



Release Highlights 2021T1

Improvements and enhancements in the 2021T1 release include:

- In **P&I Diagram**, the managing of linked objects has been enhanced with the ability to link current objects to an existing Position ID. Improvements in the specifications in the library database allow administrators to choose whether specifications are stored in the library database or project database.
- **Outfitting/3D Plant Design** has several new features that help users to multi-select objects that are part of the same group.
- Electrical devices such as electrical cabinets can now be sent from CADMATIC Electrical to Plant/Outfitting as COS objects and linked to 3D objects.
- Pipes can be created by import from Piping Component Files (.pcf). This allows pipes to be imported from many 3D design applications or to use converted point clouds from applications such as ClearEdge3D.
- **CADMATIC Hull** sees several improvements in construction features: harmonized rule system for plate and profile beveling, automatic beveling for profiles and face plates in cross section, and enhanced profiles as plate property function.
- Improvements in Hull production features, among others, are that lugs are now handled separately in coding and they can be compared in automatic part numbering. New and customizable jig view options add more convenience to shell plate inspection. Another welcome addition is that profile shrinkage can now follow plate shrinkage.
- Hull Import and Export features: Greater scope of NAPA Steel import, new Almacam Nest Data import option, and export to OCX XML has been improved so that plates' relations to other plates and fixed values and grids, as well as shell frames' relations to shell plates are preserved in the export. The Export 3D Hull Data function has been extended so that construction can be exported separately for each work breakdown (WBD) level.
- Hull documents can be published from Hull COS version to eShare and eGo for improved availability of production information and 3D sketches.
- In **Information Management**, there is now support for BCF markups and JT models, and more flexibility in configuring document links.
- **eShare** and **eBrowser** now allow users to make multiple measurements in 3D model views at the same time.
- There is now one view for all **eGo** project synchronization settings while the synchronization of only sub-models has been added.
- **Draw** includes many improvements which raise the software's usability to a completely new level. Moreover, working in 3D is now better thanks to new 3D visualization, among other things.
- **Electrical** provides more fluent usability in many aspects, making design work more streamlined and efficient for the user. I/O management, Import and 3D functionality, and storey settings have been renewed.

P&I Diagram

Specifications in library database

CADMATIC P&ID supports using specifications from the library database. For more details, see [Specifications in library database](#).

Managing linked objects

In the **Edit Data** dialog of a diagram object, the user can now link the current object to an existing Position ID to use the same data as the other objects that use that ID. If a previously linked object is unlinked, a new Position ID must be entered for it, and it is no longer sharing the same data with other objects.

The screenshot shows the 'Edit Equipment Data' dialog box for a 'Centrifugal Pump' object. The main dialog has a 'PosId' field containing 'P011' and a 'Link Object' button. An orange arrow points from the 'Link Object' button to a smaller 'Select Linked Object' dialog box. This sub-dialog has a 'System' dropdown set to 'Equipment' and a 'Pick' button. Below, there is a table of objects to link to, with 'P201' selected. The table shows 'Position Id' and 'System' columns. At the bottom of the sub-dialog, it shows '1-7/7 results' and navigation buttons 'Previous' and 'Next'. The main dialog also has 'Unlink Object' and 'Take Ownership' buttons, and a 'Clear' button next to the 'DmPartCode' field. At the bottom of the main dialog are 'OK', 'Apply', 'Cancel', and 'Help' buttons.

System: DEFAULT_SYSTEM

PosId: P011 **Link Object** Unlink Object Take Ownership

RoleInProcess:

MenuInData: P%D28004T3.14.02

Description: Centrifugal Pump

Material:

Medium:

Manufacturer:

ManufCode:

DataSheet:

Type:

Size:

Mass: 0

Notes:

DmPartCode: Clear

Compartment:

EstimatedX: 0.0 mm

EstimatedY: 0.0 mm

EstimatedZ: 0.0 mm

----- Data Specific for PUMPS -----

Select Linked Object

System: Equipment **Pick**

Object to Link to

Filter PosId:

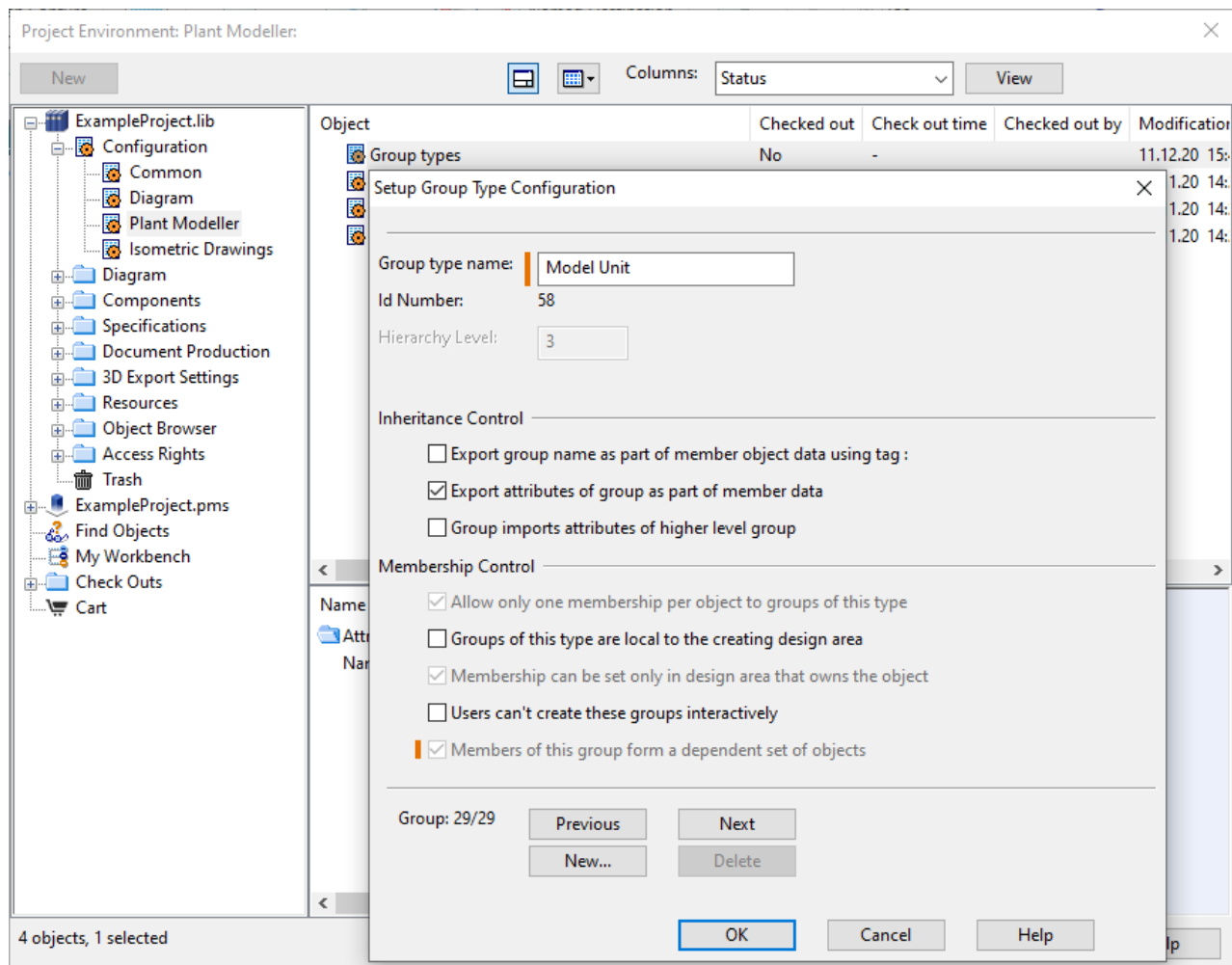
Position Id	System
P001A	Equipment
P002	Equipment
P101	Equipment
P201	Equipment
P202	Equipment
P203	Equipment
P204	Equipment

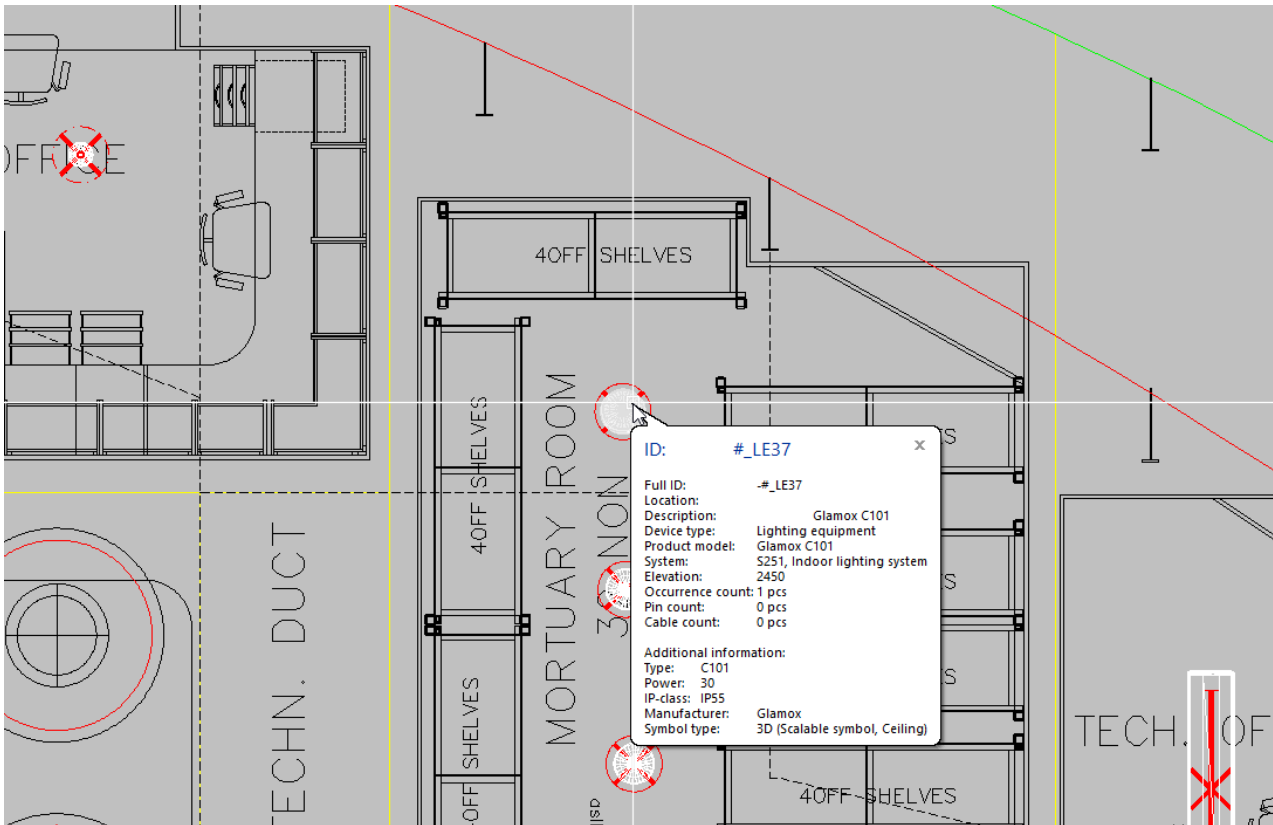
1-7/7 results Previous Next

Ok Cancel Help

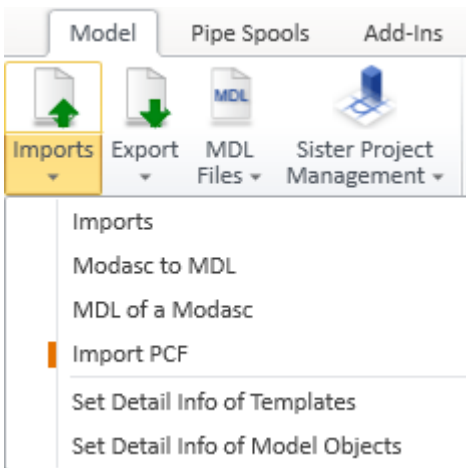
OK Apply Cancel Help

Outfitting/3D Plant Design





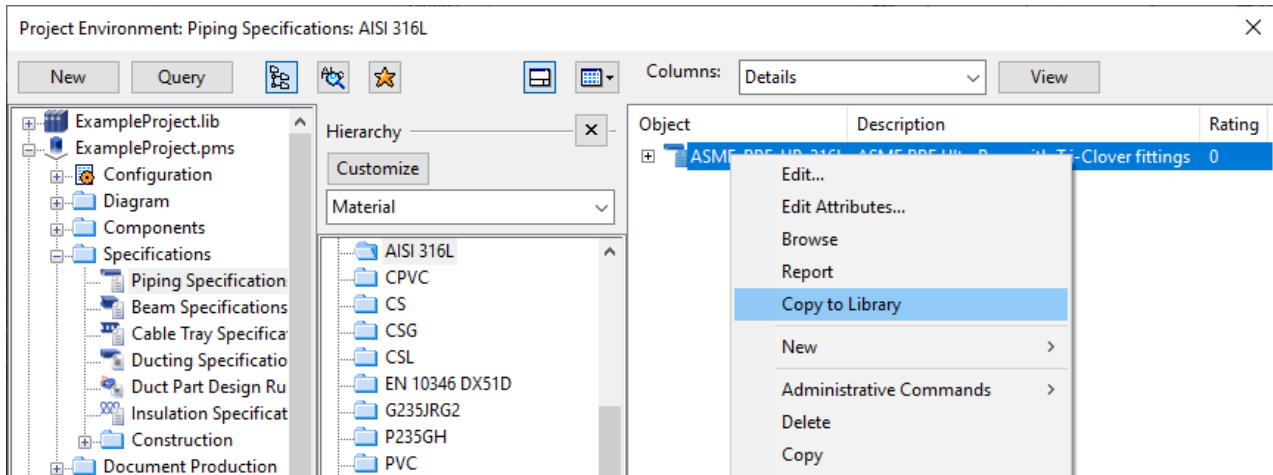
(Project courtesy of Wärtsilä AB Norway)



Specifications in library database

Previously, specifications have been stored in the project database, and using the same specification in multiple projects has required project-specific export-import and laborious resolving of data conflicts.

Now, administrators can choose whether to have specifications in the library database or the project database, or even in both at the same time. To get started, administrator copies the required specifications (piping, beams, cable trays, ducting, insulation) from a project database to the library database, which also copies the related specification setup objects to the library.

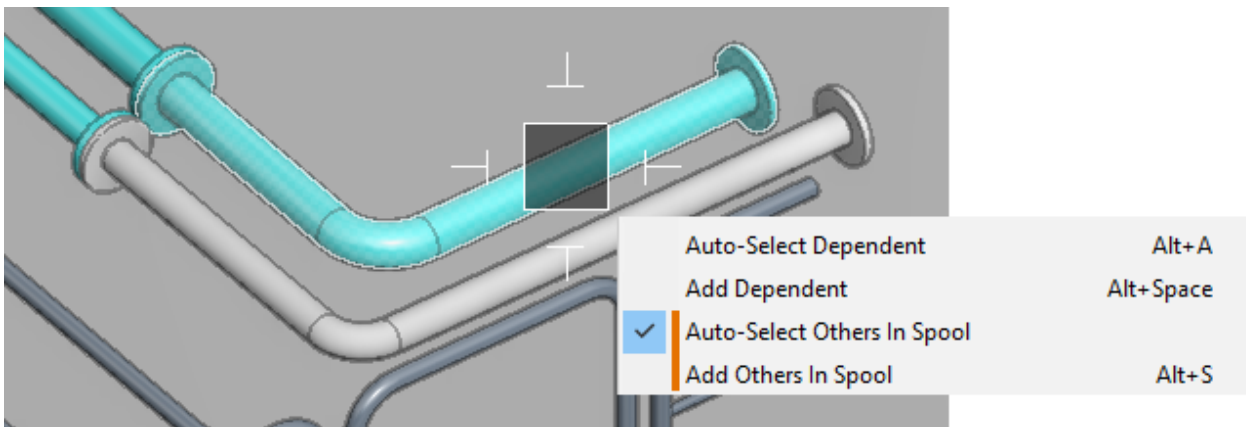


After validating the setup, specifications can be copied also from other projects that use the same library. As a result, all library-based specifications can be edited from a single location and approved for use in any project that uses the given library.

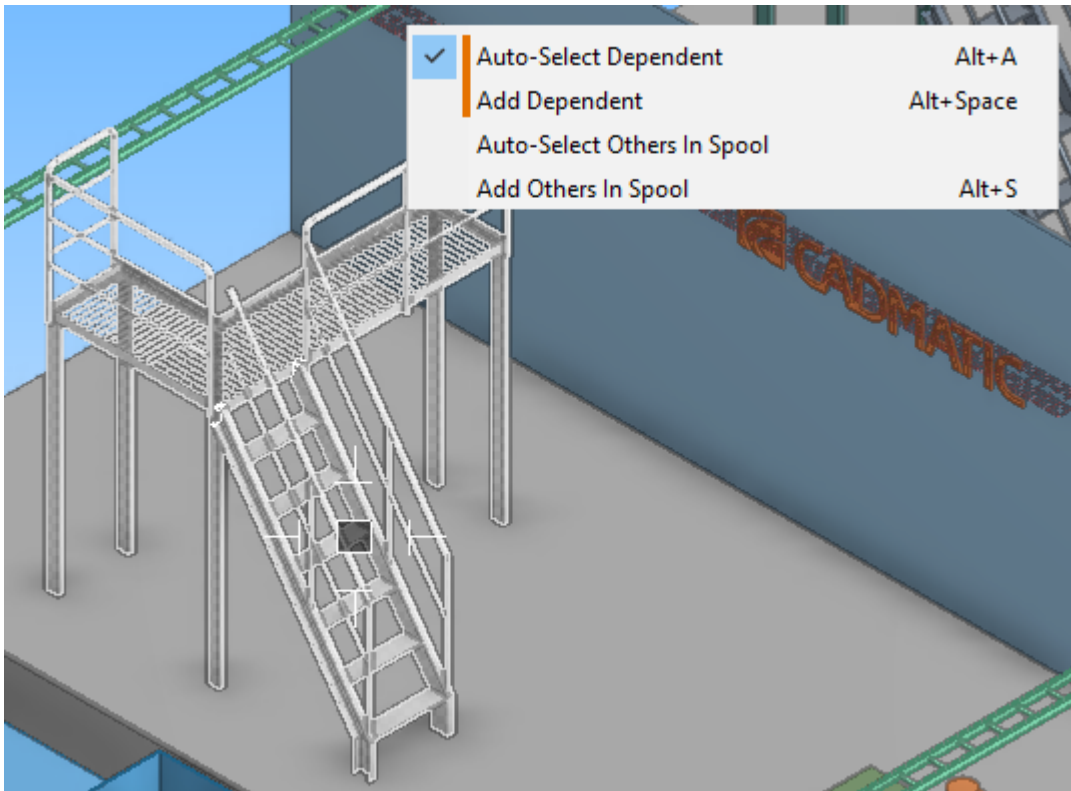
Improved object selection

The usability of selecting multiple objects for a set operation was affected when pipes were divided into individual piping objects in version 2019T3. Now there are several improvements that help the user to multi-select objects that belong to the same group.

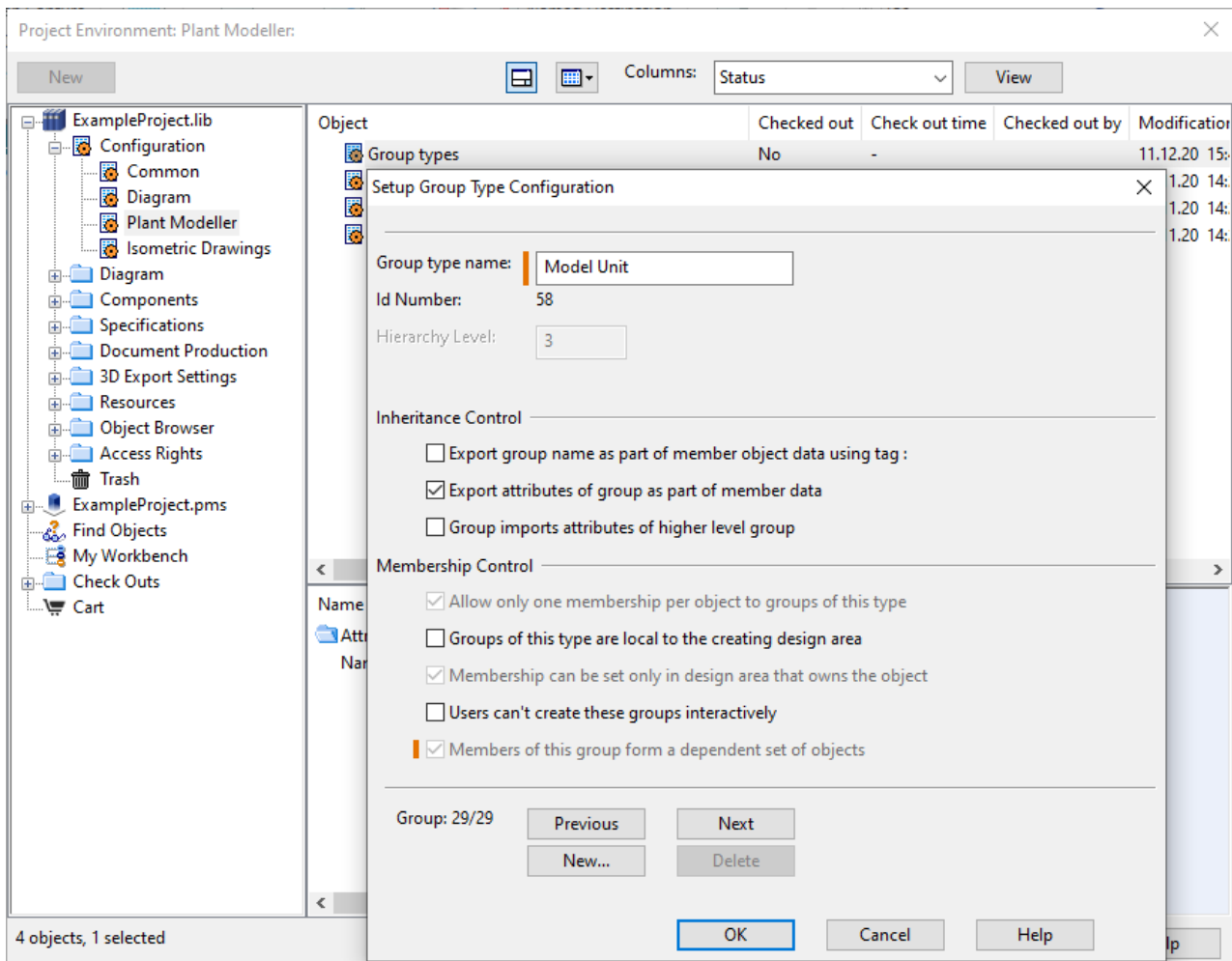
- A single click will select the whole pipe spool (based on spool break rules) or duct spool, unless the user turns off the option **Auto-Select Others In Spool**. If the option is turned off and just some of the members are selected, **Add Others In Spool** selects the other members of the spool.



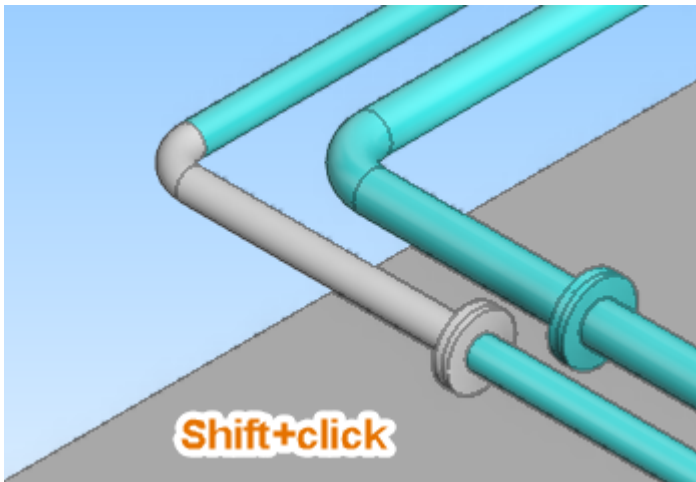
- For other types of parts that form a set of dependent objects, a single click will select the whole construction as before, unless the user turns off the option **Auto-Select Dependent**, now also the highlighting before the pick works correctly. If the option is turned off and just some of the members are selected, **Add Dependent** selects the other members of the group.



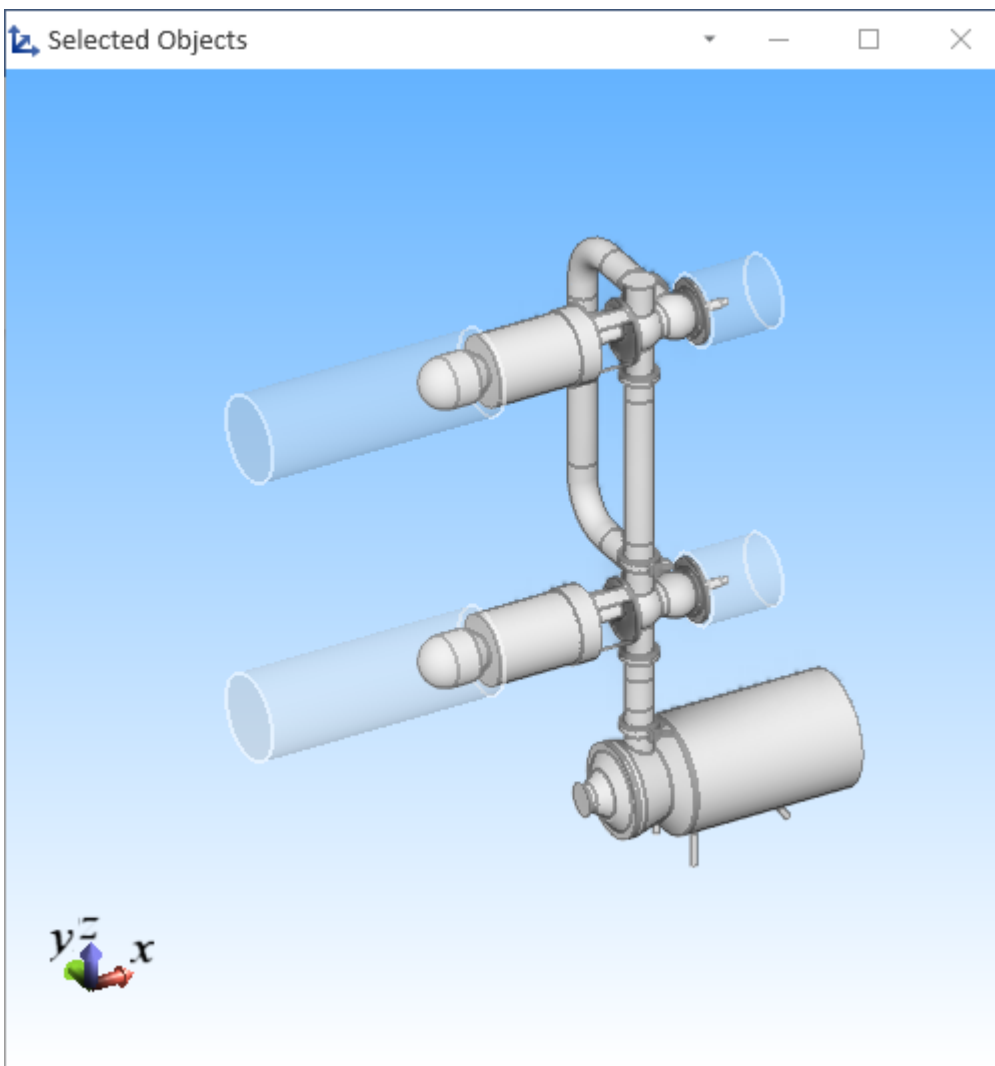
What is new is that now this feature is controlled by a new group type option, **Members of this group form a dependent set of objects**, which administrator can turn off for some of the group types, if needed, and there is a new group type "Model Unit" that has this always enabled.



- When the auto-selection features are turned off or not applicable, a set of connected objects can be selected by holding down Shift while picking the first part and the last part of the segment.



- Pressing S (**Show Selection**) opens a view that shows the currently selected objects, and the view is automatically updated when objects are added to (or removed from) the set.

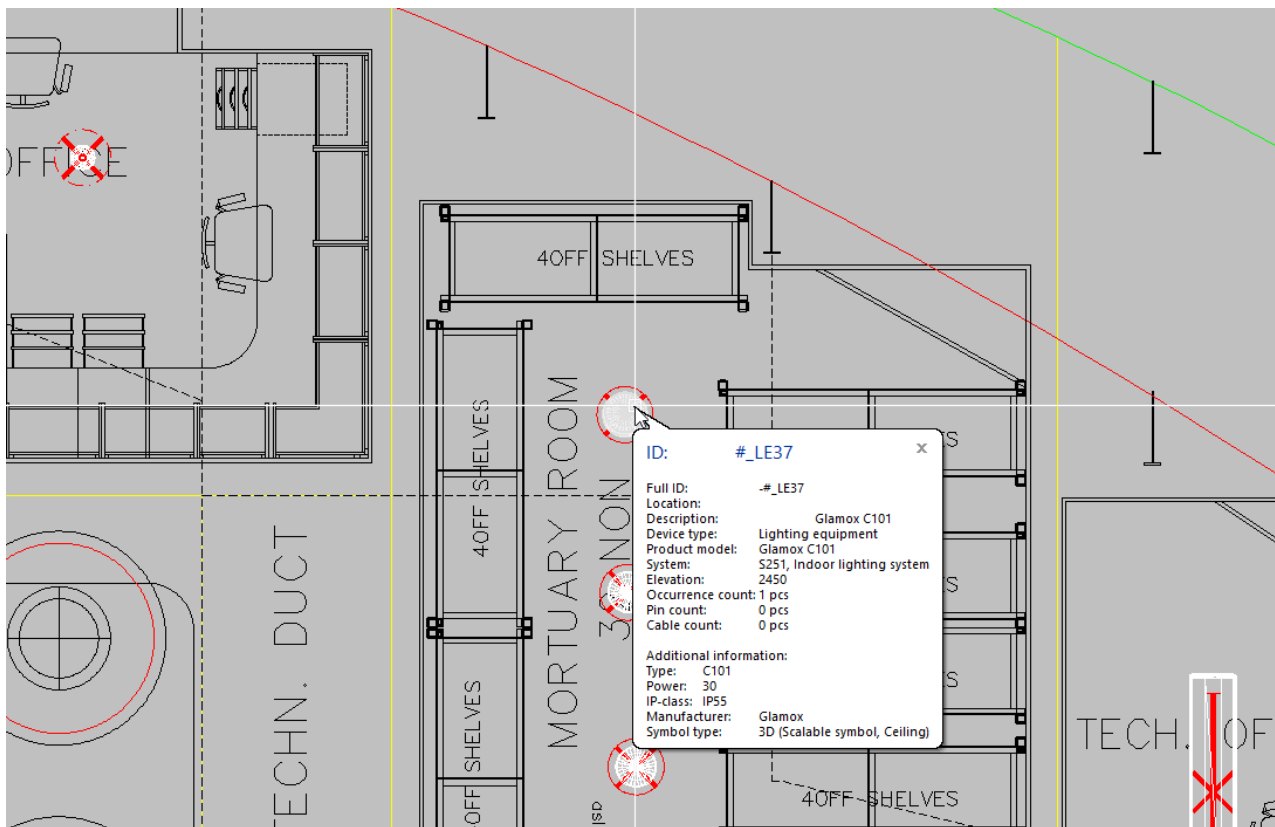


Electrical devices from CADMATIC

Electrical

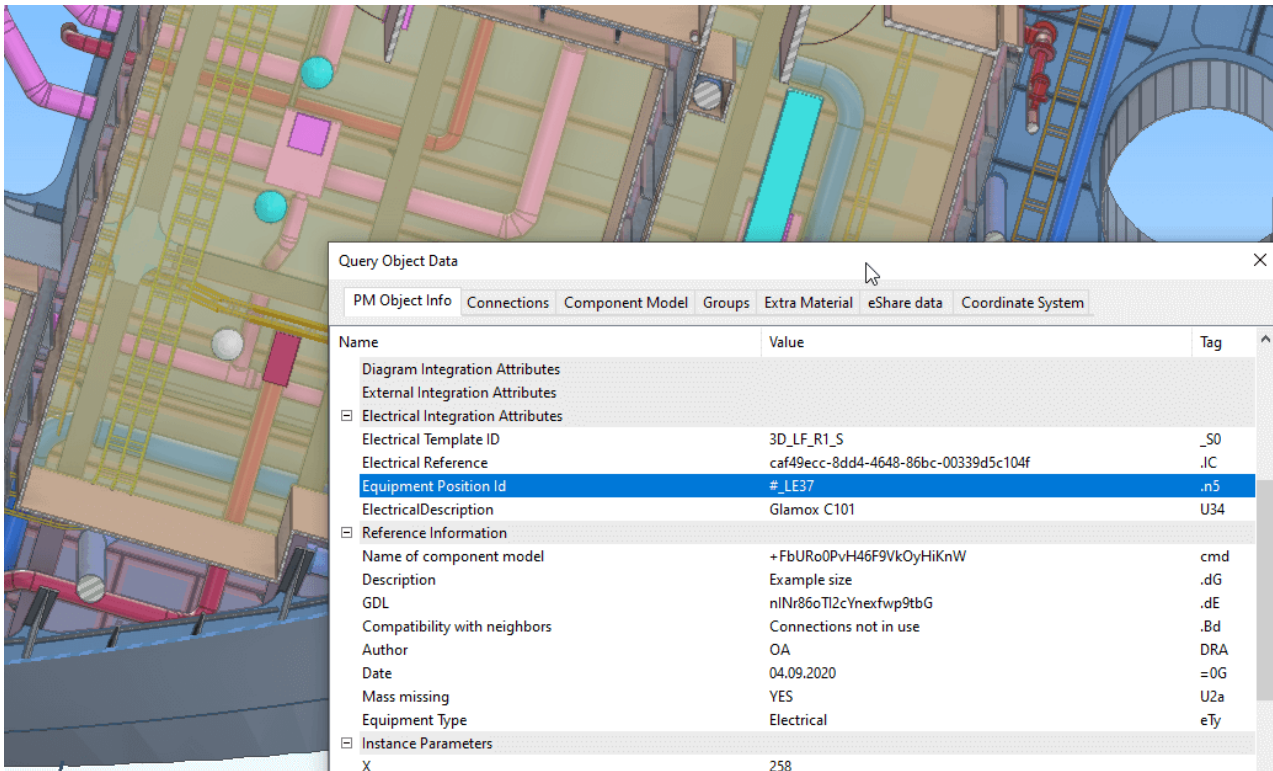
CADMATIC Electrical can send electrical devices such as electrical cabinets to Plant/Outfitting as COS objects of type "Electrical Device". These can be linked to 3D objects via Equipment Position Id, Valve Position Id or Instrument Position Id.

This integration is especially useful when electrical devices are wanted to be drawn on top of a layout to produce, for example, lighting drawings.



(Project courtesy of Wærtsilä AB Norway)

The locations of electrical devices can be defined in CADMATIC Electrical. In the example picture above, the layout drawing takes the X,Y coordinates from the symbol's location. The elevation of the electrical devices from the floor level has a default value and the user can adjust as required. (In the case of multiple stories/decks, the layout's Z-coordinate levels need to be defined in Storey Settings.) In addition to the X,Y,Z information, integration can provide the orientation of the 3D object to Plant Modeller. Objects that have adjustable sizes (such as fluorescent light fixtures) are supported via instance parameters.

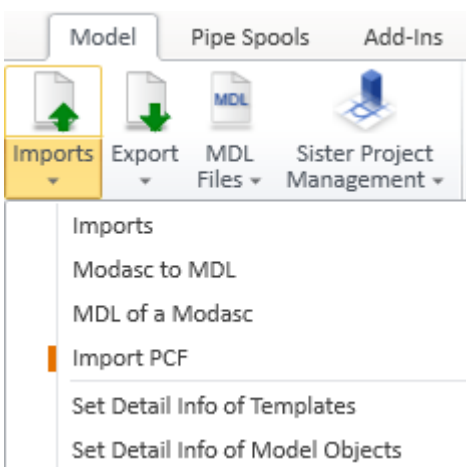


(Project courtesy of Wärtsilä AB Norway)

When inserting Equipment or Standard Components to the 3D model and there are unlinked Electrical Device, EPD or EDM objects, the user is prompted whether to link the new 3D model object to integration objects that have the same position ID. This linking allows the 3D model object to have the data attributes of each linked integration object.

PCF import

Pipes can be created by import from Piping Component Files (.pcf). This allows pipes to be imported from many other 3D design applications. The interface requires a separate license.



Point clouds to model objects

Third-party applications like ClearEdge3D can extract pipes and steels from point clouds. In CADMATIC, using the new Piping Component Files (.pcf) import allows the point cloud based pipes to be converted into intelligent CADMATIC models, and steels can be imported from ClearEdge3D steel files. Other types of model objects such as equipment can be obtained from ClearEdge3D by using the STEP model import of Component Modeller or via CADMATIC eXchanger.

Instance parameters for geometry types 9 and 15

The user can change the nominal size or the instance parameters of a Standard Component also when the Geometry Type of the component model is 9 (DM_GT_LATERAL) or 15 (DM_GT_FLEXCOMP). Instance parameters allow the designer to flexibly adjust the model object's dimensions instead of having to change the catalog part to get the required dimensions.

Improved hole management

The general usability of the Hole Manager tool has been improved. Now it is possible to delete orphan hole requests, and the hole request list is able to show "Locked by Hull" data. Also regression issues in NAPA integration and several issues reported by customers have been fixed in this version.

Web API

User-defined location for 3D model export

CADMATIC Web API now allows the user to define the folder where the 3D model files are exported.

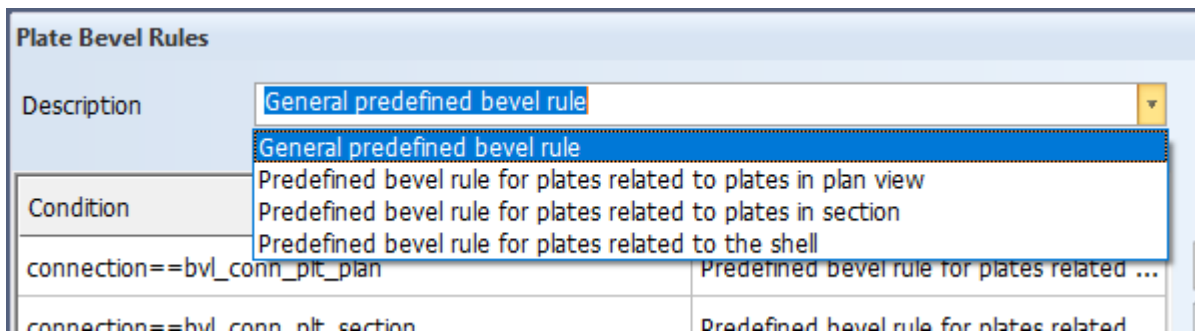
In addition, the Swagger page's Schema section shows a textual description for each return value.

Hull

Improvements in Construction Features

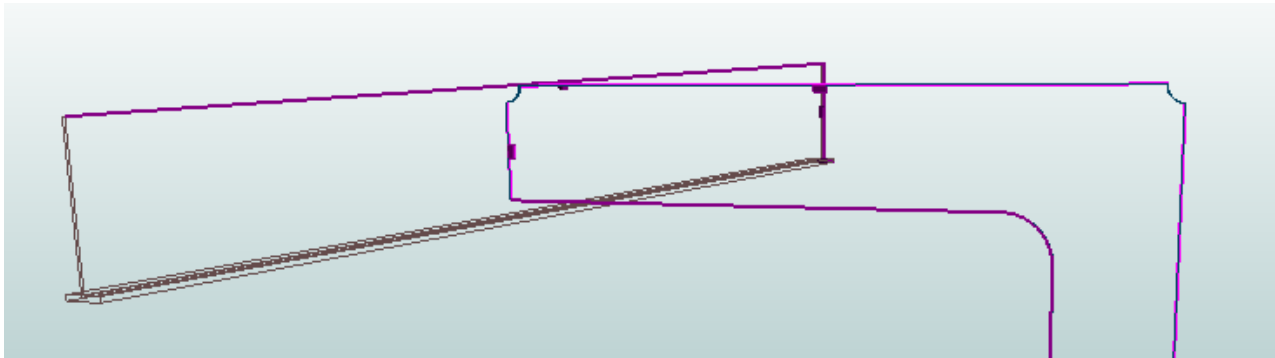
Harmonized Rule System for Plate and Profile Beveling

Yards can define their own custom beveling rules in a simplified and consistent way by using the updated beveling rule system. The rule system used for profile beveling has been extended to plate beveling, making the plate bevel rules more simple, and consistent with the profile bevel rules. Customers who already have plate bevel rules in place will benefit from the automatic conversion from the old rule system to the new rule system.



Automatic Beveling for Profiles and Face Plates in Cross Section

In addition to the simplified bevel rules definition system, more automatic beveling capability has been added to the system. The automatic beveling function (Bevel Generator) has been extended to cover plate borders connecting with profiles and face plates in cross section. The system applies the same beveling rules for profile and face plate connections as for plate connections.



Enhanced Profiles as Plate Property Function

With the previously released **Profiles as Property** functionality, it became possible to define plate stiffening as property of the plate. This allowed automated distribution of profiles at grid values – a useful feature when many changes to the design occur during the basic design. In this release, profiles as property can be added to a plate even if there is currently no room for any profiles due to other construction. This feature is useful in situations where the plate is later modified by lengthening it, for example, because profiles specified by the property are added automatically if they fit.

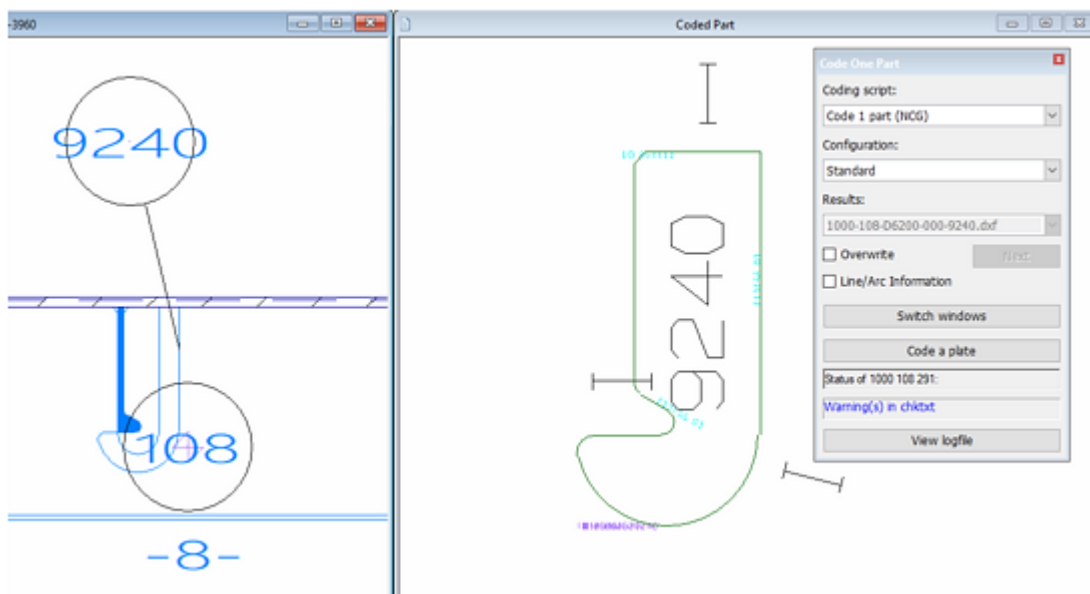
Furthermore, the speed of designing the model has been further increased by making it possible to copy the profile property from one plate to another, instead of creating it manually. Also, when a plate with the profile property is copied, the property is copied with the plate.

After the basic design phase is finished, and the optimal main dimensions are chosen, the blocks are split before the detail design phase. When plates with the profile property get split in this process, the plates resulting from the splitting will get the profile property automatically.

Improvements in Production Features

Lugs Handled Separately in Coding

Customers with production facilities that can cut small parts separately will greatly benefit from the new possibility to generate the cutting data for lugs separately from the plate, as lugs are now handled separately in the part coding process. All the lugs which are included in the part selection are coded, including lugs on profiles and shell frames. Lugs can now also be coded separately from the part they belong to.

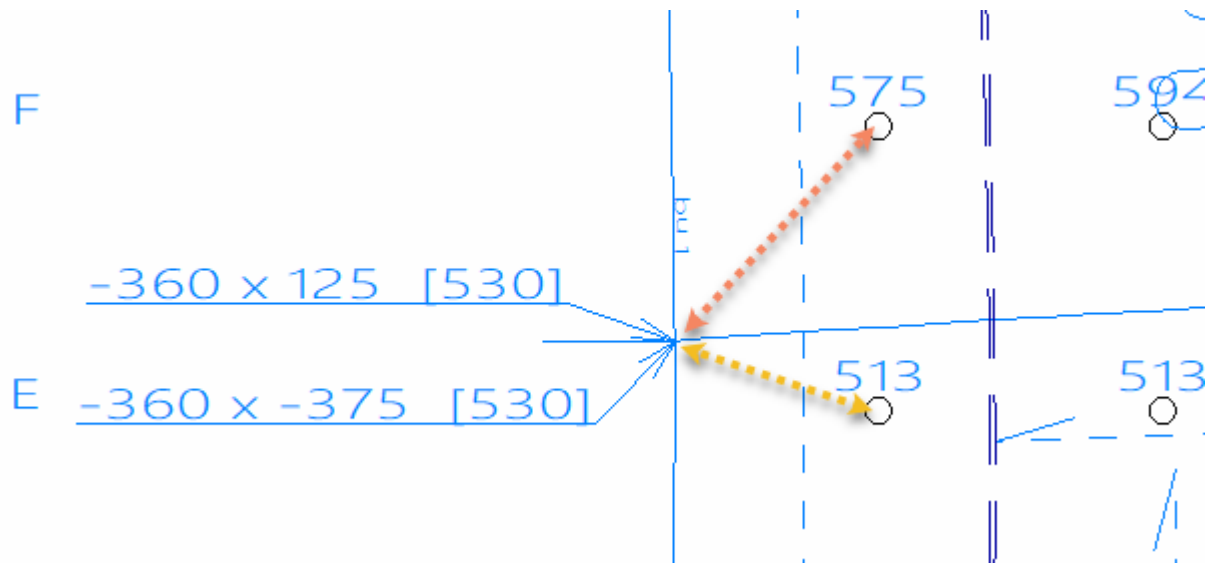


Compare Lugs in Automatic Part Numbering

The **Compare** option in the **Automatic Part Numbering** function now works for lugs as well. This makes it possible to give similar lugs the same part number automatically, and manual part numbering is avoided. The system uses the type number, netto weight, material, and thickness of the lugs to determine similarity. Different part numbers can be given to lugs on starboard and lugs on port side if so desired.

New Jig View Options

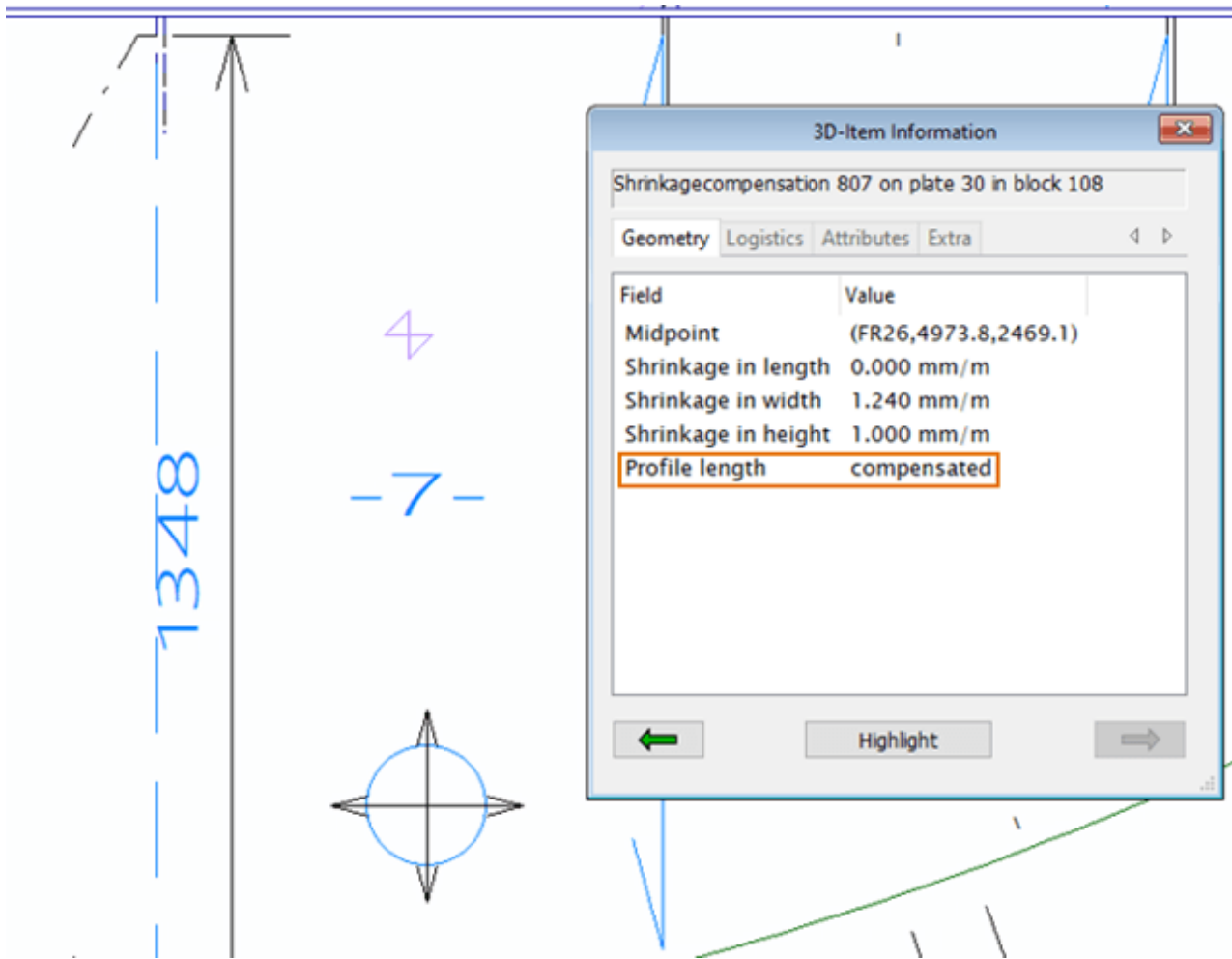
Production facilities are often used to their own custom display of information. It is now possible to customize the visualization of ping jig measurement information by opting for labels instead of a table for showing the pin jig measurement values in the jig view. The labels are placed near the shell plate corner and they contain the horizontal and vertical distance of the nearest pin to the shell plate corner, and the pin's height.



Inspecting the shell plate on the jig panel can now be done in the way most convenient for the production facility, as the position of the jig plane can be reversed. By default the jig plane is positioned at the viewing side and the view direction is from bottom to top. When reversed, the jig plane is positioned at the opposite side and the view direction is from top to bottom.

Profile Shrinkage Can Follow Plate Shrinkage

When shrinkage compensation is manually added to a plate, it is now possible to make the profiles connected to the plate to follow the plate's shrinkage compensation instead of using the default shrinkage compensation set for profiles. This helps to ensure optimal assembly with the different methods used by different yards.

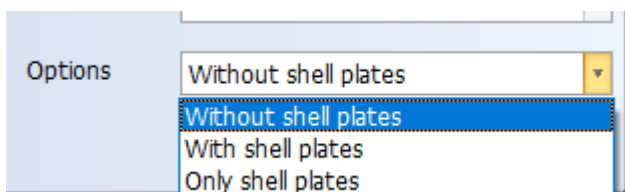


Import and Export

Improvements in NAPA Steel Import

The scope of the import has been extended: Face plates in holes are included in the import, and topological relations of plates and bent profiles to the hull shape are preserved in the import.

It is also possible to speed up the importing process with the new shell plate import options: It is possible to choose whether to include shell plates in the import or not, or whether to import only shell plates.



New Import Option: Almacam Nest Data

Importing XML Nest Data now supports importing nest data also from Almacam nesting software. To enable the import, *CadmaticExport.exe* and *CadmaticExport.ini* files must be acquired from Almacam, and placed in the project's active norms.

Improvements in Export to OCX XML

Plates' relations to other plates and fixed values and grids, as well as shell frames' relations to shell plates are now preserved in the export, which significantly expands the topology in the exported model. This is very important when using the OCX model in FEM calculation.

Exporting of penetrations has been improved, and fixed holes can now be included in the export. A summary of the export process is available after the export has completed. There are also improvements in the user interface, error messages, and warnings.

Improved STEP, IGES, SAT Export

The **Export 3D Hull Data** function has been extended so that construction can be exported separately for each work breakdown (WBD) level. When a WBD level other than Block is selected, the system sorts the parts based on the WBD level names, and generates a separate output file for each WBD level. The output files can be directly imported into welding machine software that handles panels for each WBD level separately, such as the PEMA panel welding solution.

Integrated Product Offering

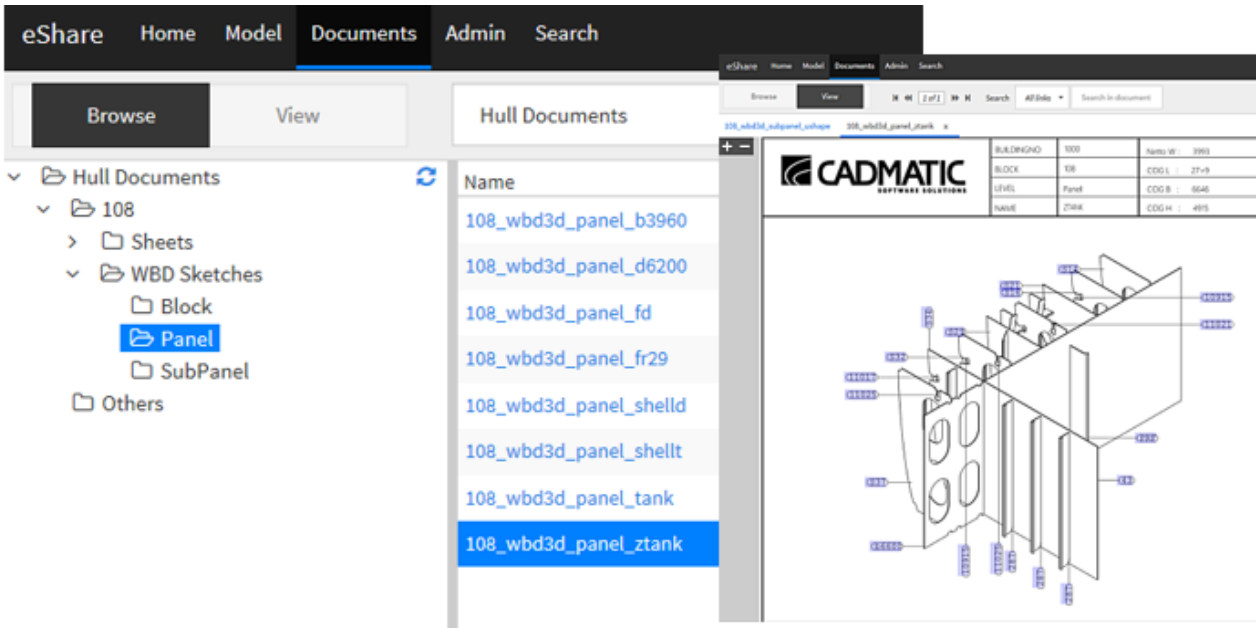
Integration and interfaces between the various CADMATIC software solutions are improved in this and future CADMATIC releases. One of the main objectives is to improve the concurrent use of CADMATIC Hull and CADMATIC Outfitting, and the use of CADMATIC eShare with Hull.

For CADMATIC Hull the focus in the 2021T1 release has been in the integration between CADMATIC eShare in the COS version of Hull which was introduced in the 2020T2 release.

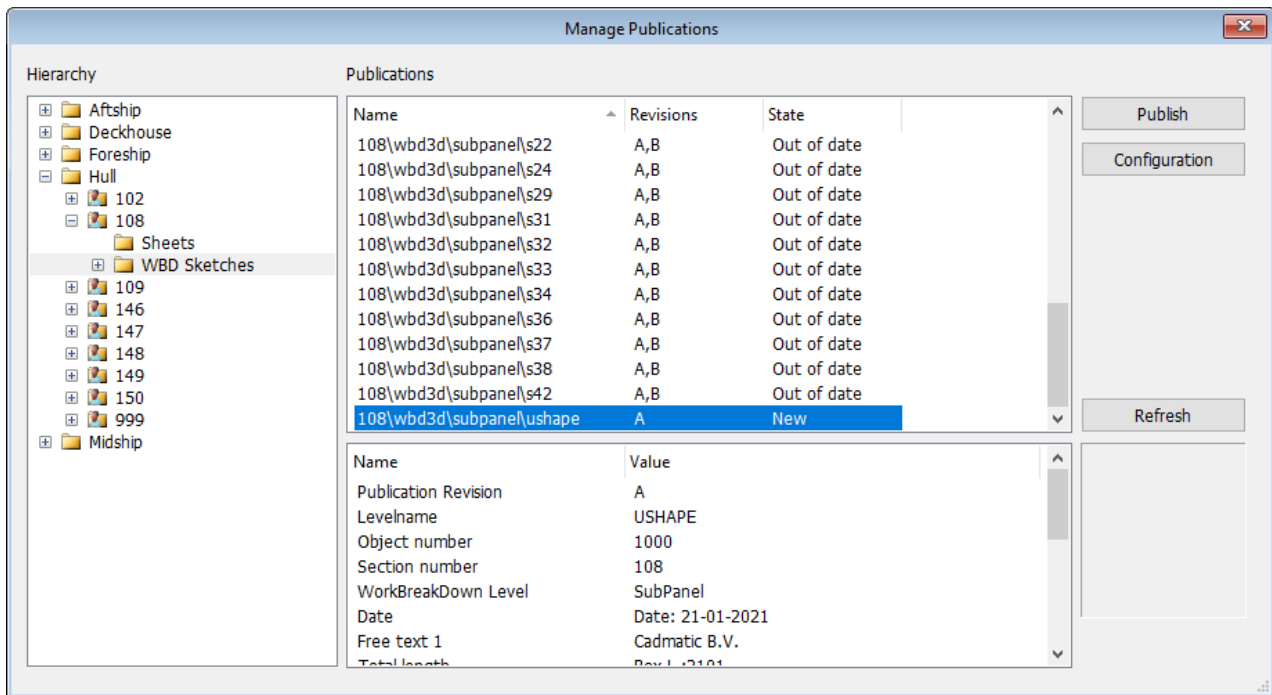
Improvements in the Hull COS Version

Hull COS utilizes the CADMATIC Common Object Storage for managing project data. The design functionality of the Hull applications is the same in both Hull versions, and the new features and improvements in this release are present in the COS version as well.

In Hull COS, publication of production documents has been improved and extended. It is now possible to publish work breakdown 3D sketches to CADMATIC eShare in distributed projects. Production information is therefore available digitally and can be visualized and inspected even on the work floor. Since the sketches have a direct link to the 3D model, navigation between the sketch and the 3D model is seamless.



Work breakdown sketches are available in the improved **Manage Publications** dialog, along with the other document types. The state of each document is now shown in the dialog, along with the revision status.



Another production documentation related improvement in this release is the possibility to include compartment information (which compartments a weld crosses) in the weld report.

Information Management

Support for BCF markups

eShare now supports BCF markups, which can be exported and imported to eShare the same way as previously was possible for EBX markups. BCF is a commonly used markup format, and supporting BCF format enables eShare to function as a centerpiece in a multi-CAD construction process. Subcontractors can continue to create and view markups using other applications, and comments can be sent to and received from them, even when they do not have access to eShare.

Support for JT models

eShare now offers support also for CAD models in JT format. Project administrator can import JT models directly to eShare project. The JT models can then be combined with other models, moved, rotated, and scaled, if needed, and published together as one 3D model for the project. The new support extends the possibilities of collaboration even further, and allows continuing the use of various engineering applications, while keeping the project in eShare up-to-date.

More flexibility in configuring document links


Project administrator can now configure document links with more flexibility in eShare. The configuration has been improved by enabling one document to have document links created both using automatic detection of model objects, automatic detection of smart points, as well as with multiple manually configured processing rules.

Attribute selection for Excel export

Excel export from search is an easy way to export reports and lists from eShare. Export has now been improved by allowing the user to select which attributes are included in the Excel export. The user can select in a dialog which of the markup, point and object attributes will be available in the Excel file.


Export to Excel


Select which attributes are included in the exported Excel file

Markup Attributes · 6 out of 12 selected Hide 

Select All

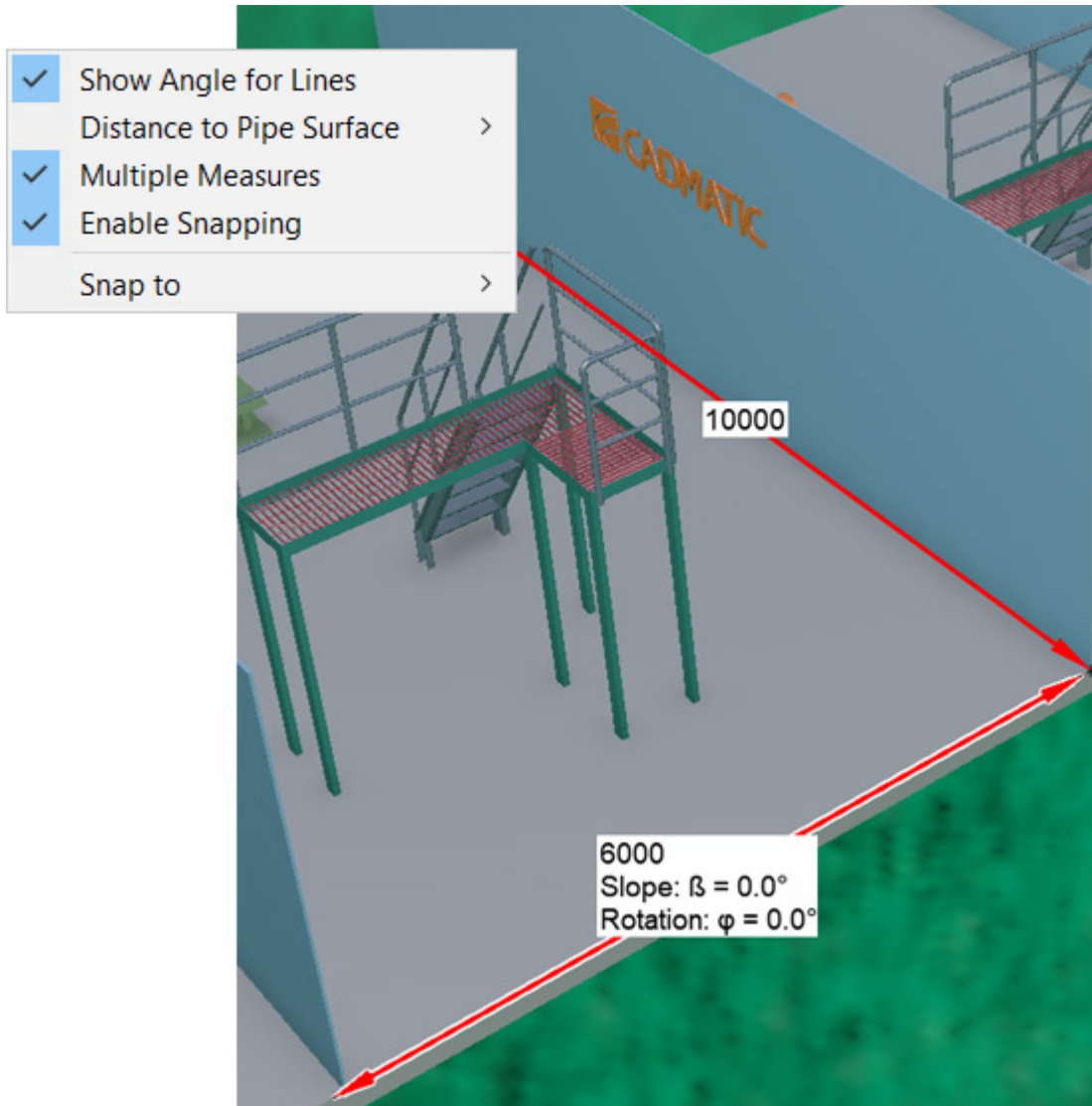
<input type="checkbox"/> Assigned to	<input type="checkbox"/> Created at
<input type="checkbox"/> Created by	<input checked="" type="checkbox"/> Importance
<input checked="" type="checkbox"/> Latest Comment	<input checked="" type="checkbox"/> Markup Comment
<input checked="" type="checkbox"/> Markup Importance	<input type="checkbox"/> Modified at
<input type="checkbox"/> Modified by	<input checked="" type="checkbox"/> Status
<input checked="" type="checkbox"/> Title	<input type="checkbox"/> Type

Point Attributes · 7 out of 14 selected Show 

Object Attributes · 8 out of 88 selected Show 

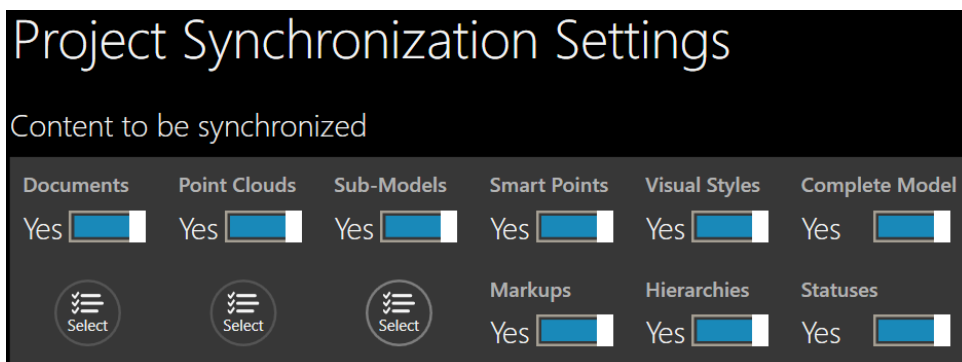
Multiple measurements in 3D model

eShare and eBrowser now allow users to make multiple measurements in 3D model view at the same time, if the new Multiple Measures mode is selected. This enables easier comparison of several measurements without having the need to remember or write them down anywhere.



One view for all eGo project synchronization settings

All the settings related to project synchronization in eGo are now available in one view. In this view the settings can be easily seen at a glance and configured as needed.

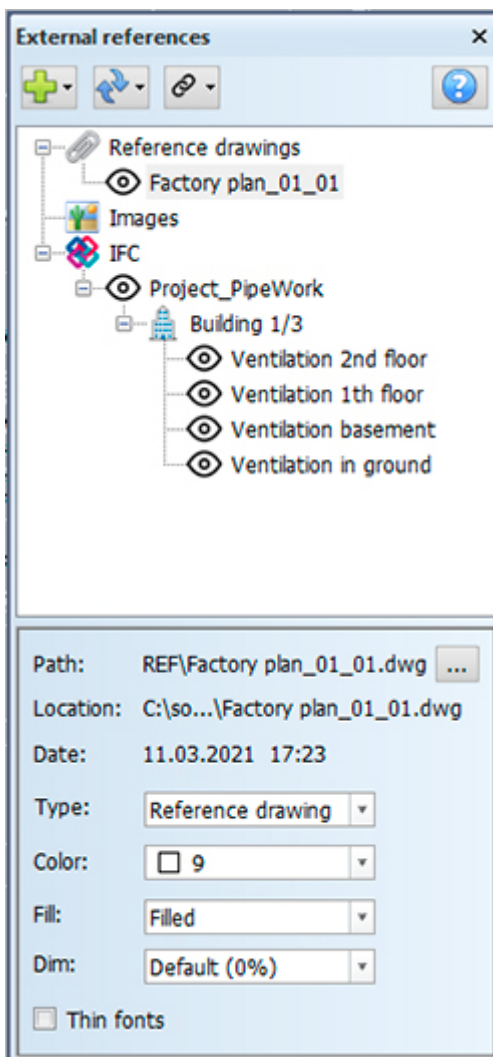


eGo allows synchronizing only sub-models

Using sub-models in eGo has now been improved by allowing users to synchronize only the sub-models in the project. This allows the user to complete their tasks working with and synchronizing only the needed sub-models of the project, without taking the time to synchronize the complete 3D model, if it is not necessary. This enables more efficient and timesaving synchronization, especially for the offline use of eGo.

CADMATIC Draw 2021 – better usability and more efficient working in 3D

From IFC models to reference images using a tree structure

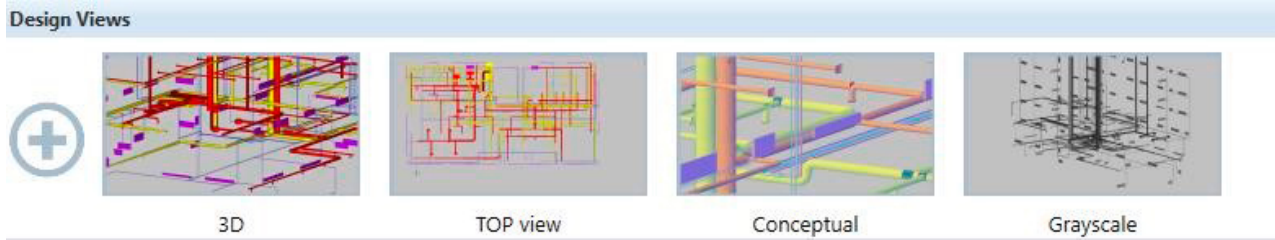


Reference drawing processing in CADMATiC Draw software has been renewed. You can now manage reference images in a tree-structure user interface. You can use the same user interface to manage drw/dwg/dxf, pdf and IFC reference images and raster images. The new tool enables importing IFC models, too, as reference images. This makes it much easier to use IFC models as a basis in design. In addition, you can use the tree structure to control the display of IFC reference buildings and storeys. Another reform to improve usability, you can now adjust the color and brightness of a drw/dwg/dxf reference file by using the tree structure. It also helps you notice if your reference image in the design has been updated on the drive. A symbol will appear on the tree to indicate that there is a newer version of the image available.

View-saving on a new level

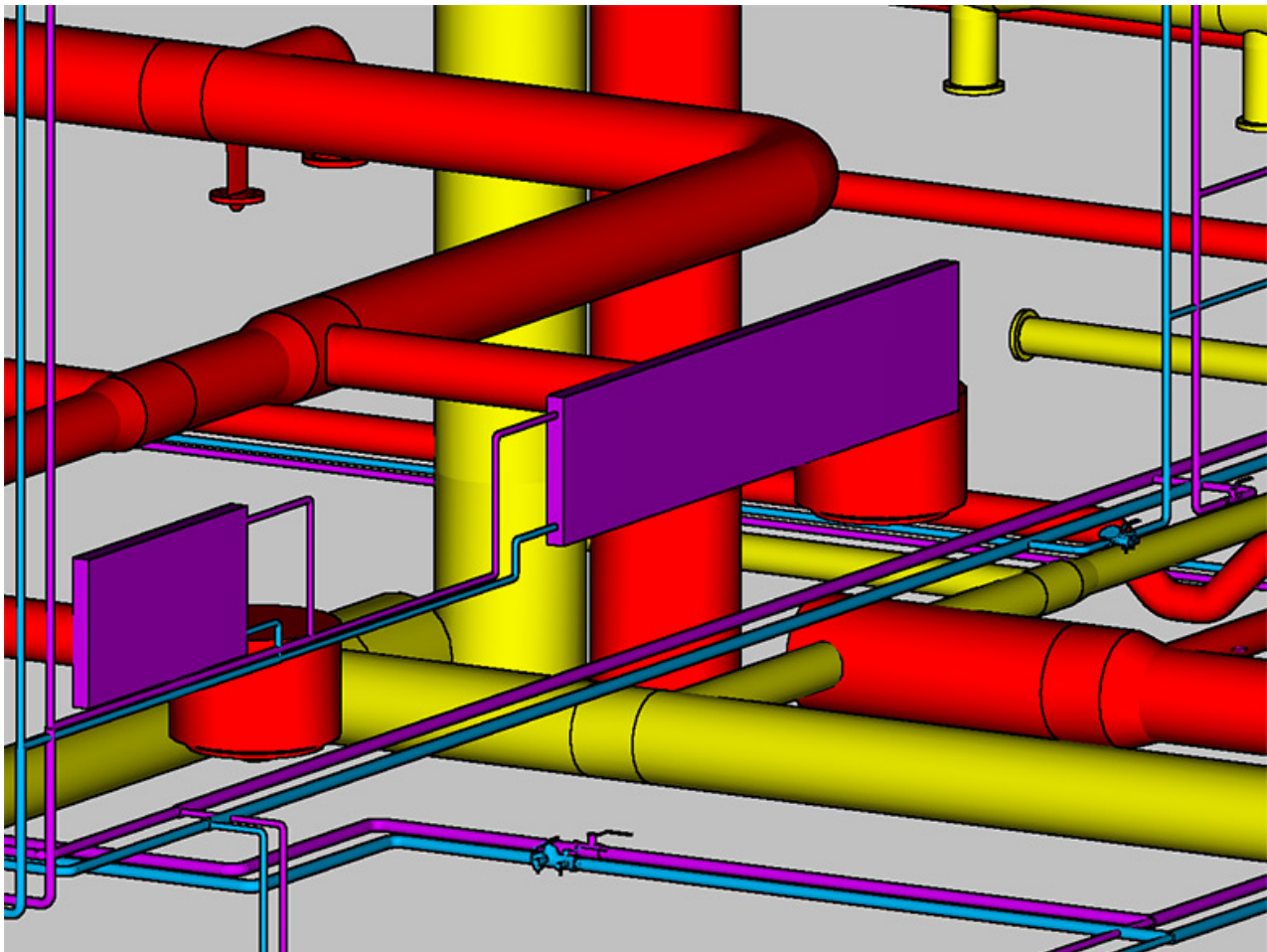
There is a new Design Views tool in CADMATiC Draw software. It is extremely easy to manage views with this new tool that utilizes GUI. You can save a view with just one click and return to it any time by double clicking the icon of the selected saved view. Saving a view will also save all the settings that affect its visibility. These include view

direction, coordinate system, layer status and shade effect status. Switching between the views has never been this easy!



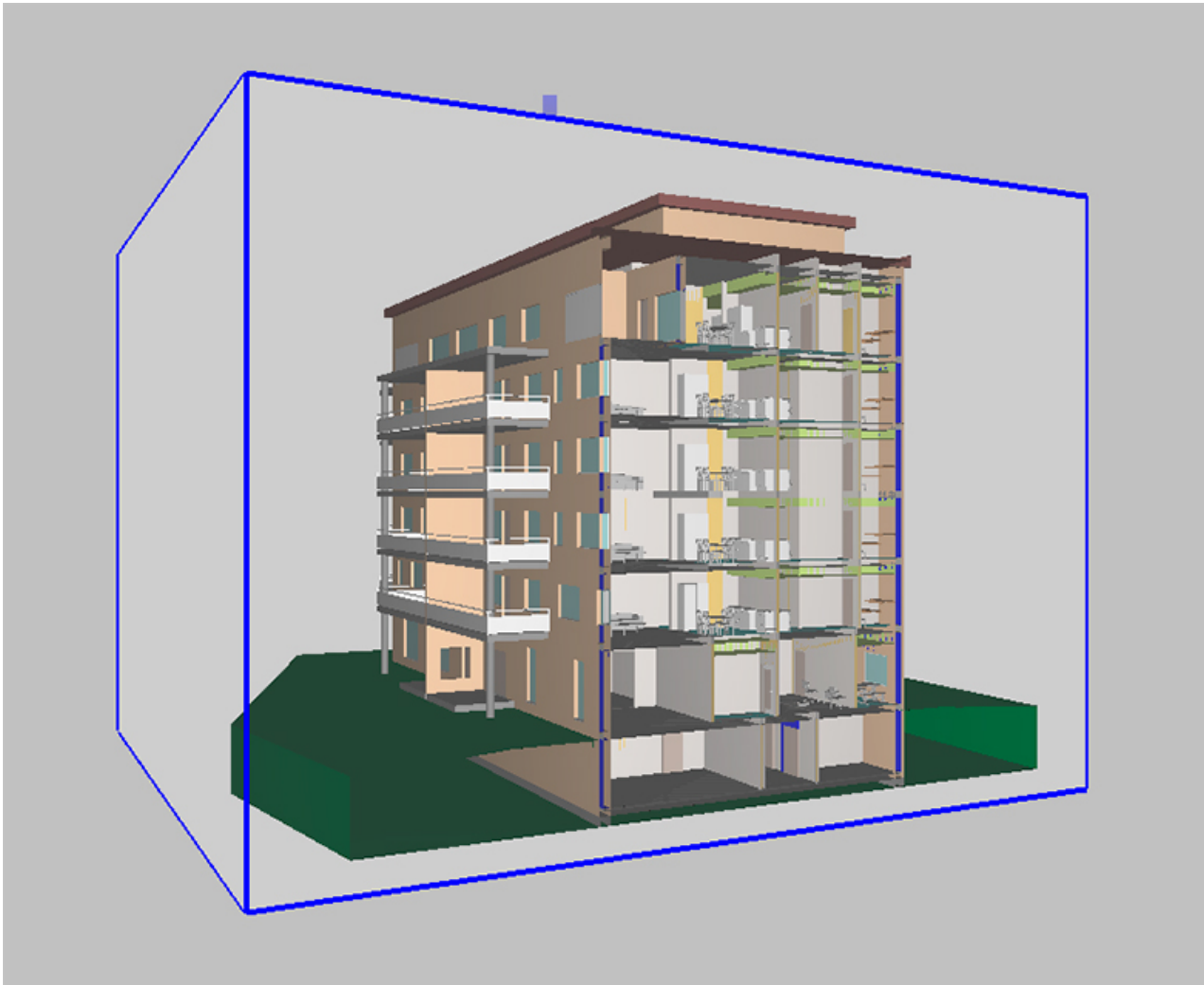
More efficient 3D visualization

CADMATIC Draw includes completely new 3D visualization. It uses OpenGL to add shade effect to images (beyond version 3.3). This makes adding shade and viewing shaded images much faster. Moreover, this new technology enables the use of many new visualization styles. These include conceptual gooch and grayscale with a transparent option. With most visualization styles, you can use outline highlighting, which will bring out the shape of things better than before.



3D view clipping feature for a new viewing experience

There is a new feature in CADMATIC Draw software that allows cropping a 3D model. You can use cubic clipping or cross-sectional surfaces. By using this feature, you can view a 3D model from any point, including inside the building, by clipping out its upper structures. With cubic selection, you can easily crop the model to only display one room at a time, for example.



CADMATIC Electrical 2021 – much awaited reforms and better usability

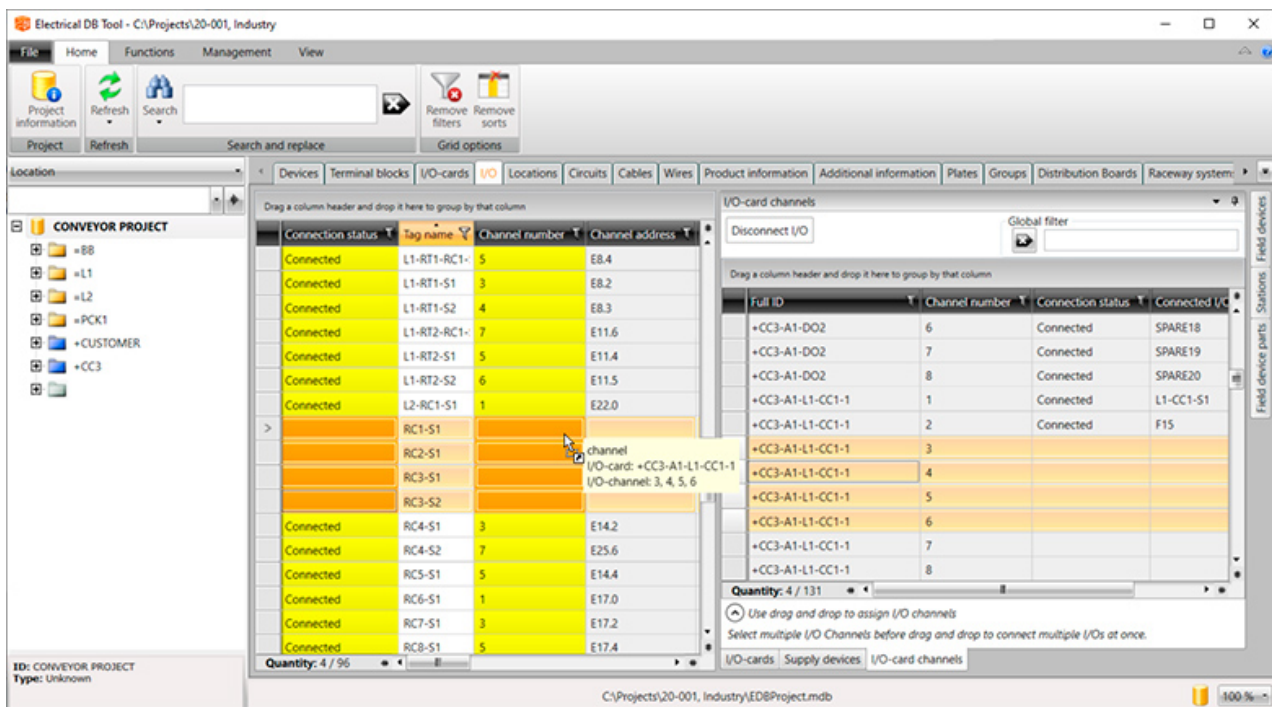
- CADMATIC Electrical 2021T1 (internal version 19.0.0) is a new version to be installed as a stand-alone product parallel to previous version 18.
- Project database structure will change during the version update, and you cannot manage a changed project using any previous software version. Therefore all users must have the latest version of Electrical when their projects are migrated to version 19.
- With Access projects, the user is prompted to update to the latest version if version 19 is used to

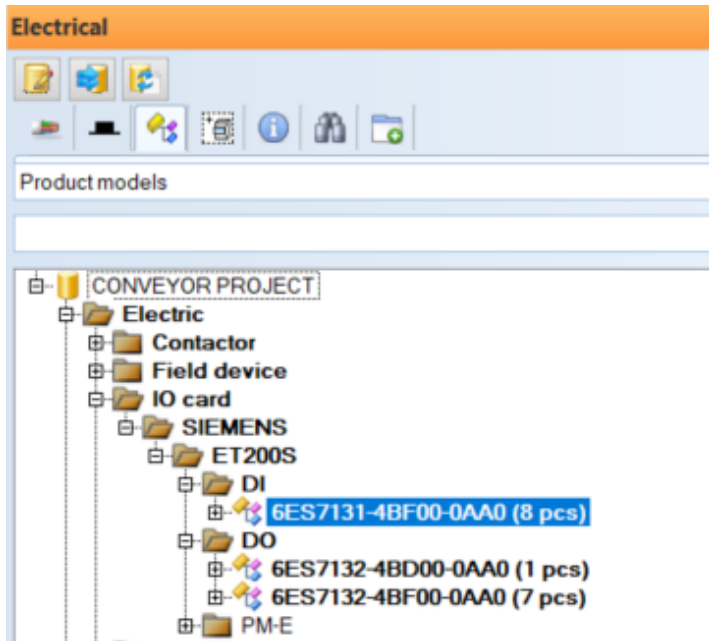
open projects created with previous versions. The migration itself is fast and should be performed as soon as all project participants have the version 19 of Electrical available.

- With SQL Server projects, the admin must update project database structure. With SQL Server databases, a structure update will also update all the projects located in this database. It is also possible to create a new project database for version 19 on the SQL Server so that versions 18 and 19 can be used in parallel. This allows updating the version 18 database to version 19 format later.
- At this point it's a good idea to curate all the shared databases of the company and the CAD environment. Consult your company's CAD Admin!

Renewed I/O management

Until now I/O management has been done with a specific I/O configuration, but now the features of this configuration have been completely integrated with the DB tool. In the future, its user logic will comply with the routine of other functions. The I/O card specifications become product models and integrate better with the features of the project's products. Another new feature is that you can add other product model features, too, to the I/O card specification, including symbols and extra information. In the project migration, the old I/O card specifications are copied and automatically translated into product models. However, this entails that there is a connection to the old card specifications. The integration of I/O management as part of the DB tool raises usability to a completely new level. You can now drag and drop to connect the I/O points to the I/O cards' channels – and in the same tool with the rest of project management.





Import functionality greatly renewed

Import to project has been greatly renewed, and this translates into better usability. Import specifications/preferences now follow the same logic as any other specifications. It is easy to share them between projects either directly or via a common database. Previously you've been able to share other project specifications in the same way, including product models and label/plate specifications.

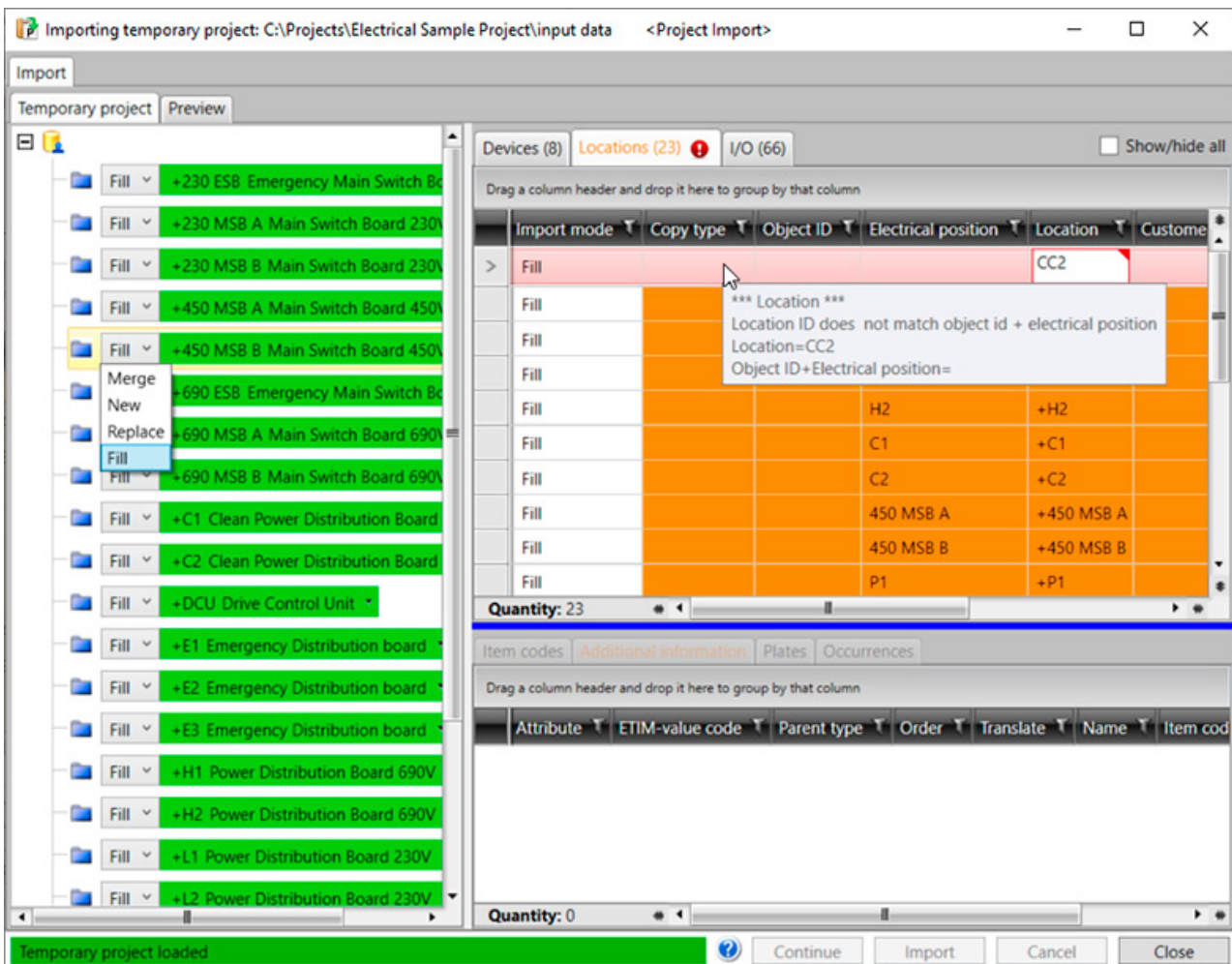
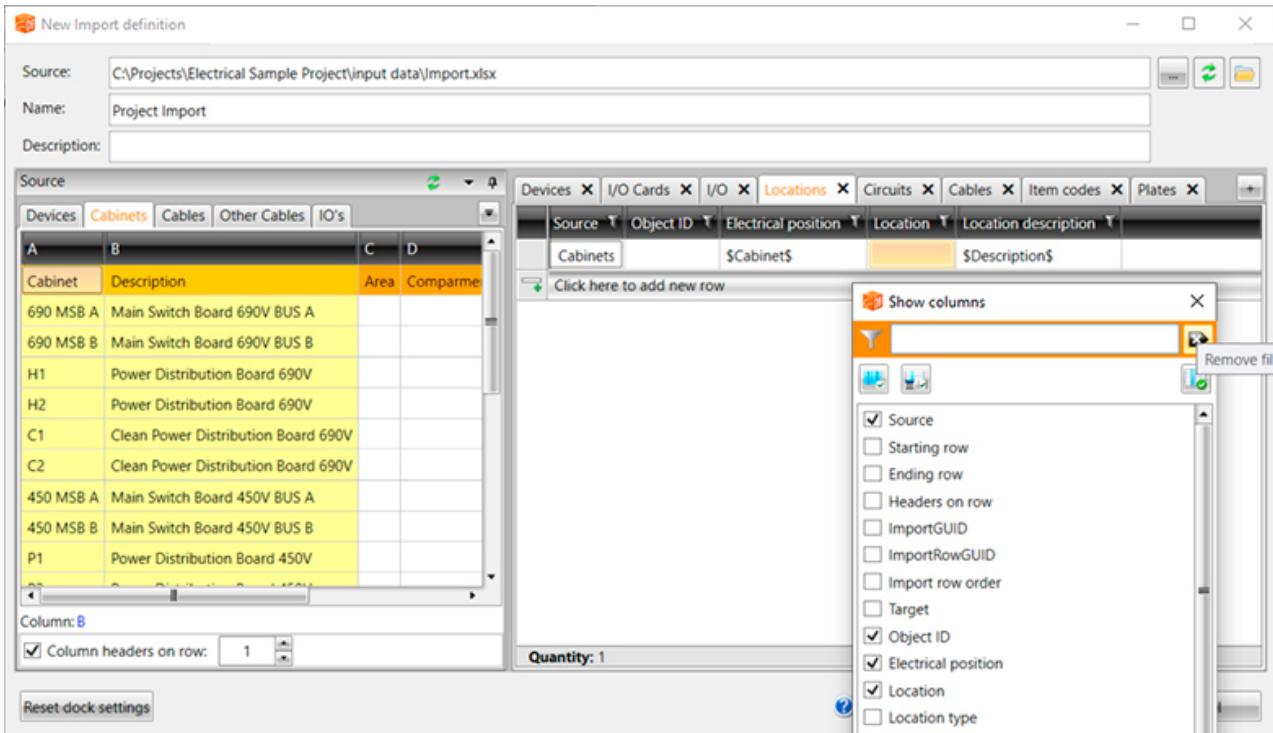
The most visible aspect to the user is perhaps the improved clarity of import preferences/specifications. The various object types are on their own tabs whose division complies with the familiar user interface of the DB tool. Respectively from an Excel source, the data to import may be taken from various sheets. This makes it significantly easier to parse data and notably reduces the amount of repetitive data in the Excel file.

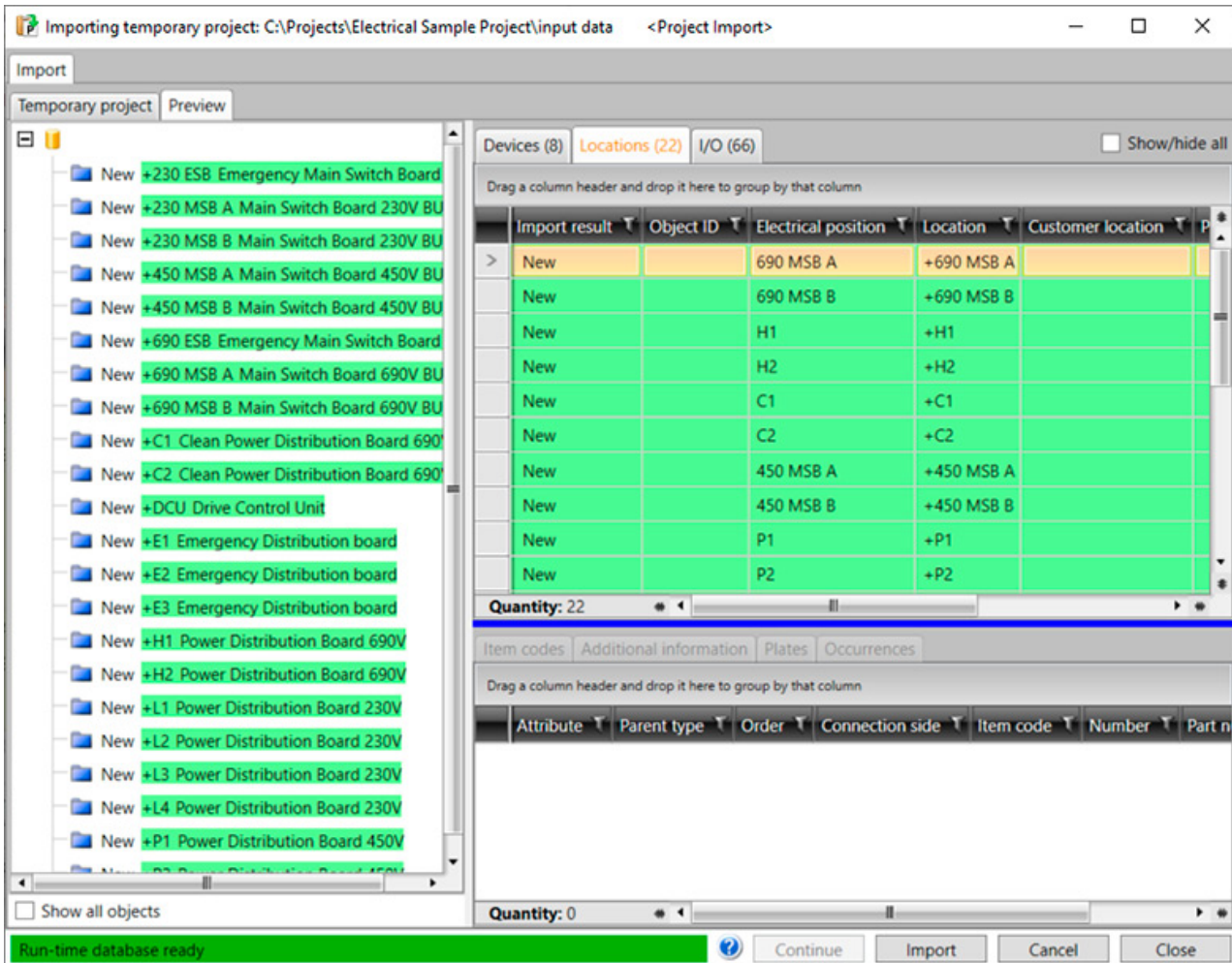
Thanks to this improvement, various object types can be imported to the project in more versatile ways – all at once from several Excel sheets – while maintaining logical usability in creating the preferences/specifications.

With the new Import feature, you can specify the device created to match a certain product model. Importing a device list that only contains device identities will generate plenty of data for the project, because some of the features, including the symbol to use, are generated from the product model's data.

There is a new reference window in the re-import of updated lists. Import review shows what is being generated, and at the same time, you can decide whether to replace the existing project data with the imported data.

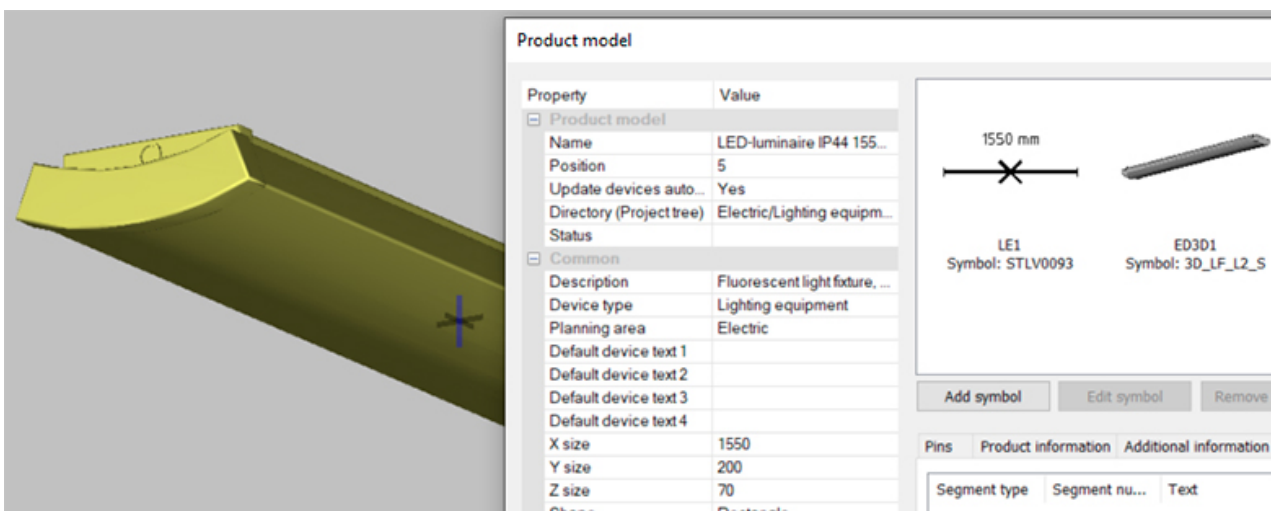
Import phasing clearly illustrates what is being imported. Preview allows understanding the end result before executing the Import. The user interface will also tell if there are gaps in the source data that can be fixed before executing the actual Import.

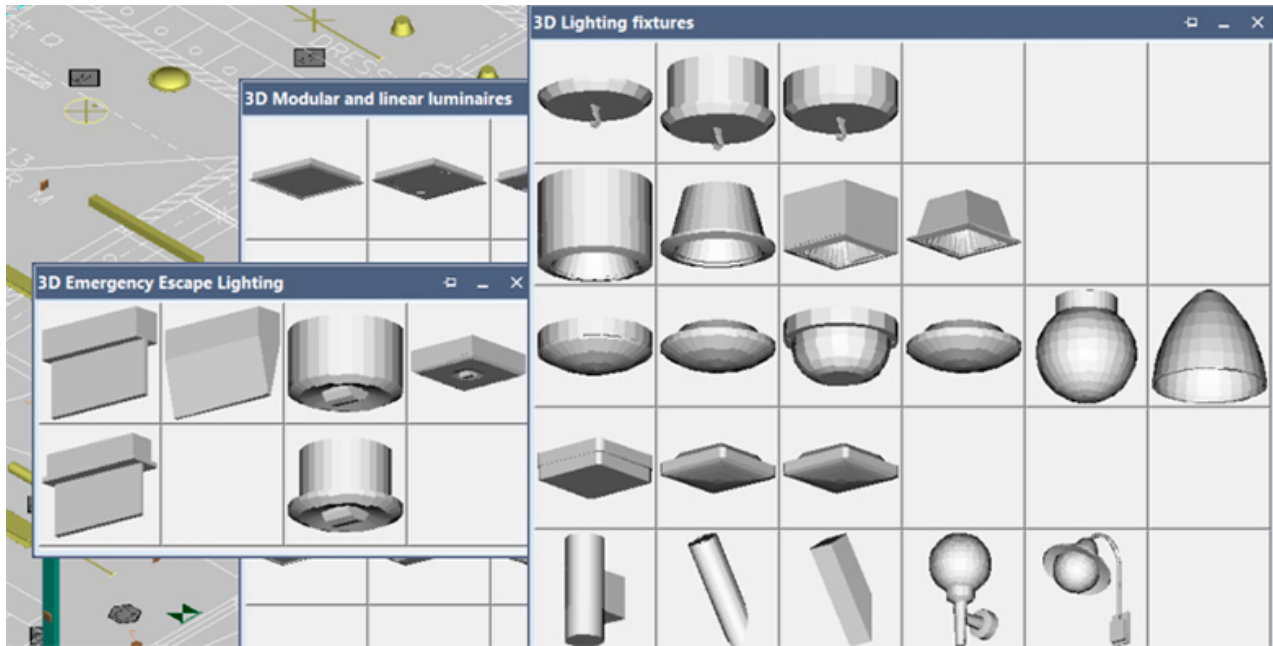




Scalable 3D symbols

There is now a wider selection of 3D symbols included in Electrical. The software symbols are now scalable and comply with the size data of the device. The symbols included in Electrical are intentionally generic. This means that we have tried to establish a model that is as light as possible yet identifiable in terms of purpose. For example, a wall mountable monitor can be used as a symbol for a small LCD controller by entering the correct dimensions for the product model.





In Electrical, you can also use the 3D symbols downloaded from the manufacturer’s website and saved to create a more detailed model. However, these will increase the size of the IFC model.

More explicit 3D toolbar

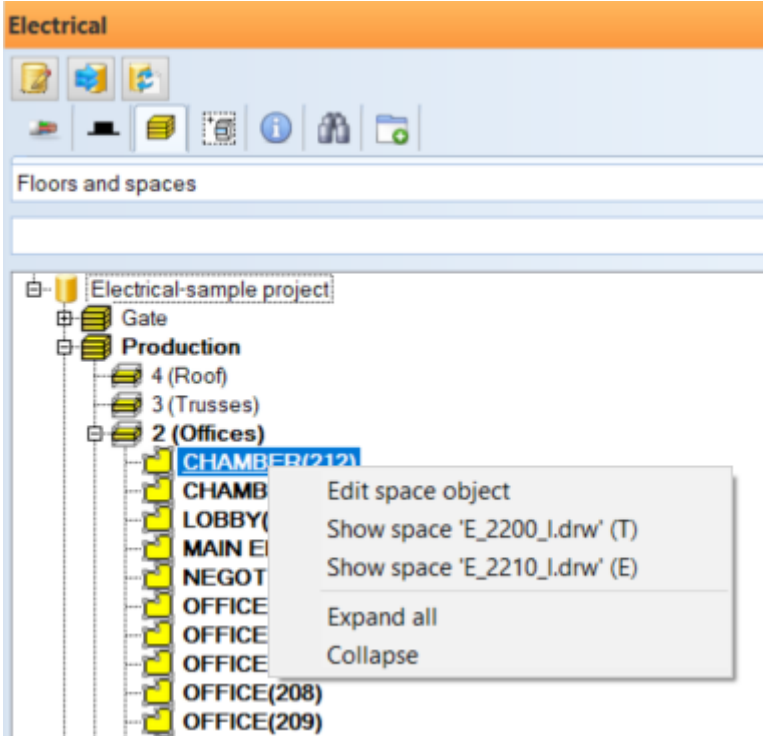
Working in 3D is much better with the new version of Draw software. For example, fast shade effects, design views and 3D view cropping make it easier to navigate the 3D model. Read more about these new features in the Draw section.

Layout application’s 3D functionality toolbar has been renewed. We have created buttons for the most common functions in the toolbar, including easy ways to switch between 3D and 2D modes.



Versatile storey settings

Storey settings have been extended, and you can now attach various files to one storey. The files are separated by design area specification. You can use any distinguishing term for the design area, as long as you use the same term on each storey. This way you can divide one storey into several files without changing the actual storey division of the building. Thanks to this reform, you can create storey settings without files. You can create storey settings for the project in advance according to the building’s hierarchy, and the resulting file can be added on the storeys later.



The user interface and attaching files to the storeys remain the same as before. If there are several files attached to a storey, the user is prompted to enter distinguishing information about the design area.

The project tree structure user interface will let you know if the same object exists in several drawings. This way you can immediately choose the correct drawing even if the space, for example, occurs in the drawings of two different design areas.

