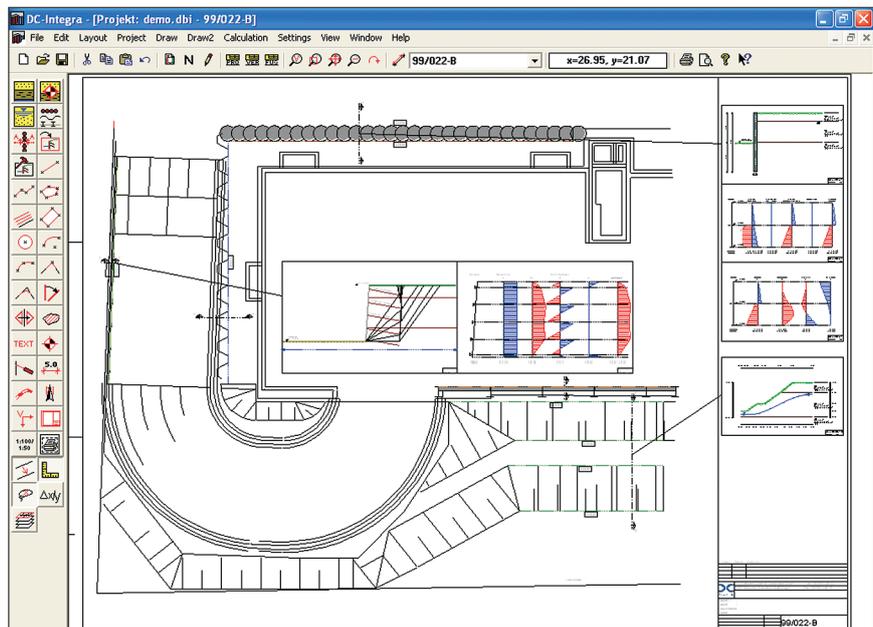


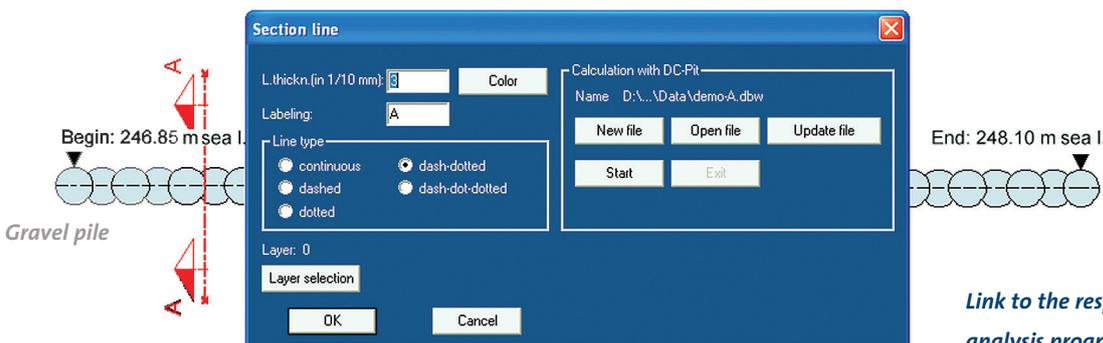
Integrated foundation engineering

DC-Integra

- German, English, French language
- Import of plans from the CAD with DXF, export of plans into DXF, integration of images through bitmaps
- Complete layer management with switching on/off and freezing
- Edit process with extensive CAD tools: lines, texts, polygons, intersection, symbols, dimension strings, anchor symbols
- Assignment of wall types to lines by predefining parameters such as girder types, bore pile diameters and spacing
- Exact graphic of the wall with macros incl. depth data as well as joint options
- Management of soil layer data, variable through bore points
- Automatic interpolation of heights above sea level, with assignment to soil layers
- Definition of the analysis sections through arbitrary intersection lines
- Management of all sections in a plan
- Automatic start of the pertaining analysis program: DC-Pit, DC-Nail, DC-Slope, DC-Underpinning
- Quick transfer of all geometrical and type data: wall type and parameters, thickness and soil layers to the calculation program
- Additional edit process (excavations, anchor lengths) and analysis in the calculation program
- Integration of the result graphics into the plan
- Update tool in case of modifications in the calculated section
- Permanent overview of all sections in the project through complete management in the plan
- Plan formats from A4 to A0 + customizable formats
- Hardcopy tool for quick output of overviews and excerpts on A4

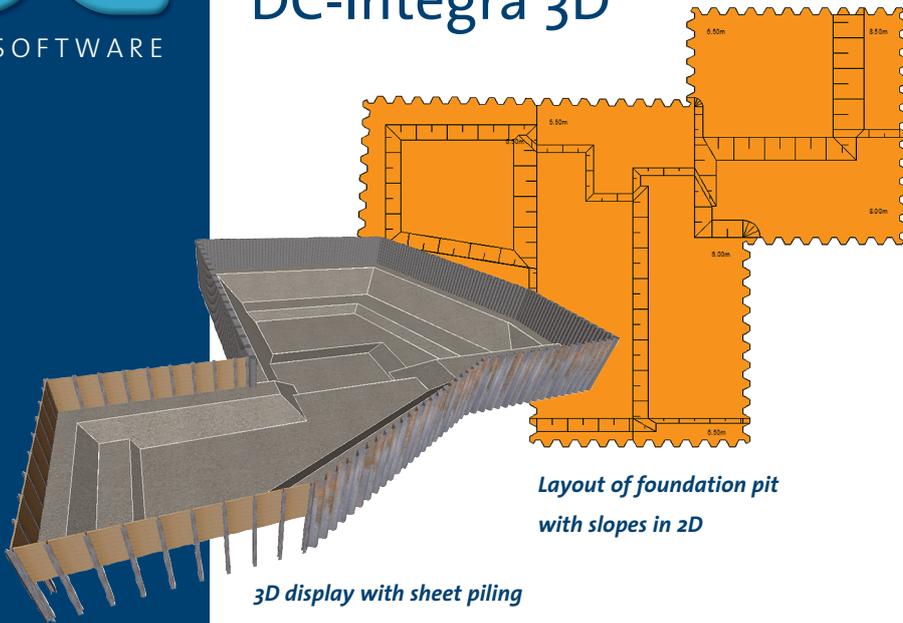


Assignment overview of the wall types

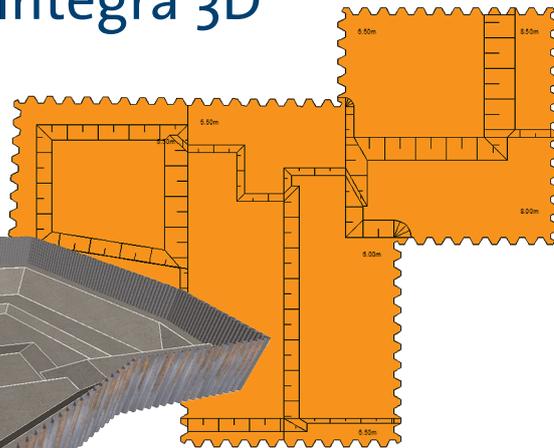


Link to the respective analysis program

3D display of foundation pits DC-Integra 3D



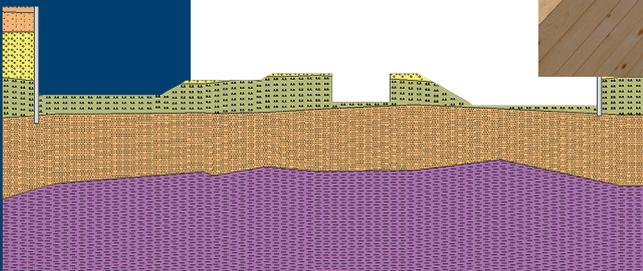
3D display with sheet piling and slope intersections



Layout of foundation pit with slopes in 2D



Display of a girder plank wall



Display of cross sections with soil layers

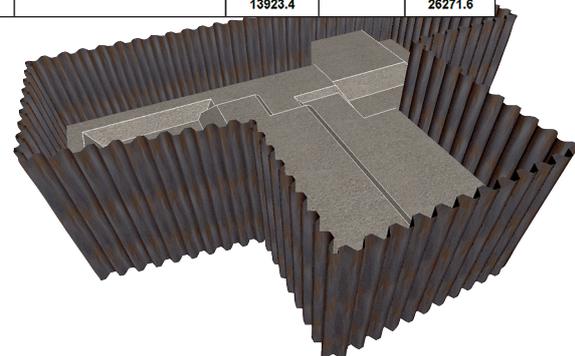
- Complete 3D model with automatic generation of the slopes between different depth sections
- Subdivision of the ground area with definition of the slope inclination
- Turning and shifting the 3D model with arbitrary viewing direction
- Creation of 3D images of complex foundation pit situations with photo-realistic display
- Clear overview over the geometry of the foundation pit even for non-experts
- Exact display of all types of walls with matching textures
- Steel, concrete, timber, earth
- Exact measures e.g. for sheet pile profiles from a parameter data base
- Import of DGMs, display of the ground surface – just easy

Excavation volumes and masses DC-Integra 3D/Volume

Determination of excavation volume and masses

- Calculation of the excavation volume at the push of a button, including swell factor
- Excavation masses with the specific weight of the soil
- Values per soil layer and total
- Verifiable output of the volume calculation with a list of all the coordinates

Cubage of excavation					
No.	Soil type	Layer name	Cubage [m³]	Spec.w. [kN/m³]	Excavation [t]
1		Sand, dense	2832.8	20.00	5665.7
2		Gravel, md	6804.3	18.00	12247.7
3		Silt (UM)	4288.3	19.50	8358.2
Total			13923.4		26271.6

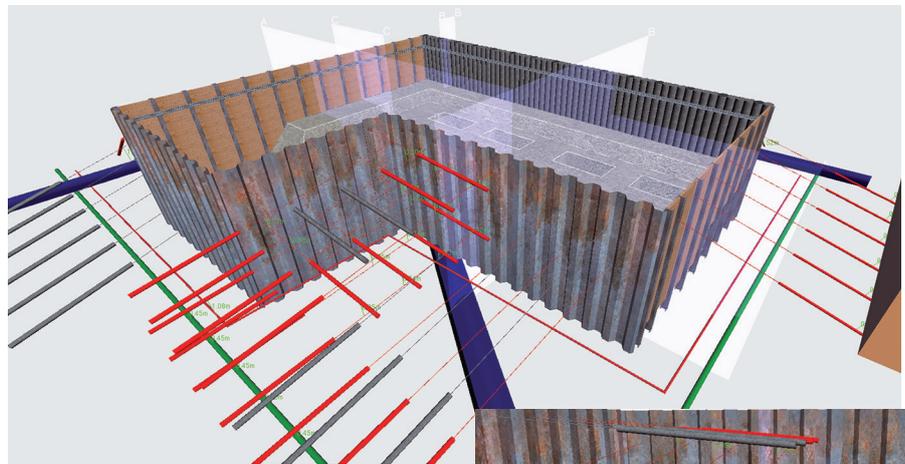


3D model of the foundation pit

Collision check of anchors

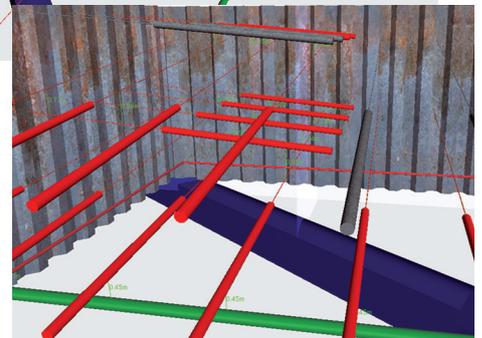
DC-Integra 3D/Anchor

- Definition of anchor layers with boom at the foundation pit walls
- Depth, length, inclination of the anchors, length and diameter of the fixed length, boom profile
- Change of inclination and depth for single anchors
- 3D display of anchor layers and booms
- Turning and shifting of the display in the 3D view
- Easy check of the position of the anchors against each other
- Automatic check for collision between anchors (free/fixed length), between anchors and pipes, between anchors and buildings
- Permitted distances to fixed lengths/pipes/buildings may be defined



Display of the anchors in the 3D model, red = problematic points

- Labels for the critical distances for a better overview
- Determination of the distances in the 3D model
- Anchors may be spreading (anchor pairs) and/or horizontally deviated

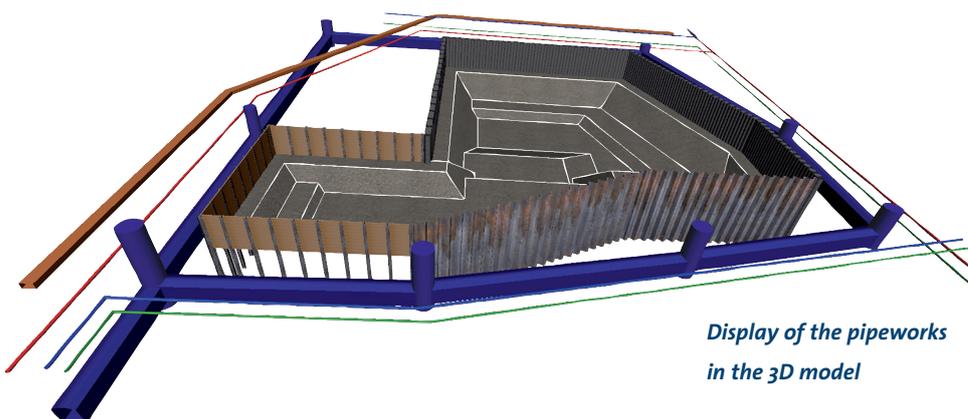


Position of the anchors from different points of view with collision check

3D display of all types of pipeworks

DC-Integra 3D/Pipeworks

- Display of different types of pipeworks
- Wastewater, water, gas, electricity, district heat, cable trenches
- Select the color for each type
- Different sections: sewer pipe profiles, circular profiles, rectangular profiles



Display of the pipeworks in the 3D model

- Different dimensions of sewer pipe (egg-shaped) profiles may be defined arbitrarily
- Optionally connection of the pipes by pits
- Definition with coordinates or with inclination
- Reference to a reference height or with heights above sea level
- Overview of all the pipeworks by 3D display: rotate, enlarge and reduce arbitrarily