



# CAD Integrator

## 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](mailto: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 Integrator

**CAD Integrator** enables you to visualize spatial Facility Management (FM) information in floor drawings in Planon ProCenter. After a relatively easy conversion of your AutoCAD drawings, you can open, edit and print these drawings in **CAD Integrator**. **CAD Integrator** is available for many Planon ProCenter TSIs that refer to the physical workplace, such as Spaces & Workspaces , Assets , Personnel , Work Orders and Reservations.



When performing actions on a CAD drawing using the **CAD integrator** menu, please note that we have found some incorrect behavior when using the FireFox browser. For example, when doing a Space mapping, the legend is not properly scaled and has to be adjusted manually. This issue will hopefully be fixed in a later version of FireFox. Alternatively, if possible, we recommend to use the Chrome browser.

# Before you start using CAD Integrator...

To use **CAD Integrator**, you do not need to have an AutoCAD license, nor do you need extensive knowledge of AutoCAD. With the appropriate CAD Integrator authorizations, to be granted via Planon ProCenter **Authorization**, users can make the most of the available graphical features.

To enjoy working with **CAD Integrator** in Planon ProCenter it is recommended to familiarize yourself with the features and concepts in Spaces & Workspaces , Assets , Personnel , Moves , Reservations and Work Orders .


 For more information on the TSIs that are relevant to CAD Integrator in Planon ProCenter , see [Spaces and Workspaces](#), [Assets](#), [Reservations](#), [Moves](#), [Personnel](#) and [Work orders](#).

## File format

To open drawings in **CAD Integrator**, you need to convert the available AutoCAD drawings from \*.dwg or \*.dxf file format to \*.orj file format. Use the CAD Import TSI to achieve this.


The converted AutoCAD drawings are split into an .orj drawing containing FM information and an .orj drawing containing constructional information.

In **CAD Integrator**, you can either open both types of \*.orj files simultaneously or hide the constructional drawing, leaving just the FM drawing with facilities management information.

 For more information on creating .orj files using CAD Import, see [CAD import definition fields](#).

## System settings

The Planon ProCenter administrator can set default file locations for CAD Integrator drawings and symbols in System Settings > File locations.

 Refer to the [System settings](#) user documentation for more information on CAD Integrator system settings.

## Linking a floor drawing to a floor



The \*.orj files (floor drawings) you created must be linked to a floor in Planon ProCenter to be able to open the drawing of the corresponding floor.

In the following procedure, it is assumed that you already have a converted FM floor plan (recognizable by the letters FM in the file name and the extension .orj) and/or a constructional drawing (recognizable by the extension .orj) available on a default location on your computer or application server.



In a drawing, polylines should not overlap, however, touching polylines are allowed.

### Procedure

1. Go to **Spaces & Workspaces** .
2. Select the (sub) property that contains the floor to which you want to link a floor drawing.
3. Go to the Components selection level.
4. Select the floor to which you want the link a CAD Integrator drawing (\*.orj file).
5. At the Spaces selection level, select the Floor attributes selection step.
6. Select the relevant set floor attributes in the elements section.
7. View the information in the data section and – if necessary - update some data fields.
8. Link an FM drawing and a constructional drawing to the floor attributes concerned, by selecting the relevant \*.orj file and \*-fm.orj file from the respective pick lists in the Constructional drawing and FM drawing fields.

If you click the pick list icons in these fields, the default location of your graphic files will be opened automatically.



If these fields are not available in your user interface, contact your Planon administrator to make the fields available via **TSIs** .

9. After populating the fields, click Save.

The constructional drawing and FM drawing are now added to floor attributes of the floor.



For more information on making fields available via **TSIs** , see [TSIs](#).

## Where can you find CAD Integrator in Planon ProCenter?

**CAD Integrator** can be opened in a separate view to see floor drawings in all CAD Integrator oriented TSIs, such as:

- Spaces & Workspaces
- Assets
- Personnel
- Reservations
- Moves
- Work Orders

At the relevant selection levels and steps, you can open **CAD Integrator** by selecting an element from the list and clicking the **CAD Integrator** button above the action panel. The data section will be replaced by the applicable CAD drawing. The element list and action panel remain visible and operational in CAD Integrator view.

Additionally, CAD Integrator functionality can be accessed from within specific fields in other TSIs. For more information on opening **CAD Integrator** from within fields, refer to [Accessing CAD Integrator through CAD Integrator related fields](#).

The screenshot shows the 'Spaces & workspaces' interface. On the left, there is a table of space attributes for '14 Columbus Square / 00 Ground'. The table has columns for 'Property', 'Floor Code', and 'Space number'. The main area displays a CAD drawing of the floor plan with various rooms colored in green, blue, and red. Below the drawing is a 'Space mapping' table with the following data:

Space types	Count	Net area(m²)	Persons
01,Archive room	1	9.17	0
03,Auditorium	2	93.88	0
08,Corridor	8	110.62	0
09,Elevator	2	11.62	0
12,Conf. room	7	273.14	0

On the right side, there is an 'Actions' panel with options like 'Area calculations', 'Generate QR code', 'Delete', 'End space', 'Restore space', 'Anonymous history', 'Permits to work', and 'Report'. A red arrow points to the 'CAD Integrator' button in the top right corner of the interface.

In each TSI where **CAD Integrator** is available, the focus is on key elements in that TSI. For example, in the **Spaces & Workspaces** TSI, the focus is on floors, spaces and workspaces. In **Assets** the focus is on assets and in **Reservations** the focus is on flexible workspaces.


## CAD Integrator in Spaces & Workspaces

In **Spaces & Workspaces**, the **CAD Integrator** view is available at:

- Components > Floors

- Spaces > Spaces
- Space details > Workspaces
- Space details > Flexible workspaces

If the top level of the **Spaces** elements list is selected (all spaces), **CAD Integrator** starts with an empty pane. To display a drawing in **CAD Integrator**, select a relevant space in the elements list. The CAD Integrator drawing that is linked to the floor of this space (at Spaces > Floor attributes) is shown as soon as you start **CAD Integrator**.

 if you drill down from a single floor and then select the **CAD Integrator** view, Planon will automatically display the right drawing. In that case you do not have to select a space first.

## Space selections in drawing and elements list


If you click a linked space in the CAD Integrator drawing while the **Highlight the selected space** option is enabled, the space will be highlighted. At the same time, this space is also selected in the elements list. Alternatively, if you click a linked space in the elements list, this space will be highlighted in the CAD Integrator drawing.

## CAD Integrator in Assets

In **Assets**, the **CAD Integrator** view is available on the **Assets** selection level.

To start **CAD Integrator** in **Assets** and simultaneously opening a relevant CAD drawing, the following conditions have to be met:

- in **Spaces & Workspaces**, an \*.orj drawing must be linked to the floor holding the space that is also present in the location assignment of the asset (refer to **Asset details > Location assignments**);
- in **Assets**, only **one** asset with a fully specified asset location is selected in the elements list. The CAD Integrator drawing that has been linked to the floor of this asset's space is displayed as soon as you start **CAD Integrator**.

 If multiple assets are selected, **CAD Integrator** starts with an empty pane. If an asset is selected whose asset location is unspecified, the **Select a floor drawing** dialog box is displayed. Select a relevant drawing from the list to start **CAD Integrator**.

## CAD Integrator in Reservations

In **Reservations**, the **CAD Integrator** view is available at:

- **Graphical planner > Flexible workspaces.**
- **Reservation details > Visitors.**

To start **CAD Integrator** in **Reservations** while simultaneously opening a relevant CAD drawing, the following conditions have to be met:

- in **Spaces & Workspaces** , an \*.orj drawing must be linked to the floor holding the space that is linked to the flexible workspace (refer to **Reservations > Graphical planner > Flexible workspaces**).
- in **Reservations**, only *one* flexible workspace, whose space is specified, is selected in the elements list. The CAD Integrator drawing that is linked to this flexible workspace's floor and space is shown as soon as you start **CAD Integrator**.
- In **Spaces & Workspaces** , an \*.orj drawing must be linked to the floor on which the space reserved for the visitor is located. For details on how to link a drawing to a floor, see [Linking a floor drawing to a floor](#).
- In **Reservations**, only *one* visitor who is linked to a reservation must be selected in the element list.

- If multiple flexible workspaces are selected, **CAD Integrator** starts with an empty pane. If a flexible workspace is selected whose space is unspecified, the **Select a floor drawing** dialog box is displayed. Select a relevant drawing from the list to start **CAD Integrator**.
- If you select multiple visitors from the elements list, then CAD Integrator cannot display the space to which the visitors are linked.

## CAD Integrator in Personnel

In **Personnel** , the **CAD Integrator** view is available at the **Personnel** selection level and **Details** selection level.

To open a CAD drawing using **CAD Integrator** in **Personnel** , the following prerequisites must be met:

- In **Spaces & Workspaces** , an \*.orj drawing must be linked to the floor where the space of the **selected person / person linked to the selected visitor** is located. For details on how to link a drawing to a floor, see [Linking a floor drawing to a floor](#).
- In **Personnel** , only *one* person must be selected in the elements list.

The CAD Integrator drawing linked to the floor of this person's space is then displayed as soon as you start **CAD Integrator**.

- If a person without a linked space is selected, the **Select a floor drawing** dialog box is displayed. Select a relevant drawing from the list to start **CAD Integrator**.• If you select multiple visitors the elements list, **CAD Integrator** cannot display the space of the person to whom the visitors are linked.

After you have opened **CAD Integrator** for the selected person, you can link / unlink, highlight, reposition, rotate and copy 'person symbols' in the drawing, and synchronize updates in the drawing with data in the Planon ProCenter database.


## CAD Integrator in Moves

In **Moves** , the **CAD Integrator** view is available at:


- Details > Move lines

To open a CAD drawing using **CAD Integrator** in **Moves** , the following prerequisites must be met:

- In **Spaces & Workspaces** , an \*.orj drawing must be linked to the floor where the space of the person associated with the move line is located. For details on how to link a drawing to a floor, see [Linking a floor drawing to a floor](#).
- In **Moves** , only *one* move line must be selected in the elements list.

 Currently, the CAD Integrator viewer in **Moves** only works for *workspaces* and *person move lines*.

After you have opened **CAD Integrator** for the selected move line, you can graphically move personnel from one workspace to another, instead of planning the move by entering data.

 For detailed information on using the CAD Integrator viewer in *Moves* , see [Moves](#).

## CAD Integrator in Work Orders

In **Work Orders** , the **CAD Integrator** view is available on the **Orders** selection level.


Make sure the following conditions are met to start CAD Integrator in Work Orders and automatically open the corresponding CAD drawing:


- In **Spaces & Workspaces** an \*.orj drawing must be linked to the floor holding the space that is linked to the order;
- In **Work Orders** , only one order is selected in the elements list. The CAD Integrator drawing that has been linked to the floor of this order's space or workspace is displayed as soon as you start CAD Integrator .

## Accessing CAD Integrator through CAD Integrator related fields

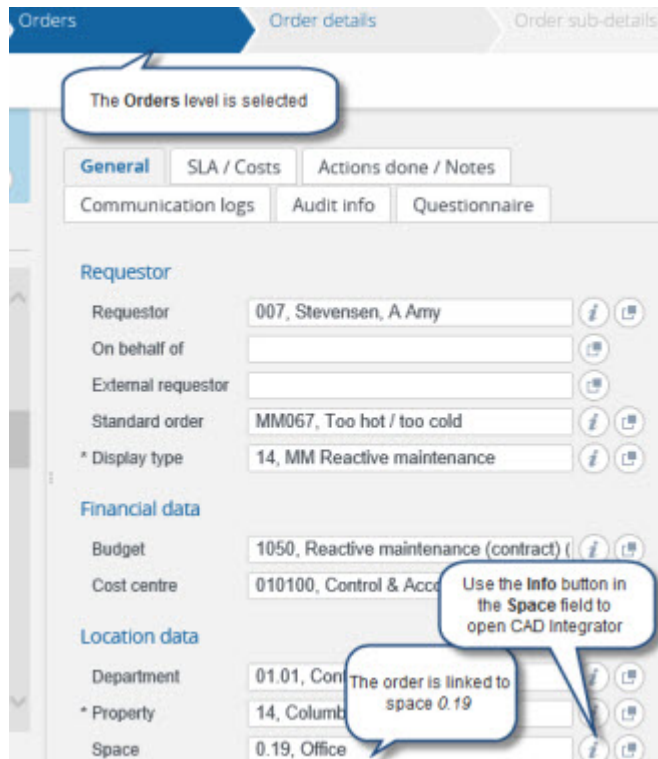
You can also open CAD Integrator drawings from within special dialog boxes. These special information dialog boxes either have a reference to spaces, flexible workspaces, assets, or to people (who are registered in the **Personnel** TSI). Fields including information dialog boxes like these also exist in TSIs that are not primarily geared to **CAD Integrator**, such as the **Work Orders** , **Reservations** and **Addresses** TSIs. Examples of fields that provide access to **CAD Integrator** through info dialog boxes

are: the **Space** field and **Asset ID** field and all personnel related fields (e.g. **Internal coordinator**, **Requestor**) in the **Work Orders TSI**.


 Your configuration may include fields with a reference to spaces, personnel or assets that have been specially configured by your organization. Info dialog boxes in configured fields (free fields) like these will also give access to any linked CAD Integrator drawings. For more information on linking drawings to floor, see [Linking a floor drawing to a floor](#). For more information on linking people or assets to a space, see [Personnel](#) and [Assets](#).

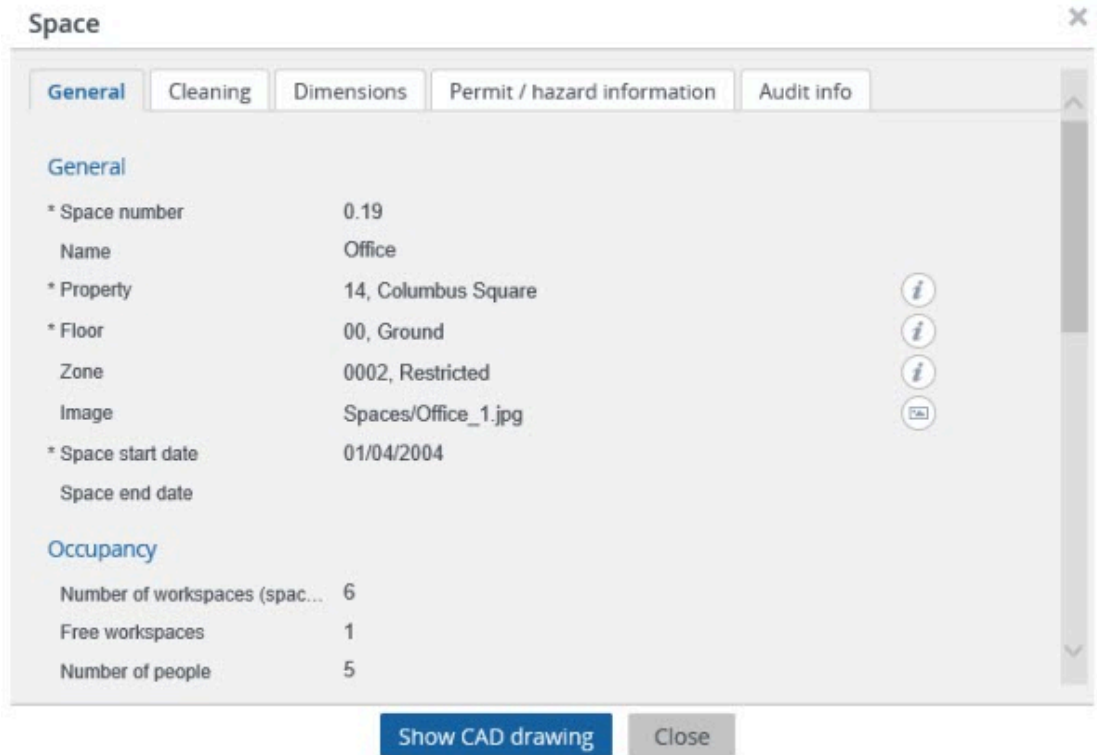
 In order to be able to open a CAD drawing through an info dialog box, the CAD drawing needs to be linked to a relevant floor and space in Planon ProCenter on the selected reference date. Likewise, the people or assets to be viewed, need to be linked to a relevant space.

The following example is about accessing **CAD Integrator** in the **Work Orders TSI > Orders** selection level > **Space** field.

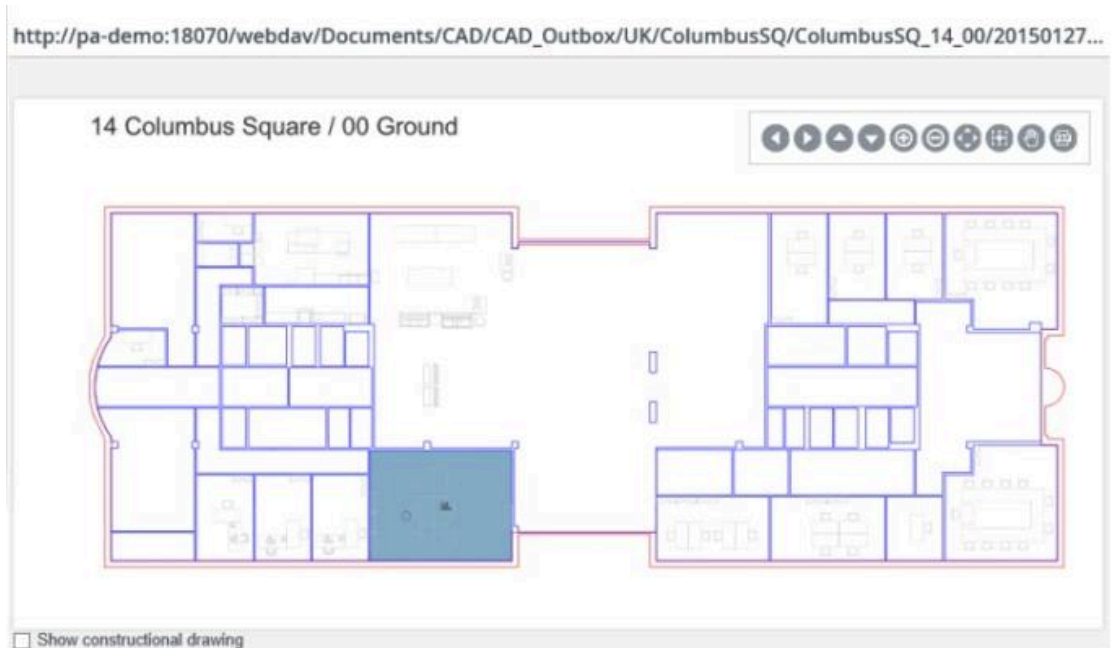


The screenshot shows the 'Orders' level selected in the 'Work Orders TSI' interface. The interface is divided into several sections: 'Requestor', 'Financial data', and 'Location data'. Each section contains several fields with associated 'Info' (i) and 'Show CAD drawing' (CAD) buttons. A callout box points to the 'Orders' level in the top navigation bar, stating 'The Orders level is selected'. Another callout box points to the 'Info' button in the 'Space' field, stating 'Use the Info button in the Space field to open CAD Integrator'. A third callout box points to the 'Space' field, stating 'The order is linked to space 0.19'.

If you select a space in this field and click the  info button, **CAD Integrator** can be opened in read-only mode by clicking the **Show CAD drawing** button.



**CAD Integrator** will open in read-only mode, highlighting the space to which the selected order applies.



**i** There are many practical applications for retrieving CAD drawings through info dialog boxes. For example: employees admitting visitors in the **Personnel TSI > Visitors** selection level, or employees submitting calls in the **Work Orders TSI**. They can retrieve



relevant CAD Integrator drawings and subsequently share these with visitors or service engineers. The screen prints can help people locate the right space, person or asset. For more information on using the shortcut menu options in the **CAD Integrator** pane, see [CAD Integrator shortcut menu](#). For more information on using the **CAD Integrator** toolbar, see [CAD Integrator toolbar](#).

## Selecting a space/workspace in the relevant field

In Planon ProCenter, on all **Space** or **Workspace** fields, you can select the relevant space/workspace from the pop-up by:

- Selecting a space/workspace from the list
- Selecting a space/workspace on the CAD drawing

For both approaches you can use a filter to narrow down the results. You can click the **Only show Spaces which are available on** option and select a date. The spaces/workspaces available on the selected date are displayed. You can also select/change a **Property** and **Floor** filters whenever necessary to refine your search.

Show CAD drawing

Selecting the **Show CAD drawing** checkbox will show the CAD drawing, enabling you to select a space/workspace directly on the drawing.

**Space**

Name Contains Search...

Property: WWB, WWB Floor: First  Show CAD drawing

Only show Spaces which are available on 19/03/2024

Space number	Name	Floor.Floor.Code
1.39	Conference room	01
1.40	Conference room	01
1.41	Office	01
1.42	Office	01
1.43	Office	01
1.44	Office	01
1.45	Office	01
1.46	Office	01
1.47	Open consultation area	01
1.47A	Pantry	01

WWS WWB / 01 First

10 m

Show constructional drawing

OK Cancel

The advantage of selecting a space/workspace from the CAD drawing is, that if you do not know the space/workspace number, you can easily choose a space/workspace on the drawing and the relevant number is selected in the list.



# CAD Integrator - Concepts


This section describes the concepts available in **CAD Integrator** and how they interact with each other.

See the links below for more information:

- [Reference date](#)
- [CAD Integrator menu](#)
- [CAD Integrator toolbar](#)
- [CAD Integrator shortcut menu](#)

## CAD Integrator menu


The Spaces & Workspaces , Assets , Personnel , Reservations and Work Orders TSIs include a **CAD Integrator** tab. The tab contains a **CAD Integrator** menu with generic and specific options and settings. The menu content depends on the selected TSI, selection level and selection step.

 In **TSIs** you can configure which menu options will be visible to authorized users on the **CAD Integrator** menu. By configuring the **CAD Integrator** menu, you can limit the number of items to only the relevant menu options. For more information, see [TSIs > Linked menu items](#).

For more information on using the options and settings of the menu, see [Generic CAD Integrator actions](#), [Specific menu options for floors](#), [Specific menu options for spaces](#) and [CAD Integrator settings](#).

## CAD Integrator toolbar

At the top right of the **CAD Integrator** pane, you can find a toolbar with various functions that you can apply to the drawing, such as moving the drawing in various directions, zooming in or out, panning etc.

 If you click the **Pan view** button, the button will change color to indicate that you are now in panning mode. To deactivate the panning mode, click the button again or press the scroll button of your pointing device.

You can also:

- Dynamically zoom in or zoom out the drawing by moving the scroll key of the pointing device up or down. On touch screen devices use 'pinch' and 'spread' gestures for zooming in and out.

- Dynamically pan the drawing by pressing the scroll key of the pointing device and moving the drawing to another point. On touch screen devices, use a 'slide' gesture for panning.
- The **Stop** button at the bottom of the pane is used to terminate actions you started from within the **CAD Integrator** menu, for example linking a space or repositioning an asset symbol.

## CAD Integrator shortcut menu

The **CAD Integrator** shortcut menu is available in Assets , Reservations, Spaces & Workspaces , Personnel and Work Orders . The **CAD Integrator** shortcut menu options may differ depending on the TSI you are in.

Right-clicking on the **CAD Integrator** pane, opens a shortcut menu. This menu contains several options that can be used when viewing a drawing.

Some of the options are also present on the drawing toolbar and are explained in the [CAD Integrator toolbar](#) section. The options that are unique to this shortcut menu are explained here.



You can dynamically zoom in or zoom out the drawing by moving the scroll key of the pointing device up or down. Press the scroll key of the pointing device to dynamically pan the drawing.

### Define text point for space

The **Define text** point option is available only in **Spaces & Workspaces > Spaces** and when you select a linked space. Double click on a text box, the border of the text box is highlighted in blue and you can move the text box. You can also select multiple text boxes.

Defining default settings for a text point is possible by clicking the **Save drawing preferences as default** option. This can be done locally for each user. That is, you can save the text, title, legend positions and sizes of a specific drawing to a default.

However, you can retrieve the default settings for this drawing by clicking **Retrieve default drawing settings**. This will overwrite the user's personal settings.

### Select

If you click this option, you select the space in which the cursor is in the drawing. It can also be used to cancel any measuring actions you may have started in the drawing.

## Place title

Double click on the title, the border of the title is highlighted in blue and you can move the text box.

## Place legend

Double click on a legend, the border of the legend is highlighted in blue and you can move the legend position.

## Add Select text points

Selects the text boxes of the selected spaces.

## Reset textpoint

Resets the textboxes of the selected spaces, to the middle point of the space.

## Select text points

Selects the text boxes of the selected spaces.

## Reset textpoint

It resets the textboxes of the selected spaces, to the middle point of the space.

## Dimensions

This menu contains two submenu options: **length** and **surface**. These options can be used to measure the distance between two points in the drawing or calculate a selected surface area. For more information on working with the **Dimensions** option, see [Measuring distance and surface area in a drawing](#).

# CAD Integrator settings menu

The **CAD Integrator settings** drop-down menu allows you to make settings for:

- tooltips for floors, spaces, personnel, assets, fixed workspaces and flexible workspaces
- texts for floors, spaces, personnel, assets, fixed workspaces and flexible workspaces
- space mapping
- legend

## Procedure

1. On the **CAD Integrator** list, click **CAD Integrator settings**. The **CAD Integrator settings** dialog box appears.
2. For details on the fields, see [CAD Integrator settings](#).
3. Modify the setting as required and click **OK**.

The selected tooltips and/or texts are displayed in the **CAD Integrator** drawings.



- Tooltips and text definitions can be defined in a data-only report by selecting the relevant fields in **Reports** . For more information on creating report definitions, see [Reports](#). For texts and tooltips in a report, see [Texts and tooltips](#).
- The default font size of the text that appears in CAD Integrator drawings can be specified in the font size fields in **Spaces & Workspaces** Spaces > Floor attributes. These font size options are set per drawing and apply to all users and will only be applied when clicking CAD Integrator > Retrieve default drawing settings. These are the common settings for all the users and are stored as default to the server. These values are updated, when you click the CAD Integrator > Save drawing preferences as default. If the font size fields are not filled, the default Planon-defined font size, **120**, is used. For more details, see [Spaces and Workspaces](#).

# Reference date

In **Spaces & Workspaces** , a reference date can be set at various selection levels and steps to be able to retrieve specific time-dependent data. For the CAD Integrator functionality this means that the drawing (.orj file) to be displayed should belong to floor attributes that have a start date equal to or earlier than the reference date.

The reference date is set via the **Reference date** button in the Planon header



. By default, the reference date is the current date and it is activated. Clicking **Reference date** opens a date picker, from which you can select another date

that is in the past or in the future. Once a new reference date is selected, the color of the header button changes and it displays the selected date.

# Generic CAD Integrator actions

There are several generic actions available on the **CAD Integrator** tab. Most actions can be found in the **CAD Integrator** drop-down menu or in the drawing toolbar.

Additionally, there are **Action on selection** and **Modify within selection** buttons which enable you to perform certain actions or status transitions on multiple elements selected in the elements list. For more information on these options, see [Action on selection](#) and [Modify within selection](#).

## Rotating a drawing

Initially, an imported CAD drawing may not always be displayed in the preferred position in CAD Integrator. In that case, you can rotate the drawing to the required position.

Procedure

1. Open the drawing in CAD Integrator.
2. Right-click and select Rotate from the context menu.

**The drawing is zoomed out.**

3. Rotate the drawing to the required position.

**By default, the rotation angle increases / decreases with 5 degree steps on releasing the mouse button. If you keep the SHIFT key pressed while rotating, you can select angles to a precision of 1 degree.**

**The drawing angle is saved in your browser's local storage.**

## Selecting and loading a CAD drawing

In **Assets** and **Reservations**, you can select and load a floor drawing with the **CAD Integrator > Load drawing** option in the drop down menu.



- Planon searches for drawings according to the property selected at the **Properties** level. If you do not select a property at the **Properties** level, all drawings are displayed by default, without the filter options.
- If you start CAD Integrator with a multiple asset selected, the **Select a floor drawing** dialog box automatically opens. Since multiple assets can be located on various floors, Planon cannot automatically open a drawing. Therefore, you must select a CAD drawing on a relevant floor.

## Aligning a background image

You can upload a CAD background image as described in [Floor attribute fields](#).

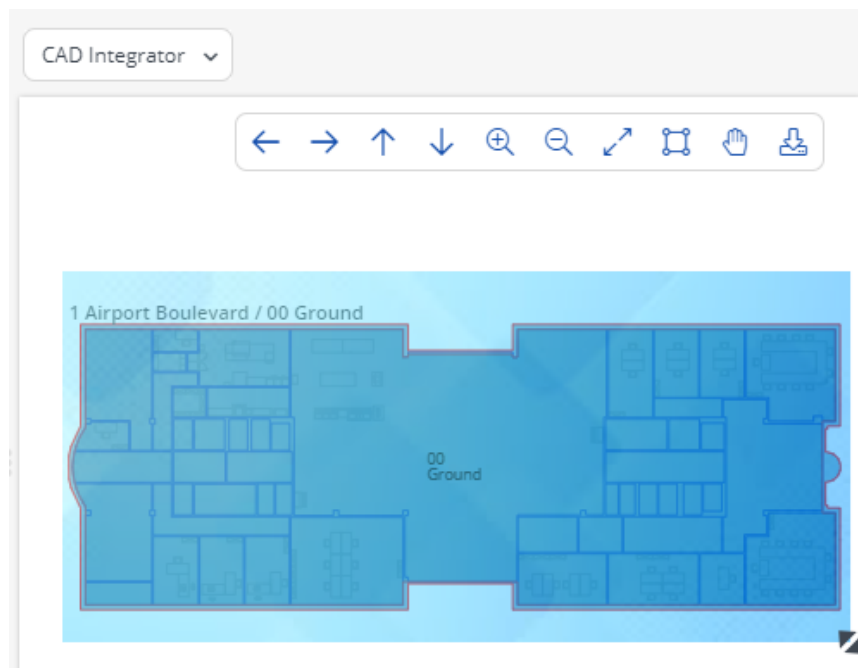
After uploading a background image for your CAD drawing, you can align it with the CAD drawing.

### Procedure

1. Go to **Components > Floors** step and select your floor.
2. Open the **CAD Integrator** view.
3. In the **CAD integrator** menu, click **Configure background image**.

You can now reposition the background image.

You can move the image left or right and, by using the controls in the bottom-right corner, you can stretch the drawing.



4. When you are done, in the **CAD Integrator** menu, click **Save Background drawing**.

This saves the background image in the current position.

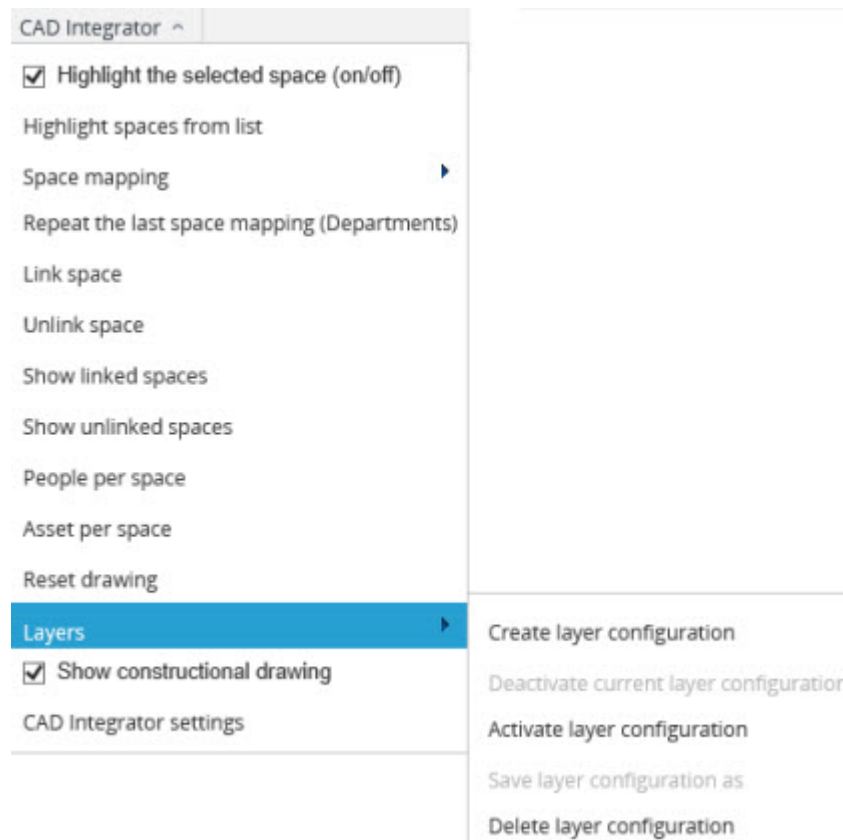
## Selecting multiple items using the CTRL key

There are different methods to select multiple items in the CAD Integrator drawing and the elements list, all involving the **CTRL** key.

- Press the **CTRL** key while clicking multiple items in the drawing, in order to select these items.
- Press the **CTRL** key while dragging the cursor across the drawing to the left, to select all items that are touched by the dotted line.
- Press the **CTRL** key while dragging the cursor across the drawing to the right, to select all items that are fully included by the solid line.
- Press the **CTRL** key while selecting items in the elements list. As a result, the corresponding items are highlighted in the drawing.
- Use **CTRL** + click outside the drawing to clear the selection.
- Use **CTRL** + **A** to select all items in the elements list. As a result, the corresponding items are highlighted in the drawing.

## Working with layers and layer configurations

The **Layers** option consists of a number of submenu options, to select, deactivate, remove, or configure the layers that are available in the CAD Integrator drawing.

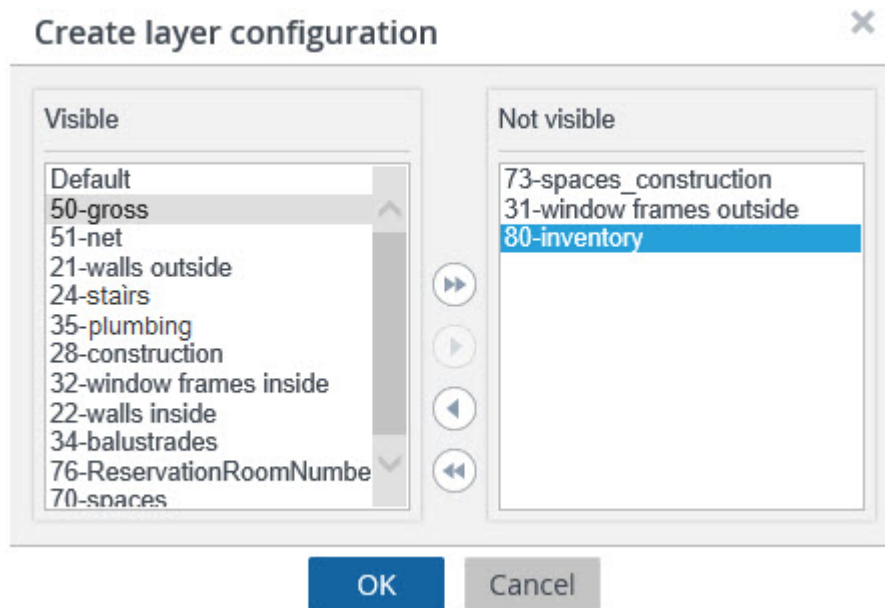


### Configuring layers



After clicking the **Create layer configuration** submenu option, a dialog box opens. In this dialog box, you can select layers from the **Visible** section that you do not want to see in the CAD Integrator drawing and click the arrow button to the right.

The selected layers are subsequently transferred to the **Not visible** section and be hidden. By default, all layers are visible in the drawing (items in the left-hand section). The double arrow buttons enable you to transfer all layers in one go, either to the left or the right.



After adjusting a drawing's layers, you can save your selection via the **Layers** option, **Save layer configuration as...** submenu option.

#### **Saving a layer configuration as**

After creating a layer configuration, you can save this new configuration by selecting the **Save layer configuration as...** submenu option from the **CAD Integrator** menu.

After selecting this submenu option, the **Save layer configuration** dialog box appears, in which you enter a name for the new layer configuration.

After entering the name and clicking **OK**, the layer configuration is saved. It can be activated in a CAD Integrator drawing via the **Activate configuration of layers** submenu option.

#### **Activating a layer configuration**

With the **Activate layer configuration** submenu option, you can load one of the layer configurations you have created and saved via the **Create layer configuration** and **Save layer configuration as...** options.

All you need to do is to select the **CAD Integrator** menu > **Activate layer** > **configuration** option.

The **Activate layer configuration** dialog box appears, from which you can select the required layer. After clicking **OK**, the layer configuration is immediately applied to the CAD Integrator drawing.

 The name of active layer is displayed in the status bar of the **CAD Integrator** pane.

### Deactivating the current layer configuration

A selected layer configuration can be deactivated through the **Deactivate current layer configuration** submenu option. The CAD Integrator drawing will be restored to its original state, with all layers visible again.

### Deleting a layer configuration

Any saved layer configurations you no longer require can be deleted from the list by selecting the **Delete layer configuration** submenu option.

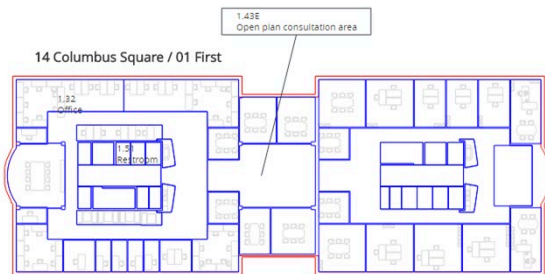
The **Delete layer configuration** dialog box appears in which you can select and delete any layers you no longer require.

## Displaying drawings

CAD Integrator is specially designed to display various types of drawings. These include:


### FM (Facilities Management) drawings

Planon ProCenter displays linked FM drawings if you click the **CAD Integrator** view. See the following example:



FM drawings can be linked to floors in **Spaces & Workspaces** . Go to Spaces > Floor attributes and populate the **FM drawing** field.

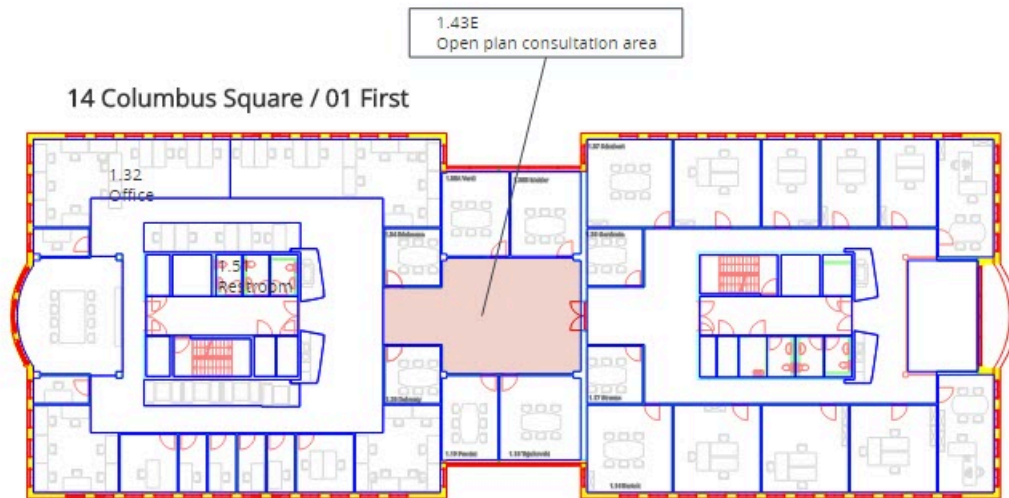
To link a drawing to a floor, see [Linking a floor drawing to a floor](#).

 The drawing files (\*.orj files) are floor attributes. Floor attributes are time-related elements which are dependent on the selected reference date.

### Constructional drawings

If you enable the **Show constructional drawing** option on the **CAD Integrator** drop-down menu, the constructional drawing (.orj file) that is selected in **Constructional drawing** field in Spaces > Floor attributes is loaded. The constructional elements will become visible in the drawing.

See the following example:



**i** The constructional elements details will be visible based on the settings made in the **Level of detail** field on the **Floor attributes** step. For more information, see [Floor attributes fields](#).

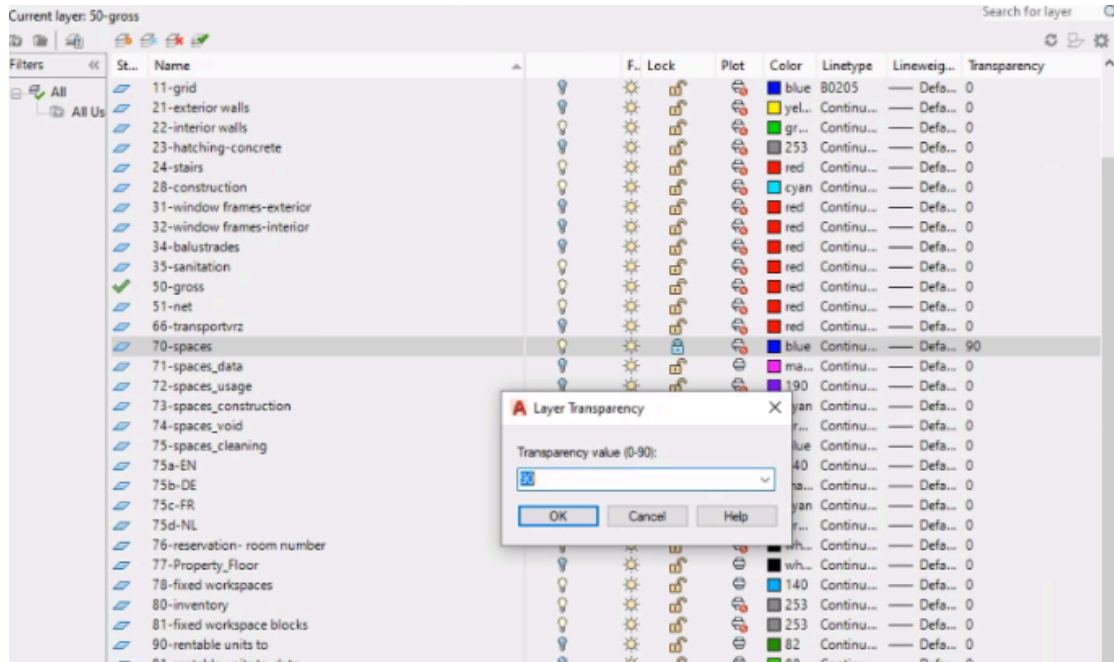
### Background image

You can display a background image for a CAD Integrator drawing. To do this, select an image in the **CAD background image** field in **Floor attributes**. After selecting the image, resize the image to suit your requirements and save the image by going to the **Floors** step (in CAD Integrator view) and clicking the **Configure background image** and **Save background image** options on the **CAD Integrator** menu. You can cancel configuration of the background image by using the **Cancel** button. For more information, see [Floor attributes fields](#).

**i** The **Configure background image** and **Save background image** options may not be visible by default. If so, add them to the TSI in Step settings > Linked step actions. For more information, see [Linked step actions](#).

### Transparent drawing layers

It is possible to display the layers of a CAD drawing as transparent or invisible in the CAD Integrator. This can be done in any AutoCAD tool, by specifying a **Layer Transparency** value between 0-90:



The visibility of layers will vary depending on the selected value. If the value is set to 90, the layer will be invisible in CAD Integrator after a CAD import.

In the following image, the **Transparency** of space layer **70-spaces** is set to 90 in the AutoCAD tool. After the CAD import, the layers in the drawing will be invisible in CAD Integrator:



The same transparency is applied when you print the CAD drawing with the **Save to PDF** option.

## Rotating and relocating assets, persons and workspaces

The imported CAD drawings shown in CAD Integrator may contain symbols representing people, assets and flexible workspaces. These symbols can be rotated and relocated.

### Procedure

1. In the relevant drawing, double-click the symbol representing the asset, person or workspace.

**The symbol changes color.**

2. To rotate the symbol, wait for the rotation symbol to appear and rotate until the symbol is at the required position.

**By default, the rotation angle increases / decreases with 15 degree steps on releasing the mouse button. If you keep the *SHIFT* key pressed while rotating, you can select angles to a precision of one degree.**

3. Release the mouse button.
4. To relocate the symbol, drag it to a required position in the drawing.
5. Release the mouse button.

## Saving and retrieving drawing preferences

The CAD drawings shown in CAD Integrator contain texts, such as drawing titles, legends and (work)space information text. These texts can be resized and moved. If you resize space or workspace information text boxes, all other information text boxes are adjusted accordingly. Your browser automatically saves the changes as personal preferences. Similarly, you can adjust a floor plan's orientation (rotation angle). If you want to make these preferences available to other users, you can save your personal preferences as defaults for other users to retrieve.

### Procedure

1. To resize the text, double-click in the relevant drawing on the title, legend or text you want to resize or move.

**The border of the text box changes color.**

2. Wait for resizing handle (opposite triangles) to appear in a corner of the text box and drag until the text has the required size.
3. Release the mouse button.
4. To move the text box, double-click the text and drag it to a required position in or outside the floor plan.

### Note

To undo the moving or resizing of title, legend or text boxes, press **CTRL + Z**. To redo the moving or resizing of title, legend or text boxes, press **CTRL + Y**.

5. Release the mouse button.
6. To adjust the floor plan's orientation, see Rotating a drawing.
7. You can save these changes as default settings and thus make them retrievable for other users, by clicking Save drawing settings as default on the CAD Integrator menu.

**A pop-up will open, informing you that the changes are saved as retrievable default settings for this drawing. Click OK to confirm the settings.**

8. You can also retrieve available Planon default settings saved by other users, by clicking Retrieve default drawing settings on the CAD Integrator menu.

**A dialog box appears, informing you that your personal settings are overwritten with the Planon default settings.**

9. Click OK to confirm the settings.

The confirmed settings will take effect after you log off and back on again.

### Note

For the browser storage it is important to recognize a drawing setting each time the viewer shows it. This recognition is important also in a situation of a second import or changing from one environment to another. See also [Identifying drawings](#).

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Identifying drawings



## Identifying drawings

The browser's ability to identify drawing determines the way how drawings are shown to the user.

The identification of a drawing is based on its UUID, a unique identifier that sticks to the drawing for its entire life.

There are, however, two situations in which a drawing's UUID is changed:

- By changing the unit of length for a drawing, which invalidates the settings (mostly position-based), such as text insert points.
- By deciding not to update a drawing during CAD import. If the setting **Update CAD Integrator FM drawing** in the import definition is set to **No**, a new UUID will be created.

**Note** Most existing drawings currently do not have a UUID. When opening these drawings in Planon now, these drawings will automatically get a UUID and their settings are converted to the new UUID based settings.

- You can save the drawing preferences as default (CAD Integrator menu), but note that there is only one default setting. (In contrast, all individual settings of the user are saved).
- The viewer stores the history of text point changes. Use CTRL+Z to go back or CTRL-Y to go forward. (History is only available during the open viewer session.)

## Aligning text boxes

In CAD Integrator , you can align text boxes that initially were randomly placed in the CAD drawing.

### Procedure

1. Open the drawing in which you want to align the randomly placed text boxes.
2. Select two or more text boxes by double-clicking them.
3. Right-click and select the Align option from the context menu.
4. Select the relevant aligning option: Left, Center vertically, Top, Right, Center horizontally or Bottom.

**The selected text boxes are aligned accordingly.**

## Save to PDF


It is possible to download a PDF of the drawing displayed in CAD Integrator.

### Procedure

1. In Spaces & Workspaces , select a space and enable the **CAD Integrator** view in the data panel.

**The drawing is displayed.**



2. On the drawing toolbar, click **Save to PDF**:  .

A dialog box in which you can make some settings appears. Most of these settings are self-explanatory:

Field	Description
Title	Provide a title for the PDF file or use the suggested name.
Page size	Specify a page size.
Orientation	Specify the orientation.
Print range	Specify whether to print the entire drawing or just the visible part of the drawing.
Scaled printing	Specify the scale of the drawing in which you want to print the PDF - in keeping with the drawing's unit of measure.  If you specify 1:10 - you will potentially get many pages.  If you specify 1:1000 - you will get fewer pages.
Print background white	When selected, the background will be white.
Print border & logo	When selected, a border and logo are included

3. Click **OK** to print your drawing to PDF.
4. Once the printing information is processed, you can click **Download PDF** to download the file.

## Multiple views

You can display 2D or 3D drawings on the corresponding levels in Assets and in Spaces & Workspaces . To simplify navigation inside these models and provide the ability to compare models, it is possible to display these views in a separate window.

-  • The pop-out windows will only respond to actions performed in the parent TSI.
- To benefit most of this feature, we recommend using multiple monitors.

When using this feature, it is therefore possible to display three views simultaneously:

- Data view

- CAD Integrator
- BIM Viewer

## Limitations

- You cannot copy the URL of a pop-out window to another browser (tab or window).
- Viewers shown in the data panel will immediately display the appropriate BIM model or CAD drawing. In pop-outs, a BIM model or CAD drawing will not update until the user has selected an item in the element list.
- When closing, the pop-out will not transfer the exact status of the viewer. The user may have to repeat certain actions in the data panel viewer.
- Dialogs such as warnings will not be shown in the pop-out, but will be shown in the data panel.
- CAD Integrator pop-out
  - Cannot save drawings to PDF.
  - Cannot be used to rotate assets.

## Synchronization

When displaying multiple pop-outs, the views that are displayed remain synchronized.

- Selecting a space in the elements list (data view) will highlight that space in the CAD Integrator and/or BIM viewer view.
- Selecting a space in the CAD Integrator view will highlight that space in the BIM viewer pop-out and select the space in the elements list (data view).
- Selecting a space in the BIM viewer pop-out will highlight the space in the CAD Integrator pop-out and select that space in the elements list (data view). If required, a new floor plan will be loaded in the CAD Integrator pop-out.



When switching to a different navigation level in the TSI shown in the workspace frame, the synchronization behavior is temporarily deactivated. In other words, the viewers shown in the pop-outs will not respond to selection changes in the elements list. Synchronization will reactivate once the user returns to the navigation level in which the pop-out windows were initially created.

## Specifics

Assets can exist on multiple floors. Selecting an asset in the element list of the CAD Integrator view may result in the appearance of the **Floor selection** dialog and this is now expanded to cover all views available on the **Assets** step.

## Displaying multiple views simultaneously

In CAD Viewer and BIM Viewer it is possible to display multiple views simultaneously. Because it can be daunting to navigate inside a 3D model, being able to display multiple views simultaneously will greatly benefit customers in doing their work. The feature will make it possible to display and compare views side-by-side.

How does it work?

### Procedure

This feature is available in Assets and in Spaces & Workspaces - the procedure for both is similar. For now, this example will focus on CAD Integrator.

1. Go to **Assets > Assets** and select an item in the elements list.

**By default, the data view will be displayed.**

2. In the view options, select **CAD Integrator** and select a floor drawing.

**The corresponding CAD drawing will be displayed.**

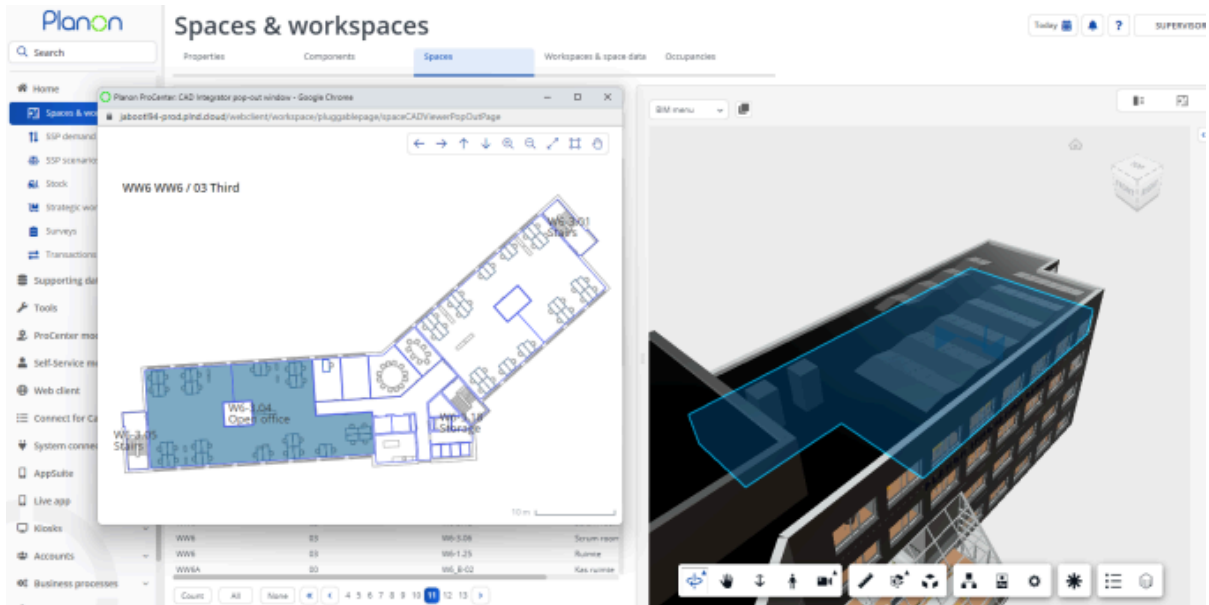
3. To display the data view and the CAD drawing simultaneously, next to

the **CAD Integrator** menu, click the pop-out button: .

**The CAD drawing will appear in a new window.**

A message in the data panel will be shown: *'The CAD viewer is currently being shown in a pop-out window'*.

4. In the view options, click **Data panel** and/or **BIM Viewer** to display another view that will be shown in parallel.



**These views will remain synchronized. When changing a selection in one view, this will be synchronized with the other view(s) currently displayed.**

By doing so, you will be able to compare multiple views (preferably using multiple monitors).

# Working with CAD Integrator

In this section working with the various **CAD Integrator** functions will be explained.

See the links below for more information:

- [Starting CAD Integrator](#)
- [General options in the CAD Integrator menu](#)
- [Specific menu options for floors](#)
- [Specific menu options for spaces](#)
- [Specific menu options for workspaces](#)
- [Specific menu options for assets](#)
- [Specific menu options for flexible workspaces](#)
- [Specific menu options for persons](#)

## Starting CAD Integrator

After an FM drawing has been linked to the relevant floor as one of the floor attributes, you can open this drawing in **CAD Integrator**.

The use of a constructional drawing is optional. If you want to open a constructional drawing in **CAD Integrator**, it should also be linked to the relevant floor as one of the floor attributes.



The reference date should be activated, otherwise **CAD Integrator** cannot be opened.

For more information on how the reference date can affect the CAD Integrator functionality, refer to [Reference date](#).

## Opening a floor drawing in CAD Integrator

**CAD Integrator** can be started by selecting a single element (for example a floor or a space) and by subsequently clicking the **CAD Integrator** button.

### Procedure

1. Select a floor in the Floors selection step at the Components selection level

Or

Select a space in the **Spaces** selection step at the **Spaces** selection level.

2. Click the CAD Integrator button. The linked FM drawing is opened.

Linked CAD Integrator drawings can be opened anywhere in Planon ProCenter where **CAD Integrator** is available.



- By default, the constructional drawing is not displayed. It can be activated by enabling the **Show constructional drawing** option in the **CAD Integrator** menu. The constructional drawing is then incorporated in the FM drawing as if they form a single drawing. All constructional elements will become visible.
- CAD Integrator drawings (\*.orj files) must be linked as floor attributes to floors in Planon ProCenter, and can only be opened in **CAD Integrator** if you have selected a floor or a space that is linked to these floor attributes.



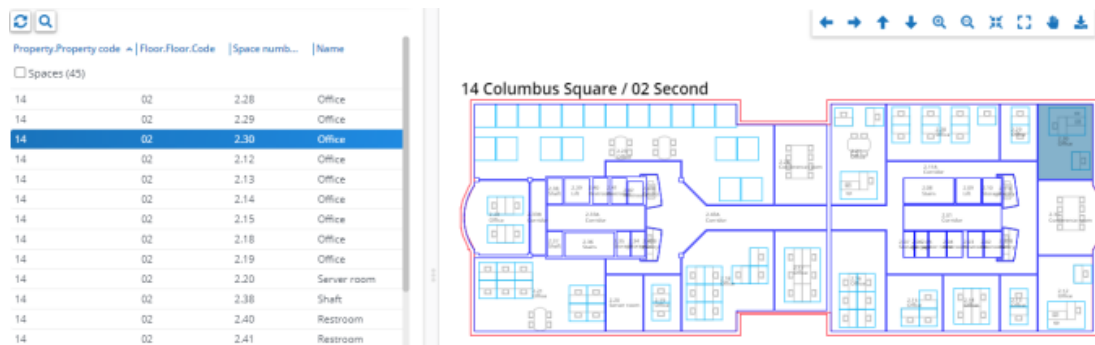
In Planon ProCenter, you can go to a lower level without selecting an element (e.g. a space or floor). This affects the use of **CAD Integrator**. If no element is selected and you open **CAD Integrator**, an empty pane is displayed. To have a CAD drawing displayed on starting **CAD Integrator**, select an element first. If the element concerned has not yet been linked to a floor plan via floor attributes, you will receive a warning.

## Specific menu options for spaces

In **Spaces & Workspaces**, if you open the **CAD Integrator** menu at the **Spaces** level, you will find several menu options that are specific to spaces. These specific options are discussed in this section.

## Highlighting a selected space

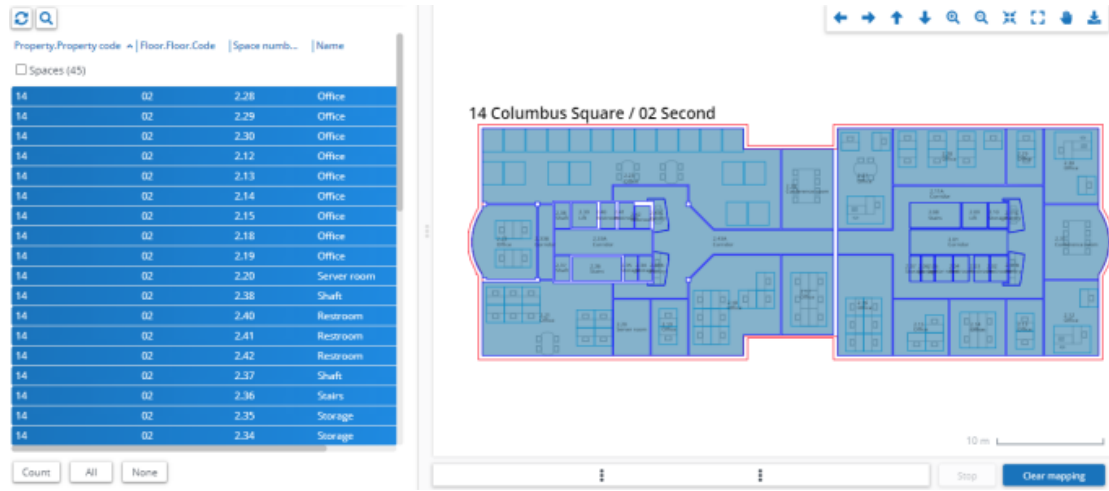
If you select the **Highlight the selected space (on/off)** option, and select a space in the element list, the selected space will be highlighted in the CAD drawing (provided you have active CAD Integrator and the spaces are linked).



Space number 2.30, an office, is selected in the element section and highlighted in the drawing. You can also select multiple spaces (using the Ctrl key on your keyboard), which will be highlighted in the drawing.

## Selecting spaces from list

If you click the **Select spaces from list** option, all the spaces in the elements list that are linked to the opened drawing are highlighted. For this option to work, the **Highlight the selected space (on/off)** option must be enabled.



In order to undo the selection, click outside the floor polyline in the CAD Integrator drawing or click on a single space.

## Space mapping

In Planon ProCenter, you can use the space mapping feature to color the spaces in your floor plan based on various criteria. Select the **Space mapping** option on the **CAD Integrator** menu and choose the criteria for space mapping. The CAD Integrator drawing will be displayed according to these settings.

The criteria for space mapping are:

- Space categories
- Departments
- Department levels 1-4
- Space types
- Cost centers
- Tariff groups (spaces)
- Space standards
- Free attributes 1 & 2



- The mapping option is only available if there is data in the **Free attributes**.
- It is recommended to log out and log in again to see the mapping.

- Available area [previously called:Space occupancy]
- Available capacity [previously called: Available workspaces]
- User-defined space mapping



- You can configure the settings for the space mappings in the **CAD Integrator mapping** step in the **CAD mapping settings** TSI. If you do not configure the settings, the 'User settings' of the user are applied. This depends on the selection in the **Use mapping settings** field in the **CAD Integrator mapping** step. For more information, see [CAD Integrator mapping](#).
- For a selected space, the space mapping data is derived from the values specified in the corresponding criteria fields at Space details > Space usage.
- You can also define your criteria for space mapping. For details, see [User-defined space mapping](#).



While the space mapping option is carried out, Planon ProCenter checks if the sum of the space dimensions from the various space usages does not exceed the space dimensions of the space itself. If it does, space mapping will fail. In that case, you can adjust the space dimensions of the space usages concerned in such a way that they no longer exceed the space dimensions of the selected space.



If space mapping is managed by a **CAD integrator mapping** business object, a message is displayed in the status bar that **This 'spaces' mapping is managed by your organization**.

For example, if you select Space mapping > Departments. The drawing displays the spaces of all departments at various levels in different colors. As shown in the image given below, the legend explains which color refers to which department.

14 Columbus Square / 02 Second



If you select **Available capacity**, the spaces are highlighted in various colors. Spaces are grouped by the number of persons present, the occupancy rate of a space and the available workspaces. Available, partially available, unavailable, overpopulated workspaces are highlighted in green, yellow, orange, and red colors respectively.



To determine the **Available capacity**, CAD Integrator considers the workspaces that you specified in the **Spaces & Workspaces** TSI, Space details > Space usage > Space capacity field. It does not consider the data on Space details > Workspaces.



The right colors will be shown when a free field is set to a specific field type (such as Department) and apply a user-defined space mapping.

### Hatch patterns in space mapping

You can make space mapping even more explicit by applying hatch patterns to various space types, optionally combined with colors. If you have multiple department levels, the department mapping always uses the hatching of the department selected on **Space usage**. The color will change based on the department level mapping, but the hatch pattern will always stick to the selected department.

**i** Note, however, that when a space has multiple space usages, the application will show the colors representing these usages of the space.

- If the fill option is 'only colors', the application applies a gradient to allow to color the space in the appropriate manner.
- If the fill option contains hatch as well, it is currently not possible to use gradients for showing different hatch patterns. Instead, the application will use the color of the hatch patterns and use these colors to fill the spaces.

For more information on the predefined hatch patterns, see [Supporting data](#).  
For more information on applying hatch patterns on space types, see [Spaces and Workspaces](#).

### Workspace mapping in space mapping

You can also apply workspace mapping on the **Spaces** level, via the **Workspace mapping** option in the **CAD Integrator** menu. This will result in a combined mapping of both spaces and workspaces. The same space mapping sub-options that are available on the workspaces level are also available here, except for user-defined space mapping. For more information on the options, see [Specific menu options for workspaces](#). If you apply workspace mapping on the **Spaces** level, only workspaces of the spaces listed on the elements panel will be colored according to the selected criteria. This implies that any filtering applied to spaces will also impact the workspace mapping.

**i** If workspace mapping is managed by a **CAD integrator mapping** business object, a message is displayed in the status bar that **This 'workspaces' mapping is managed by your organization**.

### Clearing a space mapping

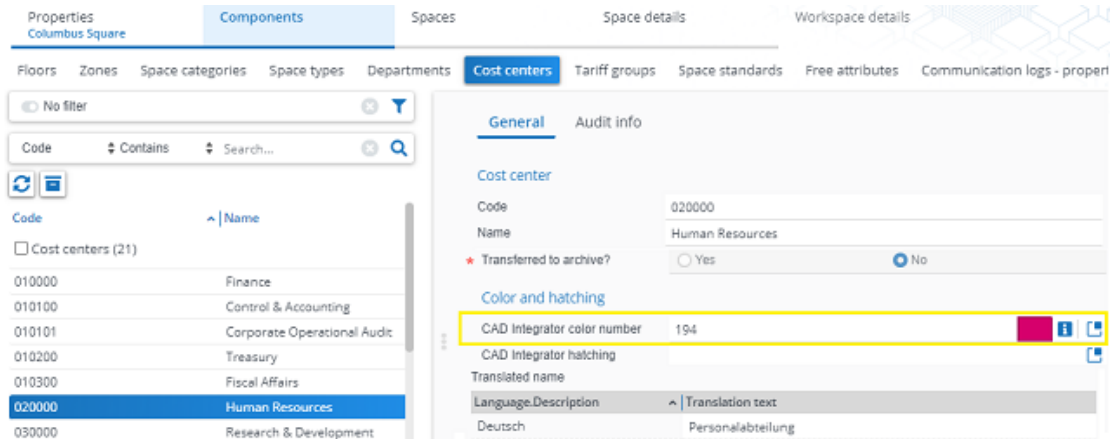
After you have applied space mapping, the drawing will retain the mapping information until you perform one of the following actions:

- Click the **Clear mapping** button in the bottom left corner of the CAD Integrator pane
- Click the option **None** on the CAD Integrator > Space mapping menu.


## Coloring of spaces

Whatever space mapping criterion you select, the result will be that the floor plan is filled with different colors, representing the different departments, cost centers, tariff groups, etc. that are using the spaces.

Since multiple, simultaneous space usage is allowed in Planon ProCenter, individual spaces can be filled with multiple colors. The color orientation (horizontal or vertical) within a single space is determined by the CAD Integrator settings. The colors are either selected automatically (by enabling the **Automatic coloring** option in the **CAD Integrator Settings** dialog box) or chosen on the data tabs of the various steps at the **Components** level:



Coloring of space usage is done on a pro-rata basis. In other words: it is based on the space dimensions of the space usage concerned. If a department only uses 50 percent of space, only 50 percent of the space will take on the corresponding color.

 If you have not specified a net area for the space usage(s) of a space that is involved in space mapping, there will be no coloring, because no percentages of space usage can be calculated as a result. Parts of spaces that have no space usage linked to them, will also remain colorless. If you have selected **Yes** in the **Show unspecified space usage** field in the CAD Integrator **Settings** dialog box – they will be colored light gray.

For more information on CAD Integrator settings, see [CAD Integrator settings](#).

## Applying 'area type' to space mapping

You can apply space mapping based on the *area type* selected in the **Area type for space mapping** field in the **CAD Integrator settings** dialog box.

 For more information, see [CAD Integrator settings](#).

The available area types are:

- Additional area
- Core area
- Floor area
- Fluxline correction
- Gross area
- Net area

- Rentable area

If you select an area type that should be applied to space mapping, make sure that you have values in the corresponding fields at **Space usage** and **Space dimensions**.

The coloring of the space is based on the following calculation: value in **Space usage** field (divided by) value in the **Space dimensions** field.

For example, if you select **Additional area**, the additional area at Space usage will be divided by the additional area at Space dimensions. Therefore, the **Additional area** fields in **Space usage** and **Space dimensions** must have a value. This calculation ensures that the colors are displayed on the floor plan based on the partial fill ratio for space mapping.

## CAD Integrator mapping

If you want to display CAD mapping settings as generic settings for all users, you can customize and authorize (using authorization filters) the space mapping options displayed on the **CAD Integrator** menu. This will give end users access to relevant and uniform mappings settings, and prevent them from using individual user-defined mapping settings. You can also create new mappings settings and make them available to users. For more information, see [Creating a CAD Integrator mapping](#).

It is possible to authorize the list of mappings in the CAD integrator mapping by using ProCenter filters.

- If you want to export CAD mapping settings via 'Configuration transfer', you also have to include all the required data-only reports that contain the information to visualize the CAD Integrator.
- You can authorize CAD mapping settings, but the authorization has to be separate (based on sub business objects) for spaces and workspaces.

## Creating CAD Integrator mapping for spaces

As a space manager, you can modify existing mapping settings or create new mapping settings for spaces in the **CAD Integrator mapping** business object and make them available to the CAD Integrator user.

- To use this feature, the **CAD Integrator mapping settings - spaces** [system name: SpaceCADMappingSettings] step must be added to the **CAD mapping settings** TSI [system name: CADViewColor]. For more information, see [Navigation panel](#).

### Procedure

1. Go to the CAD mapping settings TSI > CAD Integrator mapping.
2. On the action panel, click Add CAD mapping settings - space.
3. In the data section, complete the relevant fields. For specific fields related to the CAD Integrator mapping - space, see CAD Integrator mapping settings - spaces. For user-defined fields, see CAD Integrator settings.



- By default **Use mapping settings** field is set to **Yes**. If you select **No**, the user settings in the CAD Integrator settings will be applied.
- Only if the **Use mapping settings** field is set to **Yes** and the newly created CAD mapping is selected in **CAD Integrator**, will the selection in the new settings be applied. In all other cases, the user settings are applied by default. An exception to this rule are the color-based fields (**Title color**, **Background color**, **Background color text points**, **Legend color** and **Highlighting color**) in **CAD Integrator settings**. These settings will be applied to all space mappings.

4. Click Save.

You have created a CAD Integrator mapping for spaces.

## Creating CAD Integrator mapping for workspaces

As a space manager, you can modify existing mapping settings or create new mapping settings for workspaces in the **CAD Integrator mapping** business object and make them available to the CAD Integrator user.



To use this feature, the **CAD Integrator mapping settings - workspace** [system name: WorkspaceCADMappingSettings] step must be added to the **CAD mapping settings TSI** [system name: CADViewColor]. For more information, see [Navigation panel](#).

### Procedure

1. Go to the CAD mapping settings > CAD Integrator mapping.
2. On the action panel, click Add CAD mapping settings - workspace.
3. In the data panel, complete the relevant fields.

For specific fields related to CAD Integrator mapping for workspaces, see [CAD Integrator mapping settings - workspace](#). For user-defined fields, see [CAD Integrator settings](#).



- By default the **Use mapping settings** field is set to **Yes**. If you select **No**, the user settings in the CAD Integrator settings will be applied.
- Only if the **Use mapping settings** field is set to **Yes** and the newly created CAD mapping is selected in **CAD Integrator**, the selection in the new settings will be applied. In all other cases, the user settings are applied by default. An exception to this rule are the color-based fields (**Title color**, **Background color**, **Background color text points**, **Legend color** and **Highlighting color**) in **CAD Integrator settings**. These settings will be applied to all space mappings.

4. Click Save. You have created new CAD Integrator mapping for workspaces.



If the workspace mapping is created based on workspace details, the '**Available area**' column is shown in the legend and if it is created based on occupancy, the '**Required area**' column is shown in the legend.

## Creating user-defined space mapping

In addition to Planon-defined space mapping, you can also create *user-defined space mapping*. User-defined space mapping is made by creating a **Data only** report that defines on which field of the spaces or space usage the mapping should be made.

In the report definition of the data only report, select the **Group by this column** option for the field that is used as basis for space mapping. Any other fields selected in the report definition are displayed in the floor drawing's legend.

By selecting the **Group totals under this column** and **Totals under this column** options you can display the totals of multiple numeric fields (including free numeric fields selected in the report definition) per grouping criterion and also per column in the floor drawing's legend. Planon recommends selecting the **Group totals under this column** option to get the correct values for each legend row. For example, if an area field is added to the report, Planon calculates the total of the area field and shows the total in the floor drawing's legend.



For details on creating report definitions for **Data only** reports, see *Reports* > [Creating reports for space mappings](#).

The report you have defined can be used to make a user-defined space mapping in **CAD Integrator**.

### Procedure

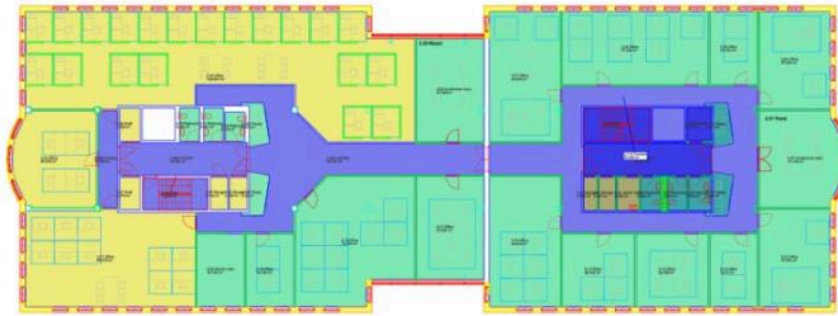
1. Open a floor drawing for the space selection for which you want to create a space mapping.
2. On the CAD Integrator drop-down menu, click Space mapping > User-defined space mapping.

The **User reports** dialog box appears.

3. Select the relevant space mapping report and click OK.

The user-defined space mapping is now created. See the following example of a space mapping based on the field **Cleaning type**:

#### 14 Columbus Square / 02 Second



Space mapping report cleaning type - Reference date: 05/10/2015			
Cleaning type	Cleaning frequency	Floor finishing	Count
Basic	Weekly	Carpet	8
Specialized	Not scheduled	Concrete	10
Standard	Daily	Carpet	43



- If a user-defined space mapping is applied, the hatching patterns and colors are displayed automatically based on settings made at the **Components** level (at **Departments**, **Cost centers** or **Space types**) if the data-only report is grouped on a field of the components business objects (Departments / Cost centers / Space types etc.).
- CAD Integrator enables you to repeat the last used space mapping. To apply the previous space mapping, select **Repeat the last space mapping** from the **CAD Integrator** drop-down menu.

## Linking and unlinking spaces (+ showing unlinked spaces)

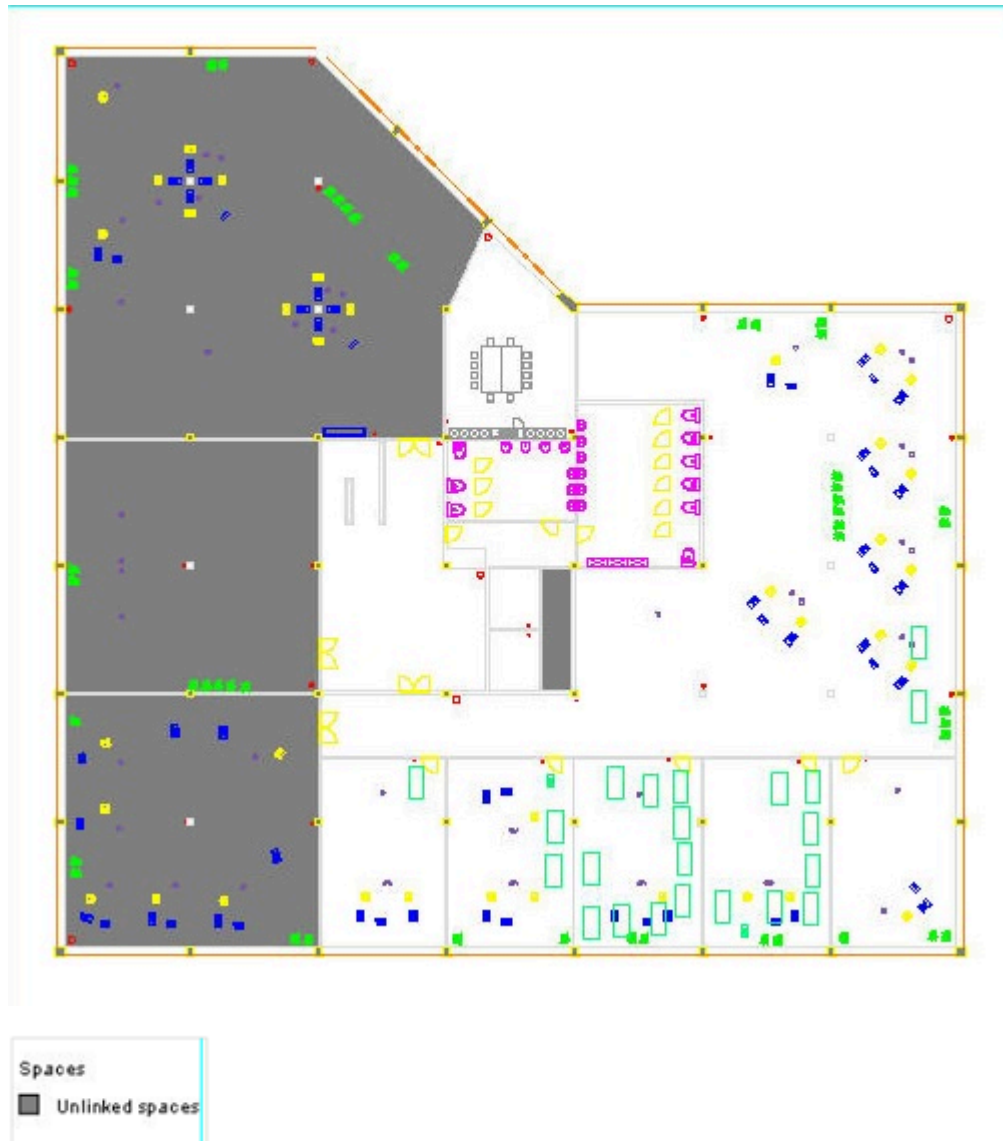
If a selected space from the elements list is not linked to a space in the opened CAD Integrator drawing, you can select the **Link space** menu option. A link will be made with a space that is clicked on in the drawing. To unlink the selected space from the drawing, you can choose the **Unlink space** option from the **CAD Integrator** menu.

If you want to find out quickly which spaces in the drawing are not yet linked to a space from the elements list, click the **Show unlinked spaces** option and any unlinked spaces will be marked gray.

As a result, the elements list will also be filtered on unlinked spaces and all the unlinked spaces are highlighted. You can restore the elements list to the original situation by clicking the **Refresh list** button.



If you choose the option **Link space** while there are unlinked spaces present in the drawing, these unlinked spaces will light up automatically in a gray color.



## Measuring distance and surface area in a drawing

The **CAD Integrator** shortcut menu (to be opened by right-clicking) contains the **Dimensions** option, with submenu options **Length** and **Surface area**.

In the following procedure it is explained how you can measure distance (length) in a drawing.

### Procedure

1. Open the relevant CAD drawing.
2. In the shortcut menu, click Dimensions > Length.
3. Click on the starting point of the line you want to measure.



A flexible red line will appear.

4. Drag the red line to the end point of the line that you want to measure.
5. Click again when you have reached the end point of the line.

The length of the line is given in meters/feet in a tooltip.

6. Click the Select option from the shortcut menu to end inserting the desired line or press the [ESC] key. The line that had been drawn will no longer be displayed in the drawing.
7. The following steps explain how you can measure surface area in a drawing.
8. Open the relevant CAD drawing.
9. In the shortcut menu, click Dimensions> Surface area.
10. Click on the starting point of the area you want to measure. A flexible red line will appear.
11. Drag the line across the area that you want to measure.
12. Click again when you have covered the required area. The surface area is given in square meters/feet in a tooltip.
13. Select the Select option from the shortcut menu to end inserting the desired area or press the [ESC] key. The area that had been drawn will no longer be displayed in the drawing.

## Specific menu options for workspaces

CAD Integrator allows you to check the availability and use of workspaces in a CAD drawing.

You can access CAD Integrator for workspaces at Space details > Workspaces. Here, you can make the settings for the CAD linked workspaces.



You can only open CAD Integrator if you have an .orj file linked to a floor.

In addition to generic CAD Integrator menu options, there is a workspace specific option available on the drop-down menu: **Workspace mapping** (with a set of suboptions). With the following **Workspace mapping** suboptions you can create the appropriate workspace mappings:

- **Availability**: workspace mapping according to the workspace availability (partial) during a certain period. The workspace coloring depends on the availability %. For example, you can create a workspace mapping of the availability % within a certain period.



- **Departments (workspace details):** workspace mapping based on the workspace details of the departments that own the workspaces on the given date.
- **Departments level 1-4:** workspace mapping based on the workspace details, per department level (1-4).
- **Departments (occupancy):** workspace mapping according to the occupancy rates of the departments that occupy workspaces on the given date.
- **Occupancies 1-3:** workspace mapping by occupancy rate, per department level (1-3), on the given date.
- **Workspace type:** workspace mapping according to the workspace types based on a reference date. This allows you to see which workspace types are on a particular floor on a certain date.
- **User-defined workspace mapping:** workspace mapping according to a user-defined data-only report. When the mapping is done, the CAD drawing legend displays the data from the selected report. You can use data-only reports from the Workspace, Workspace Details & Occupancy business objects.



If user-defined workspace mapping is based on fields from the **Components** level (Departments, Cost centers, and Free attributes), the hatch patterns and colors from the selected component will be applied to the mapping.

You can also apply space mapping on the **Workspaces** level, via the **Space mapping** option on the **CAD Integrator** menu. This will result in a combined mapping of both spaces and workspaces. The same space mapping suboptions that are available on the **Spaces** level are also available here, with the exception of user-defined space mapping. See [Space mapping](#). If you apply space mapping on the **Workspaces** level, only spaces with workspaces listed on the elements panel will get coloring according to the selected criteria. This implies that any filtering applied to workspaces will also impact the space mapping.

## Specific menu options for floors

If you open the **Components** selection level > **Floors** selection step > **CAD Integrator** drop-down menu, you will find several menu options that are specific to floors. These specific floor options will be discussed in this section.

## Specific menu options for assets

In **Assets**, if you open the **CAD Integrator** menu at the **Assets** selection level, several additional menu options are available that are specific to assets. These specific asset options are discussed in this section.

## Linking a simple asset to a CAD Integrator symbol

To link a simple asset to a symbol in a CAD Integrator drawing

### Procedure

1. In **Assets** , at the Properties selection level, select the relevant property.
2. At the Assets selection level, select the relevant simple asset.
3. Click the CAD Integrator tab.

The relevant CAD drawing is opened.

If a space is specified for the simple asset at **Asset locations**, it is highlighted.

4. In the CAD Integrator menu, click Link asset.
5. Click the relevant symbol in the CAD drawing. The simple asset is now linked to a symbol in the drawing. The Planon database is updated directly. The simple asset is highlighted and a legend with the asset's description is displayed.

## Linking a multiple asset to a CAD Integrator symbol

To link a multiple asset to a symbol in a CAD Integrator drawing

### Procedure

1. In **Assets** , at the Properties selection level, select the relevant property.
2. At the Assets selection level, select the relevant multiple asset.
3. Click the CAD Integrator tab. The relevant CAD drawing is opened. The space (or spaces) of the multiple asset specified at Asset locations is / are highlighted.
4. In the CAD Integrator drop-down menu, click Link asset.
5. Click a relevant symbol in the CAD drawing.
6. Repeat steps 4 and 5 until the relevant number of assets is linked to a symbol.
7. Click Stop linking at the bottom of the CAD Integrator pane. The symbols are highlighted and a legend with their descriptions is displayed. The multiple asset is now linked to multiple symbols in the drawing.

## Unlinking a simple asset from a CAD Integrator symbol

To unlink a simple asset from a symbol in a CAD Integrator drawing

### Procedure

1. In **Assets** , at the Properties selection level, select the relevant property.
2. At the Assets selection level, select the relevant simple asset.
3. Click the CAD Integrator tab. The relevant CAD drawing is opened and the asset symbol is highlighted.
4. In the CAD Integrator menu, click Unlink asset.
5. Click the relevant symbol in the CAD drawing. The simple asset is now unlinked and the highlighting is removed. The Planon database is updated directly.

## Unlinking a multiple asset from a CAD Integrator symbol

To unlink a multiple asset from a symbol in a CAD Integrator drawing

### Procedure

1. In **Assets** , at the Properties selection level, select the relevant property.
2. At the Assets selection level, select the relevant simple or multiple asset.
3. Click the CAD Integrator tab. The relevant CAD drawing is opened.
4. In the CAD Integrator menu, click Unlink asset.
5. Click the relevant symbol(s) in the CAD drawing.
6. Click Stop unlinking at the bottom of the CAD Integrator pane. The clicked symbols are grayed and unlinked from the asset.

## Highlighting a selected asset

By default, the **Highlight the selected asset (on/off)** option is selected. This means that if you select one asset in the elements list while **CAD Integrator** is activated, the linked asset symbol is highlighted in the drawing. If the asset is not yet linked to an asset symbol, the asset's space is highlighted.



If you have multiple assets selected, the highlighting option does not work.

## Selecting assets from list

If you select the this option, all selected assets in the elements list that are linked to asset symbols are highlighted in the drawing.

## Highlighting spaces of assets from list

If you select the **Highlight spaces of assets from list** option, the spaces of the assets in the elements list are highlighted. Precondition: the assets must have a reference to a space in the drawing via their asset location. Note: after the spaces are highlighted, the CAD drawing is frozen.

## Showing linked assets

If you select the **Show linked assets** option, the selection in the elements list is limited to all assets that are linked to a symbol in the drawing.

## Showing unlinked assets

If you select the **Show unlinked assets** option, all symbols in the drawing that have no link to an asset in the elements list, are marked gray. The elements list displays the assets that are not linked to asset symbols in the drawing.

## Specific menu options for flexible workspaces

In **Reservations**, if you open the **CAD Integrator** menu on **Graphical planner > Flexible workspaces**, you will find several additional menu options that are specific to flexible workspaces. These flexible workspace options are discussed in this section.

## Highlighting a selected flexible workspace

By default, the **Highlight the selected flexible workspace (on/off)** option is selected. This means that if you select one flexible workspace in the elements list while **CAD Integrator** is activated, the linked symbol is highlighted in the drawing. If the flexible workspace is not yet linked to a symbol, the flexible workspace's space is highlighted.



If you have multiple flexible workspaces selected, the highlighting disappears.

## Selecting flexible workspaces from list

If you select this option, all selected flexible workspaces in the elements list that are linked to symbols are highlighted in the drawing.

## Highlighting spaces of flexible workspaces from list

If you select the **Highlight spaces of flexible workspaces from list** option, all spaces of the flexible workspaces in the elements list are highlighted in the drawing. Precondition: the space in which the flexible workspace is present must be linked to a space in the drawing.

## Showing unlinked flexible workspaces

If you select the **Show unlinked flexible workspaces** option, the selection in the elements list is limited to all flexible workspaces that have no link to a symbol in the drawing. Also, all relevant symbols in the drawing that have no link to a flexible workspace in the elements list are marked gray.

## Showing linked flexible workspaces

If you select the **Show linked flexible workspaces** option, the elements list is limited to all flexible workspaces that are linked to a symbol in the drawing.

## Specific menu options for persons

In the **Personnel** TSI > **Personnel**, opening the **CAD Integrator** menu reveals several additional menu options that are specific to persons. The following options are discussed in this section:

[Highlighting a selected person](#)

[Highlighting persons from list](#)

[Highlighting spaces of persons from list](#)

[Showing unlinked persons](#)

[Showing linked persons](#)

### Highlighting a selected person

By default, the **Highlight the selected person (on/off)** option is selected. This means that if you select one person in the elements list while **CAD Integrator** is activated, the linked symbol is highlighted in the drawing. If the person is not yet linked to a symbol, the person's space is highlighted.



If you have multiple persons selected, the highlighting disappears.

## Selecting persons from list

If you select this option, all selected persons in the elements list that are linked to symbols are highlighted in the drawing.

## Highlighting spaces of persons from list

If you select the **Highlight spaces of persons from list** option, all spaces corresponding with the persons in the elements list are highlighted in the drawing. A prerequisite for this is that the space of the person must be linked to a space in the drawing.

## Showing unlinked persons

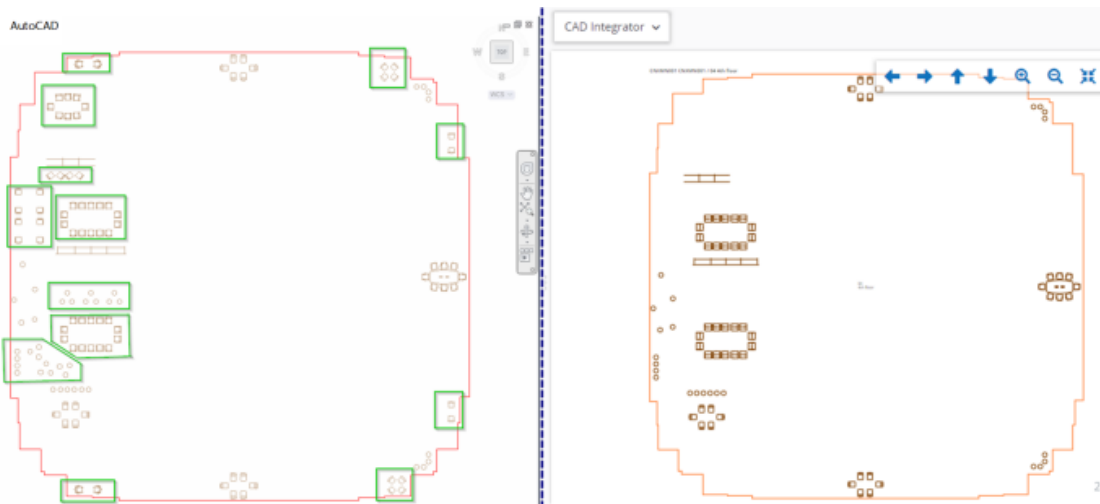
If you select the **Show unlinked persons** option, the selection in the elements list is limited to all persons that have no link to a symbol in the drawing. Also, all relevant symbols in the drawing that have no link to a person in the elements list are marked gray.

## Showing linked persons

If you select the **Show linked persons** option, the elements list is limited to all persons that are linked to a symbol in the drawing.

## AutoCAD vs. CAD Integrator

When CAD drawings are imported into the Planon application and displayed in CAD Integrator, there might be some discrepancies between the CAD Integrator drawing and the same drawing in AutoCAD.

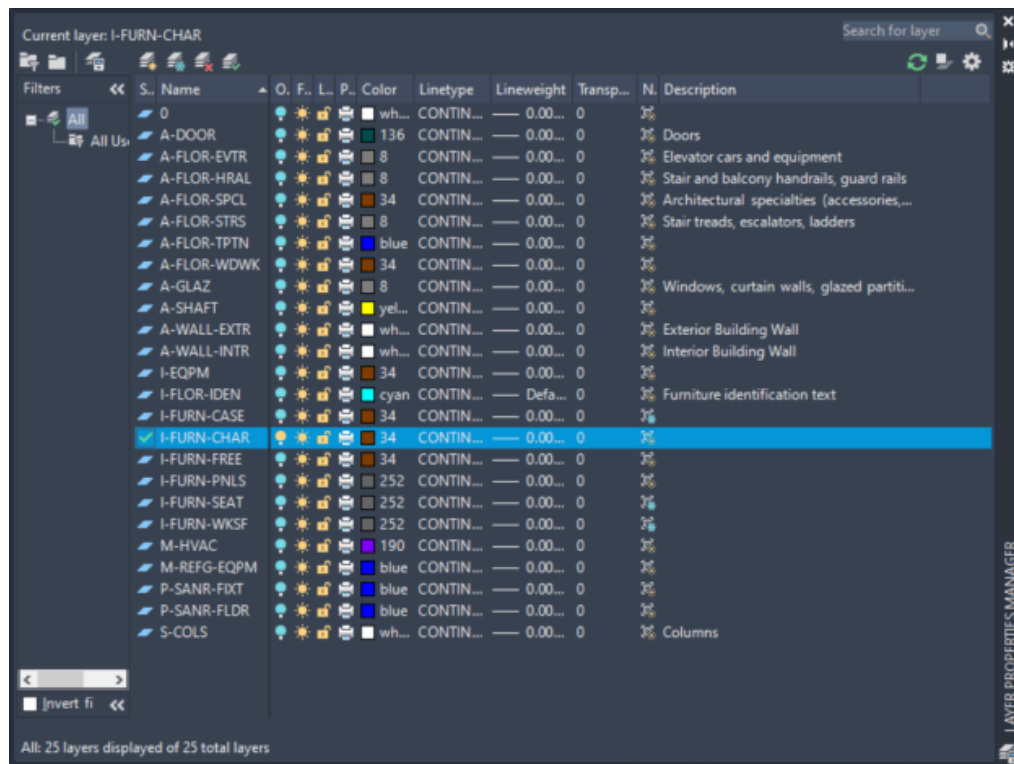


Like CAD Integrator, AutoCAD uses block definitions and block references. These can also contain multiple elements that maintain properties from their original situation. They can, for example, be contained in a specific layer.

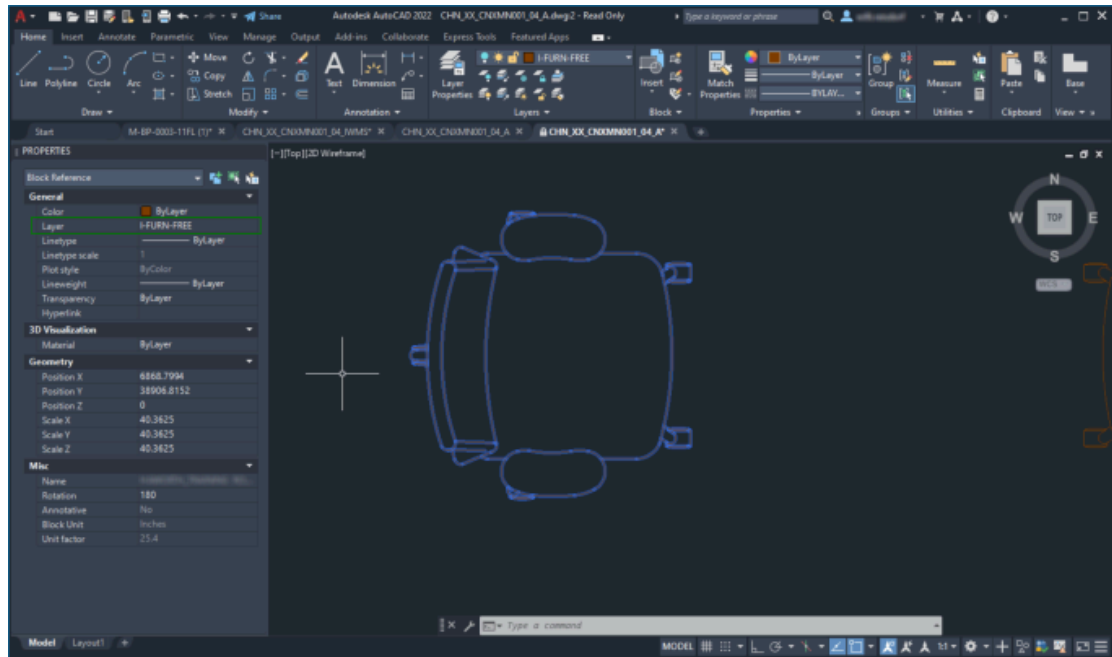
In the Planon application this is only possible for blocks and not for elements. Consequently, when a block is placed on a layer that is not visible, the elements of this block will not be visible when viewed in CAD Integrator.

## Example

In the following example, only the selected layer I-FURN-CHAR is made visible, as indicated by the light bulb behind it.



This means that the block elements that are mapped to the I-FURN-FREE layer will not be visible:





## Remedy


When this applies to your situation, determine on which layer an asset should be located so that an FM manager can work with it. Place all elements of a block on this (visible) layer, save the AutoCAD drawing and import it again.



# CAD Integrator – Field Descriptions

## CAD Integrator settings

Section	Description
<b>General</b>	
Title color Background color Background color text points Legend color Highlighting color Color for unspecified space mapping item	Set the colors for the title, background, background text points, legend, highlighting, and unspecified space mapping item of a <b>CAD Integrator</b> drawing.
Automatic coloring	Select <b>Yes</b> to pick a color from the database for the spaces where no color is defined. Select <b>No</b> to display the color defined for the element. In user-defined space mapping, colors are always selected automatically. <div data-bbox="711 1119 1323 1339"><p> If you want to apply user-defined space mapping in combination with automatic coloring and you want to use the same colors for different floors, you must select all floors of a specific property before drilling down, in order to get dynamic coloring.</p></div>
Coloring direction	Select either <b>Horizontal</b> or <b>Vertical</b> from the drop-down list. By default <b>Horizontal</b> is selected.
Area type for space mapping	Allows you to select the area type for displaying the space mapping in the selected drawing. For example, Gross area. <div data-bbox="711 1598 1323 1753"><p> This setting is saved as the default setting for the space mapping for future use. For more details on space mapping, see <a href="#">Space mapping</a>.</p></div>
Opacity for mapping	Set the degree of opacity for the colors used in space and/or workspace mapping. The default setting is 0.5. You can enter

Section	Description
	<p>any value between 0 and 1, with a maximum of two decimals.</p> <ul style="list-style-type: none"> <li>0: indicates complete transparency.</li> <li>1: indicates a completely solid color with no transparency. This setting is recommended if you want to apply space mapping on both space and workspace.</li> </ul>
Custom title	<p>Allows you to link a data-only report created for <b>Floors</b>. This report provides customized floor drawing titles, instead of the Planon default.</p> <p>Configure the data-only report by adding the fields or expressions that you want include in the drawing title.</p> <p>If you link this report, its settings are applied everywhere in Planon where CAD Integrator is available.</p>
Show empty text lines?	<p>Here, you can specify what to do with empty lines in text entities.</p> <p>If you click <b>No</b>, empty lines will be removed from text entities, providing a more visually appealing view.</p> <p>If you click <b>Yes</b>, the empty lines will be displayed, showing gaps in text entities.</p> <div data-bbox="708 1394 1321 1549" style="border: 1px solid #0070C0; padding: 5px;"> <p> This setting: Does not work for tooltips.</p> <ul style="list-style-type: none"> <li>Does not remove lines that contain only a field label without a value.</li> </ul> </div>

### Tooltip and text fields

Texts and tooltips can be defined in a data-only report. If you select the relevant data-only report on an element it will load the corresponding text / tooltips into the drawing.

Section	Description
	 See Reports for more information on creating data-only reports.
Tooltips - floors	Select a data-only report that will load the tooltips for floors.
Texts - spaces, Tooltips - spaces and Text color - spaces	Select a data-only report for texts and tooltips, or choose a different text color for spaces.
Show unspecified space usage	<p>Select <b>Yes</b> to display the spaces with unspecified space usage in the color selected in <b>Color for unspecified space mapping item</b>.</p> <p>If no space usage at all is defined for the space, the space will remain uncolored.</p>
Texts - assets, Tooltips - assets and Text color - assets	Select a data-only report for texts and tooltips, or a choose a different text color for assets.
Texts - personnel, Tooltips - personnel and Text color - personnel	Select a data-only report for texts and tooltips, or choose a different text color for personnel.
Texts - visitors, Tooltips - visitors and Text color - visitors	Select a data-only report for texts and tooltips, or choose a different text color for visitors.
Texts - fixed workspaces, Tooltips - fixed workspaces and Text color - fixed workspaces	Select a data-only report for texts and tooltips, or choose a different text color for fixed workspaces.
Texts - Moves - Workspaces, Tooltips - Moves - Workspaces, Text - Moves - Spaces and Tooltips - Moves - Spaces	Select a data-only report for texts and tooltips to be displayed in graphical move management.
Texts - flexible workspaces and Tooltips - flexible workspaces	Select a data-only report for texts and tooltips to be displayed with flexible workspaces.


### Legend settings

In the **Legend settings** fields you can specify whether totals must be displayed in the legend, when users perform space mapping.

Section	Description
	It is recommended to enter column header texts for the columns displaying the totals for persons, flexible workspaces, fixed workspaces, space usage, workspace usage and the net area.
Legend header [ - Flexible workspaces, - Persons, - Space usage, -Workspaces (usage), - Fixed workspaces, - Net area]	Enter appropriate column header texts for the columns displaying the totals. If you do not specify your own header text, default column headers will be displayed.
Show fixed workspace count	Select <b>Yes</b> , to display a column in the legend with the sum of fixed workspaces.
Show flexible workspace count	Select <b>Yes</b> , to display a column in the legend with the sum of all flexible workspaces.
Show person count	Select <b>Yes</b> to display a column in the legend with the total number of people.
Show space usage workspace count	Select <b>Yes</b> to display in the legend the total number of workspaces in a space, as determined by the space usage.


## CAD Integrator mapping settings - spaces

Field	Description
Code	Enter a unique code for the mapping.
Name	Enter a relevant description for the mapping.
Use mapping settings?	By default set to <b>Yes</b> , to use this specific mapping settings in CAD Integrator . If you select <b>No</b> , the user settings from the <b>CAD Integrator settings</b> will be applied.
CAD mapping coloring type	Select the relevant coloring type for the CAD mapping: <ul style="list-style-type: none"> <li>• <b>Automatic coloring</b> - If no value is set, automatic coloring is used (which is same as <b>Automatic coloring = Yes</b> in</li> </ul>

Field	Description
	<p>the <b>CAD Integrator settings</b>).</p> <ul style="list-style-type: none"> <li>• <b>Defined on business object</b> - This is same as the setting specified on the business object (which is same as <b>Automatic coloring = No</b> in the <b>CAD Integrator settings</b>).</li> </ul> <div data-bbox="708 646 1325 737" style="border: 1px solid black; padding: 5px;"> <p> For more information on <b>Automatic coloring</b> field, see <a href="#">CAD Integrator settings</a>.</p> </div> <ul style="list-style-type: none"> <li>• <b>Fixed coloring &amp; hatching</b> - If you select this option, select a color in the <b>CAD Integrator coloring</b> field and/or hatching pattern in the <b>CAD Integrator hatching</b> field. This color and hatching pattern will be applied to all spaces in the mapping.</li> <li>• <b>No coloring</b> - No color is applied. The legend will not displayed.</li> </ul>
Coloring direction	Select <b>Vertical</b> or <b>Horizontal</b> to set the coloring direction for the mapping. For example, if a space has multiple departments, the space will be divided horizontally or vertically into two areas, using 2 different colors.
CAD Integrator coloring	If <b>Fixed coloring &amp; hatching</b> is selected in the <b>CAD mapping coloring type</b> field, select a color in this field.
CAD Integrator hatching	If <b>Fixed coloring &amp; hatching</b> option is selected in the <b>CAD mapping coloring type</b> field, select a hatch pattern in this field.

Field	Description
Space area type	<p>Select the relevant area type to which the mapping settings are applied:</p> <ul style="list-style-type: none"> <li>• Additional area</li> <li>• Core area</li> <li>• Floor area</li> <li>• Fluxline correction</li> <li>• Gross area</li> <li>• Net area</li> <li>• Rentable area</li> </ul>
Show count?	<p>Select <b>Yes</b>, to display a column in the legend with the total number of spaces that meets the mapping criteria. If you select <b>No</b>, the <b>Count</b> column will not be displayed in the legend.</p>
Show fixed workspace count?	<p>Select <b>Yes</b>, to display a column in the legend with the total number of fixed workspaces.</p>
Show flexible workspace count?	<p>Select <b>Yes</b>, to display a column in the legend with the total number of all flexible workspaces.</p>
Show person count?	<p>Select <b>Yes</b> to display a column in the legend with the total number of people.</p>
Show workspace count (space usage)?	<p>Select <b>Yes</b> to display the total number of workspaces in a space in the legend, as is determined by the space usage.</p>
Show unspecified mapping items?	<p>Select <b>Yes</b> if you want to mark spaces that have no value in the mapped field. Example, space usage that does not contain a department or unused area of a space. Select a color in the <b>Unspecified mapping color</b> field.</p>
Unspecified mapping color	<p>Select a color to display the spaces that do not have a value in the mapping.</p>

## CAD Integrator mapping settings - workspace

Field	Description
Code	Enter a unique code for the mapping.
Name	Enter a relevant description for the mapping.
Use mapping settings?	By default set to <b>Yes</b> to use this specific mapping settings in the CAD Integrator . If you select <b>No</b> , the user settings in the <b>CAD Integrator settings</b> will be applied.
CAD mapping coloring type	<p>Select the relevant coloring type for the CAD mapping:</p> <ul style="list-style-type: none"> <li>• <b>Automatic coloring</b> - If no value is set, automatic coloring is used (which is the same as <b>Automatic coloring = Yes</b> in the <b>CAD Integrator settings</b>).</li> <li>• <b>Defined on business object</b> - This is the same setting as specified on the business object (which is the same as <b>Automatic coloring = No</b> in the <b>CAD Integrator settings</b>).</li> </ul> <div data-bbox="708 1293 1321 1381" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> For more information on the <b>Automatic coloring</b> field, see <a href="#">CAD Integrator settings</a>.</p> </div>

- **Fixed coloring & hatching** - If you select this option, select a color in the **CAD Integrator coloring** field and/or hatching pattern in the **CAD Integrator hatching** field. This color and hatching pattern will be applied to all workspaces in the mapping.

Field	Description
	<ul style="list-style-type: none"> <li><b>No coloring</b> - No color is applied. No legend will be displayed.</li> </ul>
Coloring direction	Select <b>Vertical</b> or <b>Horizontal</b> to set the coloring direction for the mapping.
CAD Integrator coloring	If <b>Fixed coloring &amp; hatching</b> is selected in the <b>CAD mapping coloring type</b> field, select a color in this field.
CAD Integrator hatching	If the <b>Fixed coloring &amp; hatching</b> option is selected in the <b>CAD mapping coloring type</b> field, select a hatch pattern in this field.
Show count?	Select <b>Yes</b> to display a column in the legend with the total number of workspaces that meet the mapping criteria. If you select <b>No</b> , the <b>Count</b> column will not be displayed in the legend.
Show unspecified mapping items?	Select <b>Yes</b> if you want to mark workspaces that have no value in the mapped field. Select a color in the <b>Unspecified mapping color</b> field.
Unspecified mapping color	Select a color to display the workspaces that do not have a value in the mapping.
Display occupancy percentages	Select <b>Yes</b> to display two columns in the legend with the sum of the <b>% occupied</b> and the sum of the <b>Max. occupancy % on workspaces</b> .

## Texts and tooltips

Texts and tooltips for...	Create data-only report in TSI:
Floors	Spaces > Components > Floors.
Spaces	Spaces > Spaces.
Assets	Assets > Assets.
Flexible workspaces	Reservations > Graphical planner > Flexible workspaces.



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Texts and tooltips for...	Create data-only report in TSI:
Personnel	Personnel > Personnel.
Visitors	Personnel > Visitors.

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