

More Possibilities. The Scaffolding System.

Quality management certified according to DIN EN ISO 9001 Energy management certified according to DIN EN ISO 50001 Environmental management certified according to DIN EN ISO 14001



Layher System Solutions



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- LayPLAN SUITE
- LayPLAN CLASSIC
- LayPLAN CAD
- LayPLAN MATERIAL MANAGER
- LayPLAN TO RSTAB
- Layher CAD-Library for Revit
- LayPLAN TEAMVIEWER
- LayPLAN VR VIEWER

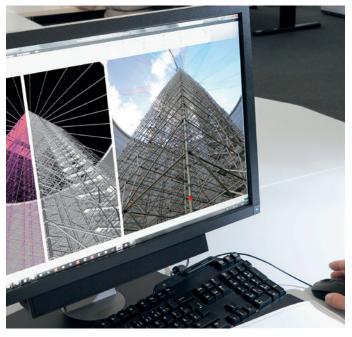
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Quality made by Layher comes from Gueglingen-Eibensbach. Our company has set down deep local roots since it was established. Right up until today, development, production and management are all in one place. This proximity creates advantages that benefit our customers all over the world: short distances, short response times, controlled quality and production.

Layher's history began more than 75 years ago with the manufacture of ladders and other agricultural equipment. Since then, Layher has significantly influenced the market for scaffolding and access technology. Today, more than 2,700 employees create more possibilities for our customers every day with a comprehensive range of services, a sustainable training programme and customer proximity. In more than 50 countries worldwide.

Layher lives **economic and ecological sustainability** in all process steps. Social responsibility towards employees, customers and society takes centre stage.



Headquarters in Eibensbach





Plant 2 in Gueglingen



Plant 3 in Cleebronn

WITH LAYHER, THERE ARE MORE POSSIBILITIES.

A comprehensive range of innovative products, application-orientated solutions and comprehensive services for easy, fast and safe working at height.

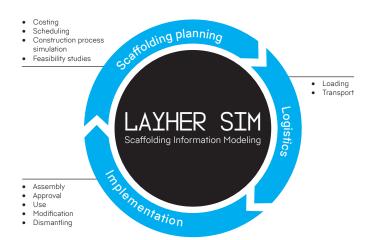
Layher SIM® – Scaffolding Information Modeling

What is Layher SIM®?

Layher SIM is a process. The SIM process is based on 3D models of the scaffolding structure, the object at which the scaffolding is to be erected and the terrain. The SIM process generates the digital twin for subsequent use on the basis of this 3D information.

Layher SIM was designed by Layher to meet the specific requirements of scaffolding construction and covers the entire lifecycle of the scaffolding project from planning through logistics and on to implementation. SIM not only allows you to plan, assemble and manage temporary scaffolding structures more efficiently, but also affords access to BIM at the same time.

LayPLAN SUITE is available as a powerful tool for the implementation of Layher SIM.



Why use Layher SIM®?

The aim of Layher SIM is to take advantage of the potentials of digitalisation and create added value for scaffolding construction. Dependable 3D planning of scaffolding structures without positioning conflicts is just one of the many benefits that go far beyond simple scaffolding planning itself. Added to that are the realistic visualisation of scaffolding, allowing work to be coordinated with other trades or construction sequence simulation, transfer of the scaffolding planning to structural analysis programs, and output of material lists and assembly plans. Transparency at every step results in a reduction in costs and an increase in safety and profitability. When they work with Layher's scaffolding construction customers, both building contractors and end customers in industry benefit from the many advantages SIM has to offer: a high degree of planning certainty, cost control and, above all, the ability to complete projects on schedule thanks to efficient and undisrupted construction processes. Delays and added costs due to inadequate planning are a thing of the past.

The Benefits for You

- Transparency in all work steps and cost control
- Exact material requirements for every construction phase
- Increase in safety and profitability for every project
- Planning and scheduling certainty in every project
- Improved planning quality and the resulting quality of assembly
- Access to BIM

Learn more on YouTube



Short video of Layher SIM on-site yt-sim-site-short.layher.com



Short video of Layher SIM in industry

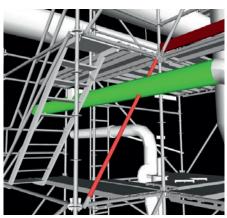
yt-sim-ind-short.layher.com



Visualisation for professional presentations



Data exchange with mobile devices



Conflict check in Autodesk Navisworks Manage

Projectworkflow

The underlying task of Layher SIM is to perform the scaffolding planning that provides the basis and the digital twin for all subsequent process steps. One of the required inputs is the geometry data of the object at which the scaffolding is to be erected. This can be provided in the form of existing 3D models, the results of a 3D laser scan or remodelling based on 2D plans. Based on the digital twin, it is possible to obtain further information as output that can be used directly for subsequent process steps. Layher SIM focuses on the end-to-end use of data and the elimination of digital barriers in order to ensure loss-free data exchange.

FROM THE REALITY INTO THE DIGITAL PLANNING >>>





Digital scaffolding planning with LayPLAN SUITE:



- LayPLAN CLASSIC
- LayPLAN CAD
- LayPLAN MATERIAL MANAGER
- LayPLAN TO RSTAB
- LayPLAN VR VIEWER





Measuring on the construction site for precise positioning of the scaffolding using the SIM2Field digital service



Virtual installation support with the SIM2Field XR app



3D model available? If a 3D model of the building project is available, this data is used



No 3D model available? Capturing the reality of existing buildings using the 3D laser scan digital service





Successful scaffolding projects can be planed

The efficient construction of scaffolding and shoring structures makes a vital contribution to the overall success of building projects. The right products, good preliminary planning with Layher SIM and trained, qualified specialist personnel are the three fundamental prerequisites for successful scaffolding projects.

Layher SIM and the solutions in the LayPLAN SUITE permit the efficient, economical preliminary planning of your project.

The right products for economically efficient and safe solutions are available with Layher's integrated system. Information on the comprehensive product portfolio can be found on our website at www.layher.com as well as in the Layher product catalogues.

With an extensive range of seminars and detailed technical documentation, Layher provides you with the support you need to ensure that your employees are optimally qualified for their upcoming tasks. Whether for scaffolding planners or erectors – in theoretical or practical seminars – in the Layher Customer Centre in Eibensbach, at your own premises or as a webinar viewed from home. For further information, request our seminar brochure or visit us online at seminare.layher.com



Learn more on YouTube



Information video on Layher SIM on-site yt-sim-en.layher.com



Information video on Layher SIM in industry yt-sim-ind-en.layher.com



LayPLAN SUITE



LayPLAN SUITE, the integrated software solution. The suite includes all the LayPLAN programs, tools, plug-ins and interfaces, which are also able to interact with one another. The individual programs of the LayPLAN SUITE are described in detail on the following pages.

However, the LayPLAN SUITE is not just the umbrella concept bringing together all the LayPLAN modules but also a desktop app which allows you to administer the individual LayPLAN modules centrally.



LayPLAN CLASSIC



LayPLAN CLASSIC is a stand-alone planning programme which facilitates a start in digital planning by allowing automated planning of predefined scaffolding applications: whether they are for circular or facade scaffolding made from SpeedyScaf, for bird-cage scaffolding and free-standing towers made from Allround Scaffolding, or for structures with temporary roofs. Once the key data has been entered, scaffolding erectors receive a scaffolding proposal that includes anchoring, bracing and side protection in just a few seconds. In parallel, a detailed material list is determined in real time.

The Benefits for You

- Automated planning of standardised scaffolding structures using SpeedyScaf, Allround Scaffolding and Layher weather protection roofs
- Automatic 2D assembly sketches
- Integrated 3D viewer for detailed visualisation and persuasive order acquisition
- Real-time material list for transport and assembly
- Export function to LayPLAN CAD and Material Manager
- No CAD knowledge necessary

Target group and usage

- Industry professionals
- Scaffolding erectors
- For rapid planning during the costing phase and for simple scaffolding structures focusing on facade scaffolding

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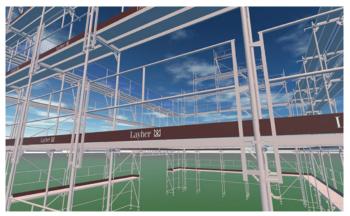
User interface

System requirements

• Operating system: Windows 7, Windows 10, Windows 11

Processor: min. 1.0 GHzRAM: 512 MB

• Graphics card: no special requirements



3D visualisation for rapid verifications and professional presentations

LayPLAN CAD



LayPLAN CAD is a plug-in for CAD systems Autodesk AutoCAD and BricsCAD von Bricsys, which is available for individual scaffolding planning. It permits 3-dimensional planning of all types of scaffolding structures, irrespective of their complexity. Alongside the extensive component library, it provides scaffolding planners with design functions for the simple, fast insertion of components. A transfer to visualisation or animation software is also possible without any problem. This allows projects not only to be planned economically and at the same time adapted precisely to actual requirements, but also to be presented professionally to customers.

The Benefits for You

- Scaffolding planning and design in 3D
- Basic planning can be done in an automated process using LayPLAN CLASSIC – thus saving time
- Visual conflict checks through realistic rendering
- Extensive component library with a convenient search function – including prefabricated assemblies and template drawings for even faster design
- Component preview and automatic component identifications
- Real-time material list for transport and assembly
- Further editing of the model data in visualisation software (e.g. rendering, VR) for order acquisition and for coordination with other trades, for conflict checking or for construction sequence simulation
- With the 'Structural model' function the further editing of the model data in frame analysis programs for structural strength calculations as part of project-related verifications of stability. Unlike in the remodelling which is otherwise necessary, this avoids sources of error and saves time when planning. LayPLAN TO RSTAB also provides a convenient interface for data transfer in combination with LayPLAN CAD and AutoCAD. For further information, see LayPLAN TO RSTAB

	AutoCAD	BricsCAD Pro	BricsCAD BIM
Licences			
Single user licences	•	•	
Network licences		•	
Purchase licence		•	•
Rental licence (subscription)			
Import, export, save and open			
*.dwg save/open	•	•	•
*.dxf save/open	•		•
*.dwf-Export	•		•
*.nwd-Referencing	•		
*.ifc-Import and Export			
*.rvt-Import	-	-	•
*.rfa-Import			
*.skp-Import	_	•	•
Point clouds-referencing	•	•	•
LayPLAN SUITE Integration			
LayPLAN CLASSIC Import	•	•	•
LayPLAN Material Manager		_	_
Export	•		
LayPLAN TO RSTAB	•		
'Structural model' function	•	•	•
Online platform included	•	-	-

Target group and usage

- Scaffolding erectors
- Construction companies
- Event engineers
- Engineering and planning offices
- In both the offer and implementation phases
- Prior knowledge of AutoCAD / BricsCAD and a good feel for IT are an advantage

System requirements

CAD system: AutoCAD, AutoCAD Mechanical, Auto-

CAD Architecture Versions 2018–2025 BricsCAD Pro or higher, V23 and V24

Operating system: Windows 10, Windows 11

Processor: High-speed processor, e.g. > 3.0 GHz

RAM: 16 GB, recommended: 32 GB

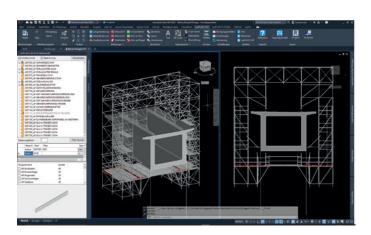
Graphics card: Recommended: 8 GB GPU with 106

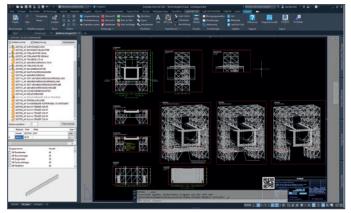
Gbit/s and compatible with DirectX 12, e.g. NVIDIA Quadro RTX 4000 with 8 GB

GDDR6

• Hard drive: Recommended total capacity: 512 GB,

SSD if possible





10 Software

LayPLAN MATERIAL MANAGER



LayPLAN MATERIALMANAGER is part of both LayPLAN CLASSIC and LayPLAN CAD. With LayPLAN MATERIALMANAGER, material lists can be imported from the two modules at the touch of a button and can be individually edited – for example in order to perform a subdivision into different construction sections or adapt the logistics optimally to the construction workflows.

The Benefits for You

- Automatic creation of material lists from LayPLAN CLASSIC and LayPLAN CAD
- Manual editing of material lists, for example splitting them into construction sections and applications
- Detailed information on the scaffolding components (reference number, name, weight, price) including preview image
- Formula functionality as in Microsoft Excel®
- Output as PDF or exports to Excel (incl. linked formulae)
- Optional component images on the material lists in the printout this makes it easier to identify components during loading and assembly

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User interface

Target group and usage

- Users of LayPLAN CLASSIC and LayPLAN CAD
- In both the offer and implementation phases

Exported material list with product illustrations

System requirements

• There are no special requirements to observe

LayPLAN TO RSTAB



Frame analysis programs are generally used for the structural strength verification of scaffolding structures. Using the LayPLAN TO RSTAB module, all modelling relevant information about an Allround Scaffolding structure can be imported in 3D form from AutoCAD into the RSTAB frame analysis program from Dlubal with all structurally relevant information. Automated transmission of the information means that it is not necessary to re-enter the model data. This means that users benefit from enormous time savings and also helps eliminate possible sources of errors during modelling.

The Benefits for You

- Time saving thanks to automated 3D model transmission of Allround Scaffolding structures
- Transmission of all structurally relevant information according to the approvals (geometry, cross-sections, materials, frame types, eccentricities and non-linear connections)
- Avoidance of possible sources of errors during modelling in the frame analysis program

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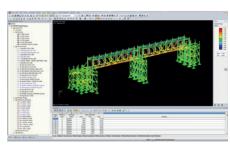
Transmission of model data with the aid of LayPLAN TO RSTAB

Target group and usage

- Scaffolding erectors with a technical office structural knowledge absolutely essential
- Engineering and planning offices structural knowledge absolutely essential
- In both the offer and implementation phases
- Knowledge of AutoCAD and RSTAB required

System requirements

- AutoCAD, AutoCAD Mechanical or AutoCAD Architecture Versions 2018–2023.
 Exact compatibility of AutoCAD versions must be checked with the RSTAB version used (no compatibility with BricsCAD).
- LayPLAN CAD
- RSTAB 8 from Dlubal RSTAB 9 is not supported
- RS-COM Interface from Dlubal



Structural calculations in RSTAB

Layher CAD Library for Revit

Independently of the LayPLAN SUITE, we make our scaffolding components available for Revit as individual, so-called families in the native *.rfa format. The library contains the complete Layher product catalogue for the product groups Allround Scaffolding, SpeedyScaf, Event Systems, Protective Systems and system-free accessories. It forms the optimum basis for the editing of scaffolding structures imported using LayPLAN TO REVIT or the individual planning of any type of scaffolding structure in Autodesk Revit. In addition to reliable geometrical data, the Revit families also contain further information on the Layher scaffolding components, such as reference number, designation and weight. This forms the ideal basis for high-quality planning, including the creation of parts lists directly in Revit. In the Revit families, geometrical and other information on the scaffolding components are merged, enabling the general requirements of BIM (Building Information Modeling) to be met. Finally, Autodesk Revit offers the option of exporting projects in the IFC format, for an unrestricted data exchange with other programs and project participants.

The Benefits for You

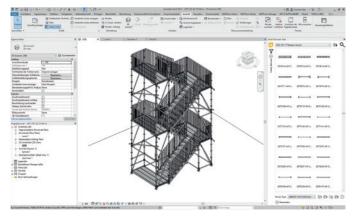
- Scaffolding planning with Autodesk Revit
- Reliable component geometries and information
- Creation of material lists
- The latest data thanks to continuous updates
- Export in IFC format is possible

Target group and usage

• Scaffolding planners who have a knowledge of and use Revit

System requirements

Autodesk Revit 2019 or higher



Planning a scaffolding structure in Autodesk Revit

LayPLAN TEAMVIEWER



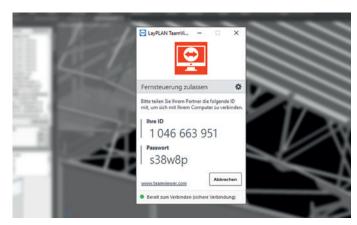
LayPLAN TEAMVIEWER is a tool available free of charge which allows users to access optimum, direct support in the event of problems or open questions. IT is installed automatically and can be opened by clicking on the icon or selecting the LayPLAN SUITE.

The Benefits for You

- Fast and easy support
- Direct TeamViewer availability
- No separate downloads necessary

System requirements

Internet access



 $Login\ window\ of\ the\ remote\ maintenance\ tool\ LayPLAN\ TEAMVIEWER$

LayPLAN VR VIEWER



The free-of-charge LayPLAN VR VIEWER enables virtual tours of scaffolding structures, to convey a realistic spatial impression of the overall situation. This provides an ideal basis for advance checking of the planned scaffolding structure in respect of occupational health and safety requirements, e.g. by the health and safety coordinator, or for coordination with other project participants. It also permits a virtual tour by and induction of the assembly team. Based on the data from LayPLAN CAD, Layher can create VR models for display in the LayPLAN VR VIEWER.

The Benefits for You

- Virtual tour of scaffolding structures with VR headset and optional display in Desktop mode
- Integrated measurement and comment function
- Conveying of a realistic spatial impression of the overall situation, for order acquisition and for coordination with other trades or for construction sequence simulation
- Verification of occupational health and safety through the involvement of health and safety coordinators

Target group and usage

- Users of LayPLAN CAD
- Offer and implementation phases
- · Acquisition, tour, coordination, instruction

System requirements

• High-performance computer; the exact specifications depend on the employed VR headset, e.g. HTC Vive Pro, Meta Quest 2 or 3.

• Cabel: USB 3.2 Gen2, USB-C to USB-C, 10 Gbps

Operating system: Windows 10, Windows 11
 Processor: Intel i7/AMD Ryzen 7
 RAM: 16 GB DDR4-RAM

• Graphics card: Nvidia RTX 20-Series*/AMD Radeon RX 6000-Series

• USB port: 1x USB-C Thunderbolt



Virtual tour of scaffolding with a VR headset



Tour of a VR model



3D-Laserscan



The ideal starting point when using Layher SIM (Scaffolding Information Modeling) is a 3D model of the object at which the scaffolding is to be erected. In the case of historical buildings such as churches, bridge structures, etc., this data is often not available and this makes scaffolding planning difficult or sometimes impossible. To make it possible to determine the actual state of these objects despite this problem, Layher offers its customers a digital surveying solution using a 3D laser scanner. The 3D laser scanner generates data of the current situation on site which is accurate to the nearest millimetre. This data is then used for scaffolding planning in LayPLAN CAD. In this way, scaffolding structures can be digitally adapted to the real current conditions on-site and optimised. Planning and checks performed on the digital twin ensure a high level of transparency and certainty during planning with regard to materials, costs and deadlines, thus conferring an enormous competitive advantage. Typical areas of application for 3D laser scanners include, for example:

- Scaffolding erected at historic buildings, churches, bridges, monuments, etc.
- Scaffolding at industrial installations, shipbuilding and aircraft scaffolding.
- Use in event technology for recording the environment at the event location.
- 3D laser scanners can be used indoors or outdoors and scanning is possible even in the complete absence of light (e.g. in a boiler).

The Benefits for You

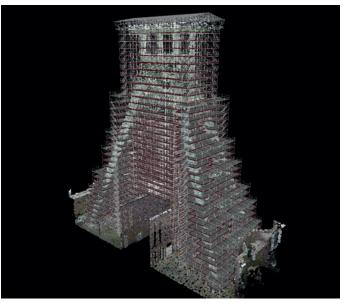
- Reliable geometrical data due to 3D surveying with millimetre accuracy
- Range approx. 100 m
- Can be used both indoors and outdoors
- Data preparation by Layher for use in LayPLAN CAD
- Integration in Layher SIM
- Certainty with regard to deadlines and costs during planning

Target group and usage

- Scaffolding erectors who need digital surveys for the cases described here
- Knowledge of AutoCAD-/ BricsCAD and knowledge of the use of point clouds are required



3D-Laserscanner



Point cloud with with scaffolding planning

SIM2Field



SIM2Field complements Layher SIM in the field of execution. The integrated concept creates a continuous, digital process, from 3D scaffolding process, from 3D scaffolding planning to completion of the scaffolding on the construction site. The 3D scaffolding model data from LayPLAN CAD is used efficiently for assembly. Thanks to SIM2Field, potential sources of error are avoided when measuring and creating the scaffolding, even with complex geometry, and paper plans are reduced.



Requirement

3D scaffolding planning based on LayPLAN CAD is a prerequisite for SIM2Field. If no 3D data is available for the object, the terrain/building geometry can also be captured using a 3D laser scanner for existing objects.



Reference points

At least three reference points are defined in the planning and on the construction site for measuring.



Stationing

The total station orients itself in the real environment using the three known reference points.



Positioning

The position of the scaffolding structure can be projected onto the floor using laser points. The base spindles are roughly positioned there. The position and height of the scaffolding can then be precisely measured using the prism.



The Benefits for You

- End-to-end, digital SIM process right through to the construction site
- Direct utilisation of the 3D scaffolding model data from LayPLAN CAD for assembly
- Avoidance of potential sources of error when measuring and creating scaffolding, even with complex geometry
- Reduction of paper plans



Reliable layout based on the 3D model data



Control and data transfer by using a tablet PC



Fully assembled and calibrated shoring

Requirements

• 3D scaffolding planning based on LayPLAN CAD incl. reference to the real environment (e.g. three reference points)

Target group and usage

- Scaffolding manufacturers who have a detailed 3D scaffolding plan (execution planning) based on LayPLAN CAD
- Direct use of the 3D model to create scaffolding structures on the construction site
- Ideal for creating scaffolding structures that are difficult to measure conventionally or where high accuracy is very important,
 e.g. complex industrial plants, shoring, etc.

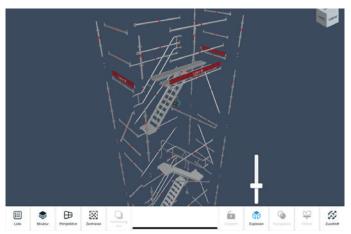
SIM2Field XR App



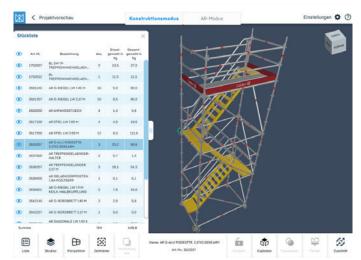
The SIM2Field XR app is used for work preparation and to support the assembly and inspection of scaffolding structures on the construction site. By using 3D scaffolding models, paper plans are reduced and at the same time the flow of information to the construction site is optimised. Various projects including associated project documents (PDF files, photos, etc.) can be provided in the app. The project data comes directly from LayPLAN CAD. This can be called up either via a link or a QR code and is then available offline on the mobile device. If an internet connection is available, the project data can be updated when changes are made. In the 3D models of the scaffolding structures, further information on the Layher scaffolding components is available in addition to the geometry. Among other things, the article designation, the article number and the component weight are displayed. The complete material list of the scaffolding construction can also be displayed.



Project data is transferred directly from LayPLAN CAD via link or QR code.



Explosion mode for displaying details of the assembly



Intelligent and interactive parts list function: All components of an item can be displayed in the design. These are highlighted in colour. Selected components can be shown/hidden. Parts list adapts automatically depending on the cut.



Placing the virtual scaffolding in the real environment using augmented reality: The setdown point can be defined beforehand in construction mode by selecting a base spindle. The model can be aligned using familiar finger gestures. The pivot point can be defined by selecting the foot spindle. The construction can be locked to prevent unintentional movement.



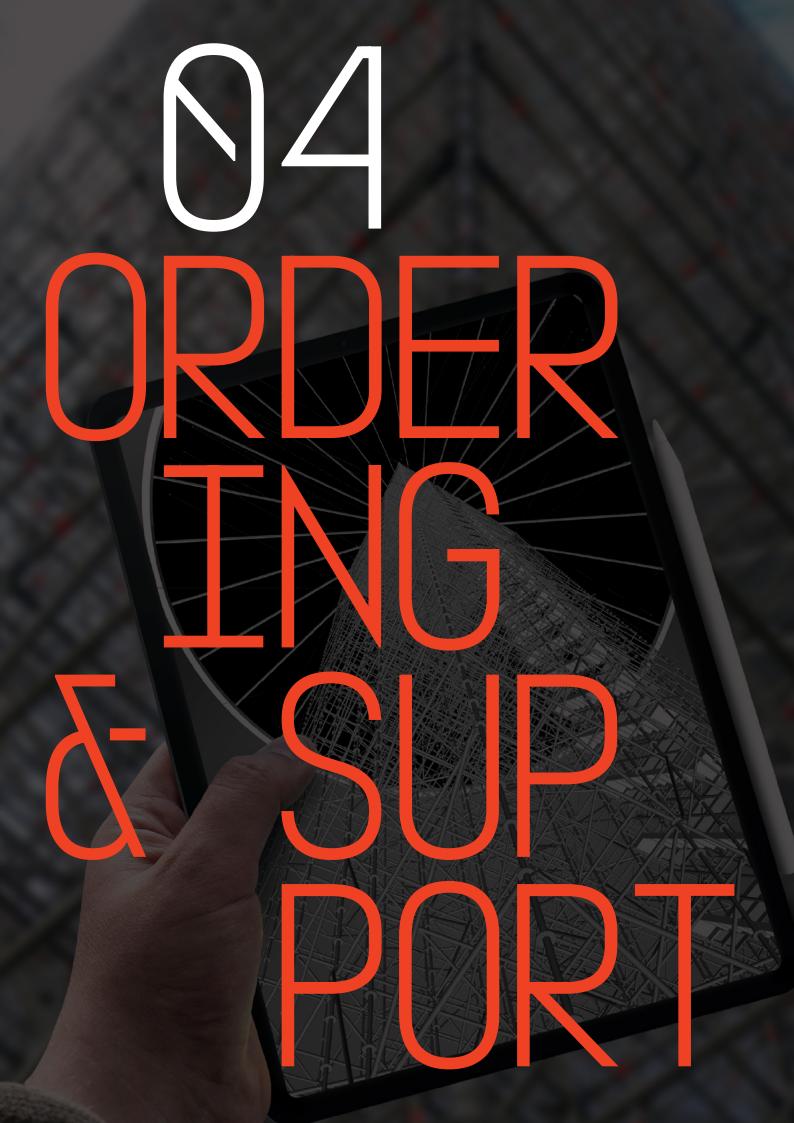
Augmented reality mode with cutting function (limit box) for visualising parts of the scaffolding structure

Requirements

 Tablet PC with iOS or Android; recommended: iPad Pro

The Benefits for You

- Direct use of the 3D scaffolding models as support during scaffolding assembly
- Reduction of 2D assembly plans (paper plans)
- Intelligent and interactive parts list function
- Quick identification of scaffolding components
- Cutting function for displaying partial areas
- Display of virtual scaffolding in the real environment for coordination in advance
- Simple use of the app without registration



Download, Ordering & Licensing

LayPLAN Login page

- You can request your personal LayPLAN Login data on the Layher website: software.layher.com
- The setup for the installation of individual or all LayPLAN Suite modules can be downloaded in the LayPLAN Login page.
- Licences for the activation and unlimited use of individual LayPLAN Suite modules are also ordered via an easy-to-use order form in the LayPLAN Login page.

Test versions

 Following initial installation, the individual modules of the LayPLAN SUITE can be tested free-of-charge for 30 days.

Ordering the CAD libraries

- The LayPLAN Login page also contains an order form for the Layher CAD libraries.
- Once you have successfully completed the order, you will receive a link allowing you to download the library.
- You will then receive information on updates to the libraries by email as they are published.

Ordering digital services

• Get in touch with your personal contact personon site. You can find them at: contact.layher.com

Licensino

- All purchase licenses are valid for an unlimited duration. Updates are performed free-of-charge.
- Licensing is user-specific by means of a licence file.
- The users must be specified at the time of ordering. The first names, surnames and email addresses of the users are requested.
- All users receive their own personal licence file so that they
 can activate the programs which are authorised for them.
 The licence file also permits one further activation, e.g. for
 an office PC and in the home office

Instructor, pupil and student versions

- On production of a valid certificate, we will make the tools of the LayPLAN SUITE available to pupils and students free-ofcharge for a period of 365 days.
- Are you an instructor in an accredited training establishment? Then please get in touch with us directly. We will be delighted to help you.

Undates

- Updates are made available at regular intervals free-of-charge.
- The updates include modifications to the catalogue file as well as functional extensions to individual LayPLAN modules in the LayPLAN SUITE.

Pos.	Description	Ref. No.
1	LayPLAN CLASSIC Scaffolding configurator for SpeedyScaf, Allround Scaffolding, weather protection roofs and rolling towers	6345.102
2 a	LayPLAN CAD Plug-in for AutoCAD, for designing complex scaffolding in 3D and for further processing of scaffolding proposals from LayPLAN CLASSIC	6345.103
b	Plug-in for BricsCAD for designing complex scaffolding in 3D and for further processing of scaffolding proposals from LayPLAN CLASSIC	6345.106
3	LayPLAN MATERIAL MANAGER	contained in both LayPLAN CLASSIC and LayPLAN CAD
4	LayPLAN TO RSTAB	6345.104
5	LayPLAN TEAMVIEWER	Part of the LayPLAN SUITE
6	LayPLAN VR VIEWER	free of charge
7	Layher Bauteilbibliothek für Autodesk Revit	6345.202
8	3D-Laserscan Flat-rate daily amount for digital surveying with 3D laser scanner including data preparation	6317.016
9	Digitales Anlegen mit Totalstation Flat-rate daily	6317.016
10	SIM2Field XR App	free of charge

Support & Seminars

Support

If you have any questions on the subject of the LayPLAN SUITE, e.g. installation and setup, functions, licensing and activation, etc., please contact layplan-info@layher.com. You will receive a reply as quickly as possible.

The LayPLAN Login page also contains downloadable guides for the individual LayPLAN modules.

Seminars

Comprehensive seminars and webinars are available for the Layher and webinars are available.

Information, prices and registration can be found at: seminare.layher.com





More Possibilities. The Scaffolding System.

Customer proximity is a key success factor for Layher - also in a geographical sense. That is why we are present with ideas and solutions wherever our customers need us.



Germany

