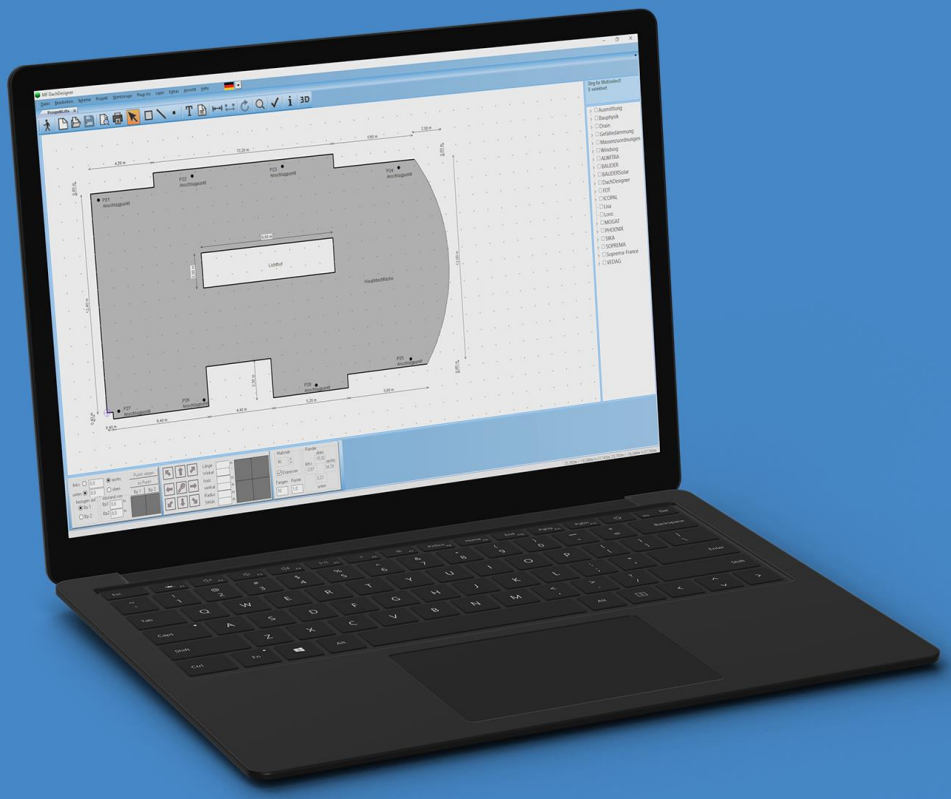
Markus Friedrich
Datentechnik



MF DachDesigner

The first steps

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Intro

The design of roofing constructions is a complex job, especially if you are willing to do it correct. Unfortunately, the codes and standards about flat roofs have been changed so complicated, even experts do not own all the affordable knowledge. At this point the MF DachDesigner starts to support the user by transferring the hard job to the specialists. They can do the design and calculation of wind uplift, cut-to-fall-insulation, draining and building physics by using the roof model the roofer has drawn.

This roof model is the basement of all. It´s much more than the drawing of the roof. Instead of drawing a point, you place a gully. Instead of a line, you draw a wall and instead of a coloured area, you draw a roofing package.

Now we want to start with the drawing of the roof.

Please note

You must update the master data on a regularly basis via the menu “extras” > “actualize data by internet”.

Start

After the successful installation you start the program, and you will see the home screen.

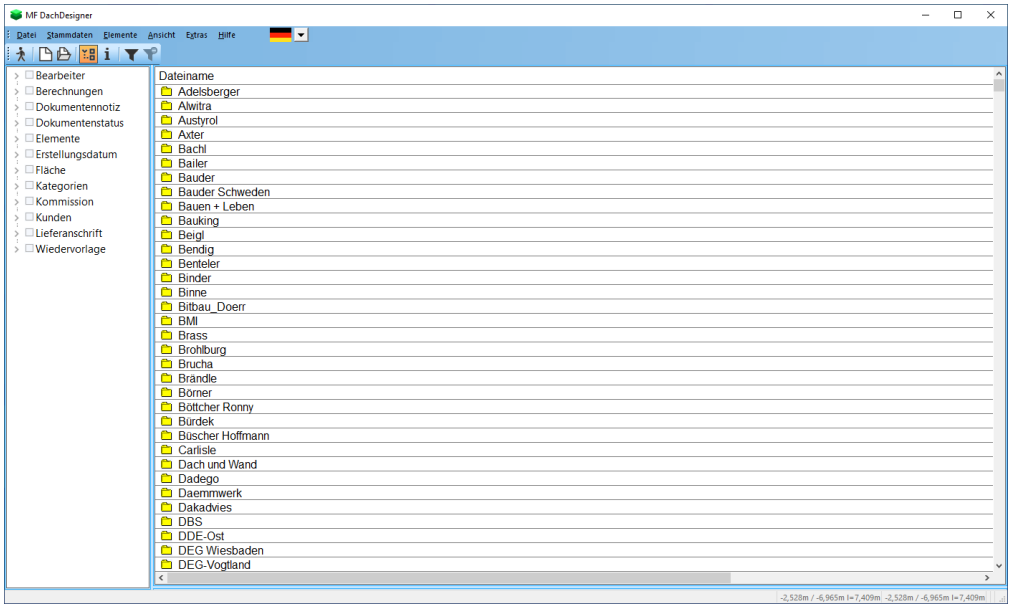

image 1.1: home screen

To start a new project, you choose the white page or the menu “file” > “new”.

Project 1: L-Bungalow

The address dialogue will pop up. Please enter a name for the project like *„L-Bungalow“.* You could enter an address, but for now we will go on with “OK”.

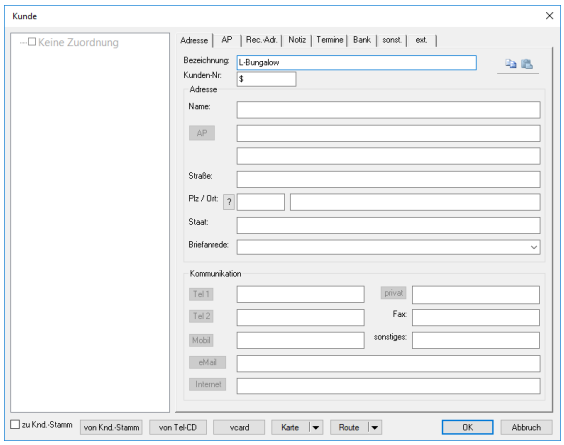

image 1.2: address dialogue

The next box displays the file name and an input field for the name of the construction project.

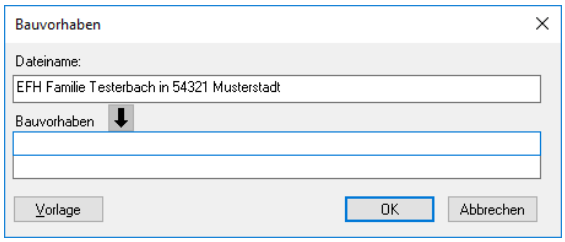

image 1.3: name of the file and construction project

The last step is the instruction page, where you can enter details about the construction project like the incline of the roof.

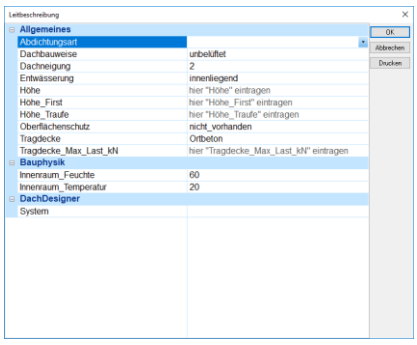

image 1.4: instruction page

This information is needed if you want to pass the information of the drawing to the plugins or if you want to send it to the industry. With the help of the information in the instruction page the technical planner got better chances to imagine the project. To enter information, click on the right side of the table and enter or choose an entry. For now, this is not important, so we will skip this step with „OK“ and move on to the drawing mode.

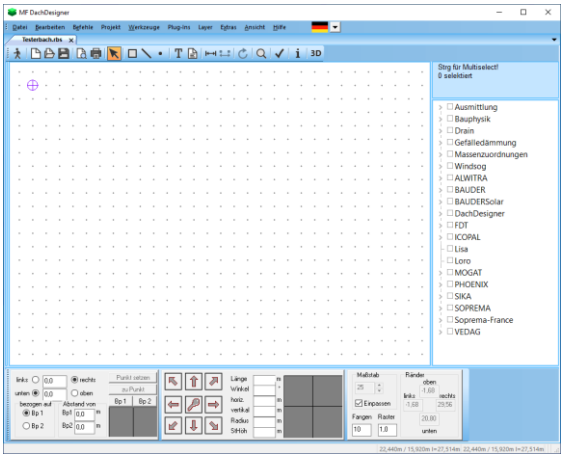

image 1.5: drawing mode

In the first step we draw the roof plan. Therefore, the choose the area symbol in the toolbar.

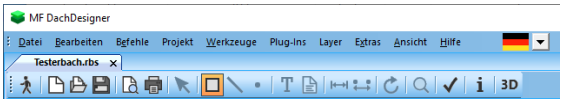

image 1.6: toolbar with active area mode

Now we have to choose the characteristics of the area because we want to draw not only a rectangle but a roof model with building physics or wind uplift and more. Therefore, choose the roof structure in the element tree on the right by clicking the + in front of „DachDesigner“, the + in front of “area elements” and then “Bit_AL_Gef_1lagig_Bit_mech”.
Now we draw a bitumen roof with vapour barrier with aluminium insert.

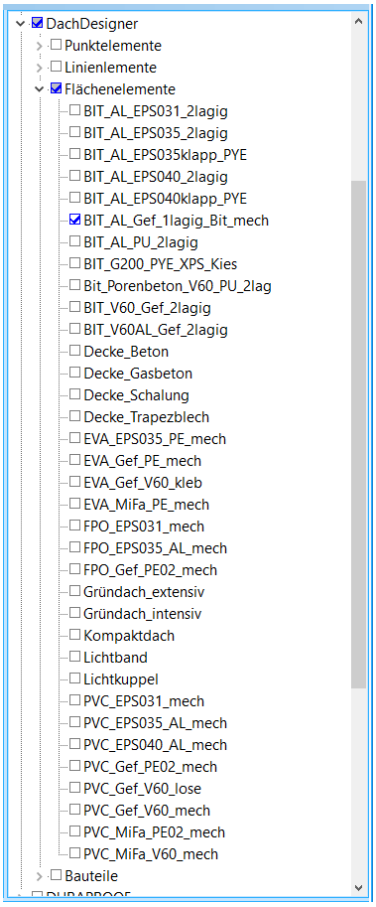

image 1.7: Elementebaum

Now we start to draw the roof plan with the line tool at the bottom of the screen. Click into the field for length and enter the length of 12,80m.

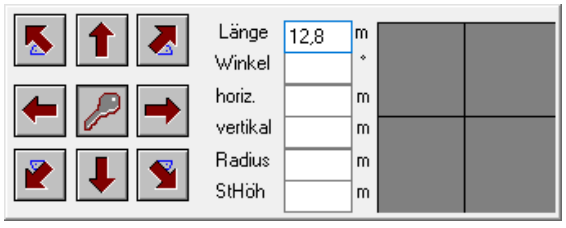

Image 1.8: line menu

You can choose the direction with the help of the arrows. Here, use the up-arrow to draw the first line. Step by step enter the next lines with the following lengths:

- 9,45 + arrow to the right
- 6,84 + arrow down
- 2,57 + arrow to the right
- 5,96 + arrow down

The last line will always be drawn by clicking the key in the middle of the arrows to close the shape to ensure that there is no gap.

Now the area dialogue box will pop up to enter a name for the new area. Enter main roof and click OK to exit the box.

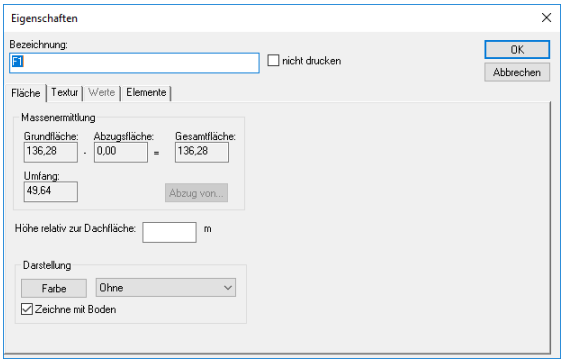

image 1.9: area fialogue

The roof shape will now be displayed:

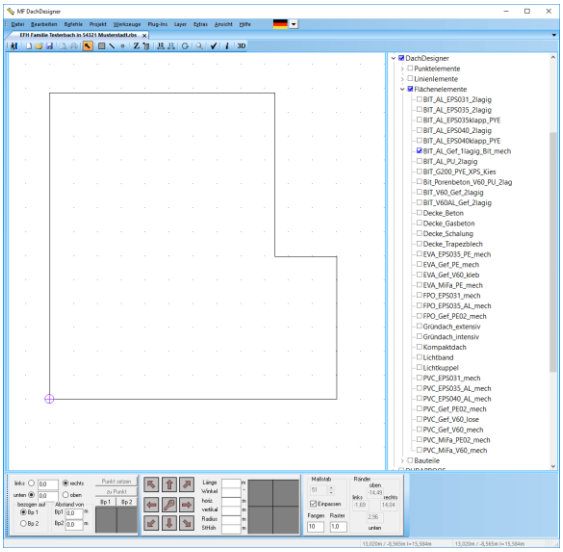

image 1.10: roof plan of the L-Bungalow

For a wind uplift calculation, we need the characteristic „wind uplift area“ from the element tree on the right. Click and hold with the left mouse on the characteristic and drag it into the area. If we now rest the mouse within the area the program displays the information of that area and will also show that this area got the characteristic of a wind uplift area. If we would like to do a drainage calculation or another calculation, we would have to assign the suitable elements from the right. Despite the area characteristics we need gullies or other drainage elements within the area. Therefore, we choose the point tool in the tool bar.

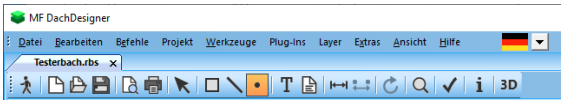

image 1.11: toolbar with active point mode

Now we need to choose the gully in the tree on the right. Choose the + in front of DachDesigner, the + in front of point elements and then „Gully_100_senkrecht“:

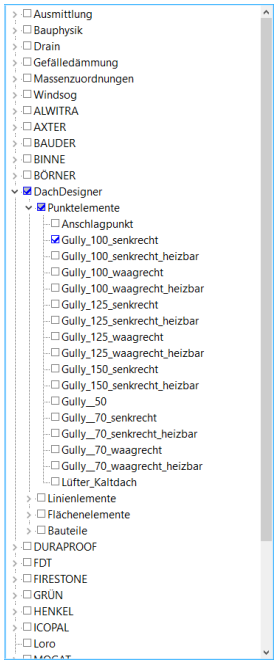

Image 1.12: element tree with gullies

For drainage calculation we would choose the „Drain“ and there „point elements” and “gully”. Afterwards we have to position the gully on the roof. To set the position of point we use the point menu at the left button. Click into the first input field and enter the following measurements:

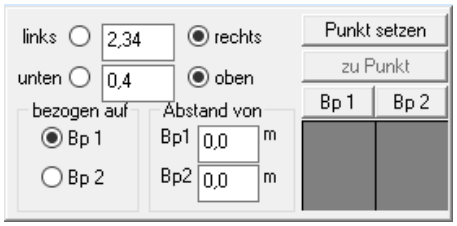

Image 1.13: point menue

All distance specifications are referring to the first reference point. The first reference point is presented as a blue circle with a plus inside. To enter the first point, select the buttons „right“ and „up“ followed by “set point”. The first gully will now appear inside the roof.

Now enter the second gully 9,65 m to the right and 0,4 m to over the reference point.

Now, we want to calibrate the third gully from the left, upper corner. Therefore, we transfer the reference point to this corner by clicking the corner with the right mouse and choose “set reference point1 (here)”. Now we can enter the measurements like we already have seen. The gully lies 4,70m to the right and 0,5m below the parapet. Enter 4,70 and choose “right” and enter 0,5 and click “down” and place the gully within the roof with “set point”.

After you have finished the roof model, you can use it for the technical programs to calculate the sloped insulation, wind-uplift, building physics, drainage etc. Therefore, you give the elements in the drawing characteristics from the structure tree on the right. For example, the roof area gets assigned the characteristic “wind-uplift area”. Afterwards you choose the menu “PlugIns” and then the belonging plugins, here “wind-uplift” and “edit”. You can read about the use of the plugins in the corresponding manuals.

Our last step is to close the project by choosing “save” and exit the file.

Project 2: diagonals and rounding's

Start a new project as you have seen in project 1 and as soon as you have reached the drawing mode, click the area tool in the tool bar and start to draw the following roof:

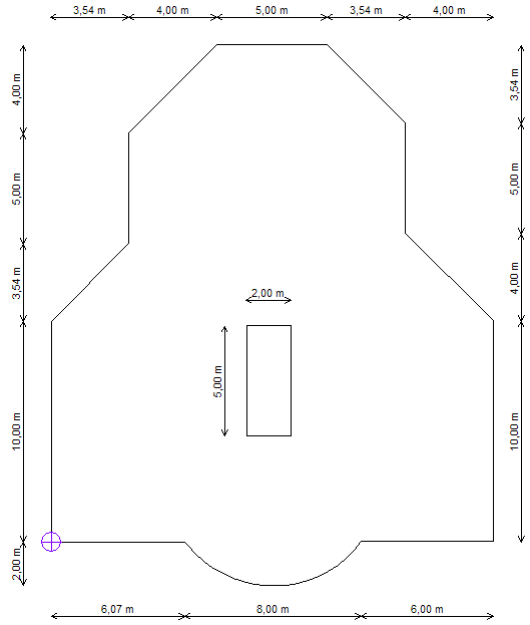

Image 2.1 roof plan project 2

Hint: Enter the numbers first and then choose the direction with the arrow.

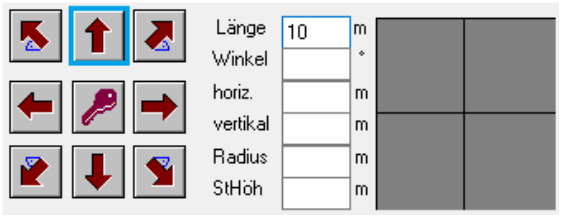

Image 2.1) Line with a length = 10 m upwards

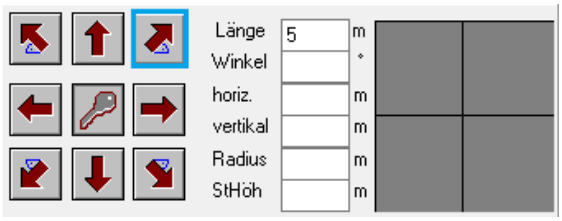

Image 2.2) Diagonal with a length = 5 m with an angle of 45° to the upper right

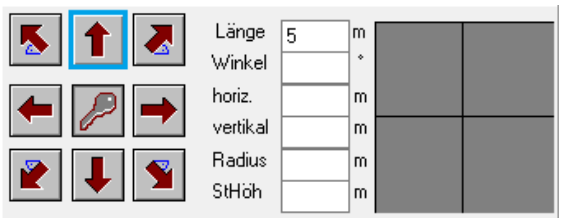

Image 2.3) Line with a length = 5 m upwards

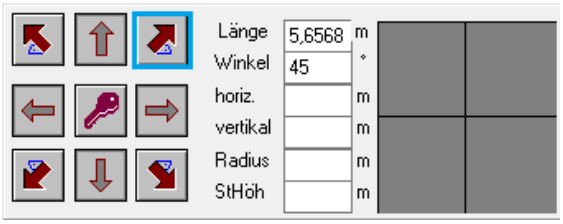

Image 2.4) Diagonal with a horizontal and vertical length of 4 m to the upper right

Note: the values for length and angle will be automatically added from the program

Add the following lines until you reach the rounding at the bottom of the drawing. Imagine you would like to draw a line with a curve. Enter a line that has the length of the distance between the start and ending point of the rounding, here 8 m. Then you enter the rise of the rounding: 2m and choose the arrow to the left.

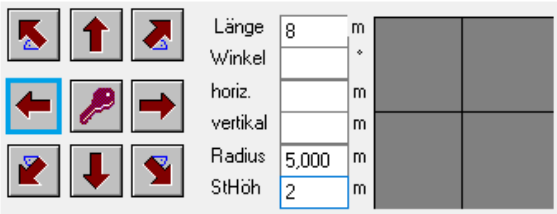

Image 2.5) rounding with a length 8 m and rise 2 m

Note: the radius will be entered by the program automatically

Close the area by clicking the key button. Name the are and finish the first step with OK.

Now we would like to add a 5 x 2 m light band. Set the reference point where we want the place the lower left corner of the light band:

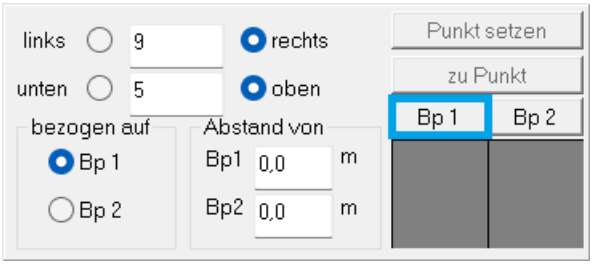

Image 2.6) set reference point 1

Activate the area mode:

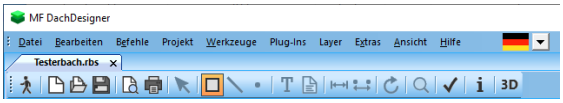

Image 2.7) are mode in the toolbar

Deselect all elements in the tree on the right. and enter in the line menu at the bottom of the display the following lengths:

- 5 m up
- 2 m to the right
- 5 m down

And close the are with the key button and enter an appropriate name like “light band”.

Now we know that the light band as to be subtracted from the roof area. To tell the program that this area has to reduce the roof surface we choose “subtract from…” and choose the roof area.

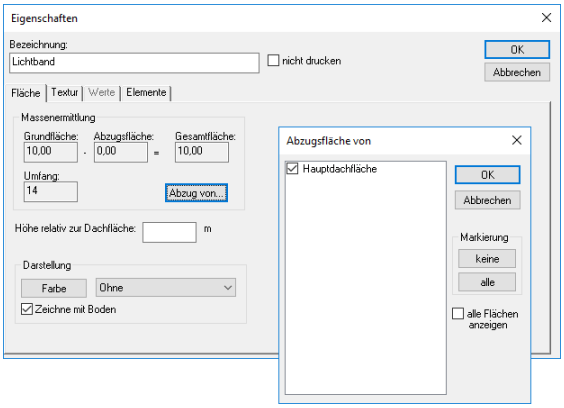

Image 2.8) light band as a subtraction area

Now the program will recognize the light band when doing the cut-to-tall insulation and will guide the water around this barrier.

Close both dialogue boxes with OK. If we hover over the area, we can now see that the size of the roof has decreased (= 358,99 m²).

To finish the project, we want to enter the measurements. Click the measurement tool in the toolbar.

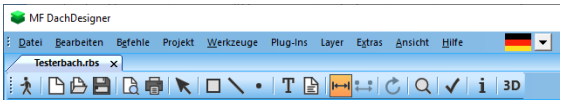

Image 2.9) measurement tool

Click on the edges of the roof to insert the measurements and choose the selection mode to place them around your roof.

Note: you cannot enter the dimension of the rounding with this tool.

Now that you know the course of action, you can now go on and draw your own roof plans. If you would like to do the calculations for wind uplift, sloped insulation etc. please read the corresponding manuals.

Notes: