cadwork®

Your Integrated 3D-CAD/CAM for All Fields of Wood Construction

- Timber Frame
- Hand Fabrication
- CNC Fabrication
- Engineering
- Playground
- Prefab Construction
- Modular Construction
- Log Building

- Mass Timber
- Wall/Floor Panels
- Truss Construction
- Steel Construction
- SIP Construction
- Sunroom
- WebGL VR-Ready
- OpenBIM

- Survey and Layout
- Education
- Remodeling
- Renovation
- Interior Design
- Cabinet Making
- Stair Design
- Architecture

cadwork.com

Cadwork - The Reference in Wood Construction

About Cadwork and Its Team

Cadwork - The Reference in Wood Construction

Cadwork has been in continous development since 1980 and is the market leader for CAD/CAM solutions in the wood-building industry.

With over 4200 clients and more than 8500 licenses in the field of wood construction alone, Cadwork can substantially cover all sections of this market.

Our clients are present in most European countries, the United States, Canada, Australia, New Zealand, Russia, and other parts of the world. Our international presence and know-how guarantee a solid investment. Our clients have different needs but all have the same goal: quick, safe, and cost effective planning, fabrication and assembly.

Thousands of wood projects like timber frames, prefabricated panels, modular homes, log constructions, solid wood walls, CLT/SIP, glulam and any desired hybrid combination as well as innovative engineered wood constructions, have already been designed with Cadwork worldwide. Our 3D software can manage all these systems in an automated fashion and as detailed as you need. Thanks to planning and automation the manufacturing stage becomes easier. With Cadwork, you have the ability to see the entire project in 3D real space, which can greatly help with problem solving. Send production data directly from your building information model (BIM) to the current machining centers and or assembly lines.

Your projects will be automatically panelized and virtually built to the last details. Convenient features like assembly drawings, bill of material, shop and installation drawings give small firms the opportunity to work economically on turnkey packages.

Did You Know?

About 90% of our 4200 clients are wood construction firms using Cadwork as an integrated production tool for all fields of wood construction and have chosen to benefit from a competitive edge.

Cadwork is so easy to learn and logical that after a 2-day training, you can start working successfully on your own projects.

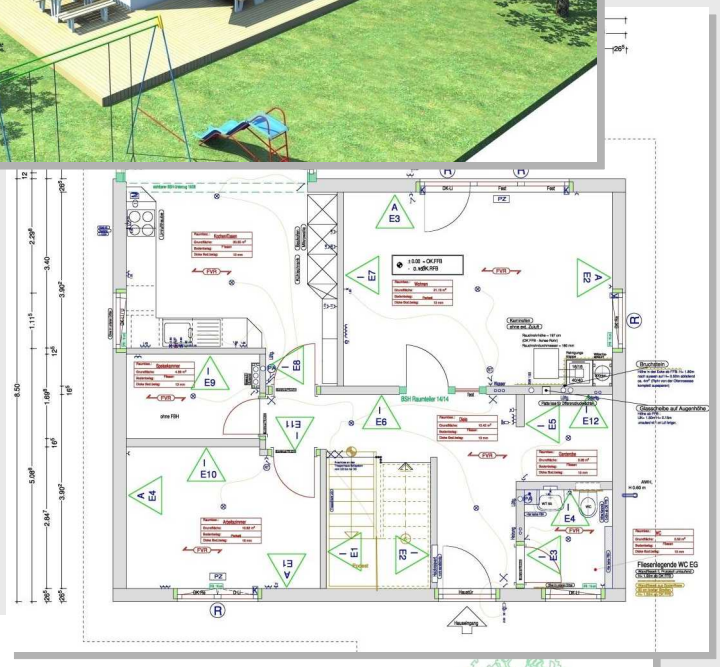
After a basic training, you can use a free trial version for 2 months including hotline in order to test our state-of-the-art products in your own environment and make sure it meets your expectations.

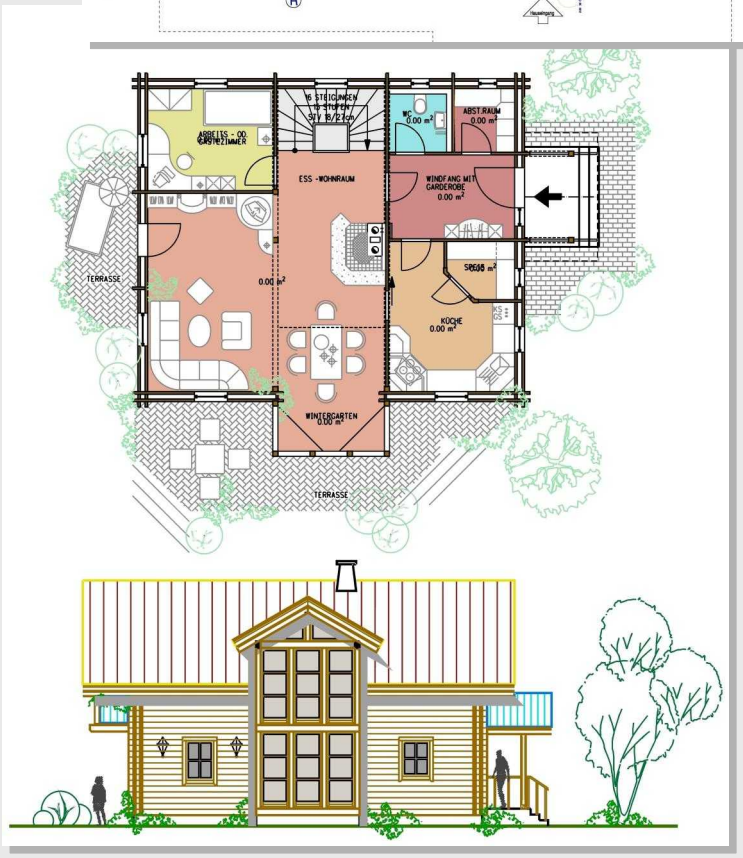
With the Cadwork Professional Timberpack all types of constructions can be quickly and freely modeled, complete parts list and shop drawings ready to print.

All parts can be easily edited without any detour through a dialog.

The student version is a full Standard Timberpack that runs for the entire education period and can be extended in most schools 6 months for free.

Let us convince you! Contact us for a tailored demonstration or training.





3D Visualisation for client, building permit and shop drawings

Architecture

It doesn't matter if you want a perspective or views for a concept, floor plans, sections and elevations for building permits, the Cadwork Professional package provides all modules to achieve those tasks. A powerful layer manager, extensive libraries and architectural dimension styles allow you to create amazing plans easily and quickly.

Developing a 3D model and following the building process in a real 3D space will convince the client or future home owner. At the same time the 3D model is used to automatically create sections and elevation drawings. Errors are tracked and solved easily in a 3D model and not on site.

Export your model including textures with directions and quickly create photorealistic renderings or animations. Cadwork directly interfaces with the Artlantis rendering software as well as other ones.

For architecture and planning, users have access to the following functionalities:

- Layering at different scales
- Drawing elements and editing functions
- Auxiliary lines and measure functions
- Quick elevations, sections and floor plans
- Parametric and detailed doors and windows
- Management of multiple plans/scales in one file
- Data exchange with programs such as Word or Excel (texts and graphics)
- Reading PDFs and many other file formats with Drag & Drop
- Export of WebGL with VR capabilities, 3D PDF and 3D printing
- Interfaces with other programs. Here are a few formats: DXF/DWG, IFC, SAT or STEP

3D Construction

Cadwork - 3D Design

Cadwork 3D is the core of the program package and is used for the planning, free form design and output of all production related drawings, lists and machine data.

For this purpose, Cadwork 3D provides tools that are easy and simple to use for any designer, technician, engineer or architect. With this application you are not limited to one type of construction. In the future you will always have the whole range of wood construction and general building at your finger tip. This is a tremendous market advantage in an age where flexibility, speed and quality in all design-build projects, have become crucial to any building firm's survival.

All conceivable designs and component shapes can be combined freely with each other.

Rectangular or curved cross sections, steel, timber or hybrid sections and oblique, double-curved custom designs are available to the designer for every project. Naturally this also includes catalogs of connectors and architectural symbols from well-known manufacturers or from libraries created by users themselves.

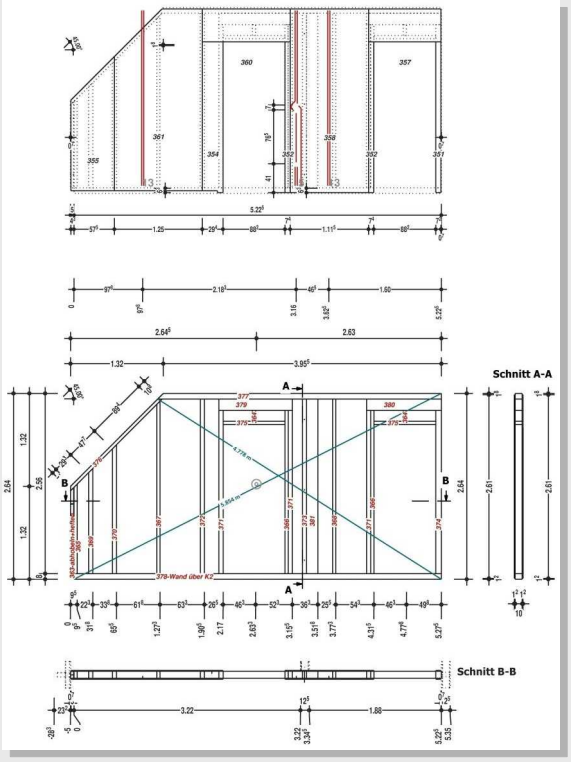
All components can be drafted as volumes in a user-defined relationship with each other. The versatility of the possibilities for editing and the ease and efficiency of handling have made Cadwork 3D a must-have tool for every planner.

Fields of applications now extend from timber framing or carpentry tasks with manual fabrication or CNC machine and all types of wooden buildings, engineered wood construction, glulam and panel construction, steel, exhibitions, sunroom and staircase construction up to complex restoration and renovation projects.

In Cadwork 3D there are no limits in geometry and creativity

Extensive libraries from different suppliers as well as our own catalogs makes work quick and easy

3D construction and representation that leaves no open questions
Maisons Laprise, Quebec, Canada



Layout, views, sections, bill of material or dimensions can be configured in order to fullfil all requirements and can then be automatically exported

File Type	Name
.pdf	3D-PDF
.sat	Acis SAT
.atl	Artlantis
.tif/.jpg	Bitmap
.bxf	Blum
.bnd	BND
.btl	BTL
.btl	BTL Wand
.bv/.bvn/.bvx	BV/BVN/BVX
.part	CATIA
.stp	DSTV-Datei
.nc	DSTV-NC
.dth	DTH
.dxf	DXF Maschine
.dxf/.dwg	DXF/DWG
.hli	HLI
.ifc	IFC Datei
.igs	IGES
.gsi	Leica GSI
.btl	OptiNest
.pdf	PDF-Datei
.rce	Roofcon
--	RSTAB-COM
.stp	STEP-Datei
.stl	STL
diverse	Terrainpunkte
.txt	Text Datei
.stp	VI 2000
.wrl	VRML
.obj	Wave Front
---	WGsystem
.wup	WUP

Easy communication with other software thanks to many file formats and direct interface

Automatic Framing for Panels as Well as Solid Wall, SIP and Log Home

The Cadwork Element module automatically frames wall, floor or roof systems in the fields of panelized homes or timber frame construction. It can also deal with log construction, CLT/SIP, solid construction and similar systems.

Hybrid constructions are also easy to solve. The number of layers is unlimited. Company specific connection details, window or door openings and even fasteners can be stored in the details. Once saved as standard details, they are ready to be used in the automatic calculation.

Details, which serve as the basis for automatic calculation are created and stored with the usual 3D design tools. Filling out tables with infinite entries or even expensive custom programming can be completely avoided. The floor plan from the architect can serve as the basis to run the element module calculation.

The list output, dimensioned and formatted wall drawings, the data output to precut components on CNC machines, framing stations and multifunction bridges occur automatically.

Interface

Cadwork is an integrated 2D/3D CAD system in which you can work without interfaces from the architecture and design to manufacturing. This is a big advantage that should not be underestimated versus multiplatform solutions and contributes enormously to the efficiency and cost-saving.

Nevertheless, you work, of course, with companies that have different CAD systems in use. In addition, you need a direct communication, for example, ERP or structural analysis programs. This allows you to exchange data easily with these systems. Cadwork offers a variety of suitable 2D and 3D links that are listed on the left.

Roof Layout / Piece by Piece Drawings

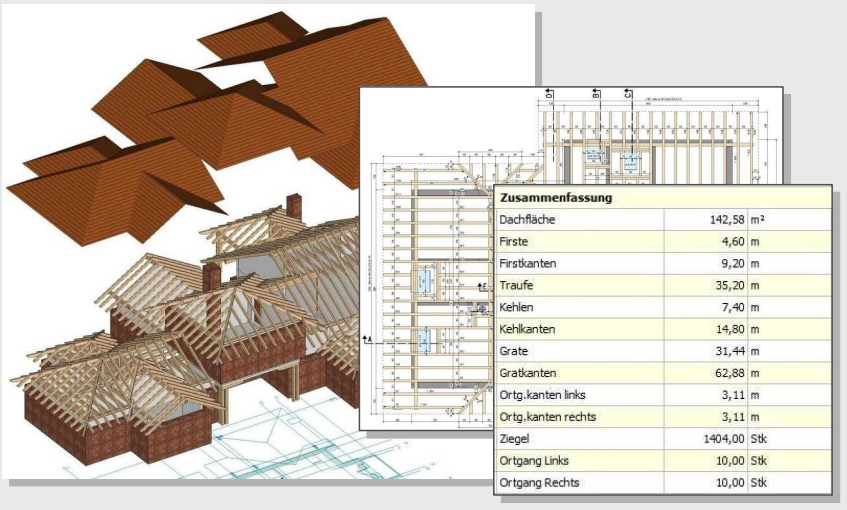
Cadwork Roof Layout

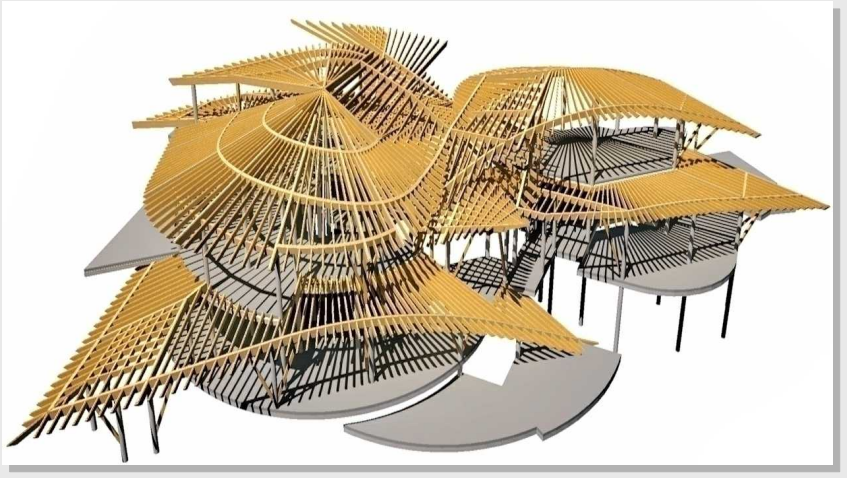
Cadwork Roof is a powerful roof layout program in which users can quickly create complex timber roofs thanks to smart automatic functions.

The true strength of this program lies in its ability to mesh seamlessly and directly with the Cadwork 2D and Cadwork 3D modules. Cadwork Roof is included in the Professional timberpack and thanks to its integration in the 3D module enables editing at any time. It enormously simplifies the complex task of creating roof layouts. You just have to determine the direction of each roof profile in the plan view and then enter the profile values (roof pitch, plates bearing heights, ridge height, standard member sizes, overhang, etc.) in a pop-up window displayed on screen.

The program then calculates the distribution layout of the laths. The type of roof covering that has been selected is also taken into account. A complete list is then displayed with a breakdown of roof tiles quantity, roof surfaces, a running length of ridge lines, eave lines as well as hip and valley lines, etc.

Complex roof layouts like the one displayed on the right can be achieved by simply using the free form features included in the Professional Timberpack.





Helmar Doberenz - planen und bauen mit holz, Taucha

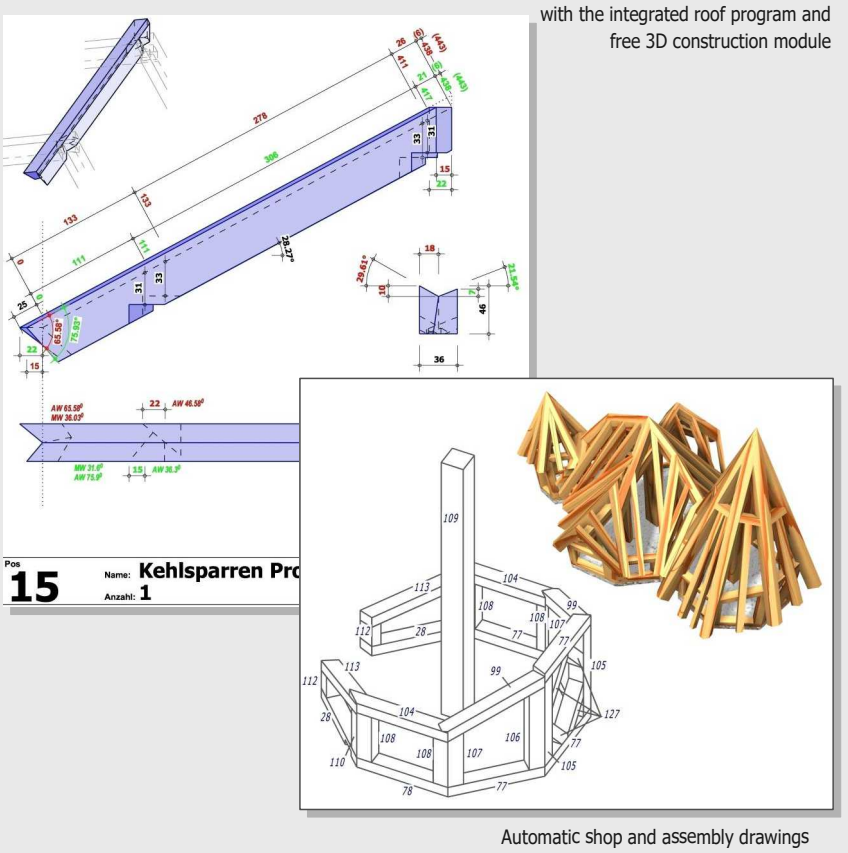
Complex roof design and list done with the integrated roof program and free 3D construction module

Automatic Piece by Piece and Assembly Drawings

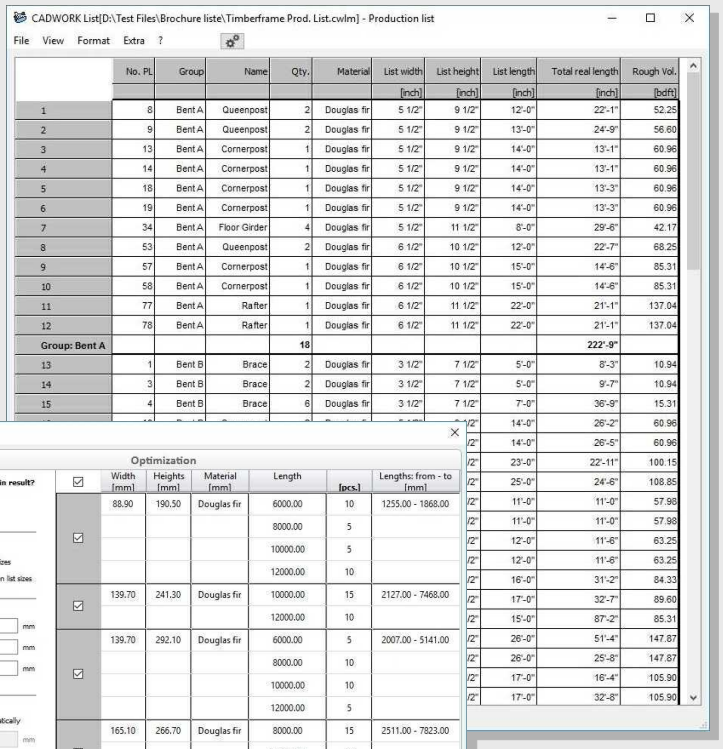
Every part modeled in Cadwork can be automatically exported using the piece by piece shop drawing feature. The drawings of standard components such as purlins, jack rafters or hip / valley rafters are dimensioned and provide the right amount of data for hand fabrication.

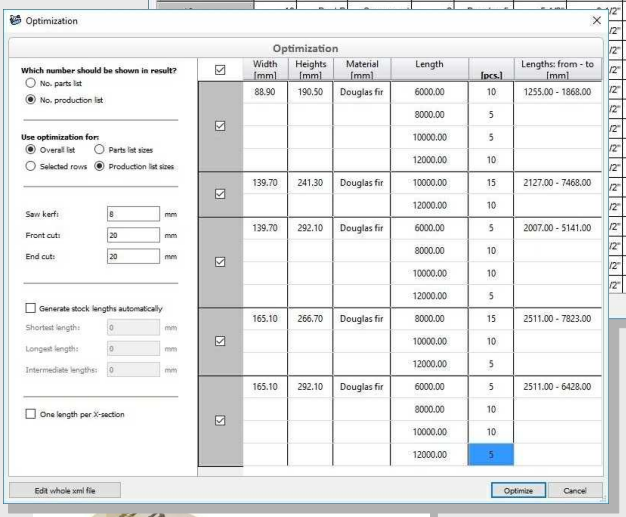
Sheet formats, scales, title blocks, quantity, standard views, shortened representations, markings, etc., can be customized and saved as standard.

Each drawing can be modified and improved by adding details, exploded views, additional dimensions, texts and images. Drawings can even be combined on a larger page.

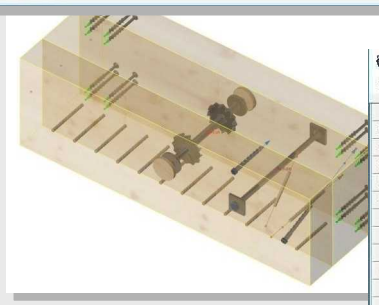


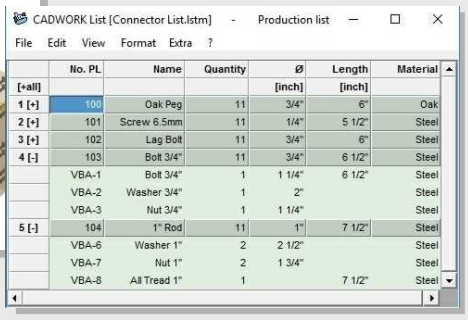
Automatic shop and assembly drawings



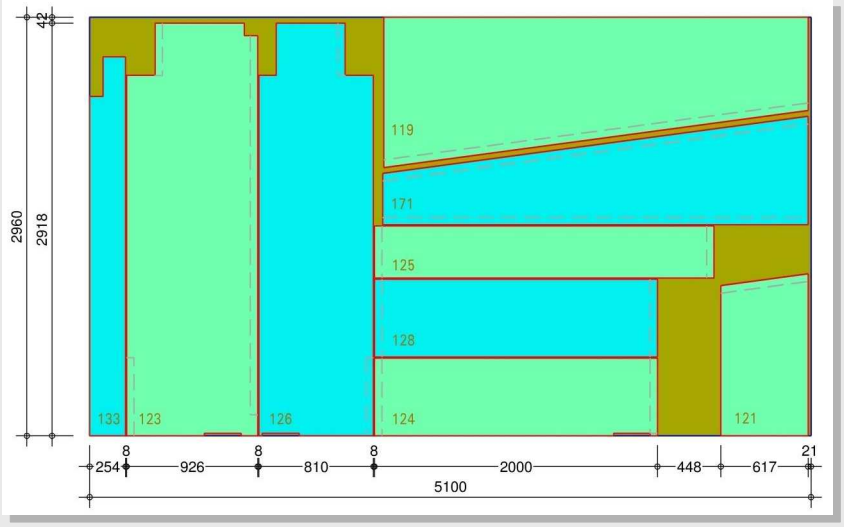


Output all parts in a bill of material and integrated length optimization





Connectors can be visualized and listed



Nesting result from the integrated nesting module

List Output

The Cadwork list output function differentiates between order, production and assembly lists.

The system lists all the relevant data to cost, order, fabricate and install. This includes wooden elements, panels, steel components and, of course, all connectors. Along with the geometric data, the system lists items such as names, subassemblies, materials, SKU#, weights, price, quantity of joints and much more.

These lists can easily be created and formatted. The list data can also be exported into other file formats, such as Excel or databases using the CSV format.

The integrated length optimization feature ensures that material sold by length is ordered to match the final cut dimensions as efficiently as possible. These optimum lengths can be entered by type and quantity, or the system can calculate them automatically.

Nesting

In order to manufacture panel elements of all kinds with minimum waste Cadwork offers a very flexible and economical nesting module.

OSB, plywood, MDF, SIP, Cross Laminated Timber elements or any other panel components are placed in a rough panel, making sure it generates the minimal amount of off-cuts.

The nesting result can automatically be exported as dimensioned shop drawings and corresponding bill of material.

Whether in the manufacturing process or in the production phase, nesting data can be extracted and even sent to CNC machines.

In order to provide maximum efficiency and full flexibility, the nesting module is designed as a semi-automatic feature and includes length optimization.

If you want to further automate your nesting, there is the option of connecting an external optimization tool (for example the Optinest program from Boole & Partner).

Plan Layout

Create Meaningful Plans Fast and Freely

All automatic shop drawings coming from the 3D model can be edited and detailed. In order to do so, powerful tools like the magnified view are available to easily create details at different scales. Modifications in the original drawing are reflected in real time and can be placed on several pages if needed.

The entire content of a plan can be configured as desired to include lines, texts, dimensions, hatchings, renderings and so on. Sophisticated tools such as move, copy, stretch, solder and modify allow the elements of the drawing to be positioned and edited as desired.

High-quality images, scanned photos, views, sections, exploded views, PDF files or bill of material can be integrated directly into the drawing.

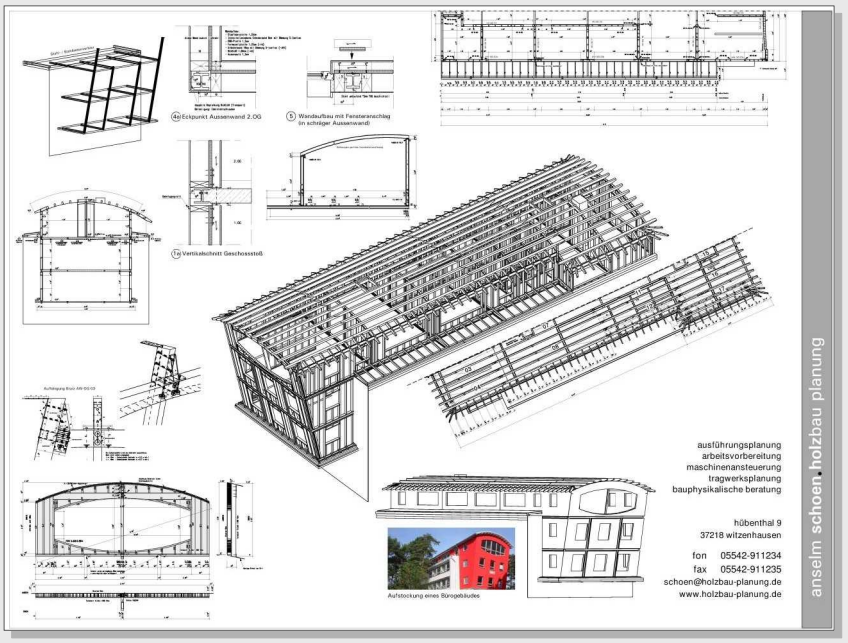
Any number of plans and scales can be managed within a single file. You can use Cadwork 2D to collate and print out (either on a printer, pdf or plotter) any number of individual drawings of different sizes and scales. Templates at scale 1:1 provide optimum site planning support, especially in the field of interior fittings and staircase construction.

Libraries from different well-known hardware manufacturers are available and you can add your own items in order to complete the ones provided at installation. Save a portion of an existing drawing or a group of items in your own catalog to use them in new projects.

Layering Feature

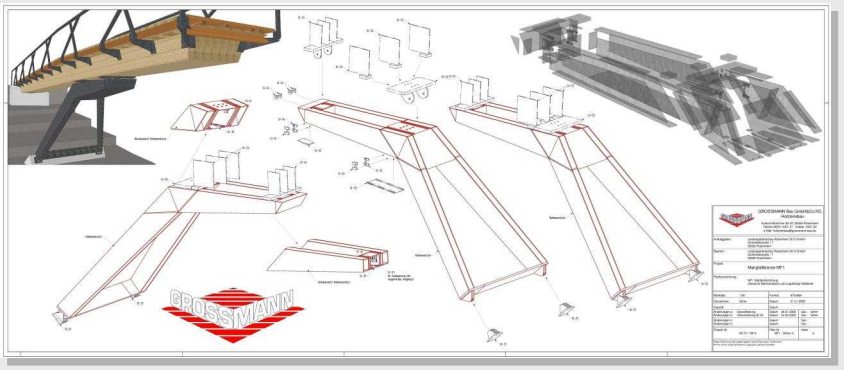
Thanks to the layering feature, it is possible to enter the floor plan dimensions at different drawing levels, for example.

The level of detail can be defined by the user on one layer and copied to another, adapting automatically to the scale of the second layer. Layers can be superimposed in any order as well as turned on and off.

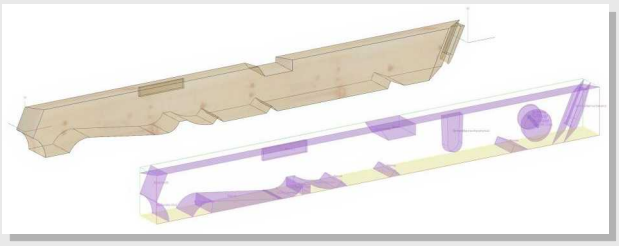


No questions to be asked with such a drawing thanks to precise details and free layout

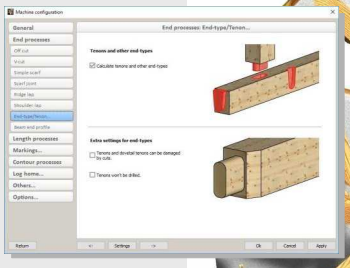
From the architect's idea to the shop - Only one software involved

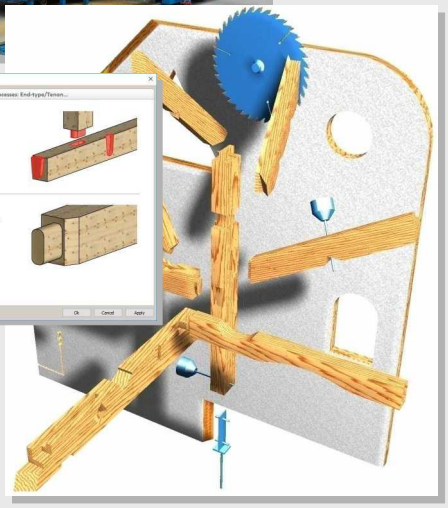


Mangfall bridge erection plan, Landesgartenschau Rosenheim 2010

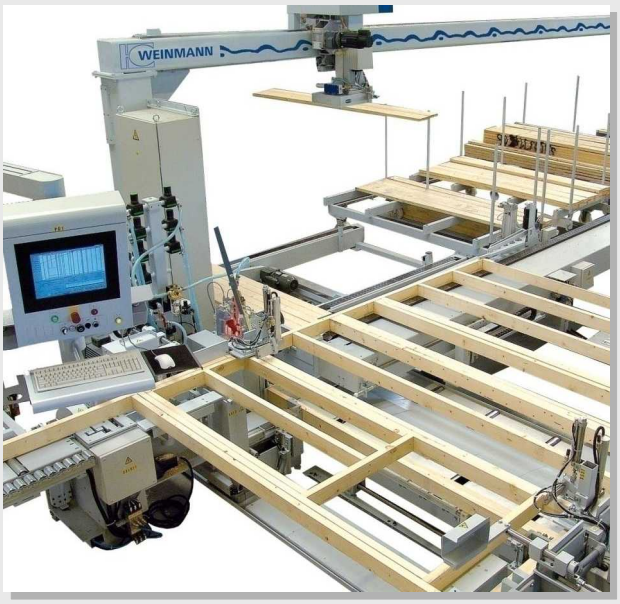


Easy configuration and optimal control in Cadwork 3D. Visualisation of both the original as well as the rough part with all processes





With Cadwork, build freely and export 100% of processes to your beam or panel cutting machine



Interface with different multifunction bridges

- Hundegger
- Weinmann
- JJ Smith
- Schmidler
- Krüsi
- Uniteam
- Creno
- SCM
- DSTV-NC
- TigerStop
- Randek
- Lignamatik
- Technowood
- BTL
- Essetre
- Stromab
- CMS
- Morbidelli
- Biesse
- WoodWOP
- Lignocam
- DXF-Machine

Interfaces with CNC Machines for Beams and Panels

In the Cadwork machine beam processing module, the geometry of components is automatically analyzed and output to all standard joinery machines. The capabilities of your machine can be used at 100%.

The same applies to the Cadwork panel machines processing module, where for example, CLT or SIP elements can be exported on the corresponding panel machine with all processes.

The experience and the close contact with countless Cadwork users who use our machine modules ensures that the newest machine technology will be integrated immediately into the module.

An absolute highlight of Cadwork machine is the ability of importing external models, for example an AutoCAD 3D solid file or Revit model. The imported 3D data can, without costly and tricky rework, be output to the machine.

Cadwork is one of the main initiators of the BTL file format. We have thus created a standard for data transfer of design to various machines. The interface is fully supported by almost all machine manufacturers in the industry and is continuously improved.

Multi-Function Bridges

In the actuation of multi-function bridges and framing stations, an automatic analysis of the geometry of wall, floor or roof components takes place. Functions such as sheet layouts, saw cuts, drilling, milling, stapling and nailing are detected according to the type of machine and directly exported to the machine.

A drawing is produced in which all functions are shown with a detailed overview and with color coding. This module also enables the connection of several short walls to produce multi-wall.

Variant / Glulam

Parametric Construction

Cadwork Variant makes it easy for you to produce parametric components or whole buildings. Functionalities for graphics creation of variants correspond to the mode of operation of standard CAD designs. A recorder is simultaneously running that records progress in work and samples the variable names. This reduces the time and effort to a minimum.

In the designing process, not only geometrical and text variables but also mathematical, logic, algebraic and trigonometric computing operations are available. Parametric files can be combined, offering a tremendous number of combinations.

Building assemblies generated with the Variant can be read into 2D or directly into 3D at any time. The whole geometry of the variant design is modified by the entry of the parameters that you have established. All parameters are entered as values or are extracted from an existing design.

Typical fields of applications for Cadwork Variant are cabinets, truss, porches and shed designs, glulam manufacturing or groups of fasteners.

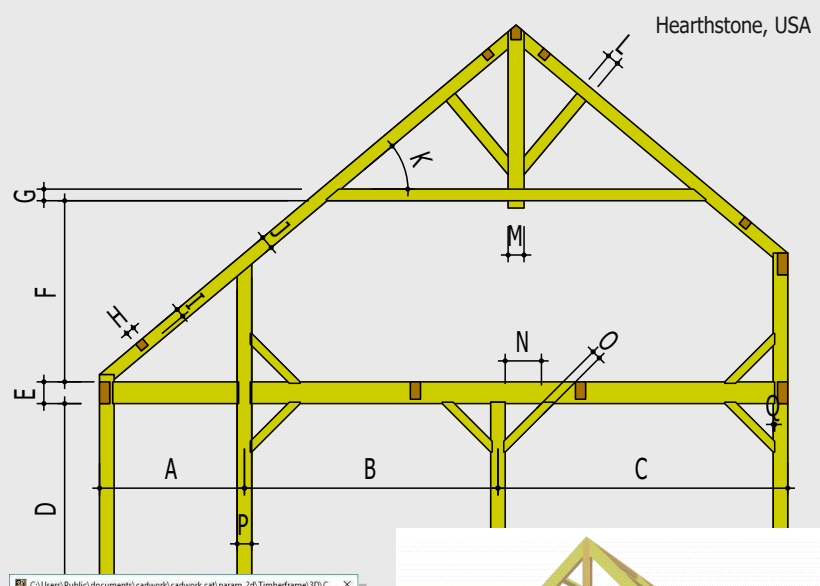
Glulam / Cadwork Lamella

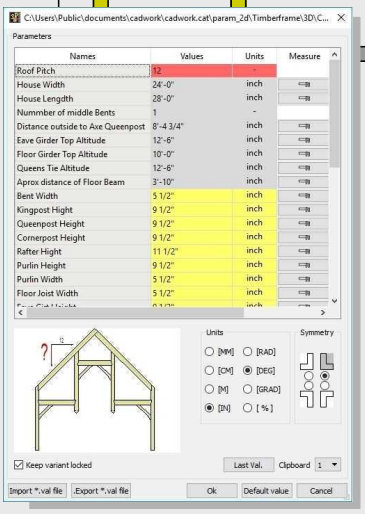
The Lamella module is integrated in Cadwork 2D. Based on the outline of any glulam beam, lamination and laminates list are calculated automatically and precisely including rough laminates dimensions.

The representation and dimensioning of the press location is also performed automatically. Each laminate can be stretched individually and is updated dynamically in the original beam and in the unfolded representation.

The calculation takes into account various parameters. Some examples including:

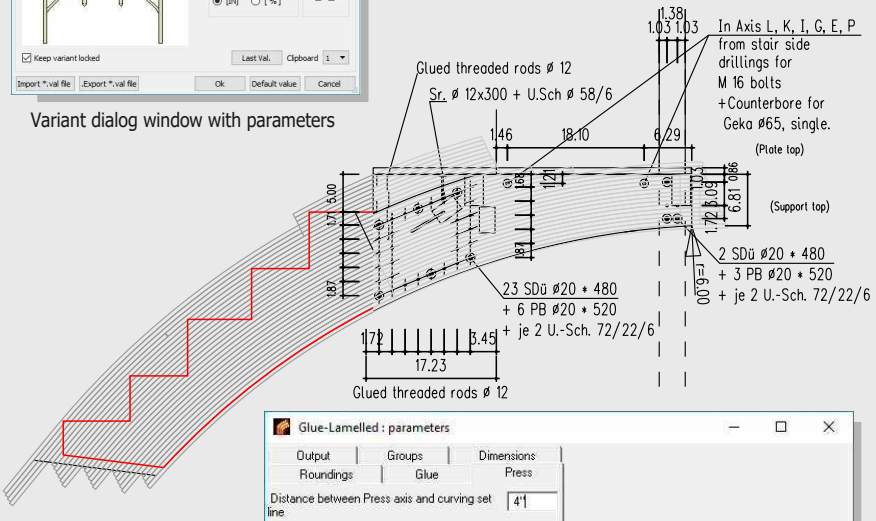
- Minimum laminate length / stock lengths
- Reference joint / Press limit stop
- Glue type / Dry joints / Laminate grade
- Rough dimension and offcut calculation
- Free output format e.g. rough laminates cut



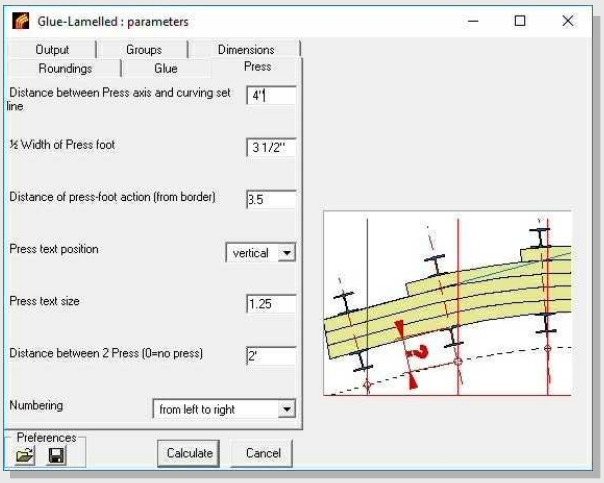


Variant dialog window with parameters

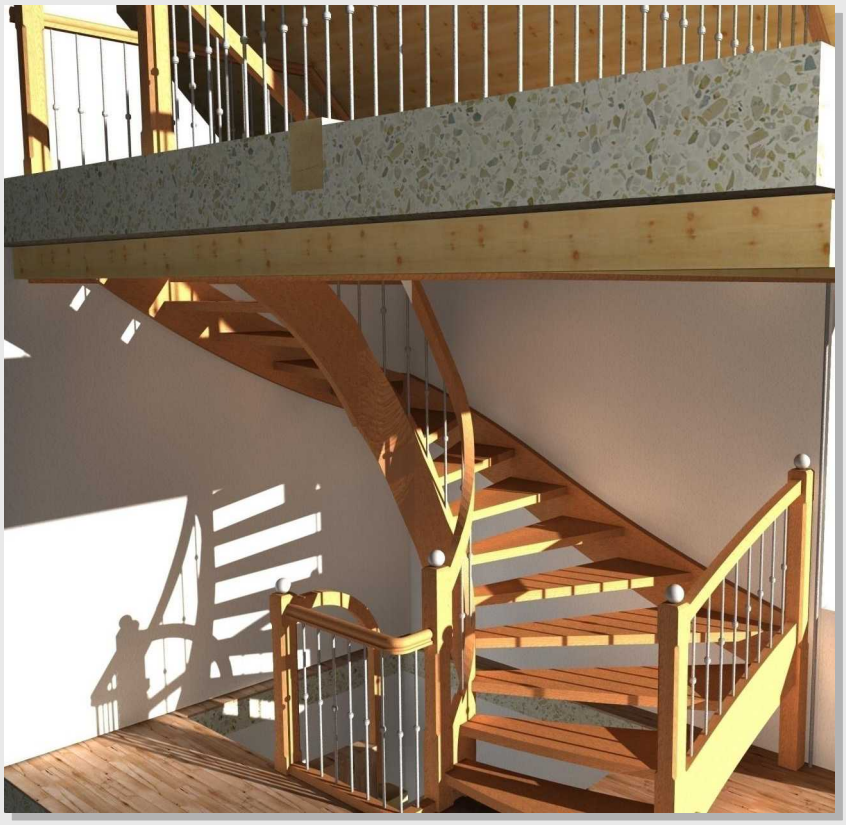
Variant after insertion



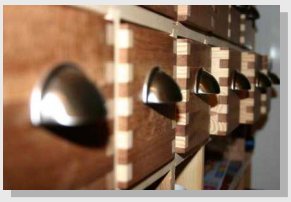
Glulam beam,
Holzleimbau Paul Stephan
GmbH + CO, D-Gaildorf

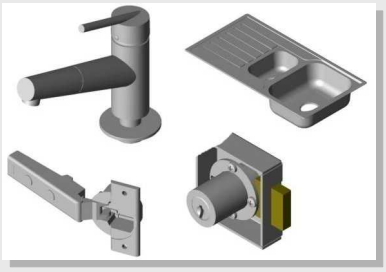


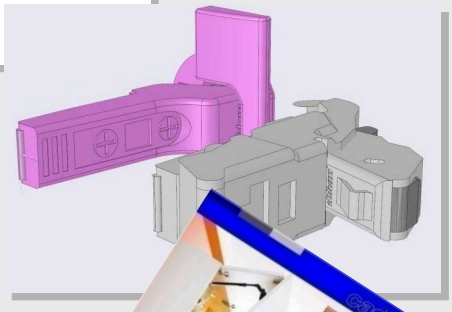
Dialog with parameters for press positionning

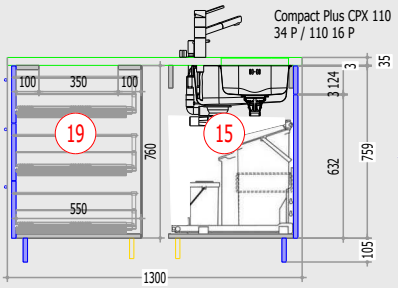


Clear input and fascinating result in Stair construction









3D cabinet from Blum "Dynaplan" software interface

Stairs

Cadwork Stairs is a module for fast and detailed design of all kinds of complex, winding wooden stairs. The full integration in Cadwork 3D enables an easy insertion and totally free editing of a stair in an existing building including the ability to mix different materials.

The following processing options are available:

- Free form, simple, complex stairs with landings
- Acquisition of floor plans from Cadwork 2D
- Selection of predefined parametric layouts
- Free combination of stringer constructions
- Visualization of the stairs with open texture and material choice of the individual components
- Automatic and free winding patterns in plan or in the stringers view
- Dynamic visual update of all manipulations
- Generation of stringers, treads, risers, banisters, railings and posts
- Free design of special structures and connection details in Cadwork 3D
- Link with CNC machines

Cabinet Maker / Joiner

Cadwork 3D Cabinet is the main tool for free form design and is used for planning, design and output of all production relevant drawings, lists and machine data.

Cadwork 2D and Cadwork 3D for cabinet are products that can be used with an efficient speed in the whole range of the cabinet-making trade. Consistency, ease of use and quick learning ensure you the decisive market advantage in days where flexibility, speed and quality in work preparation have become a matter of survival for each company.

Fabrication of series of furniture for kitchen or shopfitting and their management with its own library as well as constructing shapely custom single units is with Cadwork 2D and 3D Cabinet feasible in a very efficient way.

Booth / Sunroom

Booth and Interior Design

The versatility of Cadwork 3D offers an integrated solution for your projects in the fields of trade-show booth constructions or interior design. Your creativity encounters no boundaries here.

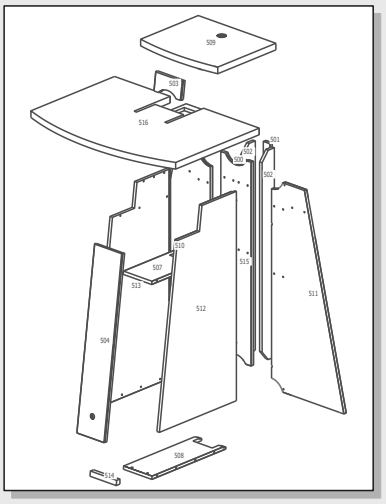
Additional costs for special modules are not necessary since the Cadwork Professional package offers all necessary features available in a powerful free-form software.

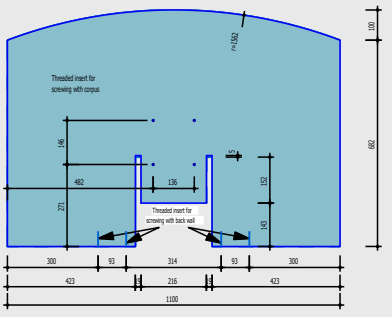
When a link with a CNC machine is required, we offer various options, which must be evaluated for each machine.

The choice of the materials does not matter: beams, profiles, panels and connectors made of steel, aluminum, wood, plastic, glass and other materials can be combined to create the overall design of your choice.

In combination with the integrated presentation module of Cadwork a virtual walk through of your booth or planned space can be achieved in the planning phase.

Cadwork booth, Tischlerei Salland



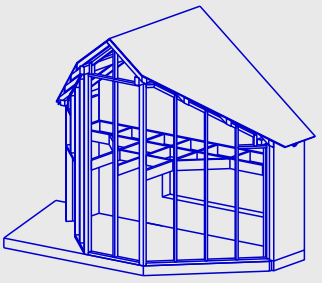


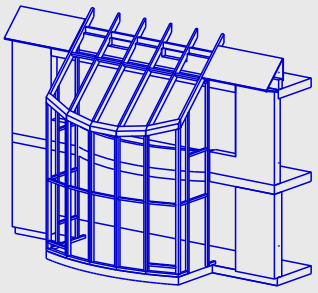
Sunroom

Your creativity for sunrooms design places nowadays very high expectations on CAD systems. Complex structures transitions from the facade to a glass house including crucial details, the combination of different materials or working with profile systems is not a problem for the Cadwork Professional package.

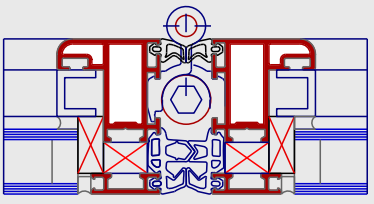
The output of meaningful construction and assembly plans, for example drawing with exploded views is part of the standard functionality of the Professional package. Materialized representations and photomontages can also be achieved very easily in the system.

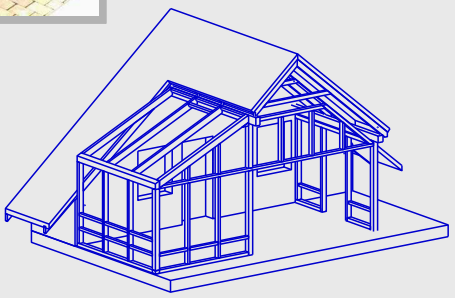
The interface with the Artlantis rendering program is available at your fingertip if you want to create professional renderings, or animations.





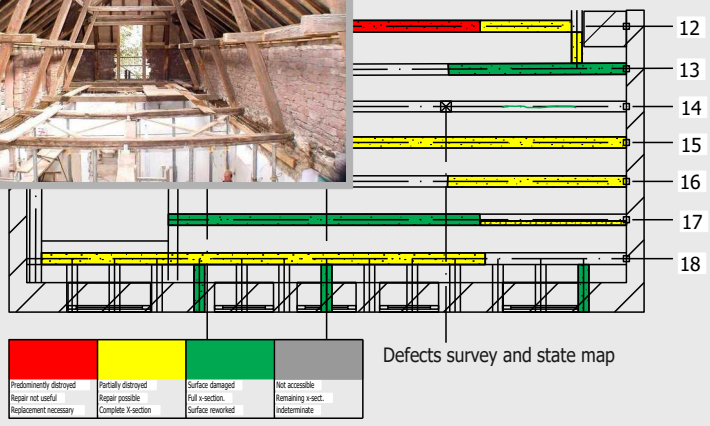
Sunroom construction and visualization



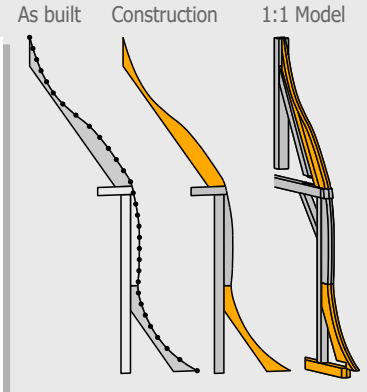


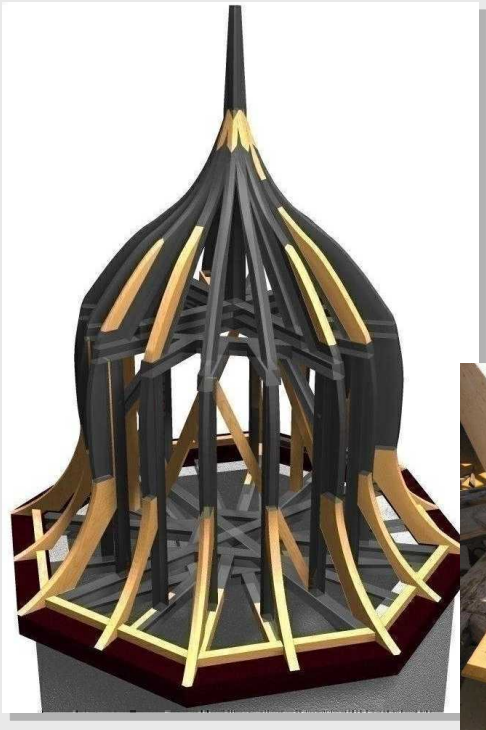
Plan in detail

As built and layout with a direct connection with cadwork 3D



Defects survey and state map





Restoration - Castle/Chrurch Haigerloch
Holzbau Ott, Gammertingen

Direct Connection with Cadwork 3D for as Built and Layout

The direct connection of your Leica total station to Cadwork 3D provides optimum measuring precision on site.

Examples of use: terrain survey and construction as built inside and out, facade, as well as renovation and restoration projects. Installation is greatly simplified thanks to a precise layout of important points.

In as built mode, any construction is measured without reflectors and with pinpoint accuracy. Measured points are transmitted via Bluetooth or data cable directly in Cadwork 3D. There already during the measurement it creates the as-built sketch using nodes, lines or polygon surfaces. Additional information about each line and color coding greatly facilitate further work.

In layout mode, modeled data from the Cadwork 3D (e.g. bottom plates position, hanger and post locations...) transferred to the total station via data cable or memory stick can be projected with millimeter precision on site.

One Stop Shop

Software, total station, training and support from Cadwork. Free interface for our customers when buying a Leica total station through Cadwork.

Renovation

With the standard Cadwork modules, we also cover the entire range of renovation, restoration and remodeling.

The renovation and extension of existing buildings requires a planning and construction tool in which one can freely design. The buildings on which it must be built onto are rarely rectangular, straight and flat. From the precise as built measures of old structures across the damage assessment through a 3D reconstruction of deformed, missing or damaged components, it can be done in detail.

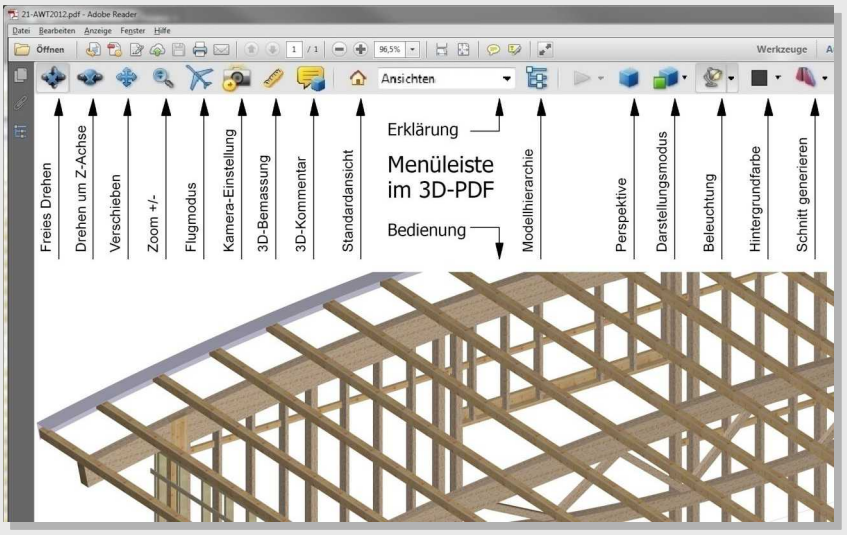
3D PDF / WebGL Viewer / 3D Printing

3D PDF

3D PDF files can be exported via the Cadwork 3D module with your company logo.

Thanks to 3D PDF, your customers have the opportunity to look at your 3D model in different representations. Prerequisite for viewing is only the free Acrobat Reader which is available for Windows and Mac.

The model can be rotated, measured, commented or cut. Some of these functions can be locked with a password if required.



Rotate, walk through, add comments, measure, print and much more in Cadwork 3D PDF

WebGL Viewer

Finally, no more plugin or 3rd party software to install for looking at 3D models.

Indeed, the WebGL export from Cadwork 3D is a standard HTML file that can be loaded in any web browsers. It means this format is multi-platform and therefore can be viewed on a computer, tablet or even smart phone no matter what operating system is loaded.

Several options are available while looking at the model. Including the ability to measure, add shadows, load a terrain, orient the construction on it and do a walk through. Virtual Reality is also available thanks to the Cardboard mode and Oculus Rift support.

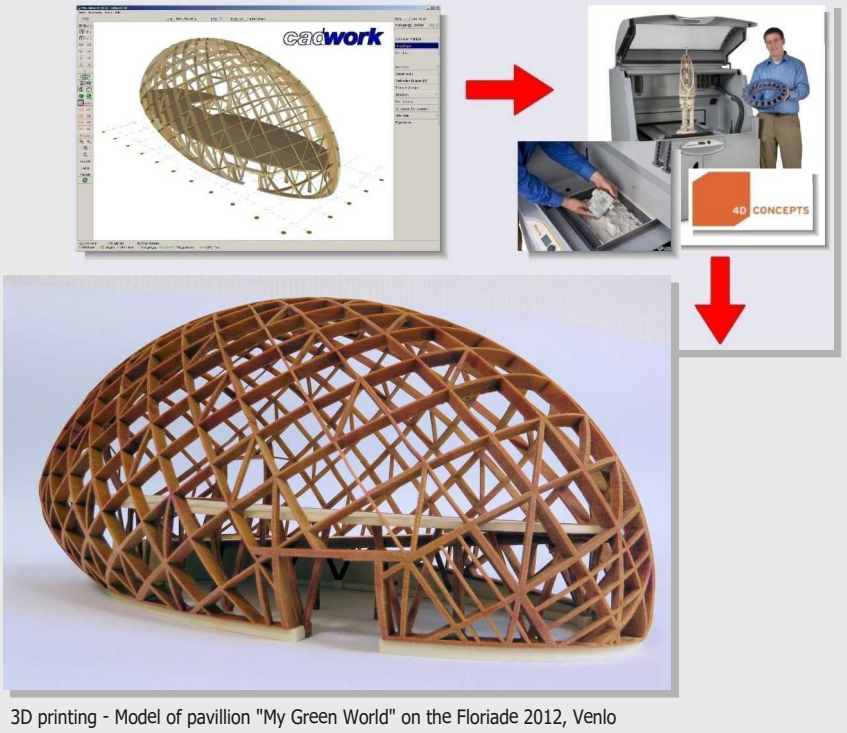
Cadwork Virtual Reality kit including glasses and remote control for walk through

3D Printing

With the stereo lithography format (* .stl) it is possible to send objects, modeled in Cadwork, to 3D printers. In the printer, a perfect 3D model of the structure is created.

Stereo lithography is a technology for rapid prototyping, in which an object is built up layer by layer materializing points in space.

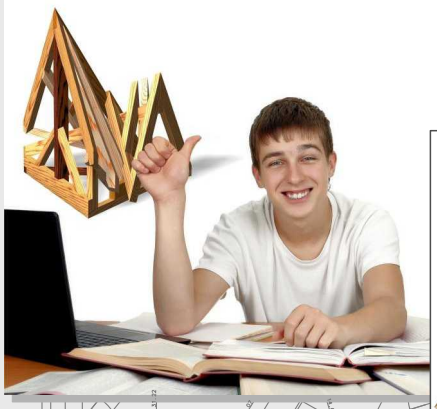
Good printers can build very intricate constructions with thicknesses of close to 1 mm. See the example on the right side.



3D printing - Model of pavillion "My Green World" on the Floriade 2012, Venlo

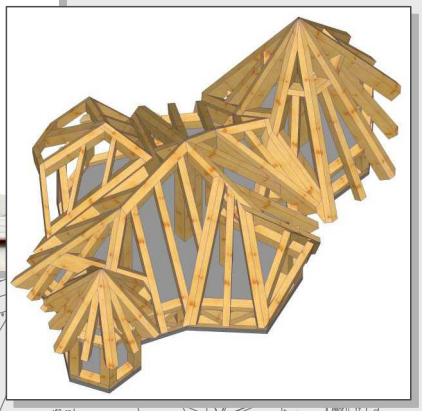
Winner of the project contest "Steg über den Rhein in Rheinfelden", Engineer office Miebach, Lohmar

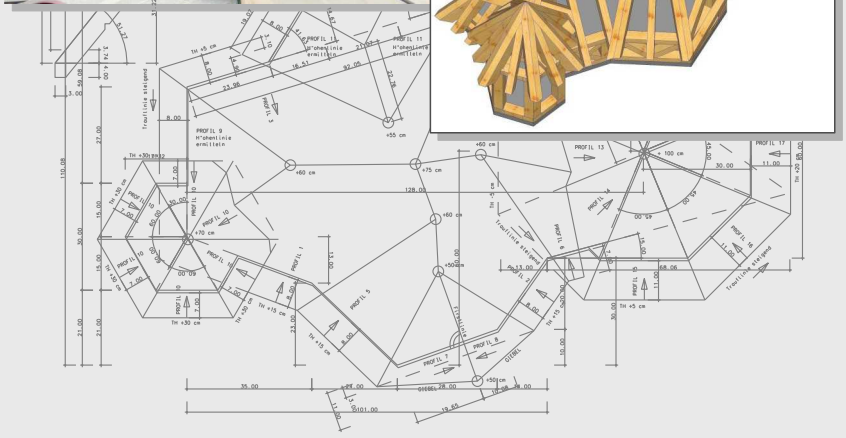
Rheinfelden suspended bridge, Engineer office Miebach, Lohmar



Full version for education

cadwork student version
cadwork lecturer version
cadwork school version





Presentation and Photomontage

A fast and professional presentation of projects is more and more important for your customers.

Surface textures, transparencies, gloss effects and the use of light and shadow makes the difference on sales pitches, marketing documents, offers and contests. This can help you with photomontage, slide shows or even videos. Especially for companies using wood as building material, the automatic alignment of wood textures in the direction of the parts including the end grain sets us apart. And in addition to the built-in options to create great presentations, we offer efficient interfaces to professional rendering programs like Artlantis.

Cadwork for Education

For many years, Cadwork has provided apprentices, students, graduates, teachers, faculty and educational institutions from the wood construction field an economical full version of the Cadwork Standard package.

Order and Info go to
www.cadwork.com or here - **>**

Apprentice and Student Version:

Usage: For training in construction, no commercial use.

Scope of supply: A Cadwork Standard Package (Full version), activation via USB dongle.

Cost: 100$ for the whole period of education.

You have a project, we have the solution...

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