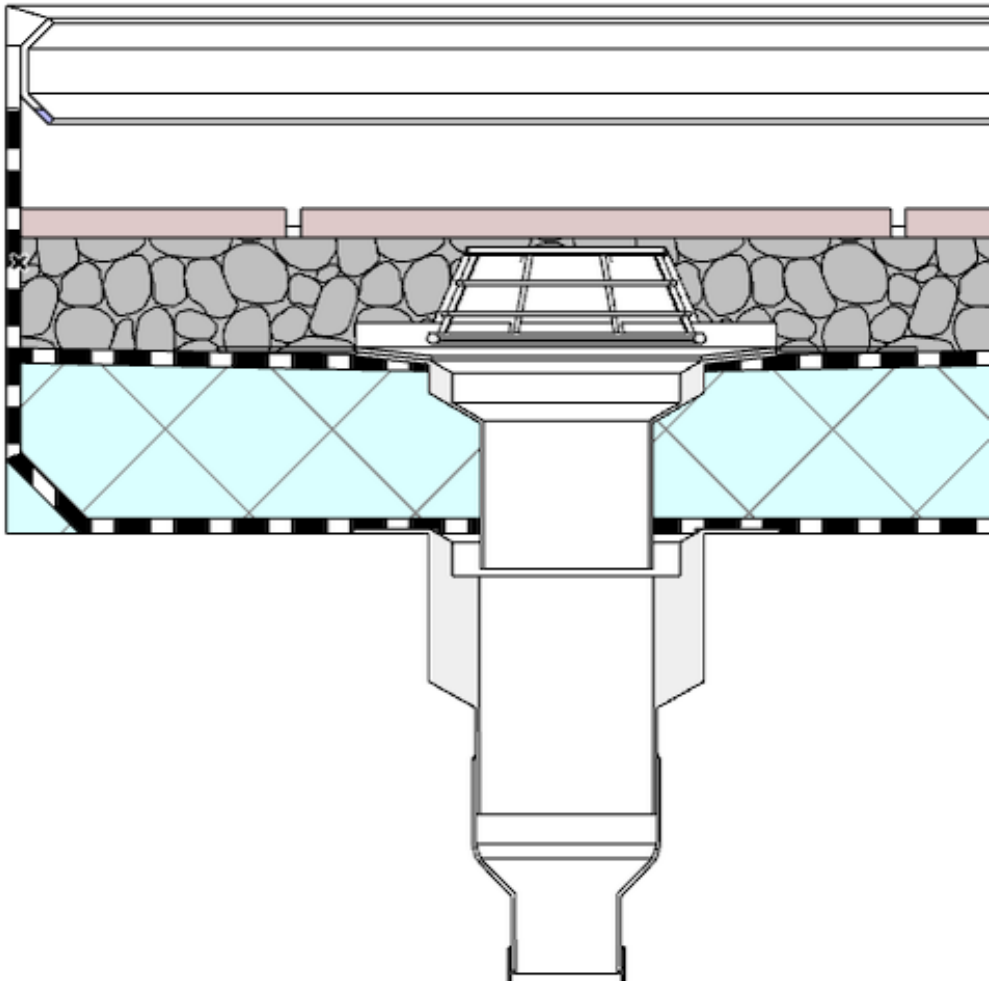
b-prisma-poly-flachdach

GDL Library Part for ArchiCAD 22 ++



The present library part is used to create multi-skin sloped insulation on flat roofs.

Functions and Features

The object has the basic shape of a rectangle and can be adapted to any polygonal shape with movable snap points. It has the following properties:

- Slope indication
- Square area for up to 4 gullies (low points)
- Parameters of each single skin:
  - Skin material
  - Skin thickness
  - optional slope: top or bottom
  - structure type (core, cladding, other)
  - optional: skin as empty layer without building material
- 2D representation as fill
- optional text with display of base area

- optional display of slope with arrows and text
- up to 4 optional flat roof drains
- optional covering from single slabs
- wall connection as cuboid or profile manager profile
- optional openings in the wall connection
- Attica emergency overflow
- Level of Geometry (LOG): 4 different display variants each for 2D, 3D and sections/views
- Optional control of LOGs via a separate model representation object
- Openings with optional wall connections
- Optional slope shape with uniformly high wall connections and different slopes per slope section.
- Optional offset of layers from outer edge of geometry

License

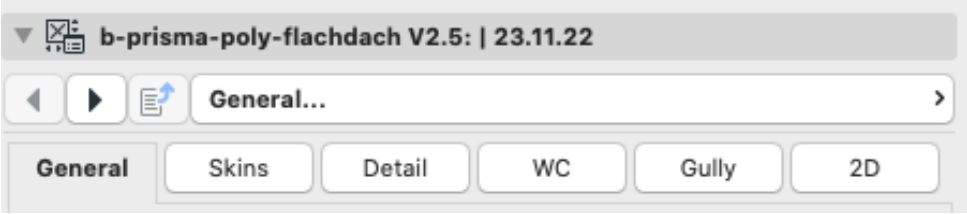
This GDL object is not freeware. Please acquire a usage license by purchase. The usage license is valid for all workstations of an office and is unlimited in time. All minor updates are free of charge.

Installation

Download the downloaded zip file and unzip it.
Move the two gsm files to your loaded library.

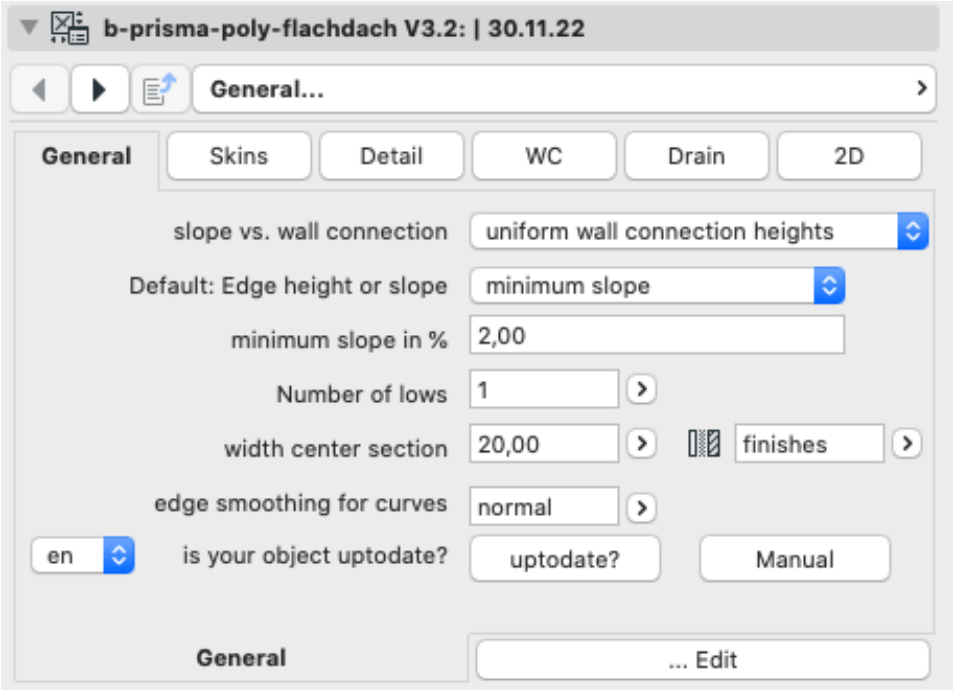
SETTINGS: the User Interface

The input of all parameters (except some dimensions, which are to be set exclusively with movable hotspots) is done via the user interface, which is the tab "b-prisma-flachdach V ..." in the dialog box of the library part



In the user interface, all parameters are available as setting options. The parameters are arranged on 6 TAB pages.

GENERAL, Subtab „General“



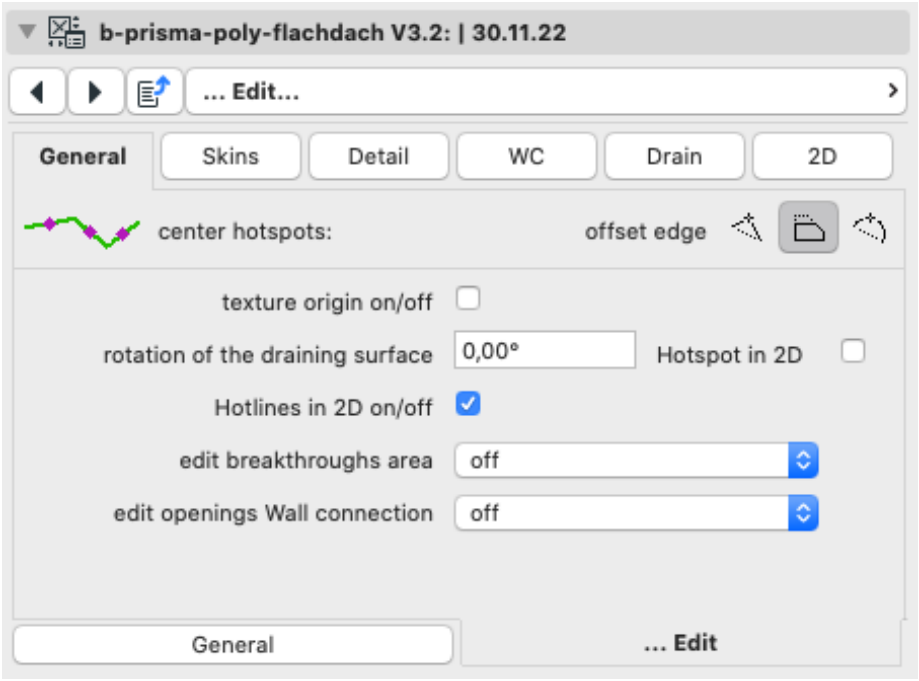
On the first tab (subtab 1)you set the following basic things:

- Uniform slope or uniform wall connection heights
- for "Uniform slope": slope
- for uniform wall connection heights:
  - specification: Height difference gully/edge or minimum slope
  - Adjustment of height or inclination according to specification
- Number of low points where drains can sit.
- Width center section: this is a square area without slope, to which the sloping roof runs from 4 sides
- Structure display center section: core, clothing or other
- Edge smoothing for curved elements in 2D and 3D
- Language of the user interface : de = german, en = english
- Is your object up to date: here you can check if you are using the latest version.
- Link to the manual (de or en)

General, Subtab „Edit“

On the first tab (subtab 2) you set the following things:

- Editing function of the poly hotspots: Insert point, offset edge or insert arc
- Texture origin on/off: If active, the texture origin of a 3D texture or the hatch origin of a 2D hatch can be moved and rotated, angles between 0 and 90° are allowed. This switch can only be activated if the



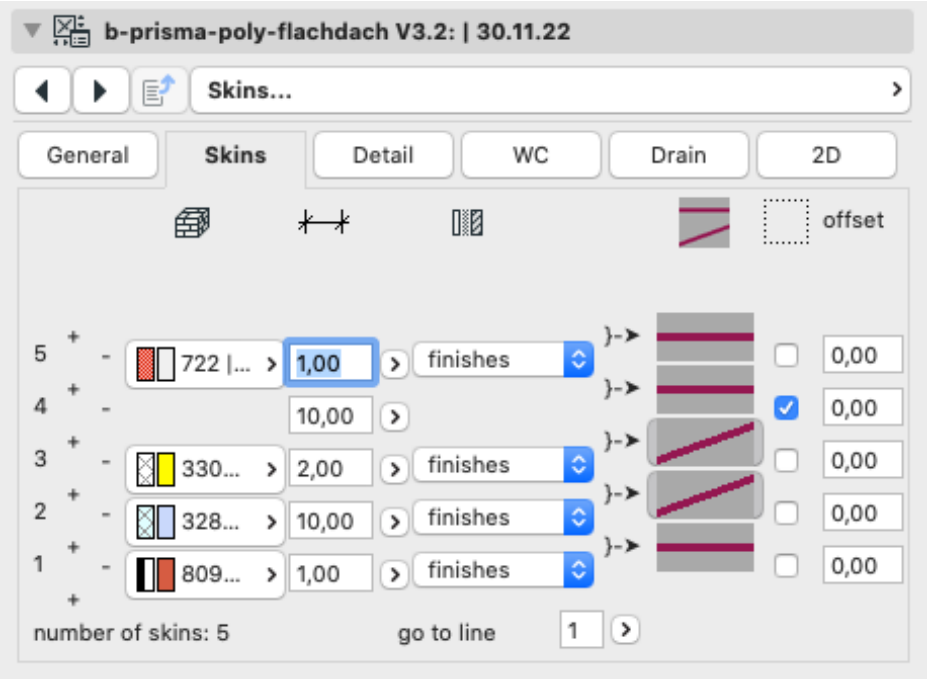
top layer has no slope. Switches all other hotspots invisible at the same time.

- Rotation of the drainage surface: is only available for uniform slopes. All slope surfaces can be rotated by the same angle around the Z-axis in one action. Optionally via movable snap point in 2D, if checkbox is activated.
- Hotlines in 2D on/off: For single tiles and fill type "tile grid" you can snap in 2D to the tile edges or tile grid edges and set e.g. dimension points.
- Edit breakthrougs surface: activates optional hotspots in 2D
- Edit openings wall connection: activates optional hotspots in 2D

Skins

On the second tab, make the following settings for each layer (from bottom to top):

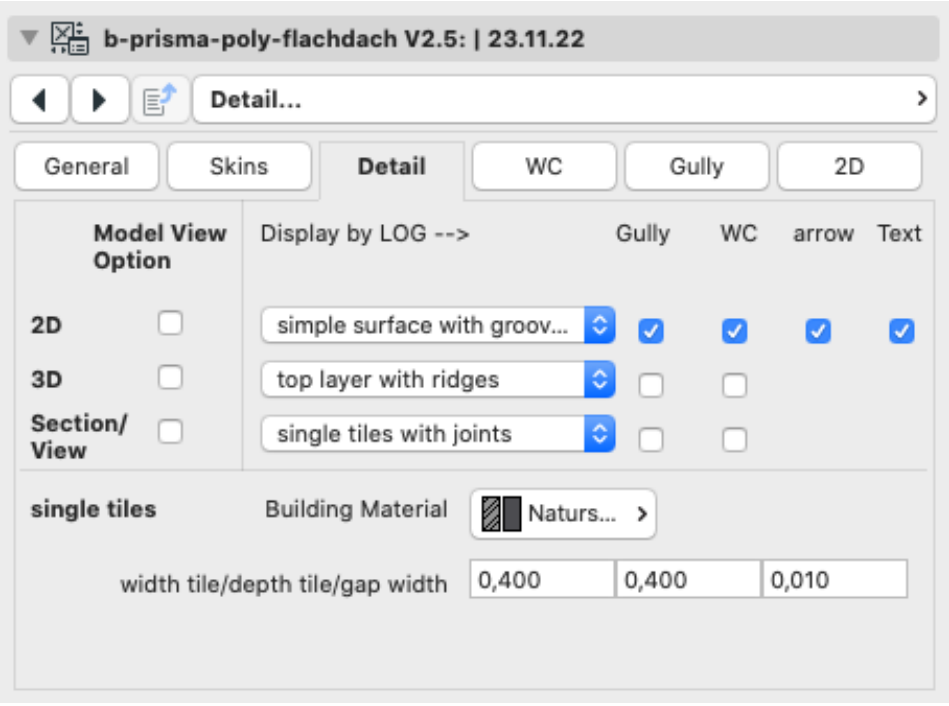
- Add or remove skin. If there are more than 7 layers, you can scroll
Building material
- Layer skin: for skin inclined on one side on top the minimum thickness, for skins inclined on one side on bottom the maximum thickness, otherwise the actual thickness
- Structure display center section: core, clothing or other
- transition between bottom and top layer inclined or not
- Layer completely empty: as an air layer, but without building material
- offset: you can set an offset of the individual skins inwards, i.e. the tile covering as the top layer, for example, can have an even distance to the outer edge



LOG (Level of Geometry)

On the third tab you make the settings for different representations of the object in 2D, 3D, section/elevation according to the desired LOG.

- In the left half you can choose whether the LOG settings for 2D, 3D, section/elevation should be made in the model view options (MVO). If you activate the checkboxes, the corresponding area in the right half will be hidden.
  In any case, it is recommended to make these settings in the model view options, because you can save different settings from there in



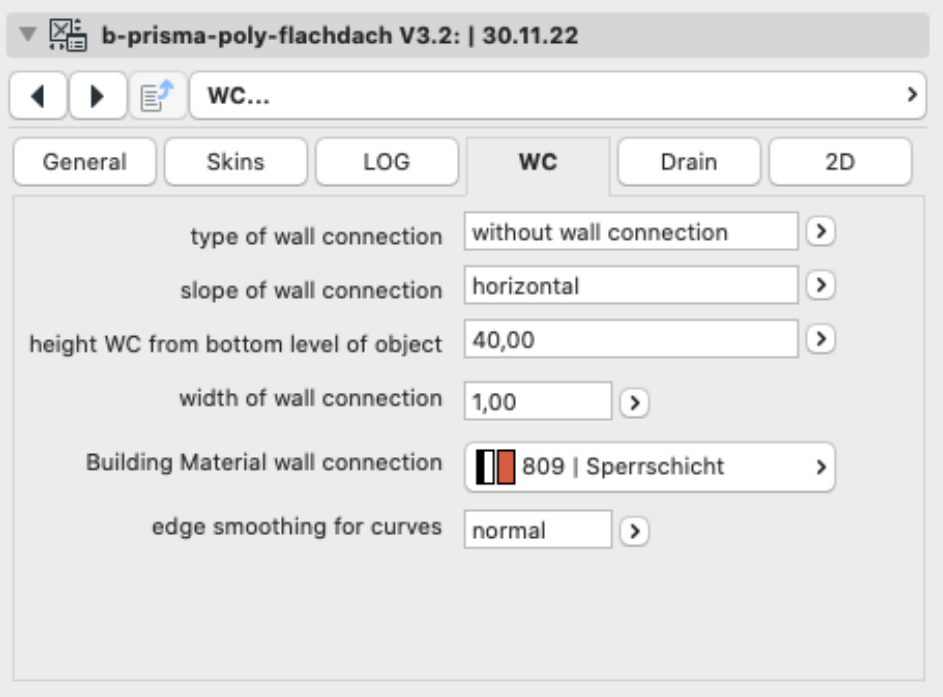
different views, so that you are highly flexible with the display variants.

- Application of the MVO object is done further below.
- In the right half you can set the LOGs separately for 2D, 3D, section/elevation, as far as the model view option is not activated on the left. Here you can choose between 4 display variants per view and additionally (depending on the selection and view) activate the elements Drain, Wall connection, Slope arrows with text and Surface text.
- In the lower area, settings for single tiles appear if they are activated in one of the views here or in the model display:
    - Building Material
    - Width tile, depth tile and gap width. To create planks, set width or depth to zero.

WALL CONNECTION (WC)

On the fourth tab, make the following settings for an optional wall connection:

- Type of wall connection: without, simple cuboid or own profile from the profile manager.
- Inclination WA: horizontal or inclined (will be trimmed at the top) according to O.K. water drainage of the inclined water-bearing layer
- Height dimension WA: from O.K. Slab if level or from O.K. Water bearing layer if sloped.
- Width WA
- Building material WA or selection of own profile



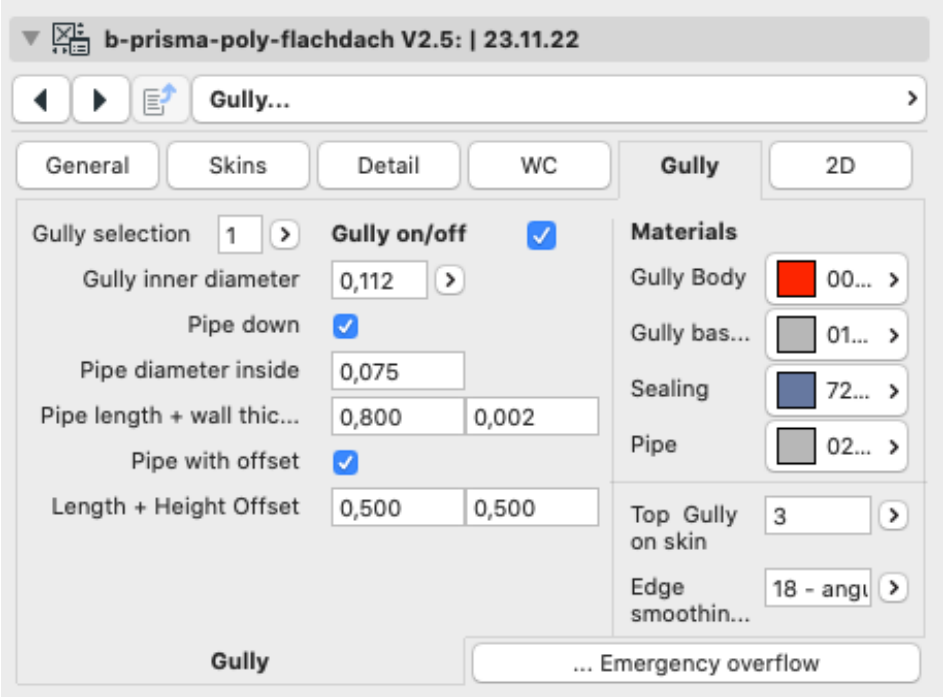
Note: The wall connection always starts from O.K. raw ceiling, no matter which type or inclination is set.

Note: In the case of profiled wall connections, the inclined design often does not make sense because the upper edge of the profiles is trimmed parallel to the inclined roof surface.

Drain

On the fifth tab (sub-tab 1) you make the following settings for one or up to 4 optional gullies:

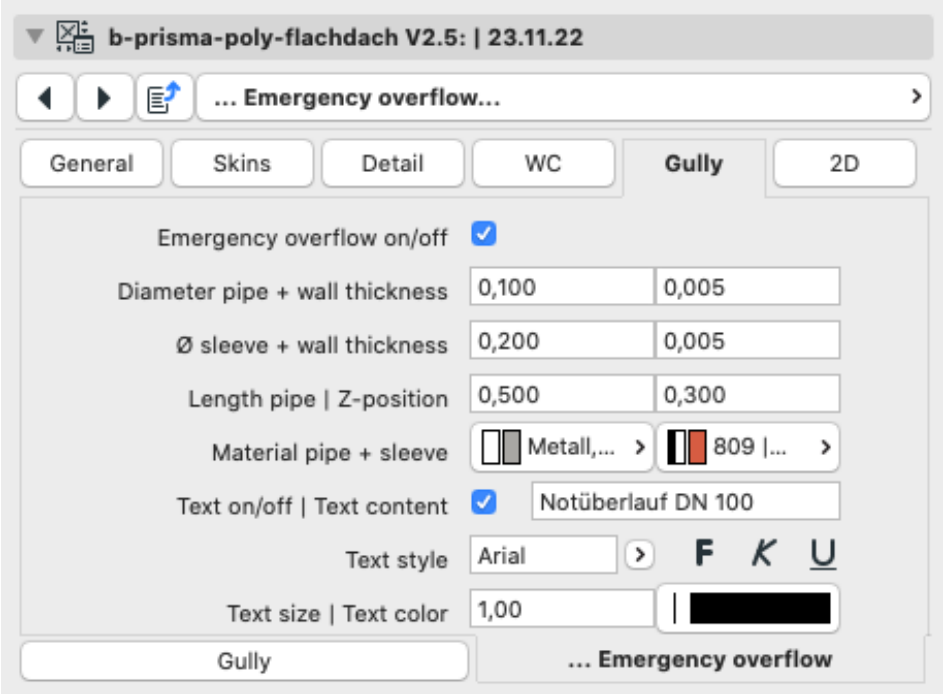
- Drain selection: selects the drain whose settings you want to make on the left half.
- Drain on/off. Independently of this, the visibility of the gullies is also controlled by the LOGs in the object or the model display.
- Inner diameter drain
- optional lower pipe outlet with adjustable dimensions
- Materials for the drain components (top right)
- Bottom right: top side drain on skin: defines the upper edge of the water-bearing skin, which drains into the drain.
- Edge smoothing (due to an extremely large number of polygons, low edge smoothing may be useful for polygon reduction).



Emergency Overflow

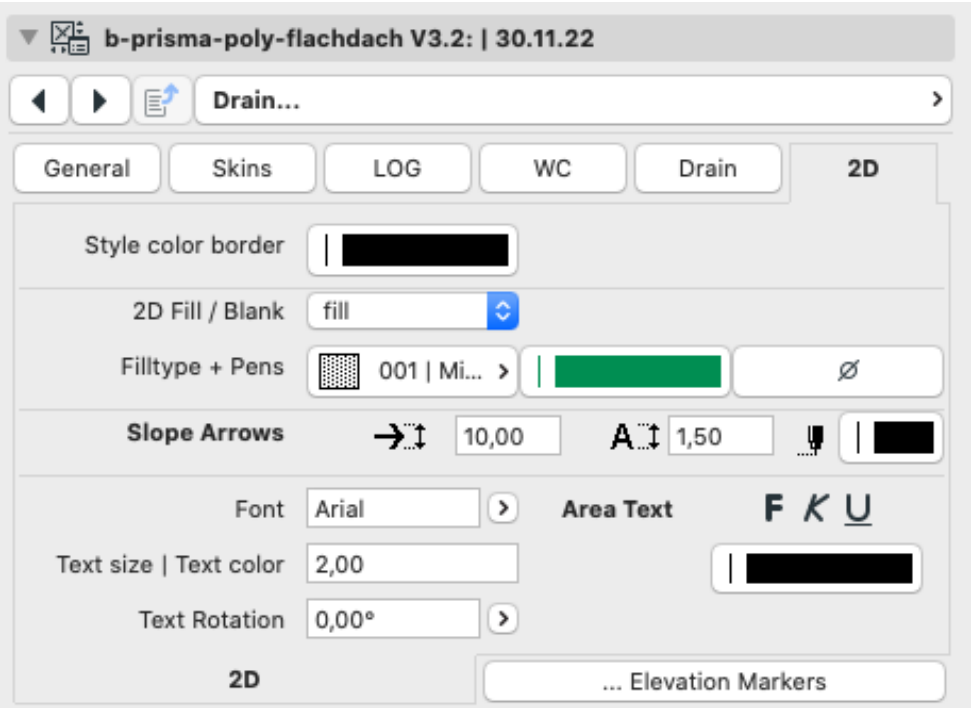
On the fifth tab (sub-tab 2) you make settings for an optional emergency overflow in the area of the wall connection.

• Emergency overflow on/off: You can drag the emergency overflow with hotspots in 2D to any position in the area of the wall connection and change the height in 3D or section/view.
• Dimensions of the emergency overflow
• Construction material of pipe and sleeve
• Settings for the optional display of a text in 2D with text content and text attributes



2D, sub tab „2D“

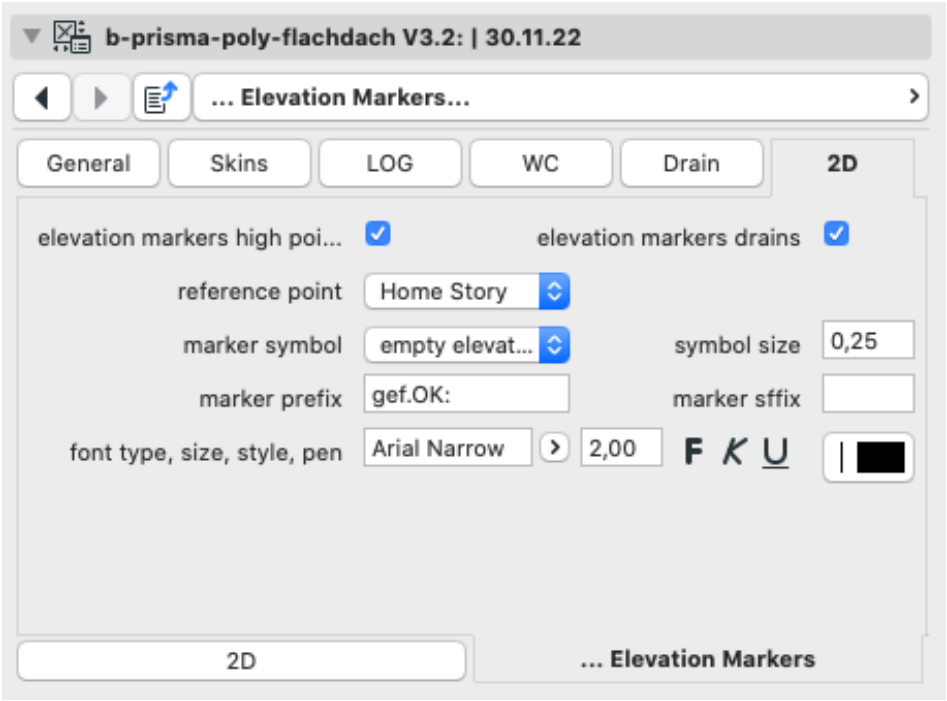
On the sixth tab (sub tab 1), make the following 2D settings:
• Pen colour border
• 2D fill on or blank: with fill type, fill colours foreground and background: only applies to the selection type 3 ("fill with rotate and move option" for the representation of the surface pavement in 2D) in the LOG settings.
• Slope arrows and slope text: visibility and attributes (only active if activated in object or model representation in the LOG settings)
• Area text: optional display of the base area of the generated flat roof structure with corresponding text parameters (only active if activated in LOG settings in object or model representation): the cutouts in the surface are subtracted from the main area. (Do not leave cutouts in the editing area outside the roof area, because they are subtracted as well)



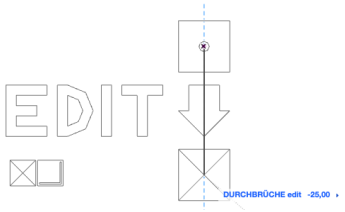
2D, sub tab „Elevation Markers“

On the sixth tab (sub tab 2), make the following 2D settings:

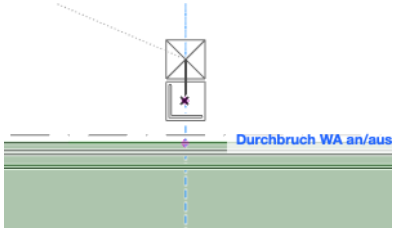
- Optional elevation markers for edge high points and drain points
- Definition of a Elevation Marker
- Cote symbol (circle with cross): empty or filled
- optional code prefix and code suffix
- Font attributes



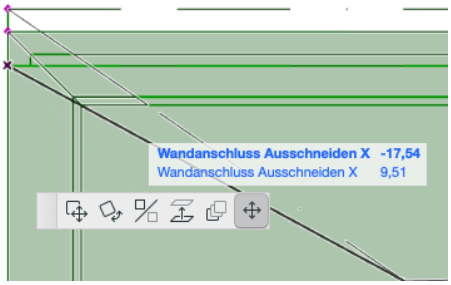
Implementation



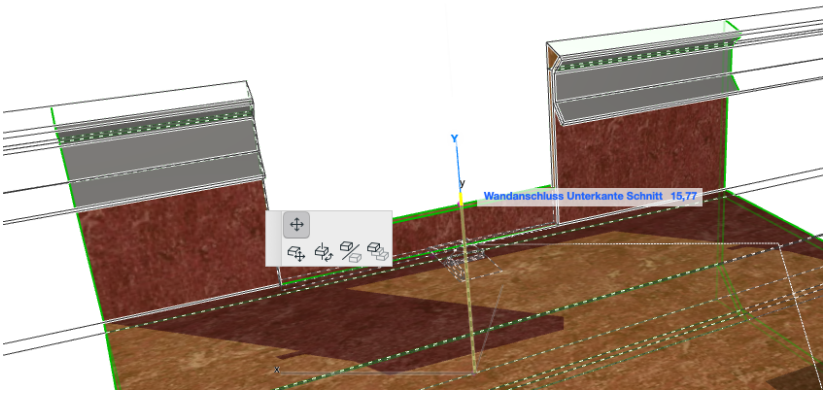
- Place the object in the floor plan and adjust the floor plan geometry to the building geometry using the movable hotspots.
- Set the number of low points and move the drain(s) to the desired position.



- Make the desired settings in the user interface.
- Optionally define a wall connection, either in rectangular form or as a separate profile.
- Define openings through the wall connections by proceeding as follows:



  - In 2D, activate the edit area of the breakthrough creation for wall connections by dragging a hotspot located outside the object (the 2nd from left) from the point to the cross.
  - New hotspots will now appear in the centre of each polygon segment, offset slightly outwards. On the polygon sides where a break-through is needed, drag the hotspot from the base symbol onto the cross.
  - A long dashed line rectangle with 4 hotspots at the corners appears. With the help of these hotspots, please draw the area together to form the desired rectangle, which is to be notched upwards from a certain height (the basic setting is 25 cm from O.K. raw concrete).
  - You can set the lower edge of the notch in 3D or section/view with a hotspot in the middle of each trimmed polygon with another hotspot.



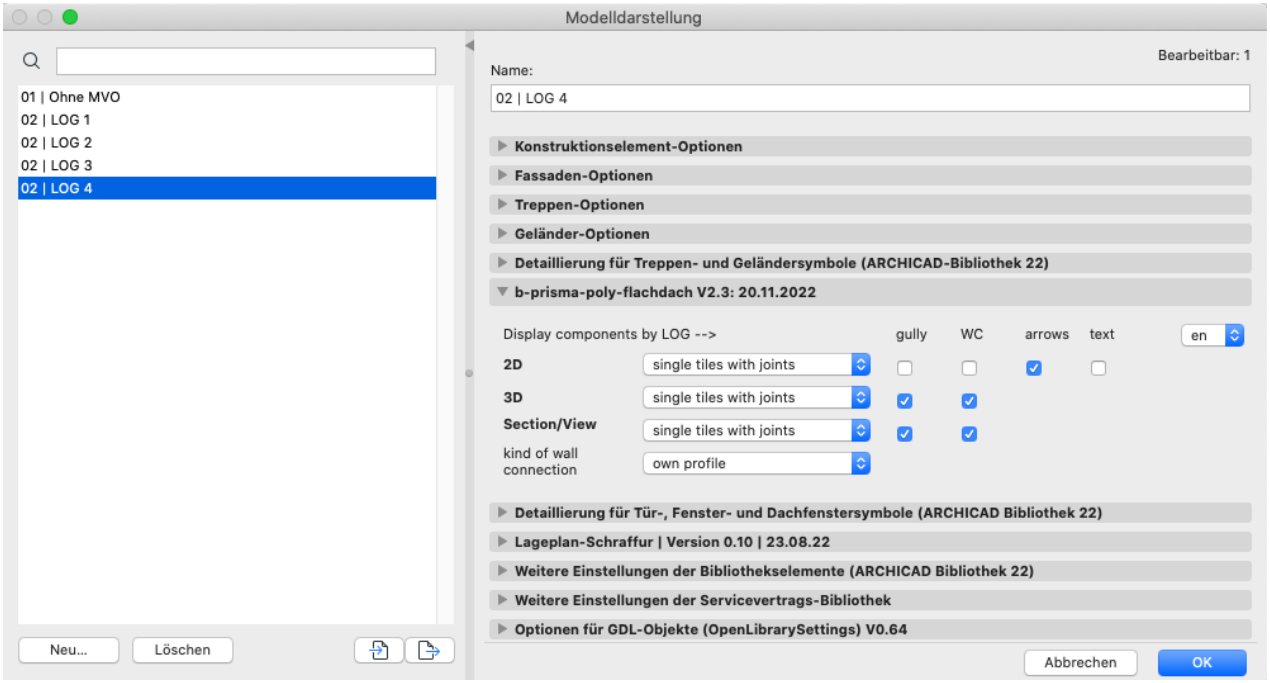
The Model View Option (MVO) Object

A so-called Model View Object is supplied with this object, with which you can save a separate "model view" for each saved view, as described above under the "LOG" tab, so that you can create an almost unlimited number of different representation variants.

Proceed as follows:

- Call up the Model View Option dialogue (Document >> Model View >> Model View Options or your keyboard shortcut).
- Select the tab "b-prisma-poly-flachdach" on the right.
- Then make the desired settings for the 2D, 3D and Section/View views.
- Set the desired checkmarks for Drain, WC (wall connection), Arrows (slope arrows with optional text), Text (to display the roof area size)
- Select the type of wall connection (cuboid or profile), regardless of which model representation the wall connection is activated in.
- When you have made all the desired settings, click on "New..." at the bottom left and give it a meaningful name.
- Finally, be sure to click on "OK" at the bottom right (not on "Cancel").

You can now assign one of the created and named Model View Options to any view.

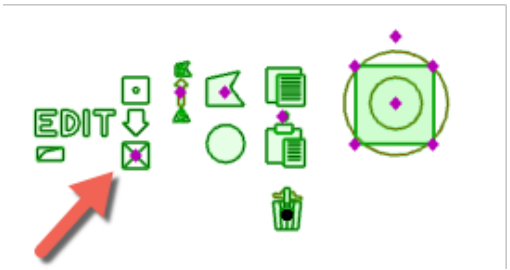


Breakthroughs

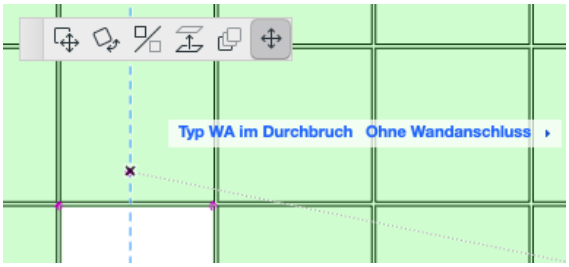
As of **version 2.4,** there are vertical breakthroughs in the skin structure. These are created and edited exclusively via movable hotspots.

To create one or more openings, proceed as follows:

- In 2D, activate the editing area of the breakthrough creation for the surface by dragging the leftmost hotspot located outside the object from the point to the cross.



- To the right of the activation button is a button for preselecting the number of polygons of the breakthrough from 3 - 16. The default setting is 4 (a square).
- To the right you can switch between polygon and circle.
- To the right you can copy an already placed opening (drag the hotspot upwards) and transfer the settings copied there to an opening that has not yet been placed or has already been placed (drag the hotspot downwards).
  This also makes it possible, for example, to convert already placed 4-corners into 6-corners.
- Below the copy and paste areas there is a "waste bin" into which you can drag openings that are no longer needed.
- On the far right you will see a circle with the preview of the opening as a polygon or circle.
- Drag the central snap point to the desired position on the roof surface and adjust the geometry with the corner snap points. You can snap to the joints of the individual tiles or tile fill.
- The base area of the flat roof is reduced by the opening area of the breakthroughs.
- Furthermore, the openings can be provided with wall connections - as already available around the outer contours of the flat roof - but only in a horizontal design.
- You can select the type of wall connection by moving the hotspots shown on the right in the graphic.

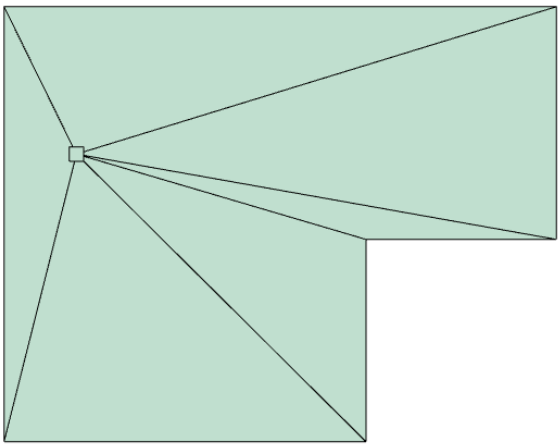


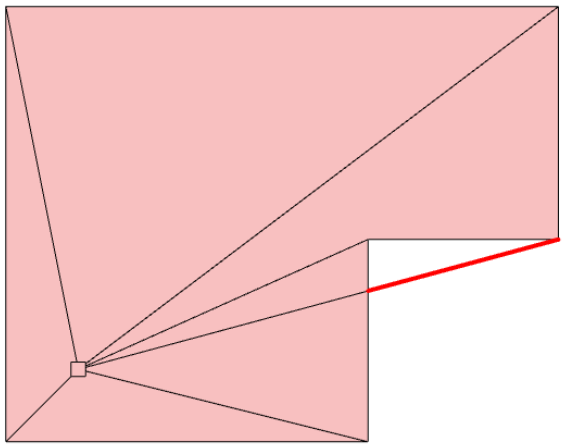
Equal height wall connections

As of **version 2.6**, the main criterion in addition to the basic setting "uniform slope" is the setting "uniform wall connection heights“. The slopes are different on all sections. There are normally as many slope sections as polygon corner points, since an edge runs from each corner point to the drain point.

The following should be noted:

- If there are several gullies, very complex intersections occur.
- With L-shaped ground plans, i.e. "where something goes around the corner", the drain or drains must not be located in the dead angle of a poly-corner jumping inwards (see picture right example). This leads to incorrect representations in 3D and in principle cannot be solved geometrically correctly, except with slopes of 90° and zero wall thicknesses.





Offsets

As of version 3.2, it is possible to set an offset of the individual skins towards the inside, i.e. the tile covering as the top skin, for example, can have an even distance to the outer edge.

Disclaimer

This software is delivered "as is". The library part has been extensively tested, but the programmer makes no warranty for possible data loss, data corruption, or hardware damage and other damages (including damages from lost profits, business interruption, loss of business information or of data, or from other financial loss).

Support

Each purchaser of the library item receives free support by email (support@b-prisma.de) or phone (05131/9059012) for 1 year from the date of purchase.

Changes and additions are possible at any time upon request. If of general interest, the costs for this are cheaper than for individual requests.

On the first settings page you can check if there are any updates by clicking the "up to date?" button. As a buyer of the object, you can have the updates sent to you free of charge.