

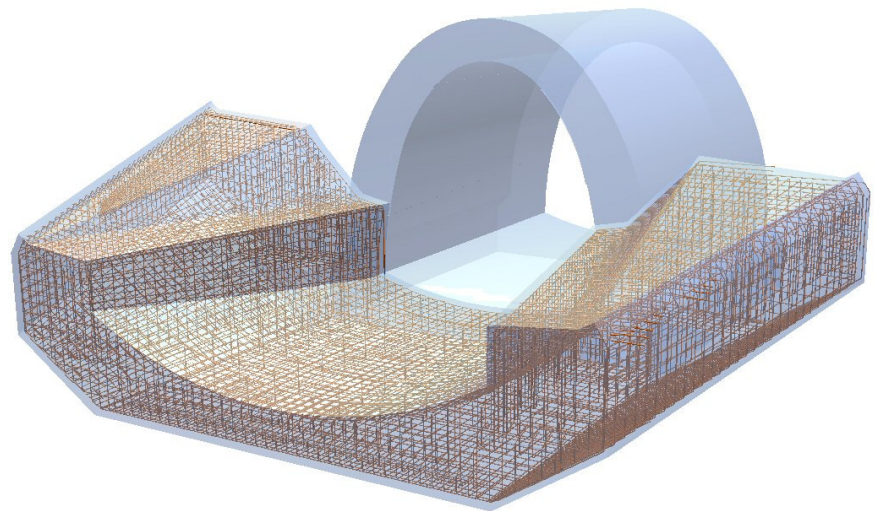
# Allplan BIM 2008 for Civil Engineers

## Performance Features



The interdisciplinary end-to-end solution for Design Engineers

Allplan BIM for Civil Engineers is the intelligent planning system from Nemetschek that provides you with efficient support in everything from structural engineering to execution drawings and cost planning. With Allplan you can cover the whole added-value creation chain in your design office and thus achieve more from the same resources. The versatility of Allplan includes the disciplines of structural engineering, building physics, building and civil engineering, prefabrication, industrial building, timber, structural steelwork, highways, bridges as well as engineering and other special structures. There are packages available to suit your particular requirements.



Picture: Inlet apron, Baukonstruktion Wolf, Berlin

### Building Structures

#### Methods for entering shell outlines in an easy and comfortable manner

Allplan provides ideal tools for designing shells for all types of buildings. Even complicated outlines can be created quickly and easily.

- ▶ Automatic creation of any views, sections and perspective views saves you a lot of time and effort
- ▶ You can open the animation window parallel to the normal view ports and navigate and set views for your design (design checking)

- ▶ **Building design:** draw walls, columns, slabs etc. in a component-oriented manner; Create several lines plus hatching in a single operation
- ▶ **Any geometries:** model complicated outlines like bridges, sewage plants and tunnels
- ▶ **Predefined dynamic engineering components** facilitate efficient designing: interactive, parameterized modelling of predefined components such as pre-cast columns and foundations; the components are user-definable; they can be rotated, positioned and resized freely while they are displayed attached to the crosshairs and they can be placed wherever you want

#### Performance Highlights

- ▶ The complete system for Structural Engineering, Building Physics, Building and Civil Engineering, Prefabrication, Industrial Building, Timber, Structural Steelwork, Highways, Bridges and other structures.
- ▶ Tailor-made packages
- ▶ Quick and easy design of complex geometries
- ▶ Automatic shell and reinforcement design
- ▶ Integrated FEM calculations
- ▶ Link to structural engineering calculations
- ▶ Practical design checks
- ▶ Customized drawing layouts
- ▶ Flexible working within the team
- ▶ Simple automated data exchange, e.g. for AutoCAD
- ▶ Ideal for small and large projects and for lead consultants

### Enter Reinforcement with automatic detection of the shell outline

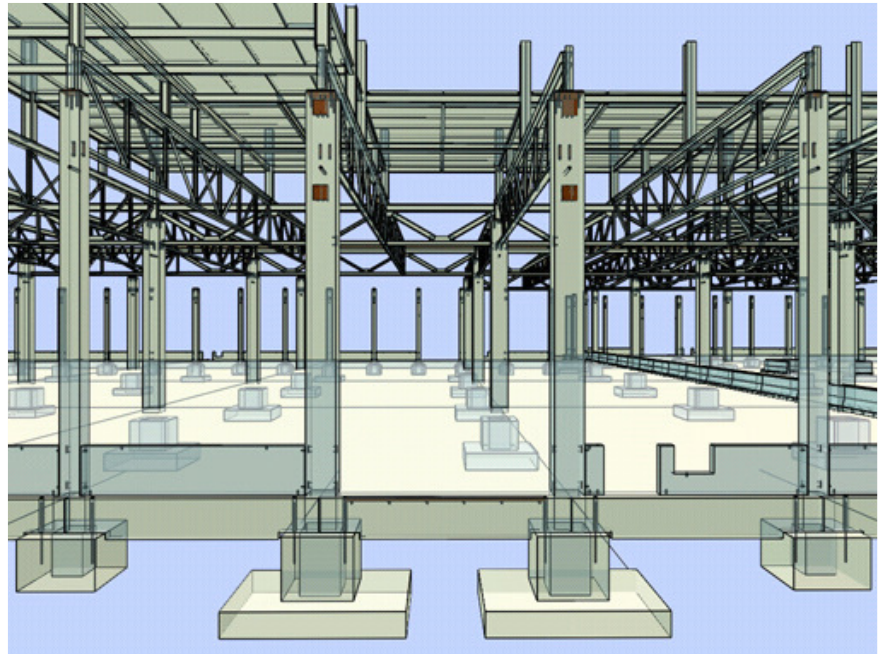
Correct reinforcement for each shell:  
Allplan automatically recognizes the outline of the shell.

- ▶ Enter bar and mesh reinforcement quickly and easily thanks to the new outline auto-detect function (FF reinforcement)
- ▶ Allplan's cursor automatically recognizes a cross-section and places the reinforcement in the shell in the correct position
- ▶ Apply reinforcement with the minimum of effort

### Intelligent Reinforcement

Using Allplan you can devote time to the essential aspects.

- ▶ Automatic management of reinforcement as, when created, the reinforcement is given specific properties such as bar diameter, bending shape and length
- ▶ Each of the smart reinforcement elements you draw is clearly defined
- ▶ Reinforcement elements with the same properties automatically get the same mark number
- ▶ All information is included in schemas of the reinforcement, bending and reinforcement schedules, wire mesh schedules and mesh cutting diagrams
- ▶ Any changes made to the placed reinforcement is automatically updated in all the schedules and schemas
- ▶ Simple, automatic creation of views and sections for reinforcement drawings
- ▶ Any changes made to the placed reinforcement are automatically updated in all the views and sections



Picture: Supplier Park, Ingenieurbüro Aloys Kerber, Merzig

- ▶ Create photo-realistic images in the animation window to check for collisions in the reinforcement

### Design Fixtures Quickly

The special tools provided for designing fixtures can save you up to 50 % of your time!

- ▶ Systems from HALFEN-DEHA, PEIKKO and ERICO Lenton are integrated
- ▶ Clear and easy design of special fixtures
- ▶ Detailed bills of materials for the manufacturer at the press of a button

### Fully Integrated Structural Design

The integrated structural analysis software helps you avoid performing structural design tasks twice.

- ▶ Integrated FEA calculations (including DIN 1045-1)
- ▶ Display the reinforcement from the calculation results as contours and FEA reinforcement color images; automatic creation of area or BAMTEC® reinforcement based on these results
- ▶ Automated punching shear calculation and reinforcement for RC slabs with automatic increase of the longitudinal reinforcement
- ▶ Links with structural engineering software from Friedrich+Lochner and SCIA structural analysis software

### Envelope results for Thermal Insulation

Allplan facilitates complex area calculations for thermal insulation requirements in accordance with EnEV.

- ▶ Comfortable and easy to follow graphical envelope results
- ▶ Output building envelope design as overview for thermal insulation requirements
- ▶ Automatic generation of keys

### Quantity Takeoff Operations

Quantities are calculated almost automatically with Allplan formwork planning.

- ▶ Fully automatic detection of rooms
- ▶ Area calculation
- ▶ Calculation of area and cubic volume in accordance with DIN 277
- ▶ Traceable, VOB-compliant quantity takeoff
- ▶ Integrated AVA interface

### Civil Engineering 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.

### Timber and Steel Construction

#### General Designs

Allplan provides special tools for creating timber and steel designs in a comfortable and easy manner.

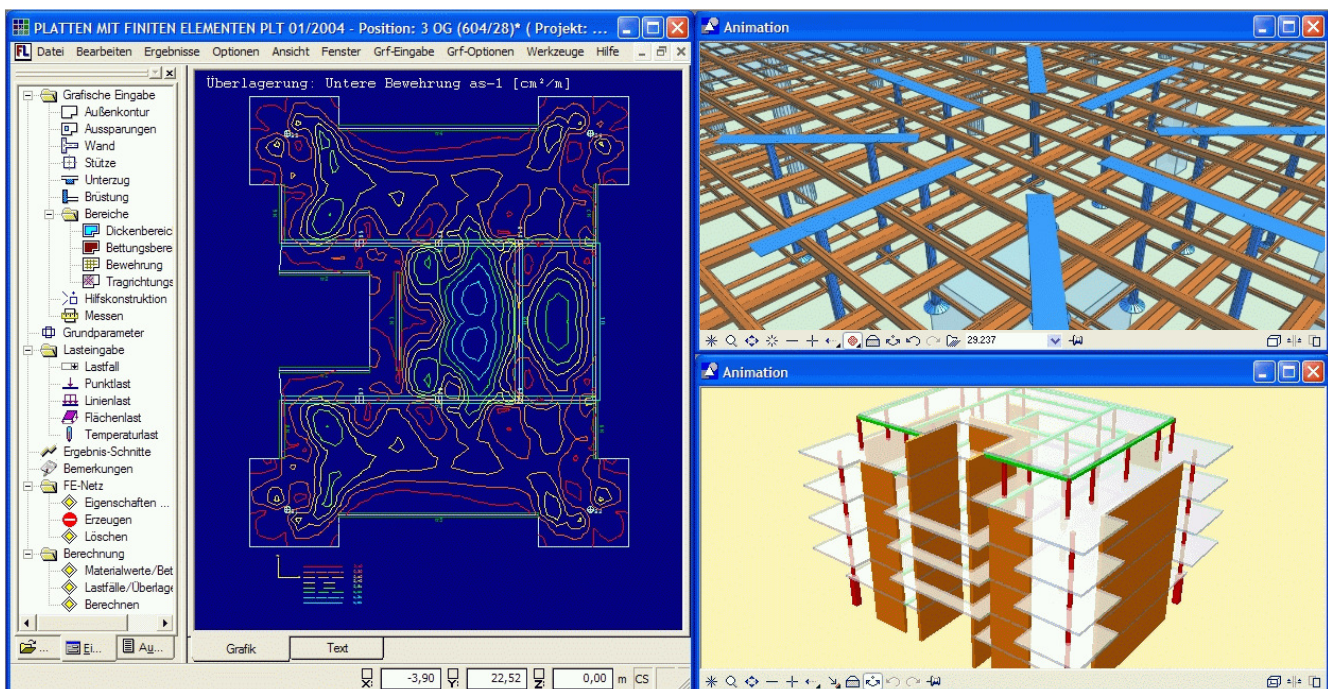
- ▶ Rafter design with freely selectable cross-sections in steel and timber
- ▶ Rafter and purlin roofs and general timber construction

- ▶ Frame structures
- ▶ Steel construction using standard sections
- ▶ Special input methods for rafters, purlins, headers, hip/valley rafters, collar ties, collar beams
- ▶ Automatic rafter positioning
- ▶ List analyses: calculation of quantities and weights with direct transfer to AVA software Allright
- ▶ Create roofs of any shape, including dormers and complex roof landscapes

#### Steel Construction

Allplan is the ideal solution for designing and planning steel structures

- ▶ Cubic, cylindrical, spherical axis grids for domes
- ▶ Extensive templates such as masts, 2D and 3D arched framework, steel grids and many more
- ▶ Create your own templates quickly and easily



Picture: The finite element calculation is integrated in Allplan.

- ▶ Use straight, curved, arched or variable bars
- ▶ Standard sections and additional, universal cross-section editor
- ▶ Point snap typical to steel construction for precise designs even with large reference scales
- ▶ Automatic generation of elevation views and component drawings for construction details
- ▶ Interactive connection to the 3D-FEA structural analysis software ESA PT from SCIA
- ▶ Import and export the geometry in the CAD format DXF, DWG, DSTV
- ▶ Realistic visualization

## Civil Engineering and Road Construction

### Digital Terrain Design

For engineers, Allplan's terrain design capabilities open up a wide range of possibilities: from building pit planning to reclamation of raw material extraction works.

- ▶ Import/export point coordinates in accordance with REB or free ASCII format
- ▶ Model terrain with triangular meshing
- ▶ Integrate buildings in terrain
- ▶ Create site plans for road construction
- ▶ Landscaping
- ▶ Bridge and civil engineering modeller
- ▶ Analyze route information in list format, road details

### Road Construction

Allplan enables you to process all road construction-related tasks. If required, buildings and engineering structures can easily be embedded.

- ▶ Powerful digital terrain model for road construction
- ▶ Define any kind of route using straight lines, circles, clothoids etc.
- ▶ Calculated or manually modified cant, enlargements
- ▶ Comfortably plan junctions and traffic circles
- ▶ Edit and display site plan, longitudinal and transverse profiles
- ▶ Create pegging tables
- ▶ Compute cut and fill automatically
- ▶ Canalization

### More Advantages

#### Quick Data Management

Even complex construction projects can be edited quickly.

- ▶ Parallel access to a project by more than one user on the network
- ▶ Management of the data quantities so that only the objects required are loaded
- ▶ Team working irrespective of location
- ▶ Use of e.g. printers over network
- ▶ Transparent data access: see who is working on what
- ▶ Central management of all design objects from one location
- ▶ Determination of parameters for consistent design forms
- ▶ License server for optimum use of all your Allplan licenses

### Data Exchange

Allplan Engineering offers almost unlimited data exchange options.

- ▶ Time-saving interface technology for data exchange with high data reliability (e.g. DXF, DWG, DGN)
- ▶ Can be tailored to suit individual project partners in one operation
- ▶ Flexible embedding and editing of OLE objects (Word, Excel etc.)
- ▶ Easy and simple processing of scanned drawings of existing features
- ▶ Compatible with Allplan Architecture

### Presenting Designs

Your designs can be simply and impressively presented.

- ▶ Extensive features for drawing layouts (e.g. color gradients, transparent images)
- ▶ Realistic animations and movies

### Where to turn for help

We offer extensive pre-sale and post-sale support.

- ▶ Attractive terms
- ▶ Special offers for students, trainees, educational institutions and start-ups
- ▶ Qualified ongoing training and education offers
- ▶ Consulting and support

### 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](http://www.nemetschek.com).