



CAD Import

Planon Software Suite

Version: L105

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About this Document

Intended Audience

This document is intended for *Planon Software Suite* users.

Contacting us

If you have any comments or questions regarding this document, please send them to: support@planonsoftware.com.

Document Conventions

Bold

Names of menus, options, tabs, fields and buttons are displayed in bold type.

Italic text

Application names are displayed in italics.

CAPITALS

Names of keys are displayed in upper case.

Special symbols



	Text preceded by this symbol references additional information or a tip.
	Text preceded by this symbol is intended to alert users about consequences if they carry out a particular action in Planon.

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About CAD Import

CAD Import allows you to import AutoCAD drawings as well as the drawing data designed using different types of StabiCAD polylines into Planon ProCenter .

Using CAD Import, you can:

- Import the drawing data of floors, spaces, assets, persons, 'Rent to', 'Rent from' units and flexible workspaces from either a single or multiple drawings.
- Update drawing data.
- Create .orj files that can be viewed in the CAD Integrator.

For an overview on importing, maintaining and re-importing the updated drawings in Planon ProCenter and Connect for AutoCAD, see [Roundtrip of AutoCAD drawings](#).

Interaction with other TSIs

CAD Import interacts with the following TSIs:

- Spaces & Workspaces
- Assets
- Personnel
- Rentable Units
- Alerts
- System settings

In Planon ProCenter , users can automatically schedule import actions and inform users via a report sent by mail.

Prerequisites

The following prerequisites are necessary to import the AutoCAD drawing data into Planon ProCenter :

- The server location for CAD Workbench must be specified.

CAD workbench is a solution for importing data stored in multiple AutoCAD drawings. For more information, see [CAD Workbench](#).

Although CAD Workbench can be deployed on the same application server as Planon ProCenter , it is recommended to have CAD Workbench running within a separate environment. For more information, see [System settings](#).

CAD drawing requirements for CAD Import

The following sections are about importing AutoCAD drawings using CAD import.

General

Preconditions

- The versions of Planon ProCenter (CAD Import) and the metadata version of the Connect for AutoCAD plug-in must be compatible in order to work together.
- The AutoCAD drawings should be present on a network share or the WebDAV location that can be addressed by both the server on which Planon ProCenter is located and the server on which the CAD Workbench is located.
- XREF drawings must be located in the same folder or sub-folder as the main drawing referring to them. See [CAD import XRef support](#) for examples.
- The drawings must contain information of a single floor of a property.
- There must be only one single space usage per space.
- A layer carrying the information for a net floor polyline is required to perform a successful import with CAD Import (and to create an ORJ file when the [Create CAD Integrator file](#) file is **Yes**).
- The scaling factor of blocks on supported drawings must be 1 - this is applies to all entities to be imported.

Limitations

- Planon only supports drawings with a building size less than 3,000 x 3,000 m (~ 10,000 x 10,000 ft). If parts of the drawing are outside of this area, they will be filtered out during CAD import. This is also true for block definitions with an origin outside this area.
- Only drawings saved in compatible AutoCAD versions and in .dwg format can be imported into Planon ProCenter .

For information on which AutoCAD versions are supported by which Planon ProCenter version, see [Planon Supported Configurations](#).

- The drawings must contain their information in *entities*, such as polylines, blocks, block attributes, single/multi line text objects, or Connect for AutoCAD. These entities can exist in multiple layers or be present in drawings attached as Xref.
- Only data stored in the “Model space layout” can be imported.



The following layer names are no longer supported:

- PLANON (used by Planon ProCenter Windows Client)
- Layers starting with: 'Planon mapping...'

- A drawing may only contain one net floor polyline and/or one gross floor polyline.



The net polyline should always fall within or coincide with the gross polyline. For non-StabiCAD drawings these floor polylines should be on different layers as well.

Recommendations

- Each layer in an AutoCAD drawing can contain entities. Each entity has impact on the size and complexity of the drawing. With regard to **CAD Import** and **CAD Integrator** the following applies: the fewer entities, the better. A drawing with more than 15,000 entities may lead to serious performance problems and possibly to unworkable situations in **CAD Import** and **CAD Integrator**. Therefore, we recommend to restrict the number of entities to a maximum of 15,000.
- A polyline can represent a Space, Floor, ‘Rent to unit’, ‘Rent from unit’ or Fixed Workspace. It is recommended that you draw closed polylines in a such way that a single polyline is not used in two objects at the same time.

For example, a single polyline should not be used to draw the boundary of both Space-1 and Space-2. Each space should have its own polylines.

Additional

- Entities on frozen layers (which as a result are not visible in AutoCAD) are imported and will be converted into the CAD Integrator drawing (ORJ).
- It is not recommended to import old drawings while more recent drawings have already been imported as this may, in some cases, lead to different data.

For example, if during an import, a space is ended because its polyline is no longer in the drawing, importing the same drawing on an earlier date will not end the space on the earlier import date.

- It is not recommended to copy a polyline of a space or a workspace that is already imported in Planon because the metadata will be written back to the CAD objects resulting in an incorrect import of the drawing. If this has already happened, use EOS-CAD tools to delete the old Planon data.
- If a block is explicitly made invisible in the AutoCAD drawing, the block is not imported into Planon ProCenter .
- The AUDIT command in AutoCAD is not supported, as the AUDIT command can corrupt the drawing. To clean the drawing, use the PURGE command.

Additional requirements for AutoCAD drawings created using StabiCAD

The following conditions must be fulfilled additionally, to import the StabiCAD drawings into the Planon ProCenter :

- Only the drawings saved in compatible StabiCAD versions are supported. For information on which StabiCAD versions are supported, see [Planon Supported Configurations](#).
- In contrast to the regular AutoCAD drawings, space and floor polylines are allowed to be on the same layer.

CAD import XRef support

Case	XRef	Supported in Cloud?	Supported on premise?	Comment
1	./foldername/ Xref.dwg	yes	yes	Planon can browse down in the file tree.
2	./Xref.dwg	yes	yes	Planon can browse in the same folder.

Case	XRef	Supported in Cloud?	Supported on premise?	Comment
3	C:/Planon/cadinbox/ foldername/ Xref.dwg	no	yes	Planon can handle the full path on premise.
4	../foldername/ Xref.dwg	no	no	Planon cannot browse up in the file tree.

Limitations

- Per drawing, Planon only supports XRefs that belong to the same floor.
- Planon displays XRef layers as follows: XRefdrawingname|Layername.

XRef blocks are displayed as follows: XRefdrawingname|Blockname.

For each, the maximum combined name size is 255 characters.

- For XRef, Planon only supports the *Attachment method* (not the *Overlay method*).

When using the *Attachment method*, if you attach an XRef to your drawing and then attach your drawing as an XRef in another drawing, the first XRef will appear in both drawings.

- Planon only supports DXF and DWG file formats.



If an xref drawing does not exist in CAD Import, then the following cases can occur:

- No data import from the xref is specified in the CAD drawing definition.

In this case, the xref does not have to be present and the CAD import works.

- Data import from the xref is specified in the CAD drawing definition (regardless of whether it is BO's or construction data).

In this case, this data is missing in CAD Import so the import process aborts with an error message.

Space entities (gross & net)

- Space entities must be of the space polyline type "LWPOLYLINE" or of the type "CIRCLE" or "ELLIPSE".
- Space polylines can be located in several layers. The specified layers are treated as a logical unit of polylines.
- Space polylines may be located in XREF drawings.



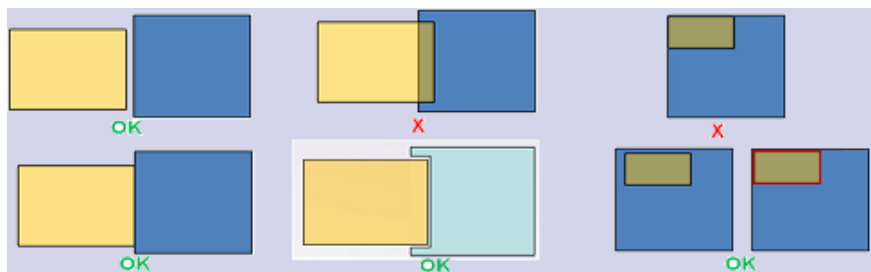
The XREF drawings do not work correctly in combination with Connect for AutoCAD because the polylines must be stored in the main drawing.

- Space polylines can be closed during the CAD Import. If you are using Connect for AutoCAD, you must close the polylines in AutoCAD in order to be able to perform space mapping.
- The use of *Net polylines* is mandatory when using *Gross polylines*. You should have at least one net polyline. The idea behind allowing gross polylines is to import the gross surface and perimeter data on a space / floor directly from the drawing. Space selection and space mapping will take place on the net polylines.
- The *Gross polylines* of a space must be stored in a different layer than its *Net polylines*. Note: the net polyline should always fall within / coincide with the gross polyline.

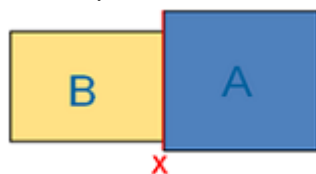


Space polylines must be stored in a different layer than Floor, Rent From, Rent To and Fixed workspace polylines.

- Only if you are dealing with Stabicad drawings, can the polylines be located in the same layer. CAD Import will recognize the type of polyline itself.
- Gross polylines from Stabicad cannot be imported using CAD Import.
- In a drawing, polylines should not overlap. Touching polylines are allowed.



- A polyline of Space A (red one), cannot be used to "close" Space B. Also, Space B needs its own 4 polylines (in this example).




- Enclosed polylines can be stored on a different layer as their surrounding polyline. The whole set of specified (enclosed) polylines layers will be treated as one logical unit.
- Enclosed polylines can be treated as:

1 Space

The Enclosed polyline will be treated as a **Space** (a Space Code must exist or must be created) whereas the area of the Enclosed polyline will be subtracted from the surrounding Space.


x1 Hole

The Enclosed polyline will be treated as a **Hole** and the area of the Enclosed polyline will be subtracted from the Surrounding Space. This is true only if no Space norm is applied.


 The subtraction of the area also depends on the applied Space norm as specified in the drawing definition.

x2 Construction data should be on the same level as x1 Hole

The Enclosed polyline will be treated as **constructional data** and the area of the Enclosed polyline will not be subtracted from the Surrounding Space. This is true only if no Space norm is applied.

 The subtraction of the area also depends on the applied Space norm as specified in the drawing definition.

- Spaces should only contain one space usage.

 If a space has more than one space usage (in the Planon database) on the import date, only the space size will be imported. This implies that Planon will only update the space usage if the net area of the space usage is identical to the net area of the space size.

Also, the Connect for AutoCAD plug-in can only deal with one space usage per space at a time.

Space code

- Can have a maximum length of 15 characters.
- Must be unique within a floor.
- Can be stored in a single line TEXT object in a specific layer.

That layer may not contain other single line TEXT objects (like Space name).

The insert point of the TEXT object must be inside the Space polyline.

Drawing definition (TAB: Details Step: Field mapping)

In the **Source** field, select option: 1 – Drawing.

In the **CAD-layer** field, select the layer that contains the TEXT objects.

- 2011.A (onwards): The Space code can be stored as an attribute of a static BLOCK.
- 2013 (onwards): The Space code can be stored in a Multi line TEXT object.

The Multi line TEXT object that contains the Space code must have the same structure for each space.

On the layer that contains the Multi-line TEXT objects per Space, do not store Multi line TEXT objects for other business objects.

The insert point of the (Multi-line) TEXT objects or BLOCKS must be inside the Space polyline.

The insert point of a BLOCK attribute can be outside the Space polyline.

- Each block (containing the Space code) must have the same structure (attributes).

Drawing definition (TAB: Details Step: Field mapping)

In the **Source** field, select option: 1 – Drawing.

In the **CAD layer** field, select the layer that contains the blocks.

In the **CAD block** field, select the block name containing the Space code.

In the **CAD attribute** field, select the attribute of the block containing the Space code.

- 2013 (onwards): The Space code can be stored in the XDATA of a polyline.

However, a few third-party applications write lot more information than the Space code in the XDATA of a polyline.

- 2013 (onwards): The Space code can be stored in AEC Space objects.

When Spaces are drawn with AEC Space objects, these objects can also contain data and can be read directly by CAD import.

- For drawings created with Stabicad, the space code/name may also present in the StabiCAD part of the XDATA.
- For drawings using Connect for AutoCAD, the space code/name may also be present in the Connect part of the Data dictionary.

- You cannot combine the storage of the Space codes in TEXT objects and/or in BLOCK objects and/or in XDATA and/or the DATA DICTIONARY (PlugIn) in 1 drawing.

Choose one or the other method (per drawing definition.)

- All Space codes must be located on 1 layer.

The exception to this rule are Stabicad drawings. In this type of drawing the Space code may be located on several layers.

Planon figures out in which layer(s) they are stored.

The user must choose the **Stabicad** option.

- Space codes can be generated by Planon with &CODEGEN(####,T) in FieldDefiner.

In that case, you do not specify anything for the Space code in the drawing definition.

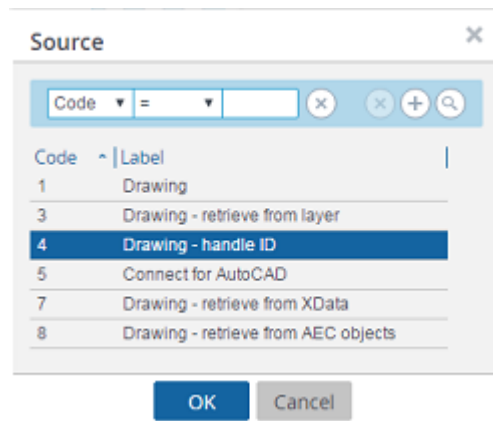
- Space codes can be generated by CAD Import by choosing a layer that does not contain a TEXT object and filling in the &CODEGEN(####,T) macro in the field: CAD default value.
- Space codes can be generated by CAD Import by choosing the option **Drawing – retrieve from layer** in the **Source** field.

The Space code will be generated from the polyline layer name: first 10 characters of Space polyline layer name + `_####`

If polylines are located on several layers, you'll see several layer names used in the Space code.

By default, the layers of the Net Space polylines will be used (if available, otherwise the layer(s) of the Gross Space polylines will be used).

- Space code can be generated by CAD-import by selecting the **Drawing – handle ID** option.



The Space code will be equal to the handle ID of the Space polyline of the AutoCAD drawing.

By default, the handle numbers of the Net Space polylines will be used (if available, otherwise the handle IDs of the Gross Space polylines will be used).

- The Space code can be generated by applying the code generator on the **CAD Import > CAD Drawing Definitions > CAD business objects** level.

Example:

?-##, 1: Generates the following codes for the 1st floor, such as: 1-01, 1-02, 1-03.

??_###, 1: Generates the following codes for the 1st floor, such as: 01_001, 01_002, 01_003.

F??_S###, 1: Generates the following codes for the 1st floor, such as: F01_S001, F01_S002, F01_S003.

Floor entities (gross & net)

- See: [Space entities \(gross & net\)](#)
- Different:
Enclosed polylines are not supported.



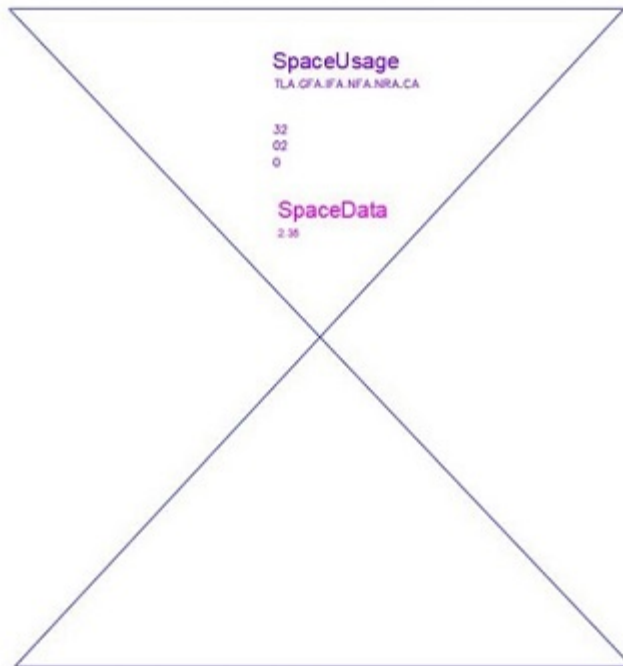
Store the Gross and Net Floor polylines on different layers from the 'Space-', 'Rent From-', 'Rent To-' and 'Fixed workspaces' polylines.

You do not need a Floor Code, because it is retrieved from the drawing-floor mapping table or from the file name.

Crossing polylines

In a CAD drawing, the polylines of different spaces / workspaces may cross one another. This crossing can also take place within a space / workspace. You can identify such faults by performing a CAD verification in the **CAD Import definitions**. The **Import log details** of faulty drawings will list the different types of crossing polylines as follows:

- **Self-crossing polylines:** Overlapping polylines in the same space / workspace. For example, in a CAD drawing, a Self-crossing polyline looks like this:



- **Overlapping polylines:** Overlapping polylines between two or more spaces / workspaces. For example, in a CAD drawing, Overlapping polylines looks as follows:



i To view the crossing polylines in the **Import log details**, open the AutoCAD drawing and use the EOS CAD tool to identify them using the AutoCAD Handle ID. For more information, see [EOS CAD Tool](#).

Rent From / Rent To entities (gross & net)

The Rent from / Rent to entities (gross & net) are similar to those of spaces. For more information, see [Space entities \(gross & net\)](#).

Note that enclosed polylines are not supported for Rent from/ Rent to polylines (gross & net).

Assets

- Assets must be represented by a static BLOCK-entity (“BLOCK REFERENCE”).
- Release 2011.A (and higher): assets can also be represented by a static BLOCK.
- In order to locate an asset in a space (to populate the **Space** field in the **Asset location**), the insert point of the block must be inside the space polyline.

Only if these conditions are met, it is possible to fill in / change the **Asset location** during the import.

Asset code

In CAD Import, it is possible to generate asset codes, based on BLOCK name or LAYER name.

The asset code:

- can have a maximum length of 100 characters
- must be unique across all assets in all buildings
- can be stored as an attribute of the asset block

The insert point of the block must be inside the space polyline, in order to have the **Space** field populated on the **Asset location**.

If the insert point is outside any space polyline, the **Space** on the **Asset location** will remain empty.

Although the options listed below can be used for all fields you can map via the **Source** field in Field mapping, we use the **Asset code** field in the following examples to demonstrate asset code generation.

Procedure

- Go to CAD drawing definitions > Details > Field mapping
 - In the **Source** field, select the **1 – Drawing** option.
 - In the **CAD layer** field, select the layer containing the asset blocks.
 - In the **CAD block** field, select the block name containing the asset.
 - In the **CAD attribute** field, select the attribute of the block containing the asset.

You can also generate asset codes for a CAD Import based on the following options:

- **2 - Drawing - retrieve from block**

The asset code is generated from the block name:
it uses the maximum field length of the field as specified in Field Definer, with a maximum of the first 90 characters of the block name + `_#####`.

- **3 - Drawing – retrieve from layer**

The asset code is generated from the name of the layer in which the block is located:

It uses the maximum field length of the field as specified in Field Definer, with a maximum of the first 90 characters of the layer name + `_#####`.

If blocks are located on different layers, the name of the layer in which the block is located, will be used.

By default, the layers of the Net Space polylines will be used (if available, otherwise the layer(s) of the Gross Space polylines will be used).

- **4 - Drawing – handle ID**

The asset code is identical to the handle ID of the BLOCK in the AutoCAD drawing.

- **5 - Connect for AutoCAD**

The asset code is retrieved from a drawing that is updated via Connect for AutoCAD.

- **7 - Drawing - retrieve from XData**

The asset code is read from the XDATA stored in the asset blocks.

Flexible workspaces

- Flexible workspaces can be stored as a static block only (*block reference*).
- Flexible workspaces can be stored as an attribute of a static block only (*block reference*).
- In order to locate a flexible workspace in a space (to populate the field **Space** in the **Flexible Workspace**), the insertion point of the block must be inside a space polyline. Only in that case, the **Space** of the **Flexible Workspace** can be filled / changed during the import.



Upon searching, if the flexible workspace already exists in the database, only flexible workspaces present within the space that includes the flexible workspace block are considered. If the flexible workspace block is not present within a space of the drawing, only the flexible workspaces in the database that are present in the property of the drawing and which have an empty space are considered.

Consequences: If a flexible workspace is moved in the AutoCAD drawing from one space to another, the flexible workspace in the database will not be updated. A new flexible workspace is created in the new (destination) space. The reason for this is

that the algorithm defining if the flexible workspace already exists, checks for a flexible workspace with the same code (or syscode) within the space polyline that is holding the block.

If a block is moved in the AutoCAD drawing, the space is different and the flexible workspace is considered as a new one.

In order to prevent a flexible workspace from occurring twice in the database, the **End flexible workspaces** setting of the import definition should be set to **Yes**.

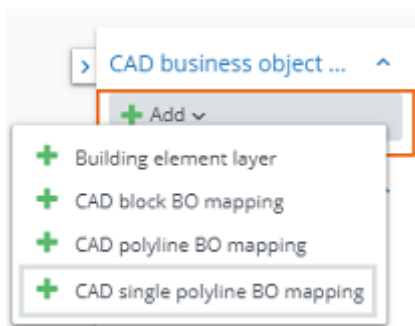
Fixed workspaces

The CAD linked fixed workspaces are single polyline objects, ellipses or circles. These workspaces are located inside spaces in a CAD drawing.



Workspace polylines must fully be inside the space polylines and should not overlap.

In **CAD business objects** select **CAD linked workspaces** and go to **CAD business object mappings** to add the special type of polyline: **CAD single polyline BO mapping**.



This will make it clear that these are *workspaces* and not spaces. Inside each fixed workspace, you can store a *workspace code* which can be saved in a TEXT, MTEXT or BLOCK, or can be generated automatically with the CODEGEN macro. The code of the fixed workspace must be unique within a single space and can have a maximum length of 20 characters. The insert point of the fixed workspace determines to which space the fixed workspace belongs. This can change in time and will also be stored in time in the Planon database (Workspace details). Occupants of fixed workspaces can only be imported via Planon Enterprise Talk.



Workspaces are implemented only for AutoCAD, not for Stabicad.

CAD Import - Concepts

The following sections describe the concepts available in **CAD Import** and how they interact with each other.

CAD drawing definition

A CAD drawing definition defines the relation between the data in Planon ProCenter and the information in the AutoCAD drawing.

The CAD drawing definition allows you to define the entities in the drawing, so you can map them onto the Planon business objects.

For example, drawing entities such as polylines and blocks can be mapped onto CAD business objects such as floors, spaces, flexible workspace, assets, persons, 'Rent to' and 'Rent from' units.

Typically, a drawing definition is based on a single drawing. However, it can be used to import multiple drawings provided that the data structure is the same in all the drawings that are going to be imported.

CAD import definition

A CAD import definition defines parameters for what to import from an AutoCAD drawing into Planon ProCenter.

The CAD import definition describes the information you want to import, such as the location of the drawings to be imported, structure of the input folder, creation of .orj files from the .dwg drawings, importing of assets and persons as move lines, specifying a global drawing definition, resume or end spaces, flexible workspaces, 'Rent to' and 'Rent from' units and so on.

You can import either a single or multiple drawings at a time.

CAD business object

CAD business objects are elements such as floors, spaces, persons, assets, flexible workspaces, 'Rent to' and 'Rent from' units that are present in a CAD drawing. You can also define the construction data which is used in the ORJ conversion.

CAD business objects enable you to define the business objects in a drawing definition. You can assign both system-defined and the user-defined business objects as CAD business objects.

Block (AutoCAD)

A graphical depiction / symbol in AutoCAD that represents a person or asset in Planon ProCenter.

In addition to using *static blocks* for representing assets and persons, Planon ProCenter's CAD Import supports *dynamic blocks* (AutoCAD) only on Google Chrome. Dynamic blocks allow you to create flexible parameters and actions. However, static is preferred.

Restrictions

- A block name must not be longer than 50 characters, otherwise the import for this specific record will fail.
- The scaling factor and unit factor of blocks on supported drawings must be **one**.
- Planon does not support *anonymous* blocks. If these blocks are 'exploded' Planon cannot guarantee that **CAD Integrator** will continue to perform well.
- The ampersand symbol (&) cannot be used in a AutoCAD block name; this character is reserved for Planon-internal use only. The same is true for anonymous blocks.
- Block names must not contain the following characters: < > / ? " ' ; * | , = '. A drawing with a block name containing these characters is not supported by AutoCAD nor by the Planon application.

Example

A table can be created as one block that can take the place of all related blocks (for tables) with varying dimensions in a drawing.

Layer (AutoCAD)

Can be used to group entities (polylines, blocks) based on their purpose.

Polyline (AutoCAD)

Represents either the net area or the gross area of floors, spaces, flexible workspaces, 'Rent to' or 'Rent from' units.

Attribute (AutoCAD)

A label or a tag that displays data related to a block. For example, the asset number or the department of a space.

MText objects (AutoCAD)

Planon supports MText objects without styling, if used for the following purposes:



MText with styling may work, but this is not guaranteed by Planon.

- *Field mapping.* Enter relevant values in the **Start line** and **End line** fields at CAD drawing definitions > Details > Field mapping. See [Field mapping fields](#) for more information.
- *Display MText in the CAD Integrator constructional drawing .* Map the MText layer as constructional data in the building element layer at CAD drawing definitions > Details > CAD business object mapping.



To ensure proper functionality of *field mapping* with MText, the MText objects must meet the following requirements:

- The MText must be left aligned.
- The MText box must be wide enough to fit the entire line that needs to be mapped to a Planon field. Field names that run over multiple lines cannot be mapped correctly.

AEC-objects and MV-blocks (AutoCAD)

A CAD drawing may contain AEC-objects (Architecture, Engineering or Construction) such as doors, walls and windows. It may also include MV-blocks (multi-view blocks), which are architectural objects that can have different representations in different view directions.

AEC-doors, AEC-walls, AEC-windows and MV-blocks can be imported as constructional data via CAD Import, provided that you have placed them in a drawing layer that is mapped as constructional layer.



Since AEC-objects and MV-Blocks are complex, importing them as constructional data may negatively affect the performance of CAD Integrator. It is recommended to only import AEC-doors, -walls, -windows and MV-blocks that are absolutely required.

CAD business object mapping

Mapping of the Planon ProCenter business objects (assets, persons, spaces, flexible workspaces, floors, 'Rent to' and 'Rent from' units) with the entities (polylines and blocks) of an AutoCAD drawing.

The CAD business object mapping is done to import data of an AutoCAD drawing into Planon ProCenter.

There are types of mappings are available:

- **CAD polyline BO mapping:** applies to floors, spaces, 'Rent to' and 'Rent from' units. You can map the net or gross polylines of an AutoCAD drawing with the floors, spaces, 'Rent to' and 'Rent from' units of Planon ProCenter.
- **CAD block BO mapping:** applies to assets, persons and flexible workspaces. You can map the blocks in an AutoCAD drawing with the assets or persons of Planon ProCenter.
- **CAD layer mapping:** applies to construction data such as pillars and staircases. During import, the elements on the layer will not be imported as business objects, but are converted either as CAD Integrator Constructional drawing or CAD Integrator FM drawing.

Field mapping

The mapping of the *fields* of business objects onto the *attributes* of polylines and blocks in a layer of an AutoCAD drawing.

The field mapping allows you to retrieve data from:

- The blocks, attributes, text objects and the handle IDs of a drawing.
- The Connect for AutoCAD data present in the polylines/blocks.
- The Stabiplan drawing data in the extended data of a polyline.



To ensure proper functionality of *field mapping* with MText, the MText objects must meet the following requirements:

Stabacad

A tool that makes drawing easier and facilitates AutoCAD drawing maintenance.

This tool provides features to draw floors and spaces along with their electro-technical installations such as electrical wiring, plumbing and so on. It also performs calculations based upon the branch specific standards such as NEN 2580.

Stabacad supports only one type of polyline, while AutoCAD supports two types - net and gross polylines.

Import logs

The import logs display the general information about the import of drawings.

The import log allows you to verify the file name of a drawing, the property and the floor of the drawing, the number of drawings imported, start and end date-time of the import.

If a workspace could not be ended by the CAD Import, the import log will indicate this.

The import log data is read-only and can be printed. An import log in the element list can be deleted.



To proactively prevent import errors, you can perform a CAD verification to validate drawings.

Import log details

The detailed information about the import. The import log details display information about every individual drawing that has been imported.

The import log details can be viewed in three levels, low, medium and high.

- The **Low** level displays information on the number of business objects that have been imported along with the errors/warnings that may arise during import.
- The **Medium** level, displays information about the import of the individual business objects.
It displays detailed information such as a list of business objects which are imported, rejected, accepted or unchanged in a table format and the date on which the imported data becomes effective. You can view the ended/resumed business objects.
- The **High** level, displays information on the imported fields of a business object.
The import log data is read-only and can be printed. An import log in the element list can be deleted.

CAD drawing definitions

In Planon ProCenter, you can import data from an AutoCAD drawing (.dwg format), by mapping Planon ProCenter business objects and fields with the entities (polylines, blocks, attributes and text) that are present in the layers of the AutoCAD drawing.

In order to import a CAD drawing, you must first define a **CAD drawing definition**, and then define the import parameters in the **CAD import definition**.

Adding a CAD drawing definition

The drawing definition defines the relation between the Planon ProCenter data and the information in the AutoCAD drawing.

Procedure

1. Go to CAD drawing definitions > CAD drawing definitions.
2. On the action panel, click Add.
3. In the data section, complete the relevant fields. For a description of these fields, refer to CAD drawing definition fields.
4. Click Save.

You can now proceed adding the business objects that you want to import.



When you start creating the CAD drawing definition, the status is set to **Under construction** automatically.

Set the status to **Completed** after you complete the steps to create a drawing definition together with the business object mappings and field mappings.

If there are any errors, solve these first.



If the server location for **CAD Workbench** is not specified in [System settings](#), an error message is displayed, indicating that the server setting is missing.

Creating history automatically

CAD Import offers the possibility to store information about drawings and build the history.

If you have more than 20 drawings, use the following settings in the **Output options** tab to build a structured history of your drawings.

• Add date to output folder	<input type="radio"/> Yes	<input checked="" type="radio"/> No
• Add date to output subfolders	<input type="radio"/> Yes	<input checked="" type="radio"/> No
• Add file as folder to output subfolders	<input type="radio"/> Yes	<input checked="" type="radio"/> No
• Add month to output folder	<input type="radio"/> Yes	<input checked="" type="radio"/> No
• Add month to output subfolders	<input type="radio"/> Yes	<input checked="" type="radio"/> No

Adding CAD business objects

You must specify the business objects to be imported from the CAD drawing into Planon ProCenter.

In addition, you can also specify construction data such as pillars, holes and other constructional elements that need to be imported into CAD Integrator FM drawings or constructional drawings.

Procedure

1. Go to CAD drawing definitions > CAD business objects.
2. On the action panel, click Add [CAD linked].

Adding CAD linked floors

1. Select **CAD linked floors**.
2. Enter a description for the CAD linked floors.
3. Click **Save**.

Adding CAD linked spaces

1. Select **CAD linked spaces**.
2. Complete the relevant fields in the data section. For a description of these fields, refer to [CAD linked spaces fields](#).
3. Click **Save**.

Adding CAD linked flexible workspaces

1. Select **CAD linked flexible workspace**.
2. In the **Description** field, enter a description for the CAD linked flexible workspace.
3. Click **Save**.

Adding CAD linked fixed workspaces

1. Select **CAD linked fixed workspace**.
2. In the **Description** field, enter a description for the CAD linked fixed workspace.
3. In the **User-defined business object** field, select the user defined workspace.



Workspace should be added as a user-defined business object to the base CAD linked business object.

Click **Save**.

Adding CAD linked 'Rent to' units

1. Select **CAD linked 'Rent to' units**.
2. Complete the relevant fields in the data section. For a description of these fields, see [CAD linked 'Rent to' units fields](#).
3. Click **Save**.

Adding CAD linked 'Rent from' units

1. Select **CAD linked 'Rent from' units**.
2. Complete the relevant fields in the data section. For a description of these fields, see [CAD linked 'Rent from' units fields](#).
3. Click **Save**.



For more information on adding user-defined business objects, see [Field Definer](#).

Adding CAD linked assets

1. Select **CAD linked assets**.
2. Complete the relevant fields in the data section. For a description of these fields, see [CAD linked assets fields](#).
3. Click **Save**.

Adding CAD linked persons

1. Select CAD linked persons.
2. Complete the relevant fields in the data section. For a description of these fields, see [CAD linked persons fields](#).
3. Click **Save**.

Adding CAD linked construction data

1. Select **CAD linked construction data**.
2. Complete the relevant fields in the data section.
3. Enter a description for the CAD linked construction data.
4. Click **Save**.

You have now added the business objects.

Mapping CAD business objects

On the **CAD business object mapping**, you can select the layer(s) in the drawing that contain(s) the polylines/blocks for the business object (like floors, spaces, workspaces, ...) that you selected on the second level.

You can also define the colors which should be used to display the object in CAD integrator. By default, the AutoCAD color is applied.

Procedure

1. Go to CAD drawing definitions > Details.
2. On the action panel, do these.
 - Click **CAD polyline BO mapping**, if you are mapping a business object whose information comes from a polyline. For example, a floor, a space, a 'Rent to' unit or a 'Rent from' unit, or a workspace.
 - Complete the relevant fields in the data section. For a description of these fields, see [CAD business object mapping fields - polylines](#).
3. Click Save.
or
 - Click **CAD block BO mapping**, if you are mapping a business object whose information comes from a block. For example, asset, person and flexible workspace.
 - Complete the relevant fields in the data section. For a description of these fields, see [CAD business object mapping fields - blocks](#).
4. Click Save,
or
 - Click **Building element layer**, to convert the elements of a layer as construction data. For example, pillars, hole, staircase and so on.
 - Complete the relevant fields in the data section. For a description of these fields, see [CAD business object mapping fields - layers](#).
5. Click Save.

Mapping fields

If you want to import data from a drawing into Planon, such as space numbers and descriptions, you need to determine where this information can be found in the drawing. At the **Field mapping** selection level you can access drawing information and select the Planon field that should be filled with this information.



- If you want to use an auto-generated value from Planon ProCenter (via a default setting in Field Definer), the field mapping on this field should be removed.
- If you want to import the area and perimeter of a polyline that is stored explicitly in the drawing (for example, in the attribute of a block), instead of a value which is calculated from the area and perimeter of the polyline, the field mapping should be done on these fields.

Procedure

1. Go to CAD drawing definitions > Details > Field mapping.
2. On the action panel, click Add.

3. In the data section, complete the relevant fields. For a description of these fields, refer to Field mapping fields.
4. Click Save.

The business object fields are mapped with the entities of the CAD drawing. Repeat the steps with all the business objects you have added to the drawing definition.



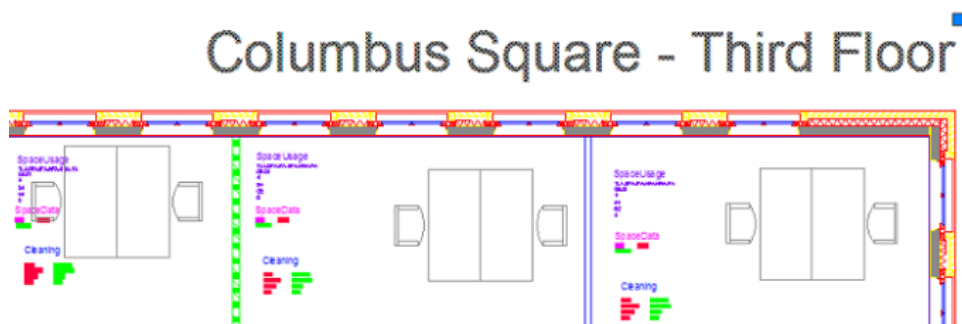
Ensure that you enter correct values for the fields **XData application name**, **Group code**, and **Occurrence**. If you enter an incorrect value, error message will not be displayed and data will not be imported.

Drawing configuration tips for Agile Workplace Management

For the configuration of Agile Workplace Management, it is recommended to follow up these configuration tips:

General

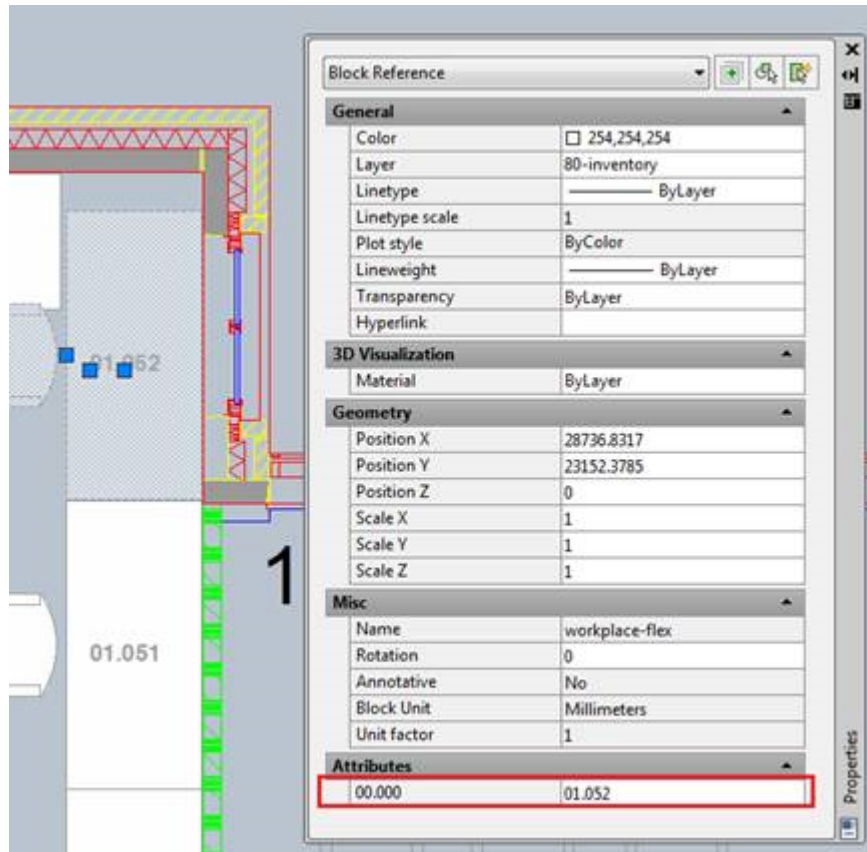
- Put the **Property-Name + Floor-Code** in a separate layer in a BLOCK or TEXT.



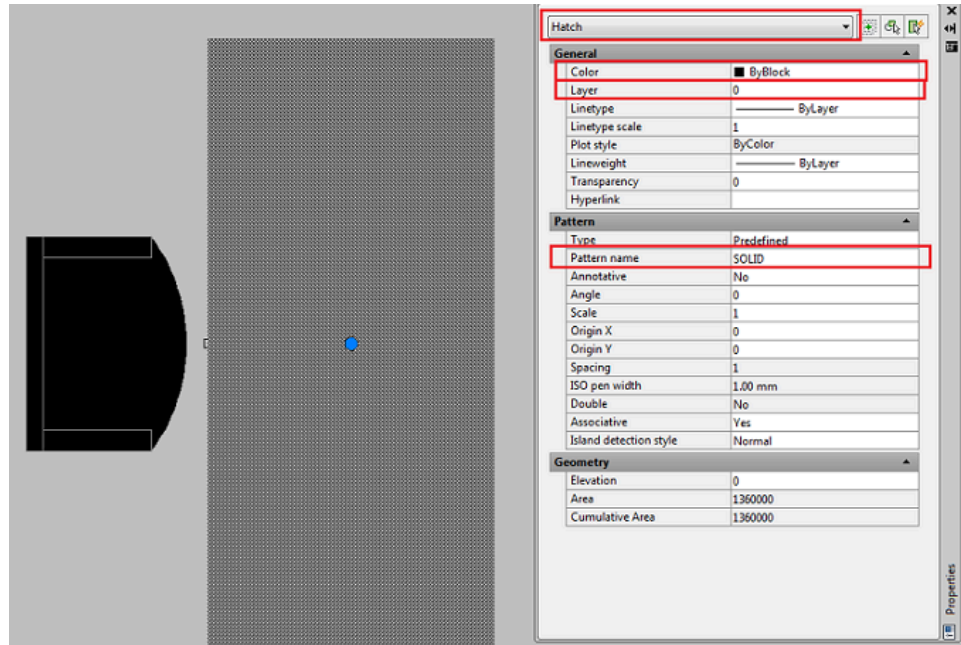
Flexible workspaces

- Define your flexible workspaces as a STATIC BLOCK and put them on a separate layer. The insertion point of the BLOCK must be placed within the space polyline.
- Add a BLOCK-property to this static block with the **Workspace code** of your flexible workspace. We recommend to number the workspaces

logically in the **Attributes**. In Planon it must be clear in what space the workspace is located. Define a combination of floor number, space number + workspace number 2.23_01 (2 = floor; 23 = space/room number; _01 = workspace) See the following example:



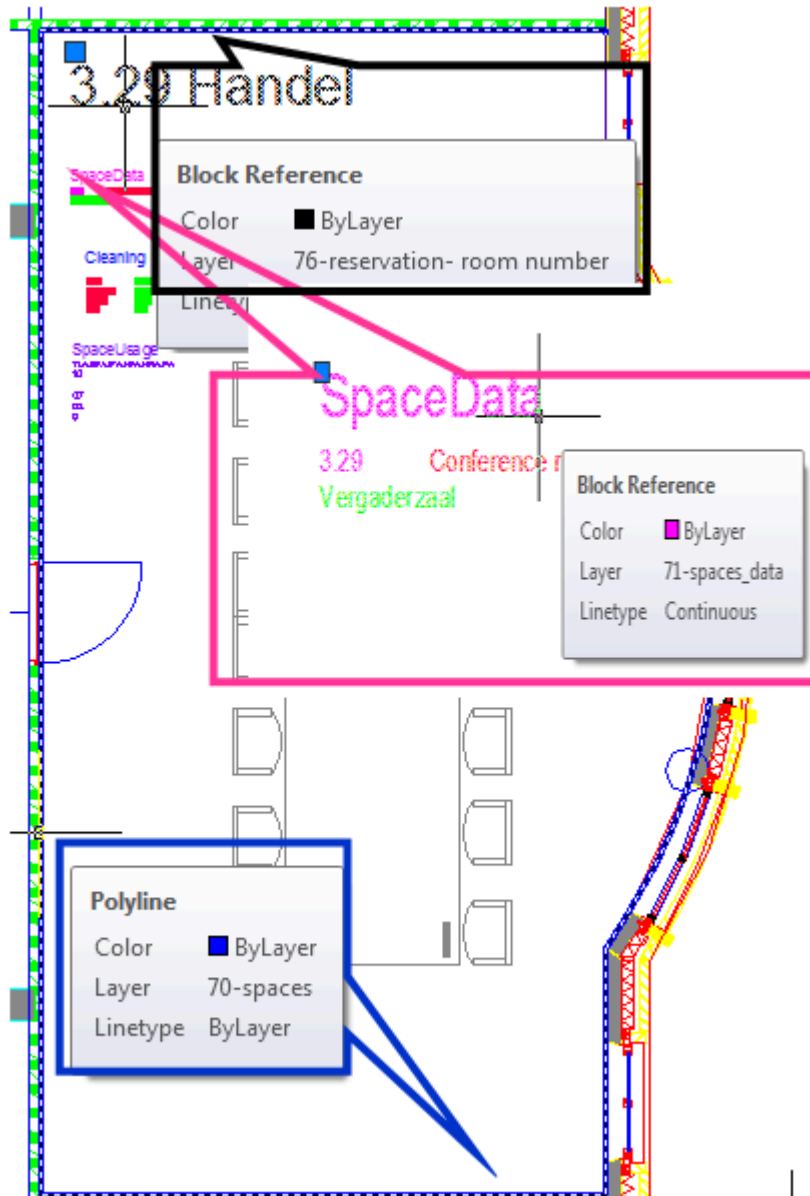
- Add **Solid** hatching to this flexible workspace BLOCK on Layer 0 (zero) and color the hatching **ByBlock** . See the following example:



- It is recommended to attach chairs to tables for the flexible workspaces in a single (static) BLOCK. The highlighted area is thus extended. The chair must also have hatching.

Meeting rooms

- Meeting rooms must have a closed polyline as described in [Space entities \(gross & net\)](#).
- Meeting rooms must have a space number as described in [Space code](#).
- Put the **Meeting room name** in a separate layer in a BLOCK or TEXT.



Correcting the unit of length in a drawing

If you initially imported a drawing having an incorrect unit of length, the drawing might appear small in **CAD Integrator**.

Take the following steps to correct the drawing:

1. Delete the ORJ file from the WebDAV folder.
2. Clear your browser's local storage location.
3. Change the **Unit of length in drawing** in the CAD drawing definition.

For more information, see [Adding a CAD drawing definition](#).

4. Reimport the CAD drawing.
5. Refresh your browser.

The size of the drawing will now be corrected.

Wildcard layer

In the CAD drawing structure, you can distinguish a main drawing and one or more *xref* drawing files.

In your drawing definition, to identify layers in a drawing, the following convention is used:

MyDrawing.dwg	MyDrawing-xref.dwg
PlanonSpaces	MyDrawing-xref PlanonSpaces

This approach ensures that layer names are unique, but it also means that the CAD drawing definition cannot be used for other drawing structures that contain *xref* drawings with different file names and identical layer structures.

To simplify using a drawing definition for importing your drawings this convention has now been extended by using a wildcard character (*).

How it works

In your drawing definition, when clicking the **Refresh drawing structure** action, a list of wildcard layers is generated and you will be able to choose from the available options (example):

- *<space>
- <space>
- xref-drawing|<space>

For each layer in the main drawing and the *xref* drawings in the current drawing structure, an additional layer consisting of the base layer name prefixed with an asterisk (*) character is generated. Doing so, ensures that CAD drawing definitions that reference *xref* layers can be reused across your drawing structure.

Drawing	Layer name
MyDrawing.dwg	PlanonSpaces *PlanonSpaces
MyDrawing-xref.dwg	MyDrawing-xref UniqueXrefLayer *UniqueXrefLayer

CAD verification

These wildcard layers should uniquely identify a layer that occurs in either the main drawing or in exactly one of the *xref drawings* referenced by the main drawing.

When encountering drawings with the same layer name, the [CAD verification](#) process checks for these occurrences and will flag these when encountered so that appropriate action can be taken (amending the drawing or the drawing definition).

CAD import definitions

A CAD import definition defines the various parameters for importing Planon data such as floors, spaces, persons, flexible workspaces, 'Rent from' and 'Rent to' units from CAD drawings.

The import definition defines, for example, the location where the drawings to be imported are found, which business objects (floors, spaces, workspaces etc.) have to be imported, the date the changes will be active, file handling of the .dwg files etc.



Drawings used in a Test environment should not be used in a Production environment. Importing the same drawing in Production would result in incorrect data, because different spaces, persons, assets, flexible/fixed workspaces, 'Rent to' and 'Rent from' units are updated. Also, do not import old drawings if more recent drawings have already been imported, because this may lead to discrepancy in data. For example, if a space is ended during an import because its polyline is no longer in the drawing, importing the same drawing on an earlier date will not end the space on the earlier import date.

For more details see [Adding a CAD import definition](#).

Adding a CAD import definition

The actual import is determined by an import definition that refers to the drawing definition. The CAD import definition determines the *what*, *where* and *when* of the import.

- *What* elements to import? spaces, assets, personnel, rentable units.
- *What* drawing to use?
- *Where* the drawings to be imported are located?
- *When* the imported data should take effect?

Procedure

1. Go to CAD import definitions.
2. On the action panel, click Add.
3. In the data section, complete the relevant fields to create an import definition.



Only the fields that are primary to run a CAD import are described in [CAD import definition fields](#). For more information about specifying the rest of the fields, see [CAD Import settings](#)

4. Click Save. You have now created a CAD import definition.



You can create a mail merge report for a specific action on the CAD import definition > Report action menu. The mail merge report can be used as a reply of a scheduled action.

- During import, the data is written back to the AutoCAD drawing. The modification date of the imported drawing still remains with the original modification date. This facilitates to filter the drawings to be imported based upon their modification date.

If the AutoCAD drawing is on a WebDAV server, the modification date of the AutoCAD drawing is changed during the import by the WebDAV server. For more information on scheduling import actions, see [Action definitions](#) (Alerts).

Mapping a CAD drawing to a floor

To map a drawing to a floor of a property.

Procedure

1. Go to CAD Import definitions, and select Mapping.
2. On the action menu, click Add.
3. In the data section, complete the relevant fields.

For a description of these fields, see [Mapping CAD drawing to floor - fields](#).

4. Click Save.

CAD drawing verification

For a successful CAD Import, a CAD drawing must meet various conditions. Typically, an import of complicated drawings or multiple drawings can produce errors. In such cases, it is difficult to find which drawing and which layer is giving the error.

The majority of failed imports are due to [Crossing polylines](#) or overlapping [Space entities \(gross & net\)](#). These errors can be avoided by verifying a drawing before importing. CAD verification functionality enables you to inspect the entire drawing and locate where the faults are.



When encountering errors while importing your CAD drawings and you need help in resolving the issue, please send your drawing and include [the verification log](#) - this is helpful in reproducing and analyzing the issue.

Verification rule set

Verification rule set

The following enumeration lists the CAD verification rules, their purpose and result.

1. **RULE VERIFY ENTITY COUNT**
 - **Purpose:** Counts the number of entities in the source DWG file.

- **Result:**
 - Error for >200,000 entities
 - Warning for 15,000-200,000
 - Normal for <15,000
2. **RULE VERIFY MIN MAX FLOOR SIZE**
- **Purpose:** Checks the size of floor surfaces.
 - **Result:**
 - Error for sizes > 4500 m
 - Warning for < 5 m
 - Normal within these limits
3. **RULE VERIFY OVERLAPPING POLYLINES**
- **Purpose:** Identifies overlaps between polylines representing floors, spaces, or workspaces.
 - **Result:**
 - Warning for overlaps
 - Normal for no overlap
4. **RULE FIXED WORKSPACE SURROUNDED BY SPACE**
- **Purpose:** Ensures fixed workspaces are within a defined space.
 - **Result:**
 - Warning for deviations
 - Normal for correct placement
5. **RULE FLEXIBLE WORKSPACE SURROUNDED BY SPACE**
- **Purpose:** Checks if flexible workspaces are completely surrounded by a space.
 - **Result:**
 - Warning for non-conformity
 - Normal for correct placement
6. **RULE VERIFY CIRCULAR REFERENCED SYMBOL DEFINITIONS**
- **Purpose:** Searches for circular references in block definitions and XRefs.
 - **Result:**
 - Error for circular references
 - Normal for no circular reference
7. **RULE VERIFY FLOOR GROSS CONTAINS FLOOR NET**
- **Purpose:** Checks if the net floor area is within the gross floor area of a floor.
 - **Result:**

- Warning for deviations
- Normal for correct placement

8. **RULE VERIFY FM DRAWING CONTAINS CONSTRUCTION DATA**

- **Purpose:** Checks FM drawings for the presence of construction drawing data.
- **Result:**
 - Warning for presence
 - Normal for absence

9. **RULE VERIFY ENTITY_ELEVATION**

- **Purpose:** Ensures all entities in the CAD drawing are at elevation 0.
- **Result:**
 - Warning for deviations
 - Normal for correct elevation

10. **RULE VERIFY COMPLETENESS OF DATA**

- **Purpose:** Checks the completeness of text data in the FM drawing.
- **Result:**
 - Warning for incompleteness or multiple assignments
 - Normal for completeness

11. **FM DRAWING RULE_NOT_LINKED_TO_PLANON_BO**

- **Purpose:** Checks if all entities in the FM drawing are linked to Planon BOs.
- **Result:**
 - Warning for missing linkage
 - Normal for correct linkage

12. **FM DRAWING RULE_LAYERS_PART_OF_FILTER**

- **Purpose:** Checks if all layers in the FM drawing are listed in the drawing definitions.
- **Result:**
 - Warning for unlisted layers
 - Normal for matching

[CAD drawing verification](#)

[Verification overview](#)

[Verifying your CAD drawings](#)

Verification overview

In addition to a large number of verifications, the verification rule set [autocorrects](#) a number of issues to ensure a smooth import.

Combined, the rule set ensures that:

- Polylines do not cross
- Drawing location
- Filter-text is used (for more simple reproduction)
- The Planon version is filled
- An entity is inside another entity
- Workspaces are inside the space
- Workspaces do not overlap other workspaces
- Fixed workspaces are surrounded by a space
- Fixed and flexible workspace are surrounded by a net space polyline
- There are no endless loops
 - main drawing with an xref referring back to the main drawing
 - block definition that refers to another block that refers back to the first one

A critical error will be logged and the import process is stopped

- The version of AutoCAD used for creating drawings is available and logs that in the CAD drawing verification log
- Each gross floor polyline contains a net floor polyline
- Dimensions are acceptable (for example: a floor with a width of less than 2 or more than 4500 meters is considered as a mistake)
- Verify the connection with the CAD Workbench server. If a connection cannot be established, a pop-up message is displayed and a log entry is created in the verification log
- Elevation is auto corrected to 0 for xref layers such as spaces, workspaces
- There are no missing, duplicate, or orphaned data entities. If so, a log entry will be created
- Verify whether multiple drawings contain layers whose names match one of the wildcard layer names present in the filter. If so, a log entry [AMBIGUOUS WILDCARD LAYER USAGE] will be created.

Verification rule set

Checking drawing dimensions

When importing a drawing or performing a CAD drawing verification, a check is conducted to verify whether the drawing dimensions are within a specific range.

The Planon application does not know the size of the entities you want to import, but to prevent that you are importing a drawing with an incorrect unit of measurement, the application conducts a preliminary validation.

If the size is too small or too large, either an error or a warning is given. The kind of prompt that is given, is determined by the range - as shown in the following example.

Min. floor value	Max. floor value	Response
0.0 m	2.0 m	Error
> 2.0 m	10.0 m	Warning
> 10.0 m	400.0 m	Acceptable range
> 400.0 m	4500 m	Warning
> 4500 m	...	Error



If an error occurs, verify if the unit of measurement in the drawing and the drawing definition are the same.

Note on Stabicad drawings

Drawings are validated based on the drawing definition. This includes the way that floor dimensions are calculated. The Planon application will collect all FM entities and their points in an area. The difference between min. x and max. x will be calculated as **length** and the difference between max. y and min. y is calculated as **width**.

Typically, the drawing definition determines which entities on which layer have a meaning to the Planon application. When checking the rules of the min. and max. sizes of a floor, the information of Stabicad drawings is sometimes available in the entities' xData (which can be arranged on any layer).

Because in a Stabicad drawing there is no layer-based filter to find FM entities, this array will then be empty. Hence, the length and width will have a value of 0.

Consequently, this specific verification is not relevant for Stabicad drawings and should be ignored.

Automatically correcting CAD drawings

To successfully run a CAD Import it is important that the drawings to be imported fulfill the proper requirements.

In order to check this, it is possible to run a CAD drawing verification. The result of this process is a log containing instructions to manually correct a drawing.

Manually correcting issues can be tedious and error prone. Sometimes it is also possible to automatically correct these issues while doing a verification.

This is how it works:

1. On your **CAD import definition**, set the field **Allow auto-correction?** to **Yes**. The status of this field (**Yes** or **No**) will be logged.

Before the drawing is auto-corrected, it is first backed up.



Note that a backup is only created if there is a need to correct something. Also, if a backup is created, it will overwrite backups that exist in the backup folder.

The location of the drawing backup is specified in **System settings > File locations > CAD Import auto-correction backups**. Here, you can retrieve the original drawings immediately after the CAD verification process. The backup location will also be shown in the validation log.

While importing the CAD drawing, the verification process is triggered. This process is set up so that the correction and verification are handled in sequence. This allows for logging elements that could not be resolved automatically.

2. All elements that were corrected are logged (together with their AutoCAD handle ID).

Reducing drawing entities

To prevent blocking the CAD Import server in the Cloud, a maximum of entities for drawings has been implemented.

Importing CAD drawings has been restricted to a maximum of 300.000 entities.

To reduce the complexity and number of drawing entities, the Planon application can automatically reduce the number of entities by joining polylines. By doing so, multiple polylines will be reduced to one.



This functionality is only available if **Allow auto-correction?** is set to **Yes**.

Process

1. During verification, if the number of entities exceeds 15.000, the joining process is started.

2. If, after joining, the drawing entities exceeds 300.000 entities, the user will be prompted to manually reduce the entities in the drawing (error in the verification log).

If the number of entities in a drawing exceeds 15.000 but is less than 300.000, a warning message is given in the verification log.

To assist in identifying the problem areas, the log lists the layers and blocks and their corresponding number of entities.

Verifying your CAD drawings


When you are ready, proceed ad follows to verify your CAD drawing(s).

Procedure

1. Go to CAD import definitions > CAD import definitions.
2. Select the CAD import definition you want to verify.
3. On the action panel, click Perform CAD verification.

The process starts running in the background.

4. After completion, go to the Import logs step to see the verification results.

The logs of the CAD verification are preceded with the text '[VERIFICATION]'. Any faulty drawings are preceded with an error icon (). For detailed information of the fault, go to the **Import log details** step.



- To understand the different crossing polylines listed in the **Import log details**, see [Crossing polylines](#)
- To view the crossing polylines listed in the **Import log details**, open the AutoCAD drawing and use the EOS CAD tool to identify them by using the AutoCAD Handle ID. For more information, see [EOS CAD Tool](#).

Verification rule set

Including metadata in an AutoCAD drawing

By using the following procedure, you can extend drawing information with Planon metadata.

This feature can be useful, for example, when onboarding measurement points or sensors based on Planon ProCenter data, but you can also just use it to display more Planon ProCenter data in your drawing.



This feature is possible because of the UUID (Shared ID) field on spaces/floors/properties/assets. This unique identifier is always included in the metadata. In this topic, we will focus on spaces as an example.

- Which metadata is to be included in the drawing is determined by using a data only report.
- If you do not specify a data only report, the metadata will only include the system code and UUID.
- The metadata will not be added to the original drawing file, but it will be added to a reference file.

Procedure

1. Go to CAD import definitions.
2. Set the Create CAD metadata file? field to Yes.

This field is not added to the layout by default. Note that only if you set the set this field to Yes will the metadata be added.

This will enable two fields:

- **Additional floor info**
 - **Additional space info**
3. In these fields, select the appropriate data only report that you want to use for creating your drawing's metadata.

Make sure you have a data only report specified for the required business object.

4. On the action panel, click Run CAD import.

All mapped drawings will be imported into Planon ProCenter. Additionally, this action exports the original dwg drawing and, per drawing, a file called "_BO_Ident.dwg". The ident file contains the metadata.


The exported files are located in your WebDAV folder.

5. In your FTP client, go to your WebDAV folder and navigate to Documents > CAD > CAD_Output.
6. Download the original dwg and its corresponding ident dwg file and save them in the same folder on your computer.
7. Open the ident file in AutoCAD.

Based on the fields in the data only report (and the system code and UUID), a block is created. For each floor/space/workplace, the required data is added to the block.

Block Reference	
Plot style	ByColor
Lineweight	ByLayer
Transparency	ByLayer
Hyperlink	
3D Visualization	
Material	ByLayer
Geometry	
Position X	18887.028
Position Y	5291.7862
Position Z	0
Scale X	1
Scale Y	1
Scale Z	1
Misc	
Name	Ident_Space
Rotation	0
Annotative	No
Block Unit	Unitless
Unit factor	1
Attributes	
Space	0.20 Office
Space start da...	Apr 1, 2004
Net area	18.75997291591400
Syscode	227
UUID	9E9A600A-E6D7-4A00-BEE2-52AB833953B5


The drawing will be displayed showing the metadata on top of it.

 To watch a video of this procedure, click this link. [Adding metadata to AutoCAD drawings](#)

CAD Import settings

Import location settings

Field	Description
Include subfolders	Select Yes to import drawings which are located in the subfolders of the Input Location folder as well.
Overwrite output files (Y/N)	Select Yes to overwrite the existing files of the output folder. When the imported file is copied into the output folder, it may be possible that the file is already present in the output folder. In that case, this setting defines whether or not the existing file should be overwritten.
Delete input files	Select Yes to delete all the imported files in the input folder after import. No is selected by default.

 If you select **Yes** here, you cannot store the AutoCAD drawing in the **Inbox AutoCAD drawing** field of the Floor attributes of Spaces.

CAD Integrator settings

Field	Description
Update CAD Integrator FM drawing?	Select Yes to update the existing .orj file during the import. A prerequisite is that the Create CAD Integrator file option is set to Yes . If you move text boxes or assets in CAD Integrator, these locations will keep their old position after the import. Select No to always generate a new .orj file. Text positions and manually moved assets in CAD Integrator will be located in the


Field	Description
	center of the space or location of the AutoCAD drawing.

Output folder

Field	Description
Add month to output folder	<p>When you enable this option, a folder is created with the month and year in YYYYMM format in the output location.</p> <p>It is added as a subfolder directly under the output location or directly under the (optionally) added history folder.</p>
Add date to output folder	<p>When you enable this option, a folder is created with the date of import definition in YYYYMMDD format in the output location.</p> <p>It is added as a subfolder directly under the output location or directly under the (optionally) added history folder. No is selected by default.</p>
Add file as folder to output subfolders	<p>When you enable this option, a subfolder with the name of the drawing is created in the output location. No is selected by default.</p>
Add month to output subfolders	<p>When you enable this option, a subfolder is created with the year and month in YYYYMM format in the output location.</p> <p>It is added as a subfolder under every subfolder in the output location. No is selected by default.</p> <p>When all the Boolean options are enabled, the hierarchy of the folders/subfolders is as follows:</p> <p>Outputlocation/HistoryFolder*/ AddMonthToOutputFolder/ AddDateToOutputFolder/.... OutputSubFolders/HistoryFolder/.... / AddFileasFolderToOutputSubfolders/AddMonthToOutputSubfolders/ AddDateToOutputSubfolders/ Drawing.dwg.</p> <p>HistoryFolder* is added in case of AddMonthToOutPutFolder or AddDateToOutPutFolder is selected.</p>
Add date to output subfolders	<p>When you enable this option, a folder is created with the date of import definition in YYYYMMDD format in the output location.</p> <p>It is added as a subfolder under every subfolder in the output location. No is selected by default.</p>
History folder	<p>Specify a name to automatically create a history folder in which all the imported drawings are saved.</p>

Field	Description
	This is especially important if your input folder is same as the output folder. Drawings in any history folder are automatically excluded during the import.
Overwrite output files (Y/N)	<p>Select Yes to overwrite the existing files of the output folder.</p> <p>When the imported file is copied into the output folder, it may be possible that the file is already present in the output folder.</p> <p>In that case, this setting defines whether or not the existing file should be overwritten.</p>

Import spaces

Field	Description
Threshold new space dimensions	Specify a value. If the difference between the net or gross area of the database and drawing is above this threshold value, then a new space size/usage unit linked to a floor instance is created on the effective date of the import. Otherwise, a new space size/usage instance is created on the effective date of the import.
New space size / usage after data change?	<p>Select Yes to create a new space dimensions / space usage record on the effective date of the import, after any data change on space dimensions / space usage. A data change is typically caused by the import of one of the mapped fields in the Drawing definition.</p> <p>Select No to update the existing space dimensions / usage.</p>
	<div style="border: 1px solid black; padding: 5px;"> <p> If the data change causes the new space dimensions to exceed the set threshold value, this setting is not taken into account. In that case, new space dimensions and usage records are created, regardless of this setting.</p> </div>
End spaces	Select Yes to end spaces that are no longer present in the drawing on the effective date of import.
Resume spaces	Select Yes to resume spaces that are ended in the database, but are visible again in the drawing.
Resume workspaces	Select Yes to automatically resume the ended workspaces of a resumed space. This field can only

Field	Description
	be enabled if you have selected Yes in Resume spaces .
Space code wildcard filter	Specify a code to filter spaces from an imported drawing. Planon ProCenter imports only those spaces whose space code matches with the code specified in this field. The following wildcards are supported: ?: any single character *: either 0 or more characters


Import 'Rent to' units

Field	Description
Threshold new 'Rent to' unit	Specify a value. If the difference between the net or gross area of the database and drawing is above this threshold value, then a new 'Rent to' unit linked to a floor instance is created on the effective date of the import. Otherwise, the existing 'Rent to' unit linked to a floor is updated.
New 'Rent to' unit life cycle after change	Select Yes to create a new 'Rent to' unit life cycle on the effective date of import only if any of the life cycle aware fields change during import. Select No to update the existing 'Rent to' unit life cycle.
End 'Rent to' units – linked floors	Select Yes to end the 'Rent to' / 'Rent from' units — linked floors whose 'Rent to' unit is no longer present in the drawing on the effective date of import.

Import 'Rent from' units

Field	Description
Threshold new 'Rent from' unit	Specify a value. If the difference between the net or gross area of the database and drawing is above this threshold value, then a new 'Rent

Field	Description
New 'Rent from' unit life cycle after change	<p>from' unit linked to a floor instance is created on the effective date of the import. Otherwise, the existing 'Rent from' unit linked to a floor is updated.</p> <p>Select Yes to create a new 'Rent from' unit life cycle on the effective date of import, only if the life cycle aware fields change during import.</p> <p>Select No to update the existing 'Rent from' unit life cycle.</p>
End 'Rent from' unit – linked floors	<p>Select Yes to end the 'Rent to' / 'Rent from' unit — linked floors whose 'Rent from' unit is no longer present in the drawing on the effective date of import.</p>

 The change in the non-life cycle aware fields is not going to create a new life cycle though this field is set to **Yes**.

Import assets

Field	Description
Remove simple assets	<p>Select Yes to remove simple assets that are no longer in the drawing. Note that the asset is not deleted, but the space in its location assignment is cleared.</p>

Import flexible workspaces

Field	Description
End flexible workspaces	<p>Select Yes to end flexible workspaces that are no longer present in the drawing on the effective date of import.</p>
Resume flexible workspaces	<p>Select Yes to resume flexible workspaces that are ended in the database, but are visible in the</p>

Field	Description
	drawing. The end date gets cleared for the resumed flexible workspaces.

Import fixed workspaces

Field	Description
End fixed workspaces	Select Yes to end fixed workspaces that are no longer present in the drawing on the effective date of import, but are present in Planon ProCenter.
Resume fixed workspaces	Select Yes to resume fixed workspaces that are ended in the database, but are visible in the drawing. The end date gets cleared for the resumed fixed workspaces.
New workspace details after change	Select Yes to create a new workspace detail record when updates for the workspace are found. (for example, different department, cost center, space, etc). Select NO to overwrite the existing Workspace Detail of the updated Workspace.
Workspace code wildcard filter	Specify a workspace code to filter the workspaces to import. CAD Import imports workspaces whose workspace code matches with the workspace code specified in this field. This field accepts the following wildcards: * = none or multiple characters For example: ab*c matches: abc, abbc, abbbc, abdc. But does not match: ac ? = any single character (but not none) For example: ab?c matches: abbc, abdc. But does not match: ac, abc, abbbc

Field	Description
Workspace update area	Select Yes to update the area of the fixed workspaces in case this differs from the area in Planon.

Import persons

Field	Description
File name wildcard filter	<p>Specify a file name to filter the drawings in the input folder to import. Planon ProCenter imports files whose file name matches with the file name specified in this field. This field accepts the following wildcards:</p> <p>* = none or multiple characters</p> <p>For example: ab*c matches: abc, abbc, abbbc, abdc. But does not match: ac</p> <p>? = any single character (but not none)</p> <p>For example: ab?c matches: abbc, abdc. But does not match: ac, abc, abbbc</p> <p>+ = None or multiple characters preceding the wildcard.</p> <p>For example: ab+c matches: abc, abbc, abbbc. But does not match: ac, abdc.</p>
Start date for import file	Specify a date to filter the files in the input folder to import.
End date for import file	Specify an end date to stop filtering files of the input folder to import.

Space filter

Field	Description
Space code wildcard filter	Specify a code to filter spaces from an imported drawing. Planon ProCenter imports only those spaces whose space code matches with the code

Field	Description
	<p>specified in this field. This field accepts the following wildcards:</p> <p>?: any single character *:either none or multiple characters.</p>

Property code retrieval settings


Field	Description
Property code – start of range	<p>The position of the 1st character of the property code, in case the property/floor should be retrieved from the character position in the AutoCAD file name.</p>
Property code – end of range	<p>The position of the last character of the property code, in case the property/floor should be retrieved from the character position in the AutoCAD file name.</p>
Property code from separator	<p>Specify the separator used before the property code in the file name. For example, in USA_OBJ371-02.dwg, the '_' is the separator.</p> <p>If this field is empty, it means the file name starts with the property code itself.</p>
Property code from # separator occurrences	<p>Specify the number of occurrences of the separator before the property code in the file name. For example, in USA_OBJ371-02.dwg, the number of occurrences of the separator '_' is one.</p> <p>If this field is empty, it means that the file name starts with the property code.</p>
Property code up to separator	<p>Specify the separator used at the end of the property code in the file name. For example, USA_OBJ371-02.dwg, the '-' is the separator.</p> <p>If this field is empty, it means that the file name (without .dwg extension) ends with the property code.</p>

Field	Description
Property code up to # separator occurrences	Specify the number of occurrences of the separator at the end of the property code in the file name. For example, in USA_OBJ371-02.dwg, the number of occurrences of the separator '-' is one.

Floor code retrieval settings

Field	Description
Floor code – start of range	The position of the 1st character of the floor code, in case the property/floor should be retrieved from the character position in the AutoCAD file name.
Floor code – end of range	The position of the last character of the floor code in case the property/floor should be retrieved from the character position in the AutoCAD file name.
Floor code from separator	Specifies the separator used before the floor code in the file name. For example, in USA_OBJ371-02.dwg, the '-' is the separator. If this field is empty, it means the file name starts with the floor code itself.
Floor code from # separator occurrences	Specifies the number of occurrences of the separator before the floor code in the file name. For example, in USA_OBJ371-02.dwg, the number of occurrences of the separator '-' is one. If this field is empty, it means the file name starts with the floor code.
Floor code up to separator	Specifies the separator used at the end of the floor code in the file name. For example, USA_OBJ371-02.dwg, no need to specify this field as there is no separator after the floor code. If this field is empty, the file name (without .dwg extension) ends with the floor code.

Field	Description
Floor code up to # separator occurrences	Specifies the number of occurrences of the separator at the end of the floor code. For example, USA_OBJ371-02.dwg, there is no need to specify this field as there is no separator after the floor code.
Modification date-time	Displays the date on which the drawing has been modified.

 If drawings are on a WebDAV server, it is not possible to modify the set modification date, nor to import the drawings based on the date on which the drawings are modified.

Running a CAD import

To run the CAD import and import the drawing data from one or more AutoCAD drawings into Planon ProCenter as defined in the import definition.

Procedure

1. Go to CAD Import definitions, select CAD import definitions.
2. On the action menu, click Run CAD import.
All the AutoCAD drawings in the input folder are imported as per the settings specified in the import definition.
The floors, spaces, 'Rent to', 'Rent from' units, assets, persons, and flexible workspaces are created or updated in Planon ProCenter with the data from the drawings as defined in the drawing definition.

Note

- Business objects such as spaces / 'Rent to' units / 'Rent from' units / assets / persons/ flexible workspaces which exist with *duplicate codes* cannot be imported.
 - It is possible to import flexible workspaces with an empty code or with the same code, existing in different spaces.
 - Importing the data of invisible and frozen layers/blocks/attributes of an AutoCAD drawing is possible.
 - Conversion of invisible / frozen blocks /attributes into the CAD Integrator drawings is possible, whereas conversion is not possible with layers.


For example, if *Space1* and *Space2* exist on layers A and B and layer B is invisible / frozen, the data of both spaces is available in Planon ProCenter . Whereas, after converting the layers into the CAD Integrator drawings, you can only see layer A and its space, but not B, due to the invisible / frozen setting.
 - While importing drawings from an input folder, any error that may arise during import of a drawing is not going to stop the import of any other drawings.

Similarly, when importing a drawing, any error on importing a business object will not stop the import of any other business object from the drawing.
 - After importing the AutoCAD drawing data, the data will be written back to the AutoCAD drawing files.
3. After a successful import, Planon ProCenter does the following:
 - Updates the existing data of floors, spaces, 'Rent to' and 'Rent from' units, assets, flexible workspaces, (including their location assignment) and persons.



Persons and assets are not updated directly, if you import them as move lines.

- Creates new floors, spaces, 'Rent to' and 'Rent from' units, assets, flexible workspaces and persons, if they do not exist.
- Displays basic information regarding the import of drawings on the **Import logs** selection level.
- Displays detailed information regarding the import of drawings on the **Import log details** selection level.

 In Planon ProCenter, system codes are assigned to imported spaces, floors, persons, assets, 'Rent to' and 'Rent from' units of an AutoCAD drawing. These system codes are written back to the AutoCAD drawing. As a result, the spaces, floors, and assets in Planon ProCenter are automatically linked with the polylines and blocks of the AutoCAD drawing. The data used by Connect for AutoCAD is also written back to the AutoCAD drawing. For an overview on importing, maintaining and re-importing the updated drawings in Planon ProCenter and Connect for AutoCAD, see [Roundtrip of AutoCAD drawings](#).

Download logs

In addition to viewing the logs in the application, you can also download the logs as a formatted PDF.


This feature is available for:

- Enterprise Talk / SDI Configuration > Business object definitions > Import document logs
- Data Onboarding > Logs
- CAD Import > Import logs

1. Go to the appropriate level (see earlier) and select the log(s) that you want to view.

If you select multiple logs, these will be combined in a single PDF.

2. Click Download logs. Your PDF will be downloaded and you can view it in your browser or by using a PDF viewer.


 The **Download logs** action only properly works for CSV and Excel imports and not so much for XML.

Roundtrip of AutoCAD drawings


This section describes the roundtrip of the AutoCAD drawings between the **CAD Import** and **Connect for AutoCAD**. It provides an overview of importing, maintaining and re-importing the updated drawing in **Planon ProCenter** and **Connect for AutoCAD** consecutively.

Procedure

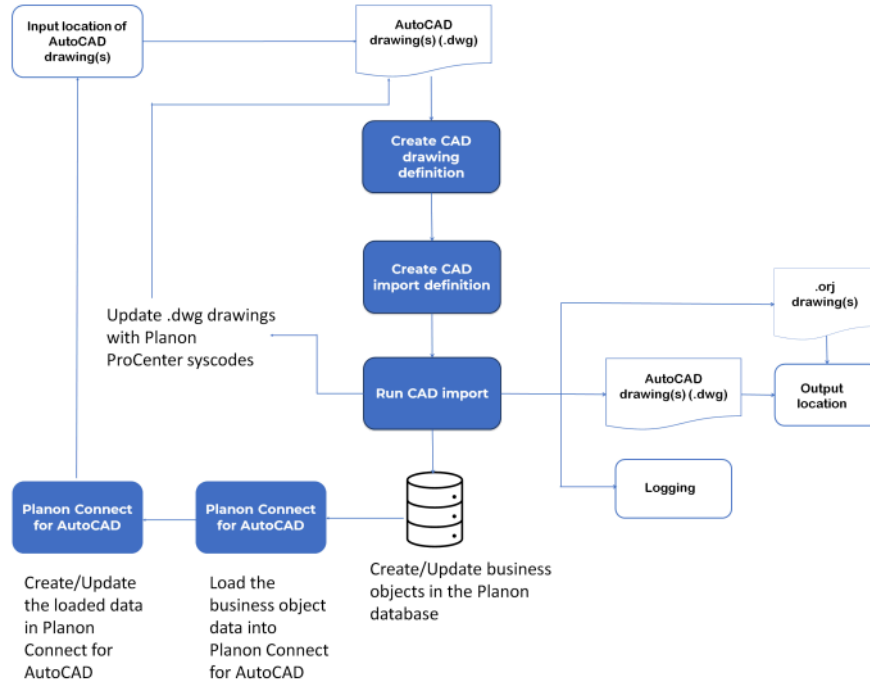
1. In **CAD Import > CAD drawing definition**, create a drawing definition by defining the structure of the drawings.
For more information on defining the structure of a drawing, see [CAD drawing definitions](#).
2. In the **CAD Import definition**, define the various parameters for the actual import of the AutoCAD drawings.
For more information on defining parameters, see [CAD import definitions](#).
3. Run the initial import and check the log for import information.
4. In **Connect for AutoCAD**, load the Planon ProCenter data of a drawing.

 For more information on how to load drawing information in AutoCAD, see [Connect for AutoCAD](#).

5. Update the AutoCAD drawing in **Connect for AutoCAD**.
For example, create a new space, modify the existing space or change the location of a person and so on, in the AutoCAD drawing.

 For more information on how to work with the drawings in AutoCAD, see [Connect for AutoCAD](#).

6. Re-import the updated drawing, in Planon ProCenter , if required, by creating a new drawing and import definition.
The information updated in Connect for AutoCAD is modified/updated accordingly in Planon ProCenter .
The following image is a graphical representation of the roundtrip of AutoCAD drawings:



Additional CAD Import information

Enclosed polylines

The following describes how the enclosed polylines affect the surrounding area and what impact they have on the FM and constructional drawing during .orj conversion.

Value	Impact on the surrounding area	ORJ conversion drawing (FM\Constructional drawing)
Space	Area is subtracted from the surrounding area.	Saved in FM drawing, as space polyline
'Rent to' unit	Area is subtracted from the surrounding area.	Saved in Constructional drawing
'Rent from' unit	Area is subtracted from the surrounding area.	Saved in Constructional drawing
Hole	Area is subtracted from the surrounding area.	Saved in FM drawing, as holes
Construction element	No affect on the surrounding area	Saved in Constructional drawing

Configuring a space-in-space

Spaces can take all shapes and forms, they can be stand-alone or consist of a main space and a nested space.

This article describes how to configure a space-in-space concept.



For the space-in-space concept to work, the following preconditions must be met:

- Each space should be represented as a separate closed polyline.
- The polyline of the nested space needs to be located on the same layer as that of the main space.

If your drawing is ready to be imported, you can configure the drawing definition accordingly.

Procedure

1. Go to **CAD drawing definitions** and add a CAD drawing definition.

2. Select your drawing definition and go to **CAD business objects** selection level and select **Spaces** in the elements panel.
3. Go to **Details** selection level > **CAD business object mapping** step and specify how **Enclosed polylines** should be treated: select **1. Space**.

This setting implies that entities inside a space should be treated as a space.

This means that when importing the drawing, such entities will get their own space record in the Planon software.

4. Save your drawing definition and proceed to import the drawing by clicking **Run CAD import**.

Good to know

- When using this setup, this then generally applies to all spaces and not just to some spaces in the CAD drawing.
- If the inner (enclosed) polyline is other than space (for example, hole or construction data), the space area can be affected. When it's hole, the area of the hole is subtracted from the area of the surrounding (main) space. When it's construction data, the area of the construction data is not subtracted from the area of the surrounding (main) space.
- The nest depth is only 2 levels deep, so all enclosed polylines within the nested space are actually considered construction data.

Importing area values on the floor attributes of a property

By using the correct configuration it is possible to import a drawing's gross area, gross internal area and net area into the Planon application.

Procedure

1. Set up your CAD drawing definition.

In your CAD drawing, the area data can be stored on different layers.

- a. Select the drawing you want to import and navigate to the CAD business objects level.
- b. Select the floor and go to Details > CAD business object mapping.
- c. Here, make sure that the CAD layer field is specified for this floor.



- There is no need for a field mapping of any kind, you can leave the **Field mapping** step empty to import the Gross area, Gross internal area and Net area values.
- The **Net area** value will be used to populate the **Gross internal area**.

2. Go back to your drawing definition and run the import.

Go to Spaces & Workspaces, select your property and go to Components > Floors and notice that the area values are imported.

Removing metadata after import

After importing a drawing using CAD Import in Planon ProCenter, the drawing contains metadata (XData + Extended dictionary data). You can remove the metadata on a drawing for only one BO type at a time or for all the BO types at the same time.

Procedure

1. Open AutoCAD.
2. Right-click the drawing area, and select Planon Tools > Remove Planon data.
3. In the CleanUpUtility dialog box, select the BO type for which you want to remove the metadata from the drawing. Alternatively, you can also select Clean all or All to remove the data for all the BOs in one go.
4. Click OK.
5. Save the AutoCAD drawing to permanently remove the metadata.

Stabicad

In Stabicad, the information on floor/space polylines is stored in the extended entity data (XData) of the related polyline.

The following list includes typical characteristics of Stabicad drawings:

- It is only possible to store the code and name of a space or a floor in the drawing.



If Stabicad is selected as a source of the field mapping on any other field, no data will be imported.

- Both net and floor polylines are generally present on the same layer.
- The concept of net and gross polylines is not supported. During import, all the polylines are interpreted as net polylines.
- In Stabicad drawings, enclosed polylines are identified by the type of the line as defined in the XData. This means that for Stabicad drawings the enclosed polyline interpretation as defined in the business object mapping is overruled by the type of the polyline as defined in Stabicad.

There are four types of enclosed polylines present in Stabicad. The type of polyline used to create a drawing interprets the surrounding area of the space or floor polyline. The impact on the surrounding area is described as follows:

Type of polyline	Impact on the surrounding area
Hole	<p>Enclosed area $\geq 4\text{m}^2$: subtracts from the gross internal area of the surrounding floor polyline.</p> <p>Enclosed area $\geq 4\text{m}^2$: subtracts from the net area of the surrounding space polyline.</p>
Construction	<p>No impact on the gross internal area of surrounding floor polyline.</p> <p>Enclosed area $\geq 0.5\text{m}^2$: subtracts from the net area of surrounding space polyline.</p>
Construction polyline less than 1.5 meter	<p>No impact on the gross internal area of surrounding floor polyline.</p> <p>Always subtracts from the net area of the surrounding space polyline.</p>
Enclosed space	<p>No impact on the gross internal area of the surrounding floor polyline.</p> <p>Always subtracts from the net area of surrounding space polyline.</p>

While creating the .orj files, the enclosed polylines that are interpreted as holes appear in the FM .orj drawing, whereas the enclosed polylines, which do not affect the surrounding floor/space polyline area are treated as construction data and appear in the constructional .orj drawing.



You can import Stabicad 8 drawings with enclosed room entities. The enclosed room entities represent holes in a floor or a space. The holes are identified for a floor or a space if they are present on the layer specified and inside the floor or the space.

The area for a hole is calculated as: Area of polyline Floor/Space - Enclosed Area.

EOS CAD Tool

The EOS CAD tool is a convenience tool that can be used to find or remove data inside AutoCAD drawings.

Planon customers can download and use this tool to resolve issues that occurred while importing AutoCAD drawings into the Planon application.

The logging information (handle ID) provided during [CAD verification](#) can be used to find (and fix) the corresponding element in the CAD drawing.

In addition, the EOS CAD tool can be used to remove Planon metadata from an AutoCAD drawing.



EOS CAD Tool cannot be used with AutoCAD LT - see [Supported Configurations](#).

[Finding a handle-ID in a CAD drawing](#)

[Clearing Planon metadata](#)

Downloading the EOS CAD tool

The EOS CAD tool is available from Planon's Customer Site.

Procedure

1. Go to planonsoftware.com and click **Login** on the top right

A Login page appears.

(Alternatively, you can directly go to and log in.)

2. Click **Customer portal** and log in using your customer credentials.
3. Click **Downloads** at the top.

A menu structure will appear.

4. Click **EosCADTools** and download the zip file.

This file contains a number of DLLs and a Readme file (with instructions, these pretty much sum up what is described here).

5. Open the zip file and extract the appropriate DLL that is compatible with your version of AutoCAD and place it on your computer.

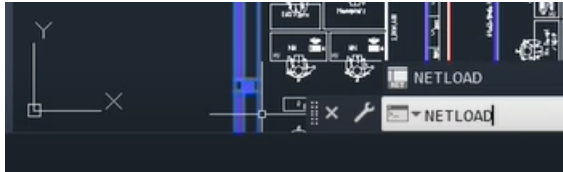
The EOS CAD tool is now ready to be loaded and used.

Loading the EOS CAD tool

In order to use it, the EOS CAD tool must first be loaded in AutoCAD.

Procedure

1. In AutoCAD, in the command line box at the bottom, type **NETLOAD**.



The Choose .NET assembly dialog box appears.

2. Browse to the folder where you have placed the EOS CAD tool (see Downloading the EOS CAD tool), select it and click **Open**.

You have now loaded the EOS CAD tool.



After closing and restarting AutoCAD, the EOS CAD tool is no longer loaded. Consequently, you must reload it in order to use it.

Finding a handle-ID in a CAD drawing

Typically, a CAD drawing contains a multitude of entities, each of these is uniquely identified by its *handle-ID*.

Whenever there is an issue with a CAD drawing, the CAD import verification will report this in its log file and will mention the entity's handle-ID as a way of identifying the entity that requires attention.

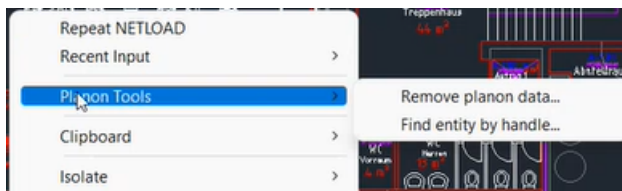
So, you can use the handle-ID to find the corresponding entity.

Procedure

1. Make sure the EOS CAD Tool is loaded - see Loading the EOS CAD tool

If this is already the case, proceed with the next step.

2. Right-click your drawing to display the context menu and click Planon Tools > Find entity by handle...



The Find entity dialog box appears.

3. Enter the handle-ID of the entity that you want to locate (copied from the verification log) and click **Find**.

Your entity will be selected allowing you to examine it and fix the issue that was reported.

EOS CAD Tool

Clearing Planon metadata

CAD drawings may contain specific Planon metadata.

In order to import this drawing in another Planon instance, its metadata must first be cleared because the primary keys of each individual Planon instance differ.

Using the EOS CAD tool, you can clear the Planon metadata for:

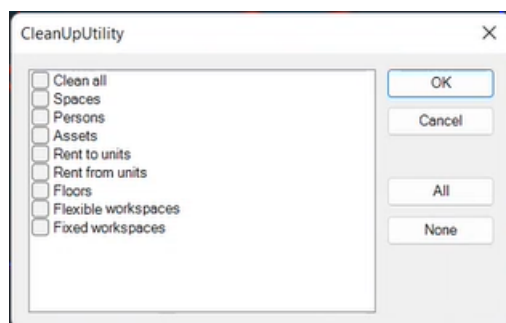
- Spaces
- Persons
- Assets
- Rent to units
- Rent from units
- Floors
- Flexible workspaces
- Fixed workspaces

Procedure

1. Make sure the EOS CAD Tool is loaded - see Loading the EOS CAD tool

If this is already the case, proceed with the next step.

2. Right-click your drawing to display the context menu and click Planon Tools > Remove planon data....



The Clean up utility dialog box appears.

3. Select the specific element whose metadata you want to clear, or click **Clean all**.
4. Click **OK** to remove all data.



You have removed the Planon metadata.

EOS CAD Tool



CAD Import – Field Descriptions





CAD import definition fields

Field	Description
Code	Enter a code for the import definition.
General import settings	
Create CAD metadata file?	<p>Indicate if you want to create a reference file containing Planon ProCenter metadata. If you select Yes, an ident file containing the metadata will be created.</p> <p>When selecting Yes, the following two fields are enabled and you can select a data only report for these fields.</p> <p>For more information, see Including metadata in an AutoCAD drawing.</p> <p>Note: this field is not available on the layout by default.</p>
Additional space info	To add additional space information, select the data only report for space whose data you want to include in your AutoCAD drawing.
Additional floor info	To add additional floor information, select the data only report for floors whose data you want to include in your AutoCAD drawing.
Global drawing definition	<p>Specify a global drawing definition, if you want to import several drawings that share similar parameters.</p> <p>The global drawing definition is used if no specific drawing definition is present for the drawing to be imported.</p>
Property-floor retrieval	<p>Select an option to map the property and floor from the drawing. You can do the retrieval in one of the following ways:</p> <p>Drawing-floor mapping: allows you to import an AutoCAD drawing using property and floor code information as defined in the Mapping between drawing and floor step.</p> <p>Drawing-floor mapping or separator position in AutoCAD file name: allows you to import an AutoCAD drawing based on the separators and their occurrences in the file name. The following fields are enabled when this option is selected:</p>

Field	Description
	<ul style="list-style-type: none"> • Floor code from separator • Floor code from # separator occurrences • Floor code up to separator • Floor code up to # separator occurrences • Property code from separator • Property code from # separator occurrences • Property code up to separator • Property code up to # separator occurrences
	<div style="border: 1px solid #0070C0; padding: 5px;">  For more information on Property code retrieval settings, refer to Property code retrieval settings. </div>
Effective on	<p>Defines which date should be used as effective date for the data to be imported. That is, it determines the start date for a new space size/usage, floor attribute, rentable unit life cycle that is created after the import.</p> <p>You can select one of the following options:</p> <p>Start date of floor</p> <p>Date in import definition</p> <p>Drawing floor mapping or character position in AutoCAD file name: allows you to import an AutoCAD drawing based on the characters in the file name. For example, USA_OBJ371-02.dwg. The following fields are enabled when this option is selected:</p> <ul style="list-style-type: none"> • Floor code – start of range • Floor code – end of range • Property code – start of range • Property code – end of range
	<div style="border: 1px solid #0070C0; padding: 5px;">  For more information on Import file location settings, refer to Floor code retrieval settings. </div>
Date on which changes become effective	<p>Specify the date on which the drawing (changes) should become effective.</p> <p>Instead of using an actual date, you can also use a macro such as <i>&STARTOFDAY</i> - which saves you from having to change the date for each import.</p>


Field	Description
Import spaces	<p>For more information about macros, see Primary and secondary arguments (<i>Fundamentals</i>).</p> <p>Select Yes, to import spaces from the drawing. Floors are imported by default. For more information on the fields related to Import spaces, refer to Import spaces.</p>
Import assets	<p>Select one of the following options to import assets:</p> <p>No: does not import assets.</p> <p>Yes: imports assets into Planon ProCenter.</p> <p>Yes, as move lines: imports assets as move lines. An asset move line is created, if the data retrieved from the asset block in the drawing is different from the asset data in the database. In this case the data from the drawing is entered in the corresponding field of the move line. This can either be 'To' field or designated 'Derive and restore' free field. If no corresponding field is present in the move line, the changed data is entered in the comment field. If a non-simple asset is imported as a move line, the difference in the number of blocks in the space compared to the number of items in the location assignment is updated.</p> <p>The start time of the move request is set to 9:00 on the effective date of the import. In case this date-time is not within working hours on the company calendar, no move request can be created.</p> <p>If the non-simple assets are removed from the space in the drawing, the corresponding number of blocks are reduced from the quantity in the location assignment of the assets.</p> <p>Likewise, if the non-simple assets are inserted in the space, the corresponding number of blocks are added to the quantity in the location assignment of the assets.</p>
Import persons	<p>Select one of the following options to import a person:</p> <p>No: does not import persons.</p> <p>Yes: imports the person into Planon ProCenter.</p> <p>Yes, as move lines: imports persons as move lines. A person move line is created, if the data retrieved from the person block in the drawing is different from the person data in the database. In this case the data from the drawing is entered in the corresponding field of the move line. This can either be 'To' field or designated 'Derive and restore' free field.</p>

Field	Description
Import workspaces (Y/N)	<p>If no corresponding field is present in the move line, the changed data is entered in the comment field.</p> <p>The begin time of the move request is set to 9:00 on the effective date of the import. In case this date-time is not within working hours on the company calendar, no move request can be created.</p> <p>For more information on the fields related to import persons, refer to Import persons.</p> <p>Select Yes, to import workspaces from the drawing.</p> <p>For more information on the fields related to Import flexible workspaces, refer to Import flexible workspaces.</p> <p>For more information on the related fields, refer to Import fixed workspaces.</p>
Import non-closed polylines (Y/N)	<p>If you select Yes, the non-closed polyline is imported into Planon ProCenter whereby the polyline is closed temporarily in order to calculate its area and perimeter. Yes is selected by default.</p>
Log detail level	<p>Specify the detail level of logging: Low, Middle or High. The setting you specify here determines the level of detail shown in the log when clicking Download logs on Import log details level.</p> <p>For more information about the different log levels, see Import log details.</p>
<div style="border: 1px solid #0070C0; padding: 5px;">  When you Download logs on Import logs level, the log will show the log header. </div>	
Import location settings	
File location of drawings	<p>Select the input folder in which the CAD drawings to be imported are located.</p>
<div style="border: 1px solid #0070C0; padding: 5px;">  If you have specified a file location for CAD Import in System Settings, the path reference must be relative. <ul style="list-style-type: none"> • You can import multiple drawings at a time from a specified input folder. </div>	
File name wildcard filter	<p>Use wildcards to smartly include a number of files.</p> <p>* = none or multiple characters</p> <p>Example: ab*c matches: abc, abbc, abbbc, abdc. But does not match: ac?</p> <p>= any single character (but not none)</p> <p>Example: ab?c matches: abbc, abdc. But does not match: ac, abc, abbbc</p>

Field	Description
Output location settings	
File locations for output	Specify a location for the output folder. All imported drawings are copied to output location. The input and output locations can be the same.
<div data-bbox="537 443 1313 527"> <p> If you have specified a file location for CAD Import in System Settings, the path reference must be relative.</p> </div> <div data-bbox="537 527 1313 625"> <p> For more information on Import file location settings, refer to Import location settings.</p> </div>	
CAD Integrator settings	
Create CAD Integrator file	Click Yes to create a CAD Integrator (.orj) file. The .orj file is created even when no CAD drawing entity is selected for import. The .orj file includes all the CAD drawing entities such as floors, spaces, assets, persons, flexible workspaces, 'Rent to' and 'Rent from' units during the import, if indicated in the drawing definition.
<div data-bbox="537 947 1313 1167"> <p> On creating persons, assets and flexible workspaces in the .orj file, the color of the blocks in the AutoCAD drawing is ignored. These blocks obtain the color of the layer as defined in the business object mapping. Note that you must specify the Output location for CAD Integrator files field to save the .orj files.</p> </div>	
Creation output folder structure CAD Integrator	Select Yes to create the CAD Integrator FM and constructional .orj drawings within the same output folder structure as is created for the imported .dwg drawings.
Output location for CAD Integrator files	Specify an output location for the .orj files of the FM and Constructional drawings; these are generated from the .dwg drawing during the import. The .orj files can be viewed using the CAD Integrator in Planon, whereby it is not required for the user to have AutoCAD.
<div data-bbox="537 1482 1313 1577"> <p> If you have specified a file location for CAD Import in System Settings, the path reference must be relative.</p> </div>	
Output options tab	
Import 'Rent from' units (Y/N)	Select Yes to import 'Rent from' units. For more information on the fields related to Import 'Rent from' units, refer to Import 'Rent from' units .

Field	Description
Import 'Rent to' units (Y/N)	Select Yes to import 'Rent to' units. For more information on the fields related to Import 'Rent to' units, refer to Import 'Rent to' units .

Mapping CAD drawing to floor - fields

Field	Description
CAD drawing	<p>Specify the AutoCAD drawing that corresponds to the selected property and floor.</p> <p>If the drawing floor mappings use a folder structure instead of a file name to distinguish drawings of various properties and floors, the identifying path of the file has to be added to the file name: for example, if the ground floor drawing of every property is called as FloorMap.dwg and each property has its own folder, for example: Drawing: \\<share>\Input\Nijmegen\0\FloorMap.dwg Drawing: http://nl-devs12:58070/webdav/wijchen/0/FloorMap.dwg Drawing: \\<share>\Input\0\FloorMap.dwg</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p> While specifying the path of folders they should be separated by a "/" in the CAD drawing field. During the retrieval of property and floor "/" is treated as "\".</p> </div>
Floor code	Specify a code of a floor to which the drawing applies.
Property	Specify a property to which the drawing belongs.

CAD drawing definition fields

Field	Description
CAD drawing	Specify the path of the AutoCAD drawing. The entities of the drawing are mapped with the elements in Planon ProCenter .
Code	Enter a code for the drawing definition.

Field	Description
Description	Enter a description for the drawing definition.
Unit of length in drawing	Specify the unit in which the drawing length is measured. The available values are Millimeters (MM), Centimeters (CM), Meters (M), Inches (IN) and Feet (FT).
StabiCAD drawing	Select Yes if the drawing definition is used for importing drawings that are made using StabiCAD. No is selected by default.
Area measurement standard	<p>Select the standard to calculate the area of spaces in which the enclosed hole/constructional polylines are present.</p> <p>The standard is used only to calculate the area of the surrounding space polyline.</p> <p>Note that the standard is not applicable to the surrounding rent to unit/rent from unit polylines.</p> <p>If the field is empty, no standard is applied.</p> <p>For more information on how to calculate the surrounding space area which is enclosing a hole/ constructional elements, see Area measurement standards (Supporting data).</p>
Apply construction threshold to enclosed polylines	<p>Select Yes to apply the construction threshold, specified in the Area measurement standard field, to the enclosed spaces. This setting is required to consider the enclosed spaces of a layer as constructional elements.</p> <p>If the area of the enclosed space is less than the threshold, the space is treated as a constructional element.</p>


1 By default, **No** is selected. The field is displayed as read-only, if no **Area measurement standard** is specified.

1 For more information on how to interpret the enclosed polyline area, see [Area](#)

Field	Description
	measurement standards (Supporting data).

CAD linked spaces fields

Field	Description
Description	Enter a description for the CAD linked spaces.
Generate space code per floor	<p>Enter a macro to generate a code for a space of a floor. Note: the macro should be entered in a single line. Note: A macro can be used in combination with a field mapping to generate a space code. For example, a field mapping is created for a space to retrieve the space code from a layer of a drawing. If no space code exists for a space, the code is generated using the macro specified in the field.</p> <p>This field accepts the following macros:</p> <p>? Indicates the code of a floor. The number of question marks indicates the number of digits of a floor code to display.</p> <p># Represents the code of the space. The numbers of hashes represent the number of digits in which the space code should be displayed.</p> <p>- and _ can be used to separate the floor and space codes for clarity and are not mandatory to use.</p> <p>, is used as a separator and is not allowed to use in a macro.</p> <p>For example,</p> <p>?-## matches with the codes of the first floor as 1-01, 1-02, 1-03 and so on.</p> <p>?## matches with the codes of the first floor as 101,102 and so on.</p>

Field	Description
	<p>F??_S### matches with codes of the first floor as F01_S001, F01_S002 and so on.</p> <p> For more information about field mapping, see Mapping fields.</p>

CAD linked 'Rent to' units fields


Field	Description
Retrieval of usage with rating	<p>Allows you to specify the Usage with rating of the 'Rent to' unit. Select one of the following options:</p> <p>Retrieval from usage and rating individually: retrieves the usage with rating of a 'Rent to' unit from the individual usage and rating indicated in the field mapping.</p> <p>Retrieval directly from drawing: Retrieves the usage with rating of a 'Rent to' unit directly from the drawing.</p>
Description	Enter a description for the CAD linked 'Rent to' units.
User-defined business object definition	Specify the user-defined business object definition. This deletes the existing field mappings which are no more valid for the selected user-defined business object.

CAD linked 'Rent from' units fields

Field	Description
Retrieval of usage with rating	<p>Allows you to specify the Usage with rating of the 'Rent from' unit. Select one of the following options:</p> <p>Retrieve from usage and rating individually: retrieves the usage with rating of a 'Rent from' unit from the individual usage and rating indicated in the field mapping.</p> <p>Retrieve directly from drawing: Retrieves the usage with rating of a 'Rent from' unit directly from the drawing.</p>

Field	Description
Description	Enter a description for the CAD linked 'Rent from' units.
User-defined business object definition	Specify the user-defined business object definition. This deletes the existing field mappings which are no more valid for the selected user-defined business object.



CAD linked assets fields

Field	Description
Simple?	Select Yes , to import a simple asset. If you select No , the asset is imported as a non-simple asset.
	<div data-bbox="776 869 1328 1094" style="border: 1px solid black; padding: 5px;"> <p> If you define a block in the drawing as a multiple asset, then all similar blocks having the same block definition are imported as one single non-simple asset, having location assignments in each space where the block is present.</p> </div>
Description	Enter a description for the CAD linked asset.
User-defined business object definition	Specify the user-defined business object definition. This deletes the existing field mappings which are no more valid for the selected user-defined business object.

CAD linked persons fields


Field	Description
Description	Enter a description for the CAD linked persons.
User-defined business object definition	Specify the user-defined business object definition. This deletes the existing field mappings which are no more valid for the selected user-defined business object.

CAD business object mapping fields - polylines

Field	Description
Polyline classification	Select Net or Gross polyline.
Enclosed polylines	<p>Select the manner in which enclosed polylines are to be interpreted during import.</p> <p>For more information about how the enclosed polylines affect the surrounding area, refer to Enclosed polylines.</p> <p>If you import a floor, space, 'rent to' and, 'rent from' unit polyline, the area of enclosed polylines defined as space, 'rent to' unit, 'rent from' unit or hole, is deducted from the gross/net area of the surrounding polyline.</p> <div data-bbox="776 940 1328 1096"><p> Construction data is considered as a part of the surrounding floor, space, and 'Rent to' and 'Rent from' unit hence is not deducted from the total area.</p></div> <p>You can calculate the area of an enclosed polyline present on the same layer or different layers of an AutoCAD drawing.</p> <p>In StabiCAD, the type of the polyline that has been used to construct a drawing defines the impact on the area of the surrounding floor or space polyline. Hence, for space and floor polylines of the Stabiplan drawing the enclosed polyline interpretation is not valid.</p> <div data-bbox="776 1524 1328 1680"><p> For more information on the types of StabiCAD polylines and their interpretation while calculating the area, refer to StabiCAD.</p></div>
Convert to CAD Integrator drawing	Select Yes, if the polylines representing the business object should be converted into the CAD Integrator FM drawing during import.

Field	Description
CAD Integrator color	Indicates the color the polyline will obtain in the CAD Integrator drawing. The default color of the CAD layer that you selected for the business object is shown. You can also assign a color of your choice from the palette.
CAD layer	<p>In the CAD layer dialog box, select a CAD layer on which the polyline representing the business object is present.</p> <p>When you select the CAD layer for the 'Rent to' and 'Rent from' units, the Usage and Rating options become available while mapping the fields with the drawing entities.</p>

CAD business object mapping fields - blocks

Field	Description
CAD block	<p>In the CAD block dialog, select a CAD block definition representing the business object.</p> <p>If no CAD block is selected, all blocks, regardless of their block definition, are seen as business objects.</p>
	<div style="border: 1px solid black; padding: 5px; width: fit-content;">  For importing non-simple assets, the CAD block should be defined. </div>
Convert to CAD Integrator drawing	Select Yes, if the blocks representing the business object should be converted into the CAD Integrator FM drawing during import.
CAD layer	In the CAD layer dialog, select a CAD layer on which the CAD blocks representing the business objects are present.
CAD Integrator color	Indicates the color the block will obtain in the CAD Integrator drawing. The default color of the CAD layer that you selected for the business object is shown. You can also assign a color of your choice from the palette.


Field	Description
	All the blocks are converted into the selected color, irrespective of the individual color of the blocks in the .dwg drawing.

CAD business object mapping fields - layers

Field	Description
Destination CAD Integrator drawing	Select a destination CAD Integrator drawing from the list, either FM or Constructional drawing.
CAD layer	Specify a CAD layer to identify its elements such as blocks, polylines and text objects as construction elements.
CAD Integrator color	Indicates the color the constructional elements will obtain in the CAD Integrator drawing. Default the color of the CAD layer you select to convert the elements as construction data is shown. You can also assign a color of your choice from the palette. All the elements of the CAD Integrator drawing are converted into the selected color, irrespective of the individual color of the elements in the .dwg drawing.

Field mapping fields

Field	Description
Field	Specify the field you want to map with the entities of the AutoCAD drawing. These fields depend on the business object you select below.
Business object	Specify the business object to which the field belongs.
Source	Specify a source location from where information for the field mapping should be retrieved. You can retrieve information from one of the following sources:

Field	Description
	<p>Drawing: retrieves the field value from the layer or block within the drawing. For example, data present as text within the involved polyline or as attribute of a block.</p> <p>Drawing-retrieve from block: retrieves the field value from the name of the block definition as defined in the business object mapping.</p> <p>Drawing-retrieve from layer: retrieves the field value from the name of the layer as defined in the business object mapping.</p> <p>Connect for AutoCAD: retrieves the field value from Connect for AutoCAD.</p> <p>Drawing-handle ID: retrieves the field value from the handle ID of the polylines and blocks in the drawing.</p> <p>StabiCAD: retrieves the field value from the StabiCAD repository. The repository stores the code and name of a floor and space.</p> <p>Drawing-retrieve from XData: retrieves the field value from the XData of a drawing.</p> <p>Drawing-retrieve from AEC objects: retrieves the field value from the AEC objects of a drawing.</p>
CAD attribute	Specify the attribute of a block which contains field information.
CAD block	Specify the block, whose attribute contains the field value.
CAD layer	Specify the layer that contains the field value.
Start line (DB: BEGINLINE)	In case you read your data from an MTEXT object, use this field to specify the start line of the MTEXT object containing the information that you want to read in.
	 To ensure proper functionality of <i>field mapping</i> with MText, the MText objects must meet the following requirements:
End line (DB: ENDLINE)	In case you read your data from a MTEXT object, use this field to specify the last line of the MTEXT object containing the information that you want to read in.
Default value	Specify a value that should be used in case a new business object (Space, Person and so on) is imported, and no value for the field can be retrieved from the drawing. To enable this field, you must first

Field	Description
XData application name	<p>save the Field mapping once. A default value is only applied the first time a new record is inserted. During an update the default value is not applied.</p> <p>Specify the name of the application in which the drawing is made.</p> <p>This field is available only if you select Drawing-retrieve from XData in the Source field.</p>
Group code	<p>Specify the group code that contains data to be imported. The range of group codes for XData is from 1000 to 1071.</p> <p>Only the following group codes are supported:</p> <ul style="list-style-type: none"> 1001 (Registered Application Name) 1000 (ASCII string) 1005 (Handle ID) 1040 (Real number) 1070 (16-bit integer) 1071 (32-bit signed long integer) <p>This field is available only if you select Drawing-retrieve from XData in the Source field.</p>
Occurrence	<p>Specify the occurrence of the group code to be imported.</p> <p>For example, if you want to import the fourth occurrence, enter 4 in this field.</p> <p>You must enter an integer greater than zero.</p> <p>This field is available only if you select Drawing-retrieve from XData in the Source field.</p>
AEC property set	<p>Select an AEC property set of the drawing.</p> <p>This field is available only if you select Drawing-retrieve from AEC objects in the Source field.</p>
AEC property	<p>Select an AEC property to be imported.</p> <p>Only the following property types are supported:</p> <ul style="list-style-type: none"> Manual (Text/Real/Integer/Boolean/Auto Increment - Integer/ Auto Increment - Character/List) Automatic Location Material

Field	Description
	<p>The values in the AEC property pick list depends on the property set you select in the AEC property set field.</p> <p>If you do not select a property set in the AEC property set field, all properties of a drawing are displayed in the AEC property pick list.</p> <p>This field is available only if you select Drawing-retrieve from AEC objects in the Source field.</p>

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