

Allplan BIM 2008

Digital Terrain Modeling Package



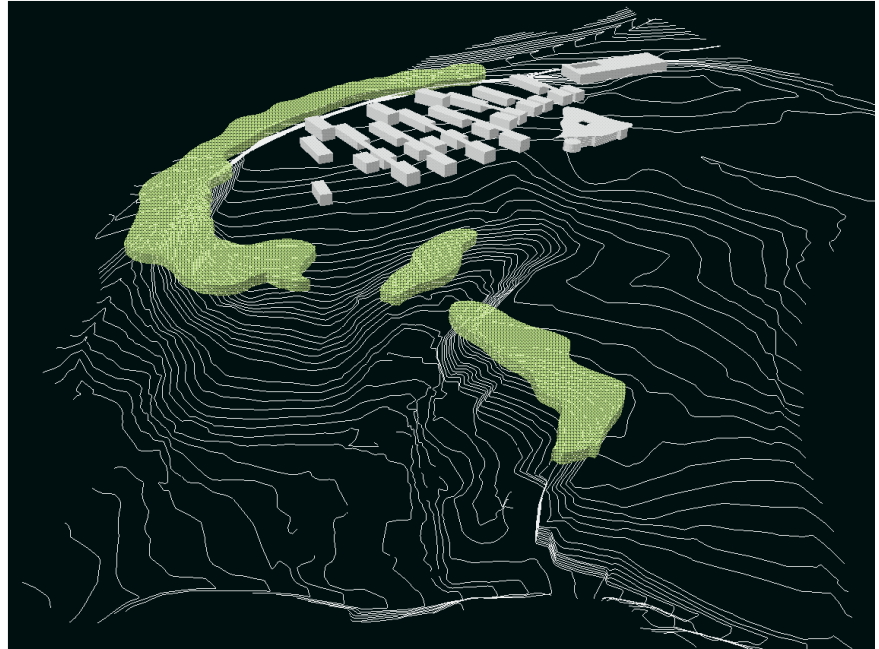
The CAD Planning Solution for Civil Engineering, Landscaping and City Planning

The Allplan Terrain package is the ideal solution for manifold tasks in civil engineering and for building design. For architects, landscape architects and engineers, this package opens up a wide range of possibilities:

- ▶ Design of building and civil engineering projects in difficult terrain
- ▶ Landscape planning, path and road design
- ▶ Plan sports fields and golf courses
- ▶ Earthworks and earthworks quantities
- ▶ Plan disposal sites
- ▶ Calculation of cut and fill volumes
- ▶ Reclamation of raw material extraction works and industrial sites.

Allplan Design package included

This package contains all the features of the Design package and builds on its functionalities for 2D design, 3D modeling, layout, design, visualization etc. For details, please consult the relevant data sheet.



Digital terrain model with embedded building structures created with Allplan

Digital Terrain Modeling

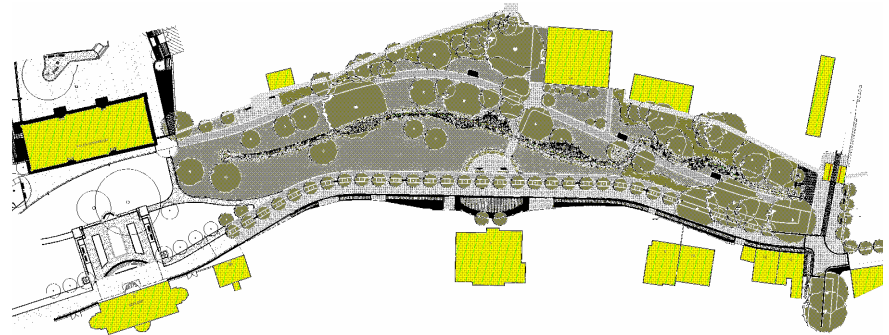
With Allplan it is easy to create a digital terrain model, which then provides the basis for design, drawing creation, presentation, and calculation of quantities and the calculation of proposed and existing ground profiles in all forms of earthworks projects.

- ▶ Create digital 3D terrain model, mesh points to form triangles, enter contours, calculate slopes, calculate cut and fill according to REB
- ▶ Model roads and paths with longitudinal sections, torsion trace, create profiles
- ▶ Quantity takeoff operations based on the DTM
- ▶ Import and export point files
- ▶ Fit in 3D building structures

Highlights of DTM

- ▶ Ideal solution for architects, landscape architects and engineers
- ▶ Import/export point coordinates in accordance with REB or free ASCII format
- ▶ Model terrain with triangular meshing
- ▶ 2D design / 3D modeling
- ▶ Layout and design
- ▶ Integrate buildings in the terrain
- ▶ Create site plans for road construction
- ▶ Landscaping
- ▶ Numerous automation mechanisms
- ▶ Bridge and civil engineering modeler
- ▶ Analyze information from a route and output this in the form of a list – road details
- ▶ Tactrix curve simulation
- ▶ Design traffic circles

- ▶ Import and export point coordinates in compliance with REB or as ASCII, including breaklines or other terrain-specific special lines if available
- ▶ Transfer line attributes and create site plans using the ASCII interface for data exchange
- ▶ Automatic creation of a three-dimensional terrain model based on point data meshed to form triangles
- ▶ Automatic creation of layouts including contours and meshes
- ▶ Labeling of grid points, contours, elevation specs
- ▶ Create profiles of the terrain along straight lines or curves, taking several terrain models into account
- ▶ Design traffic routes in three-dimensional terrain:
 - entering gradients graphically; generating layouts automatically including all height values, slopes and vertices with labeling; creating torsion traces; determining the position, height and transverse slope of the design entities in three-dimensional space; applying slopes
- ▶ Quantity takeoff operations in accordance with REB 22.013 or 22.014, log file
- ▶ Automatic creation of transverse profiles perpendicular to any elements (location lines, profiles etc.)
- ▶ Compute cut and fill
- ▶ Calculate slopes: Allplan calculates all types of slopes based on any curves (even circles, clothoids)
- ▶ Interactive editing of the terrain model using graphical modification options
- ▶ Automatic adjustment in all layouts
- ▶ Fully integrated in Allplan's product range



Site plan created with Allplan

Create Site Plans

With Allplan you can easily create site plans for the fields of landscaping, city planning, civil engineering and road construction.

- ▶ Design and edit all curves required in road construction
 - ▶ Display routes, labels in accordance with the codes
 - ▶ Retrieve detailed information on elements
 - ▶ Create new elements by entering parameters
 - ▶ Create stationing and labeling in many different ways
 - ▶ Determine point symbols in general
 - ▶ Skew elements manually or in a RAS-compliant manner
 - ▶ Vertical spacing and matching stationing
 - ▶ Point symbols, consistent management of coordinates, offset values and point numbers
 - ▶ Assign codes to point symbols automatically
 - ▶ Modify point symbols and text in a comfortable manner, assisted by dialog boxes
 - ▶ Edit points in three-dimensional space in the digital terrain model
- ▶ Apply blanking to specific point symbols
 - ▶ Exchange data via standardized REB interfaces (DA 1/40 45/50)
 - ▶ Freely definable formats; in other words, any type of points and lines can be used
 - ▶ Analyze mandatory points, checking whether the required minimum distances have been observed
 - ▶ Apply hatching to slopes fully automatically, modify the hatching in an easy and comfortable manner
 - ▶ Create pattern lines and miter the pattern line in the corners
 - ▶ Analyze information from a route and output this in the form of a list – road details

Civil Engineering and Bridge Design

Allplan enables you to plan and design longitudinal engineering structures and earthworks like bridges, tunnels, retaining walls, underpasses, ramps, ramparts, dams, channels and riverbeds. In just three steps a volumetric model is created – based on this model you can create precise drawings with any views and sections

Design Traffic Circles

With Allplan Terrain you can get started with the design of traffic circles as early as the initial draft phase. Based on the parameters you set, the program automatically creates the basic 2D geometry and the corresponding dimensions for predefined traffic circle types.

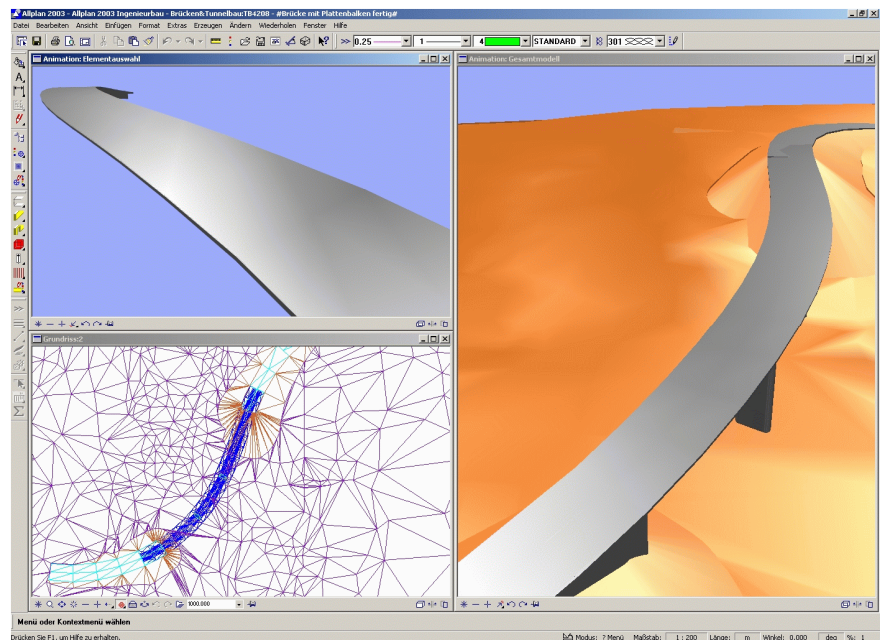
Path Simulation with Tactrix Curves

With its tactrix curve path simulation, Allplan Terrain assists you in the process of designing intersections, traffic circles and road openings in a quick and cost-saving manner. For example, you can check tight road details or plan delivery by articulated truck.

Landscaping

You can use Allplan Terrain to create all types of intelligent plant objects, placing plants in many different ways and generating plant keys automatically. Up-to-date schedules and lists can be generated at any time. The program also helps you design paths and trees.

- ▶ 2D and 3D design
- ▶ Fully integrated design process – from the first draft to the implementation
- ▶ Customize layouts using splines, freehand lines, pattern lines



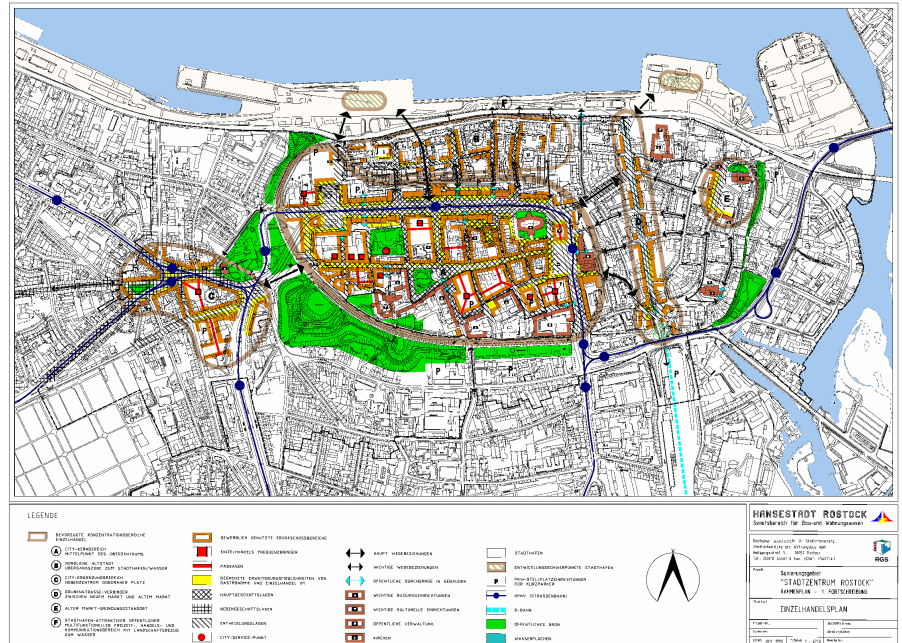
Parametric planning of a bridge route as a volumetric model with design check in terrain

- ▶ Smart plant symbols tailored to suit the needs and requirements of your office
- ▶ Automatic identification of plant areas with hatching, patterns or fills
- ▶ Display linear placements (e.g. hedges) immediately with the relevant pattern lines
- ▶ Solitary, linear or area creation and placement of plants using easy, comfortable input dialogs boxes with preview feature
- ▶ Select plants straight from the Bruns catalog (with price update for all placed plants after importing the latest version of the catalog)
- ▶ Create intelligent areas for plants and paths as well as other paved areas with a surface structure of up to 10 layers, each of which can be assigned varying materials and thicknesses.
- ▶ Analyze quantities using predefined lists/schedules
- ▶ Assign attributes and generate reports for individual objects in the open-area design such as luminaries, benches, paper baskets etc.
- ▶ Create layouts in an easy and comfortable manner
- ▶ Create trees, shrubs and other plants at the press of a button by selecting the relevant symbols in the drawing symbol regulations
- ▶ Optional color or black/white display; enter information on trunk circumference, tree top diameter and other attributes such as number, height, age, function, date and location in an additional dialog box
- ▶ If desired, you can assign botanical names and characteristics from the Bruns catalog
- ▶ Transfer to AVA systems using lists/schedules
- ▶ Quantities update to reflect and changes in the design
- ▶ Automatic creation of plant keys

City Planning Designs

Allplan Terrain offers a wide range of tools tailored to meet the requirements imposed by all kinds of tasks in the field of city planning – such as the creation of zoning plans and buildings to evaluations and analyses. It can be used to determine all the key figures such as the base and floor area factors and the building volume. All types of building structures or houses can be created in three-dimensional space.

- ▶ Create 3D building structures with floor, roof and spacing areas as well as areas of plot
- ▶ Clear dialog box for entering building structures
- ▶ Integrated roof modeler for creating gable and barrel roofs
- ▶ Intelligent building structures and areas with attributes (roof pitch, type of building etc.) which can be analyzed and evaluated
- ▶ Integrated terms and expressions in accordance with the land use act
- ▶ City planning-specific display of roof and base areas
- ▶ Analyses and evaluations of building structures based on the actual geometry
- ▶ Various predefined label styles and templates are available for labeling building structures and areas
- ▶ Predefined lists/schedules are provided for analyzing and evaluating data
- ▶ Display floor areas with automatic fill (hatching, patterns or fills)
- ▶ Comfortable functions for displaying spacing areas
- ▶ Drawing symbol regulations integrated
- ▶ Clear dialog box for selecting drawing symbols



City plan design created with Allplan

- ▶ Intelligent drawing symbols can be analyzed and evaluated using lists/schedules and can be displayed in color or in black and white
- ▶ Automatic generation of keys
- ▶ Create spacing areas with country-specific regulations

Further Information

If you need additional information or would like to find out more about one of our products, please contact your local Nemetschek dealer or visit our website at: www.nemetschek.com.