Intelligent BIM/CAD Core

- In-house developed intelligent BIM/CAD core, runs on Windows XP, Vista and Windows 7
- Import and export of all common data formats such as DWG, DXF, PDF, IFC and JPG
- DXF/DWG converter and editor with intelligent object mapper - "Click & Learn"
- Network compatible and multi-user functionalities on a project level
- Multiple windows, views (2D, 3D, front view) and any number of plots
- Multi-disciplinary project management, customizable automatic title field
- Intelligent object selection with preview, symbol creation and editing
- Print and plot at any scale with the user friendly "plot wizard"
- Structured BOQ (parts list) which can be filtered by zone, storey, room, etc.
- Interfaces with cost estimating software, including export of BOQ to Word/Excel

3D Building Model

- Flexible and easy planning of floor plans
- Intelligent discipline specific data exchange via buildingSMART/IFC
- Automatic room recognition from DWG/DXF files including windows, doors, room labels
- Configurable automatic room labels and automatic associative dimensioning
- Intelligent construction of roof surfaces, dormers, and skylights
- Easy editing of the building model for example due to change by the architect
- Automatic surface area and volume calculations including spatial roofs and dormers
- Intelligent planning of photovoltaic panels
- Builder works, chase and wall opening planning with automatic discipline specific labeling
- Automatic multi-discipline layer administration
- 3D render model, OpenGL views and multi-disciplinary collision detection
- Automatic building model consolidation for presentation, visualization and complete BOQs
- Freely definable cross-sections, part models and elevations for different model presentations

Electrical Installation

- Complete 2D/3D design of installation plans for all types of electrical installation:
  - Low voltage, lighting, movement & presence detectors, telephone & data, intercom & audio
  - TV and radio, nurse call systems, fire and security, KNX building automation
- Planning of cable routing systems (tray, ladder, duct, conduit) and mounting plans
- Integrated light calculation and bi-directional interface with Relux and Dialux for advanced calculations
- Planning of earthing systems, potential equalization and lightning protection systems
- Integrated technical generic and parametric product database
- Intelligent electric circuit selection with electric circuit and component dimensioning
- Automatic cable and volt drop calculation with length check (e.g., for data cables)
- Efficiency factor for end component group, supply, switchboard etc.
- Automatic determination of performance from sub distributors to the main feed
- Intelligent functions for cable and wire planning with automatic length calculation
- Automatic recognition of unconnected objects
- Associative and freely configurable component, cable and electric circuit labels
- Automatic update of all plans with including data exchange between model and distributor databases

Electrical Automation

- Automatic production and update of diagrams, schematics, revisions etc. when changes are made
- Automatic circuit list report and single line circuit diagrams
- Bi-directional interface with measure instrument ProfiTest M-series from GMC-I
- Automatic production and update of multi line circuit diagrams
- Creation of 2D/3D switchboard layouts with automatic dimensioning
- Automatic production of all views (sides, inside, door, 3-D), punching plans and mimic diagrams
- Extensive technical database with intelligent symbols and product data
- Flexible definition of sheets and circuit diagrams with intelligent user configuration
- Automatic numbering of components, blocks and terminals with unit/local marking and description
- Automatic duplicate record check for contacts, components and terminals
- Automatic numbering of components and terminals, plus equipment references
- Automatic prevention of multiple connections for contacts, components and terminals
## DDS-CAD HVAC & Plumbing 9

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### Plumbing & Heating
- Flexible and integrated 2D/3D design of pipe systems with "smart snap" functions
- Multi-storey logic and intelligent building model, including automatic volume and area calculation
- Calculation of U-value and heat load requirement according to EN 12831
- Automatic heating element dimensioning and placement (radiators)
- Installation and system sizing (also in combination with other heating systems, e.g. electric, underfloor)
- Heating network calculation (2-pipe system or reverse return) with automatic dimensioning
- Pressure loss calculation with hydraulic valve adjustment and valve settings
- Planning of underfloor heating based on EN 1264
- Plumbing pipe network calculation according to EN 806/circulation according to DVGW W553
- 2D or 3D design of pipe systems and schematics
- Presentation, design and calculation of sewage systems
- Intelligent design of plumbing distributor schematics
- Associative and freely configurable object, equipment and pipe labels
- Parametric and generic objects with automatic placement and mounting height verification
- Automatic production of installation plans, in addition to schematics and equipment arrangements

### Ventilation
- Flexible, integrated 2D/3D design of duct system with "smart snap" functions
- Possibility to use circular, rectangular and oval duct profiles
- Parametric symbols with built in automatic placement and mounting height verification
- Multi-storey logic and intelligent building model, including automatic volume and area calculation
- Automatic connection of air terminals, plenums and other components
- Automatic duct sizing and pressure loss calculation with hydraulic balancing
- Hydraulic balancing with screens, dampers and adjustable air terminals
- Flow rate calculation for individual branches (with dimension defaults)
- Complete planning and calculation for residential controlled ventilation systems
- Intelligent and configurable building model check and collision detection
- Associative and freely configurable object, equipment and duct labels
- Parametric and generic objects with automatic placement and mounting height verification
- Automatic production of installation plans, in addition to schematics and equipment arrangements
### Building Services
- Photorealistic presentation with sun animation and video output
- Design complete escape, rescue and fire plans
- Intelligent planning of chases and wall openings
- Calculation of U-values and heat load according to EN 12831
- Dynamic energy simulation based on gbXML output

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### Building Services Expansions
- Electrical installation and automation with integrated calculations and extensive databases
- Plumbing and heating with integrated calculations and extensive databases
- Ventilation and air conditioning with integrated calculations and extensive databases
### DDS-CAD PV 9

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- Intelligent construction of roof surfaces, dormers, and skylights
- Easy editing of the building model for example due to change by the architect
- Intelligent planning of photovoltaic panels
- 3D render model and OpenGL views

#### Smart Photovoltaic Planning
- High quality and efficient planning of PV systems in 2D and 3D
- System design and installations plans including mounting systems
- Simulation of the sun’s path Visualization and the impact of the solar shading by interfering objects
- Photorealistic presentation and video output
- Flexible design for roof, flat roof, facade and ground mounted PV systems
- Automatic roof surface occupancy, yield analysis and schematic diagram generation
- Freely definable cross-sections, part models and elevations for different model presentations Generate customizable and structured BOQs instantly
- Interfaces to cost estimating systems, plus BOQ export to Excel and Word
- Production of installation plans and plots in DWG, DXF and PDF
- Print and plot output documentation at any scale

#### Polysun Inside
- Integrated database with global weather data from over 8,000 weather stations
- Calculation of weather data for custom locations
- Update of the sun position every 4 minutes during the simulation
- Extensive shading visualization
- Comprehensive, up-to-date manufacturer product database for PV modules and inverters
- Automatic inverter mapping of the selected PV fields
- Yield forecasting on the basis of dynamic simulation and module warming
- Automatic filtering of available PV modules based on module surface area
- Automatic visualization of simulation results

#### Wiring, Installation Systems and Circuit Diagrams
- Intelligent wiring network planning
- Automatic cable and wire length calculation and control
- Intelligent circuit selection, circuit and component sizing
- Planning of cable routing systems (tray, ladder, duct, conduit) and mounting plans
- Associative and freely configurable component, cable and circuit labels
- Monitoring of connection logic, multi-disciplinary collision detection
- Automatic update of all plot drawings and distribution schematics
- Bi-directional interface with professional measurement device ProfiTest M-series
- Overview diagrams, verification protocols, and single line circuit diagrams
- Flexible options for representing sheets and circuit diagrams using intelligent configuration
- Automatic numbering of components and terminals, plus equipment references
- Automatic prevention of multiple connections for contacts, components and terminals
### DDS-CAD ProfiTest 9

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#### Electrical Automation

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- Automatic production and update of diagrams, schematics, revisions etc. when changes are made
- Automatic circuit list report and single line circuit diagrams
- Automatic production and update of multi line circuit diagrams
- Creation of 2D/3D switchboard layouts with automatic dimensioning
- Automatic production of all switchboard views (sides, inside, door, 3D), punching plans and mimic diagrams
- Manual and automatic design of circuit, terminal and cable diagrams
- KNX device overview, PLC card and patch panel documentation
- Planning of control circuit and connection diagrams
- Extensive technical database with intelligent symbols and automatic macros
- Intelligent component selection and automatic sizing
- Flexible definition of sheets and circuit diagrams with intelligent user configuration
- Automatic cable and volt drop calculation with length check (e.g., for data cables)
- Efficiency factor for end component group, supply, switchboard etc.
- Automatic determination of performance from sub distributors to the main feed
- Automatic numbering of components, blocks and terminals with unit/local marking and description
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