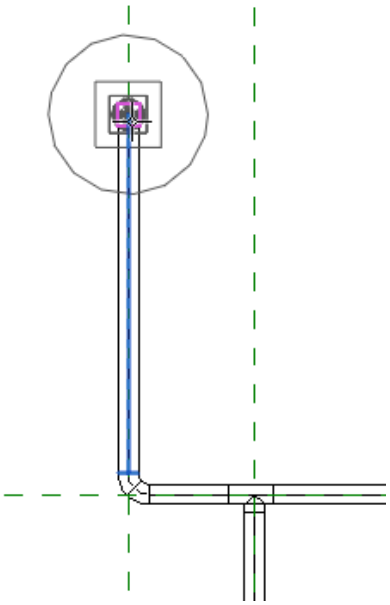
2. Click on **Plumbing Fixture** in the **Plumbing & Piping** area in the **Systems** tab.
3. Select the **PF_UN_Pluvia roof outlet with contact foil and thermal insulation_Geberit** entry in the **Properties** window.



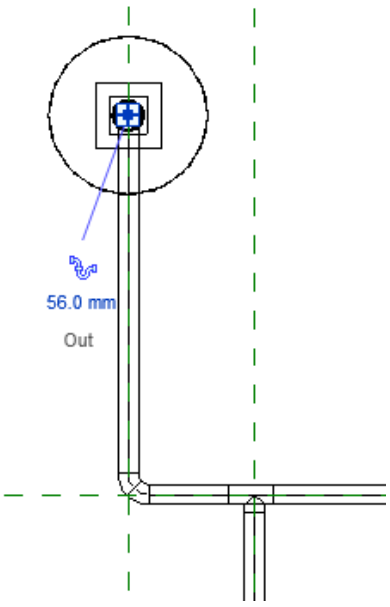
You can also use another inlet instead of the roof outlet described. The correct properties are only defined later by the plug-in.

4. Move the cursor into the drawing area.
   ✓ The roof outlet is suspended from the cursor.

5. Place the roof outlet centrally at the open end of a pipe. Make sure that the middle line of the pipe is highlighted in blue.

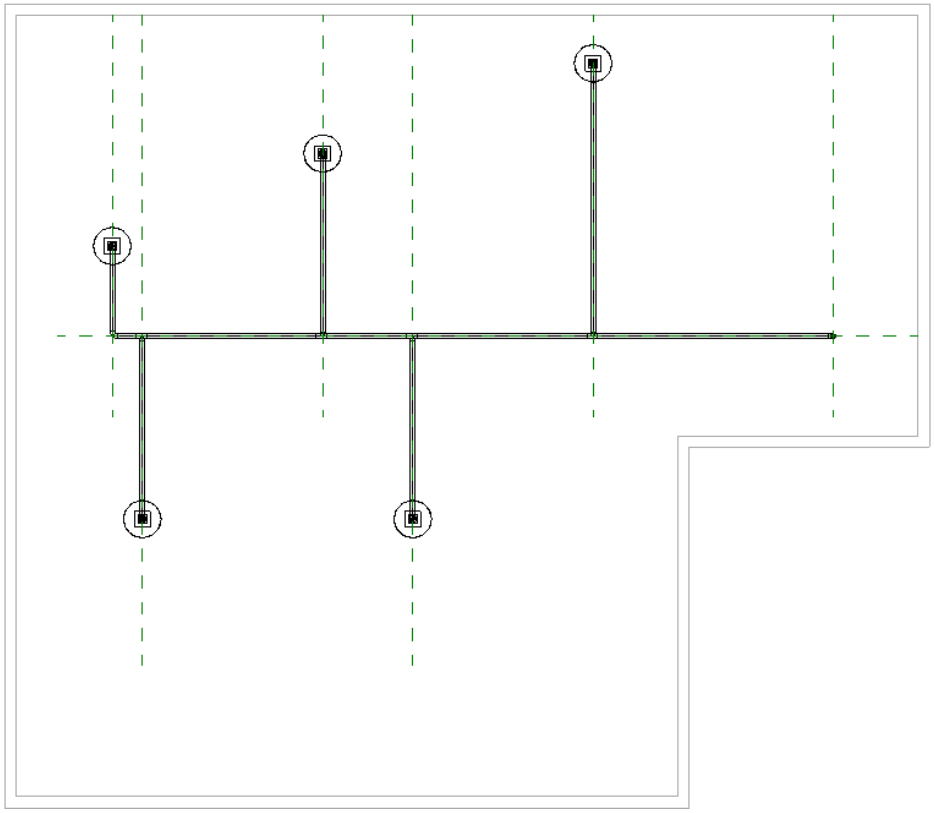


6. Click in the drawing area to insert the roof outlet.



7. Insert all other roof outlets in the same way.

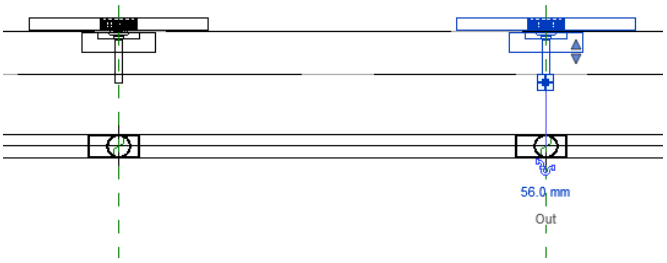
8. Press **ESC** twice to exit the drawing function.



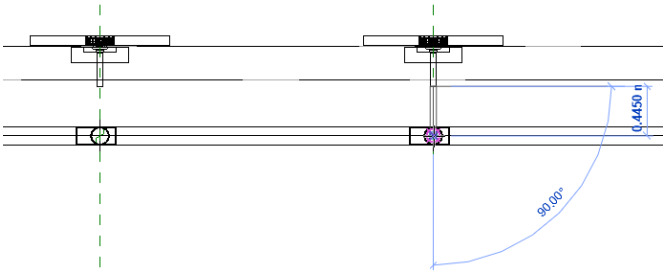
3.2.5.4 Connecting roof outlets to pipe system

Connect the roof outlets to the pipe system in the following step.

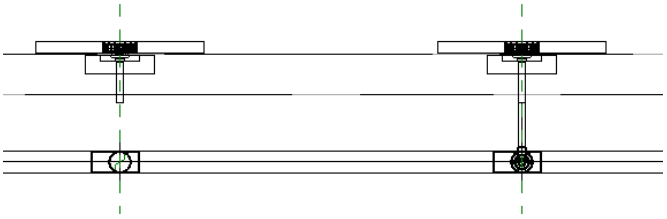
1. Show the **South** view.
2. Mark a roof outlet in the model.



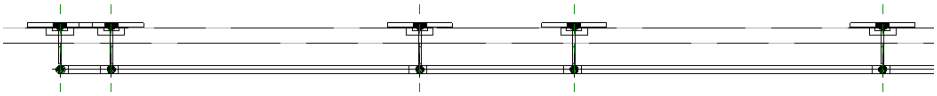
3. Click on the trap symbol on the marked roof outlet.
   ✓ A connection pipe section is attached to the cursor.
4. Move the cursor down to the centre of the fitting.



5. Click on the fitting.
   ✓ The roof outlet has been connected to the fitting.

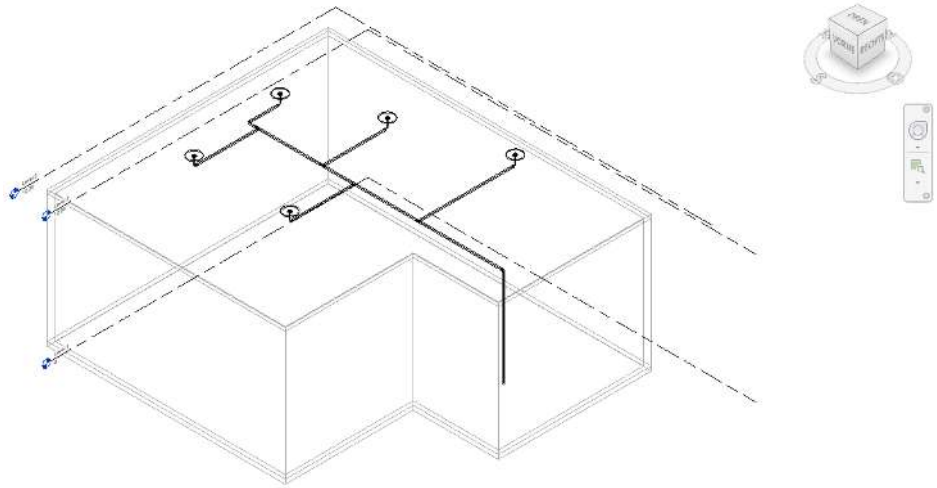


6. Press **ESC** to exit the drawing function.
7. Connect all other roof outlets to the pipe system in this way.



3.2.5.5 Checking a pipe system in 3D view

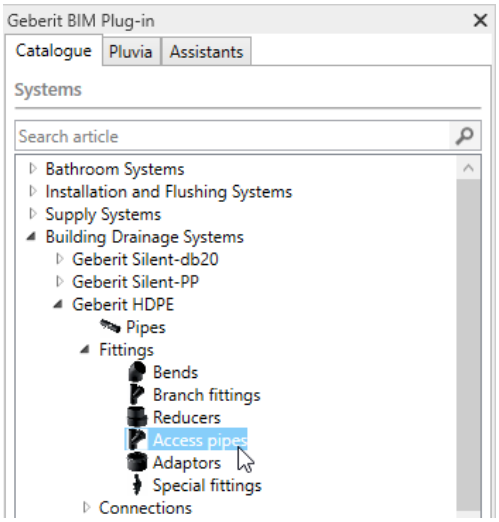
► Show the 3D view again to check whether the roof outlets have been inserted correctly.



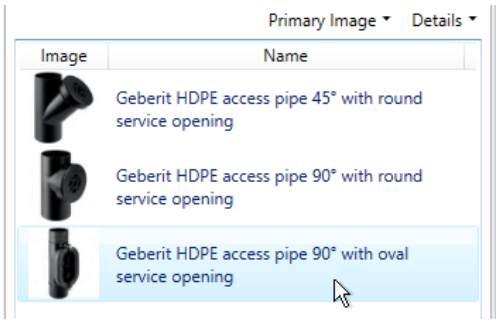
3.2.5.6 Insert access pipe

In the following step, insert the access pipe with the **Catalogue** module directly from the Geberit online catalogue.

1. Show the **Catalogue** tab.
2. Open the **Building Drainage Systems** product category in the tree structure and navigate to the **Geberit HDPE** > **Fittings** > **Access pipes** product group.

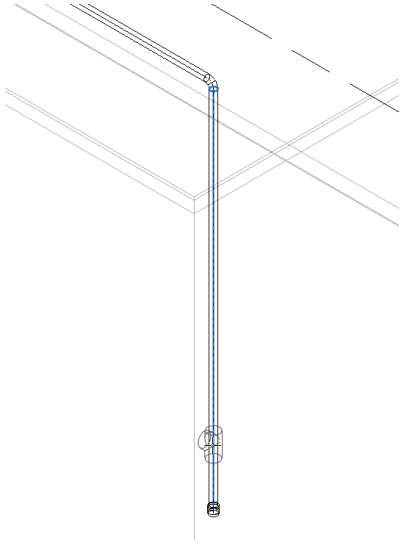


3. The available products in the **Products of category** area appear once you have marked the product group.



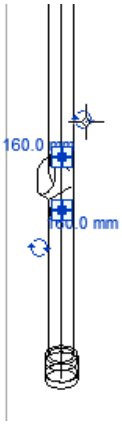
4. Double-click on the **Geberit HDPE access pipe 90° with oval service opening** in the **Products of category** area.
   ✓ The BIM object of the access pipe is downloaded from the Geberit PIM system.
5. Move the cursor into the drawing area.
   ✓ The access pipe is suspended from the cursor.

6. Position the cursor above the end in the stack. Make sure that the middle line of the pipe is highlighted in blue.

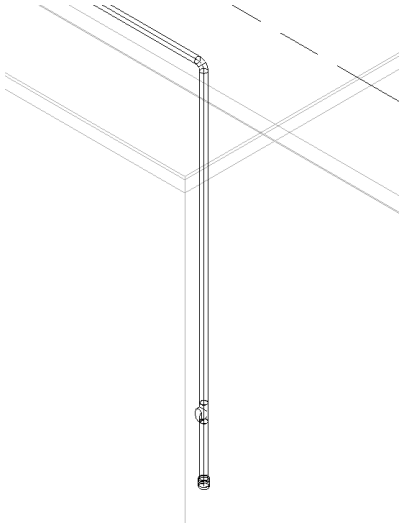


7. Click in the drawing area.
   ✓ The access pipe has been inserted into the stack.

8. If necessary, click on the arrows above or below the access pipe to adjust the alignment of the access pipe.



9. Press **ESC** to exit the drawing function.



You can insert expansion sockets in the same way. The expansion sockets can be found in the catalogue under **Building Drainage Systems** > **Geberit HDPE** > **Connections** > **Push-in connections**.

3.2.6 Calculating a pipe system

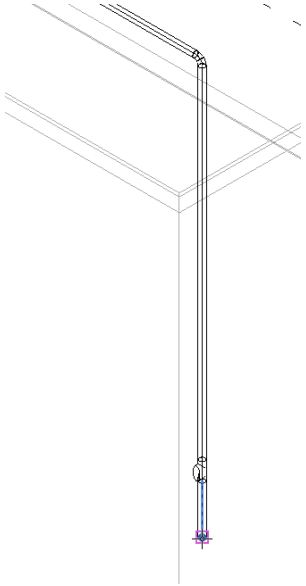
Once you have completed the pipe system, you can perform the calculation with the Geberit BIM Plug-in. To do this, define the underground pipe connection, the roof outlets and the access pipe.

3.2.6.1 Positioning an underground pipe connection

You will establish the connection to the drainage system with the positioning of the underground pipe connection.

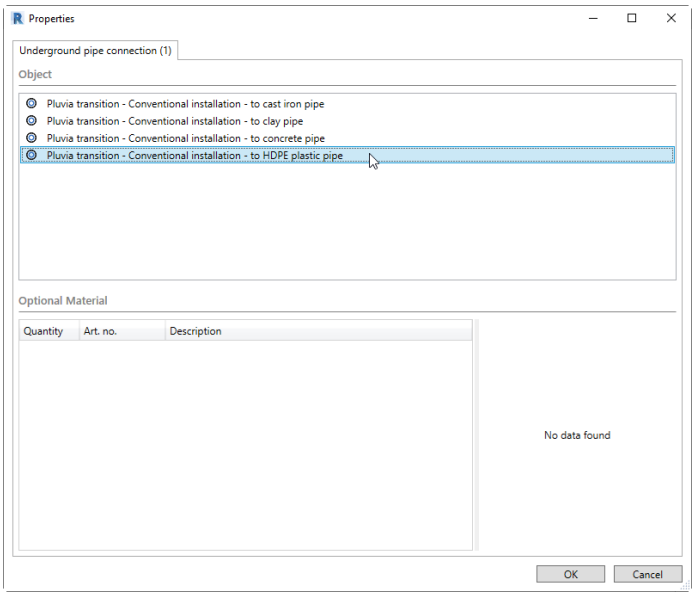
1. Show the **Pluvia** tab in the **Geberit BIM Plug-in** window.

2. Click on **Place underground pipe connection**.
3. Click on the open end of the stack in the model.



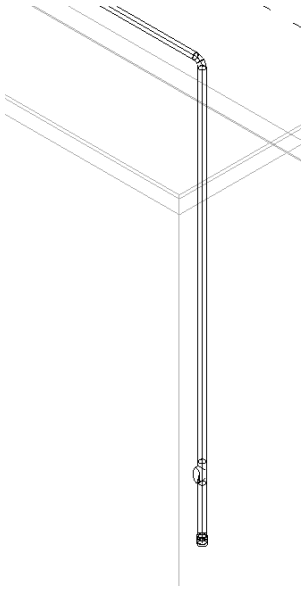
✓ The **Properties** window appears.

4. Select the following underground pipe connection.



The available underground pipe connections depend on the market.

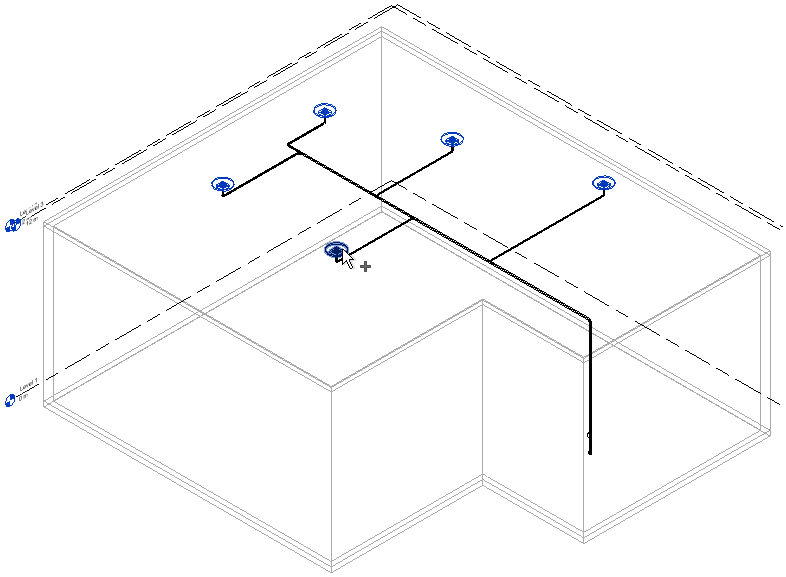
5. Click on **OK** to position the underground pipe connection.



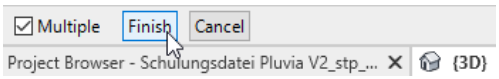
3.2.6.2 Defining roof outlets

In the next step, define the roof outlets and specify their properties.

1. Click on **Define roof outlet**.
2. Mark all roof outlets in the model.

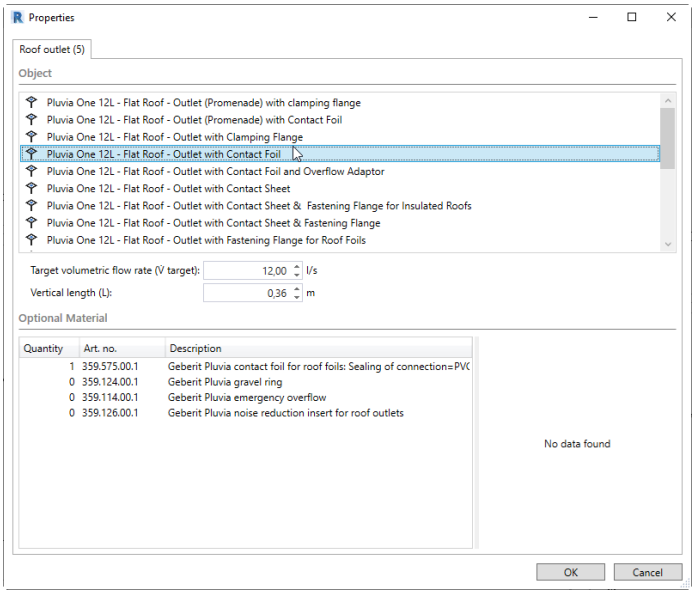


3. Click on **Finish** in the Autodesk® Revit® menu bar.



✓ The **Properties** window appears.

4. Select the following roof outlet.



The available roof outlets depend on the market.

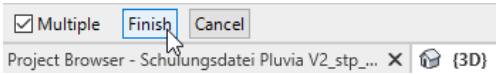
5. Leave the settings for the **Vertical length (L)** and the **Target volumetric flow rate (V̇ target)** on the predetermined values.
6. Click on **OK** to define the roof outlets.

In some markets, you can use the **Geberit Pluvia product finder** link to specifically search for a suitable roof outlet for your requirements.

3.2.6.3 Defining access pipes

1. Click on **Define access pipe**.
2. Click on the access pipe.

3. Click on **Finish** in the Autodesk® Revit® menu bar.



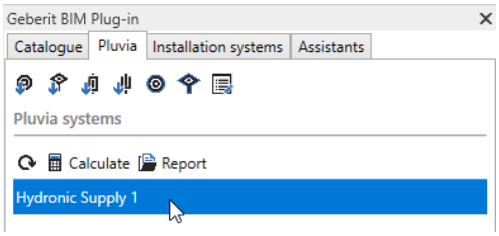
✓ The **Properties** window appears.

4. Click on **OK** to define the access pipe.

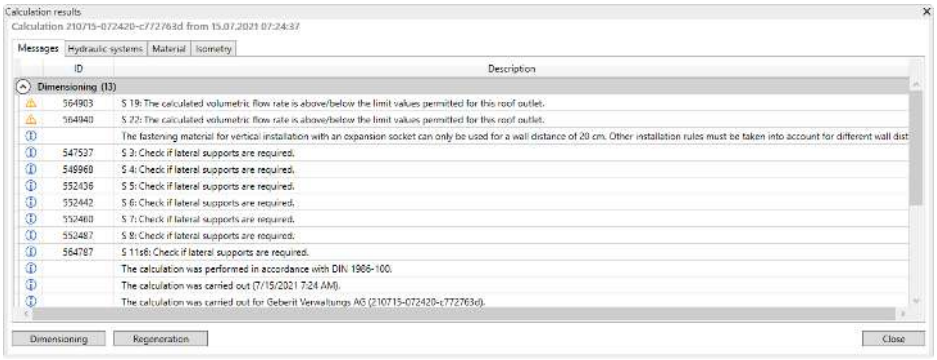
3.2.6.4 Calculation

You can calculate the Pluvia system once you have defined all the required elements in the model.

1. Click in the **Geberit BIM Plug-in Refresh the list of calculable systems** window to display the Pluvia system.
2. Mark the Pluvia system.



3. Click on **Calculate**.
   - ✓ The Pluvia system is calculated.
   - ✓ If the calculation has been successful, the **Finished** symbol appears next to the Pluvia system in the **Pluvia** tab.
   - ✓ If the calculation is incorrect, the **Failed** symbol appears next to the Pluvia system in the **Pluvia** tab.
   - ✓ The **Calculation results** window appears once the calculation is complete. Warnings relating to the volumetric flow rates are displayed in the **Dimensioning** area in some markets. These warnings are cancelled in the following section.



The **Roof outlet offset** warning or information in the **Regeneration** area indicates that the respective roof outlet has been moved by the specified value to provide a correct calculation.

3.2.6.5 Adjusting properties

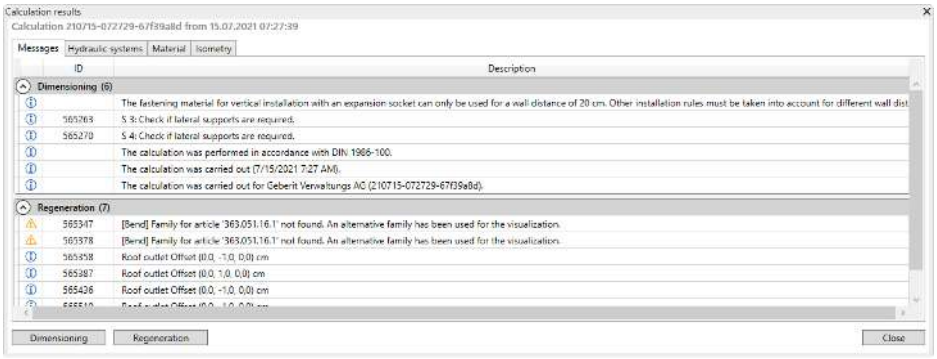
If the calculation warnings relating to the volumetric flow rates are displayed, you can cancel them as follows by adjusting the roof outlets.

1. Close the **Calculation results** window.

2. Click on **Highlight the roof outlets in the model**.
3. Highlight any element in the model.
   ✓ The roof outlets are displayed and marked in the model.

4. Click on **Properties**.
   ✓ The **Properties** window appears.
5. Enter the value **5.0** in the **Target volumetric flow rate (V̇ target)** field.
6. Click on **OK** to save the settings.

7. Click on **Calculate** in the **Geberit BIM Plug-in** window.
   ✓ The Pluvia system is calculated.
   ✓ The **Dimensioning** area no longer displays any warnings.

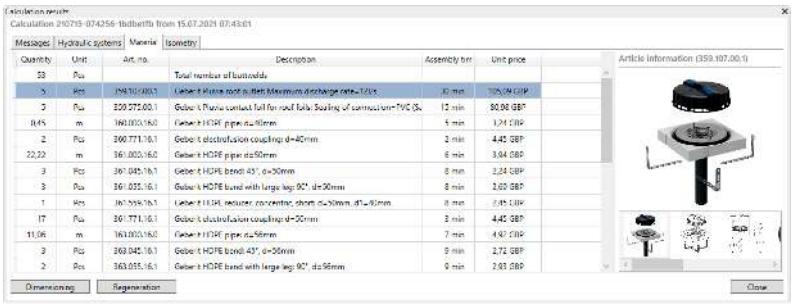


- You can quickly recalculate the hydraulics of the pipe system by clicking on the **Dimensioning** button.
- The hydraulics are also recalculated by clicking on the **Regeneration** button. In addition, all the hydraulic elements are regenerated. This may take considerably longer with an extensive hydraulic system.

3.2.7 Displaying a material list

After a successful calculation, you can see in the material list which materials are required to realise the Pluvia system.

► Show the **Material** tab.



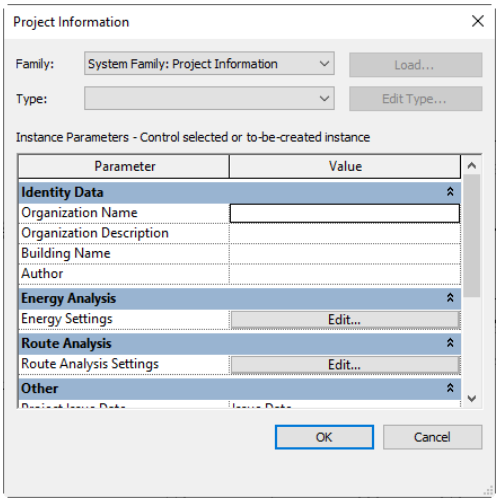
Once you highlight an article in the material list, you can call up a variety of additional information in the **Article information** area.

3.2.8 Exporting calculation results

At the end, you can export the calculation result as a PDF or Excel file. First adapt the data for the export cover sheet.

3.2.8.1 Adapting the cover sheet details

1. Show the **Manage** tab.
2. Click on **Project Information** in the **Settings** area.
   ✓ The **Project Information** window appears.



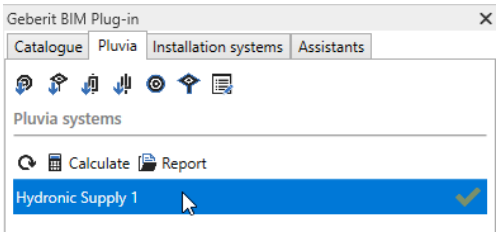
3. Enter the details for the cover sheet into the corresponding fields.

Details on the cover sheet	Field in the **Project Information** window
Project data	
Project number	**Other** > **Project Number**
Project name	**Other** > **Project Name**
Project description	**Identity Data** > **Organization Description**
Address	**Other** > **Project Address**
Status	**Other** > **Project Status**
Release date	**Other** > **Project Issue Date**
Plumber/sanitary engineer	
Company	**Other** > **Client Name**
Responsible person	**Identity Data** > **Author**

4. Click on **OK** to save the settings.

3.2.8.2 Exporting calculation results

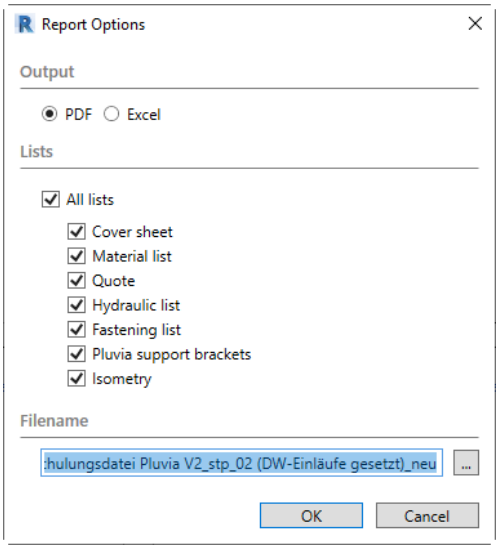
1. Mark the Pluvia system in the **Geberit BIM Plug-in** window.



If your model contains several Pluvia systems, you can adjust the order of the Pluvia systems with drag and drop in the **Pluvia** tab. This means that the Pluvia systems are calculated in the appropriate order and issued in a report.

To export the calculation result for several Pluvia systems, you can mark the Pluvia systems in the **Pluvia** tab using the **CTRL** button and click on **Report**.

2. Click on **Report**.
   ✓ The **Report Options** window appears.



3. Select whether you wish to export the report as a PDF or Excel file in the **Output** area.
4. Select the scope of the report in the **Lists** area.

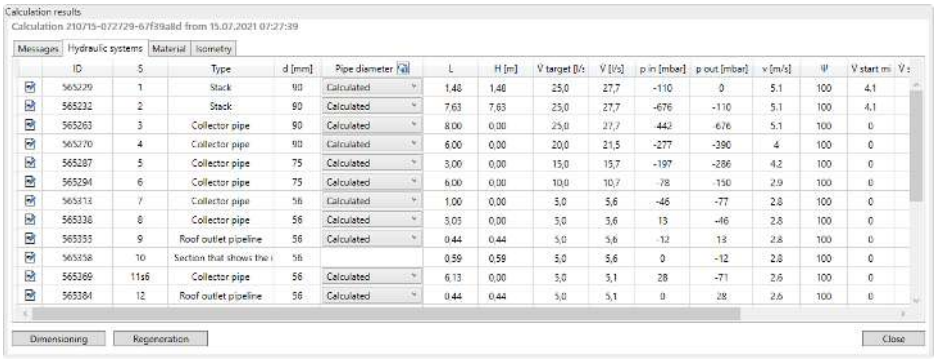
5. In the **Filename** area, click on the button with the three dots and define the storage location and the file name.
6. Click on **OK** to save the report.
   ✓ After the report is created and saved, the report opens automatically.

3.2.9 Fault clearance

If errors occur during the calculation of a pipe system, you can identify and clear these in the hydraulic list. For example, you can adjust the pipe diameter or the properties of individual elements.

You can call up the hydraulic list as follows if necessary:

1. Click on the **Finished** or **Failed** symbol next to the desired Pluvia system in the **Pluvia** tab.
   ✓ The **Calculation results** window appears.
2. Show the **Hydraulic systems** tab.

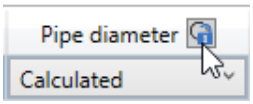


- As soon as you mark an element in the hydraulic list, it is highlighted in the model.
- As soon as you mark an element in the model, its entry is highlighted in the hydraulic list.

3.2.9.1 Adjusting pipe diameters

We recommend fixing all pipe diameters before you manually adjust the diameter of a pipe. This ensures that all other pipe diameters are adopted without changes during the recalculation.

1. Click on **Fix** / **Release Diameters** in the header of the hydraulic list.



2. Select the required pipe diameter or the **Calculated** setting in the line of the required pipe in the selection field in the **Pipe diameter** column.
3. Click on **Dimensioning** to recalculate the system.

3.2.9.2 Adjusting properties

1. Click on **Properties** in the hydraulic list in the line of the required pipe.
   ✓ The **Properties** window appears.
2. Adjust the required properties.
3. Click on **OK** to save the settings.
4. Click on **Dimensioning** to recalculate the system.

3.3 Installation systems training example

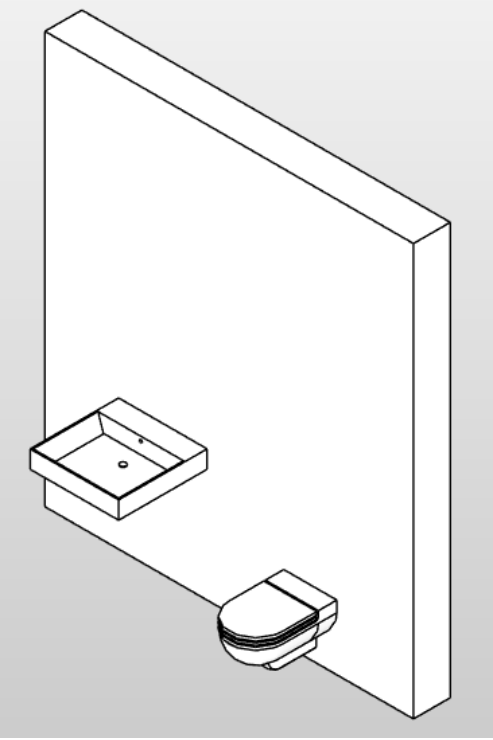
Create a simple, freestanding installation wall in the training example for the **Installation systems** module. Add two sanitary appliances, a WC and a washbasin to this installation wall.

Define the corresponding objects using the functions of the plug-in to calculate the installation wall and the sanitary appliances using the Geberit BIM Plug-in. Finally calculate the installation wall.

This chapter covers the following topics:

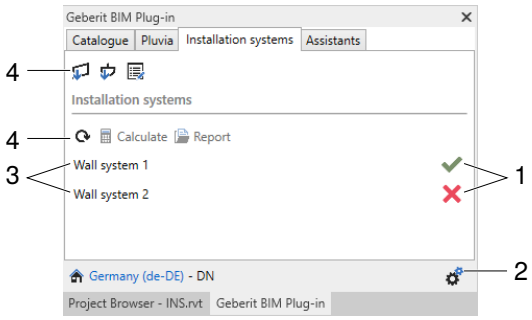
- Drawing walls
- Inserting sanitary appliances
- Defining sanitary appliances
- Calculating installation walls
- Exporting calculation results
- Displaying material lists, cut lists and dimensional drawings

Once you have completed all the planning steps, the installation wall should look like this:



3.3.1 Overview

You will find the functions for the calculation of installation systems in the **Installation systems** tab.



1 Status of the calculation
Open the **Calculation results** window

2 Call up the document settings

3 Available installation systems in the model

4 Planning and calculation functions

3.3.1.1 Calculation status

Symbol	Meaning
	Calculation successful
	Calculation faulty
	Calculation is processing
	Calculation has been cancelled

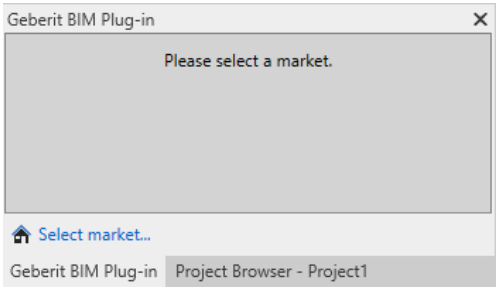
3.3.1.2 Planning and calculation functions

Button	Function
	Defining a wall
	Define the sanitary appliance
	Display and adjust the properties of one or more marked elements
	Update the list of calculable installation walls in the model
	Calculate the system
	Export the calculation in PDF or Excel format

3.3.2 Creating a new project

First create a new project in which you will work on the training example.

1. Create a new project in Revit®.
   ✓ A message to select the market appears in the **Geberit BIM Plug-in** window.

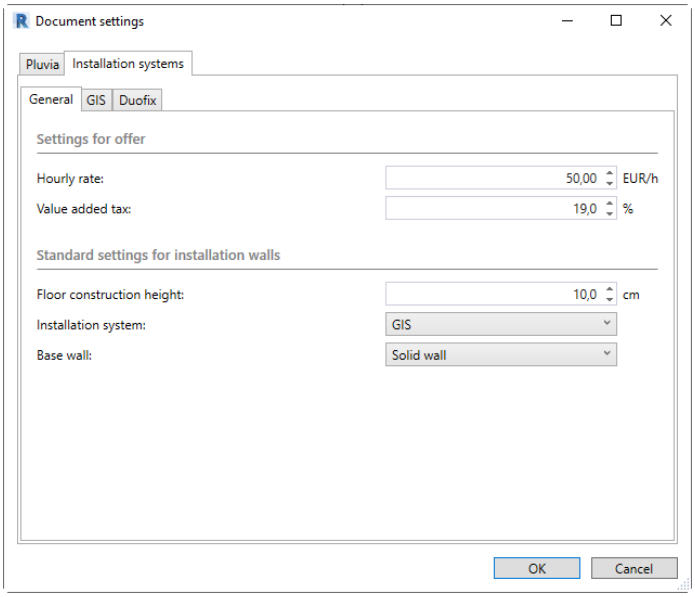


2. Click on **Select market** and select the desired market (see "Selecting the market", page 7) as described in the Preparations chapter.

3.3.3 Adapting the project

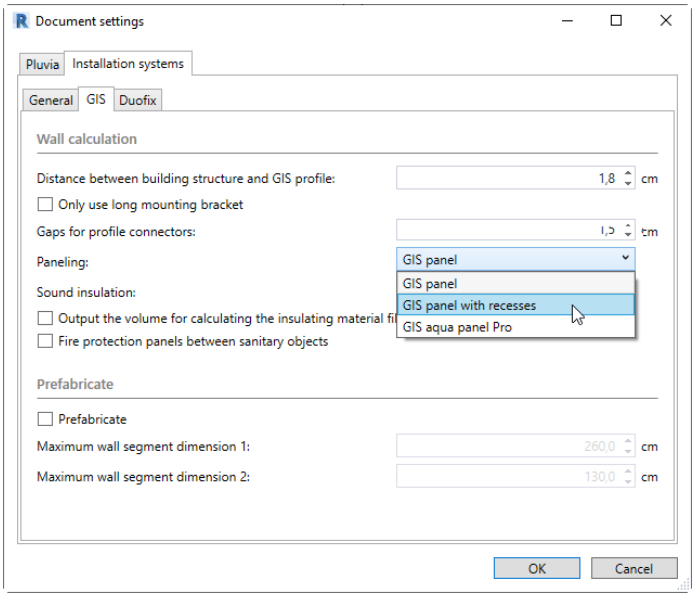
In the first step, adjust the panelling of the installation wall.

1. Click on **Settings**.
   ✓ The **Document settings** window appears.



2. Show the **Installation systems** > **GIS** tab.

3. In the **Wall calculation** area, select the **GIS panel with recesses** as the **Paneling**.



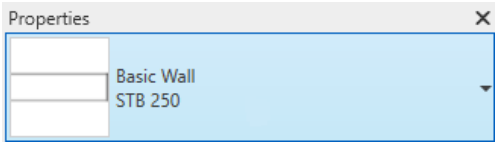
4. Click on **OK** to save the settings.

3.3.4 Drawing walls

In the next step, draw the wall on which the sanitary appliances are to be planned and which will subsequently be defined as an installation wall.

1. Show the **Architecture** tab.

2. Click on **Wall**.
3. In the **Properties** window, select a wall that has a minimum thickness of 25 cm, e.g. **Base Wall STB 250**.



4. Click in the drawing area to set the starting point of the wall.
5. Draw the cursor to the right until the length of the wall is **2.50 m**.

6. Click in the drawing area.

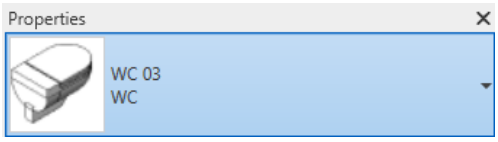
7. Press **ESC** twice to exit the drawing function.

3.3.5 Inserting sanitary appliances

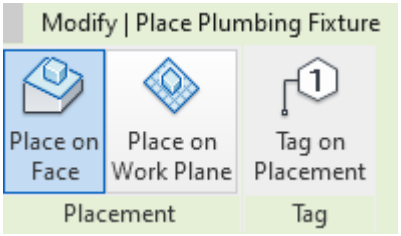
A WC and a washbasin are to be planned on the wall.

1. Show the **South** or **{3D}** view.
2. Show the **Systems** tab.

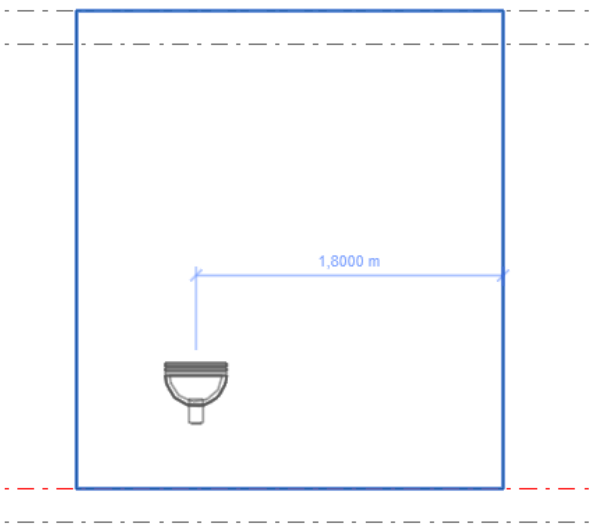
3. Click on **Plumbing Fixture**.
4. In the **Properties** window, select any wall-hung WC, e.g. **WC 03**.



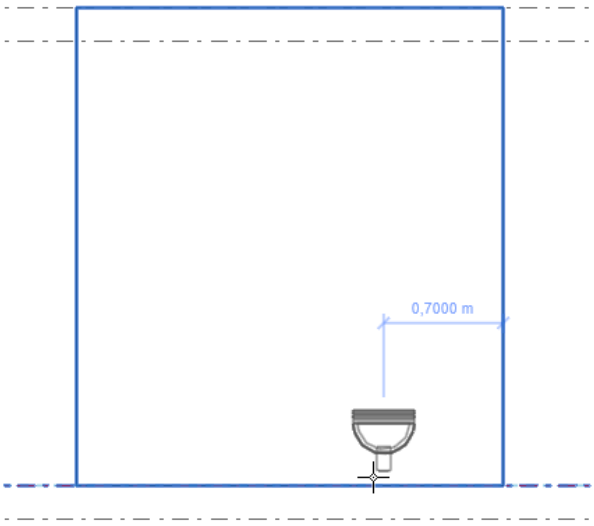
5. Make sure that **Place on Face** is activated in the **Placement** area of the **Modify** | **Place Plumbing Fixtures** tab.



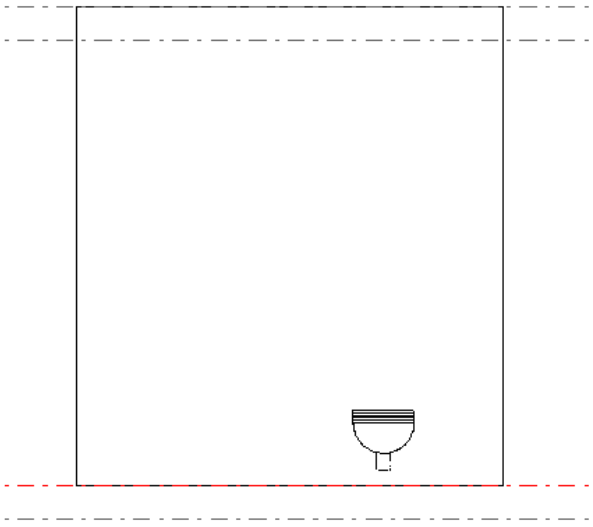
6. Move the cursor to the wall in the drawing area.
   ✓ The WC is suspended from the cursor.



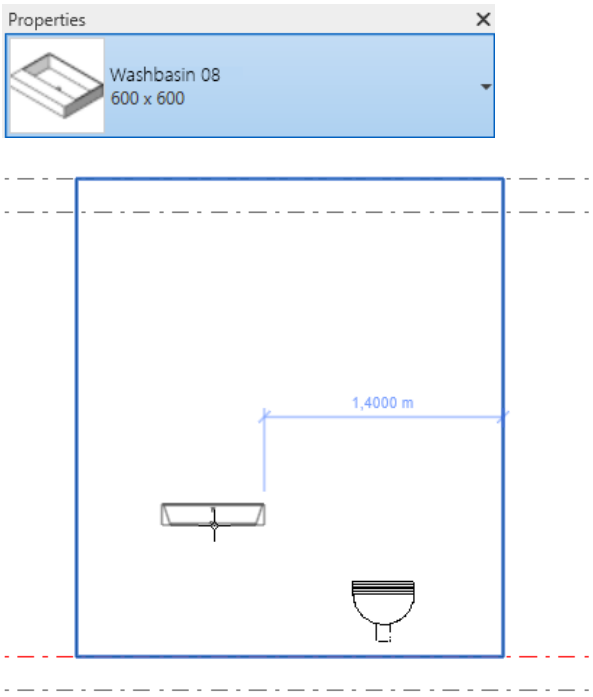
7. Place the WC at a distance of **0.70 m** from the outer edge of the wall.



8. Click in the working area to place the WC.
9. Press **ESC** twice to exit the drawing function.



10. In the same way, place a washbasin at a distance of **1.40 m** from the outer edge of the wall. You could use the **Washbasin 600 x 600** for this.

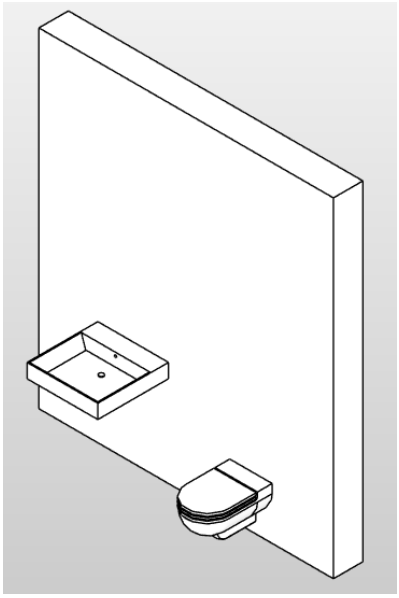


3.3.6 Calculating installation walls

The installation wall and sanitary appliances need to be defined and the respective properties specified so that the Geberit BIM Plug-in can calculate them.

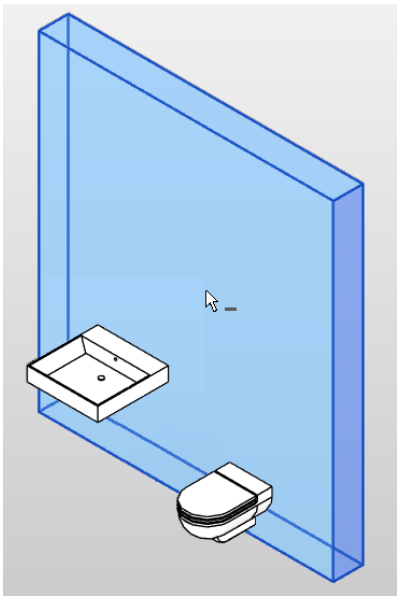
3.3.6.1 Defining the installation wall

1. Show the **{3D}** view.

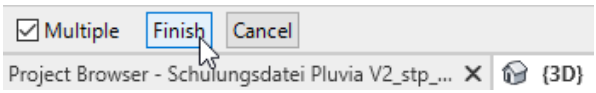


2. Show the **Installation systems** tab in the **Geberit BIM Plug-in** window.

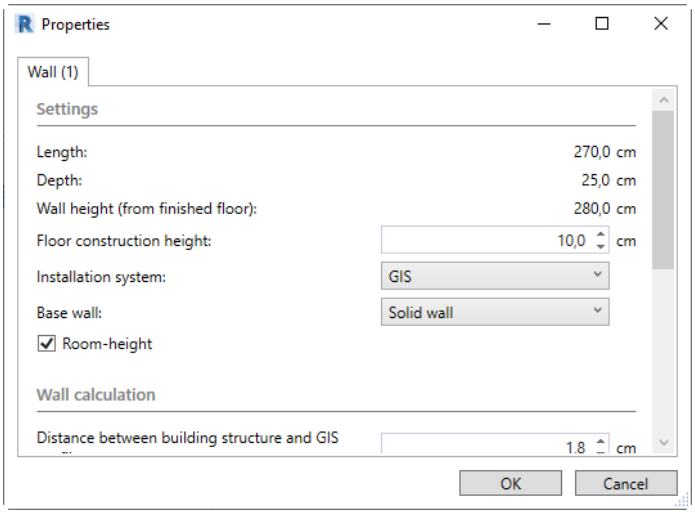
3. Click on **Select element and allocate wall**.
4. Click on the wall in the drawing area.



5. Click on **Finish** in the Autodesk® Revit® menu bar.



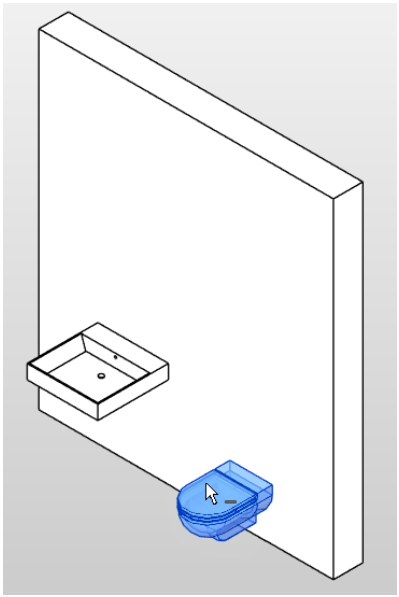
✓ The **Properties** window appears.



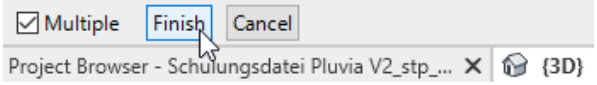
6. Exit the settings in the **Properties** window and click on **OK**.

3.3.6.2 Defining sanitary appliances

1. Click on **Select element and allocate sanitary appliance** in the **Installation system** tab.
2. Click on the WC in the drawing area.

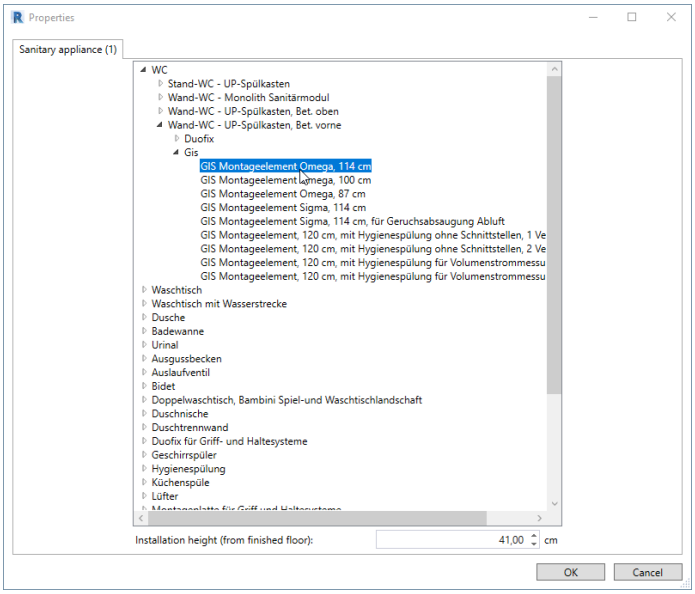


3. Click on **Finish** in the Autodesk® Revit® menu bar.



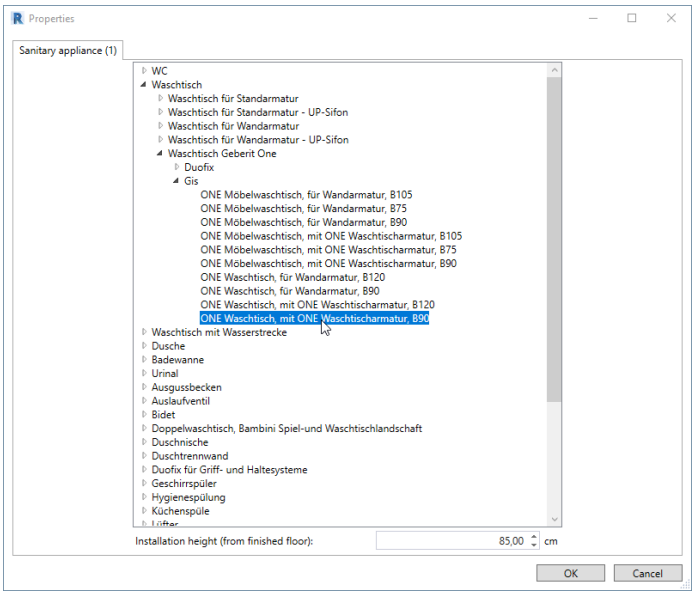
✓ The **Properties** window appears.

4. Select the **GIS installation element Omega, 114 cm** and leave the **Installation height (from finished floor)** at the preset value.



5. Click on **OK** to define the WC.

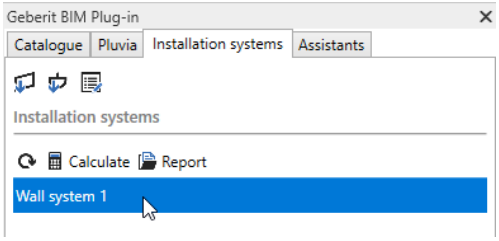
6. Define the washbasin in the same way. Select the **ONE washbasin with ONE washbasin tap, B90**.



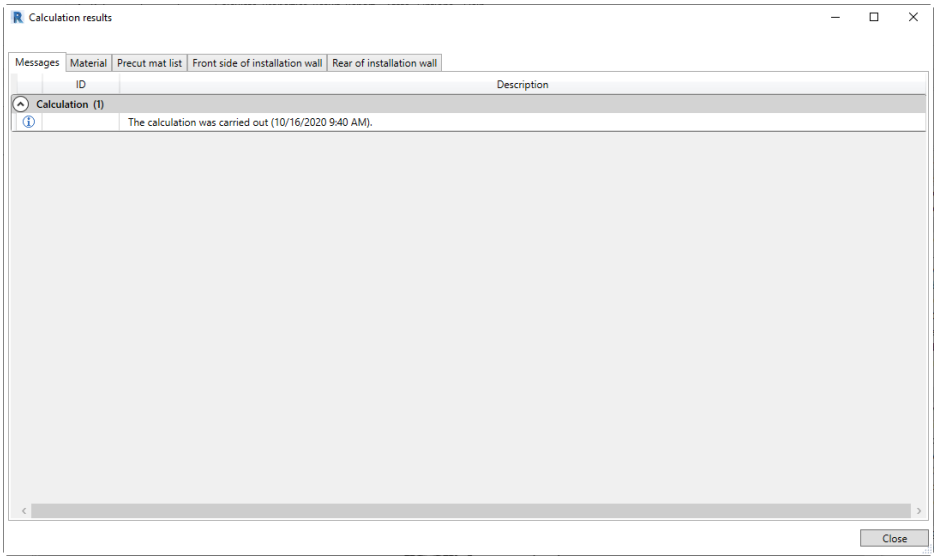
3.3.6.3 Calculation

You can calculate the installation system once you have defined the installation wall, the WC and the washbasin.

1. Click on **Refresh the list of calculable systems** in the **Geberit BIM Plug-in** window to display the installation wall.
2. Mark the installation wall in the **Geberit BIM Plug-in** window.



3. Click on **Calculate**.
   - ✓ The installation wall is calculated.
   - ✓ If the calculation has been successful, the **Finished** symbol appears next to the installation wall in the **Installation systems** tab.
   - ✓ If the calculation is incorrect, the **Failed** symbol appears next to the installation wall in the **Installation systems** tab.
   - ✓ The **Calculation results** window appears once the calculation is complete.



If you have drawn several installation walls in your plan, you need to highlight the installation wall to be calculated for the calculation.

If errors or warnings are displayed in the calculation result, you can highlight the relevant element in the model by clicking on the message in the **Calculation results** window.

3.3.6.4 Adjusting properties

You can proceed as follows if errors are displayed in the calculation or if you would like to subsequently adapt the properties or the installation wall or the sanitary appliances.

1. Close the **Calculation results** window.
2. Mark the required element in the drawing area.

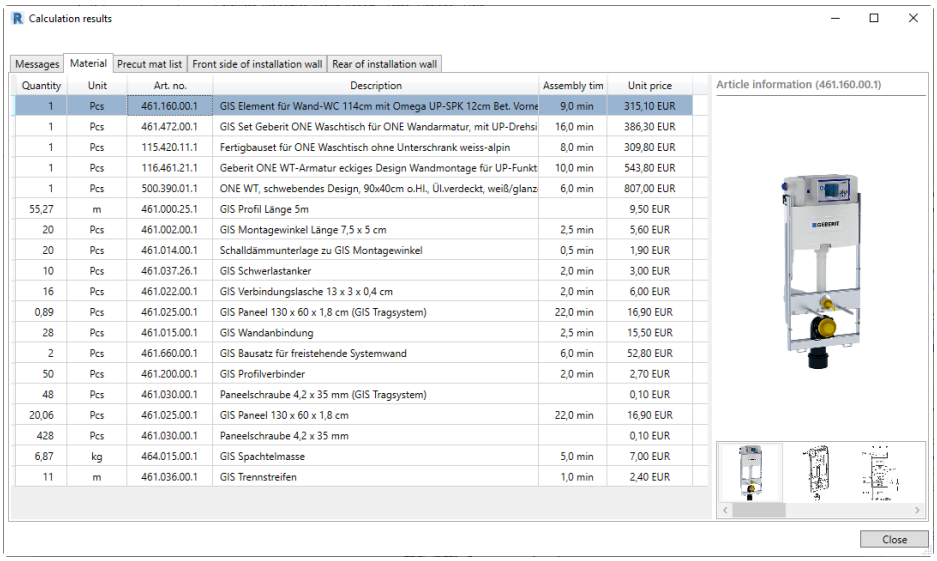
3. Click on **Change properties of elements** in the **Installation systems** tab.
   ✓ The **Properties** window appears.
4. Carry out the required adjustments.
5. Click on **OK** to save the settings.

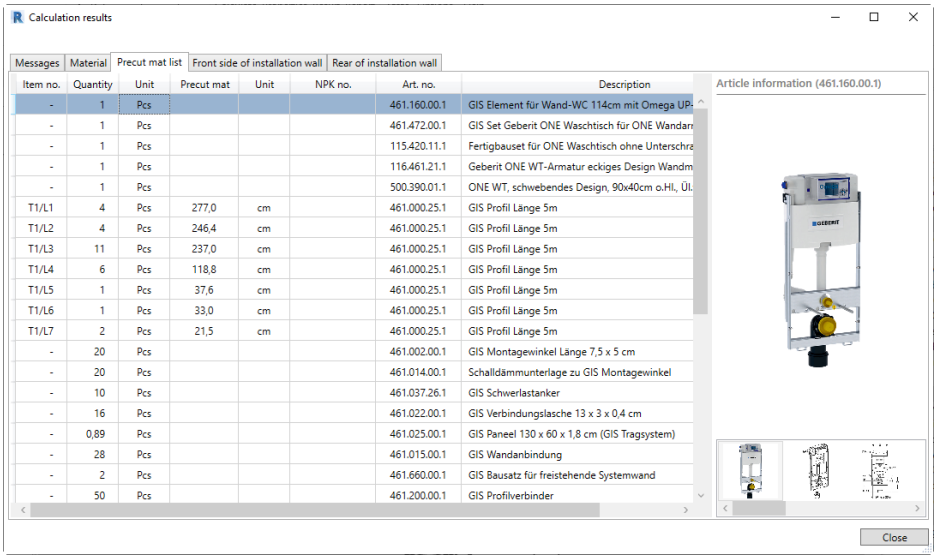
6. Click on **Calculate**.

3.3.7 Displaying the material list and cut list

After a successful calculation, you can see in the material list which materials are required to complete the system. The cut list shows the dimensions of the necessary profiles and panels.

► Show the **Material** or **Precut mat list** tab.

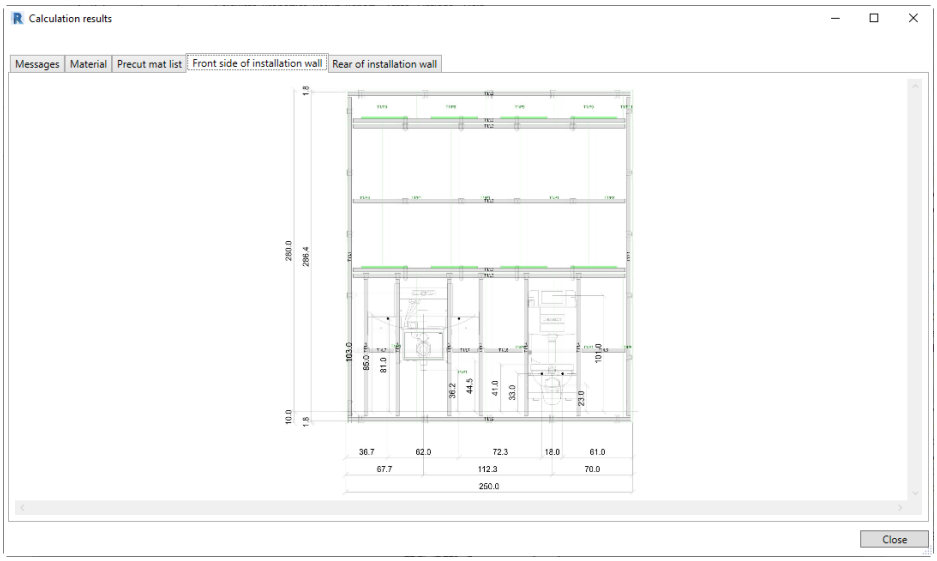


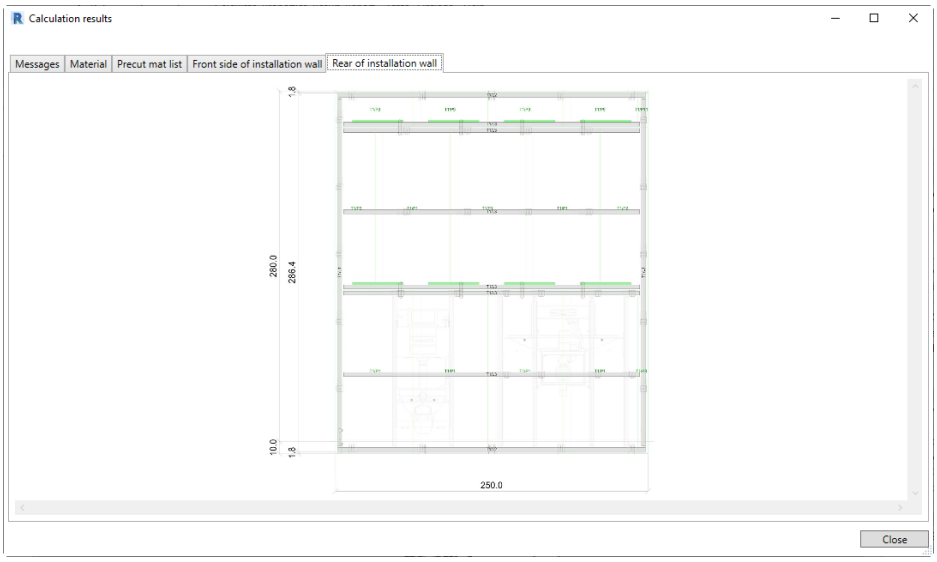


As soon as you have marked an article in the material list or cut list, you can call up a variety of additional information in the **Article information** area.

3.3.8 Displaying dimensional drawings

► Show the **Front side of installation wall** or **Rear of installation wall** tab.





- Turning the mouse wheel lets you extend or reduce the dimensional drawing.
- Right-clicking in the dimensional drawing lets you save the dimensional drawing as a graphic by clicking on **Save as**.

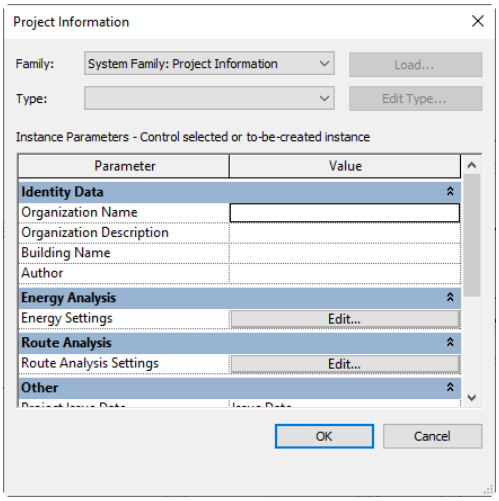
3.3.9 Exporting calculation results

At the end, you can export the calculation result as a PDF or Excel file. First adapt the data for the export cover sheet.

3.3.9.1 Adapting the cover sheet details

1. Show the **Manage** tab.

2. Click on **Project Information** in the **Settings** area.
   ✓ The **Project Information** window appears.



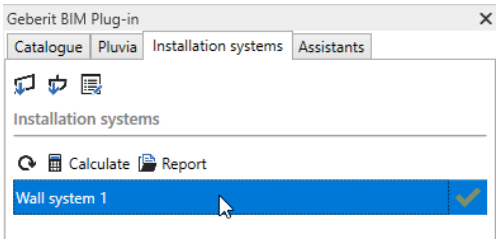
3. Enter the details for the cover sheet into the corresponding fields.

Details on the cover sheet	Field in the **Project Information** window
Project data	
Project number	**Other** > **Project Number**
Project name	**Other** > **Project Name**
Project description	**Identity Data** > **Organization Description**
Address	**Other** > **Project Address**
Status	**Other** > **Project Status**
Release date	**Other** > **Project Issue Date**
Plumber/sanitary engineer	
Company	**Other** > **Client Name**
Responsible person	**Identity Data** > **Author**

4. Click on **OK** to save the settings.

3.3.9.2 Exporting calculation results

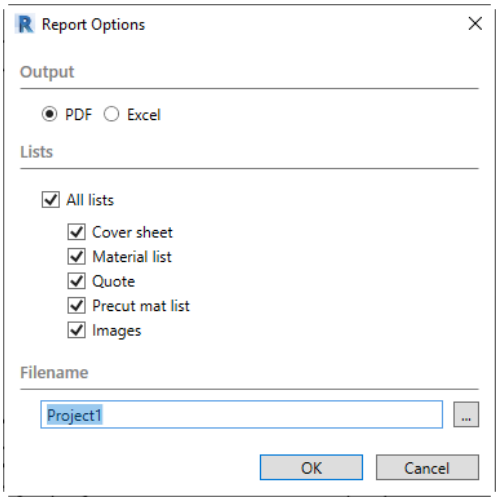
1. Mark the installation wall in the **Geberit BIM Plug-in** window.



If your model contains several installation walls, you can adjust the order of the installation walls with drag and drop in the **Installation systems** tab. As a result, the installation walls are calculated in the appropriate order and issued in a report.

To export the calculation result for several walls, you can highlight the installation walls in the **Installation systems** tab using the **CTRL** button and click on **Report**.

2. Click on **Report**.
   ✓ The **Report Options** window appears.

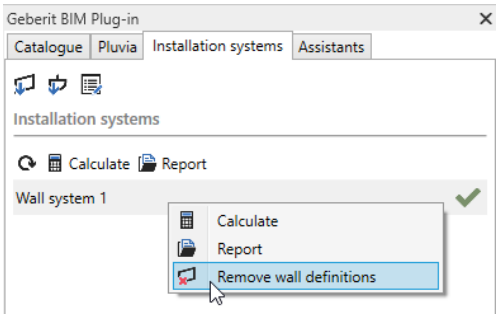


3. Select whether you wish to export the report as a PDF or Excel file in the **Output** area.
4. Select the scope of the report in the **Lists** area.
5. In the **Filename** area, click on the button with the three dots and define the storage location and the file name.
6. Click on **OK** to save the report.
   ✓ After the report is created and saved, the report opens automatically.

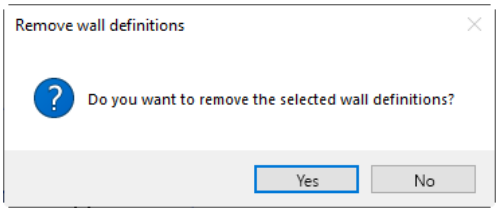
3.3.10 Removing the installation wall definition

If necessary, you can remove a Geberit GIS or Geberit Duofix installation wall from your model without having to redraw the wall afterwards.

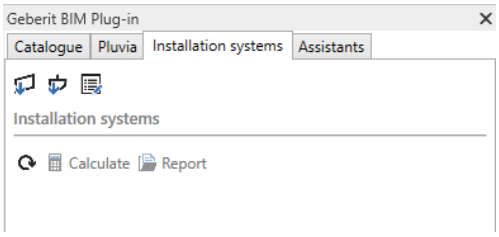
1. Right-click on the desired installation wall in the **Installation systems** tab.
2. Select **Remove wall definitions** in the pop-up menu.



✓ The **Remove wall definitions** window appears.



3. Confirm the **Remove wall definitions** window with **Yes**.
   ✓ The installation wall has been deleted and no longer appears in the **Installation systems** tab.
   ✓ The wall and the sanitary appliances in the drawing area are retained.



3.4 Training example - wizards

In the training examples for the **Assistants** module you will learn about the functions for splitting a pipe into smaller pipe sections and for labelling a pipe system. Finally, you prepare a cut list that helps to minimise scraps when cutting the pipes.

This chapter covers the following topics:

- splitting a pipe manually
- splitting a pipe automatically
- labelling a pipe system
- optimising the precut mat

To perform the training examples, you can use the Pluvia system from the roof drainage training example or a pipe system that you created yourself.

3.4.1 Splitting a pipe

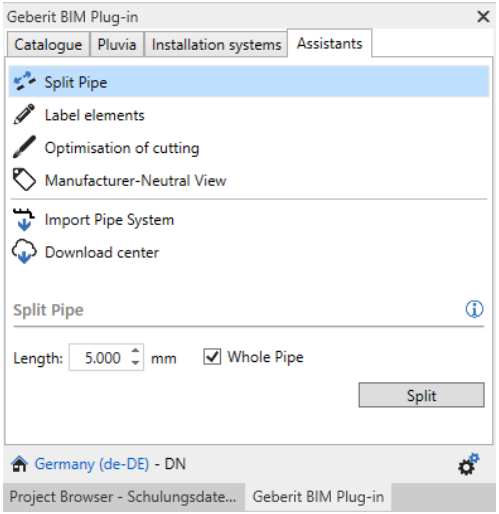
You can use the **Split Pipe** wizard to split pipes into freely definable lengths. The correct fittings are automatically placed at the resulting pipe connection points.

You can split the pipes manually or automatically.

3.4.1.1 Splitting a pipe manually

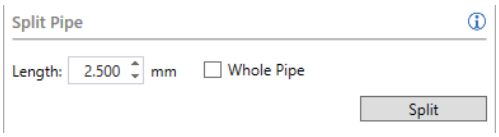
In the case of manual splitting, you need to click on the pipe to be split for each pipe section. The splitting also begins at the pipe end that is closer to the point of the mouse click.

1. Open the project file with a roof drainage training example or a project with a pipe system that you created yourself.
2. Show the **Assistants** tab in the **Geberit BIM Plug-in** window.

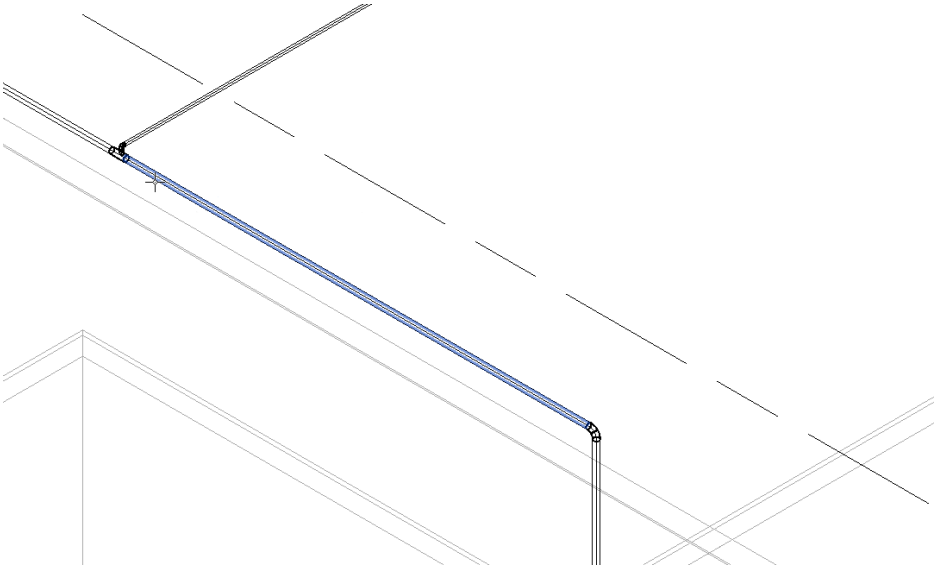


3. Enter the value **2,500 mm** in the **Length** field in the **Split Pipe** area.

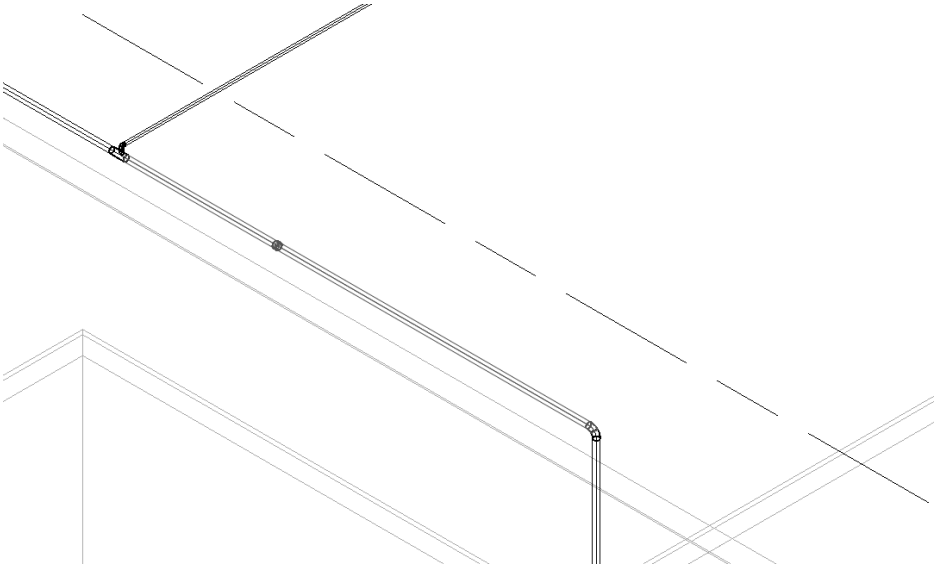
4. Deactivate the **Whole Pipe** checkbox.



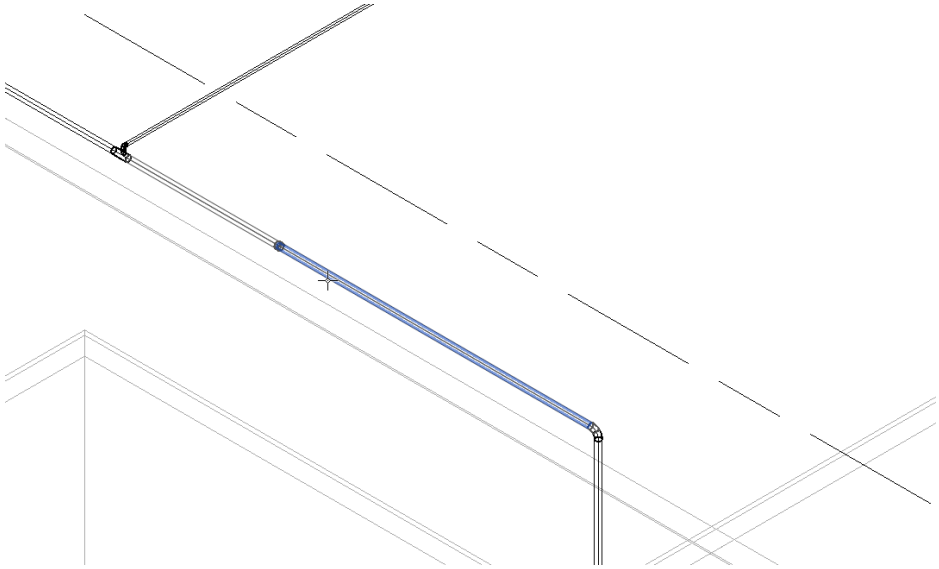
5. Click on **Split**.
6. Click on the pipe near the first branch fiitting in the model.



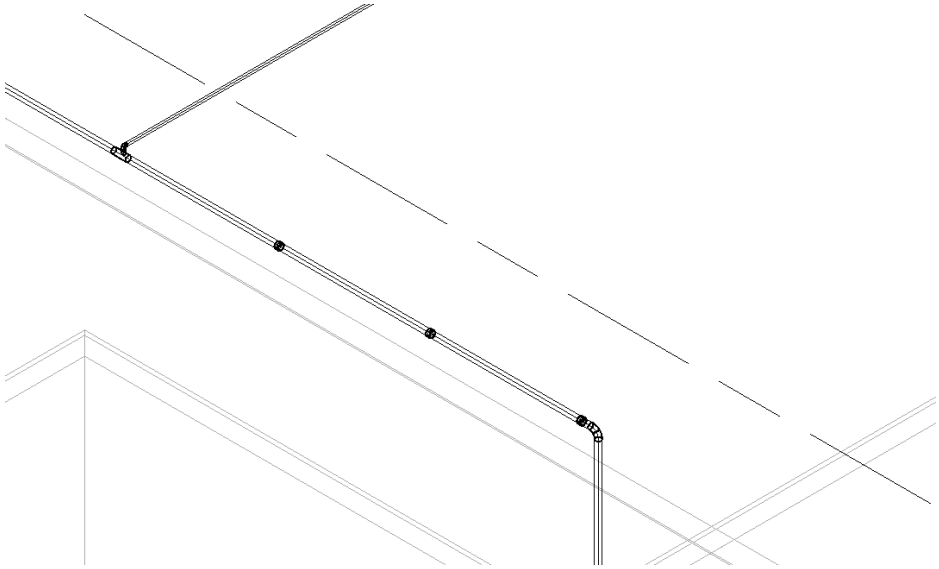
✓ The pipe is split into two pipe sections.
✓ The first pipe section is 2,500 mm long as indicated. The second pipe section is as long as the remaining length of the pipe.



7. Click on the pipe in the pipe section that has not been split to make further splits in the pipe.



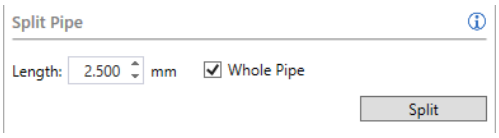
8. Create all other pipe sections in the same way.
   ✓ As soon as the remaining pipe length is shorter than the entered length of the pipe sections, the function is terminated automatically.



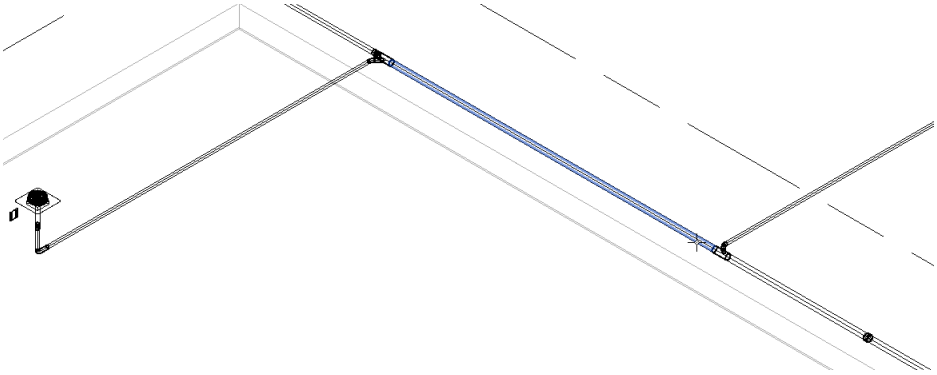
3.4.1.2 Splitting a pipe automatically

In the case of automatic splitting, the complete pipe is automatically split into the corresponding pipe sections. The splitting begins at the pipe end that is closer to the point of the mouse click.

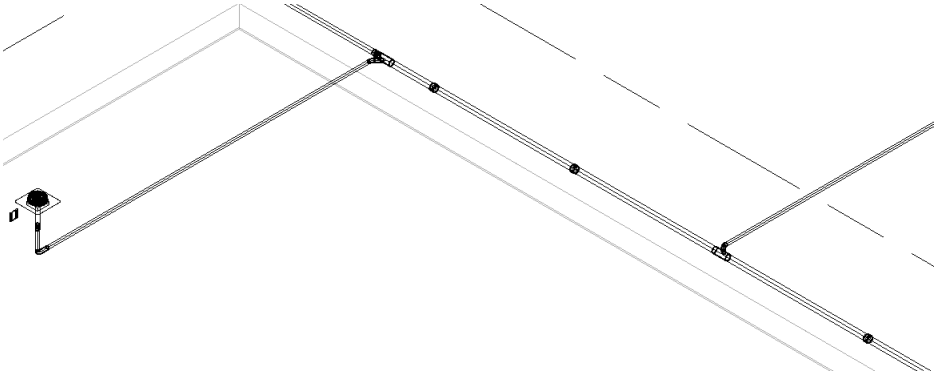
1. Enter the value **2,500 mm** in the **Length** field in the **Split Pipe** area.
2. Activate the **Whole Pipe** checkbox.



3. Click on **Split**.
4. Click on the pipe near the first branch fiitting in the model.



✓ The pipe is split into corresponding pipe sections.



3.4.2 Labelling a pipe system

The elements of a selected pipe run can be numbered and labelled with a unique item number. All elements from the first selected element in the direction of the second selected element are taken into account. The numbering runs to the end of the pipe system or ends with branching off at the dividing point. The branch fitting is the last element. The dividing points are not taken into account.

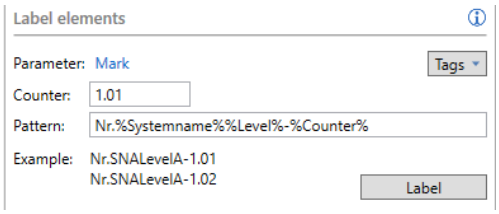
You can compile the label freely using text and the following variables:

Variable	Description
%System name%	• Shows the system name of the element.
%Level%	• Shows the reference level of the element.
%Counter%	• Shows a continuous counter. • The counter format is defined in the **Counter** field. • The last part of the number is automatically increased in the **Counter** field. • If you enter a point, the part to the right of the last point is increased. The part to the left of the last point remains unchanged. • The number value in the **Counter** field specifies the start value of the consecutive number. – e.g.: Input 8 -> Numbering starts at 8. • The number of the digits in the **Counter** field or to the right of the last point indicates the length of the consecutive number. The leading zeros are filled as required. – e.g.: Input 001 -> Output 001, 002, ..., 009, 010, ...

In the section below, label the main pipe of the previous training example with **Level 3_Geberit PE_01, Level 3_Geberit PE_02, ...** The label should start at the underground pipe connection and be saved in the standard **Labelling** parameter.

1. Show the **Assistants** tab.

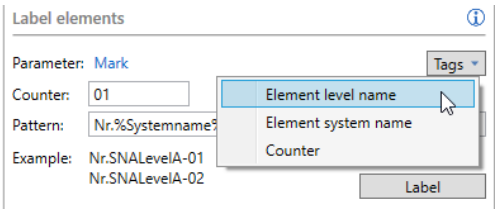
2. Click on **Label elements**.
   ✓ The **Label elements** area appears.



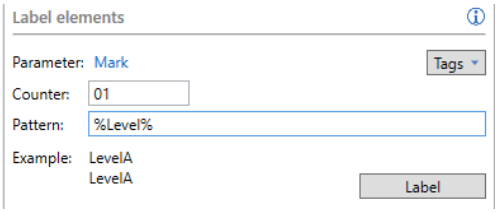
3. Exit the **Labelling** setting for the **Parameter** field to save the label in the **Labelling** parameter.

4. Enter the value **01** in the **Counter** field in the **Label elements** area so that the numbering begins at 1 and so that a 0 prefixes the numbers 1 to 9.

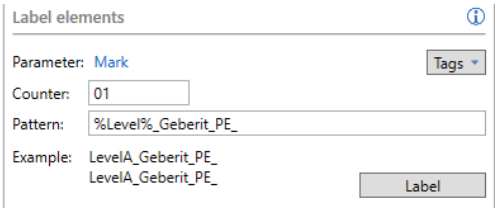
5. Delete the predetermined sample in the **Pattern** field.
6. Make sure that the cursor is in the **Pattern** field.
7. Select the **Element level name** entry in the selection field.



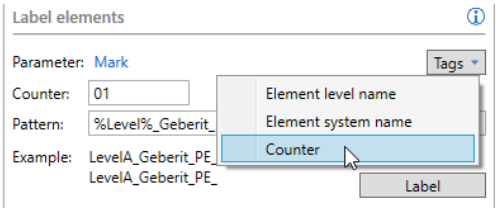
✓ The **%Level%** variable is inserted in the **Pattern** field.
✓ The preview below the **Pattern** field is updated.



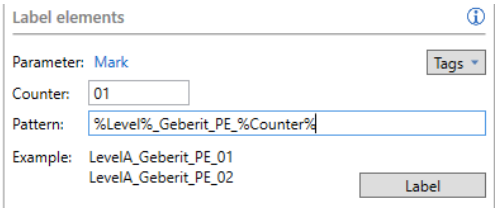
8. Enter the text **_Geberit PE_** in the **Pattern** field.



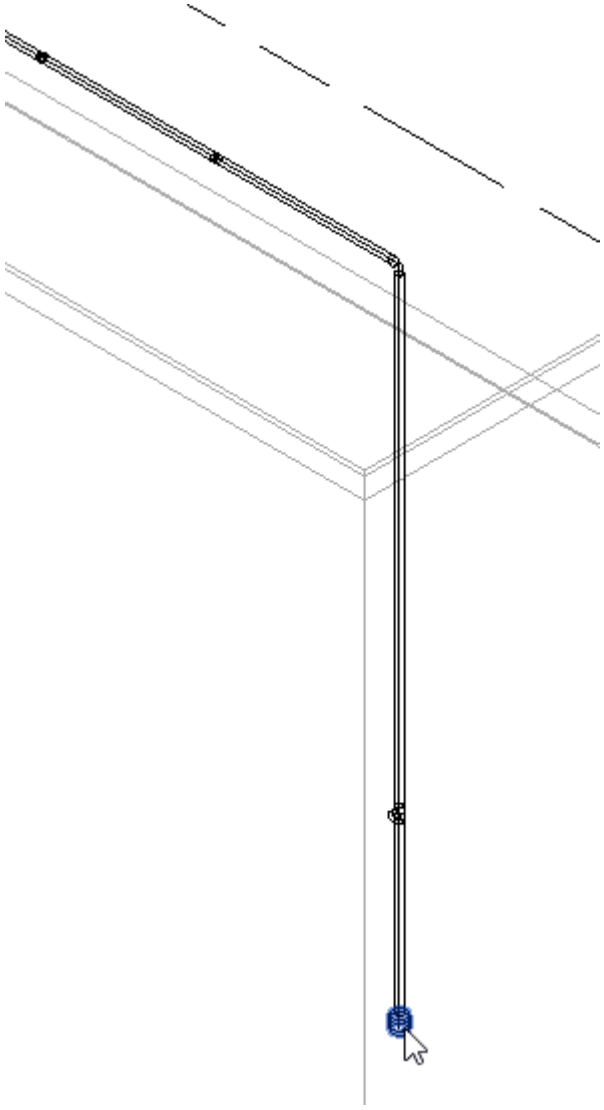
9. Select the **Counter** entry in the selection field.



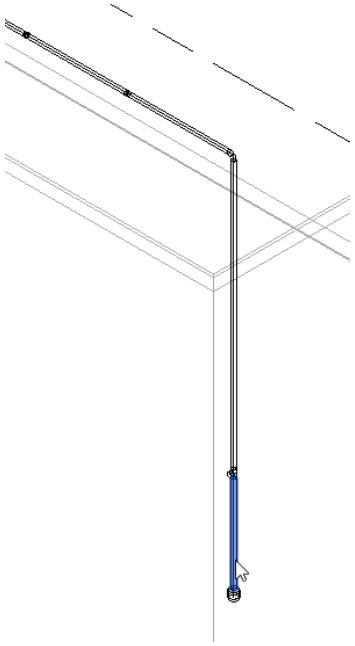
✓ The **%Counter%** variable is inserted in the **Pattern** field.
✓ The preview below the **Pattern** field is updated.



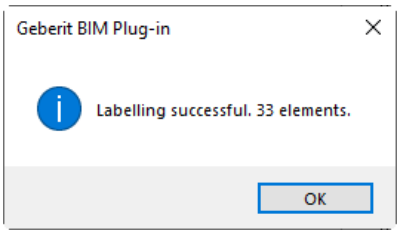
10. Click on **Label**.
11. Click on the underground pipe connection in the drawing area to define the starting point of the label.



12. Click on the pipe downstream of the underground pipe connection to specify the direction of the label.

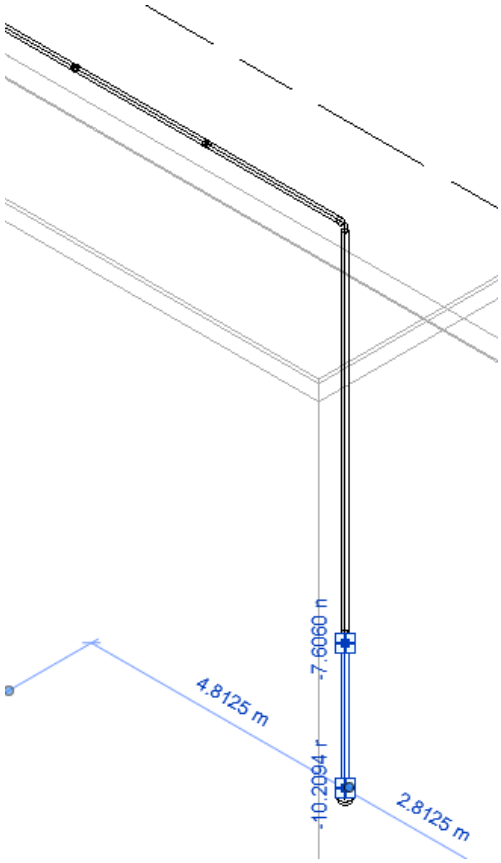


✓ The elements of the main pipe are labelled in the selected direction.



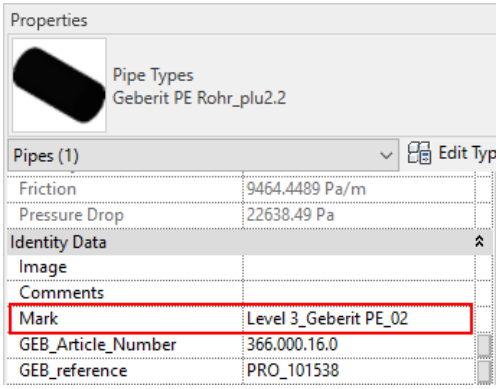
13. Confirm the message with **OK**.

14. Mark a pipe or fitting in the main pipe.



15. Show the **Properties** window.

✓ The label appears in the **Identity Data** area in the preselected **Mark** field.



16. Label the elements downstream of the branch fittings in the same way.

17. Adjust the starting value of the numbering in the **Counter** field.

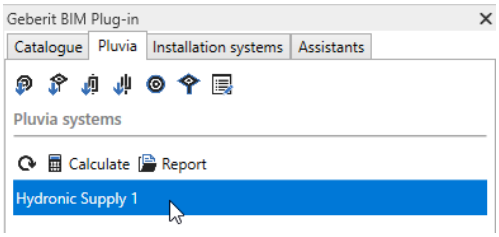
3.4.3 Optimising the precut mat

In order to reduce the scraps during the waste water prefabrication of the required pipes, the **Optimisation of cutting** wizard can create a csv file with the optimal cutting lengths. The precut mats are assembled in such a way that as few scraps as possible are generated when cutting the individual pipes for the pipe system.

Prerequisite

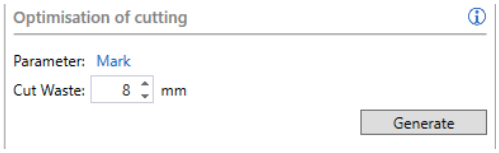
– The pipe lengths have been defined with the **Split Pipe** wizard (see "Splitting a pipe", page 75).
– The pipes of the pipe system have been marked with the **Label elements** wizard (see "Labelling a pipe system", page 79).

1. Click on the pipe system in the **Pluvia** tab so that it is fully marked in the model.



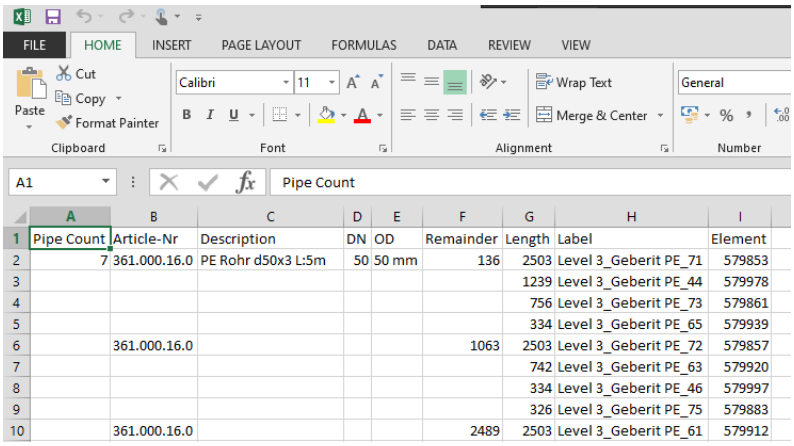
2. Show the **Assistants** tab.

3. Click on **Optimisation of cutting**.
   ✓ The **Optimisation of cutting** area appears.



4. Exit the **Labelling** setting for the **Parameter** field as the pipe label has been saved in this parameter.
5. Enter the cutting width when cutting the pipes in the **Cut Waste** field.
6. Click on **Generate**.
   ✓ The wizard calculates the optimal cutting lengths and creates a csv file.
   ✓ The **Save as** window appears.
7. Save the csv file.

8. Open the csv file with Microsoft Excel or a text editor.



	A	B	C	D	E	F	G	H	I
1	Pipe Count	Article-Nr	Description	DN	OD	Remainder	Length	Label	Element
2	7	361.000.16.0	PE Rohr d50x3 L:5m	50	50 mm	136	2503	Level 3_Geberit PE_71	579853
3							1239	Level 3_Geberit PE_44	579978
4							756	Level 3_Geberit PE_73	579861
5							334	Level 3_Geberit PE_65	579939
6		361.000.16.0				1063	2503	Level 3_Geberit PE_72	579857
7							742	Level 3_Geberit PE_63	579920
8							334	Level 3_Geberit PE_46	579997
9							326	Level 3_Geberit PE_75	579883
10		361.000.16.0				2489	2503	Level 3_Geberit PE_61	579912

Australia:

Geberit PTY LTD
Unit 1, 13 Boundary Road,
Northmead 2152

Geberit Contact
T +61 2 9889 7866

bim.support.au@geberit.com

www.geberit.com.au

Switzerland:

Geberit Vertriebs AG
Schachenstrasse 77
8645 Jona

ProPlanner Helpline Schweiz
T +41 55 221 6880

proplanner.ch@geberit.com

www.geberit.ch