

The background features a grayscale industrial scene with tall chimneys and towers, overlaid with a grid of squares and large, semi-transparent gear shapes on the left side.

THE NEW FREEDOM  
OF PLANNING

# ELITECAD MECHANICS 16

Innovations of the new version

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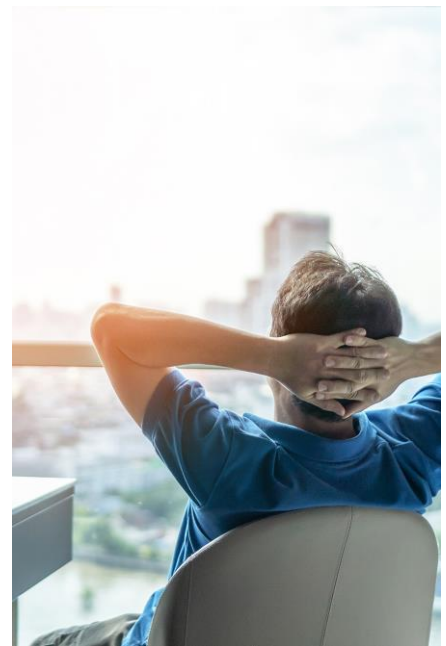
# Innovations of the new version

September 2023

**Created for you:** ELITECAD Mechanics 16 supports you perfectly, no matter what or how you plan. Because we are aware that there are always people behind abstract terms such as constructors or users. Unique personalities with individual preferences, talents, strengths and weaknesses. **The new freedom of planning** accompanies everyone in this individuality.

ELITECAD has always stood for optimal support in everyday construction, but with the new version 16, you now have an incomparable companion for your projects. The individual as the centre of construction has top priority in ELITECAD 16. Processes, workflows and standards have become more efficient and intuitive with full focus on the constructor. So, expect more support for your daily challenges. Experience absolute planning freedom without sacrificing efficiency thanks to state-of-the-art technology. **'Feel free to expect more'** is now the credo that ELITECAD gives you on your way.

While ELITECAD 15 put a strong focus on usability and collaboration, the new version 16 provides you with a broad package of innovations from all areas. A completely revised user interface enables your perfect start to the construction pleasure - **the most beautiful and user-friendly ELITECAD of all time!** But the new version also puts you in the fast lane in terms of functionality: construct faster and easier than ever with numerous new automations and features such as DWG/DXF batch export, the new axis grid, the function assistant, new records for all mechanical objects or 3D printing. Concentrate completely on your design, we take care of everything else - up to the native PDF export, which documents your project in record time in a lean and detailed way. Your project will also become a special feast for the eyes through the merging of industrial design and first-class visualisation. With the brand-new materials manager, including more than 700 selected materials, you will impress with the highest visualisation quality at every construction step without any additional effort.



It sounds like a lot of new features? That's because it is. But thanks to the new interactive Help Centre, you always have a good overview of the multitude of possibilities in ELITECAD 16. In this sense: expect more - get more! The ELITECAD team hopes you enjoy both trying out and using the new version in your daily work.

A handwritten signature in black ink, which reads "Dr. Wolfgang Stöger". The signature is written in a cursive, flowing style.

Dr. Wolfgang Stöger  
CEO

# Table of contents

Innovations of the new version.....	2
User interface .....	8
Expect more - Aesthetics & functionality .....	8
Completely redesigned user interface .....	8
Your software the way you want it - 7 modern interface styles .....	9
Dark-Mode with optimised icons .....	9
New function assistant in title bar .....	10
Interactive input line with menu guidance and tooltips .....	10
Unification of the dialogs for dimensions, text, arrow and hatching .....	10
Synchronization of terms.....	10
Help button in title bar .....	11
Mechanics innovations .....	12
Expect more – Freedom of design .....	12
General mechanics innovations .....	12
Completely revised predefined standard parameters .....	12
Revision of the dialogs for all mechanical objects .....	13
Save/load records for all mechanical objects .....	13
Transferring parameters for all mechanical objects.....	14
Automatic object dimensioning .....	14
Axis grid.....	15
Axis grid with variable distances .....	15
Assemblies .....	15
Combining assemblies with same name .....	15
Expand and collapse all groups .....	15
Kinematics.....	15
Property bar .....	15
Better visualization of the definition line .....	16
Delete guide contour .....	16
Standard parts.....	16
Revision of the dialogs for all standard parts objects .....	16
Resizable dialogs .....	17
Standard part descriptions and graphical representations improved .....	17

Stairs and railings.....	18
Dialogs unified with other objects .....	18
Asymmetric railing overhang with kink .....	18
Stairs – stringer made from a profile .....	18
New predefined steel staircase.....	18
Construction elements .....	18
Enhancements for the polygon.....	18
Sinking .....	19
New records for the fine thread .....	19
Execution coarse, medium or fine .....	19
Library parts manager .....	19
Numerous new library parts.....	19
Improvement of existing library parts .....	19
Terrain .....	19
Designated names for modifications.....	19
Detailed output of the cubage .....	20
Simplified selection of points .....	20
Reference terrain with modifications.....	21
LandXML import.....	21
2D extensions .....	22
Expect more – Planning efficiency .....	22
Regular polygons .....	22
Hatches.....	22
Simplified offset detection for model hatches.....	22
Layout and documentation .....	23
Expect more – documentation aids .....	23
Attributes.....	23
Rules and value ranges for attribute colours .....	23
Attribute colours – transparency configurable.....	24
Transfer attributes to object .....	24
Views .....	25
New depiction type ‘Solid with Shader’ for highest quality .....	25
Resolution of solid views now individually configurable .....	25
Colour properties for each scene .....	25
Sections.....	26


New section type 'restricted stepped section' .....	26
Section view groups.....	26
Title blocks.....	28
Improved versioning with flexible number of revisions .....	28
Visualisation .....	29
Expect more – impressions and customer enthusiasm.....	29
Visualisation materials .....	29
Completely redesigned library content.....	29
More than 700 new materials with high quality textures .....	30
Easy access to thousands of online materials .....	30
New revised materials manager .....	30
Globally unique material keys (GUIDs).....	30
Intelligent search bar with multitext support.....	31
New favourites function including icons and filtering .....	31
Predefined material presets for automatic configuration of reflections, shininess, etc.....	31
Batch import of materials and folders using drag & drop (incl. presets) .....	31
Display number of materials.....	31
Display material origin.....	32
Improved preview .....	32
Highlight used materials with a click.....	32
New filter options and sorting .....	32
Performance of database access improved.....	32
New materials for all standard parameters.....	33
Image export .....	33
Create and export snapshots with transparent background.....	33
Video export.....	34
Optimisation and simplification of the video export dialog .....	34
Easy native MP4 video export.....	34
Native generation of stereoscopic 3D videos .....	34
Stereo display.....	34
Better support for stereo hardware .....	34
Stereo display for auxiliary elements on the cursor .....	35
Adjustable line width for graphics tools.....	35
Connectivity & interfaces.....	36
Expect more – Collaboration, communication and teamwork .....	36
3D-PDF .....	36

Export of views with attribute colours .....	36
3D Printing.....	36
STL export.....	37
Size preview.....	37
Components.....	37
Transparency.....	37
DXF/DWG.....	37
Import and export dialogs revised.....	37
New batch export for DXF/DWG similar to PDF.....	38
DXF Export of views with attribute colours .....	38
Support of AutoCAD 2022 files.....	38
IFC .....	39
Improved exchange of IFC library parts.....	39
Improved positioning / load into functions .....	39
Export / import of axis grid .....	39
PDF.....	39
New native PDF export .....	39
Crisp high-quality plans at every zoom level due to export as vector data .....	39
Drastically reduced file size and faster export and management .....	40
Transparent vectorised colour gradients.....	40
Export including layer structure.....	40
Point clouds.....	40
Simplified splitting and cleaning of point clouds .....	40
Batch import.....	41
SketchUp 2022 support.....	41
Synchronisation with external rendering applications.....	42
Incremental model updates with a single click.....	42
Usability .....	43
Expect more – joy, simplicity and efficiency .....	43
More security when saving.....	43
Drastically improved graphic output .....	43
Shader mode active by default.....	43
Optimised standard light settings.....	44
Copy parameters.....	44
Copy parameter function retains the previous selection per object .....	44

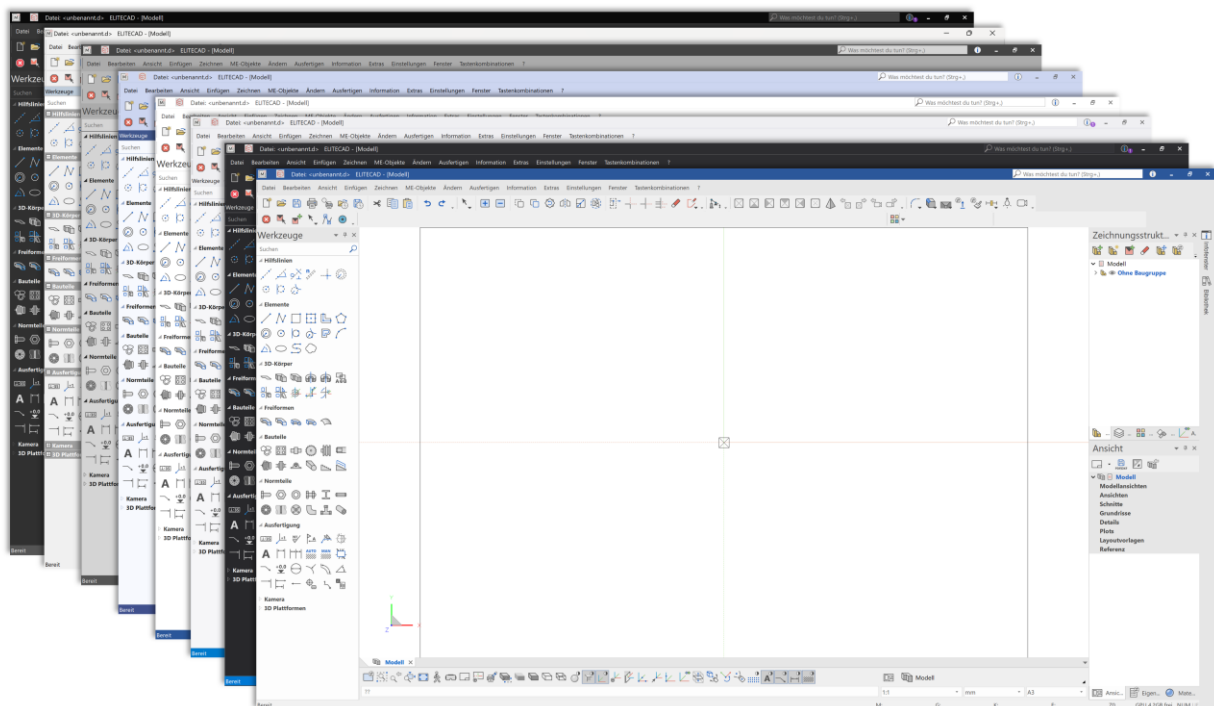
Copy parameters for ME objects .....	44
Walk mode now available as toggle switch in input bar .....	44
Feedback for invalid values .....	45
ELITECAD Help Center.....	46
Expect more - insights.....	46
New website for interactive help for ELITECAD products.....	46
Intelligent and fast search.....	47
Continuous expansion of content.....	47
Native integration in ELITECAD .....	47
System and configuration.....	48
Expect more – Optimisation, support and internationalisation .....	48
Revised and optimised default settings.....	48
Windows 11 Support.....	48
SpaceMouse .....	48
New 3Dconnexion Toolkit.....	48
Configuration .....	48
Internationalisation and localisation.....	48
English version .....	48
Swiss version.....	49
Transfer parameters between versions .....	49

## User interface

### Expect more - Aesthetics & functionality

The science of beauty combined with the highest object functionality and standard-compliant implementation accompanies constructors in their everyday work at all times. The synergy of aesthetics and functionality is also a central theme in software development, to which particular attention has been paid in the new version. 

ELITECAD 16 impresses with the most modern and clear design. In addition, the new user interface is highly adjustable to individual preferences and the end devices used. Choose freely between Dark Mode or one of the 7 new interface styles, enjoy the optimally scalable user interface of your planning tools and benefit from even more intuitive workflows thanks to the complete revision of the control elements. The new version impresses at first sight and leaves nothing to be desired.



### Completely redesigned user interface

Our ambition: Many users spend a large part of their working day in front of ELITECAD. Our ultimate goal is to offer the best user experience in the CAD industry. We achieve this goal by constantly developing the software based on feedback from our users.

All icons in ELITECAD 16 are scalable, razor-sharp and adapt to modern resolutions. Whether on a full HD monitor, 4K or even 8K screen, the new user interface with its reduced, clear lines looks beautiful and elegant on every display. Shine in front of your friends and colleagues: The modern look and feel of our software leaves nothing to be desired.

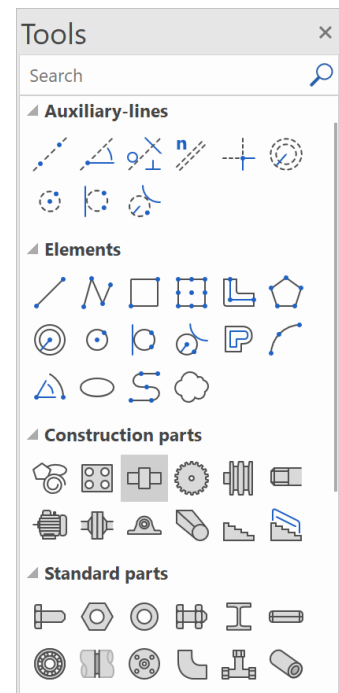


Security instead of uncertainty: Faster and more efficient planning thanks to a standardised interface and consistent icon sizes. The high level of recognition of the symbols ensures that functions can be found quickly. We make it as easy as possible for you to get started and create more space for your ideas.



Not only function icons, but all graphics in all setting menus and dialog windows have been redesigned from scratch. Vector instead of pixel graphics enable a razor-sharp display of all control elements in dialogs. The reduced colours and their consistent use create a pleasant, uniform appearance. Users with limited red-green perception will particularly appreciate the improved colour scheme.

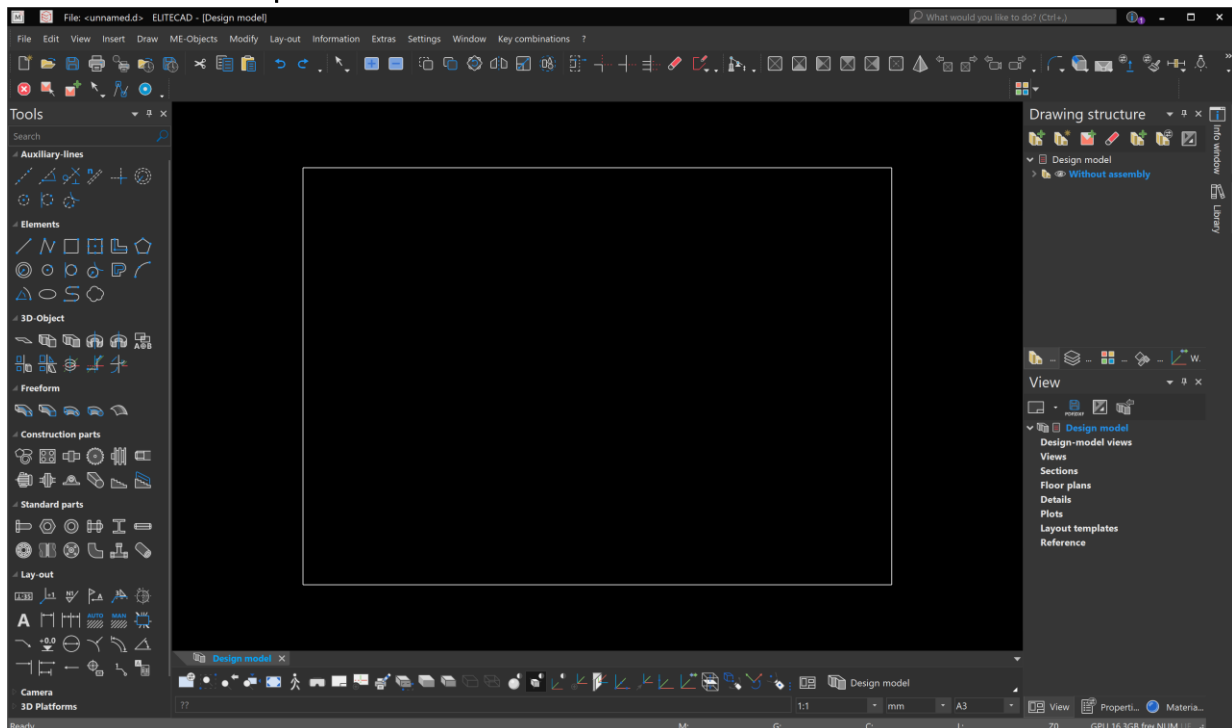
Don't worry about upgrading to the new version. The icons are instantly recognisable and in the same position as before. So you can get started right away and notice how much the new user interface supports you in your daily work. With ELITECAD 16 it's even more fun.



## Your software the way you want it - 7 modern interface styles

Individual work is an integral part of today's workday. Seven new interface styles allow you to design your ELITECAD the way you want it. In addition, the new version also contains configurable Office and Windows interface styles.

## Dark-Mode with optimised icons

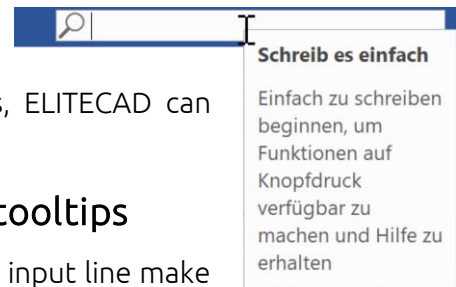


Switch easily and conveniently from light to dark mode. True to the motto - **Join the dark side!** In the new ELITECAD version, all icons have been optimised for the new dark mode in order to create a consistent overall experience. A dark background and high-contrast colours are easy on the eyes when working late at night.

## New function assistant in title bar

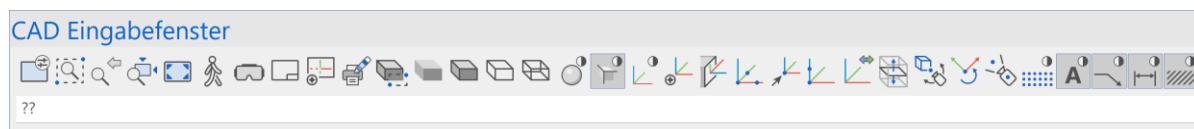
What would you like to do? Find every function quickly and execute it immediately: The interactive function search directly in the title bar with automatic execution is just right for you! Countless functions are easily accessible from the assistants making them just a click away. Searching in menus or in the toolbars is no longer necessary, the assistant is particularly useful for functions that are not often used.

Entering just a few letters brings you all the appropriate options to choose from. Each function is immediately accessible, even if the exact name is not known. With this, ELITECAD can support professionals and beginners alike.



## Interactive input line with menu guidance and tooltips

Every click is a hit: Larger and easier-to-select icons above the input line make operation easier and thus ensure even smoother and more efficient planning.

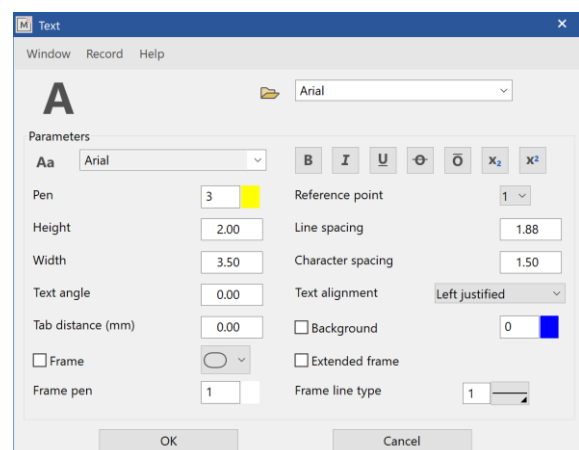


Always keep an overview: error avoidance through an input line with an interactive information display of the respective function. The input line and the information line above it have been combined. This simplifies operation and also saves some space, which in turn can be used by the graphics window.

If something is written in the input line, the hint or query text appears as a tool tip, no information is lost with this intelligent solution.

## Unification of the dialogs for dimensions, text, arrow and hatching

Consistency in dialogs is not limited to the mechanics functionality. Usability is particularly important for the basic functionality, so we have unified the finishing dialogs and adjusted their appearance to that of the mechanics dialogs. The redesign and the standardisation of the user interface also creates recognition value and more understandable processes in the basic dialogs.



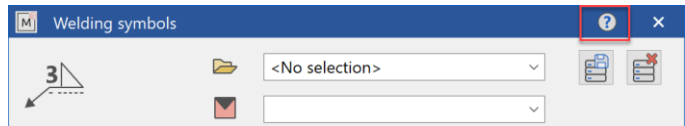
## Synchronization of terms

Even if it was clear in most cases, there were isolated cases where similar but different terms were used for the same thing. With a critical eye and after a careful examination, we have standardised some terms in order to be able to offer even more conformity and comprehensibility.

To this end, the "plan views" were renamed to "floor plans". "Reference drawing" is called "reference plan" in the new ELITECAD 16 version. The "Skybox/Skymap" is now referred to simply as "Panorama Environment". As it is with MS Office products, the dialogs now use "Apply" instead of "Set".

## Help button in title bar

In order to enable the fastest access to the manual, the help link was removed from the menu of the dialog windows and moved to a location that is as easily accessible as possible. In this way, you can now always find the help button in the same place in all dialogs and get to the right place in the manual straight away.



## Mechanics innovations

### Expect more – Freedom of design

Individual design has become an indispensable part of modern planning work. In order to offer you even more design freedom, we have introduced features such as the axis grid with variable distances. Numerous automations, such as predefined records for all objects or the new polygon, relieve you of complex construction tasks and thus create more time for the essentials.



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Of course, with ELITECAD, functional extensions always go hand in hand with simple operation. Our aim is to achieve results with as few and simple steps as possible. We make it hard on ourselves to make it easy for you.

Numerous optimisations, also for existing functions, make work easier in many areas. For example, mechanical

objects have been standardised to ensure a better overview.

Thanks to the extensive feedback from our users, the default settings of all predefined datasets have been expanded and adapted even better to practice. This saves time in the configuration so you can focus on your planning activities.

### General mechanics innovations

#### Completely revised predefined standard parameters

ELITECAD provides extensive predefined, region-specific data sets for each mechanical object and for each auxiliary element. We have made adjustments, optimisations and visual upgrades to almost all parameter sets in order to be able to offer you even better software performance and easier use. All data sets have been updated and equipped with new visualisation materials. New data sets with values that are frequently used in practice have been added. Data sets that



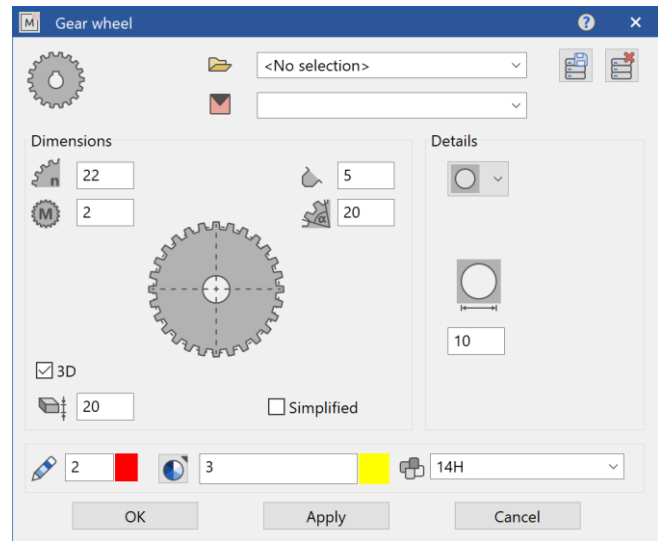
have been created in different regions over the years have been aligned with each other so that we can provide optimal settings for all regions with the same quality.

### Revision of the dialogs for all mechanical objects

Uniform design is a basic requirement for easy operation. This principle was the guiding principle in the revision of all mechanical objects.

As a first step, the drop-down menus were removed from the dialogs and the menu items were moved to the dialog, which immediately saves the first unnecessary clicks when calling functions.

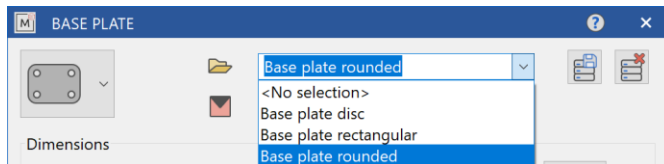
All the tools for managing records are grouped at the top as general functions. The component name can be found centrally for all objects at the top too. The material was also arranged at the top in earlier program versions, but is not useful for every object (e.g. symbols) and therefore it fits logically to the properties in the lower area.



In addition, for some objects, the value fields and options for the type of input have been arranged better, so that an overall more logical layout is guaranteed.

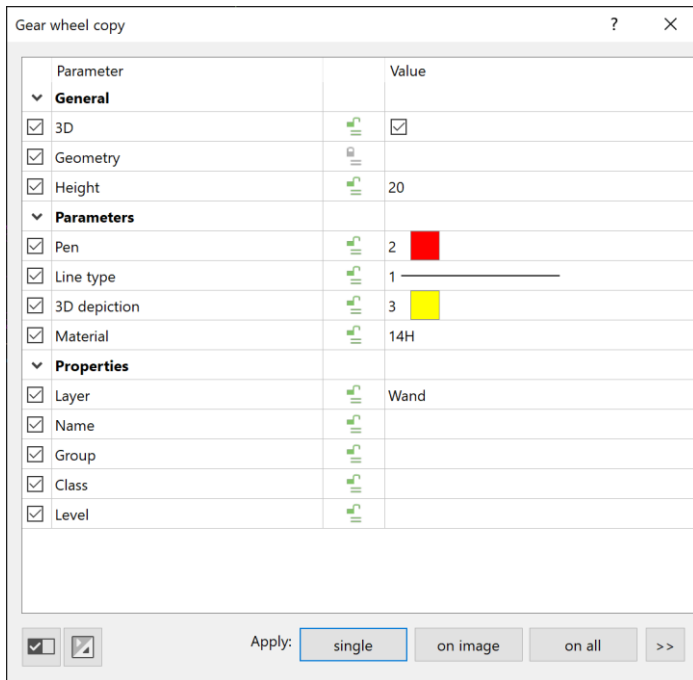
### Save/load records for all mechanical objects

Predefined records are a valuable tool when the same settings are used regularly. With version 16, this option is not only available for symbols and texts, dimensions, arrows and hatching, but for all mechanical objects.



Different variants of each component, such as different base plates, are created quickly and are then available at the push of a button.

### Transferring parameters for all mechanical objects

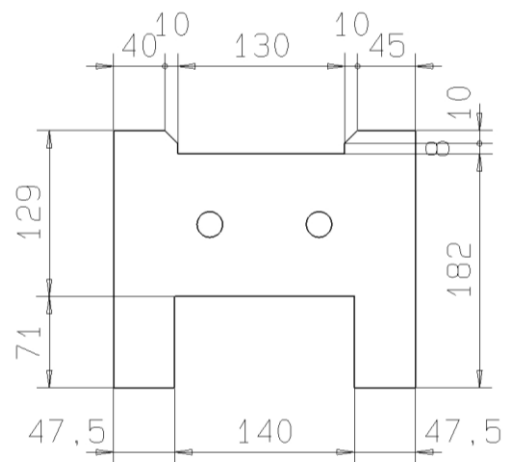


Transferring geometry and properties from one element to another enables efficient changes across the entire drawing in record time.

This practical option has now been extended to all mechanical objects, so that changes can also be made flexibly and purposefully for components.

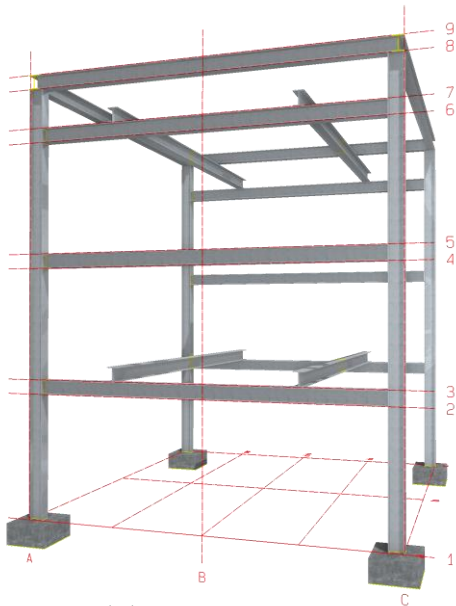
### Automatic object dimensioning

Dimensioning contours and components is always a tedious task. Exactly this helpful automation is now also available in version 16 for all objects. The so called wizard can be used for fast object dimensioning. One click on a 2D polygon or component and all relevant outer dimensions are created automatically. Ease of use and time savings, as you are used to from ELITECAD.



## Axis grid

### Axis grid with variable distances



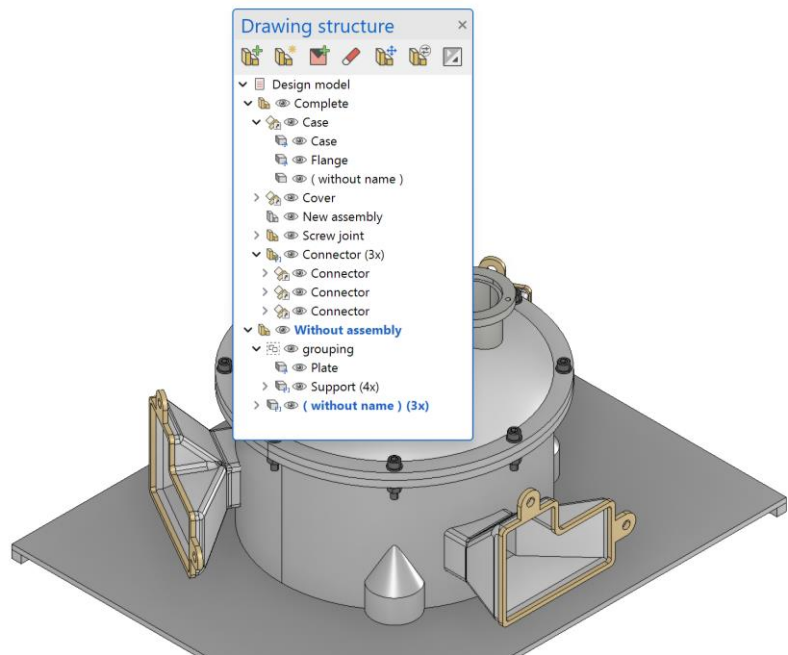
ELITECAD now provides the necessary tool for every plant layout, no matter how complex. An axis grid can be used in any view. The new axis grid dialog enables plots with variable distances in a single parametric object. It is not necessary to divide into several axis grids with different distances.

Entering the distances offers all degrees of freedom and any combination options in any amount. Subsequent changes to axis grids with variable distances can now be made directly via the list in the grid dialog. Predefined axis grid types and labels facilitate easy use so even the most difficult task becomes child's play with the variable axis grid in ELITECAD.

## Assemblies

### Combining assemblies with same name

Until now, objects of the same name have been combined into an object group in order to keep the length of the structure as short as possible. But assemblies themselves can also occur in large numbers in a model. With version 16, assemblies and groupings of the same name are now also displayed in a summary within the tree. This saves additional space and makes orientation easier.



### Expand and collapse all groups

The assembly manager now features new buttons to expand or collapse all groups, as it is known from other manager windows. This ensures that a clear overview is given, even with large structures and many objects and assemblies.

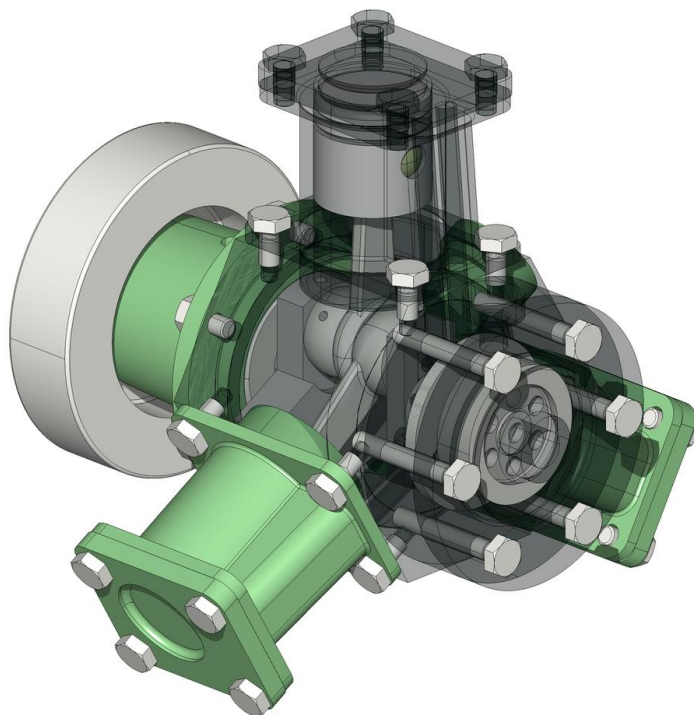
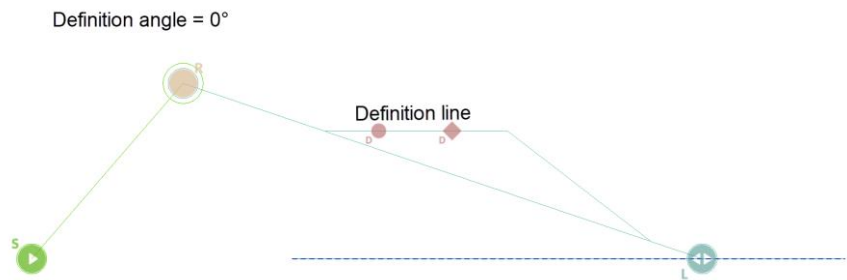
## Kinematics

### Property bar

Depending on the type, the most important parameters when simulating a kinematic arrangement are the angle and the increment. To simplify access to these two values, they can now be set in the property bar.

### Better visualization of the definition line

The definition line describes the lever for which it is checked whether the limit angle up to which the simulation is carried out has already been reached. However, a straight line does not uniquely define an angle, since there are always two possibilities. A horizontal line for instance, can be described with 0 or 180 degrees relative to the x-axis. However, a lever rotating around a point reaches a line at two different positions.



In order to make the direction of the lever, which describes the definition line, clearly recognizable, 2 symbols are now used - a circle for the starting point and a rhombus for the end point. This way, the direction that determines the angle is immediately apparent.

### Delete guide contour

When selecting a guide contour, the selected element is identified as representative of the guide contour. Up until now, this exact element had to be selected again when deleting the guide contour. With the new version, the guide contour can be selected at any point for deletion.

## Standard parts

### Revision of the dialogs for all standard parts objects

The dialogs for standard parts have been optimised in the same way as for the mechanical objects. All of the resulting advantages are therefore also automatically available for the standard parts.

In addition, the functions for listing the standard part details and checking the history of the standard part designation have moved to the main dialog and can be accessed with one click.

The object name and record name have been separated so that both are now independent of each other and a clearer designation is possible.

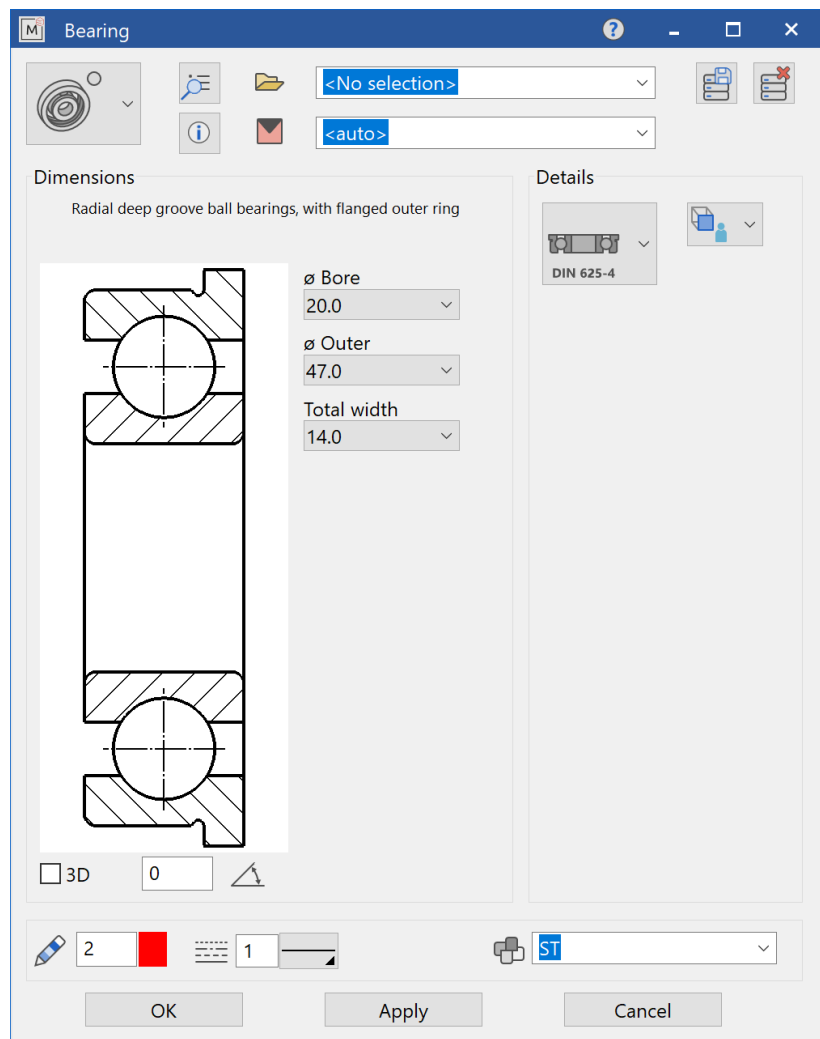


### Resizable dialogs

Our customers often asked for a larger display, especially for the preview window for standard parts. All standard part dialogs can now be scaled to any size. When resizing, the items for settings remain the same and all the space gained is used for the preview window. This gives you maximum overview.

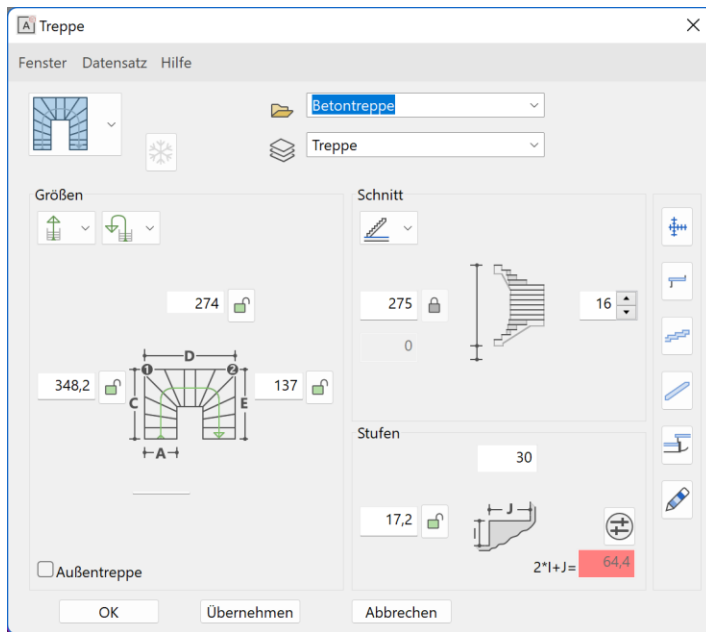
### Standard part descriptions and graphical representations improved

The descriptions of many standard parts have been improved so that the text in the dialog window informs more clearly about the content, which is particularly useful for standards that have been divided into different subcategories.



## Stairs and railings

### Dialogs unified with other objects



The stair and railing dialogs have been aligned with the other mechanical objects. Here too, the standardisation leads to better recognition and to faster and more efficient work.

### Asymmetric railing overhang with kink

ELITECAD 16 offers the possibility to create parametric railing constructions according to well-known standards. Asymmetrical railings, where the handrail overhang has a kink, can be created with just one value input. The kink in the handrail of the railing can be assigned using a button. The beginning and end of a handrail are set independently of each

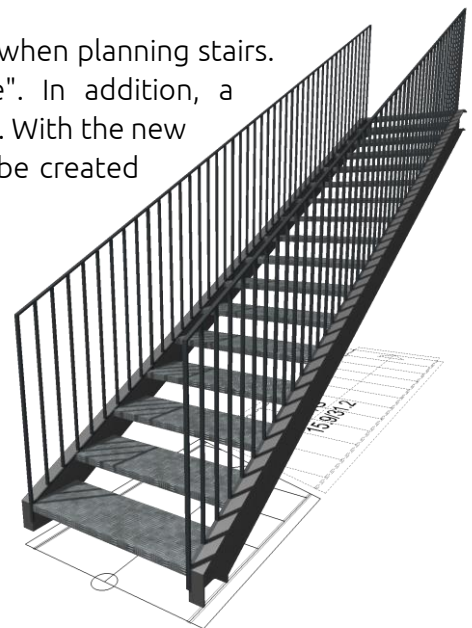
other.

### Stairs – stringer made from a profile

The stringers made of free profiles offer even more flexibility when planning stairs. Choose between the string types "uniform" and "variable". In addition, a distinction is made between double-sided and one-sided cheek. With the new options, modern and contemporary stairs with handrails can be created easily and quickly.

### New predefined steel staircase

Create the desired result in just a few steps with predefined types. In addition to concrete stairs and stringer stairs, steel stairs can now also be easily created and integrated parametrically. We have extended the stair types so that they can be used without spending time on configuration or as a template for modifying according to your own wishes.



## Construction elements

### Enhancements for the polygon

This construction element benefits from the new possibilities of the 2D polygon. In addition to the incircle and perimeter, the edge length can also be selected as a defining variable for the geometric representation. The reference direction for the angle helps with alignment, as does the type of input via reference point or via freely selectable placement points.

## Sinking

### New records for the fine thread

The predefined records for countersinks with fine threads have been extensively expanded. A total of around 900 new data records are available for the various types of sinkings.

### Execution coarse, medium or fine

For sinkings, the variants "fine", "medium" and "coarse" are now stored with the current diameter values for the through hole.

## Library parts manager

### Numerous new library parts

Vehicles, furniture, lighting, etc. are indispensable components of high-quality planning. A large number of new 3D library parts in all categories will support you. All objects are labelled as usual, assigned to a suitable layer and are aligned to the floor depending on their type.



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### Improvement of existing library parts

Existing 3D parts have been upgraded using new visualisation materials with reflections, gloss, surface structure and much more. This results in an even higher quality overall. New predefined position and exchange points enable easier handling.

## Terrain

### Designated names for modifications

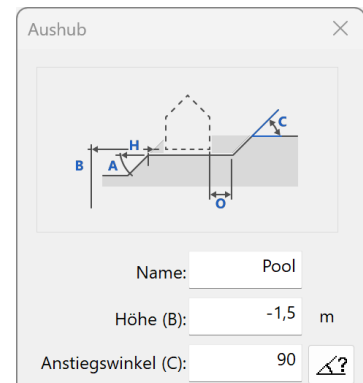
Terrain modifications are excavation, dispersal, street, path, and free excavation. A name can be optionally specified in all dialog windows. The use of the name is described in the subsequent improvement.

### Detailed output of the cubage



In practice, a typical terrain around a structure has numerous modifications, i.e. excavation, dispersals, streets and paths. Every single change in the original terrain causes material to be removed or added, or both at different places at the same time. A value for the cubage is displayed in the property bar of the terrain, namely the difference between the initial state and the final state. Ideally, this is zero in order to save on transport costs. However, zero does not mean that no material was moved, only the sum of all changes is displayed.

With ELITECAD 16, changes to the individual modifications can now be listed in detail. The information window shows the amount of soil removed and applied for each modification. So that the individual work steps can be distinguished, the log also contains the new names of the respective modifications. Adding everything together provides a sum of the total additions and total removal, which are also output separately and the difference between them is displayed in the property bar as before.



Infenster						
Gelände - Volumenberechnung						
Nummer	Name	Typ	Abtrag	Aufschüttung	Änderung	
0		Differenz Geländegrundfläche zu Referenzgelände:	-260m³	472m³	211m³	
1		Aushub	-19m³	0m³	-19m³	
2		Aushub	-69m³	0m³	-69m³	
3		Aushub	-4m³	0m³	-4m³	
4		Aushub	-5m³	0m³	-5m³	
		Gesamtänderung	-358m³	472m³	114m³	

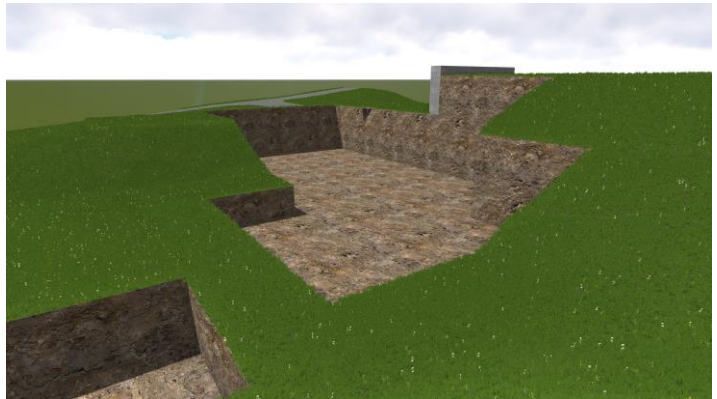
All in all, the calculation log provides better traceability and control of the individual modifications without additional effort.

### Simplified selection of points

Selecting height points using a polygon has been possible in ELITECAD for a long time. Very often this function is used to reduce the imported height points, usually you want to limit the terrain to an area. Until now, however, all points inside the selection polygon have been selected, while the points outside should actually be deleted. With the new option "Select inside" or "Select outside" all points outside the specified area can be selected in one go. This procedure is much more intuitive and saves a lot of manual intermediate steps.

### Reference terrain with modifications

For the calculation of the excavation differences, it is necessary to define an initial state. The mass changes are calculated relative to this. The original terrain results from elevation points, curves and terrain areas and the added modifications result in the difference. However, sometimes it is necessary to create the initial state with modifications, e.g. if an excavation for a building already exists and an area next to it needs to be expanded. For this use, you can now choose whether the reference terrain should be frozen with or without modifications.



### LandXML import

LandXML is an international file format for exchanging georeferenced data. ELITECAD takes the points from the XML file and uses them to generate a terrain surface. This supports an uncomplicated exchange of data with all clients or project partners.

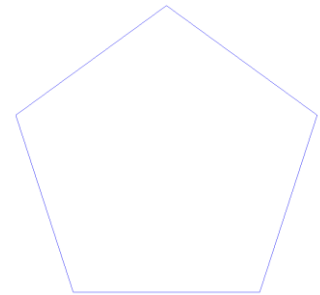
## 2D extensions

### Expect more – Planning efficiency

Working with 2D plans also remains a central component in a 3D-oriented software. Many complex components are created from 2D contours and, of course, plans have to be created quickly, easily and in good quality. For these reasons, we put a special focus on the continuous simplification of 2D functionality. Simpler processes and new functions lead to faster results, making daily work steps easier.

### Regular polygons

The regular polygon sounds simple, but is difficult to construct for some types. With the new 2D function, the task is reduced to just a few clicks. The number of corners determines the type, but the many input possibilities will surprise you. Incircle radius, edge length etc. determine the size depending on the requirement. The position indication via different points and angles support you in all situations.

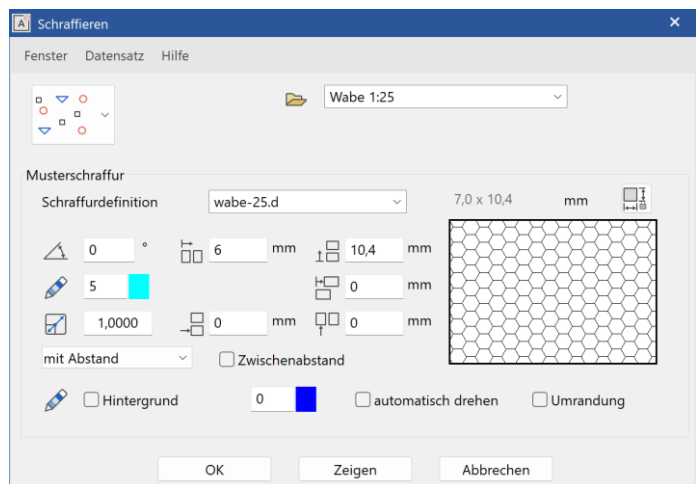


### Hatches

#### Simplified offset detection for model hatches

The model hatching for the filling of polygons has a wide range of options. To make arranging the repeating elements easier, one needs to know the length and width of a single piece. The dimensions can now be determined with a single click and are used for the distance specification. One click that replaces many sub-steps.

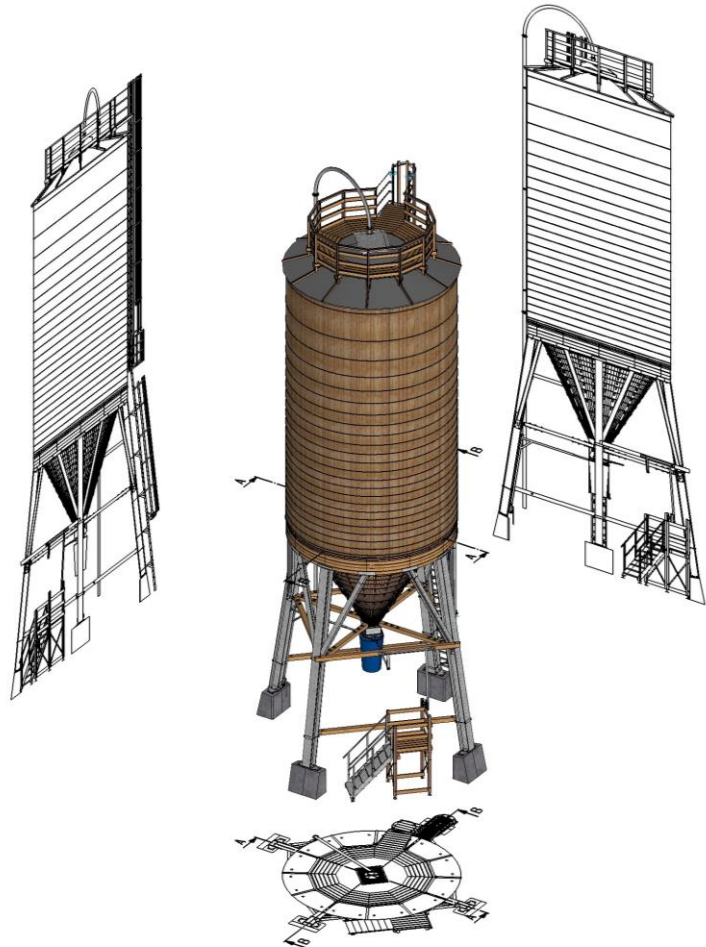
In addition, you can now select whether the total distance or the intermediate distance is used for the distance specification. The most common case, namely seamless juxtaposition, even manages with an intermediate distance value of 0 without any knowledge of the length of the individual part. The necessary information is again reduced to a minimum.



## Layout and documentation

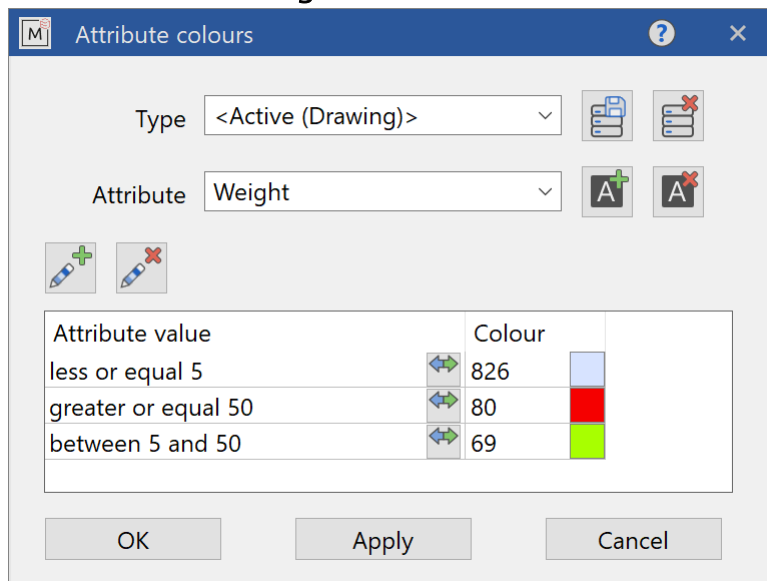
### Expect more – documentation aids

The simple creation of 2D plans based on 3D models has been a great strength of ELITECAD for many years. Our users appreciate the plan-model link, which reduces a lot of manual work in day-to-day business. In ELITECAD 16, the 3D models are not only more intelligent, 2D data is also created even faster and, on top of that, even looks much nicer. Based on the feedback from our users, we have significantly improved and expanded many features of version 15. The new revision list or the comprehensively expanded attribute visualisation with transparency and value ranges are just samples of the highlights of version 16 that make creating and preparing 2D submission data a real pleasure.



### Attributes

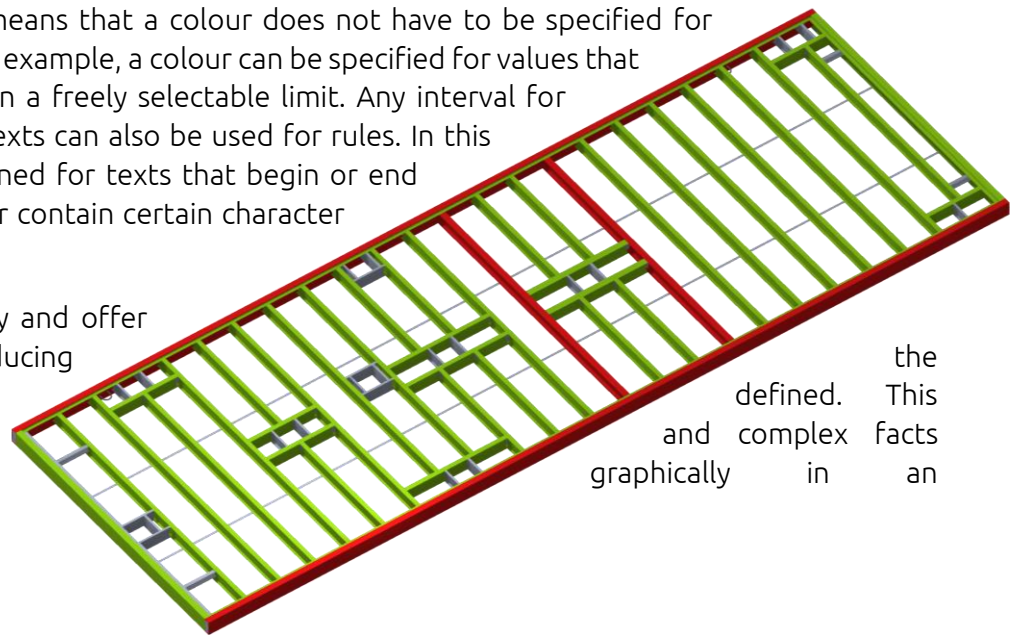
#### Rules and value ranges for attribute colours



The attribute colours are used to graphically visualise properties. For attributes whose values are only specific numbers or texts, it is easy to specify each colour individually. However, it becomes more difficult if the values are completely random and can occur in large numbers. There is now a simple solution to this challenge: rules and ranges.

In concrete terms, this means that a colour does not have to be specified for every attribute value. For example, a colour can be specified for values that are larger or smaller than a freely selectable limit. Any interval for values is also possible. Texts can also be used for rules. In this way, colours can be defined for texts that begin or end with certain characters or contain certain character sequences.

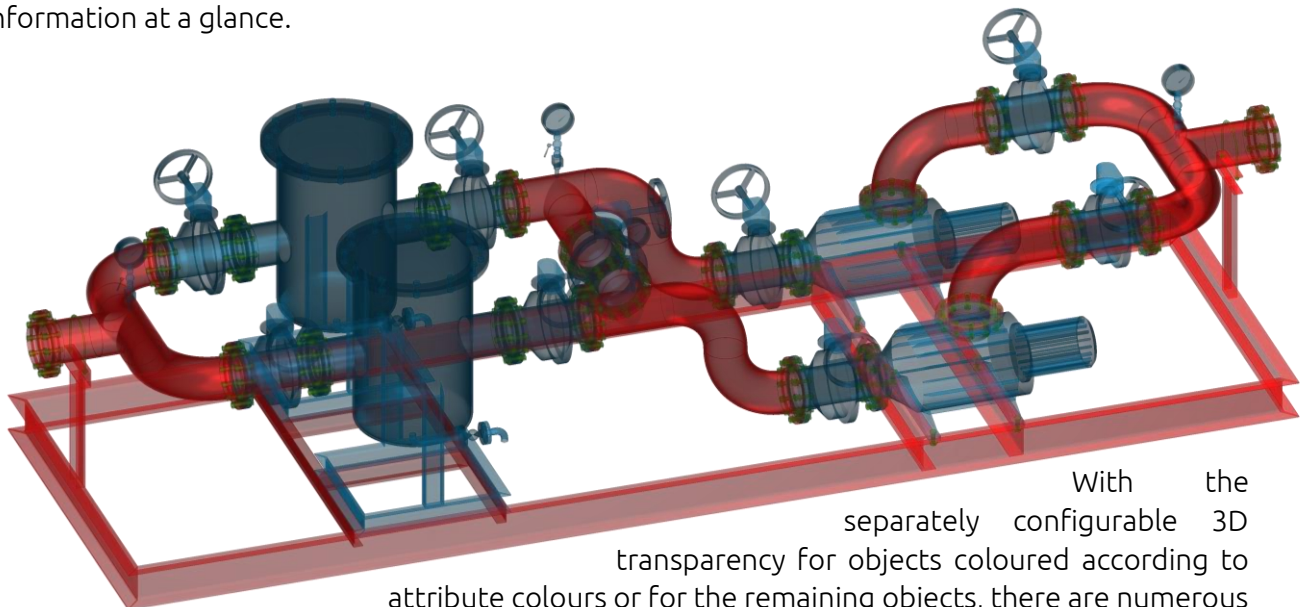
Rules are created quickly and offer numerous options for reducing the number of colours to be defined. This increases the clarity and complex facts can be presented graphically in an understandable way.



the defined. This and complex facts graphically in an

## Attribute colours – transparency configurable

With this functionality, our primary goal is to highlight the essentials. Attribute colours make properties clearly visible, but if components obscure the view of the interior, then the colours are of limited use. The 3D transparency options for views were created to allow for an even better overview. Better visibility of the objects provides a better overview and you can see the crucial information at a glance.



With the separately configurable 3D transparency for objects coloured according to attribute colours or for the remaining objects, there are numerous possible applications, e.g. the colouring of objects of a certain type in a transparent construction. Control views are also of practical use, where objects whose attribute values are shown in colour according to certain rules and those objects that contradict these rules are shown in red, for example. This way you can see all the errors in the attributes at a glance. These are just a few examples, the possible applications with the new transparency display are unlimited.

## Transfer attributes to object

Attributes can be set either via the properties window or via the attributes dialog. The properties window shows the attributes of the object selected in the assembly manager, the attributes dialog

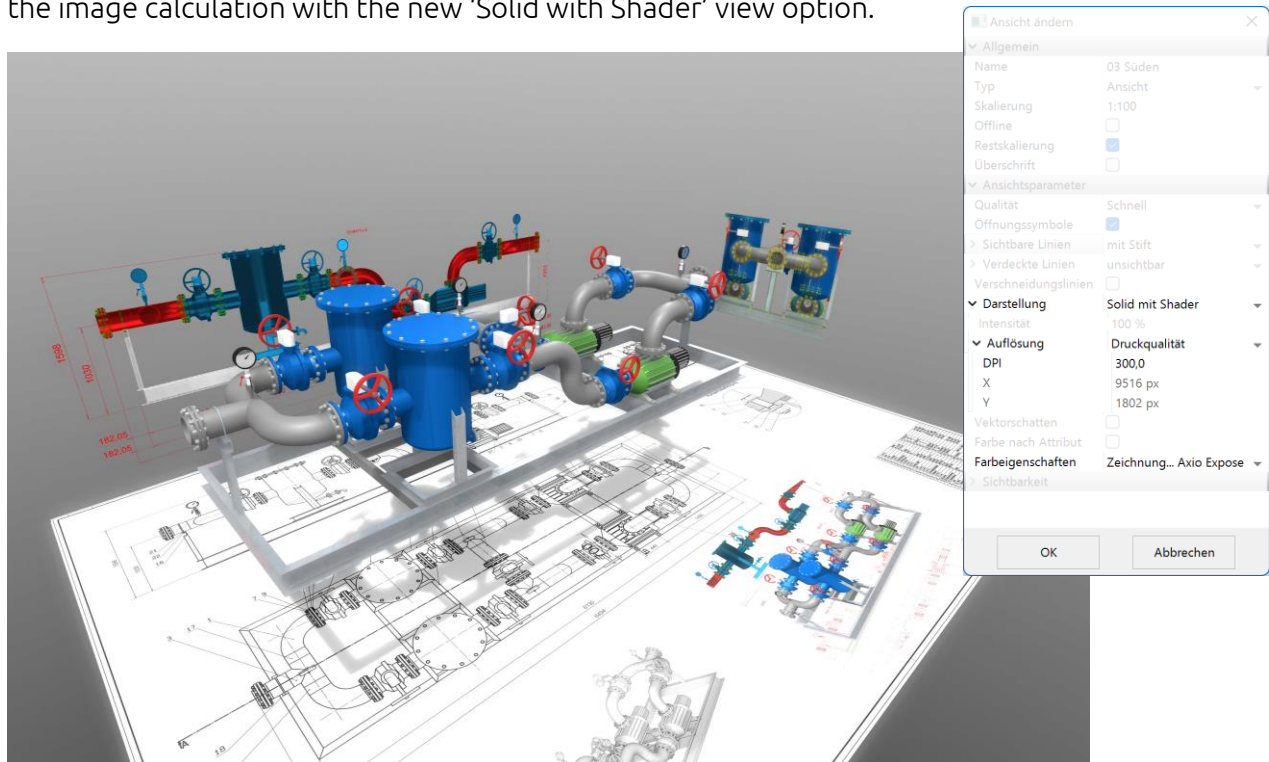


uses the active pattern (object). Copying attributes to a single pattern was only indirectly accessible by activating the target pattern before setting. It is now much easier with the new Transfer Attributes function. The target model (object) is to be selected, the active object is not changed and the function is directly visible on the surface.

## Views

### New depiction type 'Solid with Shader' for highest quality

You can now achieve the highest graphic quality in the views while at the same time accelerating the image calculation with the new 'Solid with Shader' view option.



Shader effects such as grass, water, reflections and gloss effects have so far only been reserved for real-time visualisation in the model view. These cool effects are now also possible in calculated views. Unlike physical rendering, shaders work in real time. Image calculation takes a minimal fraction of standard rendering, and view depiction is faster than ever.

### Resolution of solid views now individually configurable

The resolution of the calculated solid views is now freely configurable and can therefore also be set higher than the current screen resolution. Either via a scaling factor relative to the screen resolution or completely freely via the number of pixels, but in any case, with the best possible quality.

### Colour properties for each scene

ELITECAD has been supporting multiple colour settings for a long time, which can be configured individually and switched easily. Each setting contains the colour for the screen, the printer and the line widths. A single setting is usually sufficient, but it can happen that individual views contain so many lines that thinner line widths would be desirable. To avoid having to switch back and forth between the settings, colour properties can now be assigned to a view. Simply set them in the view options and configure the best display per view.

## Sections

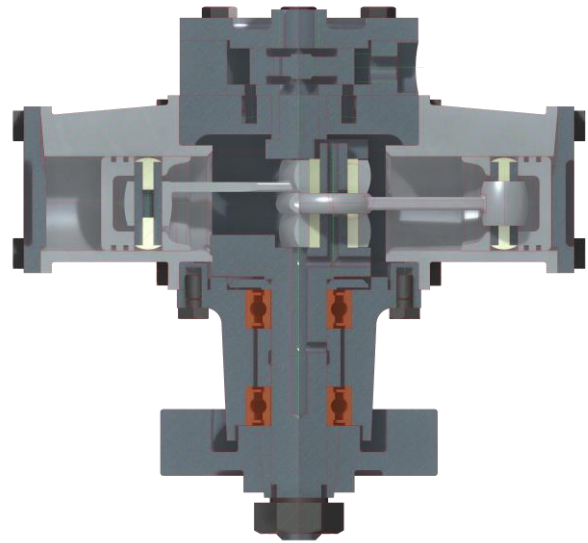
### New section type 'restricted stepped section'

The new section type 'restricted stepped section' is not only the basis for the section view groups, but can also be used in many ways. For example, you can cut along a facility to separate out auxiliary objects from the main object. With the new section type, using covering hatches for delimitation becomes obsolete. The ideal combination of the popular section types stepped section and restricted section.

### Section view groups

Would you like to show a section contour with angles as needed or facades next to each other in the views? The automatic section view group is the perfect tool for this. What used to be possible with many manual intermediate steps is now possible with just a few clicks. And if something changes afterwards, all changes are automatically updated.

A section of a project is by no means as clear as it appears at first glance. Should vehicles be excluded or shown? Are all sides meant or not? We have designed the new feature so flexibly that every possibility is taken into account.



All you need is the new section group in the views. Each individual section is cut using the restricted stepped section and is part of the section group. The section line determines whether or not library parts are displayed and which areas are displayed. The lettering is consecutive and thus defines the order of the individual sections. The section group can be placed into plot as a single view, the

arrangement of the sections in the plot is done automatically. Maximum degree of freedom with minimum effort.

But this new feature can do much more. When changes occur in the model, not only are the sections updated individually, the alignment to each other is also adjusted if necessary. Sections are easy to delete or add, of course this also works via drag and drop in the view manager, as well



as changing the order in the section groups.

In the plot view, section groups are always considered as a unit. A common quick handling of the section group views on plots (insert, move) is easy and intuitive.

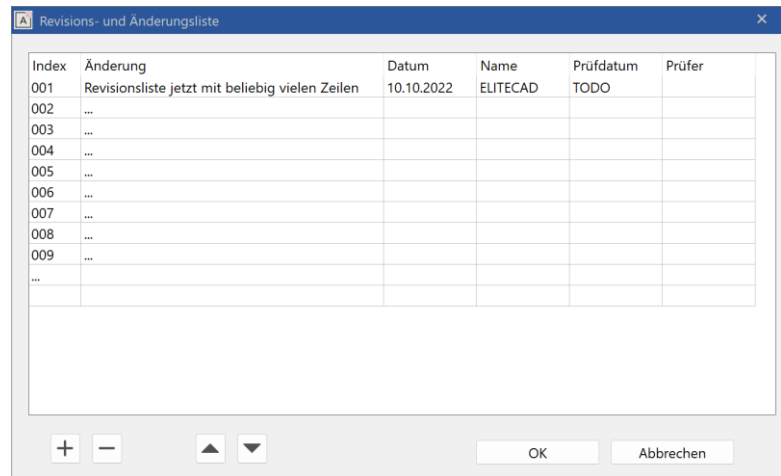
However, the restricted stepped section is not only able to be restricted laterally, the height restriction can also be set in the view parameters. Only focus on what is relevant - complete or just limited above or below.

If you change the settings of a section, the settings are automatically compared to all sections - parameters only have to be changed once, as easy as you are used to from ELITECAD.

## Title blocks

### Improved versioning with flexible number of revisions

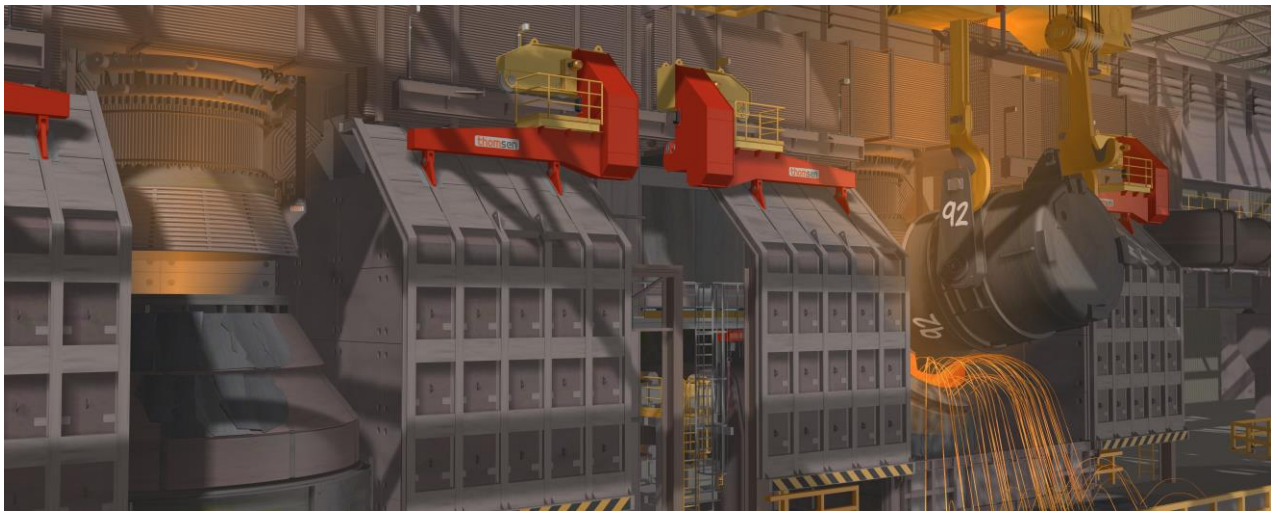
If there should be more changes, we now have the solution for you! The improved versioning of plans: Manage many revisions quickly, easily and in just a few steps and document them on the plot. No more number limitations and flexible use. The new dialog for the revision list has numerous input aids and allows changing the order, as well as adding and deleting the individual entries with just a mouse click.



## Visualisation

### Expect more – impressions and customer enthusiasm

Appealing graphic output in all phases of planning? Why not if it doesn't mean more effort. With the extensive, impressive new visualisation materials that are already preset in all objects, this becomes a reality. This makes planning even more fun. By the way - a nice 3D model fits perfectly with the new user interface. Many optimisations when dealing with visualisation materials give you a better overview and support you in everyday planning.



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Shine in front of your customer with professional presentation documents. Who wouldn't like a high-quality video of their project? Preferably in 360°. Just select and save - it's that easy with ELITECAD 16. With the automatically cropped images from the model or plans, you can also create 2D graphics in record time.

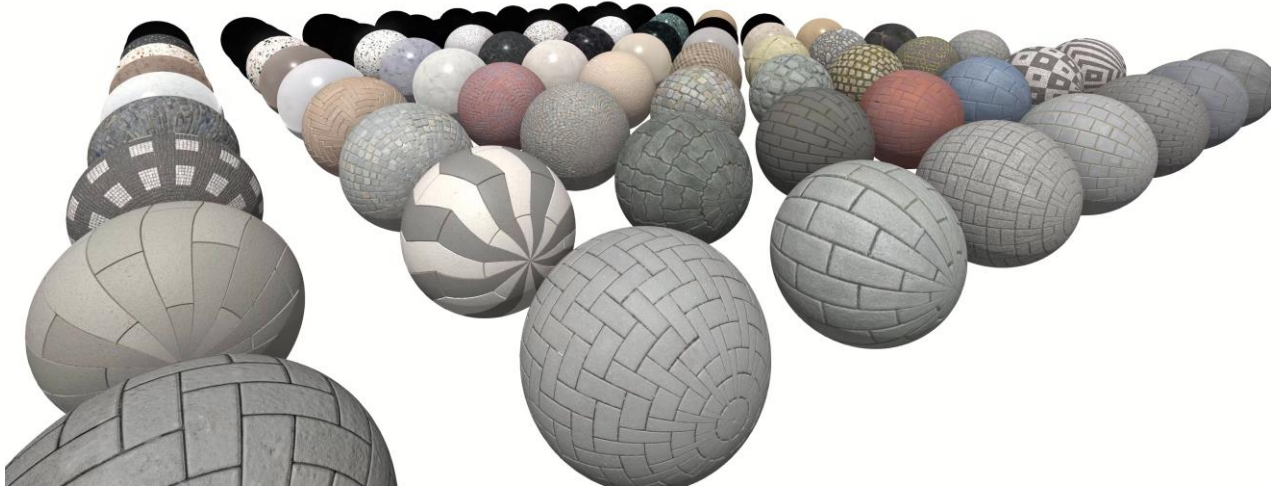
### Visualisation materials

#### Completely redesigned library content

In ELITECAD 16 you will find the right visualisation material faster than ever before. This was made possible by reorganising the entire database of visualisation materials. Over 3900 visualisation materials were revised and re-categorised. The restructuring was carried out according to material type, use, quality and classification. The result is better category names, fewer levels of detail, and a more logical structure. The previous database remains in an archive, so older drawings are 100% compatible.

## More than 700 new materials with high quality textures

Visualising with ELITECAD is fun and starts with the design. The already large selection has been expanded to include 700 high-quality, industry-relevant visualisation materials.



Take advantage of graphical quality from design to submission and enrich your model with high-resolution, fully preset materials, with effects such as shine, surface finish, reflection, depth information and much more.

## Easy access to thousands of online materials

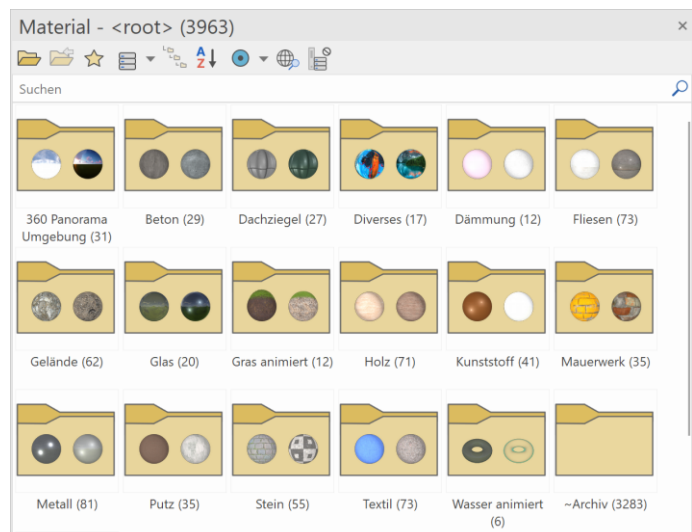
Want more? No problem - you can find quick access to thousands more high-quality materials in online libraries. Importing materials from the most popular platforms like Quixel Megascans, ambientCG, Polyhaven is no longer a big deal. Download materials, drag & drop them into ELITECAD and use them directly in your model.

## New revised materials manager

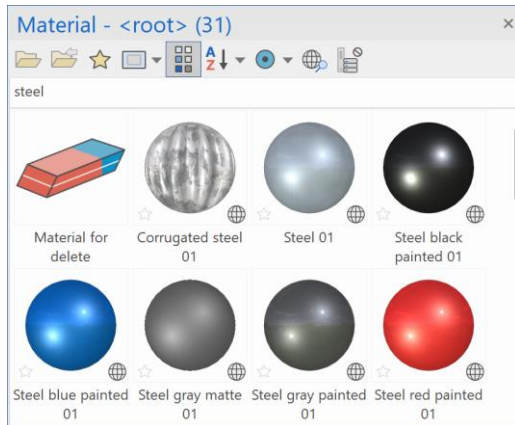
New visualisation materials are the basis for the presentation, but only half the battle. Only with simple usage does the work become fast and productive. You will quickly appreciate many improvements in handling the materials.

## Globally unique material keys (GUIDs)

Each visualisation material in ELITECAD 16 now has a clearly recognisable material key - a so-called GUID (globally unique ID). This key is retained when models are copied, shared, or imported. It is even language-independent, i.e. a material is recognised when the language is changed, although the material name is language-dependent. No more merging or comparing unnecessary duplicates, just rely on the GUIDs in ELITECAD.



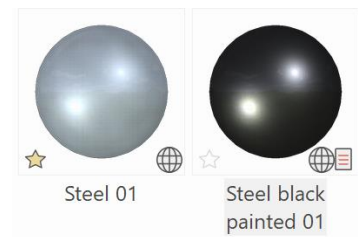
### Intelligent search bar with multitext support



Never search for a material for a long time again! From now on it's "search and find". Simply enter the desired search term, the results are listed in real time. If the search is to be restricted even more precisely, several terms can simply be combined or terms can also be excluded.

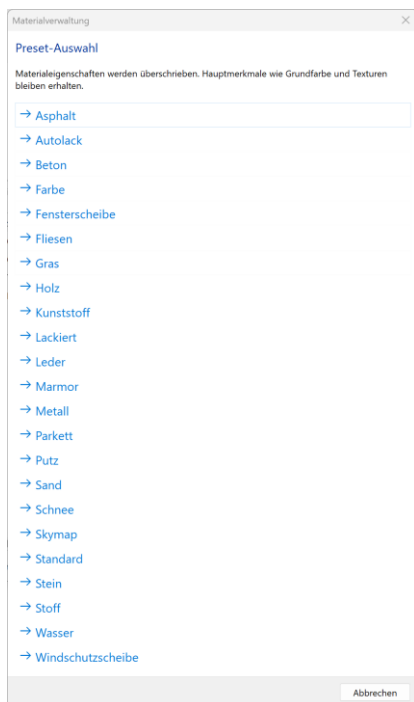
### New favourites function including icons and filtering

You always want to have your favourite materials at hand? With the new, simple



management of favourites for materials, this now works almost automatically. One click on the star and you've already created a favourite. The additional symbol next to the preview image tells you immediately what your favourites are and the filter on favourites immediately puts all your personal favourites in focus.

### Predefined material presets for automatic configuration of reflections, shininess, etc.



More than twenty fully preconfigured presets and hundreds of multilingual synonyms for the automated parameterisation of materials enable the automatic adjustment of shininess or reflection, for example. Therefore, materials and textures no longer have to be manually configured. All material properties can be preset with one click.

### Batch import of materials and folders using drag & drop (incl. presets)

Step by step, importing material by material is too time-consuming for you? We think the same! That's why the fully automated batch import is now also available for complete directory hierarchies. Just drag and drop a folder, sit back and let the program do the work.

ELITECAD 16 includes automated detection and presetting of material properties using hundreds of synonyms and presets. You can either have the material properties determined fully automatically or simply select a material type yourself. Materials

are automatically recognised by their filename.

### Display number of materials

It's not easy to keep track of thousands of materials. That's why we've optimised the user interface to give you an even better overview. Each folder or category shows the number of materials it contains. This way you always have an optimal overview.

### Display material origin

The indication of origin of the material can also be displayed as an additional symbol. Does it come from the database, does the material only exist in the drawing? Is it predefined globally and created by the user etc. All this is represented in version 16 by means of additional symbols in the materials manager.

### Improved preview

You find materials, but you don't recognise anything? No problem, the material management now allows seamless zooming of the preview images as well as a large material preview in tooltips. This allows you to set your preferred size individually, just as you are used to.

### Highlight used materials with a click

Where is a specific material used? Viewing material usages is now even faster with just half a click, it couldn't be faster. Simply click and hold the mouse on the additional symbol for the drawing material and all surfaces with this material are highlighted in the model.

### New filter options and sorting

Now filter for your own materials (all except standard materials) or for new materials, where you can configure the time period individually, including the appropriate sorting option, so that you can find the materials you are looking for even faster.

### Performance of database access improved

Due to many database optimisations, you can reorganise, move, rename and now search for materials and entire folders much faster in the new version.

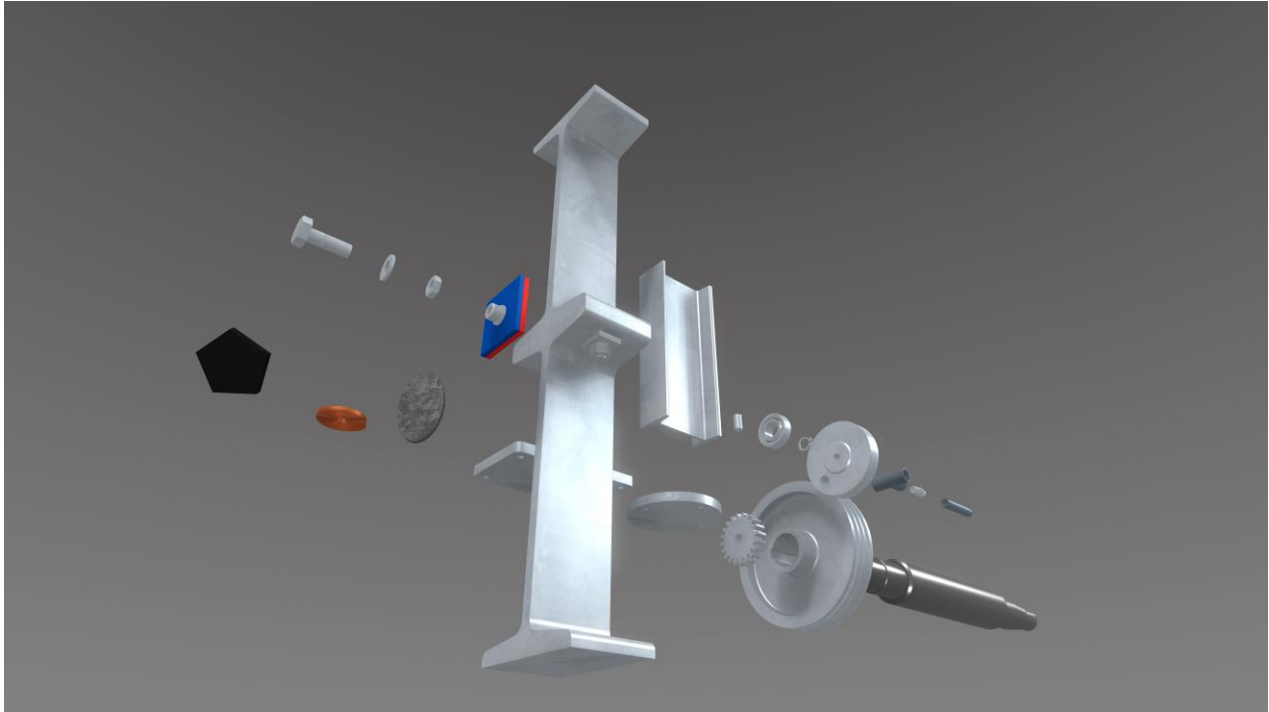


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## New materials for all standard parameters

As you know from your experience with ELITECAD, our aim is to relieve our users of manual work steps and repetitive processes. This also applies to the use of the many new materials.

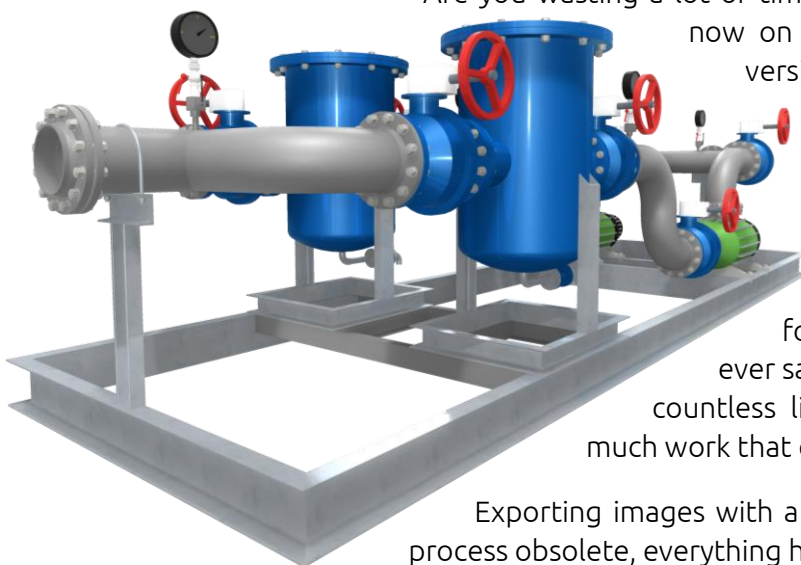


No configuration, no subsequent adding of materials, just plan and still shine, that was the requirement for ourselves! With the new version, fast and efficient draft planning at the visualisation level is easily and automatically implemented without any additional effort. ELITECAD 16 offers you hundreds of revised standard parameters of all objects with new visualisation materials.

## Image export

### Create and export snapshots with transparent background

Are you wasting a lot of time cropping images in post-processing? From now on we will take over this task! With the new version, snapshots can be exported with an alpha channel, i.e. with a transparent background, if desired.



With ELITECAD 16, razor-sharp presentation documents are generated in any resolution. This feature doesn't only work for snapshots or model views. Anyone who has ever saved a 2D plan as an image and had to cut out countless lines, dimensions, etc. probably knows how much work that can mean.

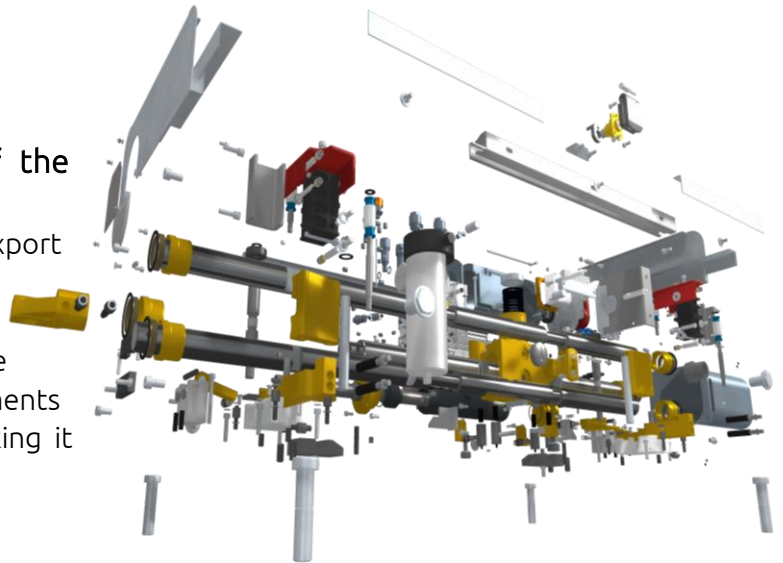
Exporting images with a transparent background makes this tedious process obsolete, everything happens automatically in the background. You

just choose the option and you're done. Result: An image with e.g. 16K is completely automatically cut out in fractions of a second, without manual post-processing in external graphics programs.

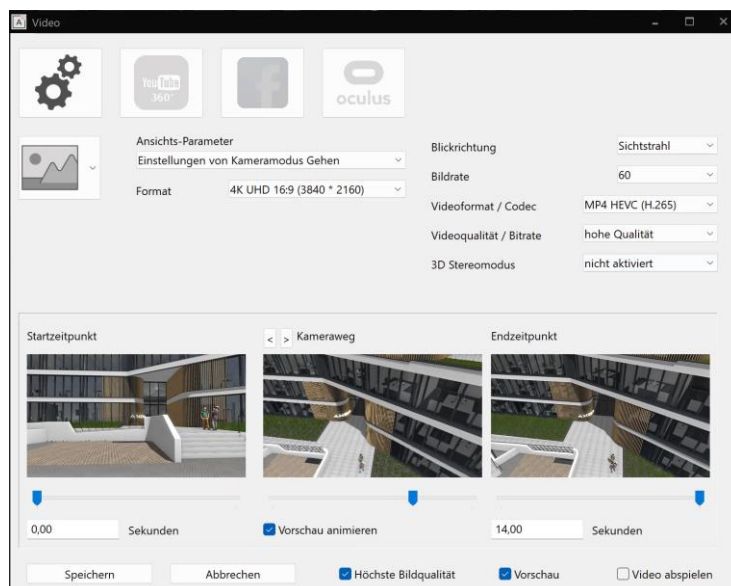
## Video export

### Optimisation and simplification of the video export dialog

You don't have to be a professional to export videos in ELITECAD. The revised video export dialog brings the setting options to the user interface in a simple and understandable way. Repeating elements and settings have been optimised, making it even easier to create attractive videos.



### Easy native MP4 video export



Videos use codecs to compress the content. These are used during playback, but must also be considered when creating the video. Setting up these codecs is often complex and requires some expertise.

Admittedly, that was a bit complicated at times. In version 16, we have now taken over this task for you. With a pre-installed codec, you can export perfect videos in no time at all, even with standard settings. If you want to use special codecs, you still have the option to configure everything yourself.

### Native generation of stereoscopic 3D videos

Your customer asks for 3D films? No problem - become a director yourself and stage what is important to you! Create stereoscopic 3D videos with just a few clicks! Simply select the 3D stereo option when exporting the video and you're done, no special knowledge or hardware required.

## Stereo display

Presentation on stereo output devices is an impressive alternative to VR and is becoming increasingly important. However, the different technologies require more degrees of freedom in the settings, which can be found in the ELITECAD configuration under Advanced OpenGL settings.

### Better support for stereo hardware

Sometimes the display settings swap the output for both eyes. To compensate for this undesired behaviour, the assignment of the left and right images can be corrected again.

## Stereo display for auxiliary elements on the cursor

Depending on the graphics card, auxiliary elements such as the cursor can also be displayed in stereoscopic form. The option is activated under "Use framebuffer objects instead of OpenGL logic for UI elements". This switch also leads to an improved coloured display of temporary lines. With this setting, temporary input fields on the cursor, e.g. for entering coordinates, are also displayed in three dimensions, which further improves the three-dimensional impression when working.



## Adjustable line width for graphics tools

In some output devices, the output of the left and right image is divided into pixel rows. This can lead to lines that are only one pixel wide no longer being displayed. In order to avoid this undesired behaviour of the hardware, the scaling of the UI elements can be activated in the options under the settings for the screen refresh. This significantly improves the display on monitors with a higher resolution.

## Connectivity & interfaces

### Expect more – Collaboration, communication and teamwork

Our ambition for perfect quality does not end with ELITECAD itself. We also want to optimally pass on data to external partners and programs. The new PDF export impresses with its higher quality and smaller file sizes. Synchronise the model with external visualisation tools or export hundreds of DXF views including attribute colours with just one click thanks to the new DXF batch export.

From virtual model to reality with the new interface for 3D printing. Your customers will be amazed when they can disassemble a printed project object by object.

### 3D-PDF

#### Export of views with attribute colours

Attribute colours are a visualisation aid and not the actual colour of an object. Not all viewer programs offer the possibility to display this practical representation. Therefore, when exporting views, we now created an option to use the configured attribute colour instead of the object colour. The plan or 3D model now looks exactly the same in the PDF viewer as it does in ELITECAD and you can also pass this useful representation on to your partners.

### 3D Printing

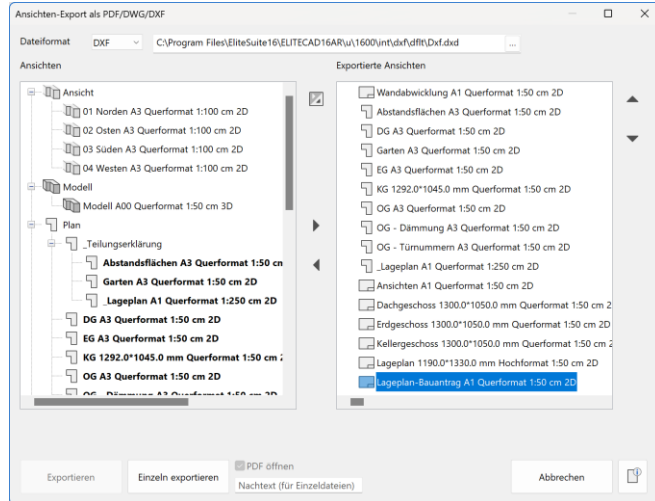
Virtual Reality is not enough for you? Would you also like to experience your models haptically? Models you can touch - this is now possible with the new 3D printing function in ELITECAD!





## New batch export for DXF/DWG similar to PDF

Friday afternoon again? Now start your weekend sooner with the new batch export for DXF/DWG similar to the PDF export!



With just one selection, you can create all (still) common delivery formats at once. No more waiting for individual exports. Faster, more efficient and fewer errors. One click, ELITECAD 16 does the rest!

One dialog with three options now. Select the views to be exported as known for PDF export and switch the file type to DXF or DWG. Everything works the same - only in the new format.

## DXF Export of views with attribute colours

Similar to the PDF export described above, the DXF export now also offers the option of using the configured attribute colour instead of the object colour. The configured attribute colour of the view is used and the DXF plan looks like the view in ELITECAD.

## Support of AutoCAD 2022 files

DXF-Export and import now also support AutoCAD 2022 files.

## IFC

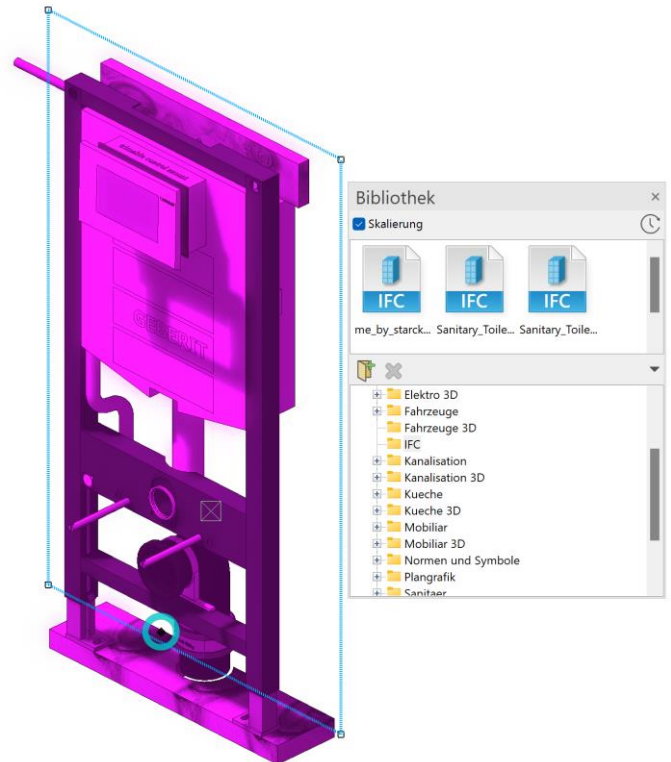
### Improved exchange of IFC library parts

The pre-installed ELITECAD library contains hundreds of library parts with many advantages such as exchange points, layers, descriptions, etc. External formats such as SketchUp can also be included in the library without conversion. As more and more library parts become available in IFC format, we now also support native management of files in IFC format in the library manager.

As a practical additional benefit, the exchange of IFC library parts via placement and exchange points can now also be used in the same way as ELITECAD library parts.

### Improved positioning / load into functions

Files in IFC format can now also be loaded with the positioning and load into functions. Placing the cursor over free positioning points makes it easier to take over individual parts or entire models.



## Export / import of axis grid

The axis grid, which has been added as a new object in ELITECAD 16, is also taken into account in the IFC export/import.

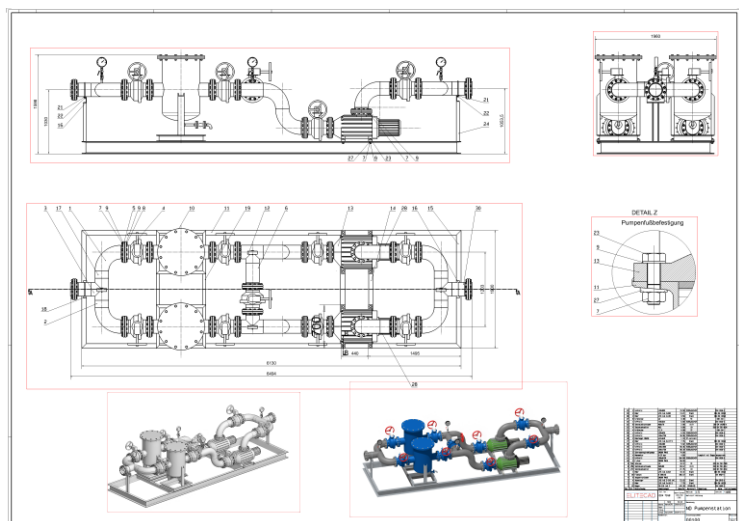
## PDF

### New native PDF export

The PDF export has been completely redeveloped in ELITECAD Version 16. This means that an external printer driver is no longer necessary. The PDF interface is fully integrated in ELITECAD, you don't have to worry about anything. This allows you to export PDFs faster than ever.

### Crisp high-quality plans at every zoom level due to export as vector data

Faster, smaller and more beautiful - vector information can now be stored natively as vector data. Razor-sharp plans can be displayed with ELITECAD 16 at any zoom level, regardless of the size of the plan. Texts are always displayed as native text in the PDF document and can be selected and copied.



## Drastically reduced file size and faster export and management

PDFs can be exported with the new version in a smaller data size. This results in a large saving in storage space. Due to the smaller file size, exported PDF files are now also displayed faster.

## Transparent vectorised colour gradients

Gradient hatching and transparent areas are an essential graphic tool in ELITECAD. The new PDF export now also supports these types as vector data, so plans can be transferred without loss of quality.



## Export including layer structure

The visibility of the layer structures can be switched individually in common PDF viewers. The layer structure of ELITECAD is completely exported, so you can easily hide and show objects in the PDF afterwards.

## Point clouds

### Simplified splitting and cleaning of point clouds

Overshot the target again? Millions of points were recorded with the laser scanner, but only a fraction of them are relevant? No problem, now with the advanced and fast selection and clean-up functionality. Splitting point clouds can now be controlled by selecting the desired area. Just select an area once and decide what stays selected – inside or outside. This allows the outside area to be selected and deleted quickly instead of selecting several times what actually needs to be eliminated.



## Batch import

Depending on the procedure, one or more files are created when recording point clouds, which contain, for example, one recording per scanner location. While a few files can be quickly imported one at a time, several hundred files become a tedious task. With the new batch import of point clouds, this task becomes child's play. Simply select a folder and quickly and safely import all the point clouds it contains at once.



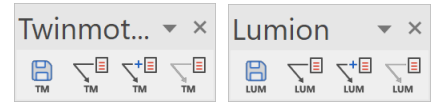
## SketchUp 2022 support

Import and export of SketchUp files is now possible up to the current SketchUp version 2022.

## Synchronisation with external rendering applications

### Incremental model updates with a single click

Want to go one step further? You like to visualise with external software? Now create model updates quickly and easily with the new synchronisation functionality for rendering software such as Lumion or Twinmotion. Save once with a name and update with just one click in ELITECAD and the external visualisation software. In this way, changes to the model can be made effortlessly. Material assignments are always correctly retained thanks to the new GUIDs.



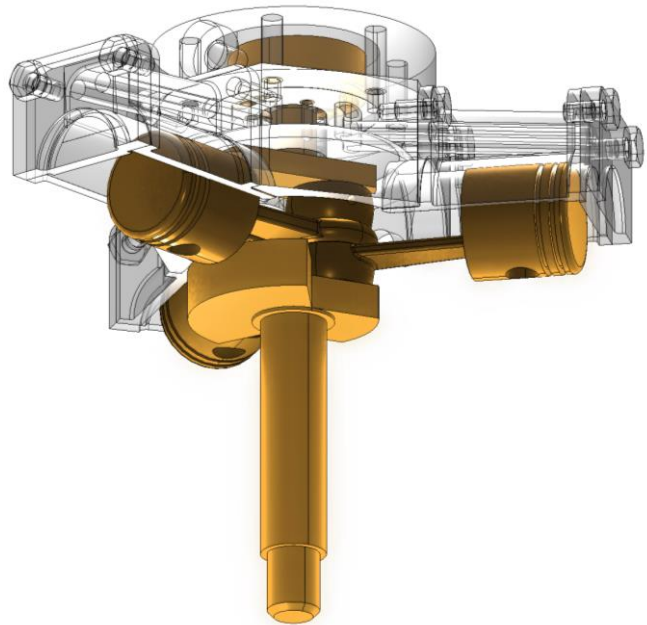
## Usability

### Expect more – joy, simplicity and efficiency

Usability is one of the basic principles of ELITECAD. Maximum design freedom with minimum effort. We have followed this credo since the first version and it a common thread running through the entire program. Wherever we see a possibility, we apply this credo. This allows you to use ELITECAD optimally and workflows are as easy as possible.

### More security when saving

Almost everyone has experienced the situation that when you exit the program or execute “New file”, you get a message asking if you want to save the changes. If you are no longer sure whether what was actually changed last, then you have a dilemma. This can be remedied, firstly, by the new message when saving showing when the last change happened. Secondly, the dialog now offers the option to visualise all data of the drawing that has been changed since the last save. This gives you graphical control over all changes and more security that no unintentional changes are saved or significant changes are lost.



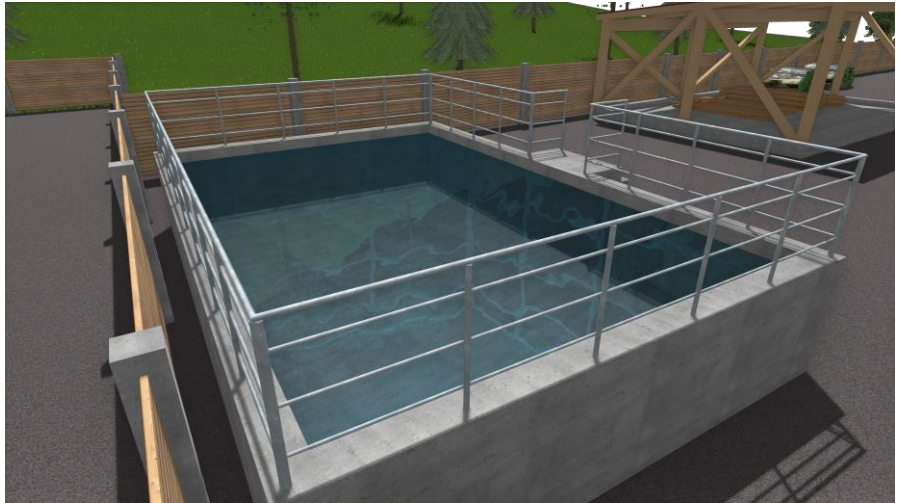
### Drastically improved graphic output

#### Shader mode active by default

The improved graphics output offers the highest quality and performance in working mode. In addition, there is no CAD with nicer integrated graphics output directly in the design process. The improved graphics output and the new material library complement each other perfectly.

## Optimised standard light settings

Without light, no light effects. Therefore, in ELITECAD 16 we have optimised the standard light settings for the sun and ambient light for the new shader display with regard to efficient work and the presentation of your models.



## Copy parameters

**Copy parameter function retains the previous selection per object**

The copy parameters function now works even faster. True to the motto "Continue where you left off!" ELITECAD 16 remembers the last active selection or configuration of the copy parameter function. The next time the function is used, the last configuration is preset again - all of this per object type, of course.

## Copy parameters for ME objects

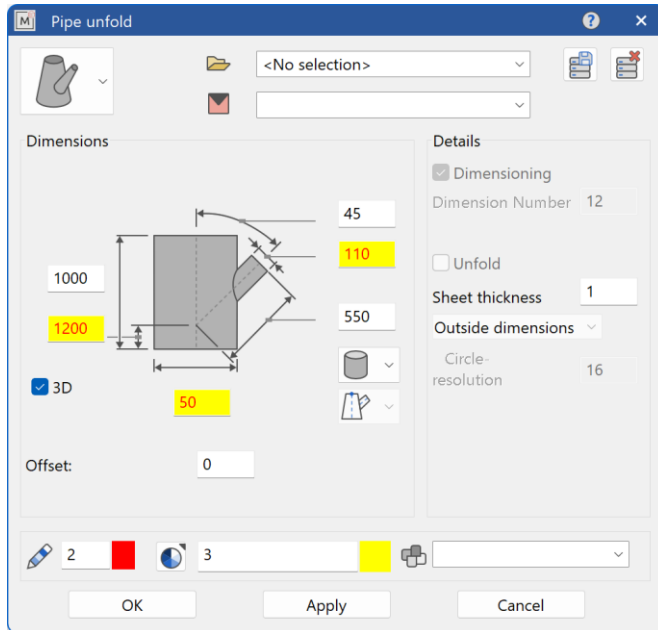
With the possibility of saving data records for all mechanical objects, the management for the parameters of the mechanical objects has also been integrated in the copy parameters dialog.

## Walk mode now available as toggle switch in input bar

Walking mode is now even easier to activate. Instead of using the camera toolbar as before, you can now also activate the mode with just one click using a switch above the input line, quickly and clearly.



## Feedback for invalid values



When defining a pipe unfold, the invalid values will now be highlighted using a red font in a yellow text field. That way it is easier to identify the invalid input and correct the corresponding values.

# ELITECAD Help Center

## Expect more - insights



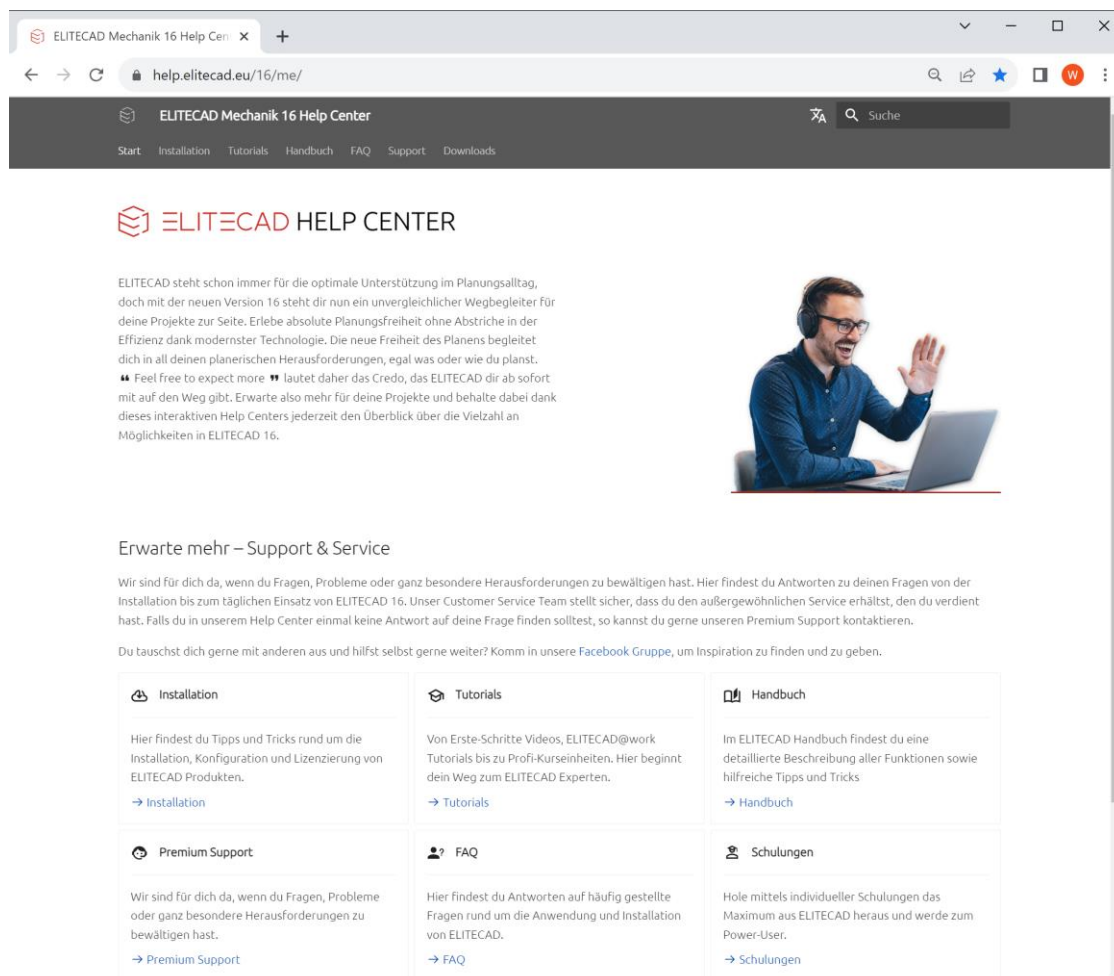
The project has to be finished and you can't find an important element anymore? No problem, the Help

Centre is your new interactive point of contact for all questions relating to ELITECAD 16. It can be easily accessed via the usual help function. Downloading documents is no longer required. Another highlight is the intelligent and fast search with a result preview, which immediately highlights the most important results.



## New website for interactive help for ELITECAD products

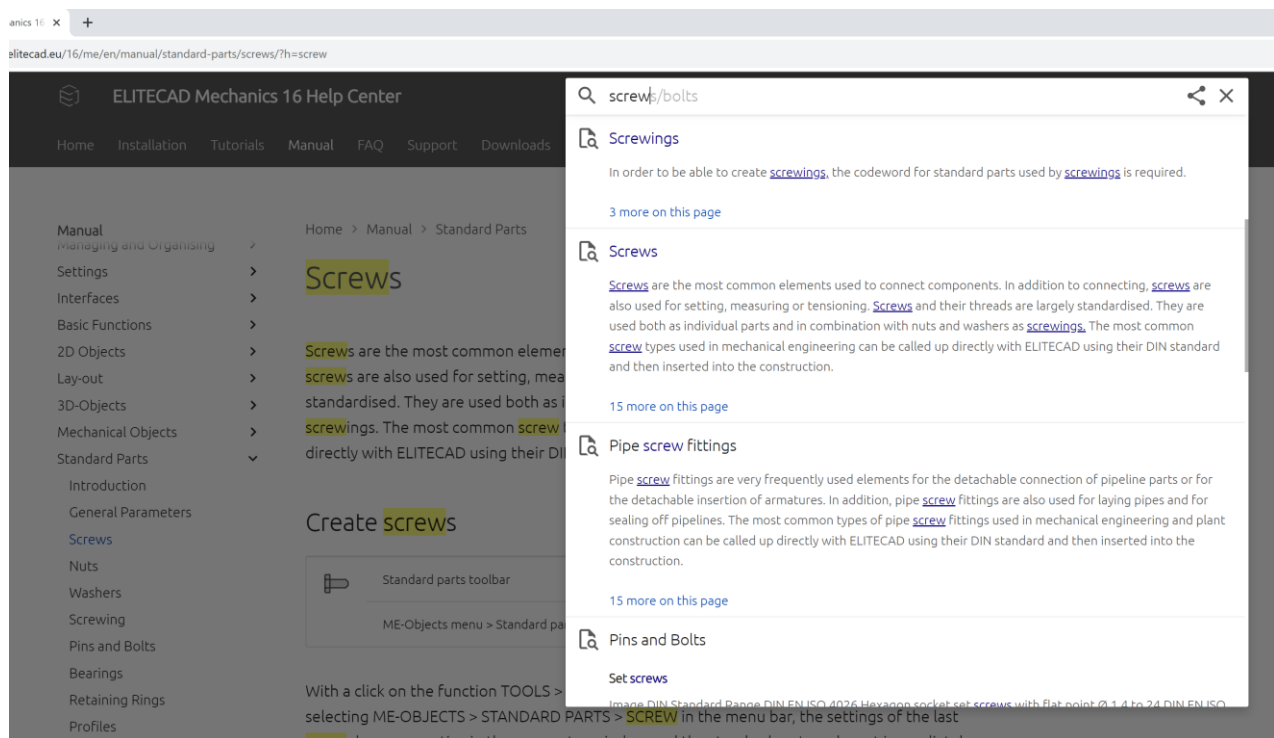
In order to provide a central point of contact for all versions, we have created the ELITECAD Help Centre for all your questions. The range goes from useful documents such as manuals, FAQs, installation instructions to services such as courses, support, tutorials, videos and much more. Hundreds of new interactive pages, over 7000 updated screenshots in German and English will help you find exactly what you are looking for. In addition, course units are available in multiple languages. Everything centralised and at a glance in the new online platform!



The increased user-friendliness results in advantages such as a shorter training period for new employees. With the new interactive user interface of the ELITECAD Help Center, long scrolling through PDFs is no longer necessary. In addition, the Help Center can also be displayed in several languages.

## Intelligent and fast search

The new intelligent and fast search gives you a detailed preview of the results including highlighting. Enter a word in the search field and the matching results will be listed immediately. This is how you get to your destination quickly and intuitively.



## Continuous expansion of content

With the new Help Center we can react even faster to changes such as corrections or updates. The online content of our Help Center is always up to date. But if you need an offline version, that's no problem either, you can optionally use the help content offline.

## Native integration in ELITECAD

The native integration in ELITECAD enables direct, interactive access to the Help Center. Long loading times for PDF files are no longer necessary. The help links in ELITECAD take you straight to the relevant parts of the manual. No more searching or scrolling necessary.

## System and configuration

### Expect more – Optimisation, support and internationalisation

Country-specific presets are an important part of ELITECAD. Not only for the users in the respective countries, but also for our customers who are planning for the respective regions.

Ongoing adjustments to new hardware and operating systems ensure future-oriented work. With ELITECAD, you are always prepared for this.

### Revised and optimised default settings

New extensions also require new settings. Some new setting options have been added to the options at various points. For example, tooltips have been removed from the interface settings as a separate point and extended by the display time for the input line.

### Windows 11 Support



ELITECAD 16 supports Windows operating systems from version Windows 10. Of course, ELITECAD also runs perfectly under the new version Windows 11 22H2.

### SpaceMouse

#### New 3Dconnexion Toolkit

3Dconnexion's six-degrees-of-freedom (6DoF) input devices make viewing 3D models easier and enables precise editing of digital content or camera positions. Pan, zoom, and rotate 3D drawings intuitively by simply pressing, pulling, twisting, or tilting the controller cap. With the latest toolkit, the latest models are perfectly supported.



#### Configuration

The settings for the SpaceMouse have been merged with the GamePads settings in the configuration dialog for input devices, which further simplifies the adjustments. From there, you can also go directly to the manufacturer settings in order to be able to carry out even more specific adjustments.

### Internationalisation and localisation

The expansion of the parameters is a continuous process. With each new version, new regions are added and existing regions are updated to the best of their ability.

#### English version

The new mechanics online manual is now also available completely in English, all graphics were created with the English user interface and offer the best possible support for all international users.



The texts of the manual were also revised by native speakers and numerous terms were standardized and improved.

The dialogs for DIN standard parts have been adapted for the English user interface and the DIN standard part descriptions have been translated into English.

All bill of material templates are also available in English.

## **Swiss version**

In addition to the user interface texts, which were adapted for Switzerland in version 15, the DIN standard part descriptions are now also with ss instead of  $\beta$  and are displayed correctly depending on the region setting.

## **Transfer parameters between versions**

All parameter records, in particular the new records for all mechanical objects, can now be transferred between versions and languages using the Transfer Parameters tool.