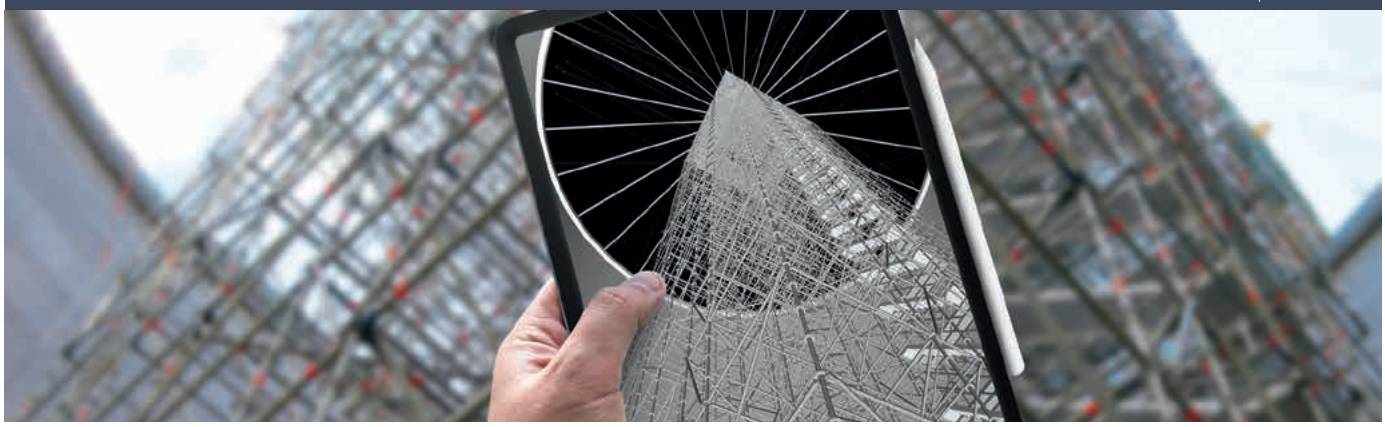
Layher Info
Information about products and technology for clients and partners.

Layher
More Possibilities. The Scaffolding System.

September 2019



YOUR ACCESS TO BIM

SIM | SCAFFOLDING INFORMATION MODELING

Digitalisation is affecting every industry. Scaffolding construction included. Rightly so, because nothing else optimises project planning so effectively while opening up enormous potential for cost savings. Layher therefore asked itself the question of how the BIM concept – Building Information Modeling – originating in civil engineering could be adapted to scaffolding in temporary structures. Because the proven Layher systems permit faster and safer upward access, yet are not part of the actual structure. Furthermore, scaffolding can also be used independently of civil engineering projects, for example as stand-alone structures like temporary bridges. The result is SIM: Scaffolding Information Modeling.

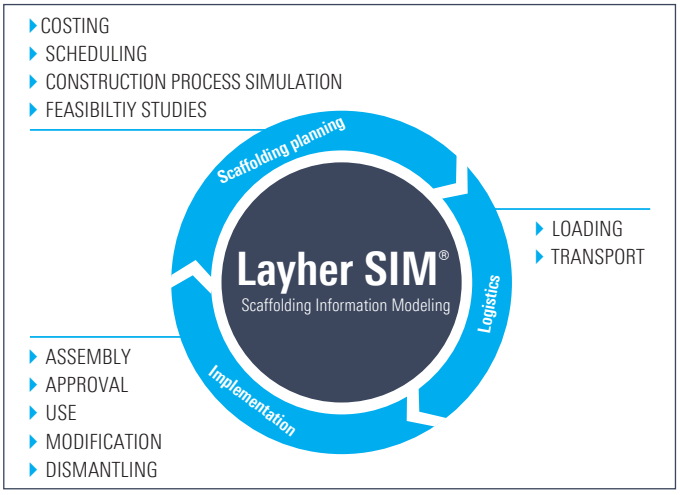
The future in scaffolding construction is digital – and it's name is SIM

Scaffolding Information Modeling – SIM for short – is a process based on 3D models and designed by Layher to meet the specific requirements of scaffolding construction. 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. With the integrated Layher software solution LayPLAN SUITE, you have a powerful tool for the SIM process: LayPLAN CLASSIC facilitates a start in digital planning by allowing automated planning of predefined scaffolding applications – and if required even with temporary roof structures. For complex scaffolding structures as part of large-scale engineering scaffolding, there is LayPLAN CAD. Detailed information on the modules of LayPLAN SUITE can be found on the following pages.

Planning and scheduling certainty at sites

Dependable 3D planning of scaffolding structures without collisions is just one of many benefits. Added to that are the realistic visualisation of scaffolding, allowing work to be coordinated with other trades or for construction sequence simulation, transfer of the scaffolding planning to structural analysis programs, and output of material lists and assembly plans. Transparency at every work step results in a reduction in costs and an increase in safety and profitability.

When building contractors work with Layher's scaffolding construction customers, building contractors and end customers in industry benefit thanks to SIM from a high degree of planning certainty, cost control and above all completion of projects on schedule thanks to efficient and undisrupted construction processes. Delays and added costs due to inadequate planning are a thing of the past.



YOUR BENEFITS AT A GLANCE

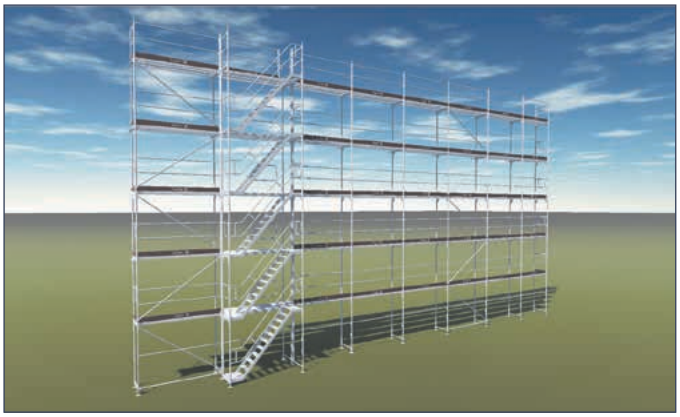
- Transparency in all work steps and cost control.
- Increase in safety and in profitability for every project.
- Planning and scheduling certainty at every site.
- Your access to BIM.

THE MODULES OF LAYPLAN SUITE

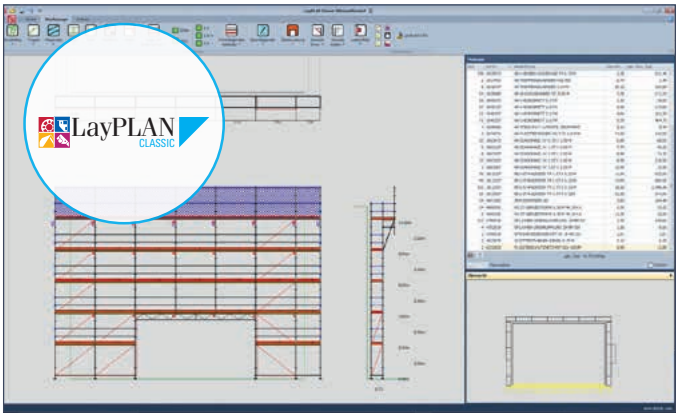
1. LayPLAN CLASSIC for SpeedyScaf and Allround Scaffolding

LayPLAN CLASSIC facilitates a start in digital planning by allowing automated planning of predefined scaffolding applications: whether they're for circular or facade scaffolding made from SpeedyScaf, for birdcage scaffolding and free-standing towers made from Allround Scaffolding, or for structures with temporary roofs.

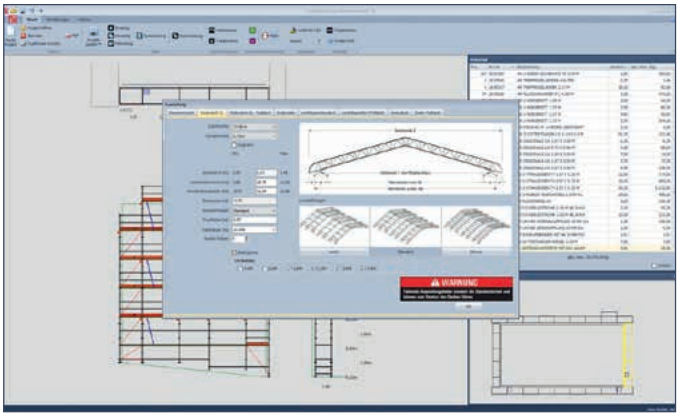
Once the key data has been entered, scaffolding manufacturers receive in seconds a scaffolding-proposal that includes anchoring, bracing and side protection. During the design phase, the overall length, standing heights and areas are continuously calculated and displayed to reflect the latest plan. A materials list can also be easily created at the push of a button: scaffolding erectors benefit from more certainty when planning the commercial and technical details; from optimised use of their stocks; and from full cost transparency at every stage of the project.



3D visualisation in LayPLAN CLASSIC



Facade scaffolding with brick guard level and vehicle access using LayPLAN CLASSIC SpeedyScaf



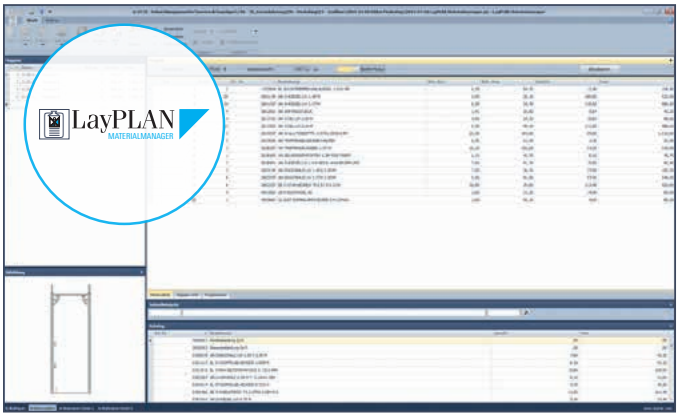
Planning of a weather protection roof with Keder Roof XL on Allround support scaffolding using LayPLAN CLASSIC

THE FUNCTIONS OF LAYPLAN CLASSIC

- Automated planning of standardised scaffolding structures using SpeedyScaf, Allround Scaffolding and Layher weather protection roofs.
- Export function to LayPLAN CAD.
- Automatic 2D drawings.
- 3D visualisation for order acquisition.
- Real-time material list – for transport and assembly.

2. LayPLAN MATERIAL MANAGER for LayPLAN CLASSIC and LayPLAN CAD

The LayPLAN MATERIAL MANAGER allows material lists to be created and edited – for example splitting into different construction sections to permit prices and weights to be considered separately.



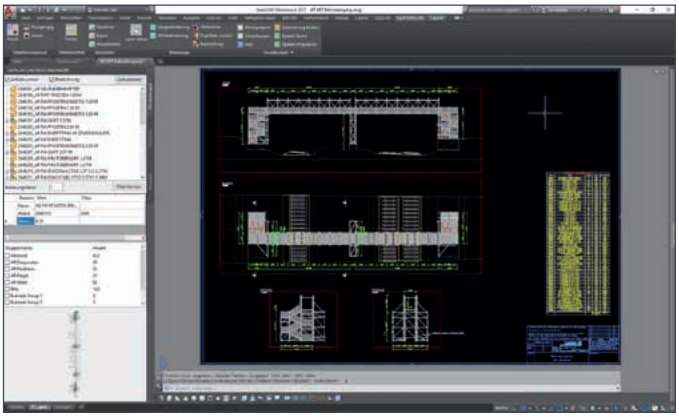
THE FUNCTIONS OF LAYPLAN MATERIAL MANAGER

- 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 including preview image.
- Output as PDF and export in Excel.
- Optional component images on the material lists in the printout – this makes it easier to identify components during loading and assembly.

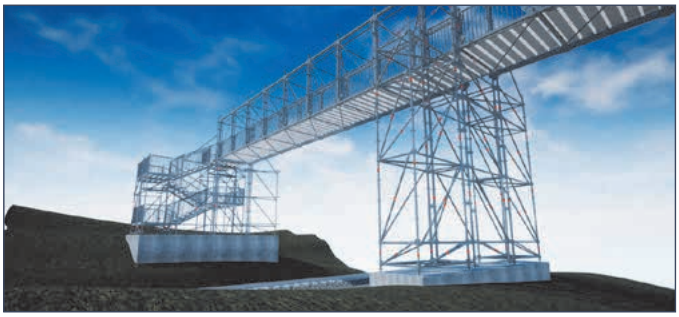
3. LayPLAN CAD for planning in 3D

For complex scaffolding structures as part of large-scale engineering scaffolding, LayPLAN CAD is available. This is a plug-in for Autodesk AutoCAD. It permits 3-dimensional planning of scaffolding structures of all types.

Planning of individualised scaffolding structures in LayPLAN CAD



Creation of planning documents with integrated material lists in LayPLAN CAD



Professional 3D rendering of the LayPLAN CAD models

THE FUNCTIONS OF LAYPLAN CAD

- Scaffolding planning and design in 3D.
- Basic planning can be done in an automated process using the proven LayPLAN CLASSIC – that saves time.
- Dependable visual collision check thanks to realistic rendering as a volume model.
- Extensive component library with a convenient search function – including prefabricated assemblies and template drawings for even faster design.
- Preview image of components and output as 3D models.
- Automatic component identifications.
- Real-time material list for transport and assembly – the required material is guaranteed to be there where it's needed.
- Further editing of the model data in visualisation software (e.g. rendering, VR) for order acquisition and for coordination with other trades or for construction sequence simulation.
- Further editing of the model data in RSTAB for structural strength calculations as part of project-related verifications of stability. Unlike in remodeling which is otherwise necessary, this avoids error sources and saves time when planning. If you are interested, we would be happy to send you supplementary Layher information for export into RSTAB.
- Available in German, English, French and Spanish.

4. 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. Based on the data from LayPLAN CAD, Layher can create VR models for you for display in the LayPLAN VR VIEWER. We would be happy to assist you for your VR presentation.

THE FUNCTIONS OF LAYPLAN VR VIEWER

- Virtual tours of scaffolding structures with VR headset (e.g. Oculus Rift).
- Optional display of VR models 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.

Further information about SIM in the building trade can be found on film at: **http://yt-sim-en.layher.com**

Further information about SIM in industry can be found on film at: **http://yt-sim-ind-en.layher.com**

Further information about LayPLAN SUITE can be found on film at: **qrsoftwareen.layher.com**

HOW CAN I ACQUIRE LAYPLAN SUITE?

Registration and all the ordering processes can be conveniently accessed at the Layher website: **http://software.layher.com**
Use a contact form to obtain the data for accessing the LayPLAN log-in, where you can download the LayPLAN software. After initial installation, the LayPLAN programs can be tested free of charge for 30 days. For activating the full version, the software portal contains a form for ordering the software.

Pos.	Description	Ref. No.
1	**LayPLAN CLASSIC** scaffolding configurator for SpeedyScaf, Allround Scaffolding, weather protection roofs and rolling towers	**6345.102**
2	**LayPLAN CAD** plug-in for AutoCAD, for designing complex scaffolding in 3D and for further processing of scaffolding proposals from LayPLAN CLASSICC	**6345.103**
3	**LayPLAN MATERIAL MANAGER**	**contained in both LayPLAN CLASSIC and LayPLAN CAD**
4	**LayPLAN VR VIEWER**	**free of charge**

⊖ = not discountable

What system requirements apply for LayPLAN?

LayPLAN CLASSIC

Processor	min. 1.0 GHz
Main memory	512 MB
Operating system	Windows Vista Windows 7 Windows 8 / 8.1 Windows 10
Screen resolution	min. 1024 x 768
Network	Internet access

LayPLAN CAD

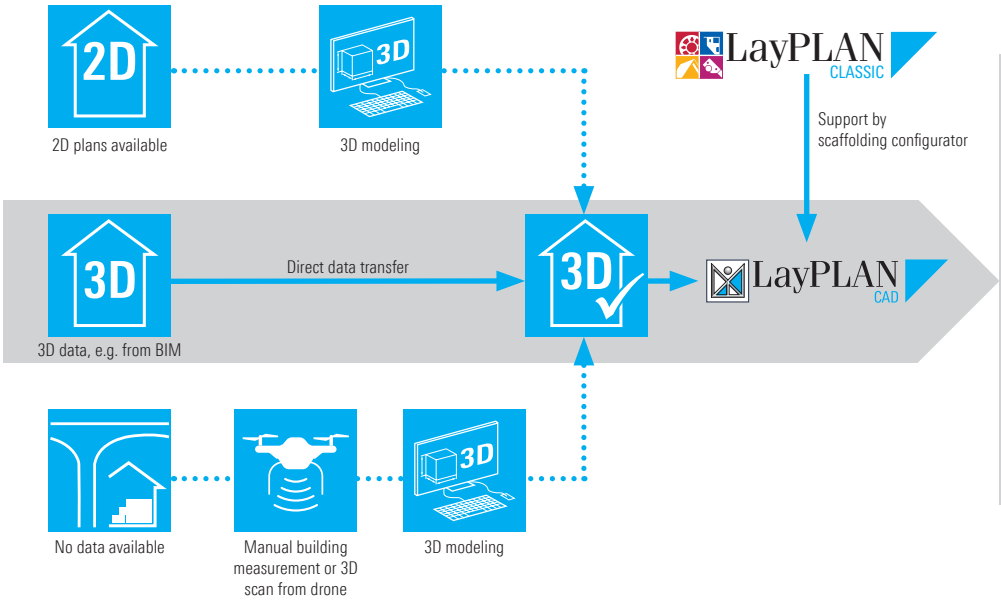
CAD system	AutoCAD or AutoCAD Architecture or AutoCAD Mechanical 2016, 2017, 2018 or 2019 versions
Processor	64-bit processor
Main memory	8 GB; 16 GB is recommended
Operating system	Windows 7, 64-bit or higher
Graphic card	DirectX 11-compatible graphic card recommended
Screen resolution	min. 1920 x 1080
Network	Internet access
Other information	Write access to drive C

For other relevant system requirements, go to www.autodesk.de

LayPLAN VR VIEWER
Powerful computer; precise specifications depend on the VR headset used

PROCESSING OF THE MODEL DATA UP TO 3D USE IN SIM

Digital 3D scaffolding planning affords many advantages over planning in 2D as previously used: from a high degree of detail in planning and in drawings to the visual collision check and to professional visualisation of the scaffolding structure. The basis for scaffolding planning is 3D building model data. It is available as a rule from your customer as part of the BIM process. Alternatively, it is possible to remodel the 3D building model data on the basis of 2D plans or manual building measurements or 3D scans – stationary or using a drone. Once 3D scaffolding planning with LayPLAN CAD is finished, the data can also be used without any problem for downstream processes, for example the creation of part lists or construction sequence simulation.



- Realistic 3D scaffolding planning.
- Visualisation of the design for professional presentation.
- Collision check.
- Data transfer to structural analysis programs.
- Material lists for logistic planning and costing.
- 2D plans for assembly.
- Construction sequence simulation.
- VR model for virtual tour.
- Communication / data exchange with mobile devices.

Subject to technical modification. Component weights are subject to fluctuations due to tolerances and may therefore diverge from what is specified. Deliveries shall be made exclusively in accordance with our currently valid General Terms of Sale.

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