HT2000 upgrade version 9.0 - december 2018

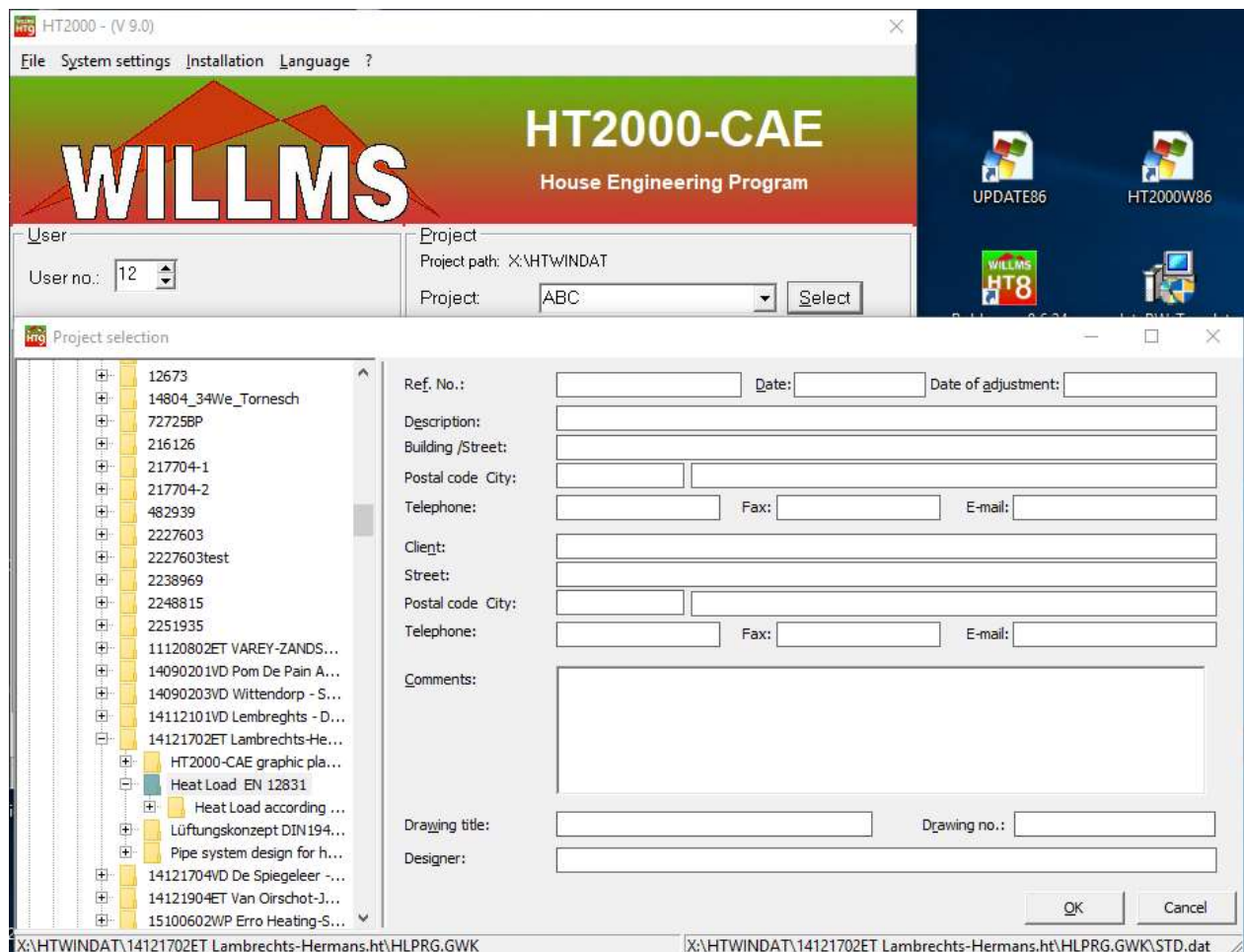© 2018 Willms GmbH

General Information

- **Adjustments to the current Windows 10 version**

- **New fast project browser**

The new project browser allows very fast access to projects and directory structures even with complex network structures. At the last level the project data are shown.

HT2000 / HT2000-CAE

Version 9.0   december 2018

- New result browser

With page preview, search function and various settings

HT2000 V 9.0   - 3 -   Project: ABC

Surface heating with PE-X pipes

according EN 1264

S y s t e m   s u m m a r y

Flow temperature	39,9 °C
Mean return temperature	31,5 °C
Total heat load	2916 W
Total output of underfloor heating	2916 W
Total flow quantity	363,6 kg/h
Max. pressure loss	4490 Pa
Water content	40 l
Total heating area of underfloor heating	57,5 m²
Total room area	60,0 m²

UFH with tacker sheet 50

Heating area   cc 200   16x2 mm   57,5 m²

Manifold	No. of heating circuits	Heating area [m²]	Flow quantity [kg/h]	Press. loss total [Pa]	Length total [m]	tf [°C]	tr [°C]
1	3	57,5	363,6	4490	334.5	39.9	31,5

19.12.2018

Page 1 of 5

- Radiator design

New radiator data acquisition

For old radiators for which no VDI3805 or BDH data are available, the technical data can be recorded. This enables an automatic design as with manufacturer data.

The acquisition module is called up via "Installation" in the start mask:

Table for data entry

You create a new model by entering a name in a blank line and confirming with <Enter>.
The data of an existing model can be taken over. Use <Del> to delete a model.

	Type/Designation	Overall height [mm]	Overall depth [mm]	Heat output [watts]	Exponent	Water content [l]	Coated area [m²]	Overall length [mm]	Code no.
1	Abs 10	400	90	200	1,25	1	0,76	600	
2	Abs 10	400	90	200	1,25	1	0,76	1400	
3	Abs 10	600	90	300	1,26	1,3	0,99	600	
4	Abs 10	600	90	300	1,26	1,3	0,99	1400	
5	Abs 10	300	90	130	1,26	0,6	0,44	1000	
6	Abs 11	300	100	130	1,26	0,7	0,44	1500	
7									

Radiator design according to the new sheet 6 VDI3805, incl. Cooling

Design surface heating systems

- **various new product data sets**

- **neutral ceiling heating in the PEX-Plus dataset**

- **Connections "reverse return" (Tichelmann system)**

Optionally, several identical heating circuits can be connected reverse return (Tichelmann system). The size and number of sub circuits can be varied. The nominal width of the pipe can be specified or determined automatically by the program.

- **Consideration of insulated connection pipes**

Individual connection sections can be marked as "insulated". This means that the output of these pipes is not taken into account. The material list may contain corrugated pipes or other insulating material.

Connecting lengths   ✕

☐ Connect several heating circuits Reverse Return (Tichelmann)

	Length [m]	through room	Insulate section	Output of connection [%]	Pipe spacing [mm]	covered area [m²]
▶	4	103	☒	0	100	0,8
2	6	104	☐	50	100	1,2
3			☐			
4			☐			
5			☐			

☑ Connecting length is automatically doubled.

Total length of connection pipes [m] :   20

- revised layout mask

HT2000 (9.0)   UFH Design according to BS EN 1264   © 2018 Willms GmbH   — ☐ ✕

Project: ABC

Surface heating with PE-X pipes

Manifold

No.: 1 ▼   Control group: 0   tf: 39,9 °C   ▦ tf-determination   **3** connections   Flow quantity: 363,6 kg/h
                                                                    Press.drop tot.: 7800 Pa   Pipe length: 334,5 m

	Room No.	Room denomination	ti [°C]	Flr. R.lb [m²K/W]	q spec. [W/m²]	Q short [W]	tf-tr [K]	Pz cc [mm]	Pz area [m²]	Pz ts [°C]	Oz cc [mm]	Oz area [m²]	Oz ts [°C]	Conn. area [m²]	Undo manual adjustm.
1	100	Küche	20	0,020	58		11,1				200	15,5	25,5		☒
2	101a	Wohnen	20	0,100	48 ···		7,6				200	25,0	24,6		☐
3	101b		20	0,100	48		7,6				200	17,0	24,6		☐
															☐

	Room No.	System variant	Pipe ND	Zone	No. of heating circuits	Connect. length [m]	Length total [m]	Flow quantity [kg/h]	Press. loss total [Pa]	Press. loss valve [Pa]	v [m/s]	kv - value	Flow rate [l/min]	Undo manual adjustm.
1	100	Ta50	16x2 mm	Oz	**1**	20,0	97,5	83,6	7798	618	0,21	1.40	1,40	☐
2	101a	Ta50	16x2 mm 18x2	Gruppe	**1/3**	**12,0**	137,0	166,7	4488	2459	0.14 0,30	0.77	0.93 2,80	☐
3	101b	Ta50	16x2 mm 18x2	Gruppe	**1/2**	**15,0**	100,0	113,3	3591	1136	0.14 0,21	0.52	0.95 1,90	☐
														☐

Room/circuit no. 101a, Correction of Reverse Return circuits, modules   ✕

Nominal diameter of Reverse Return pipe: autom. determination ▼

Number of Reverse Return circuits: 1   Heating area per circuit: [m²]:   **25,0**

Number of modules per Reverse Return circu 3   Heating area per module: [m²]:   **8,3**

✓ OK   ✗ Cancel

Cooling
Flow temperature: 17 °C

Information
Manual adjustment of number of heati...

✗ Cancel   ❓ Help

- neutral data set for industrial surface heating

with variable concrete coverings, concrete core activation and ceiling heating, connection of the equal circuits reverse return (Tichelmann system)

- <u>HT2000-CAE graphic module</u>

- General and CAD functions

- **Reading and saving large projects**
  Reading and saving of large projects has been significantly accelerated.

- **DXF / DWG interface extended and updated**
  EMF image files (e.g. manifold legends) are automatically converted to JPG files.
  This allows a direct export to the DWG file. The images are packed in a separate file and saved parallel to the DWG file.

- **PDF export has been extended and updated**
  The layer structure will be exported to the PDF file.
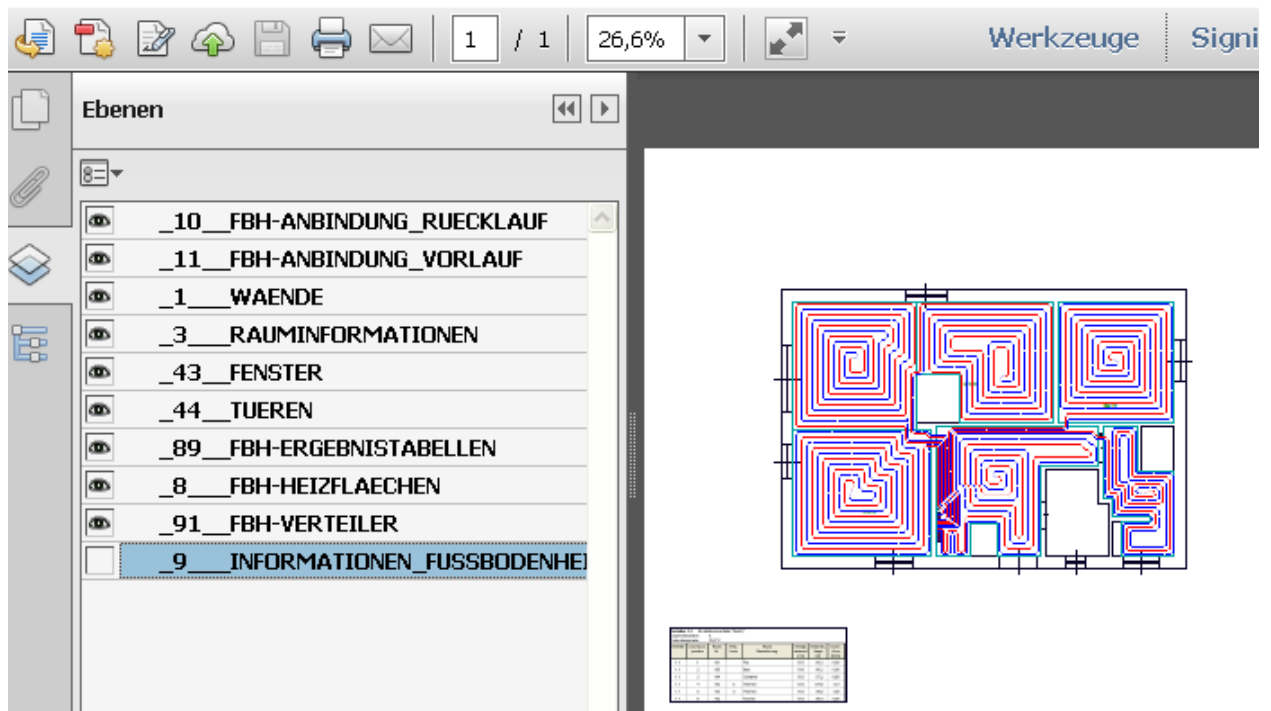
- **Views (Professional version only)**

The user can create different views of his plan and switch between the views at any time, e.g. between ground plan, heating plan, plumbing plan, or ufh routing plan.
The views are managed by "tabs" at the bottom of the screen.
The basis is the tab "default".
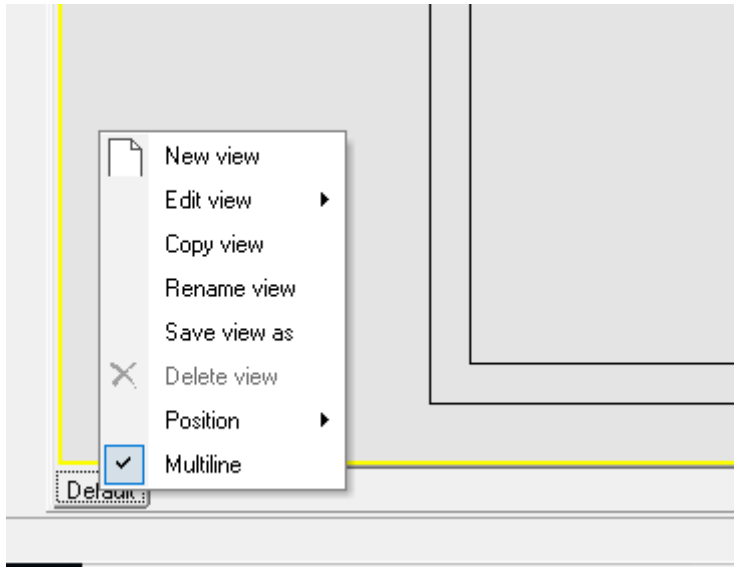
This is the view of your project as you have worked with it so far. If you right-click on "Default", you get a context menu with which you can create and edit new views.

Views are not new drawings, but combinations of existing layers that are displayed on screen at the same time.
This allows larger projects to be structured in a meaningful way. The following properties are managed and saved separately in each view :

> displayed layers,
> active working layer,
> scale,
> view scan template,
> zoom status,
> display line width,
> grid parameter,
> grid on / off ,
> visualizations
> title blocks

Title blocks placed in a view are managed separately, i.e. the texts can be changed in every view. Title blocks of other views, which should not be displayed, can be switched off via "fade in/out".
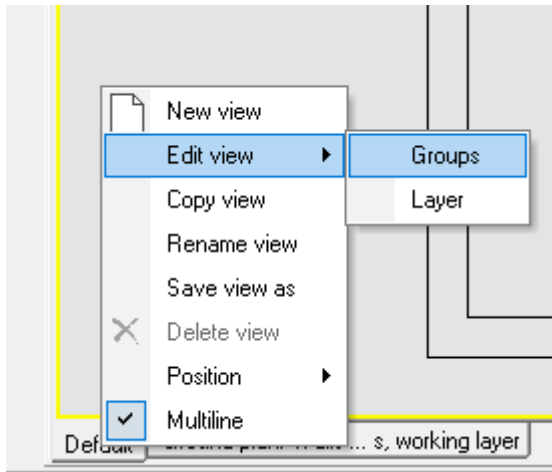
New view

A new tab is created after you have selected the layers to be displayed in the new view.
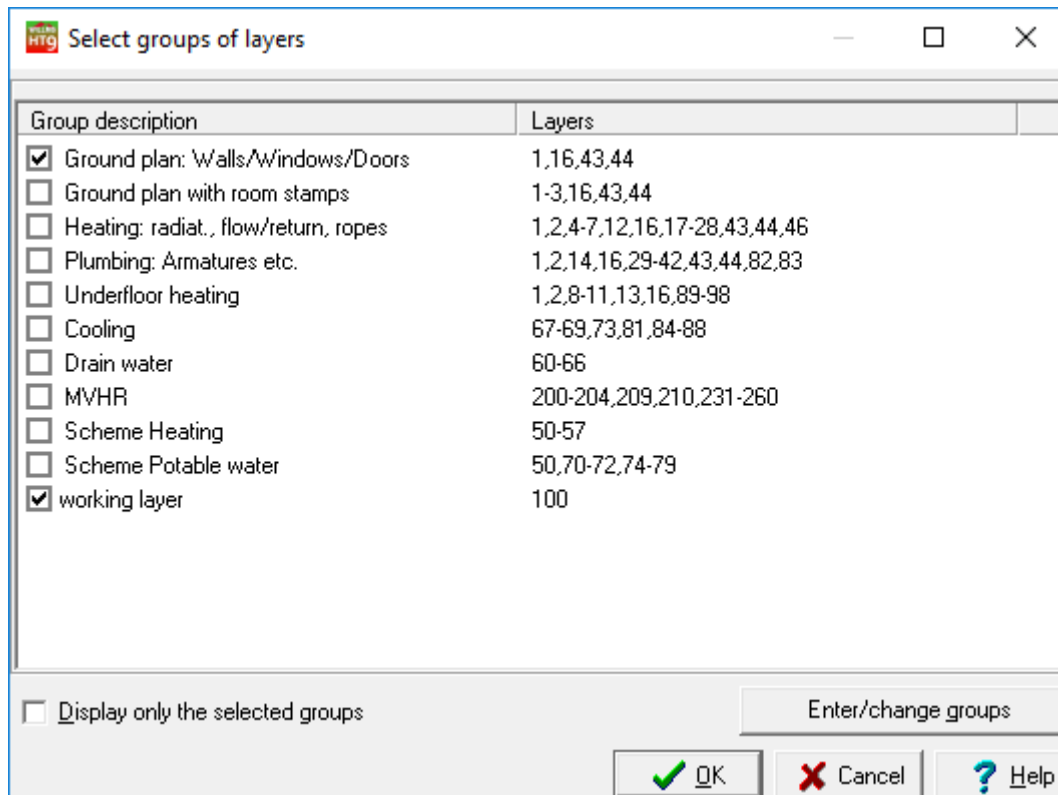
After the above selection, the layers 1, 16, 43, 44 and 100 are shown.
If you do not make a selection, all layers and properties of the active view are adopted.

Edit view

With "Groups" you can call up the layer group selection again, with "Layers" the list of all layers that you can select or deselect individually.

Copy view
A copy of the active view is created directly.

Rename view
The name of the view can be changed arbitrarily.

Save view as
The selected layers of the view are added to the list box of the layer groups under the name of the view. This allows you to retrieve the configured views in other projects.

Delete view
The view or tab is deleted. No data will be deleted.

Position
The position of the "tabs" can be changed.
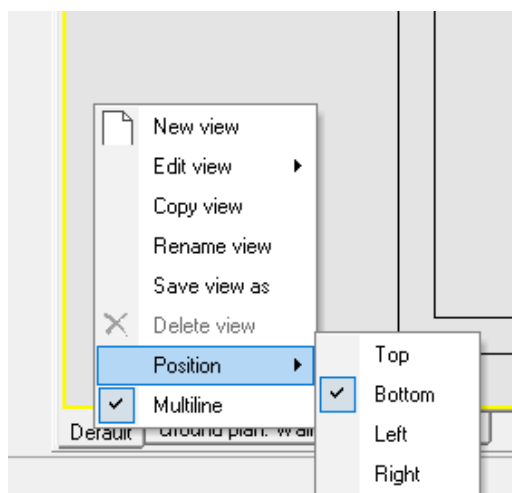
Multiline

If required, several tab rows are created

- **Undo / Redo (Undo / Redo) function**
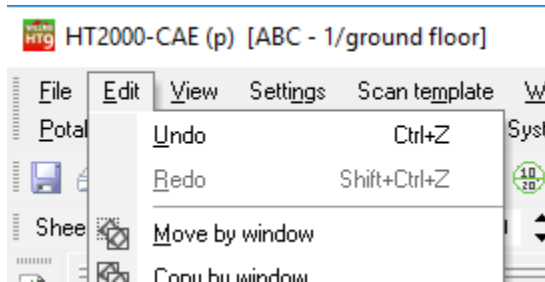
When editing CAD elements, the individual processing steps can be reversed or the "undo" can be revoked (redo).
For calculation objects the same function is currently in progress

- **Text Search by "CTRL + F"**
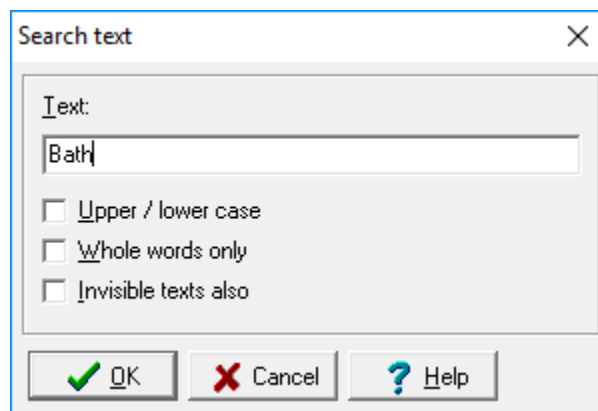
Throughout the drawing you can search for any text.

- **Text-quick entry / correction**
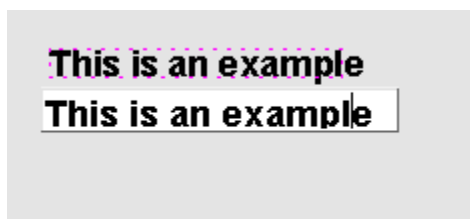
Double-clicking on the text activates the fast entry. Below the text an input field appears in which the text can be edited directly. By "Enter" the change is accepted, by "Esc" it is aborted.

- **Automatic closing function with key "c"**
  for all polygon-functions

Place next point anticlockwise at the internal side of the wall.   [c] = close polygon
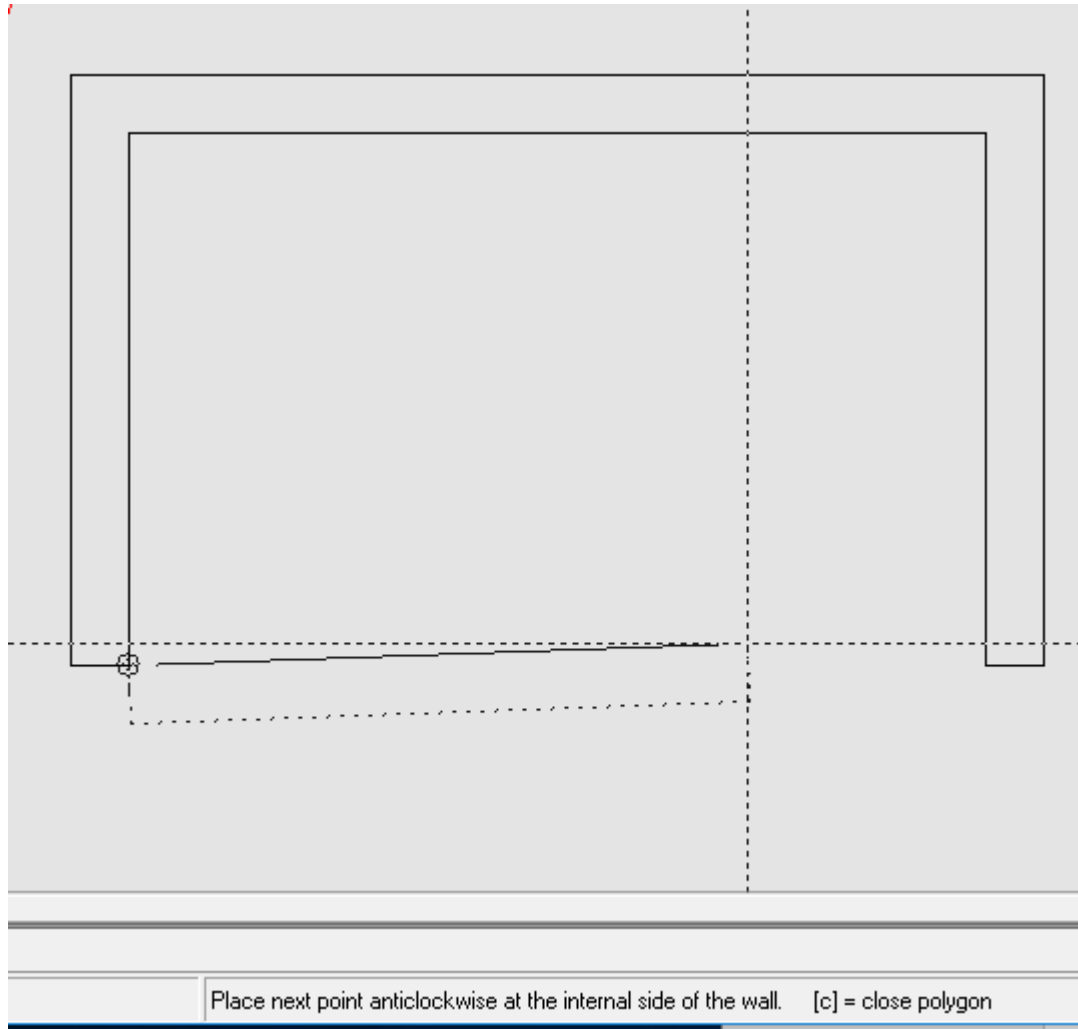
While the line or wall is hanging on the crosshairs, the polygon can be closed by pressing the "c", i.e. the first point of the polygon automatically becomes the last.

- Wall niches, parallel continuation of walls

The creation of wall niches and the parallel connection of walls with different wall thicknesses have been significantly improved.

- **Layer group selection**

Additive selection and enter/change group composition

Group description	Layers
☐ Ground plan: Walls/Windows/Doors	1,16,43,44
☑ Ground plan with room stamps	1-3,16,43,44
☐ Heating: radiat., flow/return, ropes	1,2,4-7,12,16,17-28,43,44,46
☐ Plumbing: Armatures etc.	1,2,14,16,29-42,43,44,82,83
☑ Underfloor heating	1,2,8-11,13,16,89-98
☐ Cooling	67-69,73,81,84-88
☐ Drain water	60-66
☐ MVHR	200-204,209,210,231-260
☐ Scheme Heating	50-57
☐ Scheme Potable water	50,70-72,74-79
☐ working layer	100

☑ Display only the selected groups   Enter/change groups

✔ OK   ✘ Cancel   ? Help

If the **"Display only the selected groups"** button is <u>deactivated</u>, the selected layer groups are displayed in addition to the existing layers, otherwise only the selected groups are displayed.

Via the button **"Enter / Change groups"** you can directly change or delete existing groups or add new ones.

Sign symbols have been added to the base toolbar for rescue, fire, commandments, prohibition and warning:
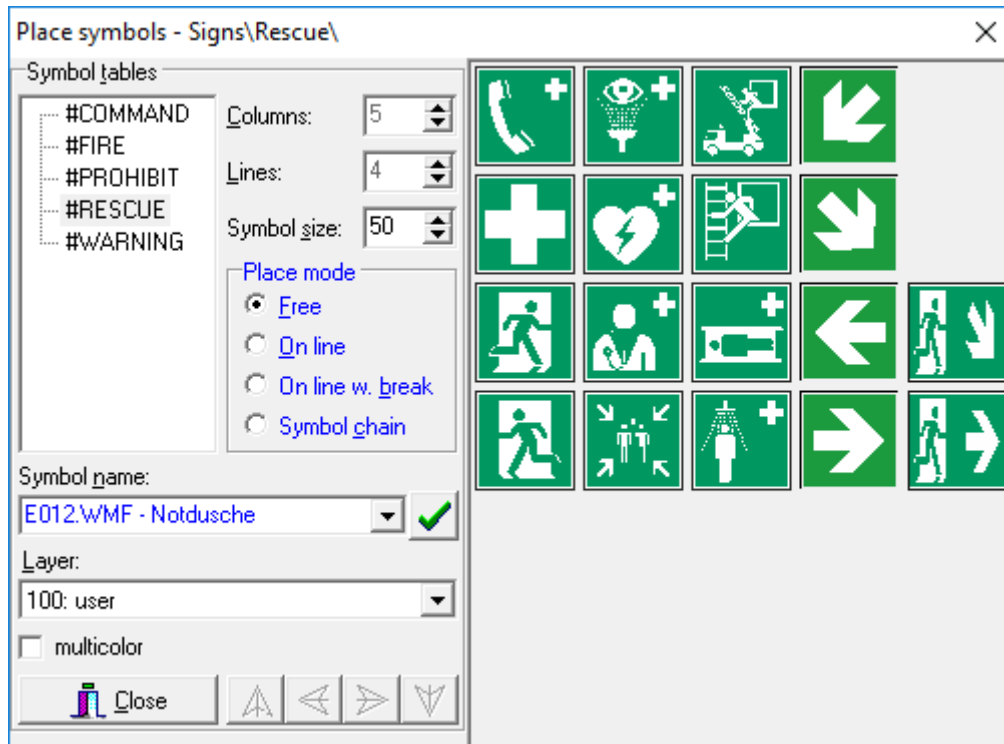
- strech images, copy images
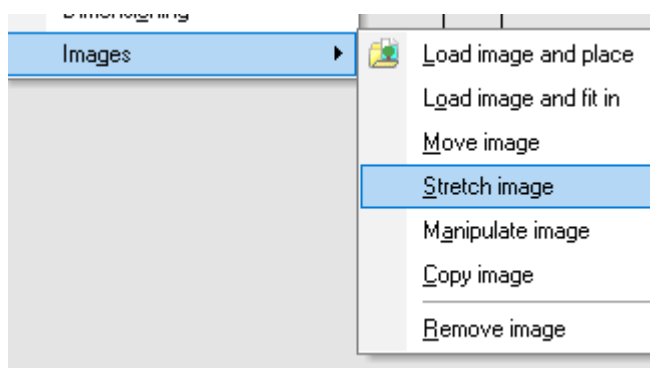
If the images are streched over the marked vertices, the image will not be distorted. The ratio of length to width remains constant.
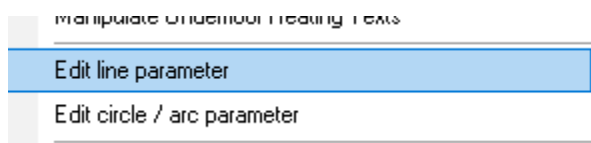
- Manipulate objects / elements

- Global change of node radii at branches or tees
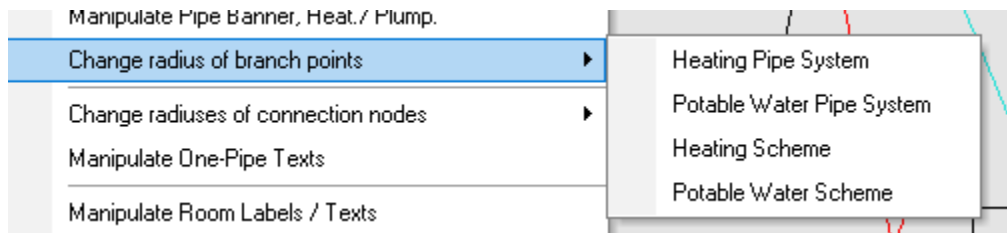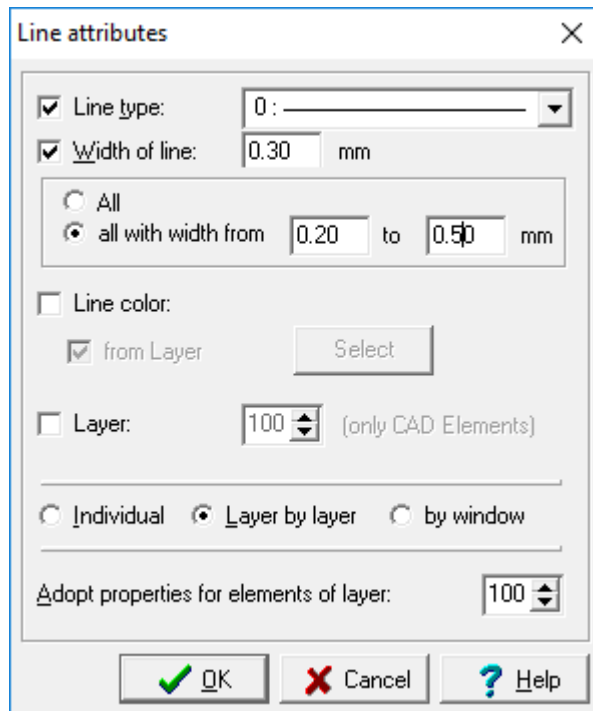

- global change of radii at connection nodes
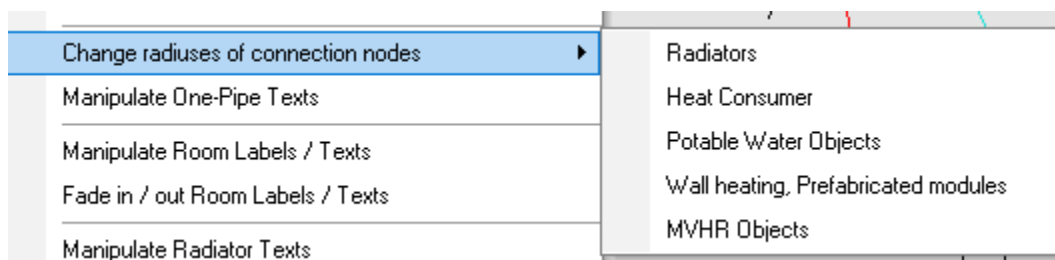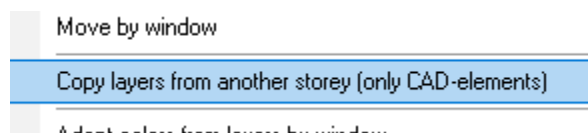

- Edit line / circle / arc parameter

Selective adjustment of line widths

In the function "Change line / circle / arc attributes", it can be differentiated whether changing the line thickness in a plane or window, whether "all" or only the lines with a certain line width should be changed.

- copy layers from another storey (only CAD elements)

From another storey the CAD elements of certain layers can be copied to the current storey. Calculation objects can not be copied.

- Adopt layer colour or element colour by window
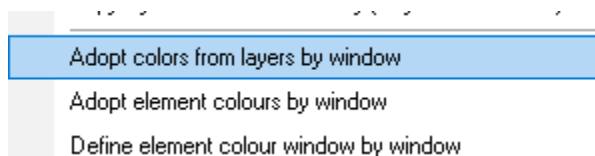
The colour of all CAD elements within a window can be switched to their element colour or to the colour of the layer.
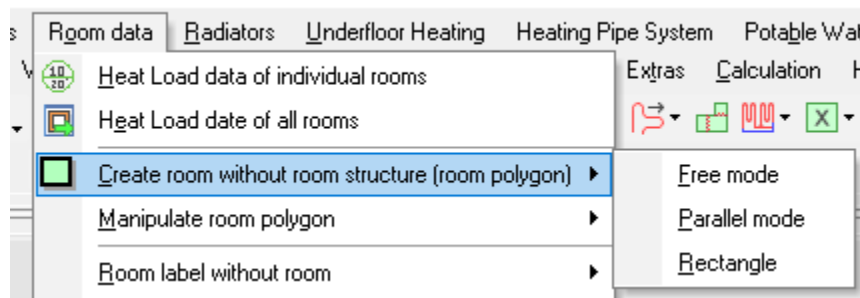
- Scan-template

Rotating a scan template has been refined up to 0.1°, see status bar at the bottom of the screen

Move the template by mouse   Rotate by curor keys left/right (0.1°) / +Ctrl (1°) / +Shift (10'') / +Ctrl+Shift(90°)
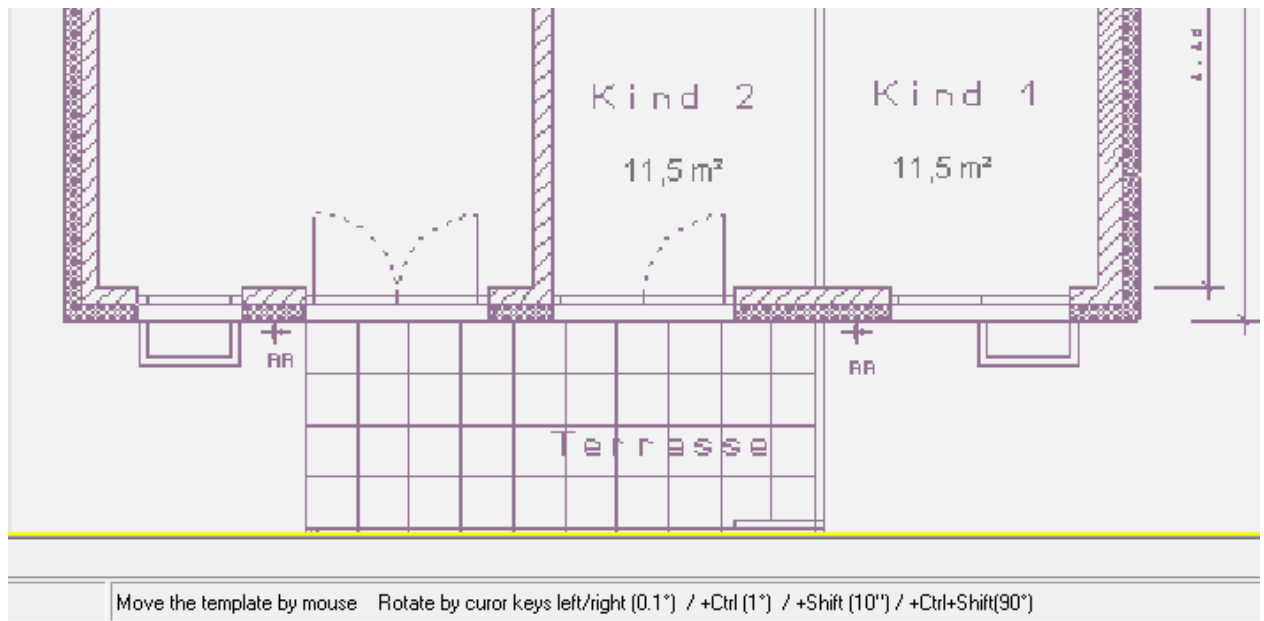
Cursor keys   left/right :   0.1°
                + Ctrl-key: 1°
                + Ctrl-key: 10°
        +Ctrl + Shift-key: 90°

- Room data

- create rooms without room structure (room polygon)
  (to call also via the base toolbar)

Using the 3 options arbitrary rooms can be created with a line polygon. The area will be measured and the room data will be queried directly after closing the polygon.
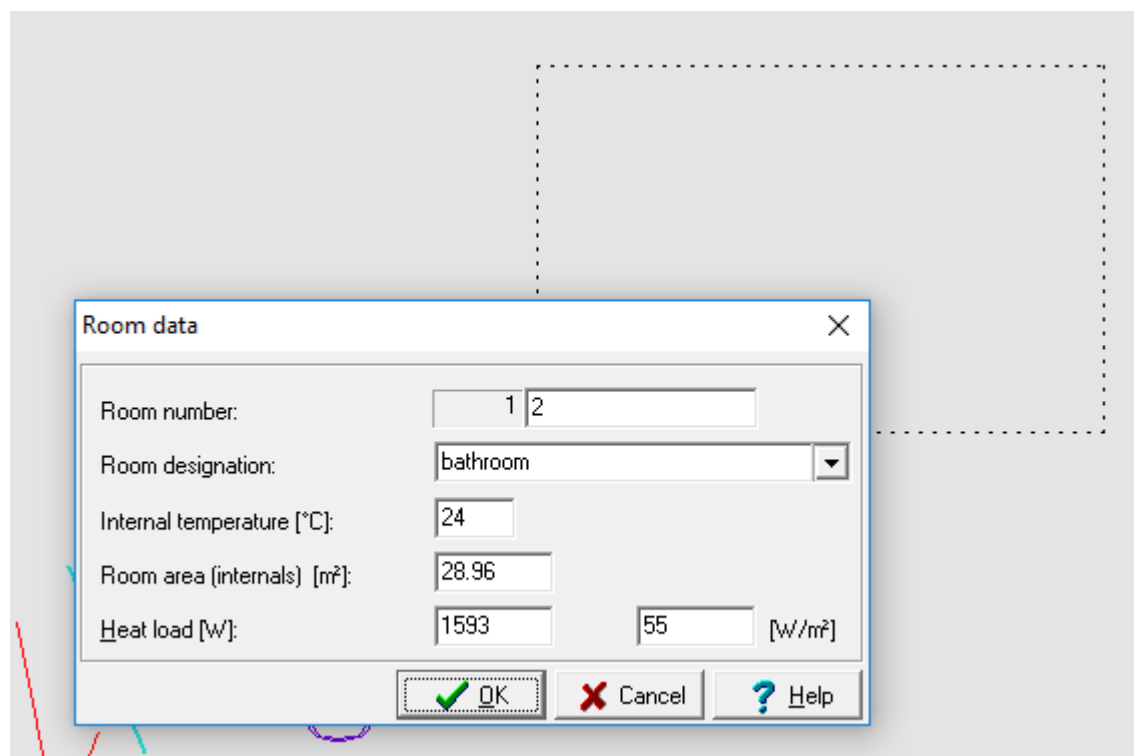
The heating load can be assigned manually (no heat load calculation!). The room marker is placed automatically.
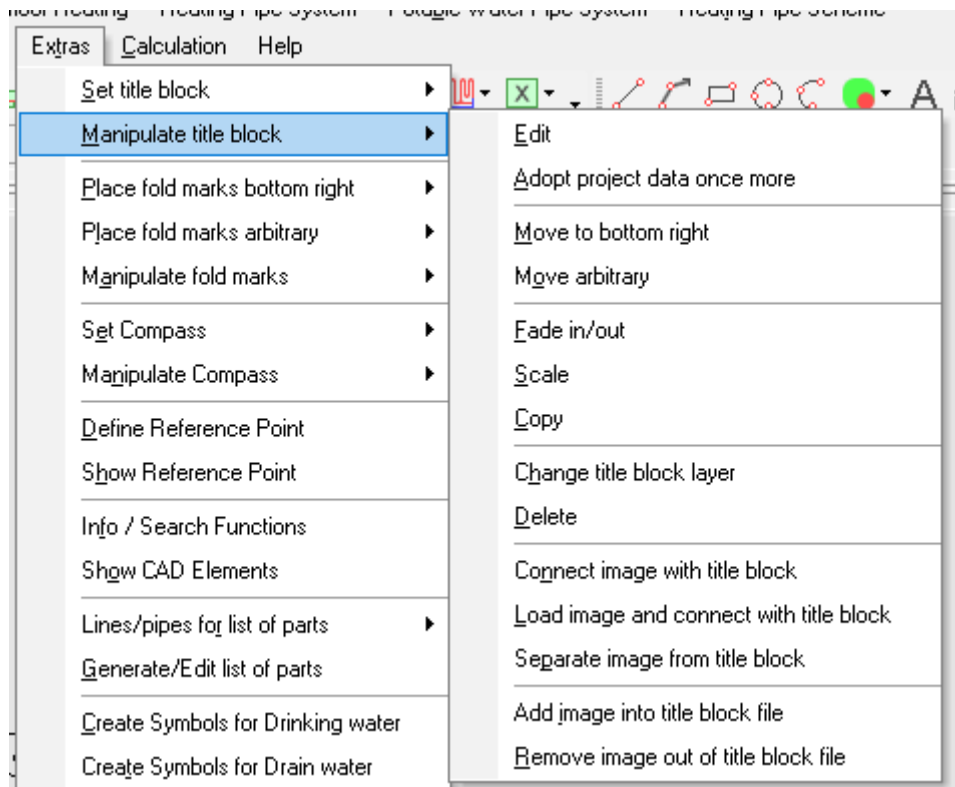These rooms can be used like normal rooms for radiator or ufh layout.

- **Manipulate room polygon**

There are various functions available for editing the room polygons:
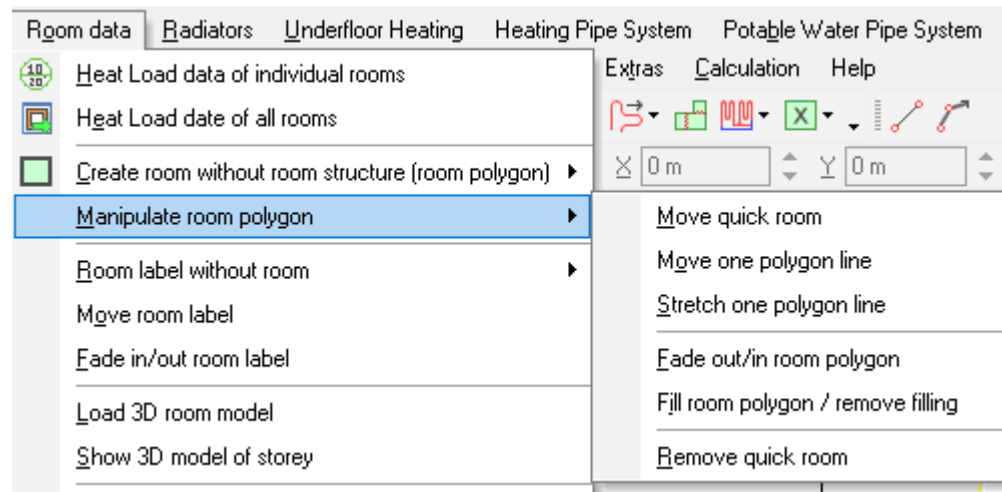
- Title block

The manipulation options for the title blocks have been significantly expanded.
Title blocks can now be placed multiple times. Different texts can be assigned to each title block.

- fade in /out

Title blocks can be made visible or invisible in any view as required.
All invisible title blocks are temporarily displayed on the screen. By clicking on it, you can make the desired title block visible again.

- Edit

The texts in the title block are now entered or changed directly in the drawing. All text fields will be marked first.

By clicking on a field the respective field will be opened for editing, for example:

If you complete the entry with **enter**, you can click on the next field.
When you finish with **tab**, the program automatically jumps to the next field (from left to right, from bottom to top).

- Pictures in the title block

Image files can be temporarily or permanently linked to a title block.
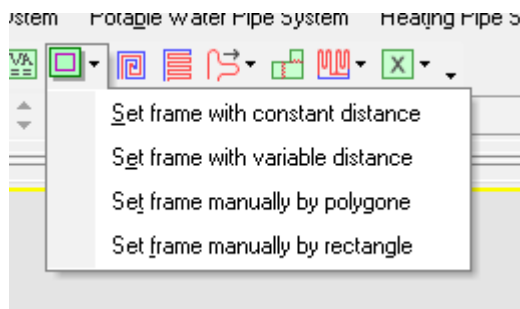
"Link image to title block" means a temporary link in the current view of the project, e.g. the image is moved or faded in/out at the same time as the title block.

"Add image to title block" means a permanent link. Whenever you reload the title block, the image will be included.

- Underfloor heating

- Frame

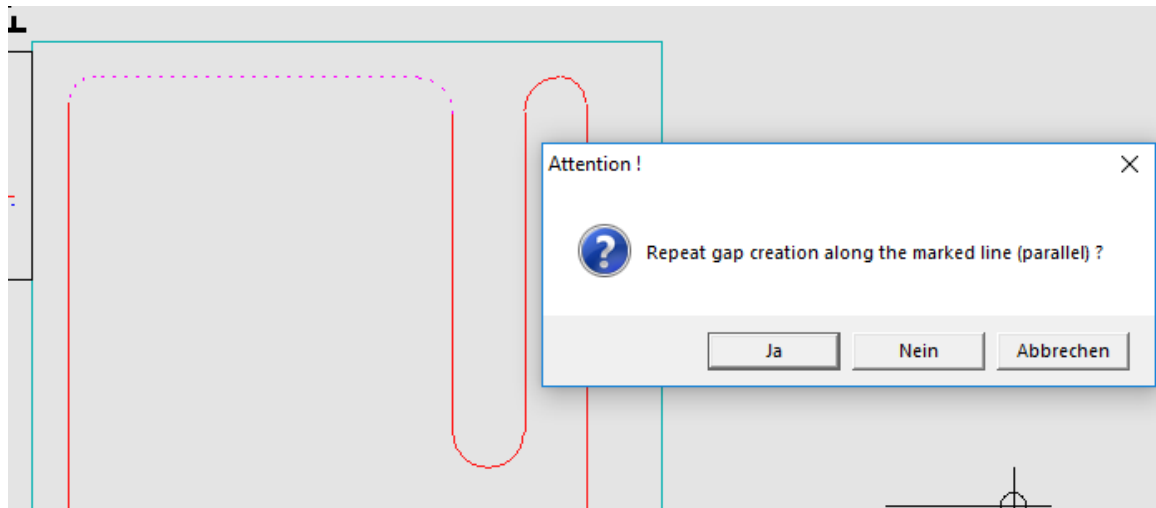A frame for the automatic laying can be created now manually as a rectangle.

- Manipulate snails / meanders

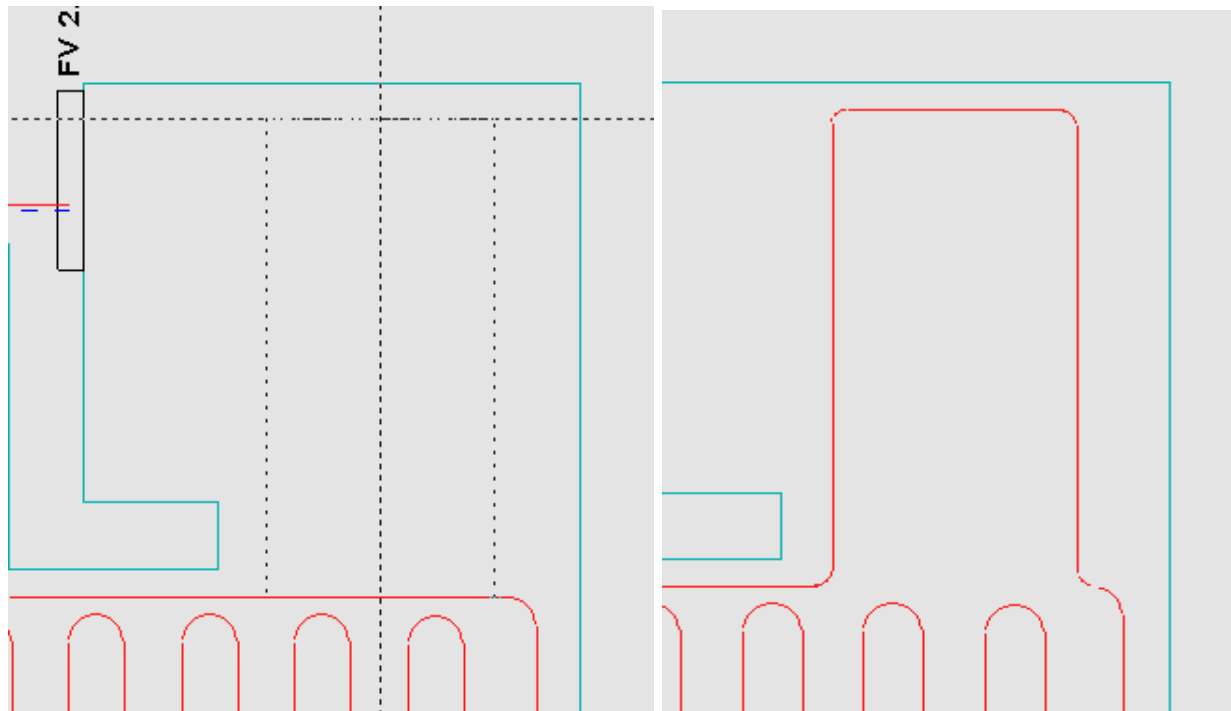For editing meanders and snails several new functions are now available.
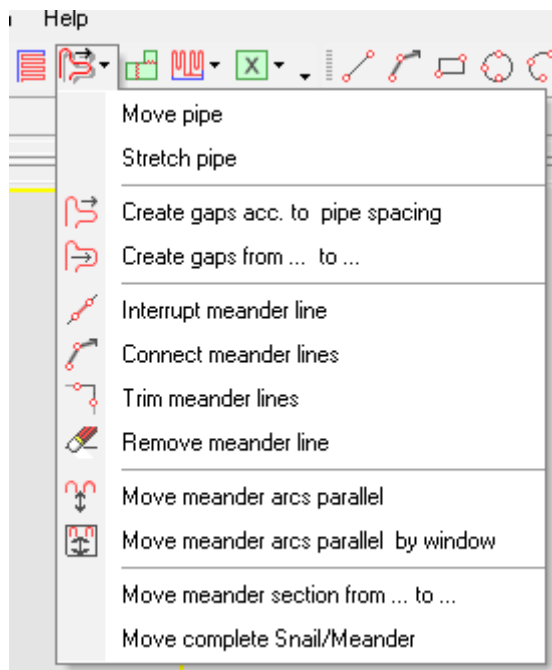
Create a gap acc. to pipe spacing

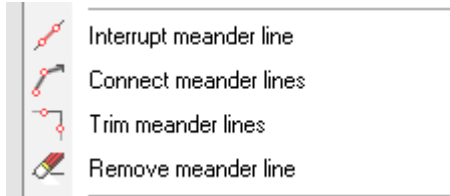
The gap creation can be repeated automatically.

Create gap from ... to ...

Interrupt, connect, trim and delete meander lines
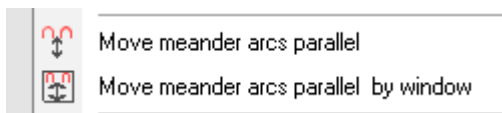
Interrupt meander line
Connect meander lines
Trim meander lines
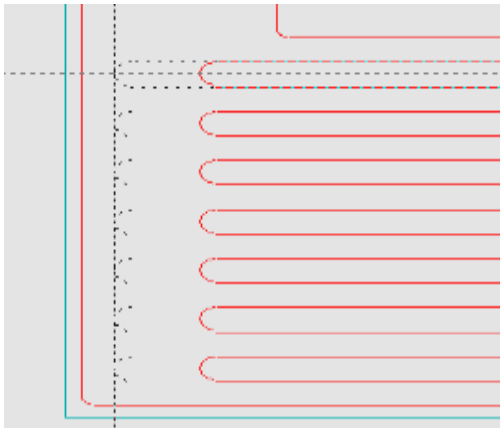Remove meander line

With these functions make sure that no ring loop is created.
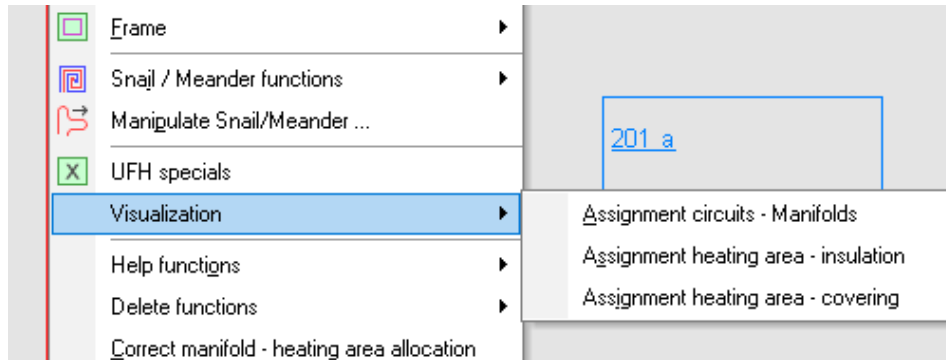New lines can only start from the end an existing line by "connect".

Move several meander sheets at the same time

Move meander arcs parallel
Move meander arcs parallel by window

Meander arcs can be clicked one after the other or selected by a window and then moved together parallel.

- Visualizations

Which heating areas belong to which manifold or which insulation variant or which floor covering is used in which area can be represented by colouring the surfaces in different shades, for example :
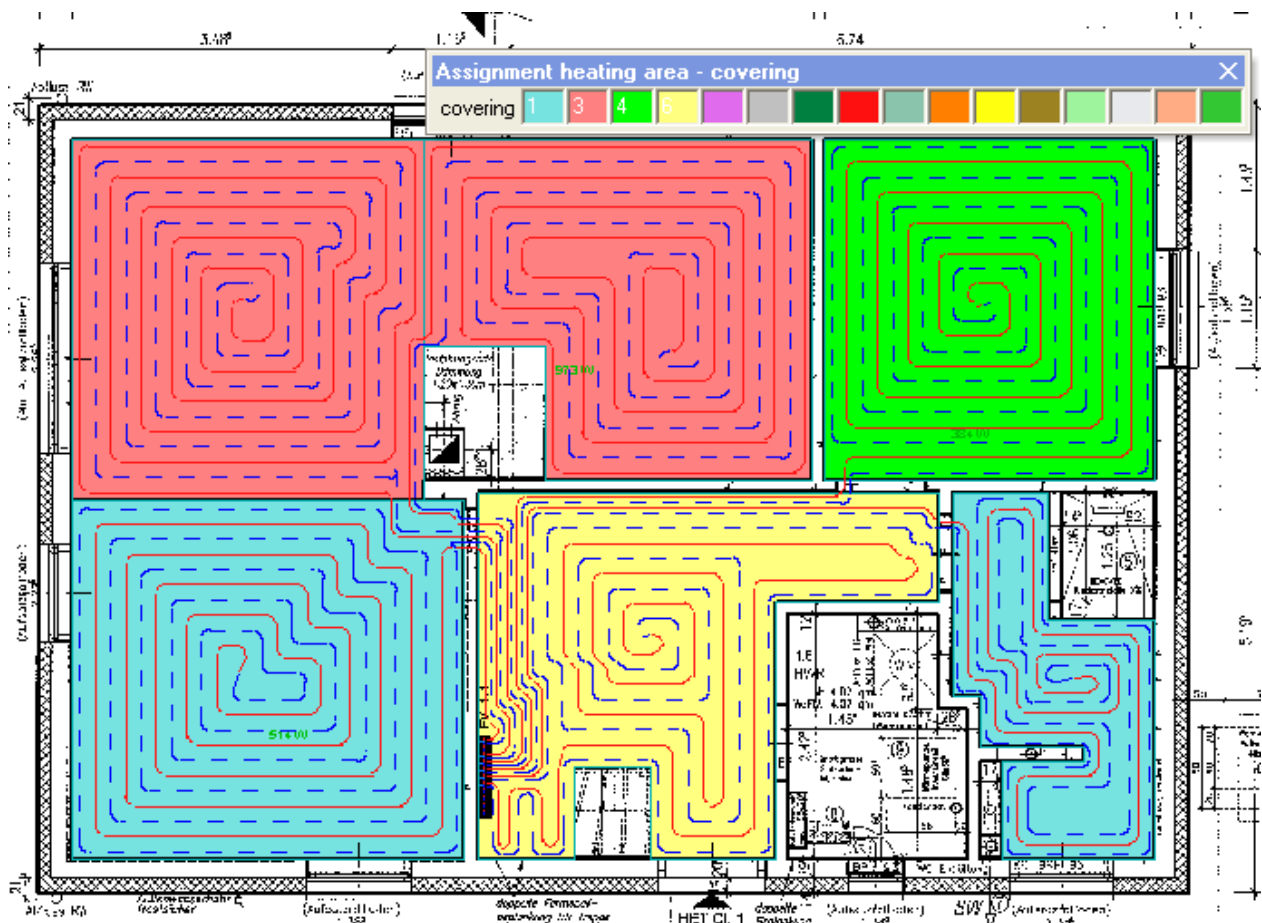
By double click on the colour fields of the tool bar you can determine the colours yourself.