

# ALLPLAN 2018

## Manual

Installation, Basics

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# Welcome

Welcome to Allplan 2018, the high-performance CAD program for architects and civil engineers.

In this manual, you will familiarize yourself with the user interface and the basic tools provided in Allplan 2018.

This way, you will quickly learn how to use Allplan 2018, and you will find that within a short time you will be in a position to carry out common operations with ease in order to accomplish your daily tasks.

**This chapter covers the following:**

- Contents of this manual
- Documentation for Allplan 2018
- Additional help on Allplan 2018
- Where to turn for training, coaching and project support

# Introduction

This manual consists of two parts:



- The installation of Allplan 2018
- An introduction to the basic concepts of and navigation in Allplan 2018.

This manual assumes that you have a working knowledge of Microsoft Windows programs. Basic CAD knowledge is helpful; however, this manual will provide both the experienced CAD user as well as newcomers to CAD with a solid foundation in the methods employed by Allplan 2018.

# Sources of information


## Documentation

Documentation for Allplan consists of the following parts:

- The help is the main source of information for learning about and working with Allplan.  
While you work with Allplan, you can get help on the current tool by pressing the F1 key, or activate  **What's This** in the  **Help** dropdown list (title bar on the right) and click the icon on which you require help.
- The **Manual** consists of two parts. The first part shows how to install Allplan. The second part is designed to provide an overview of basic concepts and terms in Allplan and introduce approaches for entering data in Allplan.
- The **Basics Tutorial** guides you step by step through the most important tools for designing and modifying elements in Allplan.
- The **Architecture Tutorial** guides you step by step through the process of designing a building. In addition, you will learn how to analyze the building data using reports and to print the results.
- The **Engineering Tutorial** guides you step by step through the process of creating key plans, general arrangement drawings and reinforcement drawings and shows you how to print the results.
- **New Features in Allplan 2018** provide information on what's new in the latest version.
- Each volume in the **Step-by-Step** series deals with a specific concept or series of tools or modules in Allplan in detail. The areas covered include data exchange, system administration, geodesy, presentation, 3D modeling and so on. As a Serviceplus member, you can download these guides as PDF files from the Training – Documentation area of Allplan Connect (<http://connect.allplan.com>).
- You can also find numerous publications on social networks.

## Additional help

### Tips for efficient usage

The  **Help** dropdown list (title bar on the right) provides **Tips for Efficient Usage**. This topic includes practical tips and tricks showing you how to use Allplan efficiently and how to carry out operations with ease.

### User forum (for Serviceplus customers)

Allplan forum in Allplan Connect: Users exchange information, valuable tips relating to everyday work and advice on specific tasks. Register now at [connect.allplan.com](http://connect.allplan.com)

### On the Internet: solutions to frequently asked questions

You can find solutions to numerous questions answered by the technical support team in the comprehensive knowledge database at [connect.allplan.com/faq](http://connect.allplan.com/faq)

### Feedback on the help

If you have suggestions or questions on the help, or if you come across an error, send an email to: [dokumentation@allplan.com](mailto:dokumentation@allplan.com)



# Training, coaching and project support

The type of training you are given is a decisive factor in the amount of time you actually spend working on your own projects: A professional introduction to the programs and advanced seminars for advanced users can save you up to 35% of your editing time!

A tailor-made training strategy is essential. Our authorized seminar centers offer an extensive range of programs and are happy to work out a custom solution with you that will address your own needs and requirements:

- Our **sophisticated, comprehensive seminar program** is the quickest way for professional users to learn how to use the new system.
- **Special seminars** are designed for users who want to extend and optimize their knowledge.
- **One-on-one seminars** are best when it comes to addressing your own particular methods of working.
- One-day **crash courses**, designed for office heads, convey the essentials in a compact format.
- We are also happy to hold seminars on your premises: These not only encompass Allplan issues but also include analysis and optimization of processes and project organization.

For more detailed information on the current training program, please consult our online seminar guide you can find on our homepage (<http://www.allplan.com/de/events/termine/schulungen-kurse-cad-ava-d2c-fm.html>).

# Feedback on the documentation

We are always trying to improve the overall quality of our program documentation. Your comments and suggestions are important to us and we welcome feedback.

Please do not hesitate to contact us to express criticism or praise concerning the documentation. Feel free to contact us as follows:

Documentation

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Email: [dokumentation@allplan.com](mailto:dokumentation@allplan.com)

# Installation

## Read the following before installing

### Installation documentation

You can find documentation on installing Allplan 2018 in a number of places:

- The manual describes the procedure for a first-time installation at a stand-alone workstation and covers the essentials for first-time installation on a network.
- While installing, you can open the help by pressing F1. The installation help provides additional, up-to-date and detailed information on installing Allplan for the first time and upgrading Allplan on stand-alone workstations and on networks.  
This help is also available online  
(<http://help.allplan.com/Allplan/2018-0/1033/Allplan/85122.htm>).
- The Allplan 2018 DVD includes the `install.chm` help file, which you can find in the `programs\x64\Allplan\HelpFiles\English\` folder.

## System requirements for Allplan 2018

Before you begin, make sure all the computers where you want to install Allplan 2018 meet the minimum requirements.

**Tip:** You can download a system test from [allplan.info/info/sys2018](http://allplan.info/info/sys2018). Using this system test, you can check whether your computer meets the system requirements for Allplan 2018.

### Hardware requirements

#### Minimum requirements

- Intel Core 2 processor or compatible
- 4 GB RAM
- 5 GB free hard disk space
- OpenGL 3.3-compatible graphics card with 1 GB RAM and a resolution of 1280 x 1024

#### Recommended

- Intel Core i7 or Core i5 processor or compatible
- 16 GB RAM
- Display resolution of up to 2560 x 1600 (for 4K resolutions and higher resolutions, you can use the scaling options provided by the operating system; if you work with several monitors, make sure they all have the same resolution.)
- OpenGL 4.2-compatible graphics card with 8 GB RAM; use a certified graphics card:  
[www.allplan.com/info/graphiccards](http://www.allplan.com/info/graphiccards)

## Supported operating systems

### Supported operating systems:

- Windows 10, 64-bit
- Windows 8.1, 64-bit
- Windows 7 64-bit, Service Pack 1
- Windows Server 2016, Standard Edition (for Citrix XenApp)
- Windows Server 2012 R2, Standard Edition (for Citrix XenApp)

### Supported data servers:

- Windows Server 2016
- Windows Server 2012 R2
- Windows Storage Server 2016 for NAS

### Notes

- **Recommended operating system:** Windows 10, 64-bit
- **Recommended data server:** Windows Server 2016

## Further information

[allplan.info/info/sys2018](http://allplan.info/info/sys2018)

- offers further information, such as the system test tool.

## Some notes on the data structure

### Allplan data can be classified as follows:

- **Program folder:** Program files are always installed locally on every workstation. Normally, you can accept the folder proposed by the program.
- **Central file storage folder:** Projects and the office standard are saved in this folder. If the **workgroup option** is installed, the folder also includes the data for network administration in the **\Net** folder. The central file storage folder can be installed locally or on a file server. When you install the program with the **workgroup option**, the folder you specify here acts as the central file storage

folder of the workgroup. Please read the notes on the central file storage folder with network installations.

- **Local file storage folder:** This folder is used to synchronize the data of the central file storage folder and the data of online projects. If you do not specify a folder, the program synchronizes the data of online projects with the `LocalData` folder, which is a subfolder of the central file storage folder. You must specify a local file storage folder on the local computer if you want to access Allplan online projects from a mobile computer (for example, when you work from home or as a freelancer). It is not absolutely necessary to do this if you use a stationary computer with permanent access to the central file storage folder.

Prior to installing, decide on the folders where you want to install the program. If you need to change this later, you usually have to uninstall the program and then re-install it again. It is a good idea to keep the data files and program files in two separate, central locations. This will facilitate backup operations later.

**By default, Allplan 2018 is installed to the following folders:**

- **Program files:** `C:\Program Files\Allplan\`
- **Central file storage:** `C:\Data\Allplan\`
- **Local file storage:** `C:\Local Data\Allplan\`

# Installing

## First-time installation on a stand-alone workstation

This section shows how to install Allplan 2018 at a stand-alone workstation. Any existing Allplan installations will not be affected.

---

### To install Allplan 2018 on a stand-alone workstation

➡ Read the following before installing:

- Requirements for running Allplan 2018 (see "System requirements for Allplan 2018" on page 7)
  - Some notes on the data structure (on page 9)
- 1 Log on to the operating system as the administrator for the local machine or as a user with administrator privileges.
  - 2 Start installing in one of the following ways:
    - If you are installing Allplan from DVD: Insert the **Allplan 2018** DVD in the DVD drive. Click **Allplan 2018** and then **Start Installation**.
    - If you downloaded Allplan: Unzip the **zip** file. This results in an **exe** file (for example, **allplan2017-0-2-cad.exe**). Double-click this **exe** file and specify the path to which you want to copy the temporary setup files.
  - 3 Select the language for Setup and click **Next** to confirm.
  - 4 Click **Next** to confirm the Welcome screen.
  - 5 The **License Agreement** dialog box opens, displaying the terms of the software license agreement. If you agree to the terms of the agreement, click **Yes**.
  - 6 In the Installation Option dialog box, select **First-time installation** or **First-time installation and copy data**. Click **Next**.
  - 7 If you selected the **First-time installation and copy data** option: Select the data you want to transfer to the new version and click **Next**.

- 8 Select the type of licensing in the **Installation Option** dialog box:
  - **Use active license:** Select this option if you want to install Allplan with the current license. You can only see this option if you have activated a license on this computer before or Setup has automatically found a license provided by a license server. Setup automatically detects all license servers on the network. This function is particularly useful if you have a license server or if you update Allplan.
  - **License activation:** Select this option if you want to install Allplan by entering a Product Key. You should use this option if you install Allplan for the first time or on a stand-alone workstation. You can enter your Product Key in the next dialog box. **Important:** You must have Internet access and the computer must be online.
  - **License selection:** Select this option if several licenses are available and you want to select the license manually. You can only see this option if you have activated a license on this computer before or Setup has automatically found a license provided by a license server. Setup automatically detects all license servers on the network.
  - **Use viewer:** Select this option if you want to install Allplan as a viewer. You also need to select this option if you want to install Allplan on a computer without Internet access.
- 9 Click **Next**.
- 10 Select the paths where you want to install the programs and files of Allplan 2018.

**Program folder:** Program files are always installed locally on every workstation. Normally, you can accept the folder proposed by the program.

**Central file storage folder:** Projects and the office standard are saved in this folder. If the **workgroup option** is installed, the folder also includes the data for network administration in the **\Net** folder. The central file storage folder can be installed locally or on a file server. When you install the program with the **workgroup option**, the folder you specify here acts as the central file storage



folder of the workgroup. Please read the notes on the central file storage folder with network installations.

**Local file storage folder:** This folder is used to synchronize the data of the central file storage folder and the data of online projects. If you do not specify a folder, the program synchronizes the data of online projects with the `LocalData` folder, which is a subfolder of the central file storage folder. You must specify a local file storage folder on the local computer if you want to access Allplan online projects from a mobile computer (for example, when you work from home or as a freelancer). It is not absolutely necessary to do this if you use a stationary computer with permanent access to the central file storage folder.

- 11 Select a setup type in the **Setup type** dialog box. Click **Next**.

**Default:** Installs the program with the most commonly used options. Recommended for most users.

**Minimum:** Installs the program with minimum options.

**Custom:** Installs the files you specify. You can deactivate the components you do not want to install in the **Select Features** dialog box.

- 12 Check the settings in the **Ready to install Allplan** dialog box. If the settings are correct, click **Next** to start the installation.
  - 13 After installation, the system may prompt you to restart the computer. Log on as the administrator for the local machine or as a user with administrator privileges.
-

## First-time network installation

---

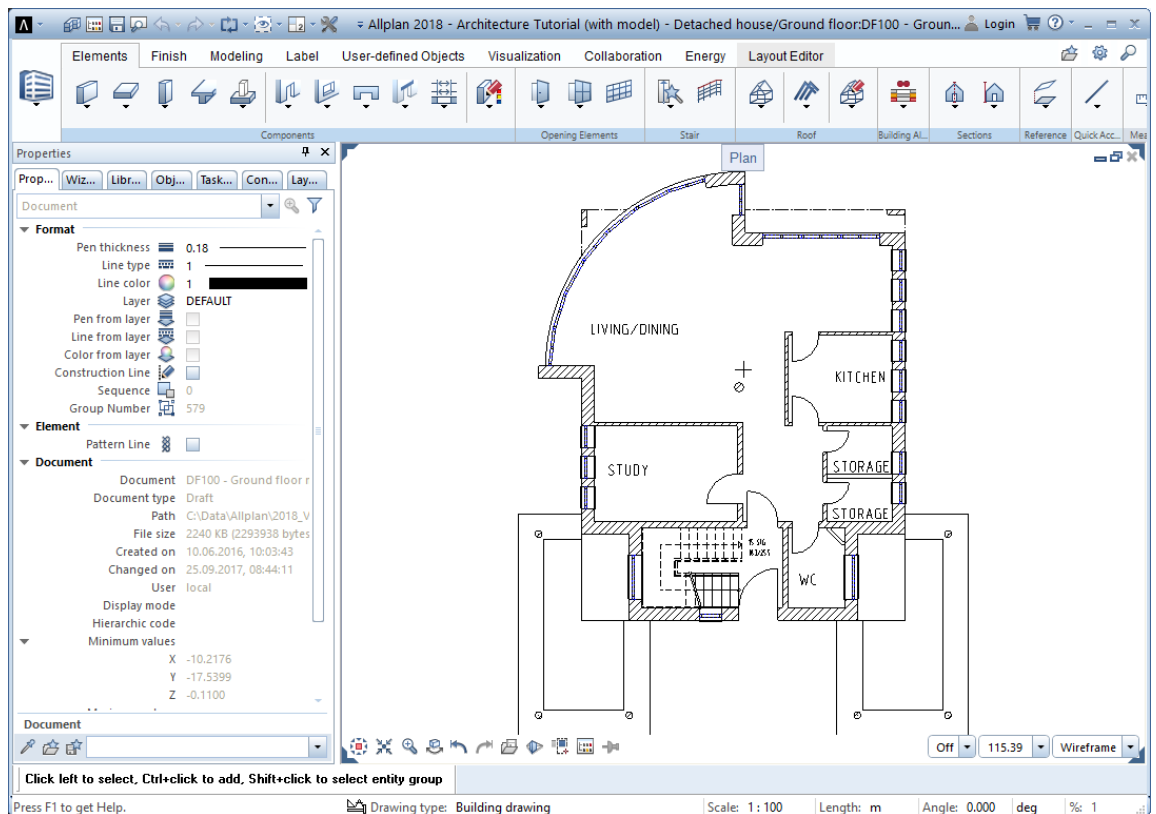
### To install for the first time on a network

- 1 Read the following **before** installing:
    - Requirements for running Allplan 2018 (see "System requirements for Allplan 2018" on page 7)
    - Data structure (see "Some notes on the data structure" on page 9)
    - Data backup
  - 2 Install Allplan 2018 on all the workstations as described in Installing for the first time on a standalone workstation (see "First-time installation on a stand-alone workstation" on page 11).
  - 3 Check every workstation to see whether Allplan 2018 starts correctly.
-

# User Interface

When you start Allplan, you see the Allplan application window with the Allplan user interface.

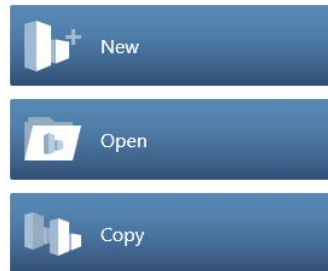
Depending on user-defined settings, the user interface could look like this:



# Welcome screen

The welcome screen combines tools you require frequently when you start Allplan.

## Creating, opening projects



### New

Use this to create a new project.

More information can be found in the Allplan help; see "Creating a new project".

### Open

Use this to open a project.

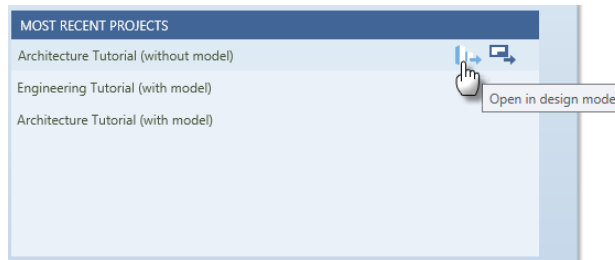
More information can be found in the Allplan help; see "Selecting the current project".

### Copy

Use this to create a new project as a copy of an existing project. The contents, structure and settings of the existing project will be copied to the new project.

More information can be found in the Allplan help; see "Creating a new project as a copy".

## Most recent projects



You can see the most recent projects you have worked on. Specify whether you want to open the project in **design mode** or in **layout mode** by clicking the corresponding symbol. Double-clicking the project name opens the project in the mode you used last.


## Information, Hotinfo, Updates



### First steps

This takes you to the Allplan website of the **QuickStart CAD Tutorial**, which provides a quick and practical introduction to the world of Allplan.

### New features in Allplan architecture, new features in Allplan engineering

This takes you to the Allplan website where you can find information on what's new in **Architecture** and **Engineering**. As an alternative, you can select **New Features** in the  **Help** dropdown list (title bar on the right).

### HotInfo – Support Tool

Use this to generate a support request with **Hotinfo**. More information can be found in the Allplan help; see "**HotInfo**".

## Updates – Settings

Use this to open the **Allplan Update Settings** dialog box. More information can be found in the Allplan help; see “**Allplan update**”.

## Internet

[CONNECT](#)[EXCHANGE](#)[BIMPLUS](#)

### Allplan Connect

This takes you to the website of **Allplan Connect**, the service portal of Allplan.

### Allplan Exchange

This takes you to the website of **Allplan Exchange** for distributing electronic documents over the Internet.

### Bimplus

This takes you to the website of **Bimplus**, the BIM server platform for exchanging everything about buildings.

## Social media





This takes you to the Allplan areas of the most important social networks.

## Border of the welcome screen

### Show this window at startup

You can use this option to switch off the welcome screen. In this case, the most recent project opens automatically when you start Allplan.

Using  **Welcome Screen** ( **Help** dropdown list, title bar on the right), you can open the welcome screen at any time.


### Information on Allplan

You can see information on the Allplan version, customer number and seat.

**About Allplan** ( **Help** dropdown list, title bar on the right) provides advanced information.

## Default configurations

Allplan comes with several default configurations. Access to the most important tools for a specific discipline is provided in each of these configurations. To select a default configuration, open the **View** menu, point to **Default Configurations** and select a configuration.

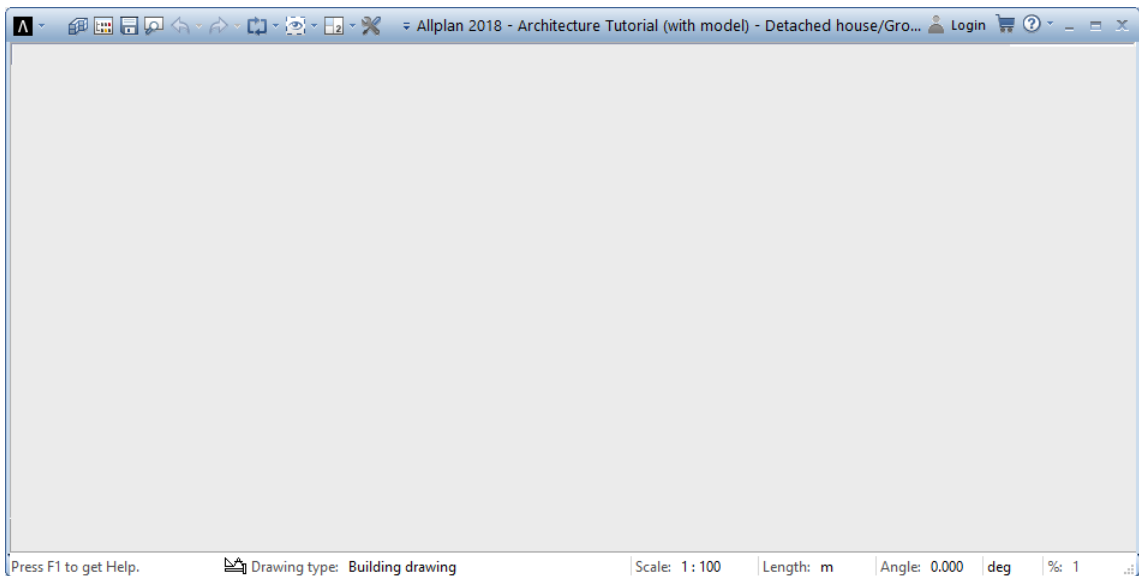
The **Actionbar Configuration** is the default setting. It consists of the **Actionbar** structured by **role**, **task** and **task area**. The title bar of Allplan's application window provides more tools (**Allplan icon**, **Quick Access toolbar**, **Bimplus Login** and  **Help**). In addition, this configuration comes with the **Properties**, **Wizards**, **Library**, **Objects**, **Task Board**, **Connect** and **Layers** palettes.

Apart from this configuration, the **Default Configuration – Classic**, **Palette Configuration** (see "Palettes" on page 30) and **Basic Configuration** are also available.

# Working area

The working area is the part of Allplan's application window where you can place the Allplan controls docked to the application window.

This illustration shows Allplan's application window after you have floated all controls. All that is left is the empty working area (gray area):



You have the following options to arrange the Allplan controls in the working area:

- You can dock the **Actionbar** (on page 23) to the top of the working area.
- You can also dock the **Palettes** (on page 30) to any edge of the working area. There, you can lock them into position or configure the program to show and hide them automatically.
- You can place the **Viewports** (on page 55) in the remaining, empty space of the working area. In addition, you can move, arrange and resize them as you like (provided you have not maximized a viewport).



- You can dock the **Dialog line** to the top or bottom of the working area.
- The **Status bar** is always at the bottom of the working area. It is the bottom line in Allplan's application window. You can show or hide the status bar, but you cannot float it.

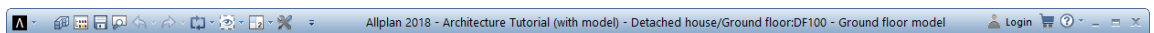
## Title bar

You can see the current project, fileset, building structure and document in the middle of the title bar of Allplan's application window.

You can find the **Bimplus Login** on the right. To visit the Allplan Shop, click the **Open Allplan Shop** icon. Click the **Help** icon to open a dropdown menu, where you can activate the Allplan help and get information on the Allplan version installed.

Click the **Allplan icon** on the left to open important tools such as save, copy, import and export.

Furthermore, you can show the **Quick Access toolbar**, which provides frequently used tools. Using a dropdown list, you can switch these tools on or off or arrange these tools in the sequence you need. Furthermore, you can show or hide the menu bar. Click **Customize User Interface...** to open the **Customize** dialog box.

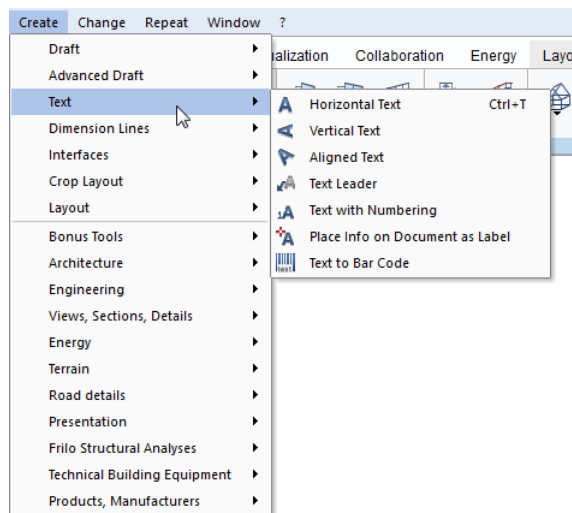


## Quick Access toolbar

The title bar of Allplan's application window comes with a dropdown list. By selecting tools in this list, you can set up a quick access toolbar. The size of this toolbar is defined by the number of tools you select. Using the dropdown list, you can also show and hide the menu bar, define the sequence of the tools on the quick access toolbar and open the **Customize** dialog box – **Actionbar** tab.

# Menus

The menus are in the top border of Allplan's application window. All the tools can be activated via the menus, regardless of the role or task you are working on.



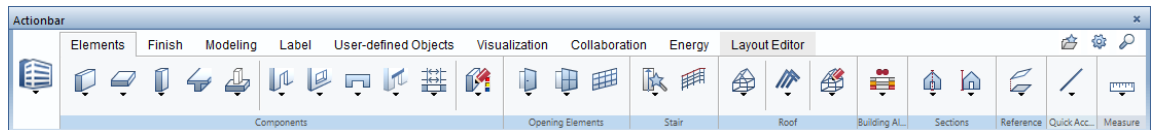
**Tip:** To open a menu, you can also press the underlined letter in the menu name while pressing and holding down the ALT key.

**Note:** When you install for the first time or work with the Actionbar Configuration, the menu bar is hidden by default. You can show or hide the menu bar using the **Quick Access toolbar**.

**Note:** Pressing the ALT KEY shows the menu bar for a short time.

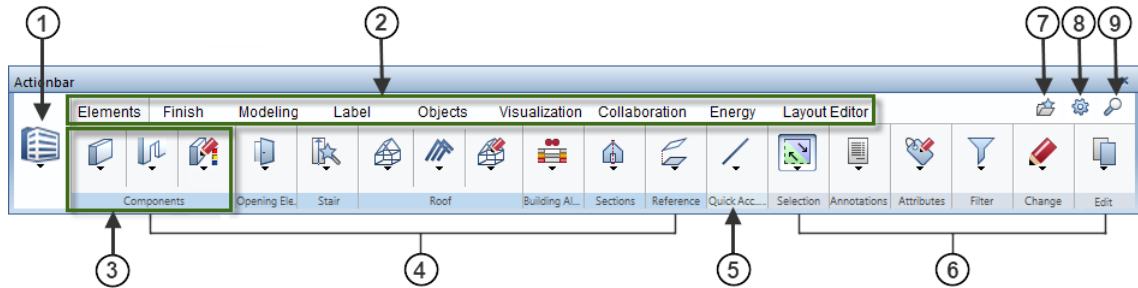
# Actionbar

You can find the **Actionbar** above the workspace. It includes all All-plan tools grouped by role and task. To display the **Actionbar**, you must select the Actionbar Configuration.






## Structure

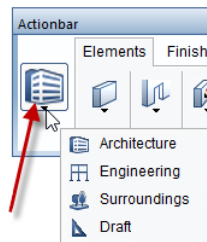
The **Actionbar** is docked to the top of the working area. If you want, you can drag the Actionbar to the bottom and dock it there. You can also make the **Actionbar** float anywhere on your screen. By double-clicking the left mouse button, you can dock it to the place where it was docked last.




Components of the **Actionbar**:

- 1 – Role (see "Actionbar – role, tasks, task areas" on page 25)
- 2 – Tasks (see "Actionbar – role, tasks, task areas" on page 25) arranged on tabs
- 3 – Task area (see "Actionbar – task area, group of tools, tool" on page 26)
- 4 – Varying task areas (see "Actionbar – role, tasks, task areas" on page 25)
- 5 – **Quick Access** task area
- 6 – Fixed task areas (see "Actionbar – role, tasks, task areas" on page 25)
- 7 –  **Load favorite:**
- 8 –  **Actionbar Configurator**
- 9 –  **Find** (see "Actionbar – find" on page 27)

## Actionbar – role, tasks, task areas



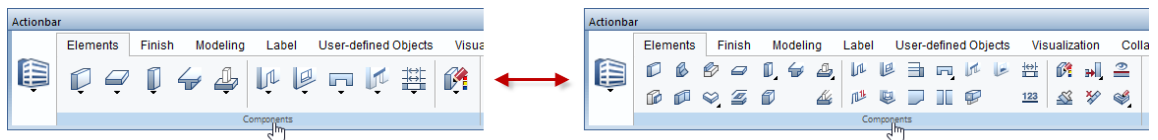
The **role** is the area where you can find the tasks to be worked on. The roles that are actually available to you depend on the selected  **Favorite** (in the top right corner of the **Actionbar**). If **Actionbar [Default]** is selected, you can choose from all the roles you purchased.

The **tasks** that are available to you change with the selected role. To open a task, click the corresponding tab. Each task is subdivided into appropriate areas. You can find areas in different colors, indicating varying (blue) and fixed **task areas** (gray). The varying task areas change with the selected task, such as the **Components** task area of the **Elements** task. The fixed task areas are always included in all roles and tasks, such as the **Selection** and **Filter** task areas. The **Quick Access** task area includes tasks with frequently used tools.

The first time you open Allplan the task areas are collapsed. To open the flyout menu of the tools displayed, click the downward arrow.

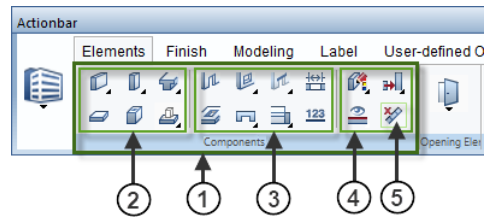
When you point to the name line of a task area, the cursor changes to .

You can maximize or minimize a task area by double-clicking the left mouse button within the name line of a task area. A maximized task area shows more tools, which may also have flyout menus.

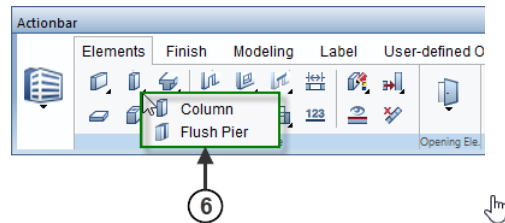


## Actionbar – task area, group of tools, tool

An expanded task area (1) contains one or more groups of tools (2). Different groups of tools are separated by vertical lines (= separators). The tools are grouped by topic (Create (2); Create in context (3); Modify in context (4)). Some tools have flyout menus (6) where you can find similar tools.



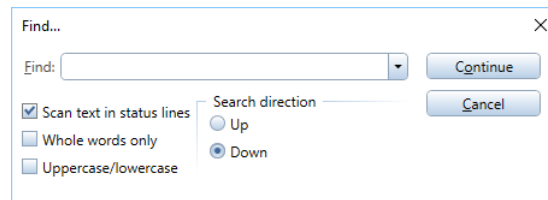
- 1 – Task area
- 2 – **Create** group of tools
- 3 – **Create in context** group of tools
- 4 – **Modify in context** group of tools
- 5 – Tool



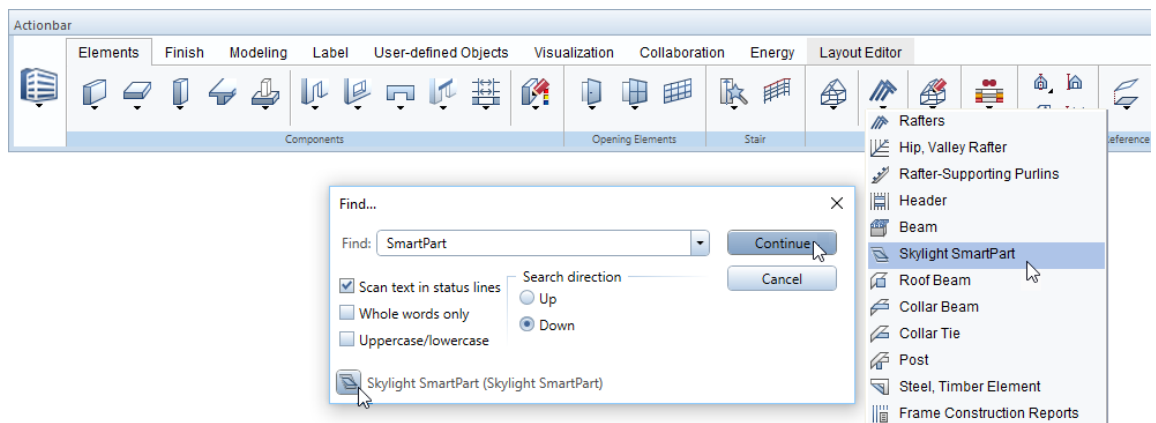
- 6 – Tool menu = flyout menu of a tool

## Actionbar – find

Using the  **Find** tool in the top right corner of the **Actionbar**, you can find tools across tasks and roles on the **Actionbar**.



Enter the name of the tool or parts thereof in the **Find:** box. If you want, you can select options and define the search direction. Click **Continue**. If Allplan has found the text you entered in the box in the name of a tool, you can see the result in the lower part of the **Find...** dialog box. At the same time, the **Actionbar** opens the role and task that include this tool and highlights the tool. Click **Continue** to find more tools whose names contain the text entered. Once again, the **Actionbar** opens the role and task that include the tool, highlighting the tool.



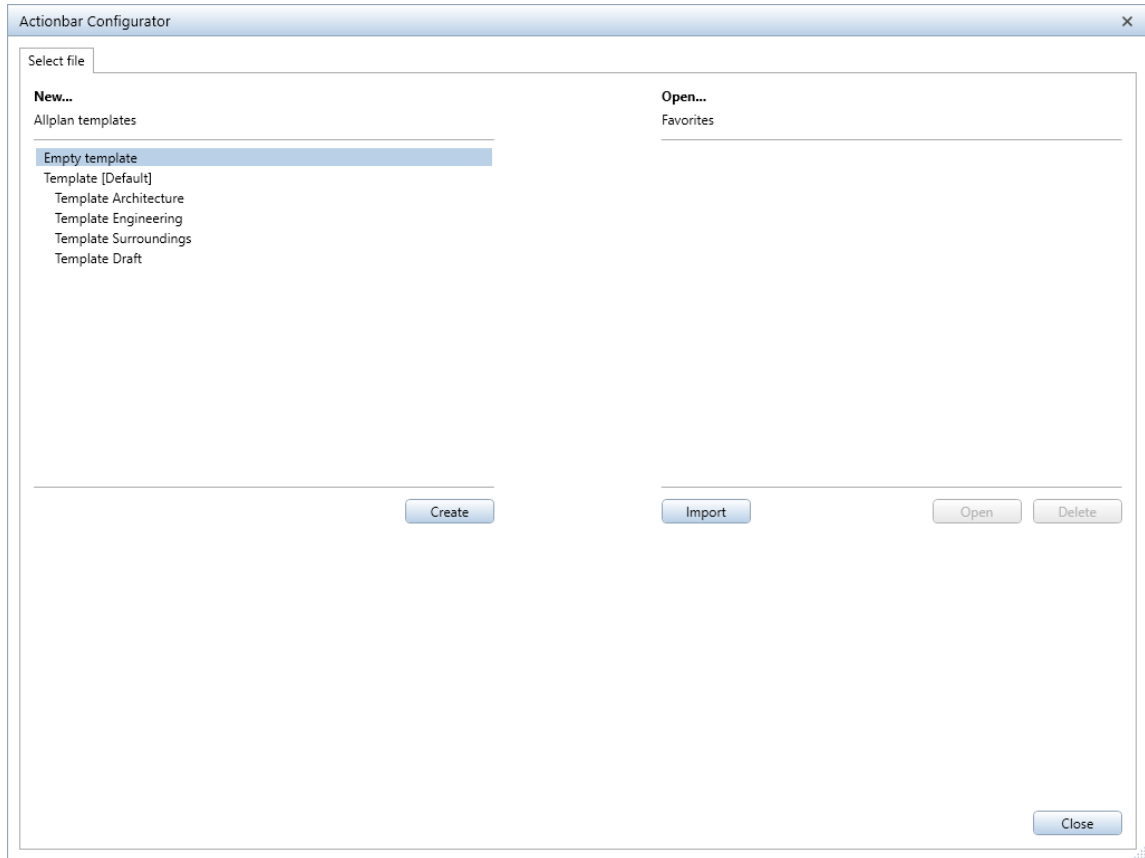
You can access the tool found straight from the **Find...** dialog box by clicking the icon of the tool. Of course, you can also click the tool on the **Actionbar**.

## Actionbar Configurator

Using the **Actionbar Configurator**, you can customize the Actionbar to suit your needs and requirements or set up a new Actionbar. Click

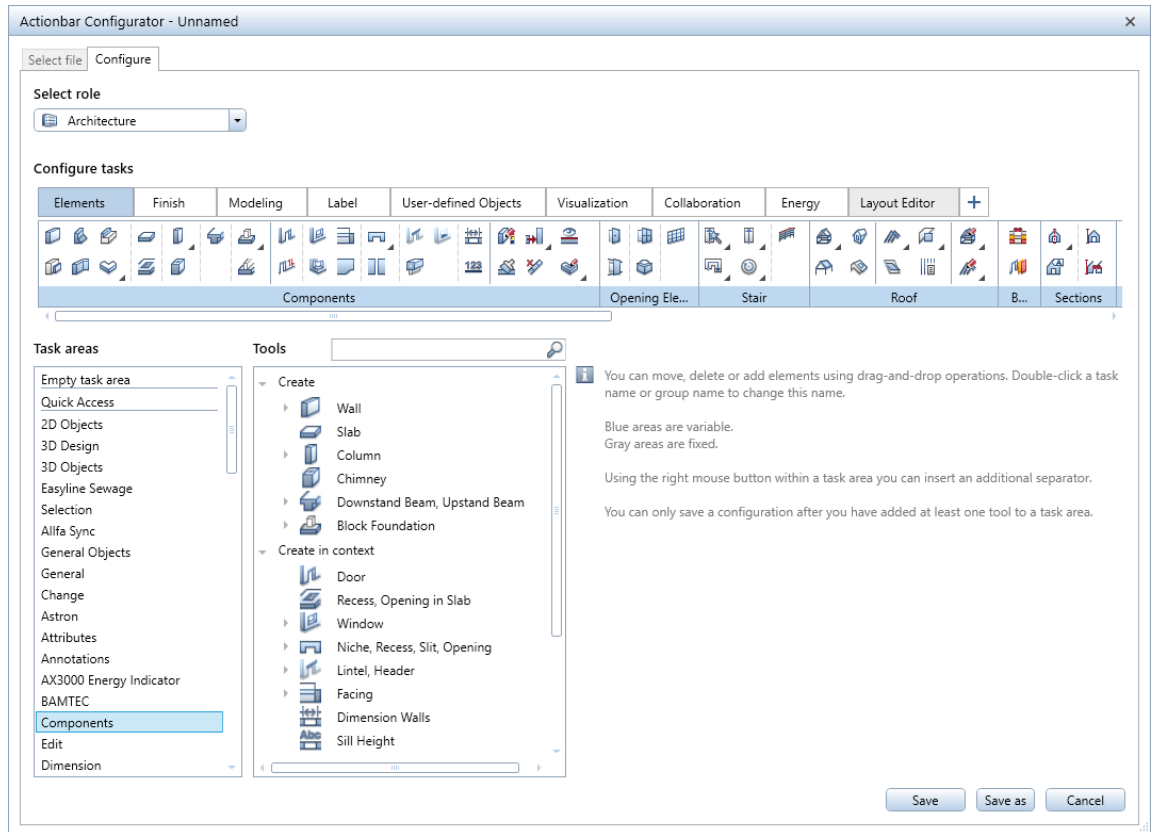


on the Actionbar to open the **Actionbar Configurator**.



Specify whether you want to create a new Actionbar or edit an existing template. After you have clicked **OK**, the **Actionbar Configurator** dialog box opens. Here, you can configure your own Actionbar. The **Actionbar Configurator** dialog box shows either an empty Actionbar (**New** button) or an Actionbar with the selected role (template).





You can move, delete or add elements using drag-and-drop operations. By double-clicking a task or task area, you can change the name of this task or task area. You can also create flyout menus. To do this, left-click a tool on the Action bar or in the right column of the table, keep the left mouse button held down and drag the icon of the tool onto another tool. Then release the mouse button. This results in a flyout menu containing the moved tool.

You can find more information on how to design your own Actionbar in the Allplan help – “Actionbar Configurator”.

# Palettes

Palettes are important controls of Allplan, making the user interface simple and easy to use.

The following palettes are available:

- **Properties** palette (on page 33) to modify the properties of elements.
- **Tools** palette to quickly activate tools. This palette is not displayed when you work with the Actionbar configuration.
- **Wizards** palette (on page 35) to select and manage wizards.
- **Library** palette (on page 37) to select and manage symbols, smart symbols and SmartParts.
- **Connect** palette (on page 43) to directly access content provided by Allplan Connect.
- **Layers** palette (on page 44) to keep sight of the layer status and to quickly change it.
- **Objects** palette (on page 48) to quickly check your design by showing or hiding elements or element groups.
- **Task Board** palette (on page 52) to see and edit tasks of Bimplus projects directly in Allplan.

By default, Allplan displays the palettes as tabs in a separate window – the palette window. But you can float or dock each palette individually.

In addition, you can arrange the palette window or individual, free-floating palettes around the edge of the working area (on page 20) or make them float anywhere on your screen. You can even configure Allplan to automatically show or hide the palette window or palettes arranged around the edge.

## Arranging palettes


### Displaying palettes



You can use shortcut keys to bring the palettes to the front. For example, you can assign the following shortcut keys:

- A (**W**izards palette)
- B (**L**ibrary palette)
- C (**C**onnect palette)
- E (**P**roperties palette)
- F (**T**ools palette)
- L (**L**ayers palette)
- M (**M**odules palette)
- O (**O**bjects palette)
- T (**T**ask Board palette)

Palettes that are already on top close when you press the relevant shortcut key.

### Hiding palettes automatically

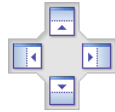
You can use the  and  icons on the title bar of a palette to specify how the palette behaves:



- **Hide automatically on** (): The palette opens and closes automatically when you move the cursor over it, regardless of whether the palette is docked or not.
- **Hide automatically off** (): The palette is always open.

You can define settings for this feature using the Customize dialog box – Palettes tab (shortcut menu of a palette or **Tools** menu – **Customize User Interface**).

## Floating or docking palettes or the palette window

You can arrange individual palettes or the entire palette window around the edge of the working area or make them float anywhere on your screen. Click the title bar of the palette or the palette window and drag it to one of the arrows displayed in the working area.



As long as you keep the mouse button held down, you can move the palette or palette window freely in the working area. This is indicated by a transparent preview. The palette or palette window will dock to its current position as soon as you release the mouse button. To minimize the palette, click  **Hide automatically**. To float the palette or palette window again, deactivate  **Hide automatically**.

## Floating or docking palettes to the palette window

To float a single palette and arrange it separately, click the tab of the palette and drag it to its new position outside the palette window.


To combine palettes into a palette window again, click the title bar of the palette and drag it to the title bar of the palette or the palette window with which you want to combine it.

**Note:** You can arrange a single palette or the entire palette window around the edge of the working area or make it float anywhere on your screen.

## The palettes in detail

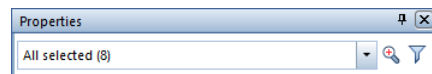
### Properties palette

The properties of selected elements are displayed and can be modified using the **Properties** palette. This palette is available for 2D elements and engineering elements; however, it cannot be used with architectural elements.

Using the  **Options – Desktop environment – General** area, you can specify whether double-clicking an element or clicking **Properties** on the shortcut menu opens the **Properties** palette or the **Properties** dialog box. Normally, the **Properties** palette provides more modification options for most elements. However, the properties of text and dimension lines are always displayed in dialog boxes, regardless of this setting. When you press SHIFT and double-click an element at the same time, the program always presents the properties in a dialog box.

The **Properties** palette has the following areas:

#### List box

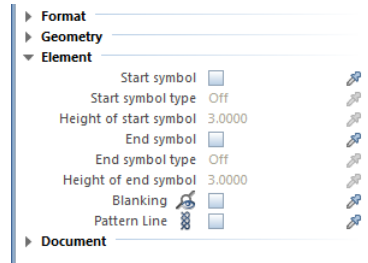


The list box at the top displays the type and number of selected elements. Elements that cannot be edited using the **Properties** palette (e.g. architectural elements) are grayed out. Any changes you make only affect the elements selected here.


 **Zoom in on selected objects:** defines the section displayed on screen so that all the selected objects are visible.

 **Filter step by step:** opens the **Filter** dialog box where you can apply a filter to the selected elements.

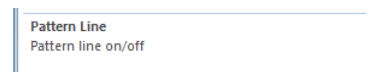
## Properties



The properties of the selected elements are displayed and can be modified in the **Properties** area. The shortcut menu of a property provides several tools for applying the properties of an existing element to selected elements:

- **Match property:** matches a single property. Clicking  has the same effect. You can use the shortcut menu to show the match buttons.
- **Match group:** matches all the properties of the group.
- **Match all (without geometry):** matches all the properties except geometric properties.


## Description




The **Description** area includes additional information on the parameter to be defined. You can use the shortcut menu to hide and show this area.

## Bar at the bottom



 **Match parameters:** copies the parameter settings of an element clicked and applies them to the current selection (if possible).

 **Load favorite:** loads the properties from a favorite file (\*.prop).

 **Save as a favorite:** saves the current properties as a favorite file (\*.prop).

## Wizards palette

The **Wizards** palette has the following areas:

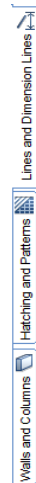
### List box



You can choose a wizard group in the list box at the top. You can use the shortcut menu to create new groups, add existing groups to the palette, rename the current group and remove it from the palette.

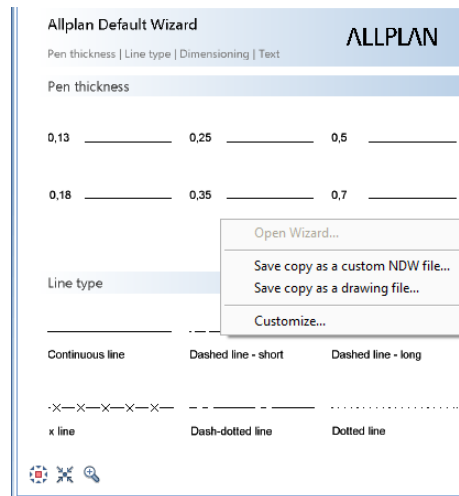
**Note:** The wizards that come with Allplan are in the \etc\Assistent folder. They are combined in the **Allplan** group. You cannot change the wizards in this group. If you want to define your own wizards, you must create a new wizard group first.

## Tabs



The tabs show the wizards in the current wizard group. You can use the shortcut menu to add wizards and to remove, replace and rename tabs.

## Workspace



The workspace displays the elements in the selected wizard. When you right-click in the empty space, Allplan presents a shortcut menu



with a number of options. For example, you can open a wizard or save the current wizard as a drawing file or as an NDW file. You can use drag-and-drop operations or CTRL+C and CTRL+V to copy elements from the wizard into the document. To place these elements, you can use the same tools as for symbols.

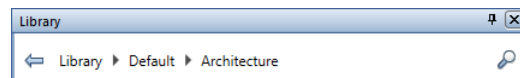
## Library palette

The **Library** palette contains library elements of the following types:

- **Symbols** (see "Using symbols" on page 181)
- **Smart symbols** (see "Using Smart Symbols" on page 182)
- **SmartParts** (see "Using SmartParts" on page 186)
- **PythonParts** (see "Using PythonParts" on page 191)

This palette has the following areas:

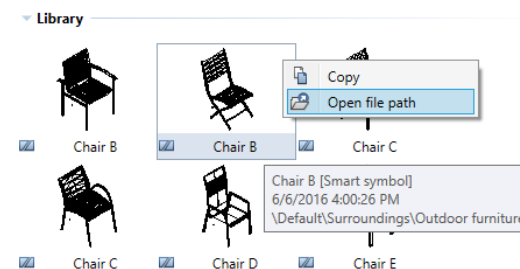
### Navigation field



The navigation field at the top shows the open folder in the library.


**Back** takes you up one level in the hierarchy.

You can use **Find** to find library elements in the current folder and all subordinate folders. The program then lists all elements with names matching the letters you entered. When you point to one of the elements found, you can see a **ToolTip** with information on the **name**, the **date the file was saved**, the **element type** and the **folder where the file was saved**. You can open this folder using the short-cut menu.







## Selecting and filtering library elements



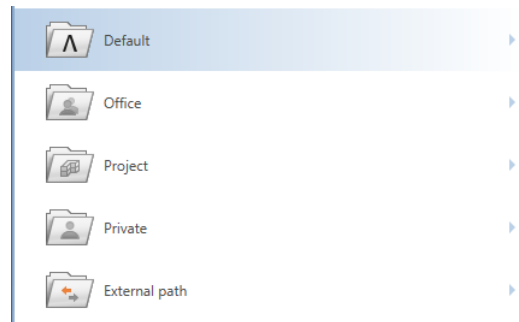
Using  **Filter**, you can show or hide specific types of library elements (symbols, smart symbols, SmartParts, PythonParts).

Using  **Sort criterion**, you can sort the library elements alphabetically or by date in ascending or descending order.

Using  **Hide empty folders**, you can hide folders without library elements. When selected, the icon changes to  and appears pressed in.

Using  **Show active project only**, you can display the active project, hiding all the other projects. When selected, the icon changes to  and appears pressed in.







## Library

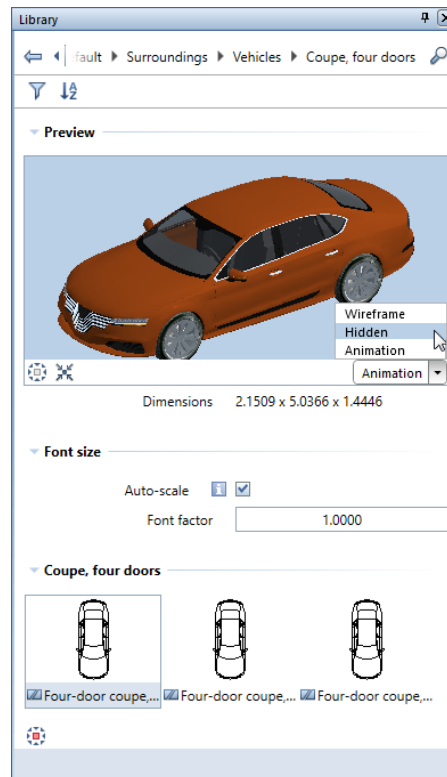


This is where you open the libraries in the **Default**, **Office**, **Project**, **Private** and **External** paths and navigate to the required folder.

As soon as you select a folder, you can see the library elements in this folder. A folder can contain **Symbols**, **Smart symbols**, **SmartParts** and **PythonParts**.


Just look at the small symbol indicating the type of library element:

-  Symbol or  Symbol with resources
-  Smart symbol or  Smart symbol with resources
-  SmartPart
-  PythonPart



## Preview area

You can see a preview of the selected element. You can set the


 **View** and **View type** (Wireframe, Animation).

Except for fixtures, you can see the **Dimensions** of the library element. The program calculates the dimensions from the min-max box of the library element.

## Font size area

Use this to define whether a label in the library element will be resized automatically (**Auto-scale**) or by a factor you enter (**Font factor**).

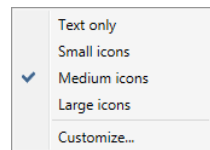
## Selection area

You can see illustrations of the library elements in the selected folder. You can set a  **View** for 3D elements. 2D symbols are always displayed in **plan view**.


To select an element, double-click it or drag it into the workspace and place it there. The input options provide a number of tools you can use to place the element.

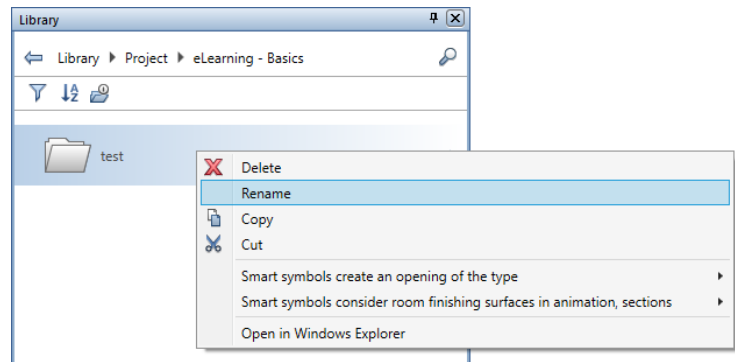
The **Selection** area provides a shortcut menu you can use to define the size of the illustrations. You can even hide them by selecting the **Text only** option. Clicking an entry displays the associated illustration in the **Preview** area.

Clicking **Customize...** opens the **Customize** dialog box, **Palettes** tab, where you can customize the palettes to suit your needs.




## Shortcut menu or icon




The  icon appears when you point to folders and library elements.




Folders in the default path offer the following options:

-  **Copy**  
Copies the folder to the clipboard; you can then paste the folder into a different path (except the **Default** path).
- **Smart symbols create an opening of the type**  
Assigns an opening type to each smart symbol in the folder.
- **Smart symbols consider room finish surfaces in animation, sections**  
Defines how each smart symbol in the folder adapts to room finishing surfaces.




Modifiable folders offer the following additional options:

-  **Delete**  
Deletes the selected folder.
- **Rename**  
Renames the folder.
-  **Paste**  
Pastes a folder from the clipboard into the selected folder.
-  **Cut**  
Copies the selected folder to the clipboard and deletes the folder.
- **Open in Windows Explorer**  
Opens the selected folder in Windows Explorer.

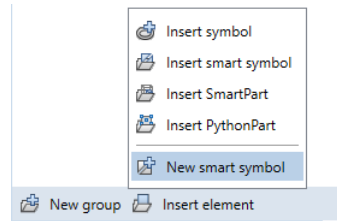
Library elements in folders in the default path offer the following options:

-  **Copy**  
Copies the library element to the clipboard; you can then paste the library element into a folder you created yourself (this folder must not be in the **Default** path).
- **Open file path**  
Opens the folder with the library element in Windows Explorer.

Library elements you created yourself (in the office, project and private folders) offer the following additional options:

-  **Delete**  
Deletes the selected library element.
- **Rename**  
Renames the library element.
-  **Paste**  
Pastes a library element from the clipboard into the selected folder.
-  **Cut**  
Copies the selected library element to the clipboard and deletes the library element.
- **Replace**  
Replaces the selected library element with a new one selected by you.
- **Resources Included** (symbols and smart symbols only)  
Defines whether Allplan is to save the resources together with the library element or take the resources from the current project. When you select this option, Allplan saves the current resources with the library element. As a result, the library element will always look the same even if you use it in other projects.

## Bar at the bottom



Depending on the path and folder, the toolbar at the bottom offers more tools.

### **New group**

Creates a new group in the selected folder.

### **Insert element**

Saves library elements to the current library folder and adds library elements placed in the workspace to the current library folder.

### **Insert symbol**

Saves a new symbol to the current library folder.

### **New smart symbol**

Creates a smart symbol and saves it to the current library folder.

### **Insert smart symbol**

Adds a smart symbol placed in the workspace to the current folder.

### **Insert SmartPart**

Adds a SmartPart placed in the workspace to the current folder.

### **Insert PythonPart**

Adds a PythonPart placed in the workspace to the current folder.

### **Add path**

Creates a path in the **External path** folder so that you can access more files with library elements.

## Connect palette

Using the **Connect** palette, you can access content provided by Allplan Connect straight from Allplan. You can enter the user name and password directly in the palette. However, these entries will be lost as soon as you close Allplan. As an alternative, you can open the **Customize User Interface** tool on the **Tools** menu and enter the user name and password on the **Palettes** tab. These entries will be saved.

## Layers palette

The **Layers** palette displays the entire layer hierarchy. You can select the current layer and define the visibility and status of layers.

The **Layers** palette has the following areas:

### List box



### Expand selected entries

Expands the view so that all sub-entries of the selected node are visible.

### Collapse all entries

Hides all sub-entries.


### Invert layer visibility

Inverts the layer visibility currently set.




First	Then
<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Current	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Modifiable
<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Modifiable	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Hidden, frozen
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Visible, frozen	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Hidden, frozen
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Hidden, frozen	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Modifiable

The **Default** layer is set as the current layer.


**Note:** To restore the original layer visibility, use  **Back in layer visibility**.



Undoes changes made to the layer visibility or restores changes you have undone. Using  **Layer visibility** you can display the course of changes made to the layer visibility and undo up to 30 changes. This setting is user-specific and saved separately for each project.



**Refresh layer structure**

Updates the layer structure displayed. If, for example, you have selected **List layers used in open documents** on the shortcut menu and you delete the last element that uses one of the layers listed, the contents of the list box will not update automatically to adapt to the new situation. Click  to display the layers that are used in the document.



**Find**

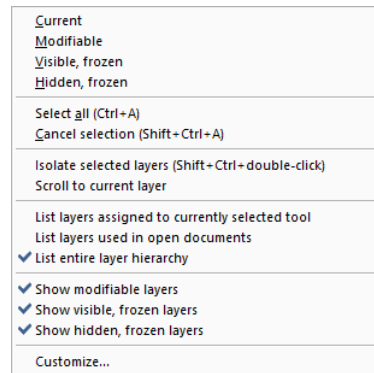
Opens the **Find...** dialog box, where you can find short or full names of layers or parts thereof.

## Layers

Use the check boxes to define the status of layers:

- DOUBLE-CLICK a layer to make it **Current** ☐ ☐ ☒.
- CLICK the corresponding check box to make a layer **Current** ☐ ☒ ☐ / **Modifiable** ☐ ☒ ☐ / **Visible** ☒ ☐ ☐ / **Hidden** ☐ ☐ ☐.
- SHIFT+CTRL+DOUBLE-CLICK makes the selected layer **Current** ☐ ☐ ☒ and sets all the other layers to **Hidden** ☐ ☐ ☐.
- Select a layer and press the SPACE BAR to switch between **Modifiable** ☐ ☒ ☐ <-> **Visible** ☒ ☐ ☐ <-> **Hidden** ☐ ☐ ☐.

## Shortcut menu



### Select all (Ctrl+A)

Selects all the layers that are displayed in the palette. Layers that are not displayed because the corresponding level is not expanded are not selected.

### Cancel selection (Shift+Ctrl+A)

Cancels the selection of elements.

### Isolate selected layers (Shift+Ctrl+double-click)

Sets all the selected layers to **Modifiable**. The layer selected last is set to **Current**; all the other layers are set to **Hidden**.

**Scroll to current layer**

Takes you to the current layer.

**List layers assigned to currently selected tool**

Displays only the layers that are assigned to the active tool.

**List layers used in open documents**

Displays only the layers in the current drawing file and in drawing files open in edit mode. If all layers are on the default layer, this option is not available.

**List entire layer hierarchy**

Lists all the layers.

**Show modifiable layers / Show visible, frozen layers / Show hidden, frozen layers**

Filters the layers displayed in accordance with the option you select.

**Customize...**

Opens the **Customize** dialog box, **Palettes** tab. You can choose to display the upper and lower structural levels of the layer hierarchy and define the layer properties (short name, full name, combined format properties, pen, line, color) you want to display. You can also use the shortcut menu of the table head to specify which properties you want to display.

## Bar at the bottom



### Match current layer

When you click this icon, the dialog box will close temporarily and you can click an element in the workspace. The layer of this element is set as the current layer.



### Load favorite

You can retrieve layer settings you have saved as favorite files.



### Save favorite

You can save the current layer setting as a **favorite** file (\*.lfa).



### Set all layers to modifiable – retain current layer

Sets all layers to modifiable without changing the current layer.



### Select Layer Print Set

Use this to select a defined print set (see "Using print sets" on page 226).



### Select layer privilege set

You can select the current privilege set.

### >> Expand

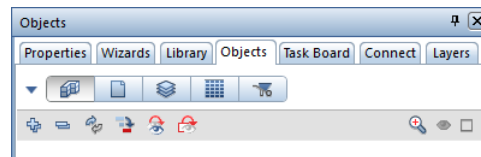
Opens the **Layer** dialog box (see "'Layer' dialog box" on page 227).

## Objects palette

The **Objects** palette lists all objects and elements in the currently open drawing files (**current** or **open in edit mode** or **open in reference mode**). You can sort these objects and elements according to certain criteria. It is possible to show or hide selected objects and elements. You can even activate or deactivate objects and elements in the **Objects** palette.

The **Objects** palette has the following areas:

### List box



Five sorting criteria are predefined:

#### Sort by building structure

This criterion combines all elements and objects in the currently open drawing files into groups, listing the groups alphabetically. You can find the objects and elements at the lowest level in each group. The details from the building structure are at the top level in the hierarchy.

#### Sort by drawing file

The drawing files containing the objects and elements are at the top level in the hierarchy.

#### Sort by layer

The layers are at the top level in the hierarchy. If an object (for example, a window opening) consists of several elements (for example, sill and window SmartPart) that are assigned to different layers, you can find this object in the **\*varied\*** list.

#### Sort by material

The materials assigned to the objects are at the top level in the hierarchy. If an object or element does not have a **Material** attribute, you can find this object or element in the **\*not defined\*** list.






### Sort by trade

The trades assigned to the objects are at the top level in the hierarchy. If an object or element does not have a **Trade** attribute, you can find this object or element in the **\*not defined\*** list.



### Switch between predefined and custom sorting

Click this icon to change the sort sequence. You can choose from different categories for each sorting criterion.

After you have selected custom sorting by clicking , you can use a shortcut menu (see "Shortcut menu – custom sorting" on page 52) to activate or deactivate the four sorting criteria and several categories. In addition, you can save custom sorting ( **Save sorting favorites**) and load a sorting favorite ( **Load sorting favorites**).



### Expand selected entries

Expands the view so that all sub-entries of the selected node are visible.



### Collapse all entries

Hides all sub-entries.



### Refresh palette

Refreshes the palette displayed.



### Go to next active element (SHIFT+A; backward: SHIFT+S)

Marks the next active element in the hierarchy.



### Invert visibility

Inverts the visibility set.



### Hide everything that is not selected

Shows active elements only.



### Zoom in on selected objects

Zooms in on active objects.

**All invisible / All visible**

Switches between **All invisible** and **All visible**.



indicates that not all elements or objects are visible or invisible.

**Everything inactive / Everything active**

Switches between **Everything inactive** and **Everything active**.





indicates that not all elements or objects are active or inactive.

## Objects, elements

Depending on the sorting criterion selected, this section lists all objects and elements in the currently open drawing files (**current** or **open in edit mode** or **open in reference mode**).

You can change the visibility and selection of objects or elements listed in each row. Use the following icons:

**Visibility:**  /  = visible / hidden



indicates that this hierarchical level includes visible and hidden objects and elements.



indicates that the layer of this element or element group is hidden or that this element is not selected in Show/Hide.

- **Selection:**  /  = active / inactive



indicates that this hierarchical level includes active and inactive objects and elements.

You cannot activate objects or elements that are on frozen layers or in drawing files open in reference mode.


Use the left mouse button to switch between **visible** and **hidden** and between **active** and **inactive**. Double-clicking the **Selection** icon with the left mouse button at the lowest level in the hierarchy zooms in on the corresponding element in plan.

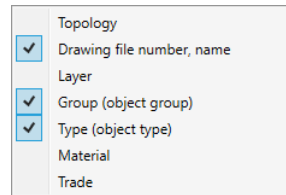
## Bar at the bottom

**Settings**



Opens the **Options – Object navigator**. You can specify how you want to list rooms within the **Objects** palette. You can choose between **Object name**, **Name** and **Function**.

## Shortcut menu – custom sorting

After you have selected custom sorting by clicking  in the **Objects** palette, you can right-click a category to open a shortcut menu:



You can switch on and off the five sorting criteria and the two categories (group and type) as you need. At least one entry remains selected on the shortcut menu.

**Note:** You can save custom sorting ( **Save favorites for sorting**) and load a sorting favorite ( **Load favorites for sorting**).

## Task Board palette

You can use the **Task Board** palette to communicate with all those involved in a Bimplus project. Allplan allows you to access the tasks of the currently loaded Allplan project straight from Bimplus. In addition, you can use Allplan to create new tasks for Bimplus or edit existing tasks. You can also import or export tasks in BCF format or export the complete task list as an Excel table.


**Note:** This is only possible if you have used the Allplan workstation to log in to Bimplus and if the Allplan project is linked with a Bimplus project, that is to say, the Allplan project data have been uploaded to Bimplus *at least once*. See Handling projects using Allplan Bimplus for more information on handling projects in a BIM-compliant manner using Bimplus, the web service offered by ALLPLAN GmbH.



## Preview

Displays a preview of the view of the building model saved for a task.

Go to the **Tasks** area and click within the **Name** column of a task to display the view of the building model for this task in the preview and in the current viewport.

By selecting  **Set view** or clicking within the preview, you can set the view saved for the task in the current viewport while editing the building model in Allplan.

You can see spots in the preview. These spots are markers, visually linking tasks and objects.

## Tasks



### New Task

Creates a new task on Bimplus for the project you are currently editing in Allplan. Use the **Details** palette to enter detailed information about this task.

The new task is then available to all those involved in the project. They can use Allplan or Bimplus to access this new task.



### Clear Selection

Removes element marking you defined in the **Details** palette.



### BCF Import BCF file to Bimplus

Imports a task in BCF format to the task list currently loaded in Allplan, automatically synchronizing this list with the task list on Bimplus.



### BCF Export task to BCF file

Exports the task currently selected in the task list to a file in BCF format, saving this file on Bimplus.

The other project participants can then download this file directly or you can send an email with the corresponding download link.



### Export all tasks to Excel file

Exports the currently loaded task list to an Excel file.

### Task list

Displays the tasks of the project you are currently editing in Allplan, automatically synchronizing the tasks with the tasks on Bimplus.

Click within the **Name** column of a task to display the view of the building model for this task in the **Preview** and in the current viewport.

The **Priority** column of the task list indicates the priority rating of each task. You can define the priority rating in the **Details** palette, where you can also find and edit all other details of a task.

Click within the right column of a task or double-click a task to open the **Details** palette, where you can see, enter or edit the details of this task.

### Bar at the bottom

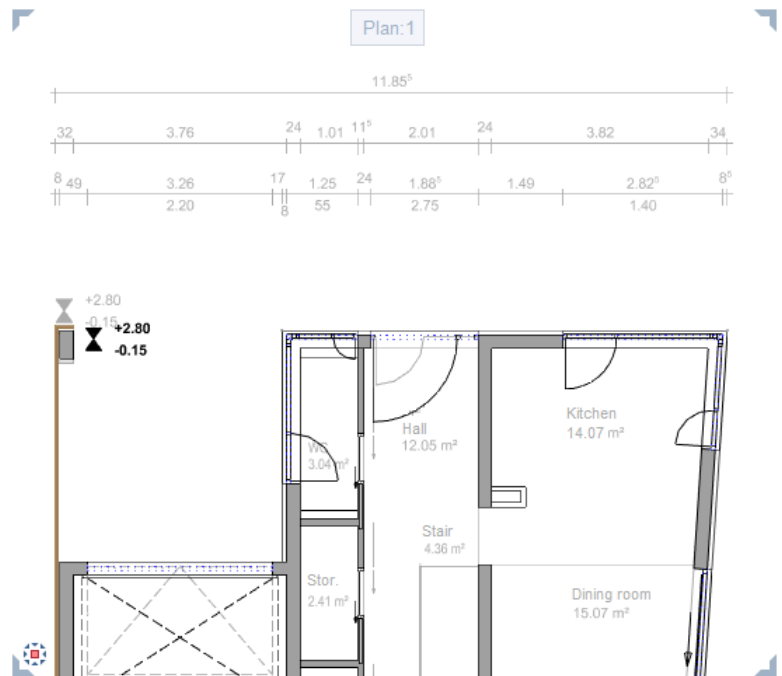


#### Settings

Opens the **Settings for ...** dialog box, which provides information on the Bimplus project linked with the current Allplan project.

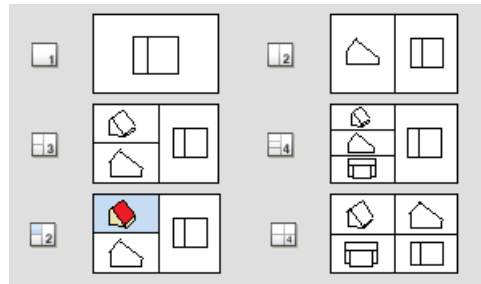
# Viewports

You edit your model in viewports. Here, you create or modify the design entities you need. While doing so, you identify distinctive points and set the view type and view appropriate to the current status of your work.



To maximize the workspace, you can float all viewports freely. If you have a second monitor, you can leave Allplan's application window on one monitor, using it as a "toolbox", while editing your model in the independent viewports you place on the second monitor.

By opening several viewports in parallel and arranging them as you need, you can display your model using different views, scales and view types. You can set a different view in each viewport. For example, you can display a section, the entire design or an isometric view.



The tools for arranging viewports are on the **Quick Access toolbar** (on page 21) and on the **Window** menu (see "Tools for using and arranging viewports" on page 58). You can also select one of the standard viewport arrangements provided and then modify this arrangement to suit your needs.

With the **Connected** option, you can specify how the viewports interact when they are *docked* to Allplan's application window.

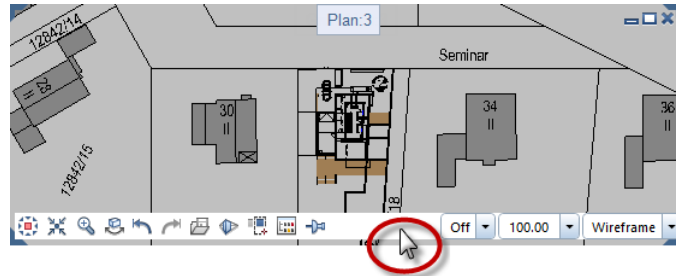
- If this option is *active*, the viewports are connected: As soon as you change the size of a viewport, all the other viewports adapt automatically; new viewports will be fitted into the arrangement.
- If this option is *not active*, you can place and resize the viewports independently of each other within Allplan's application window.

## Viewport toolbar

You can find the viewport toolbar at the bottom of the viewport. If you are working with multiple viewports, each viewport has its own viewport toolbar.

You cannot see the viewport toolbar until you move the cursor to the bottom of the viewport, guaranteeing as large a workspace as possible.


**Tip:** You can also show the viewport toolbar permanently. To do this, open the **View** menu, point to **Toolbars** and click **Show Viewport toolbar**.



**Tip:** You can also move the viewport toolbar to the top of the viewport. To do this, open the **View** menu, point to **Toolbars** and click **Viewport Toolbar at the Top**.

For detailed information on the tools on the viewport toolbar, refer to "Tools on the viewport toolbar for controlling on-screen display".


# Tools for using and arranging viewports

This table shows an overview of the tools for using and arranging the viewports on the screen. You can find these tools on the **Quick Access toolbar** -  **Window**.


Use this

To do this


 **New Viewport**

Using  **New Viewport**, you open a new viewport for the current document.

 **Animation Window**

Using  **Animation Window**, you open a new viewport displaying your 3D model in the **Animation** view type. Navigation mode (see "Design mode and navigation mode" on page 91) is active by default.

 **1 Viewport**

Using  **Window Arrangement**, you can divide the work-space into a number of different preset viewports. For instance, you might have three viewports, each showing a different view of the design.


 **2 Viewport**

 **3 Viewport**


 **4 Viewports (1)**

 **4 Viewports (2)**

 **2 + 1 Animation Window**

Using  **2+1 Animation Window**, you divide the workspace into three viewports. The viewport at top left automatically shows the **Animation** view type.

**Arrangement - To the left, right**

Using **Arrangement - To the Left / Right**, you define where the viewports are arranged when you select one of these  **Arrangements**. You can choose between **To the left** or **To the right**.

**Save, Load Arrangement**

Using **Save, Load Arrangement** , you save the current arrangement or load an arrangement you saved beforehand.

**Arrange Icons**

Using **Arrange Icons**, you arrange the icons of minimized viewports at the bottom of the viewport.

**Tile Horizontally**

**Tile horizontally** shows all open viewports stacked. If more than three viewports are open, the program arranges the viewports in several columns.

**Note:** You can only select this tool when **Connected** is *not selected*.

**Tile Vertically**

**Tile vertically** shows all open viewports size side by side. If more than three viewports are open, the program arranges the viewports in several rows.

**Note:** You can only select this tool when **Connected** is *not selected*.

**Connected**


Using **Connected**, you connect all open viewports, displaying boundary lines between the viewports. When you change the size of a viewport, all the other viewports adapt automatically. New viewports will be fitted into the arrangement.

**List of viewports**

Lists the currently open viewports. If ten or more viewports are open, you can use **More Viewports** to access those viewports.

Click the viewport to which you want to switch.


**More Viewports**

If more than nine viewports are open, you can find **More Viewports...** on the **Window** menu or on the **Quick Access toolbar** -  **Window**. Clicking this entry opens a dialog box listing all open viewports.

## Setting up viewports

---

### To set up viewports

- 1 Go to the **Quick Access toolbar** and click  **Window**.
- 2 Click one of the standard viewport arrangements.

Or:

Open a new viewport by clicking **New Viewport** or **Animation Window**.

---

## Floating viewports freely

You can float viewports freely on screen, making them independent of the Allplan application window. You can use free-floating viewports as you would in any other Windows program.

**Note:** When you exit Allplan, the program closes *all* viewports, including the free-floating ones.

---

### To float a viewport

- 1 Point to the title of the viewport you want to float.
- 2 Press and hold down the left mouse button.

- 3 Drag the viewport to its new position outside the Allplan application window. Then release the mouse button.

**Note:** It is the position of the cursor that is important. To float a viewport, you must position the cursor outside the working area (on page 20).

---

## Placing viewports in front of or behind the Allplan application window

You can place free-floating viewports in front of the Allplan application window without docking them.

Using ALT+TAB, you can then switch between the Allplan application window and the free-floating viewports as you would between independent Windows programs.

This option is particularly useful for workstations with a single monitor.


---

### To place a viewport in front of or behind the Allplan application window

- 1 Press and hold down the CTRL KEY.
  - 2 Drag the viewport to its new position in front of the Allplan application window.
  - 3 Release the mouse button and then the CTRL KEY.
  - 4 Press and hold down the ALT KEY.
  - 5 Use the TAB KEY to select the viewport you want to bring to the front.
  - 6 Release the ALT KEY.
-



## Docking viewports to Allplan's application window

The setting of the **Connecting** option (**Quick Access toolbar** –  **Window** menu) controls how Allplan arranges the viewports in the working area:

- If this option is *active*, Allplan automatically defines the size and position of the viewport to be docked in accordance with the number and configuration of the other viewports that are currently open in the working area.
- If this option is *not active*, Allplan places the viewport to be docked exactly where the cursor and thus the title of the viewport is located when you release the mouse button. In doing so, Allplan does not change the size of the viewport.

---

### To dock a free-floating viewport to Allplan's application window



- 1 Point to the title of the free-floating viewport.
  - 2 Press and hold down the left mouse button.
  - 3 Drag the viewport into the working area (on page 20) of Allplan's application window. Then release the mouse button.
-

# Shortcut menu

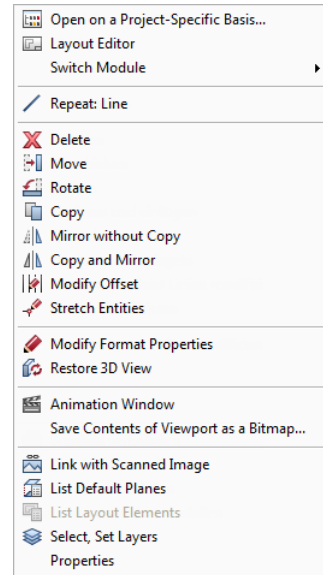
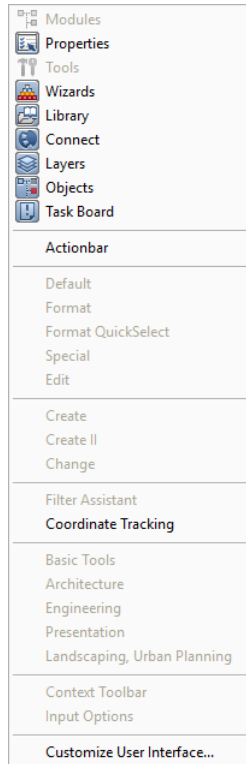
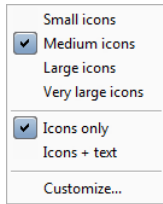
When you right-click, the shortcut menu opens where you clicked.

Depending on where you click (in the empty workspace, on a design entity, within a palette and so on) and what you are currently doing, the shortcut menu offers the tools you need for the task at hand.

The tools on the shortcut menu differ depending on the following criteria:

- **Clicking within a palette:**  
If you right-click within a palette, you can define how the palettes and the icons therein look. In addition, you can set further palette-specific parameters.
- **Clicking within the Actionbar or an area for viewports:**  
If you right-click within the Actionbar or an area for viewports (*no* viewport is *maximized*), you can control how the toolbars look and what they include.
- **Clicking within a viewport:**
  - In **Design Mode** (see "Design mode and navigation mode" on page 91) ( **Navigation Mode** is *off*):  
If you right-click in the empty workspace without having selected a tool, you can choose from a wide range of edit tools and a number of frequently used general tools.  
But if you right-click a design element, the shortcut menu presents relevant edit tools (see "Shortcut menu in design mode (on page 64)").  
If you have selected a tool which expects you to enter a point, right-clicking opens the shortcut menu for entering points (on page 68).
  - In **Navigation Mode** (see "Design mode and navigation mode" on page 91) ( **Navigation Mode** is *on*):  
Regardless of where you click, the shortcut menu provides tools you can use to present the 3D model (see "Shortcut menu in navigation mode (on page 65)").  
In navigation mode, you cannot click or select design entities.

Examples of tools on the shortcut menu:



Initial situation:

- Clicking within a palette


Initial situation:

- Clicking within the Actionbar or an area for viewports

Initial situation:

- Design mode on
- Clicking in the empty workspace

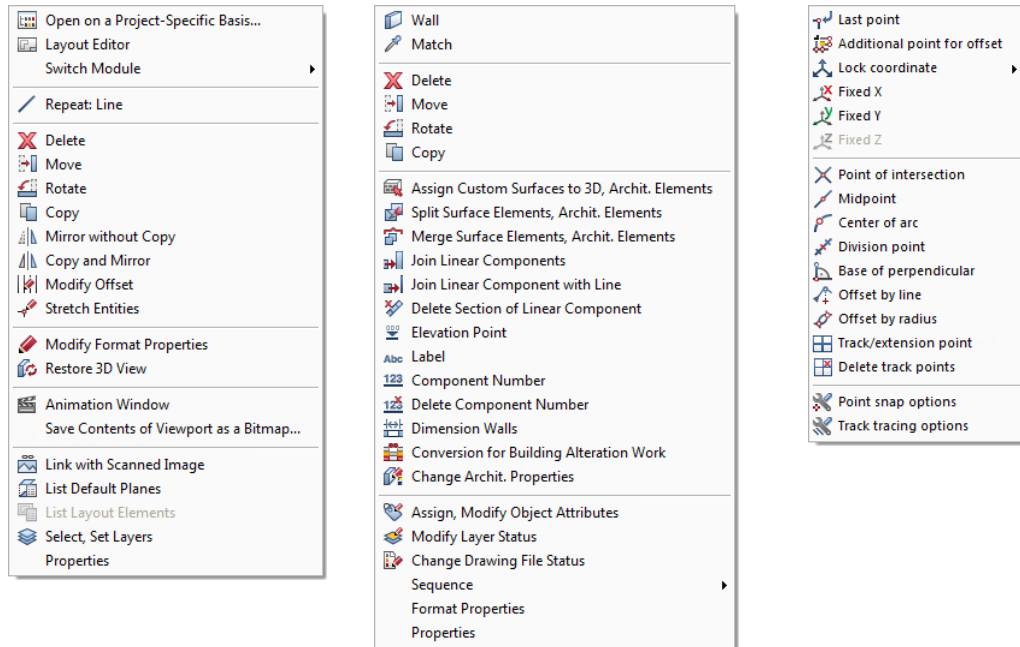
## Shortcut menu in design mode

You work in **Design Mode** (see “**Design mode and navigation mode**” on page 91) as long as you have *switched off*  **Navigation Mode**.

If the cursor is within a viewport and you right-click while you are working in design mode, the tools on the shortcut menu differ depending on the following criteria:

- **Clicking in the empty workspace**  
If you right-click in the empty workspace, you can choose from a wide range of edit tools and a number of frequently used general tools. For example, you can switch to **Layout Editor**.
- **Clicking a design entity**  
If you right-click a design entity, the shortcut menu presents relevant edit tools. As soon as you select one of these tools, the program automatically selects the element clicked.
- **Entering points**  
If you have selected a tool which expects you to enter a point, right-clicking opens the shortcut menu for entering points (on page 68).

Examples of tools on the shortcut menu when working in design mode:



Initial situation:

- Design mode on
- Clicking in the empty workspace

Initial situation:


- Design mode on
- Clicking a design entity (for example, a wall)

Initial situation:

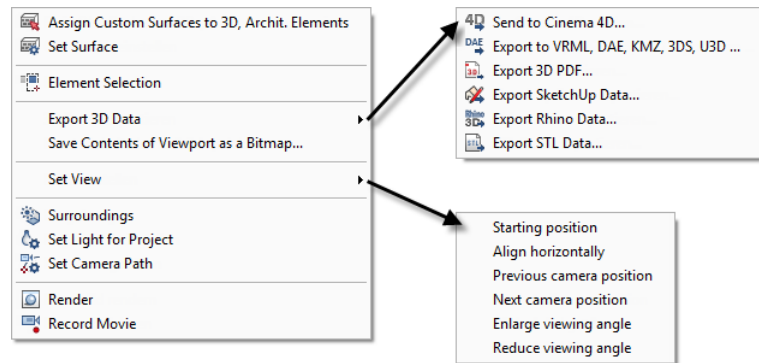
- Design mode on
- Active tool expects you to enter a point
- Cursor in viewport

All these tools are also included in the menus or toolbars, where they are described in detail.

## Shortcut menu in navigation mode

If you have *activated*  **Navigation Mode** and placed the cursor within a viewport, you can open the following shortcut menu by right-clicking.

Using the tools on this shortcut menu, you can modify and manipulate the scene without having to select other tools or switching navigation mode off.



Initial situation:

- Navigation mode on
- Cursor in viewport


### Assign Custom Surfaces to 3D, Archit. Elements

Assigns custom surfaces to 3D surfaces, 3D objects and architectural elements. To assign a surface, simply drag the surface to the relevant object.


### Set Surface

Opens the properties of the surface or background clicked. You can then change these properties.

The following dialog boxes open:

- If you click in the background, the **Define Surfaces** dialog box opens. The same dialog box appears when you select  **Set Surface**.
- If you click an element, the **Modify Surfaces** dialog box opens.



### Element Selection

Using  **Element Selection**, you can select the design entities you want to display in the current viewport. The program temporarily hides all the other design entities.

Click  **Element Selection** again to switch it off.

## Export 3D Data

Opens a submenu where you can select the following tools:

-  Send to Cinema 4D
-  Export to VRML, DAE, KMZ, 3DS, U3D
-  Export 3D PDF
-  Export SketchUp Data
-  Export Rhino Data
-  Export STL Data


## Save Contents of Viewport as a Bitmap

Saves the contents of the current viewport as a bitmap.

## Set View

Opens a submenu where you can select the following tools:

- Starting position
- Align horizontally
- Previous camera position
- Next camera position
- Enlarge viewing angle
- Reduce viewing angle

**Note:** The first four tools apply to the current camera path (see  **Setting the camera path**)! If you have not defined a camera path, these tools have no effect.

## Surroundings

Defines natural lighting conditions (location, season, position of north, position of sun and so on) for the 3D model.



### **Set Project Light**

Sets artificial light sources for the 3D model. These light sources can be both inside and outside the model.



### **Set Camera Path**

Defines camera positions, thus creating the story board for a movie. You can play back this movie immediately or later. If you want, you can also record it.



### **Render**

Calculates photo-realistic bitmaps from the current view of the 3D model, taking into account the selected lighting properties and surface properties.



### **Record Movie**

Calculates a sequence of animated or rendered bitmaps from a 3D model, saving this sequence as an AVI movie.



## Shortcut menu for entering points

Tools and options on the shortcut menu

Right-click to access the **tools and options** on the shortcut menu, helping you place and snap to points.

**Tip:** When you point to an element and right-click, the program automatically applies the tool selected on the shortcut menu to the element clicked and places the point.

When you open the shortcut menu in the workspace, just click the element to which you want to apply the tool.

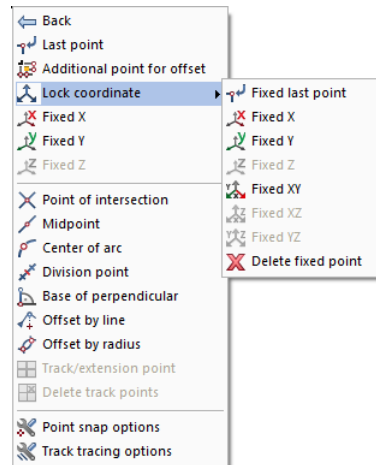


Figure: Tools and options on the shortcut menu

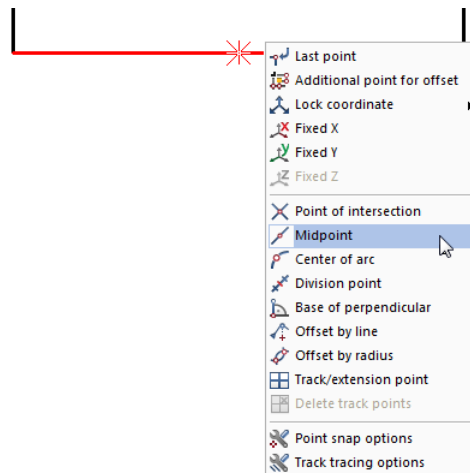


Figure: Identify the midpoint of an existing line by opening the shortcut menu directly on the element

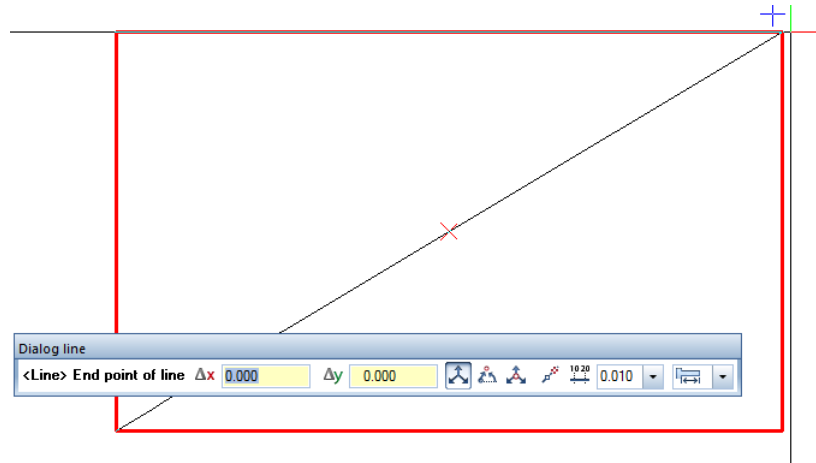


Figure: Midpoint of diagonal by clicking the endpoints of a box

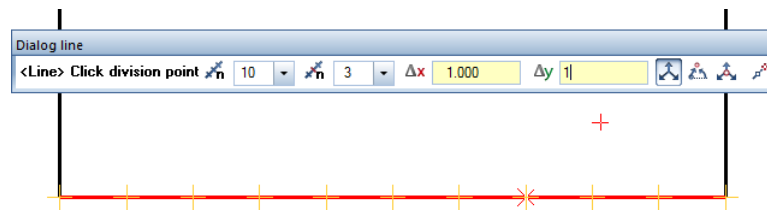













Figure: Division point

## Context-sensitive tools and options

The shortcut menu and dialog line only offer functions and options that are appropriate to the currently active tool:

- Only when you have selected **Enter at right angles** or **Cursor snap** will the system prompt for the DX/DY or length values.
- The **Use coordinate** option is only available with **Global coordinates**.
- When you have selected **Enter at right angles**, **Change direction** is available on the shortcut menu.

## Tools and options on the shortcut menu, overview

Tool	Use
	<b>Last point</b> Uses the last point entered.
	<b>Additional point for offset</b> The point snapped is fixed; the offset values entered in the x-direction, y-direction and z-direction apply to this point even if the crosshairs snap to other points.
	<b>Lock coordinate</b> Uses the current coordinate as the fixed coordinate. You can select the x-coordinate, y-coordinate or z-coordinate or a combination thereof on a submenu.
	<b>Point of intersection</b> Finds the point of intersection of two elements like lines, circles, and ellipses. This tool also finds virtual points of intersection between elements obtained by extending the elements.
	<b>Midpoint</b> Finds the midpoint of an element or a line that you enter.
	<b>Center of arc</b> Finds the midpoint of an arc, circle or curve.
	<b>Division point</b> Uses temporary markers to divide an element (or a line that you enter) into an equal number of sections and snaps to these points.
	<b>Base of perpendicular</b> Snaps to the base of a perpendicular on an element by dropping a perpendicular from a point onto the element or the extension of the element. The element can be a line, polyline, splines, circle, ellipse, etc.
	<b>Reference point</b> Places a point on an element that is at a precise distance from a reference point. The reference point can be the end point of an element or a point that you enter.
	<b>Offset by radius</b> Finds a point obtained from the point of intersection of two new circles that you enter.
	<b>track/extension point</b> Places a track point.



### Delete track points

Deletes all the track points placed; the track lines will be recalculated.



### Point snap options

Opens the **Options** dialog box, displaying the **Point snap** page. You can specify the kinds of points the program is to scan the workspace for. You can also switch on CursorTips. These are small symbols that appear at the center of the crosshairs to indicate the type of point (midpoint, intersection, grid point, ...) the system will snap to when you click. In addition, you can set general snap options.




### Track tracing options

Opens the **Options** dialog box, displaying the **Track tracing** page. You can turn track tracing on and off. In addition, you can define (display) settings for track tracing.



### Terrain point definition

Using  **Perpendicular through Station** (Actionbar – **Landscaping** role – **Plants**, **Site Plan** task – **Site Plan** task area), you can set the primary point number and the secondary point number.

## Shortcut menu for creating and modifying elements

Right-click to open the shortcut menu. Depending on where you click and what you are currently doing, the shortcut menu offers the tools you need for the task at hand.

If you open the shortcut menu in a viewport *and* you work in design mode (see “Design mode and navigation mode” on page 91), the shortcut menu offers tools you can use to create and modify elements (see “Shortcut menu in design mode (on page 64)”):

- If you right-click an element, the shortcut menu shows edit tools appropriate to the element clicked. As soon as you select one of these edit tools, Allplan automatically selects the element.
- If you double-click an element with the right mouse button, Allplan starts the tool that was used to create the element clicked and automatically copies its current parameters.
- If you right-click in the empty workspace, you can choose from various edit tools and general tools. You can also switch to **Lay-out Editor**.

## Creating similar elements using the shortcut menu

*Right*-clicking an element while you are working in design mode (see “Design mode and navigation mode” on page 91) will open a shortcut menu. The tool at the top is the tool that was used to create the element. If you click this tool on the shortcut menu, the program will open this tool but it will *not* adopt the parameters of the element clicked.

---

### To create similar elements with the shortcut menu

- Double-click the element with the right mouse button.

Allplan adopts all the properties of the element clicked.

Or

Right-click the element. Then click the tool at the top of the shortcut menu.

Allplan will *not* adopt the properties of the element clicked.

---

## Editing elements using the shortcut menu

---

### To edit and modify elements using the shortcut menu


*Right*-clicking an element while you are working in design mode (see “Design mode and navigation mode” on page 91) will open a shortcut menu with a selection of appropriate edit and modification tools. The shortcut menu shows the element type together with a number of general and special (element-specific) edit tools.

The following edit tools are provided on the shortcut menu:

- Use **Format Properties** to modify the general properties of an element (e.g., pen, line color, layer).
  - Use **Properties** to modify the special properties of an element.
-

# Dialog line

The dialog line below the workspace is where the program prompts you to enter values. Alternatives are indicated by commas or the word 'or'.

**Note:** You can also do basic calculations in the dialog line. In addition, you can transfer values obtained with  **Measure** directly to the dialog line. Using CTRL+C and CTRL+V, you can copy and paste text into the dialog line.



# Status bar

The status bar is the bottom line in Allplan's application window. You can hide it on the **View** menu – **Toolbars** – **Status Bar**. Various types of information on the current drawing file are displayed here – e.g., the reference scale and unit of length. You can also modify these values by clicking them.

## Overview of elements in the status bar:



Drawing type

Shows the current document type.

Scale

Shows the current drawing type.

Length

Shows the current reference scale. You can change the scale by clicking.

Angle

Shows the current unit of length. You can change the unit by clicking.

%

Shows the current system angle and the current unit of angle. By clicking the angle displayed, you can set the system angle to predefined default values. To specify any angle, click **Define** and enter the value you need. You can change the unit by clicking.

Shows how much of the memory reserved for documents has already been allocated (as a percentage).

# Input options

The toolbar with the input options appears when a function offers several implementation options. You can dock the input options at the top or bottom of the window.



Input options for entering polylines







# Basic Approach


## Using the mouse

The functions of the three mouse buttons change with the task at hand in Allplan. There are three different states:





**Note:** The information in the tables is based on a 3-button mouse. If you work with a 2-button mouse, you can simulate the middle mouse button by pressing the CTRL key and the left mouse button at the same time.

## Using the mouse (no tool is activated)

Mouse button	This	Does this ...
<b>Left</b> 	Click element	Selects the element with handles.
	SHIFT + click element	Selects an additional element with handles or cancels its selection. Selects an entity group or a symbol with handles.
	CTRL + click element	Selects an additional element with handles.
	Double-click element	Displays the element's properties.
	CTRL + double-click element	Displays the element's format properties.
	Click and drag in workspace	Selects elements with handles. Selects intersected elements depending on the setting on the <b>Filter Assistant</b> toolbar or <b>Actionbar - Selection</b> area.
	SHIFT + click and drag in the workspace	Selects elements in a region with handles or cancels the selection.
	Double-click in workspace	Opens the <b>Open on a project-specific basis: drawing files from file-set/building structure</b> dialog box.
<b>Middle</b> 	CTRL + double-click in workspace	Opens the <b>Layer</b> dialog box.
	Double-click	Sets the display scale so that all the visible elements are displayed in their entirety.
	CTRL + double-click	Regenerates the section that is visible on screen.
	Click and drag	Pans in the current viewport.
	SHIFT + click and drag	Pans in the current viewport.
	CTRL + click and drag	Zooms in.
	ALT + click and drag	Zooms dynamically (cursor = center). Move the cursor up to zoom in; move the cursor down to zoom out.

	<b>Right</b>		
	Click element		Displays the shortcut menu for the element clicked. The shortcut menu offers general tools and edit tools that are specific to the element in question.
	Click in workspace		Displays the general-purpose shortcut menu.
	CTRL + click an element or in workspace		Opens the shortcut menu for selecting elements.
	Double-click element		Opens the tool that was used to create the element and adopts all the parameters of the element.
	Double-click in workspace		Opens the Layer dialog box.

## Using the mouse (a drafting tool is activated)

Mouse button	This	Does this...
	<b>Left</b>	
	Click in workspace or click an element	Places and snaps to points in the workspace.
	CTRL + click	Places points in exact alignment with existing points (linear snap).
	SHIFT + click	After having placed the first point, you can create additional points so that they are orthogonal (provided  <b>Enter at right angles</b> or  <b>Enter using cursor snap</b> is not active in the dialog line).
	<b>Middle</b>	
	Double-click	Sets the display scale so that all the visible elements are displayed in their entirety.
	Click and drag	Pans in the current viewport.
	SHIFT + click and drag	Pans in the current viewport.
	CTRL + click and drag	Zooms in.
	ALT + click and drag	Zooms dynamically (cursor = center). Move the cursor up to zoom in; move the cursor down to zoom out.

**Right**

Click in workspace

Opens the shortcut menu for entering points.

Confirms the entry when requested in the dialog line: *<confirm>*.

Click a toolbar

Quits a tool (= ESC key).

## Using the mouse (an edit tool is activated)

**Mouse button****This****Does this...****Left**

Click element

Identifies or selects an element.

SHIFT + click element

Identifies or selects an entity group.

Click and drag in workspace

Selects elements in a rectangular region.

**Middle**

Double-click

Sets the display scale so that all the visible elements are displayed in their entirety.

Click and drag

Pans in the current viewport.

SHIFT + click and drag

Pans in the current viewport.

CTRL + click and drag

Zooms in.

**Right**

Click in workspace

Depends on the setting in the **Options, Desktop environment – Mouse and crosshairs page**: Opens and closes the brackets, or opens the shortcut menu for selecting elements.

CTRL + click in workspace

Opens the shortcut menu for selecting elements.

Confirms the entry when requested in the dialog line: *<confirm>*.

Click a toolbar

Quits a tool (= ESC key).

**Middle-Left**

Click element with middle and then left mouse button

Selects a segment.

**Middle-Right**

Click in workspace with middle and then right mouse button

Enables the selection rectangle. Use the left mouse button to enclose the desired elements in a selection rectangle.



## Using a mouse with a wheel

A mouse with a wheel is a conventional 2-button mouse with a mouse wheel between the left mouse button and the right mouse button. By turning this mouse wheel, you can zoom in on your design and scroll through dialog boxes.


**You can use the mouse wheel to do the following:**

- **Zoom sections:** Just move the wheel. You can zoom in (by turning the mouse wheel in a forward direction) and zoom out (by turning the mouse wheel in a backward direction). The zoom factor is 20%. The cursor defines the zoom center.
- **In dialog boxes,** you can scroll up and down by turning the mouse wheel accordingly.

# Activating and quitting tools



Allplan offers you several options to activate, execute and quit tools.

## Activating tools

- You can click the relevant icon.
- You can double-click the element with the right mouse button. This activates the tool that was used to create the element, adopting all settings and parameters of the element you clicked.
- You can activate tools using shortcut keys. To get a list of all predefined shortcuts, click **Shortcut Keys** in the  **Help** dropdown list (title bar on the right). In addition, the shortcut key for tools where one has been defined is shown in the ToolTip.
- You can use the shortcut menu.
- You can activate tools on the menu bar.

## Executing tools

Instructions are provided in the dialog line after you have clicked a tool. For example:


- **Point snap** (e.g.,  **Line** tool: *From point*)
- **Selecting** elements (e.g.,  **Delete** tool: *Select elements you want to delete*).

When appropriate, a dialog box or context toolbar is displayed so that you can make settings for the tool.

## Quitting tools

- Press ESC on the keyboard.
- **Right**-click the Actionbar or a toolbar.
- Activate a different tool.

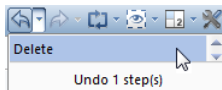
# Correcting errors


When you make an error in Allplan, you can use  **Undo** (**Quick Access toolbar**) to correct the error. The number of undo steps is unlimited. For example, if you inadvertently moved an element, you can annul the move. You can go back (undo) as many steps as you want, as far back as the last time the data were saved.


Note that certain actions, such as switching between drawing files or switching to **Layout Editor**, make Allplan save the data automatically.

**Tip:** If you inadvertently deleted elements, you can quickly restore them by immediately right-clicking in the workspace twice (the **Delete** tool must still be active).

You can undo several steps in one go. Click the arrow beside the Undo icon, keep the mouse button held down and drag the cursor over all the steps you want to undo. Then release the mouse button.



 **Redo** redoes operations that you have undone. Redo operations, however, are not possible if you have added new design entities in the meantime.

**Note:** You can also activate  **Undo** while another tool is active. The tool in question will close and all the entries you made while it was active are undone.





# Saving your work

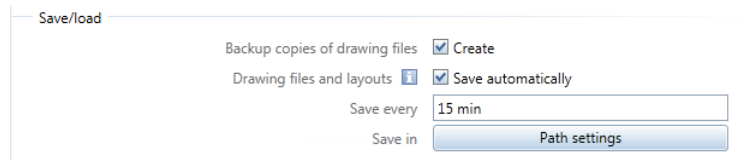
When you exit Allplan, all open drawing files will be saved automatically. You do not need to save your data explicitly (as in other programs) before you exit Allplan. Exception: NDW files have to be saved manually.

In certain circumstances, Allplan makes backup copies of your drawing files or layouts. For more information, see Using .bak files (on page 85).

While you are working in Allplan, you can save your data manually or you can have the program do so automatically after a certain number of steps. Allplan saves the data in the current drawing file and in those that are open in edit mode. Certain actions (for example, switching to the Layout module) make Allplan save your work automatically.



## Allplan saves the data when you

- Switch to a different drawing file, fileset, layout or project.
- Switch to **Layout Editor**.
- Export data from Allplan using  **Export**.
- Save manually using  **Save** (Quick Access toolbar or CTRL+S) or  **Save and Compress** (Allplan icon on the title bar).
- Save automatically. You can activate this tool and define the number of steps between saves in the  **Options** on the **Desktop environment** page. Allplan will not save the data until you close the current tool.




Save/load	
Backup copies of drawing files	<input checked="" type="checkbox"/> Create
Drawing files and layouts	<input checked="" type="checkbox"/> Save automatically
Save every	15 min
Save in	Path settings






Allplan does not compress the data saved automatically or manually using  **Save**. In other words, the document size will not be smaller although you have deleted data. The reason for this is that the data you have deleted are still in the memory so that you can redo the deleted data even after saving. Use  **Save and Compress** to compress the data when you save manually. All the other actions that save data also compress the data.

## Using .bak files

Specific actions cause Allplan to make backup copies (files ending in **.bak**) of the drawing file or layout. The **.bak** files and the original drawing files or layouts are stored in the same folder, i.e. the project folder. You can choose to create **.bak** files in the  **Options** on the **Desktop environment** page.

If you have inadvertently carried out a function, you can use the **.bak** file to restore the original data of a drawing file or layout. All you need to do is rename the drawing file or layout in Windows Explorer.

The following actions cause Allplan to create **.bak** files

- When you select the  **Copy, Move Elements between Documents** tool.
- When you delete drawing files and layouts using  **Delete Document....**
- When you delete the contents of drawing files and layouts in the **Open on a project-specific basis: drawing files from file-set/building structure** or **layouts** dialog box.
- Before you import data to drawing files using  **Import**
- Before you import data using **Add drawing files and layouts with resources to project**.

**Note:** Please note that these backup copies may increase the volume of data involved in backing up projects. You should therefore delete unnecessary **.bak** files before you start the backup. You can use the Services application to delete **.bak** files. Open the **Utilities** menu and click **Delete temporary files**.

---

### To use .bak files

**For example: You have accidentally copied wrong elements to drawing file 4711.**

- 1 Find out which folder includes the current project: Start the Services application, select the **Service** menu, choose **Hotline Tools** and double-click **wopro**.
  - 2 Exit the Allplan project.
  - 3 Delete or rename the file **tb004711.ndw**. You can name it **tb004711.ndw.old**, for example.
  - 4 Rename the file **tb004711.ndw.bak**. Enter **tb004711.ndw** for the new name.
- 

**For example: You have accidentally copied wrong elements to layout 815.**

- 1 Find out which folder includes the current project: Start the Services application, select the **Service** menu, choose **Hotline Tools** and double-click **wopro**.
  - 2 Exit the Allplan project.
  - 3 Delete or rename the file **pb000815.npl**. You can name it **pb000815.000.old**, for example.
  - 4 Rename the file **pb000815.000.bak**. Enter **pb000815.npl** for the new name.
-

# Using the Clipboard

In Allplan you can copy elements to the Clipboard and insert them in any drawing file or application. The input options provide a number of tools that help you place elements.

**Note:** You cannot use the Clipboard when you define patterns and fonts.

## Allplan features

You can use the Clipboard in Allplan just as you would in any other Windows application. Note, however, that there are some special elements and properties:

- **Layer:** Elements retain their layers. Elements on frozen layers (visible and hidden) will not be copied.
- **Default reference planes:** You can only select default planes with CTRL+A. See also Behavior of default planes when copying or moving elements between documents in the Allplan help.
- **Group number:** Elements get new group numbers when you place them. Elements that had the same group numbers still have the same group numbers.
- **File size:** The program will issue an error message if the file size is too large after you have inserted elements.
- **Text:** If the application from which you have copied text to the Clipboard is an OLE server (such as Microsoft Word or Microsoft Excel), the contents of the Clipboard will be pasted as an OLE object into Allplan. To paste the contents of the Clipboard as normal text, use **Paste Contents – Unformatted (Unicode) Text**. Text of this kind gets the text parameters currently set.
- **FEA and Allfa elements:** FEA and Allfa elements cannot be copied to the Clipboard.



## Copy

Use this tool to copy selected elements and put them on the Clipboard. You can then paste these elements from the Clipboard as often as you need using **Paste** and **Paste to Original Position**. The elements can also be pasted into other applications. This command is not available when no element is selected.



## Cut

Use this tool to cut selected elements and put them on the Clipboard. You can then paste these elements from the Clipboard as often as you need using **Paste** and **Paste to Original Position**. The elements can also be pasted into other applications. This command is not available when no element is selected.



## Paste

You can paste Allplan elements, text (for example, from a word processing program) and bitmaps from the Clipboard into Allplan. This tool is only available in plan view. This command is not available if the Clipboard is empty or contains elements that cannot be pasted into Allplan.

If the application from which you have copied text to the Clipboard is an OLE server (such as Microsoft Word or Microsoft Excel), the contents of the Clipboard will be pasted as an OLE object into Allplan. Use **Paste Contents** to paste the contents of the Clipboard as normal text.

**Note:** Allplan elements can only be pasted from the Clipboard into the same type of document from which they were copied to the Clipboard. The contents of the Clipboard will always be pasted into the active document even if the data were copied from a file open in edit mode.

## Pasting elements from the Clipboard into Allplan

The input options provide a number of tools that help you paste elements.

Allplan elements are inserted as original data (in other words, with attributes and properties). In the case of text, the current text para-

meters apply. You can also insert bitmaps using the Clipboard. The following settings are used:

- Color depth: several colors
- Transparency: off; color: black.
- Width: 100 pixels = 1000 mm

The Clipboard supports the following bitmap formats: DIB (or BMP) and WMF.

**Note:** When the Clipboard contains several formats supported by Allplan, you can use the **Paste Contents** tool to select a format.

### Pasting Allplan elements into other applications

When you paste Allplan elements into another application using CTRL+V, the elements will be inserted as a Windows Enhanced Meta file. But when the Clipboard contains text elements (for example, normal text lines, paragraph text, component numbers, labels), these elements will always be pasted as "pure" text into other applications.



### Paste to Original Position

You can use **Paste to Original Position** to insert Allplan elements at their original position. This command is not available if the Clipboard is empty or does not contain any Allplan elements.

**Note:** If you insert these elements in the same document, they exist twice at the same position.


### Paste Contents

You can use this tool to specify which element on the Clipboard you want to paste into Allplan. You can use this tool when the Clipboard contains several formats supported by Allplan (for example, bitmap and pure text).



# Controlling What's on Your Screen

Allplan offers various tools you can use to control how your model and its design elements appear on the screen. Thus, you can always choose the tool best suited to the task at hand.

You can find these tools in various places in Allplan, for example in the  **View** dropdown list (Quick Access toolbar), on the shortcut menu (see "Shortcut menu in navigation mode" on page 65) and on the viewport toolbar (on page 56). You can even use the keyboard and mouse to control what's on your screen.

## Design mode and navigation mode

Depending on whether you are designing or you want to get an impression how the current design looks, you can use two different modes for controlling the display of your model on the screen: **design mode** and **navigation mode**.


Each mode has its specific properties:

- **Design mode** offers the most important tools for drafting and designing on the shortcut menu (see "Shortcut menu in design mode" on page 64). You can identify points and design entities only in this mode. The mouse is generally used for drafting and designing.

You are working in **design mode** as long as  **navigation mode** is *not* active.

- **Navigation mode**, on the other hand, focuses on motion. In other words, the observer moves around the model, viewing it. Here, you use the mouse and the tools on the shortcut menu (see "Shortcut menu in navigation mode" on page 65) to move around

the 3D model and to visualize it. Therefore, you cannot click or select individual design entities in navigation mode.

You are working in **navigation mode** as soon as you *activate* the  **Navigation Mode** tool in a viewport. If you want to identify a point or an entire element while designing an element, switch to **design mode** by *deactivating* navigation mode again.

As you can select the mode individually for each viewport, you can quickly and easily switch from one viewport (where you are working in design mode) to another viewport (where you have activated navigation mode) and check your design there.

## View, perspective and scale

In each viewport, you can zoom in on any section as close as you want (= enlarging the section). In addition, you can display the entire design with just one click, pan or move around your model in three dimensions.

The easiest way to do this is to use the mouse and the tools on the viewport toolbar (on page 56). Of course, you can also use the tools on the menus or shortcut keys.

Allplan saves the individual perspective views and scales so that you can undo and redo your steps.

### Controlling the view using the mouse

You can use the mouse to control the parameters defining the view of your model. These parameters include the (perspective) view, viewing angle, viewing direction, display scale and many more. Whether you want to zoom in, pan or change the viewing angle – you can achieve all these tasks just with the mouse.

The mouse buttons have different functions depending on whether you are working in design mode (see "Design mode and navigation mode" on page 91) or navigation mode (see "Design mode and navigation mode" on page 91).



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## Using the mouse in design mode

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### To use the mouse in design mode

- 1 Check that navigation mode is *not* active in the relevant viewport.

Have a look at the viewport toolbar (on page 56):

The  **Navigation Mode** icon must *not be pressed in*.

Or

Move the cursor into the relevant viewport.


If the crosshairs appear, navigation mode is not active.

- 2 Now you have the following options:
  - You can pan by pressing and holding down the middle mouse button.
  - Turn the mouse wheel to enlarge or reduce the area around the cursor.
  - If you want to zoom in on a section, press and hold down the right mouse button while enclosing the section in a selection rectangle.
  - Double-click with the middle mouse button to display the entire design.

**Note:** You can make different settings for the functions of the mouse buttons in the **Options** on the **Mouse and crosshairs** page.

---

## Using the mouse in navigation mode


If  **Navigation Mode** is *active*, you can use the mouse to control the cursor as if you were holding a camera in your hands: Looking through the viewfinder, you can see the workspace. Using the mouse, you can move around or move the camera.

---

### To use the mouse in navigation mode


- 1 Check that navigation mode is active in the relevant viewport.

Have a look at the viewport toolbar (on page 56):

The  **Navigation Mode** icon must be pressed in.


Or

Move the cursor into the relevant viewport.

If it looks like this , navigation mode is active.

- 2 In order to move the camera, press and hold down one of the mouse buttons while moving the mouse.
  - 3 There are two more settings controlling the camera in navigation mode:
    - Sphere mode (see "Sphere mode, camera mode" on page 95) is the default.
    - Press the CTRL key to navigate in camera mode (see "Sphere mode, camera mode" on page 95).
- 

**Tip:** Pressing and holding down the SHIFT key increases the speed (sensitivity) by a factor of 5.

**Tip:** You can use the **Focal length** parameter in  **3D View** (viewport toolbar) to control the aperture angle of the vision cone. The **focal length** is equivalent to the lens on a small camera. The default of 50 mm is equivalent to a normal lens.

## Sphere mode, camera mode

### Sphere mode

In **Sphere mode** (default setting), you guide the camera on an imaginary sphere around the target point located at the center of the sphere by pressing and holding the mouse button while dragging. In other words, the position of the camera (the eye point/observer) changes. The target point is static. The target point should be as near to the object being animated as possible.

**Sphere mode** is especially useful if you want to rapidly view an object from all sides.

**Camera mode** is better for viewing objects from the inside (see below). Press and hold down the CTRL key.

**Tip:** In addition to or as an alternative to the mouse, you can use SpaceNavigator to navigate in animation windows.

**Note:** It is the observer that moves, not the object!

### The following movements are possible:

Turn camera about object on the surface of an imaginary sphere:

Hold down the left mouse button.  
Cursor shape:



Move camera laterally/up/down:

Hold down the left mouse button.  
Cursor shape:



Move camera towards/away from object:

Hold down the right mouse button.  
Alternative: move mouse wheel  
Cursor shape:






## Camera Mode

In **Camera mode** (press and hold down the CTRL key), you control the camera's viewing direction by pressing and holding the mouse button. In other words, the position of the camera (the eye point) does not change. The viewing direction (the target point) changes. This way, you can quickly view the building from all directions.


**Sphere mode** is better for viewing an object from all sides (see above). Release the CTRL key.

**Note:** It is the observer that moves, not the object!

### The following movements are possible

Turn camera:	CTRL + hold down the left mouse button. Cursor shape: 
Move camera laterally/up/down:	Hold down the left mouse button. Cursor shape: 
Move camera towards/away from object:	CTRL + hold down the right mouse button. Alternative: CTRL + move mouse wheel Cursor shape: 

**Tip:** As soon as the cursor reaches the edge of the screen, it appears again on the opposite side.

**Note:** In **sphere mode**, the target point of the camera is static; this mode is particularly useful for viewing a building from all sides. To facilitate intuitive navigation within buildings, you can enter a value for the **Minimum offset for navigation mode and mouse wheel** option. Allplan will automatically switch to **camera mode** as soon as the offset is less than this value. The default setting is 1m. You can find this option in the  **Options – Desktop environment – Mouse and crosshairs – Mouse** area.

## Controlling the view using the keyboard

You can use the mouse to view or move through your model. In addition, you can use a number of shortcut keys to move around or to control camera positions you have already defined.

If you work in navigation mode (see "Design mode and navigation mode" on page 91), you can also use the shortcut menu to access the shortcut keys shown in bold.

### Overview of shortcut keys

Shortcut key	Function
<b>F2</b>	Render
<b>F4</b>	Opens a new viewport of the <b>Animati-on</b> view type
F5, double-click with middle mouse button	Zoom All
SHIFT + F5	Zoom All in All Viewports
F6, CTRL + middle mouse button	Zoom Section
ALT + LEFT ARROW	Takes you back to the previous view
ALT + RIGHT ARROW	Takes you to the next view
SHIFT + CTRL + S	Saves the contents of the viewport as a bitmap
LEFT ARROW, RIGHT ARROW, UP ARROW, DOWN ARROW	Rotates the view about the target point
BACKSPACE	Takes you back to the previous view
SHIFT + BACKSPACE	Takes you to the next view
CTRL	Switches camera movement from <b>sphere mode</b> (see " <b>Sphere mo- de, camera mode</b> " on page 95) to <b>camera mode</b> (see " <b>Sphere mode, camera mode</b> " on page 95) (as long as you hold down the key)

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CTRL++ (on the number pad)	Enlarge View
CTRL+- (on the number pad)	Reduce View
CTRL + F4	Closes the current viewport (animation window and design viewport)
CTRL + F6 CTRL + TAB	Switches between current viewport and viewport(s) in the background (e.g. between animation window and viewport in which you are drawing)
Double-click element in animation window	Opens the <b>Properties</b> dialog box of the element. You can modify the properties of the element.
CTRL + double-click element in animation window	Opens the <b>Format Properties</b> dialog box of the element. You can modify the element's format properties (pen thickness, line type, color, layer).

# View types for displaying models

You can set the view type separately for each viewport. Different rendering methods (**Wireframe**, **Hidden**, **Shaded**, **Sketch** or **RT\_Render**) enable you to display your model in many different ways.


When **Layout Editor** is open, you can switch between **Design view** and **Print view** (= preview of resulting printout).

# Selecting and displaying elements

In addition to the options described, you can control how design elements look on screen. For example, you can hide groups of elements to speed up your computer or use a specific pen color or line thickness for all elements.








As opposed to some of the other options, these settings always apply to *all* viewports.

# Rules defining how elements look on screen

Elements are not always displayed on screen with the format properties you have defined. In other words, an element to which you have assigned the color red does not necessarily appear in red. The way elements look on screen depends on several settings controlled by priorities. Top priority is given to several general settings in the  **Options (Desktop environment** page – **General** area) for example, followed by the actual format properties of the elements.

The following table shows the sequence in which elements are displayed on screen. The **No.** column shows the priority; the lower the number the higher the priority of the corresponding setting. If, for example, you have selected the **Use same color for elements in reference files** option (priority 1), Allplan always uses the color set

for elements in reference files, regardless of all the other settings such as format properties, construction lines, color stands for pen option and so on.

No.	Setting	Where?
1	Color for elements in reference drawing files	 <b>Options – Display – Drawing file and NDW window</b>
2	Color for elements on frozen layers	 <b>Select, Set Layers – Select Layer /Visibility tab</b>
3	Construction line color and line type	 <b>Options – Display – Drawing file and NDW window</b>
4	Use color 1 for all elements	 <b>Show/Hide</b>
5	Color stands for pen	 <b>Show/Hide</b>
6	Default pen, color (for hatching, patterns, fonts)	<b>Tools menu – Defaults</b>
7	Text height defines pen thickness (for Allplan fonts)	 <b>Options – Text</b>
8	Pen, line, color from layer	 <b>Select, Set Layers</b>
9	Format properties of the element	<b>Properties palette or Format toolbar</b>

# Sequence in which elements are displayed

The sequence in which elements are displayed on screen depends on several factors. The following table shows the sequence in which elements are displayed on screen. The **No.** column shows the priority; the lower the number the higher the priority of the corresponding setting. For example, elements in drawing files open in reference mode are always displayed behind elements in the current document or in files open in edit mode, regardless of other settings.




No.	Setting	Explanation
1	Document status	Elements in the current document or in documents open in edit mode are always displayed in front of elements in reference drawing files.
2	<b>Show/Hide, Surface elements in background</b> option	When this option is selected, surface elements (hatching, pattern, fill) are placed behind other elements.
3	<b>Sequence</b> element property	See Sequence property (see "'Sequence' property" on page 101)
4	Time of creation/modification	Elements that were created/modified later are placed in front of other elements.  For more information on the sequence in the layout, see Sequence in which elements print (on page 270).

## 'Sequence' property

By default, elements are displayed in the sequence in which they were created or modified. This way, the element you created or modified last is always on top. Allplan provides several settings for changing the sequence so that you can prevent fills from hiding all the elements below, for example.


The **Sequence** property is saved as a number between -15 and +16. The elements are displayed on screen in accordance with the value set: The greater the value, the further up the element. In other words, the element with the greatest value is on top of all the other elements. When two elements have the same value, the element you created last is displayed on top of the other one. New elements get a fixed default value, which depends on the element type. More information can be found in the Allplan help; see "Values for the display sequence (see "Values defining the display sequence" on page 102)".

**Note:** New elements or modified elements are always on top. Only when you click  **Refresh** will Allplan rearrange the elements in accordance with the sequence defined.

In the case of elements consisting of subordinate elements (e.g. smart symbols, element groups, XRefs), the setting of the subordinate element has priority over the setting of subordinate elements. If, for example, you define that an element group is to be dis-

played on top of another element group, all the elements of which this element group consists are displayed on top of the elements of the other element group, regardless of the settings defined for subordinate elements.



## Values defining the display sequence

The following table displays the **Sequence** defaults for various elements created in Allplan. You can modify these values in the  **Options** on the **Desktop environment** page.

The following table shows the defaults for creating elements.


Element	Default value
<b>Design entities</b>	
Normal design entities (lines, circles, ...)	0
Dimension lines/text without fill	+10
Dimension lines/text with fill	+14
OLE objects	+11
XRefs	0
Fills	-7
Bitmap areas, bitmaps	-5
Style areas	-4
Hatching, patterns	-3
<b>Architectural elements, bar reinforcement</b>	
Lines of architectural components	+7
<b>Note:</b> So that the layers of multi-layer walls do not overlap, the lines of every other, even wall layer are automatically given the value +8.	
Surface elements of architectural components	+6
<b>Note:</b> You cannot set the value for surface elements. It is automatically the value of the associated line minus 1. The surface elements of every other, even wall layer are automatically given the value +7.	
Lines of rooms, stories, areas	-1
Surface elements of rooms, stories, areas	-8
Bar reinforcement	+9

**Notes:**







- Converting a surface element to different one using  **Convert Surface Element** does **not** change the display priority.
- Elements in reference drawing files are always behind the elements in active drawing files.
- If **Surface elements in background** is selected in  **Show/Hide**, fills are always behind other elements, regardless of the priority set.

## Modifying the 'Sequence' property

You have two options to modify the sequence in which elements are displayed:



- Select  **Modify Format Properties** (Actionbar – Change area or **Format Properties** on the shortcut menu of an element) and enter a value between -15 and +16.
- Right-click an element, choose **Sequence** on the shortcut menu and select the tool you need:

**This****Does this...**

	<b>Bring to front</b>	Moves the element to the top. This element is assigned a priority value of +16.
	<b>Send to back</b>	Moves the element to the bottom. This element is assigned a priority value of -15.
	<b>One level to the front</b>	Moves the element up one level. The priority value of this element is increased by a factor of 1.
	<b>One level to the back</b>	Moves the element down one level. The priority value of this element is reduced by a factor of 1.
	<b>In front of another element</b>	Moves the element in front of another element. Compared with the selected element, the priority value of the modified element is increased by a factor of 1.
	<b>Behind another element</b>	Moves the element behind another element. Compared with the selected element, the priority value of the modified element is reduced by a factor of 1.

# More tips for controlling the on-screen display

Focal length or aperture angle of vision cone

Using the **Focal length** parameter in  **3D View** (viewport toolbar) or  **Set Camera Path**, you can control the aperture angle of the vision cone. The **focal length** is equivalent to the lens on a small camera. The default of 50 mm is equivalent to a normal lens.

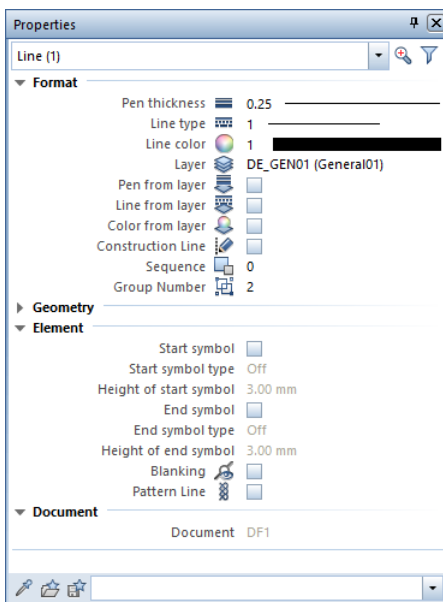
# Using Format Properties

## Basics



### Defining an element's pen thickness, line type and line color

The Properties palette opens as soon as you activate a tool for creating elements. Before you draw the element, you define its line thickness (pen thickness) and line type in the Properties palette. When Color stands for pen is on (it is off by default), Allplan automatically sets the color with the pen.

If you work with layers and you take the format properties from the layer, Allplan automatically sets the format properties in accordance with the current layer.



## Modifying format properties


Use  **Modify Format Properties** (Actionbar – **Change** area) to modify the pen thickness, line type and line color of an element. After selecting the tool, you can see a dialog box, where you can define which format properties you want to change. Click  to match the format properties of an existing element.

**Note:** To change the format properties of a single element, you can also use the shortcut menu. Just click **Format Properties**.

## Using pen thickness

Allplan provides 15 pens of different thickness, which you can select by clicking a number between 1 and 15. To specify which number represents which pen thickness, select the **Tools** menu, click **Defaults** and choose **Pen Thickness + Format QuicktSelect**. An element you are drawing either gets the current pen thickness or it takes the pen thickness from the current layer. For more information, see Defining format properties using layers (on page 111).

If the **Color stands for pen** option is switched on, each pen thickness is represented by a specific color on screen and in printouts. You can also use **Tools – Defaults – Pen Thickness + Format QuicktSelect** to specify which color represents which pen thickness.

The different thickness settings are usually not displayed on screen. If you want to display the thickness, select the **Thick line** option in  **Show/Hide**.

When printing, you can assign a thickness to each of Allplan's 15 pens in the **Pen and Color Assignment** dialog box (**Print Layouts** tool, **Print profile** tab, **Pen and color assignments...**).

**Note:** There are some particular issues to bear in mind when you assign pen thickness and line color to text and dimension text. Please refer to the chapters Pen thickness and line color of text and Pen thickness, line type and line color of dimension lines and text in the Allplan help.

## Using line types

A line type is a repetitive combination of line sections and empty spaces in between. Allplan provides 15 different line types, which can be addressed by their number. Using **Defaults – Line types + Format Properties** on the **Tools** menu, you can modify the definition of the individual line types. Line type 1 cannot be changed; it is always defined as a continuous line.

An element you are drawing either gets the current line type or it takes the line type from the current layer. For more information, see *Defining format properties using layers* (on page 111).

## Using colors


Allplan provides 256 colors. An element you are drawing either gets the current color or it takes the color from the current layer. For more information, see *Defining format properties using layers* (on page 111).

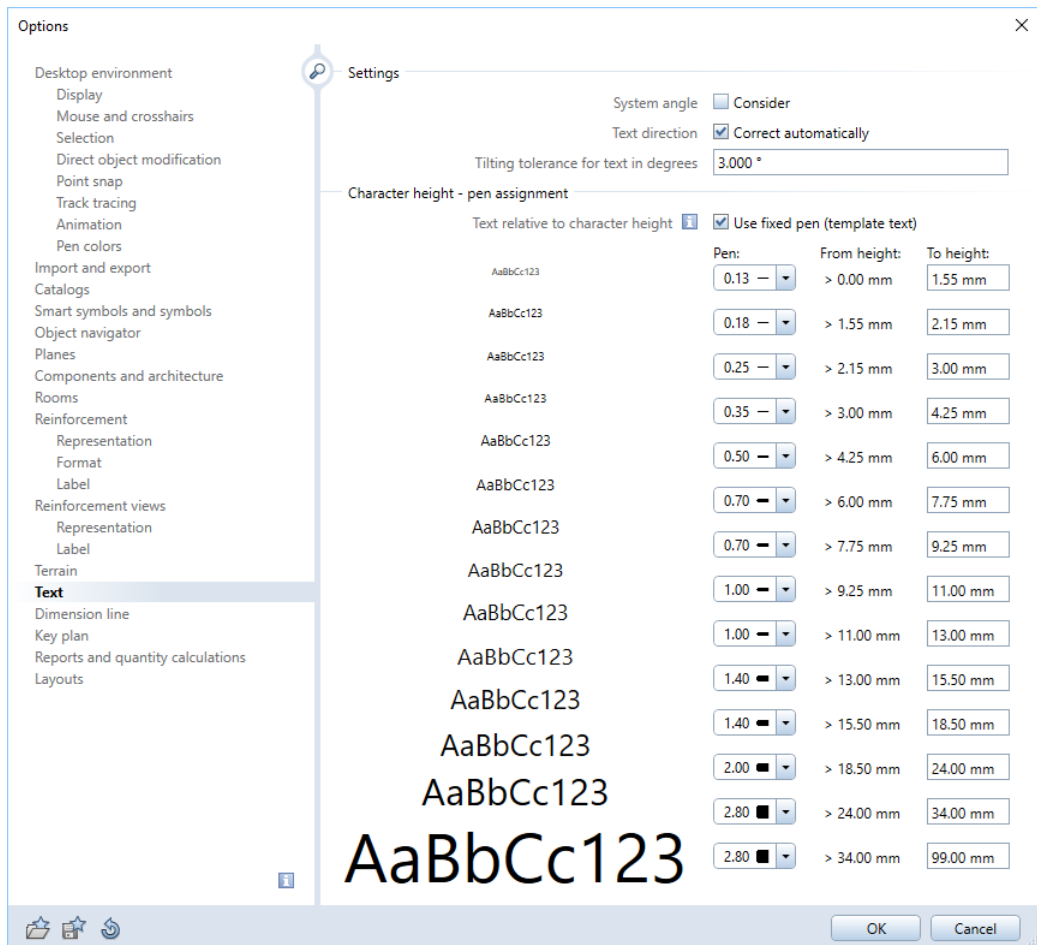
When the **Color stands for pen** option is switched on, the color of elements is defined by their pen thickness. Thus, the color displayed on screen is not the color of the element but the color assigned to the respective pen thickness. You can assign colors to pens using **Tools – Defaults – Pen Thickness**. Fills are always displayed using their own colors.

When printing, you can assign a color to each of Allplan's 256 basic colors in the **Pen and Color Assignment** dialog box (**Print Layouts** tool, **Print profile** tab, **Pen and color assignments...**). For more information on color layouts, see *Printing color layouts* (on page 273).

## Pen thickness and line color of text

When you write text, Allplan displays the text using the pen thickness set in the **Properties** palette and the text color defined in the **Text** dialog box or the settings for the current layer.

In the  **Options - Text** page, you can configure the pen (and thus the color when **Color stands for pen** is active) used for text to depend on the text height. For example, you can have text that is between 2.15 mm and 3 mm high be drawn with pen 1 and text that is between 3.00 mm and 4.25 mm high be drawn with pen 2.





If the **Text relative to character height – Use fixed pen** option is not active, the line color and thickness of text are based on the current pen thickness and line color set in the Properties palette or on the settings for the current layer.


Line type no. 1 is always used to display text.

For more information, see Rules defining how elements look on screen (on page 99).


## Pen thickness and line type of dimension lines and dimension text

Dimension text and other dimension line texts in Allplan fonts


The pen thickness used for dimension text and other dimension line texts in Allplan fonts is defined in the same way as the pen thickness used for normal text in Allplan fonts. In other words, dimension text uses the pen thickness of the font set or the font height.

If both features are off, Allplan uses the settings currently defined in the  **Properties** of the dimension line.

**The pen thickness and line type used to display dimension text depend on the following factors:**

- **Defaults – Fonts:** You can specify that text always uses the pen thickness set in the font defaults. Consequently, Allplan ignores all the settings described below.  
To access the font defaults, go to the **Tools** menu, click **Defaults** and then **Fonts**.
- **Options – Text:** You can specify that the pen thickness of text depends on the font height by selecting the **Text relative to character height – Use fixed pen** option.  
To access the options for **Text**, go to the **Quick Access toolbar**, click  **Options** and then **Text**.


Dimension text and other dimension line texts in TrueType fonts and OpenType fonts

The pen thickness used for dimension text and other dimension line texts in TrueType fonts and OpenType fonts depends on the text size defined in the  **Properties** of the dimension line. Boldface is possible.

# Layers and Format Properties

## Basics

### Using the 'from layer' format property

Elements can assume the format properties (pen thickness, line type, line color) of the layer on which they are drawn. The relevant properties are then grayed out in the **Properties** palette and  **Modify Format Properties** dialog box. For more information, see Defining format properties using layers (on page 111).

### Advantages of the 'from layer' format property

- The elements' format properties are linked with the layers' format properties. When you change the format properties of a layer, the format properties of all the elements to which this layer is assigned change automatically.
- You can work in a scale-independent manner using line styles.

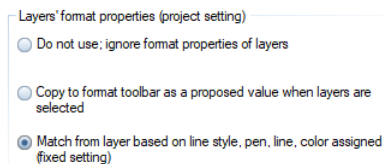
**Note:** When working with pen thickness and line color of text as well as pen thickness, line type and line color of dimension lines and dimension text, you have to take into account special conditions that control the assignment of pen thickness and line color and that override the 'From layer' property.

## Defining format properties using layers

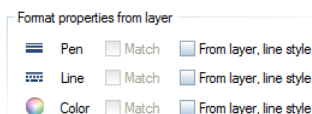
Using the **Layer** dialog box, you can specify that an element is to automatically assume the properties of the layer on which the element is drawn.

### This involves two steps:

- Open the **Format Definition** tab and select one of the three options for matching the format properties of layers. This setting applies to the current project. It applies to all new elements and is valid until you explicitly change it. When you work with Workgroup Manager in a network environment, you must be logged in as the administrator. Otherwise, you cannot make any settings in this area.

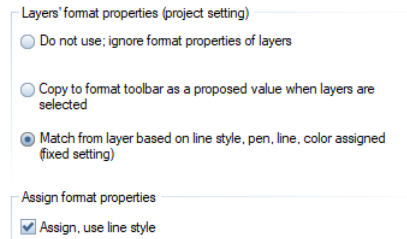


- Switch to the **Select Layer/Visibility** tab and specify the format properties (pen thickness, line type and line color) the program is to take from the layer.



## Using line styles

Using line styles, you can change the look elements depending on the reference scale or drawing type. Requirements: The format properties are taken from the layer in a fixed manner and line styles are used.



The format properties (pen, line, color) you define for a layer can be saved in a named line style. Elements can then assume the format properties of this layer. You can define different line styles for various scale ranges or drawing types so that the look of elements on screen and in printouts changes with the reference scale or drawing type set.

The program comes with a several predefined line styles that are based on DIN 1356–1.

Line styles are project resources. When creating a project, you can thus specify whether you want to use the line styles in the office standard or project-specific line styles.

You can also apply the **As construction lines** setting to a scale range or drawing type. Elements with this layer are then displayed using the line type and color of construction lines. However, these elements are not 'real' construction lines and they are not found by the **Construction Line Format** filter.

Line styles cannot be set to **hidden**. To hide a line style, you must hide the layer. But, for example, you can define a print set with the same name as a line style. You can then use this print set to hide the corresponding layers.

**Important:** Working with line styles and different settings for various scale ranges and drawing types requires a well-thought-out approach!

# Selecting Elements





## Selecting elements, overview

In order to edit elements, you must select the elements. In Allplan you usually select the edit tool (e.g., copy) first and then the elements to which you want to apply this tool. This also works the other way round in most edit tools: Select the elements first and then the tool.

**Tip:** When you right-click an element and select an edit tool on the shortcut menu, Allplan selects the element automatically.

You can select elements either by clicking them or by defining a region around the elements you want to select. The tools in the **Selection** area of the **Actionbar**, the **selection shortcut menu** and the **Filter Assistant** toolbar help you select elements.

This table gives you an overview of selection options:

To do this	Do this
Select an element.	Click the element.
Select several elements or regions.	Open the  <b>Brackets</b> , click the elements or specify the regions. Then close the brackets. You can also open and close these metaphorical brackets by right-clicking in the workspace.
Select elements in a region.	<p>To specify a selection rectangle:</p> <p>Use the left mouse button to open a selection rectangle.</p> <p>In the  <b>Options – Desktop environment – Selection</b> page – <b>Selection</b> area, you can specify that closing the selection rectangle requires a second click. When working with the selection rectangle, you can specify whether you want to select elements fully bounded by the region, fully bounded and intersected or only intersected elements.</p> <p><b>To specify a fence:</b></p> <p>Click  <b>Fence</b> and enter the points defining the outline of the fence.</p>
Select all elements.	Some tools (e.g. <b>Export</b> ) let you select all the elements in the current document by clicking <b>All</b> in the input options. This also selects elements that are not visible such as default reference planes. See also "Behavior of default planes when copying or moving elements between documents" in the Allplan help.
Reselect the elements that were selected last.	Click  <b>Reselect</b> ( <b>Actionbar – Selection</b> area or <b>Filter Assistant</b> toolbar).
Select elements with the same group number.	Click one of the elements in the group with the middle and then left mouse button. Alternatively, press and hold down the SHIFT key.

## Overview of tools for selecting elements

### Selection



Fully bounded

### Use

Selects the elements that are fully bounded by the selection rectangle only.



Fully bounded and Intersected

Selects the elements that are fully bounded or intersected by the selection rectangle.



Intersected only

Selects the elements that are intersected by the selection rectangle only.



Select elements based on direction

Selection depends on the direction in which you enter the selection rectangle:

- From right to left – selects the elements that are fully bounded or intersected by the selection rectangle. With this method, the selection rectangle is shown as dashed lines.
- From left to right – only selects the elements that are fully bounded by the selection rectangle.




Selection Option for Ambiguous Elements on/off

Lets you select the element to be activated if there are congruent elements. When this option is not selected, the program always selects the element that was created first (that is, the older one).



Reselect / Undo

Reselects the elements that were selected last or restores elements you have deleted (provided the  **Delete** tool is still active).



Fence on/off

Lets you enter a selection fence. Click the first point again to close the polyline.




Brackets

Opens the brackets. All the elements you select after opening the brackets, whether selected in a rectangle, fence or individually, will be added to the selection. Click the brackets again to close them.

**Note:** You can find the tools for selecting elements on the **Filter Assistant** toolbar too.





## Selecting elements by clicking

When you are prompted to select an element, you can click a **single** element to select it. To select several elements, switch on the  **Brackets** (**Actionbar – Selection** area or **Filter Assistant** toolbar). All the elements you click will be added to the "selection" until you close the brackets.

## Selecting elements by entering a region

You can also select elements by specifying a region rather than clicking elements. When working with the selection rectangle, you can specify whether you want to select elements fully bounded by the region, fully bounded and intersected or only intersected elements.


**The Selection area of the Actionbar and the Filter Assistant toolbar provide the following options:**

-  Selects the elements that are fully bounded by the selection rectangle.
-  Selects the elements that are fully or partially bounded by the selection rectangle.
-  Selects the elements that are partially bounded by the selection rectangle.
-  Selection depends on the direction in which you enter the selection rectangle:
  - Entering the region in the positive x-direction only selects the elements that are fully bounded by the region.
  - Entering the region in the negative x-direction selects all the elements that are fully or partially bounded by the region. With this method, the selection rectangle is shown as dashed lines.

**Note:**  **Select elements based on direction** is the default.

The selection rectangle is displayed as a colored area, which is indicated by the icons. The color of the area changes with the selection option you activate.






The easiest way to enter the region is to press and hold down the left mouse button and to enter two points that define diagonally opposite corners of a selection rectangle. You can also use  **Fence** to enter a freeform region.

## Using the brackets to select elements

You can use the brackets to select several elements in succession.

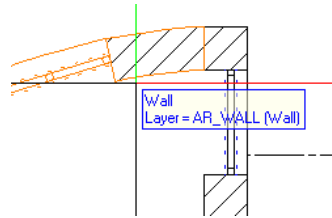
To use the brackets to select elements

**Tip:** Depending on the settings in the  **Options – Desktop environment – Mouse and crosshairs** page – **Mouse** area, you can also open and close these metaphorical brackets by right-clicking in the workspace.

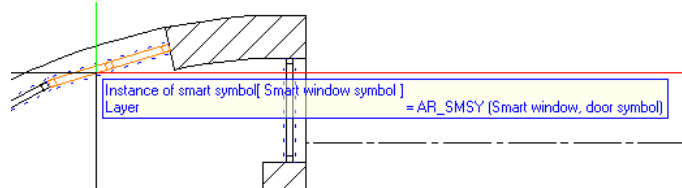
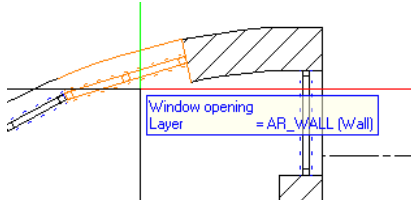
- Open the brackets by clicking  **Brackets** (Actionbar – Selection area or **Filter Assistant** toolbar).
- Click elements or open selection rectangles or fences.
- Close the brackets by clicking  **Brackets**.

# Selection preview and element info

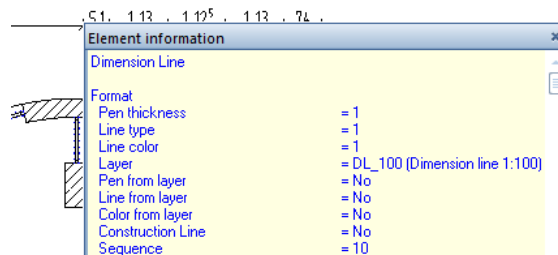
When you point to an element but do not click, the entire element is displayed in the **selection preview color** in plan, elevation and perspective view. The default setting is orange. **Selection preview** is particularly useful for complex drawings, as you can see whether you have found the right element even before you select it.




**Element info** provides additional support: In addition to selection preview, the element name and layer (default setting) are displayed with the crosshairs.



Pressing the TAB key displays additional information on 2D and 3D elements.



**Note:** You can set the color, type and scope of **Selection preview** and **Element info** in the  **Options** on the **Selection** page.

# Working with filters

Using filters, you can limit the selection of elements to specific types or properties. For example, you can use a filter that only selects elements of a certain color or walls of a specific thickness. Click the filter you want to use and set the properties by which you want to filter the elements. You always select the filter before you select the elements to which you want to apply the filter. Normally, you can only select element types that are available in the loaded drawing files.

Allplan always applies the filter to the properties of elements; what you see on screen is irrelevant.

If you select several filters, they are linked by an AND connective. This means that Allplan only selects elements that match all filter criteria.

**You can find the filter tools in the following places:**

- **Actionbar – Filter area**
- **Selection shortcut menu**
- **Filter Assistant toolbar** (not available with Actionbar configuration)

## Overview of filter options

### Filter

### Use



**Filter Step by Step**

Applies a filter to elements you have already selected or filtered; you can specify additional filter criteria. For more information, see [Filtering step by step](#).



**Match**

Matches all or specific properties of an element and uses these as the filter criteria.



**Show Pixel's RGB Color Info**

Shows a pixel's r(ed) g(reen) and b(lue) values and determines the precise values of a color.



**Pen**

Filters the elements by pen.



**Line**

Filters the elements by line type.



**Color**

Filters the elements by color. You can choose from 256 colors.



**Layer**

Filters the elements by layer. All layers in the active document and in the drawing files open in edit mode are available.



**Group number**

Filters the elements by group number.



**Construction line**

Filters the elements by construction line format.



**Pattern line property**

Filters the elements by pattern line property and a pattern with a specific number.



**Hatching number**

Filters the elements by hatching with a specific number.



**Pattern number**

Filters the elements by pattern with a specific number.



**Fill**

Filters the elements by fill or advanced fill (with color gradient, transparency and shading).










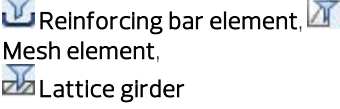




**Style area number**

Filters the elements by style area with a specific number.



**Point symbol number**

Filters the elements by point symbol with a specific number.

 <b>Element</b>	Filters the elements by element, such as lines, hatching, smart symbol.
 <b>DTM</b>	Filters the elements by element created with the tools of the <b>Digital Terrain Model</b> task.
 <b>Urban planning, landscaping</b>	Filters the elements by element created with the tools of the <b>Urban Planning</b> and <b>Landscaping</b> roles.
 <b>Layout element</b>	Filters the elements by layout element. In addition, you can filter by scale and drop-in angle.
 <b>Architecture</b>	Filters the elements by architectural element. You can define the type of architectural element, thickness and material. For more information, see Filtering by architectural component.
 <b>Attribute filter</b>	Filters the elements by element with a specific attribute.
 <b>Alteration category</b>	Filters the elements by architectural element with the <b>As-built</b> , <b>Demolition</b> and <b>New building</b> attributes.
 <b>Allfa</b>	Filters the elements by Allfa element.
 <b>Reinforcing bar element, Mesh element, Lattice girder</b>	Filters the elements by element type.
 <b>Delete condition</b>	 <b>Filter Step by Step</b> only: deletes the filter condition you defined last.
 <b>Most recent filters</b>	Retrieves filter settings you have already used.
 <b>Find Elements</b>	Finds objects and architectural elements in the loaded documents based on criteria you specify. The elements found are highlighted and can be edited.



# Precision Drawing

## Basics

### Overview

With Allplan, you can quickly create precise and exact designs without even knowing the coordinates of points or the lengths of elements and without having to create complex designs in construction line format. You can match length values and coordinates from existing elements. In addition, you can do calculations in the dialog line or use the measuring tools and then transfer the results you obtain into the dialog line.

## Entering length values and coordinates

### General information


In Allplan, length values and coordinates are always entered as real values. In other words, you do not need to recalculate the length each time to take the reference scale into account. For example, when designing a wall that is 8.60 m long, enter 8.6 (assuming that m is set for the unit of length).


### Performing calculations in the dialog line

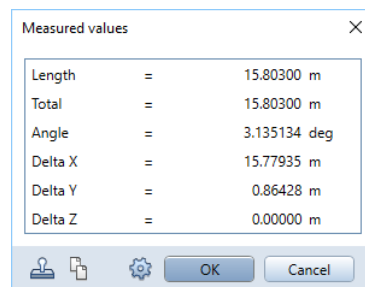
You can also do calculations in the dialog line when the system prompts you to enter a length value.



### Transferring measured values

Values obtained with  **Measure** can be transferred directly to the dialog line. All you need to do is click the relevant value in the **Measured values** dialog box.

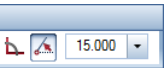
You can use  to copy the result to the Clipboard and paste it into other Windows applications (CTRL+V).





# Setting a cursor snap angle and using drawing aids


When you draw linear elements (a wall or a line, for example), you can draw freely or you can restrict the direction in which you draw to a specific angle. You can make this setting on the right in the dialog line.




You can restrict movement to horizontal and vertical (ortho constraint) or set a cursor snap angle of your choice. The program takes into account the current setting for the system angle. If, for example, the system angle is set to 30°, then this is interpreted as being horizontal.

**Note:** If you have set a cursor snap angle, then this will have priority over any point snap settings you have made, as well as any other settings on the shortcut menu. This means that only points in alignment with one of the set cursor snap angles will be snapped.

You can use the following options in the dialog line to restrict cursor movement to a specific direction or angle:

Icon	Function	Use
	No icon pressed in	The line can be drawn at any angle. This is the default setting.
	Enter at right angles	The line can only be drawn at right angles to the current system angle.
	Cursor snap	The line can only be drawn at specific angles.
15.00	Cursor snap angle	Define the cursor snap angle here (only possible when  is switched on).

## Point snap


When you place a point with the left mouse button, you can snap to points on existing elements as you do so. You can snap to the following types of points: end points, midpoints, division points and points of intersection. You do not need to know the coordinates of these points, nor is it necessary to work with construction lines. When CursorTips are activated, a symbol (known as a CursorTip) is displayed at the center of the crosshairs. The CursorTip shows the kind of point that has been detected in the snap radius. Using the  **Options, Desktop environment, Point snap**, you can set the types of points the system is to snap and whether the system is to scan active, edit or reference drawing files for points.

By means of linear snap, you can align points exactly with existing points. Here, too, visual aids are provided to facilitate the process.













**Note:** If you have set a cursor snap angle, then this will have priority over any point snap settings you have made, as well as any other options you have selected on the shortcut menu. This means that only points in alignment with one of the set cursor snap angles will be snapped.

# Using CursorTips

When CursorTips are activated, CursorTips are displayed at the center of the crosshairs before you set points. These CursorTips indicate the type of point detected within the snap radius. CursorTips are displayed when you have activated a drawing tool (the Line tool, for example) and you move the crosshairs across the workspace. You can specify which types of points the system is to look for in


 **Point snap options** on the **shortcut menu**.

Allplan uses the following CursorTips to indicate different types of points:

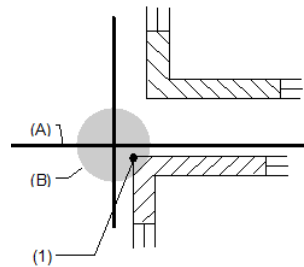
Icon	Meaning
	<b>Free point:</b> There is no defined point within the snap radius. The circle represents the size of the snap radius.
	<b>End point:</b> Snaps to the nearest element endpoint. This option cannot be deactivated.
	<b>Intersection:</b> Snaps to the point of intersection between two elements within the snap radius.
	<b>Midpoint:</b> Snaps to the nearest midpoint of a line or polygon within the snap radius.
	<b>Tangential point:</b> Snaps to the nearest tangential point of an arc, circle or ellipse.
	<b>Quadrant point:</b> Snaps to the nearest quadrant point on an arc, circle or ellipse.
	<b>Grid point:</b> Snaps to the nearest grid point within the snap radius. The grid is defined with  <b>Grid Settings</b> . The grid is only visible when  <b>Grid on/off</b> ( <b>View</b> menu or <b>Special</b> toolbar) is active. Grid points are snapped even when the grid is not visible.
	<b>Reference point of dimension lines:</b> Snaps to existing reference points when you draw dimension lines.
	<b>Linear snap using CTRL + left mouse button:</b> Snaps to the nearest point within the snap radius while you are placing points. This way, you can quickly draw mutually perpendicular lines. This option cannot be switched off.
	<b>Element:</b> Snaps to the nearest point on an element within the snap radius.

## Point snap with the left mouse button

You can snap to points on existing elements. These points include endpoints, midpoints, division points and points of intersection. You do not need to know the coordinates of these points, nor is it necessary to work with construction lines.

Allplan scans for points within a defined radius about the crosshairs. This means that when you point or click in the workspace, the system "snaps" to points within a specific distance (the snap radius), even if the center of the crosshairs is not positioned directly over the point. You can set the size of the snap radius in  **Point snap options** (on the **shortcut menu**) in the **Point snap** area.


Depending on the setting made in the  **Point snap options**, the snap radius can apply to the active drawing files only or may also include drawing files open in reference mode.



(A) Crosshairs

(B) Snap radius


(1) The program snaps to the coordinates of this point as it is within the snap radius.

**Note:** In the  **Options – Desktop environment – Point snap page – Point snap area**, you can configure the system to emit an acoustic signal whenever an undefined point is clicked.

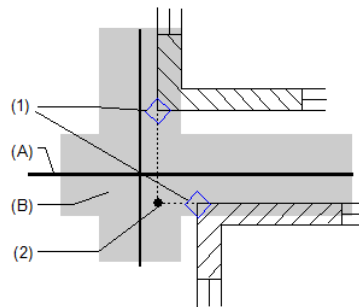
## Linear snap

Linear snap lets you place points so that they are in direct alignment with existing points. To do this, use CTRL + left mouse button. If the program finds a point within the snap radius, it places the point in such a manner that it is exactly aligned with the nearest point found inside the snap radius.

Alignment is based on the selected system angle.

If the **Display CursorTips - Linear snap** option is selected in the **Point snap representation** area of the  **Point snap options**, the program highlights the points that are in perpendicular alignment before you press a button and creates temporary construction lines stretching to the point. This provides a better visual check when you use the linear snap tool.


**Tip:** Drafting using linear snap is mainly useful with drawings consisting of few design entities. It becomes more difficult to align with the correct point as the number of design entities increases.





- (A) Crosshairs
- (B) Snap radius
- (1) Linear snap
- (2) Point snapped

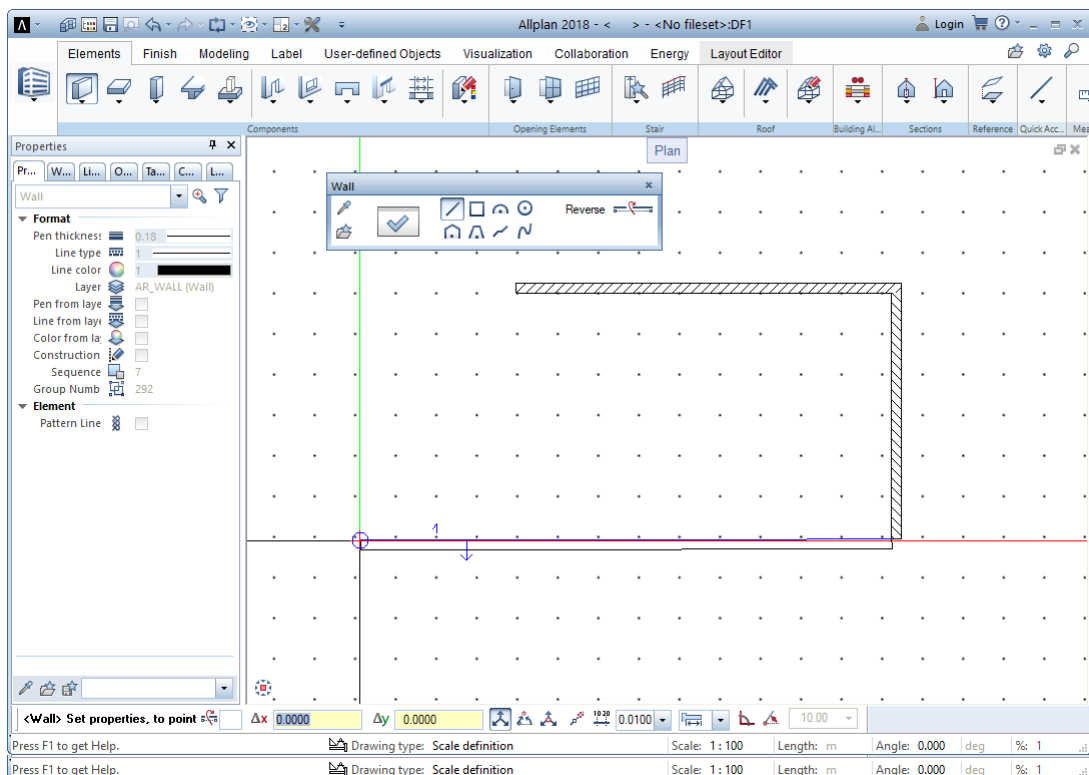
## Precision drawing with the grid

When switching on the grid (using  **Grid on/off** (**View** menu or **Special** toolbar)), you can see a dot grid in all the viewports in the active project; the grid stretches across the entire workspace. The grid serves as a means of visual orientation, as well as for point snapping. The grid points themselves do not appear in printouts.

When the **Grid point** option is activated in the **Point snap** area of the  **Point snap options**, you can use the grid points as snap points. If you clear all the other check boxes, as well as the Scan active drawing files and Scan reference drawing files check boxes, the cursor will snap to grid points only.

**Note:** Grid points are snapped even when the grid is not visible.

You can show and hide the grid with  **Grid on/off**. Use  **Grid Settings** (**View** menu or **Special** toolbar) to define the spacing between grid points in the x-direction and y-direction. When drawing the grid, the program takes into account the current system angle.










## Point snap methods

When snapping and entering points, you can find a number of helpful tools in the dialog line and on the shortcut menu (point assistant).

These tools and options are only available when the program expects you to enter a point, for example, after you have selected a tool for creating elements.

Tools and options on the shortcut menu

Icon	Point snap	Use
	Last point	Uses the last point entered.
	Additional point for offset	The point snapped is fixed; the offset values entered in the x-direction and z-direction apply to this point even if the crosshairs snap to other points.
	Lock coordinate	Uses the current coordinate as the fixed coordinate. You can select the x-coordinate, y-coordinate or z-coordinate or a combination thereof on a submenu.
	Fixed X	All the point entries you make (in the dialog line or using the cursor) apply to the x-coordinate snapped. This way, you can place points in exact alignment with existing points.
	Fixed Y	All the point entries you make (in the dialog line or using the cursor) apply to the y-coordinate snapped. This way, you can place points in exact alignment with existing points.
	Fixed Z	All the point entries you make (in the dialog line or using the cursor) apply to the z-coordinate snapped. This way, you can place points in exact alignment with existing points.
	Use coordinates	Uses the coordinates of the next point you click (only available if Global point is selected).



Point of intersection

Snaps to the point of intersection between two elements.



Midpoint

Finds the midpoint of an element (e.g., a line) or a line that you enter. When you apply this tool to circles and ellipses, the centers of these elements are snapped.



Center of arc

Finds the midpoint of an arc, ellipse, part of an ellipse or spline.



Division point

Divides a line that you enter or an element into an arbitrary number of segments. The division points can be addressed by clicking or entering a number.



Base of perpendicular

Finds the point on an element that is obtained by dropping a perpendicular line from an arbitrary point onto the element.



Reference point

Places a point on an element that is at a specific distance from a (reference) point. The reference point is displayed as a direction symbol and is located at either the start or the end of the element, depending on which is nearest to the point you clicked. The distance between the displayed reference point and the contact point is displayed in the dialog line.



Offset by radius

Finds a point obtained from the point of intersection of two new circles that you enter.

Track/  
extension point

Places a point on a track line.



Delete track points

Deletes all the track points placed; the track lines will be recalculated.



Point snap options

Opens the **Options** dialog box, displaying the **Point snap** page. You can specify snap options and make settings for point snap and Cursor Tips.















Track tracing options

Opens the **Options** dialog box, displaying the **Track tracing** page. You can turn track tracing on and off. In addition, you can define (display) settings for track tracing.



## Tools and options in the dialog line

Icon	Point snap	Use
	Global point	Lets you enter absolute coordinates in the dialog line. These coordinates are relative to the origin (= global point) of the CAD system (0, 0, 0). You can also get the coordinates of an existing point by clicking it or entering its point number.
	Global x-coordinate	Finds a point based on its global x-coordinate (relative to the origin (= global point) of the CAD system (0, 0, 0)).
	Global y-coordinate	Finds a point based on its global y-coordinate (relative to the origin (= global point) of the CAD system (0, 0, 0)).
	Global z-coordinate	Finds a point based on its global z-coordinate (relative to the origin (= global point) of the CAD system (0, 0, 0)).
	Delta point	Lets you enter relative coordinates in the dialog line. You can place a point based on its offset relative to the point currently snapped or the last point entered.
	Delta X	Finds a point based on its offset in the x-direction relative to the last point entered.
	Delta Y	Finds a point based on its offset in the y-direction relative to the last point entered.
	Delta Z	Finds a point based on its offset in the z-direction relative to the last point entered.
	Polar coordinates	Places a point at a specific distance and a given angle from the last point.
	Area detection on/off	Switches automatic detection of closed, delimited areas on and off.
	Track line	Switches track lines on and off. As an alternative, you can also press the F11 key.
	Rasterize length	Clicking this icon places the reference point exactly on points of a grid you define by entering the grid length and value. The current coordinates relative to the last point entered are displayed in a ToolTip attached to the crosshairs.
0.125	Grid length	Here you enter the value for 'Rasterize length'. This setting also applies to track lines.

The following icons only appear when you have activated a tool for creating elements (for example, **Line**):



**Enter at right angles**

The line can only be drawn at right angles to the current system angle.




**Cursor snap**

The line can only be drawn at specific angles.

15.00

**Cursor snap angle**

Define the cursor snap angle here (only possible when  is switched on).

## Precision drawing

During input, the preview of an element changes constantly as you move the crosshairs across the workspace. The element you are entering is always displayed in the preview as it will actually be placed in the workspace later, which means that the position of the element displayed in the preview adapts to the point snapped by the crosshairs. Elements which can be snapped are displayed in the selection color.

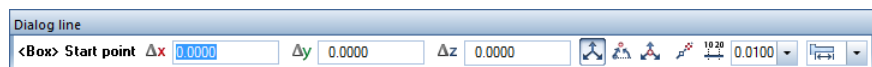
These options facilitate creative design work as you can enter points quickly, which enables you to edit very complex drawings consisting of countless points in a comfortable and easy manner.

### Entering points using the dialog line

Whenever you click a tool which expects you to enter points, you can see the following data entry boxes and icons in the dialog line:



You can also find the z-direction wherever the third dimension is required, for example in **Modeling**:



## Preview snaps to points

You can snap and place points using the mouse. You can also enter points and elements based on existing points:

Move the crosshairs near a point (all you have to do is point to that point) and the program will snap to it and mark it with a red X.

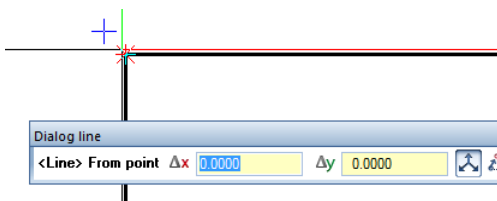


Figure: Point snapped; highlighted by a red X

**Note:** Points snapped are displayed in all views.

All the entries you make in the dialog line apply to the point snapped. Use the TAB/PAGE UP key or SHIFT+TAB/PAGE DOWN key to toggle between the data entry boxes. You can also calculate.

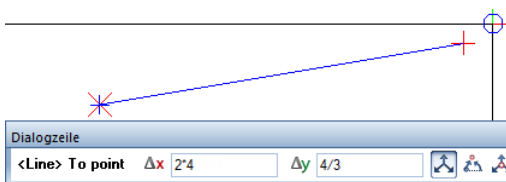


Figure: calculations: DX=4x2=8; DY=4/3=1.333

## Preview shows all points

The entries you make in the dialog line are displayed simultaneously in the preview. A red cross immediately appears at the point defined by the values entered.

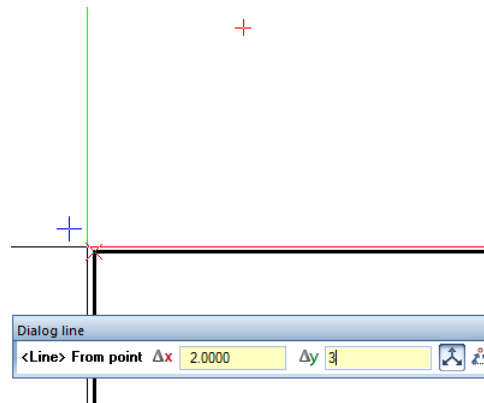


Figure: Preview of point, offset of DX=2, DY=3 to point snapped

When you press ENTER or click in the workspace, the point you have just entered serves as the start point for the new element (line in this example) or as the reference point for modification tools.

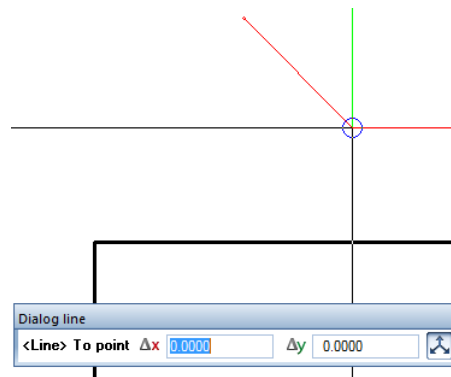


Figure: Press ENTER or click in the workspace to place the point; the line is attached to the crosshairs.

Before you place the point, you can also point to another point using the crosshairs: the offset you enter in the dialog line refers to the new point snapped.

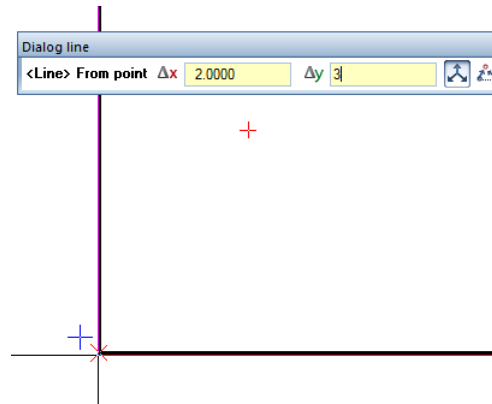


Figure: Preview of point, offset of DX=2, DY=3 refers to new point

### Reference to point snapped or point placed?

When making entries in the dialog line, you can see at once whether your entries refer to a point snapped or to the point you placed last:

- In the case of points snapped, the data entry boxes are highlighted in yellow.
- In the case of points placed, the data entry boxes are highlighted in white.

Value entered is proposed

The icons to the left of the data entry boxes are buttons:  
When you click an icon, the program proposes the value entered for all further steps; however, you can change the value any time.

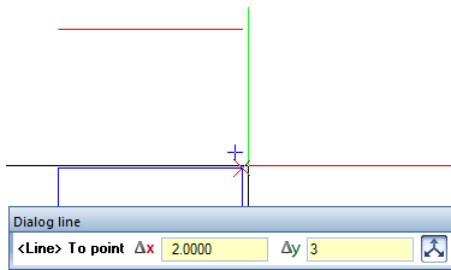


Figure: DY=3 is proposed for the next point snapped

Transferring values to data entry boxes by clicking

Data entry boxes provide shortcut menus, which you can use to get values from the drawing by clicking. Right-click the relevant data entry box, select a tool and click the points or angles you want to use.

Tool	Use
	<b>Horizontal offset</b> Click two points; the horizontal distance between these two points is transferred to the data entry box.
	<b>Vertical offset</b> Click two points; the vertical distance between these two points is transferred to the data entry box.
	<b>Offset</b> Click two points; the distance between these two points is transferred to the data entry box.
	<b>Angle</b> Specify the angle by clicking two direction points or a direction line; the value of this angle is transferred to the data entry box.

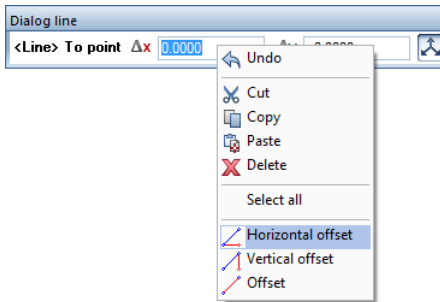


Figure: Shortcut menu when entering coordinates

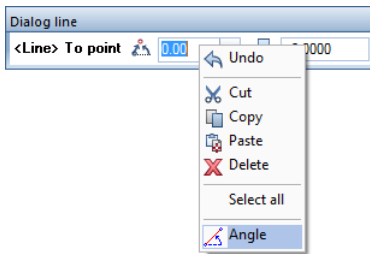


Figure: Shortcut menu when entering angles

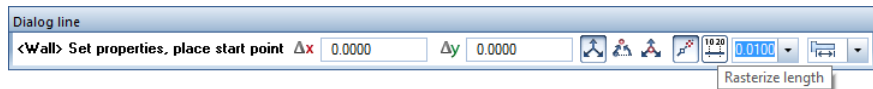
## Shortcut menu for entering points

Right-click to access the **tools and options** on the shortcut menu, helping you place and snap to points.

You can find more information in the section Shortcut menu for entering points (on page 68).




## Entering points using the 'Rasterize length' option (grid dimensions)

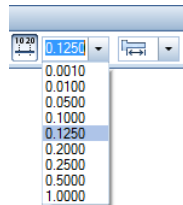
When entering architectural elements, you can place points and elements in a grid that can be defined using a precision of an eighth of a meter.



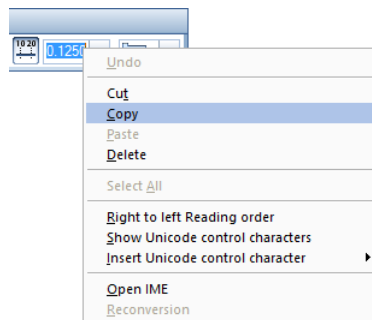
To work with grid dimensions

The following options are available in the dialog line:

- Click  **Rasterize length** to activate grid dimensions and to deactivate  **dX** and  **dY**.
- You can select a predefined length or enter a value in the data entry box.

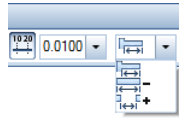





- Right-click the box for the grid length to open a shortcut menu with tools for entering values:

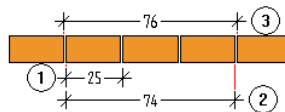




- Select a setting for the grid in the box on the right:



- Brick plus joint (for example, 1 cm) form a unit.
-  **Basic dimensions**: Allplan does not add an additional joint.
-  **Outside dimensions -**: Allplan subtracts the width of one joint.
-  **Opening dimensions +**: Allplan adds the width of one joint.



- 1 Basic dimensions
- 2 Outside dimensions -
- 3 Opening dimensions +

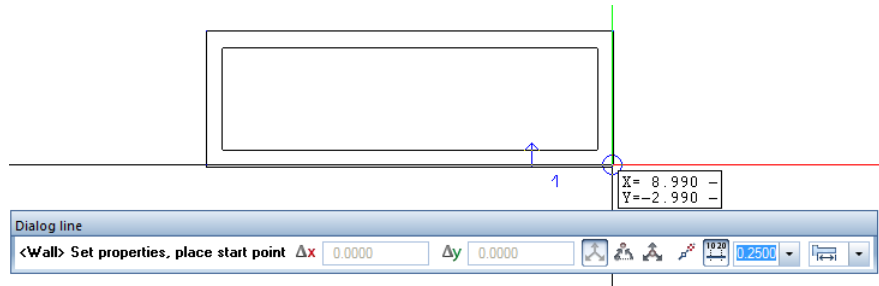
- Right-click the selection box on the right to open a shortcut menu for **entering the joint width**:



## Drawing with the 'Rasterize length' option


When you draw walls, select the appropriate grid length and 

**Outer dimensions -**. While working, you can see a ToolTip with the offset to the start point of the wall in the x-direction and y-direction.



You can place the end point of the rectangular wall only in the selected grid.

**Tip:** The 'Rasterize length' option is very useful for working in animation windows.

**Tip:** If  **Rasterize length** is active, you can use the TAB key to quickly toggle between **Basic dimensions**, **Outside dimensions -** and **Opening dimensions +** while drawing.



**Tip:** You can also use the 'Rasterize length' option when drawing with track lines.

# Drawing with Track Lines

## Track lines

Track lines make it easier for you to design intuitively, saving you a lot of time and effort as you do not need to draw construction lines. By pointing to existing elements, you can pick up to five track points. These track points picked are marked with symbols, defining the type of track line displayed.

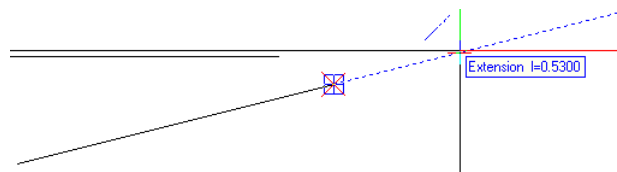
**Tip:** Track points snapped are marked by rectangles appearing around the track point or point snap symbol.

Instead of pointing to an element and waiting for the track lines to appear, you can also place a track point directly by selecting  **Track point** on the shortcut menu. Using  **Delete track points**, you can delete all track points and start again.

## Possible Track Lines, Overview

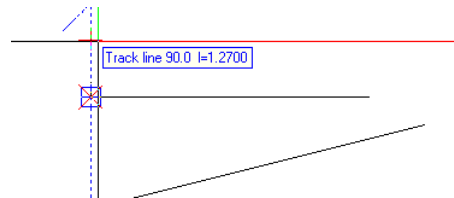
### Extension

After activating a design tool, point to the start point or end point of an element. When you move the crosshairs along the extension of the element, the program displays a track line stretching from this element. In the case of two track lines, you can also use the virtual points of intersection between these two lines.



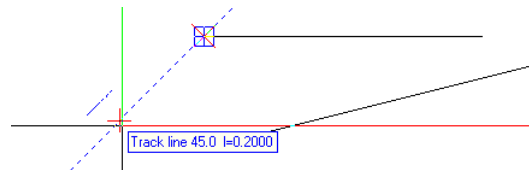
## Orthogonal Track Lines

After activating a design tool, move the preview of the element roughly in the direction of the x-axis or y-axis. The nearest horizontal or vertical track line is displayed.



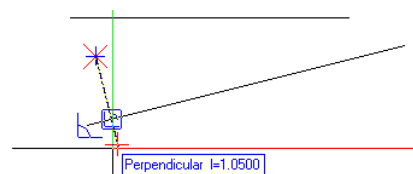
## Polar Track Lines

Orthogonal track lines are complemented by polar track lines. After activating a design tool, position the preview of the element roughly at the cursor snap angle set for polar track lines. The nearest track line matching this angle is displayed.



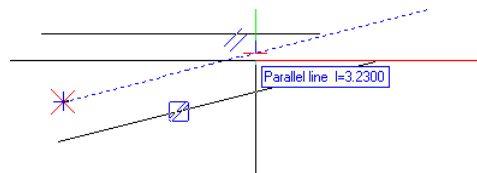
## Perpendicular

After activating a design tool, point to an existing element roughly where the perpendicular is to be dropped. Wait until the program displays the appropriate symbol. When you move the crosshairs along the extension of the perpendicular, a track line appears. You can now click a point on the element or track line or enter the length of the perpendicular in the dialog line.



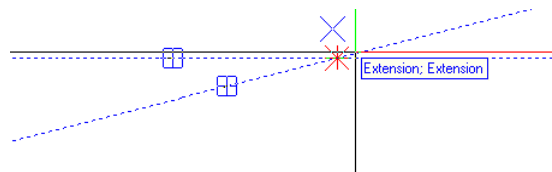
## Parallel Line

After activating a design tool, move the crosshairs to a linear element and position the cursor somewhere between the element's midpoint and end point. Wait until the program activates the track tracing feature (you can define a time limit in the **Point Entry Options, Track Tracing** tab) and shows the appropriate symbol; in other words, the program displays a parallel track line. Now you can click a point on the track line or enter the length of the element in the dialog line.

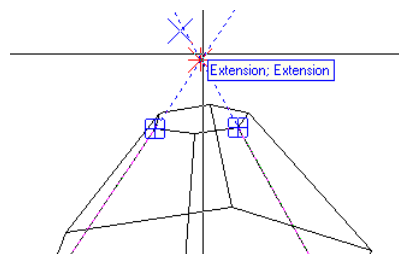


## Assumed point of intersection

After activating a design tool, point to the start point and end point of existing elements one after the other. When you move the cursor near the assumed point of intersection, the program displays the extensions of the "collected" elements and the assumed point of intersection.





You can also use track tracing in conjunction with 3D solids. The following illustration shows a truncated cone whose edges are extended to the virtual vertex.





# Entering lengths using track lines


## Entering length values using the preview


When you move the preview of an element along a track line, you can see the current length of the element. This length is a multiple of the value specified for  **Rasterize length** in the dialog line (even when  **Rasterize length** is not active).

## Entering numerical length values in dialog line

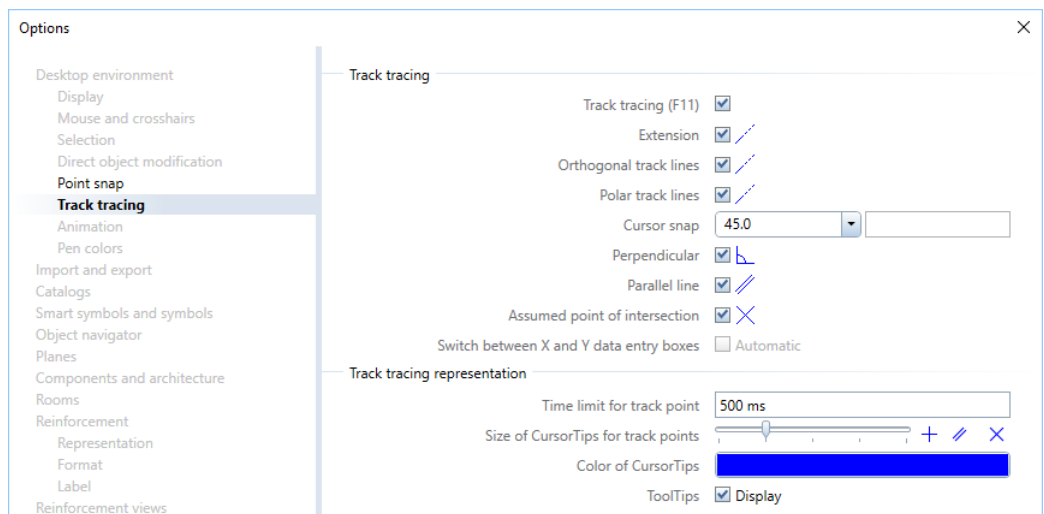
- As long as the preview of an element has not snapped to a track line or point, the values you enter relate to the start point of the element in question. You can enter values for the x-coordinate, y-coordinate or z-coordinate in the dialog line. See precision drawing.
- As soon as the program snaps to an existing point or track point, the values relate to the point snapped. See Entering points relative to existing points
- When the program snaps to a track line, you can enter values in the dialog line using  **Offset to reference point** (starting point of element) and  **Offset length** (track line).

# Activating and customizing track tracing

**Tip:** You can quickly switch **track tracing** on and off while you are entering elements. All you need to do is press the F11 key or click  **Track line** in the dialog line.

You can customize **track tracing** to suit your needs: Activate a tool for creating elements (**Line**, for example) and click  **Track tracing options** on the shortcut menu.

You can switch off some options or even deactivate track tracing completely on the **Track tracing** page in the **Options, Desktop environment**. You can also specify the time (in milliseconds) the program is to wait until it automatically activates track tracing.



Customizing track tracing in the **Options, Desktop environment - Track tracing**





# Modifying Objects Directly

Allplan offers a wide number of options for editing existing design entities. The most important editing options found on the Actionbar, menus or toolbars can also be accessed straight from the elements. Using direct object modification, you can move, rotate, mirror and copy elements immediately after you have selected them. In addition, you can modify the element geometry and change other object-specific properties.

Basically, you need to differentiate between two different objectives: On the one hand, you want to edit an element generally: For example, move, rotate, mirror or copy the entire element, which means that the element itself remains unchanged. On the other hand, you want to edit an element individually: For example, resize the element, which means that its geometry or properties change.


**Whichever approach you take, the benefits are the same:**

- The options provided by direct object modification make sure that the most important edit tools are always close at hand.
- You can change the most important geometric parameters of an element without palettes or dialog boxes.
- The optimized workflow reduces the number of mouse clicks and the distance covered by the mouse to a minimum.
- Direct object modification works in both 2D and 3D.

# Basics

## Selecting direct object modification

Direct object modification must be switched on if you want to edit elements using this feature.

Open the  **Options – Desktop environment – Direct object modification** page and select the **Display handles** option in the **Handles** area (see also “Switching on direct object modification” in the Allplan help).

## Selecting elements

Elements you want to edit using direct object modification must be selected first. You can select elements either by clicking them or by enclosing them in a selection rectangle.


The table below gives you a *brief* overview of the most important options for selecting elements:

 *No* tool is selected.

To do this	Do this
Select a single element	Click the element
Select several elements	Click in the workspace, press and hold down the mouse button and enclose the elements in a selection rectangle
Select additional elements	Press and hold down the CTRL key and click the additional elements or enclose them in a selection rectangle
Select all elements	Press CTRL+A

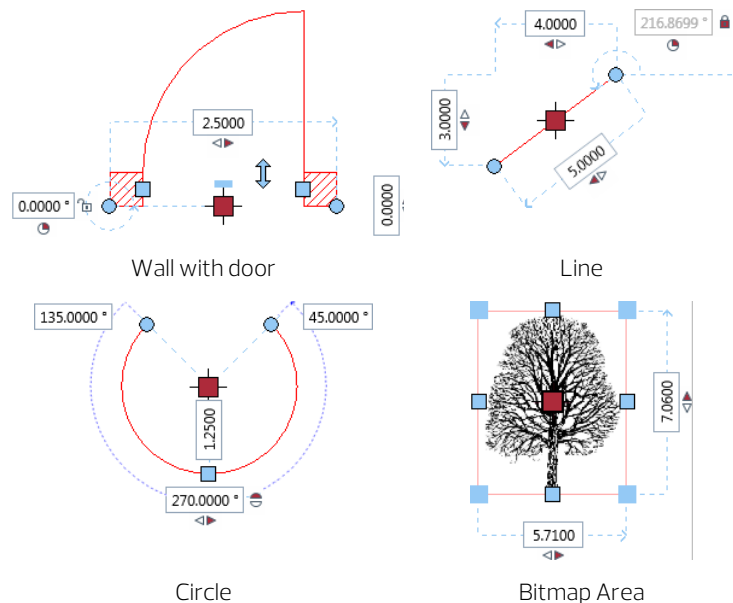
**Note:** Detailed information on all selection options provided can be found in “Selecting elements (on page 113)”.

## Controls for direct object modification

When you select elements and the **Display handles** option is on ( **Options – Desktop environment – Direct object modification – Handles**), Allplan displays the controls for direct object modification with the selected elements: handles, toggle buttons and data entry boxes. The **context toolbar** opens when you move the crosshairs to a handle. As soon as you select a tool, the **coordinate dialog box** opens, where you can enter values.

### Handles

Handles are colored symbols at object-specific geometric points of selected elements, providing context-sensitive interactivity. By clicking these handles, you can modify the geometric properties of elements. The shape and color of a handle indicate what you can do with this handle.




Below is a small selection of options provided by handles:

☞ You have selected elements; handles are visible.


To do this

Do this


Move elements

Click the  **Central move handle** of the selected elements and place them where you want in the workspace.

Resize elements

Click one of the  **Geometry handles** of the selected elements and resize them as you need.

Move element points





Click one of the  **Point handles** of the selected elements and place the point where you want in the workspace.

Delete elements

Press the DEL KEY.


Types of handles

The shape of a handle indicates what you can do with this handle.

Hand- le	Name	To do this
	Point handle	Modify point(s)
	Geometry handle	Change geometric properties (for example, length, width, radius)
	Central move handle	Move or – while keeping the CTRL KEY held down – copy element(s)
	Special handle	Change the reveal of a door or window

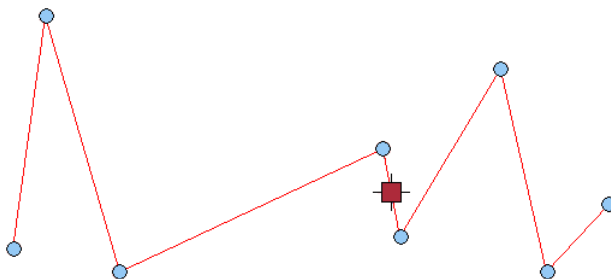
**Note:** You can specify the handle size using the  **Options – Desktop environment – Direct object modification – Handles.**

## Colors of handles

Handles assume different colors depending on what you are doing. You can specify colors using the  **Options – Desktop environment – Direct object modification – Handles**. You can also define the transparency of handles there.

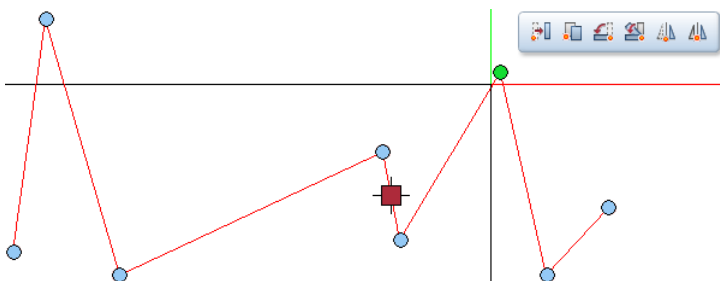
### Handles in general:

All handles you can use with the selected elements are displayed in the color you have specified for the **default color**.



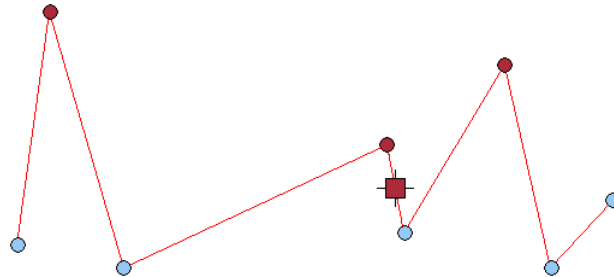
### Handle within snap radius:

If the crosshairs are within the snap radius of a handle, the color of this handle changes to the color you have specified for the **selection preview color**. Click to select this handle; the editing option that is subsequently available to you depends on the handle type (see "Types of handles (on page 152)").



### Selected handles:

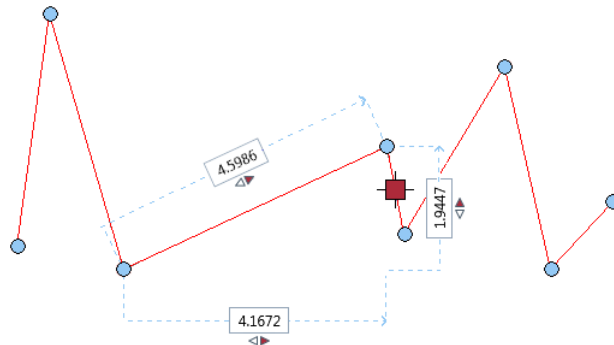
The handles to which the subsequent editing option applies are displayed in the color you have specified for the **selection color**.



### Data entry boxes

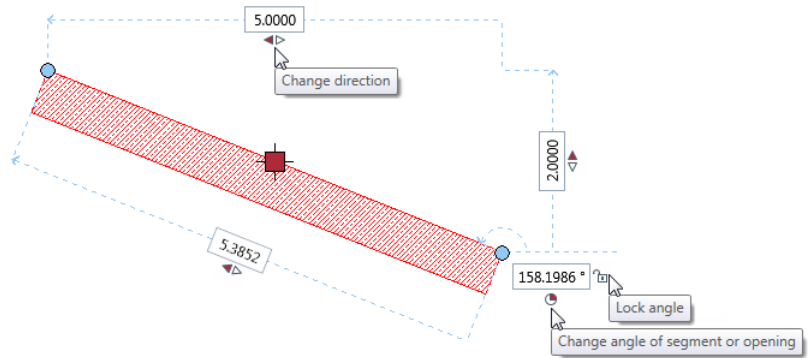
You can use data entry boxes to enter values defining the geometry of an element. These boxes are only displayed when you select a single element.

**Tip:** You can use the **Visibility when element is selected** option (✂ Options – Desktop environment – Direct object modification – Entry boxes) to define whether data entry boxes open immediately after you have selected an element or not until you press the space bar.



## Toggle buttons

Toggle buttons, which are always close to data entry boxes, are only displayed when you select a single element.



**Tip:** You can specify the color for toggle buttons using the **Icon color** option in the **Entry boxes** area (✂ Options – Desktop environment – Direct object modification).

## Changing direction

When editing linear elements, you can choose to apply the changed value to the left, to the right or to both sides:

- ◀▶: Change applies to the left
- ▶▶: Change applies to the right
- ◀▶▶: Change applies to both sides

To change the direction, click the ◀▶, ▶▶ or ◀▶▶ **Change direction** toggle button.

## Changing side

When editing openings in curved walls, you can choose to apply the changed value to the interior side or to the exterior side of the wall:


- ◻: Change applies to the interior side
- ◻◻: Change applies to the exterior side



To switch from the interior side to the exterior side and vice versa, click the ◻ or ◻◻ toggle button.

## Changing angles

You can edit circular elements based on the segment angle or the opening angle:

: Segment angle

: Opening angle

To switch from the segment angle to the opening angle and vice versa, click the  or  **Change angle of segment or opening** toggle button.

## Locking or unlocking the angle


When editing inclined elements, you can choose to lock or unlock the inclination angle relative to the horizontal.

Angle locked (value cannot be edited):  

The inclination angle of the element remains constant. The program automatically calculates the delta values resulting from changes in values.





Angle unlocked (value can be edited):  

You can change the inclination angle of the element relative to the horizontal. To do this, you can enter values directly or have the program calculate the values automatically from changes in the x, y and z values.

To lock or unlock the angle, click the  **Lock angle** or  **Unlock angle** toggle button.

## Context toolbar

The **context toolbar** exists in two forms:

- When you move the crosshairs to a selected element, the **context toolbar** provides the tools that are familiar to you from the **Actionbar – Edit area**:  **Move**,  **Copy**,  **Rotate** and  **Mirror without Copy**.





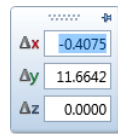
- When you move the crosshairs to a point of an existing element (does not have to be a handle or part of a selected element; can also be any additional point such as the center of a circle), the **context toolbar** provides the above tools with advanced functionality: The point snapped automatically serves as the start point for the next tool you select.



**Tip:** You can specify the time that is to elapse until the **context toolbar** appears. Select the  **Options – Desktop environment – Direct object modification – Context toolbar** and enter a value from 300 to 20,000 milliseconds for the **Time limit**. Here, you can also add more tools to the **context toolbar**.

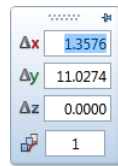
## Coordinate dialog box

When you move elements, the following **coordinate dialog box** opens close to the start point or close to the crosshairs (if you have snapped the target point):




Enter the delta values for the move based on the start point (the data entry boxes are highlighted in white) or based on any other reference point currently snapped (the data entry boxes are highlighted in yellow).

When you copy elements, the following **coordinate dialog box** opens close to the start point or close to the crosshairs (if you have snapped the target point):



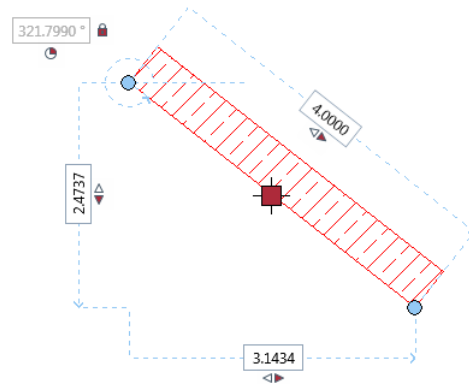
Enter the delta values for the first copy based on the start point (the data entry boxes are highlighted in white) or based on any other reference point currently snapped (the data entry boxes are highlighted in yellow). In addition, specify the number of copies.

## General object modification

To edit and copy elements or element groups in their entirety, you can use the  **Central move handle** and the **context toolbar**.

## Individual object modification



When you select a single element (for example, a rectangle, circle or wall), the program presents not only the handles but also the most important geometric parameters. By changing the values displayed, you can directly modify the geometry of the element.



# Using Wizards

A wizard is a window that is displayed in the **Wizards** palette (on page 35); it includes a pictogram-like legend representing frequently used tools. In addition, you can use wizards to work with predefined content. You can match all attributes and parameters of elements from the wizard. You do not need to define any element properties.

**Right-clicking an element opens a shortcut menu with the following options:**

- The tool that was used to create the element is at the top of the shortcut menu. The element gets the most recent properties; it does *not* take the parameters and attributes from the wizard.
- By clicking  **Match**, you open the tool that was used to create the element. *In addition*, you take all the parameters and attributes from the wizard.  
This is equivalent to double-clicking the element with the right mouse button.
-  **Conversion for Building Alteration Work** is available for most architectural elements. This matches the building alteration category of the element clicked. If you have not assigned a building alteration category, Allplan automatically uses the **New building** category.

Allplan comes with several predefined wizard files, but you can also create your own wizards. You can find the predefined wizards in the `\ETC\Assistant` folder. In addition, you can purchase wizards with content.

- You can save drawing files and NDW files as wizards. To do this, click the **Allplan Icon**, select **Save copy as** and set the file type to **Wizard (\*.nas)**.
- You can save wizards as NDW files or drawing files. To do this, right-click in the wizard window and select the tool you require.

# Organizing wizards

Wizards are combined in groups. The wizards in a group are displayed as tabs in the **Wizards** palette. You can select a wizard group by clicking in the list box at the top of the **Wizards** palette.

Wizard groups are saved to a `*.nagd` file. You can use **Add group...** on the shortcut menu to select an existing `*.nagd` file and add this file to the palette (when you want to use a wizard group of a colleague, for example).


A wizard group file is a text file, containing references to the wizard files (`*.nas`). The path saved is a relative path.

You can use the shortcut menu of a tab to add, remove, replace and rename tabs. You can arrange the tabs using drag-and-drop operations. The ToolTip of a tab shows the path and file name of the associated wizard file.

**Note:** The wizards that come with Allplan are in the `\etc\Assistent` folder. They are combined in the **Allplan** group. You cannot change the wizards in this group. If you want to define your own wizards, you must create a new wizard group first.

## Using elements from wizards

Elements in wizards can be used in three different ways:

- Right-click an element and select a tool on the shortcut menu:
  - The tool that was used to create the element is at the top of the shortcut menu. This tool does *not* take the element's parameters and attributes from the wizard.
  -  **Copy** opens the tool that was used to create the element *and* takes all the parameters and attributes from the wizard.
- Double-click an element with the right mouse button. This selects the relevant tool and matches the element's parameters.
- Copy elements from the wizard and place them in the workspace (using drag-and-drop operations or CTRL+C and CTRL+V).

**Note:** Wizards assume the drawing type of the active viewport.

# Entering Polylines and Areas






## Entering polylines

**Tip:** The easiest way to enter a rectangle is to click two diagonally opposite points and press ESC.

You can use the polyline entry tools to enter polylines and polygonal-bounded areas. The polyline entry tools are used by countless Allplan functions; for example, when you enter hatching, apply a fill or define a room.

You can enter the polyline from scratch using the drawing aids in the dialog line or on the shortcut menu. As an alternative, you can use existing outlines or elements.

# Basic polyline entry rules

- Entering two points and pressing ESC creates a rectangle.
- Polylines that have to be closed (e.g., for hatching) close automatically when you press ESC or click the first point again.
- When you click an element, you can either define a point on the element or choose to use the entire element or parts thereof as the outline.
- Using the **Input Options** you can control how the polyline entry tools behave.
- You can create areas composed of any number of areas by clicking  **Multi** in the **Input Options**. Using  **Plus** and  **Minus**, you can then define whether you want to add the area to the overall area or subtract the area from the overall area.
- To quickly select closed outlines, you can use  **Area detection** in the **Input options for entering polylines**. Select  **Island detection** if you want the program to automatically detect and cut out closed outlines within an area.

# Input options for entering polylines, overview

The **Input Options** open whenever you select a tool that uses polyline entry tools (for example, pattern, hatching, room). You can use these options to specify how the polyline entry tools handle architectural lines and how these tools behave when you generate polylines based on existing elements.



## Entering areas



### Single

Use this to create **single**, discrete areas.



### Multi

Use this to create areas composed of several polygons. Hatching, patterns or fills get the same group number; rooms are handled as a single entity. This way, you can define separate rooms, which Allplan then analyzes as a single room.



### Plus, Minus

If you select **Multi**, you can use **Plus** and **Minus** in the input options to specify whether each new polygon you enter will be added to or subtracted from the overall area.

## Polygonizing existing elements

### Polygonize elements on/off

When the check box is not selected, Allplan ignores elements when you click them. In this mode, Allplan only detects points.

When the check box is selected, Allplan polygonizes the elements you click. You can use the options next to this check box to specify the type of polygonization.



#### **Polygonize entire element**

This uses the entire element that you clicked. The starting point defines the direction of polygonization. If the last point in the polyline coincides with the start or end point of the element, you do not need to specify the direction.

Use this option when the outline consists of entire elements.



#### **Define area of element to polygonize**

With this option, the program prompts you for the area with every element you click (from point, to point).

Use this option when the outline consists of segments.





#### **Enter reference point**

With this option, the program prompts you for the reference point with every element you click. This option uses a point on the element you clicked with a defined offset to the reference point. Click to define a new reference point and then enter the offset to the reference point. Use this option when you want to specify the outline based on existing elements (when you enter a dormer, for example).




#### **Area detection using additional point**



 **Area detection using additional point** combines areas bounded by lines and polylines to form a polygon. Allplan uses the inner boundaries or outer boundaries depending on whether the temporary point is inside or outside the outline.

By selecting  **Element filter**, you can configure the program to ignore architectural lines when detecting areas.





### **Area detection**

You can use  **Area detection** to automatically detect the outlines of closed polygons. You can use closed areas delimited by design entities of any kind as an outline polygon simply by clicking anywhere within the area. Allplan automatically detects and polygonizes the entire outline. The boundary elements can have points in common; they can intersect and they can touch. You can turn this automation feature on and off at any time.

**Note:** The **Minimum distance between points** setting in the  **Options** on the **Desktop environment** page also applies to the  **Area detection** tool. To make sure that Allplan detects outlines with small gaps, you can temporarily increase the minimum distance between points.

### **Island detection**, **Inverse island detection**


When  **Island detection** is on, Allplan detects closed outlines within an area and cuts them out automatically.

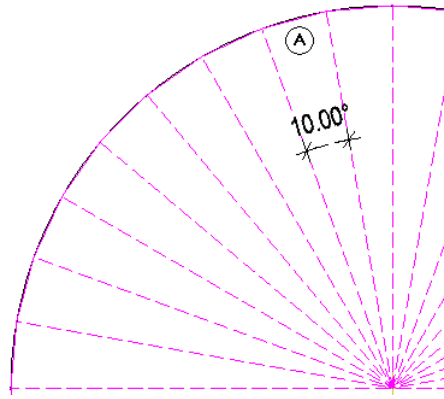
When you select  **Inverse island detection**, Allplan does not cut out closed outlines. Instead, Allplan fills these outlines with the selected surface element. It is the area around the 'island' that remains empty.

You can only use these tools together with  **Area detection** using **additional point** and  **Area detection**.

## Number of segments / Rise


### Number of segments

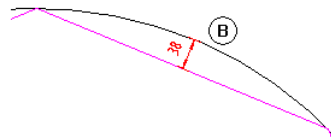
The polygonization value is interpreted as the number of segments. The value for  **Number of segments** defines the number of segments used to approximate a curve. In the case of a circle, for example, a value of **120** means that a full circle is approximated by a 120-sided polygon. The higher the degree of accuracy you require or the larger the radius, the higher the number of segments should be used to approximate a circle. You can enter a value between 36 and 360.



(A) Segments in circle = 36; this will produce an angle of 10°

### Rise

The polygonization value is interpreted as the rise. The value you enter for  **Rise** defines the maximum rise of the secant relative to the arc (in mm). As a result, the curve is polygonized so that the maximum offset of the polyline's segment to the curve is less than or equal to the value you specified. This setting produces more accurate results than the number of segments.



(B) Rise (38mm or less)




## Element filter

### Element filter

Ignore plan lines of architectural elements

Ignore 2D surface elements (hatching, patterns, fills, bitmap areas, smart fit placements)

when using area detection

When you select the  **Element filter**, Allplan ignores lines of architectural elements and 2D surface elements when you use  **Area detection** or  **Area detection using additional point**. Use this option if you want to automatically apply surface elements like hatching, patterns and so on to adjacent outlines that are separated by arcs, splines or curves.

Here is some background information: Allplan polygonizes curves based on the number of segments specified.

When you enter a second (third...) area, **Area detection** may take a long time or produce incorrect results because Allplan detects both the outline of the surface (2D line) and the boundary line of the polyline of the first area.

## Back, Help

### Back

This undoes the last point you entered.

### Help for entering polylines


This displays help for the **polyline entry tools**.



# Applying Surface Elements






## Hatching, pattern, fill, bitmap area and style area

You can apply hatching, patterns or fills to areas in order to define different materials or to visually highlight areas. In addition, you can apply bitmaps to areas or use architectural area styles for 2D areas (we will use the term 'surface element' to refer to the wide range of options provided by Allplan).






The library of hatching styles that ships with Allplan includes a wide range of hatching styles and patterns. However, you can also define your own hatching styles and patterns (click **Defaults** on the **Tools** menu) or modify those that come with the program. You can display the boundary of hatching, patterns and fills as a construction line by setting the appropriate option in  **Show/Hide**.

You are advised to use the polyline entry tools to enter areas to which you want to apply a surface element, such as hatching, pattern, fill.

### The following tools are available for entering filled areas:

Icon	Tool	Use
	Hatching	You can use this tool to apply hatching to an area.
	Pattern	You can use this tool to apply a pattern to an area.
	Fill	You can use this tool to apply a color fill to an area.
	Bitmap Area	You can use this tool to apply bitmaps to areas.
	Style Area	You can use this tool to apply architectural area styles to 2D areas.

### The following tools are available for modifying filled areas:

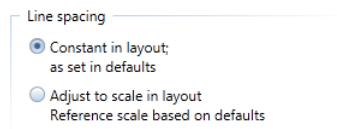
Icon	Tool	Use
	Reshape Surface Element, Architectural Area	You can use this tool to add areas to hatching, patterns, fills, bitmaps or architectural elements (slabs, rooms, net stories, floors, ceilings, roof covering) or remove such areas.
	Split Surface Elements, Archit. Elements	You can use this tool to split hatching, patterns, fills, bitmaps and architectural elements (walls, columns, slabs, beams, upstands, rooms, net stories, floors, ceilings) into two parts. This can be useful if you need to split up the 3D plan while creating the layout.
	Merge Surface Elements, Archit. Elements	You can use this tool to merge areas of hatching, patterns, fills, bitmaps and architectural elements (walls, slabs, beams, upstands, rooms, net stories, floors and ceilings) to form a single element.
	Convert Surface Element	You can use this tool to convert surface elements (hatching, patterns, fills or bitmaps) to surface elements of the same or different type. You can also use the tool simply to modify the properties of a surface element.
	Stretch Entities	You can use this tool to modify the outline of filled areas.

# Hatching and scale

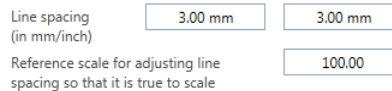
Whenever you apply hatching, you can specify whether the spacing between the hatching lines is to remain constant or change dynamically with the reference scale. This means that you can distinguish between hatching used to display real objects, and symbolic hatching, e.g., concrete hatching. Tiles should appear larger or smaller depending on the selected reference scale. Symbolic hatching, on the other hand, should have the same spacing between lines regardless of scale.

## You can make this setting in two places

- In the hatching properties when you create an area with hatching: Here, you can specify whether the hatching is to adapt to the scale or remain constant, regardless of the scale.



- In hatching defaults: You can set the spacing between hatching lines (for the **Adjust to scale in layout** setting) and the scale to which the line spacing is to apply. This setting also defines how component hatching behaves.



**Note:** Changing the defaults changes all the areas with this hatching style.

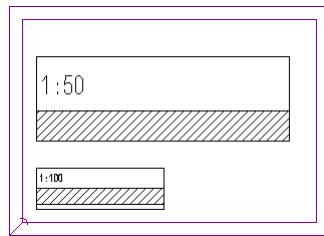
## 'Constant in layout' hatching setting

When set to **Constant in layout**, the spacing between hatching lines is always constant in layouts, regardless of the scale. Components like walls are based on this setting when **Reference scale for adjusting line spacing so that it is true to scale** is set to 1 in the hatching defaults.

Hatching in layouts looks different from hatching in documents. It is the way hatching looks in layouts that is of relevance.

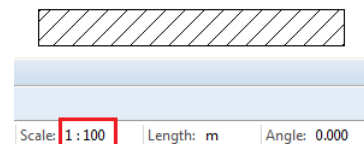
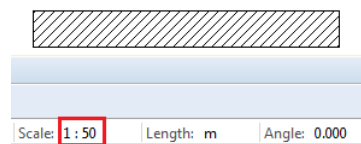
### Display in layout

The spacing between the hatching lines is the same at 1:50 as at 1:100, but the number of lines doubles. The spacing is based on the value entered for the line spacing in the hatching defaults (regardless of the scale).



### Display in document

As the number of hatching lines doubles, the way hatching looks in documents changes dynamically with the reference scale.





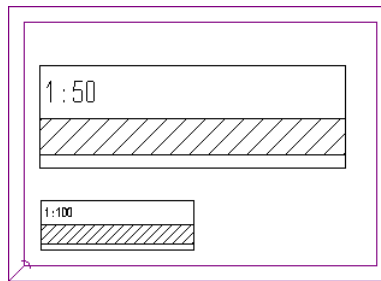
## 'Adjust to scale in layout' hatching setting

When set to **Adjust to scale in layout**, the spacing between hatching lines changes dynamically with the scale. Components like walls are based on this setting when a value < 1 is set for **Reference scale for adjusting line spacing so that it is true to scale** in the hatching defaults.

Hatching in layouts looks different from hatching in documents. It is the way hatching looks in layouts that is of relevance.

### Display in layout

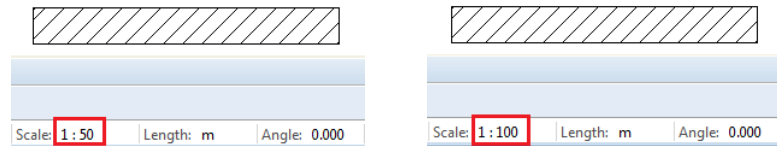
The spacing between the hatching lines is twice as large at 1:50 as at 1:100, but the number of lines remains constant. The spacing is based on the value entered for the line spacing in the hatching defaults and on the reference scale.



**Example:** You are using hatching 1 with the following settings: Line spacing is 3 mm and the 'Reference scale for adjusting line spacing so that it is true to scale' is set to 1:100. Using the **Adjust to scale in layout** setting, you create hatching in the document and place the hatching in the layout at a scale of 1:50. Allplan calculates the spacing between the hatching lines in the layout as follows: Line spacing (from defaults): reference scale x scale of layout; i.e. in this example: 3mm : 1/100 x 1/50 = 6mm. This produces a line spacing of 3 mm at a layout scale of 1:100.

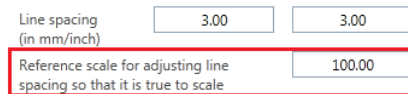
## Display in document

As the number of hatching lines remains constant, the way hatching looks in documents does not change even when you change the reference scale.



## Applying hatching to architectural components

Hatching can be applied to architectural components like walls. The setting in the hatching defaults defines how hatching applied to components behaves with different reference scales.

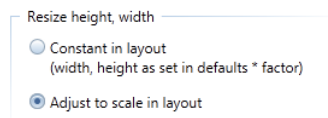


- When **Reference scale for adjusting line spacing so that it is true to scale** is set to 1, the hatching behaves as if the **Constant in layout** option was enabled. In other words, the spacing between the hatching lines always stays the same, regardless of the scale. This setting is usually used. See 'Constant in layout' hatching setting on page 172.
- When **Adjust to scale in layout; reference scale based on defaults** exceeds 1, the hatching behaves as if the **Adjust to scale in layout** option was enabled. In other words, the spacing between the hatching lines changes dynamically with the scale. See 'Adjust to scale in layout' hatching setting on page 173.

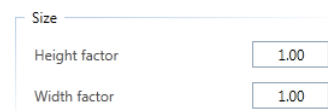
# Pattern and scale

The size of a pattern or pattern element and its display at different reference scales depend on three factors:

- The height and width of a pattern element. You can set these values in the pattern defaults (on the **Tools** menu – **Defaults** – **Pattern**).
- The **Adjust to scale in layout** and **Constant in layout** resizing options. You can select these options in the pattern parameters (**Pattern** tool – **Properties**).



- The values for the height and width factor of the pattern. You can also enter these values in the pattern parameters.



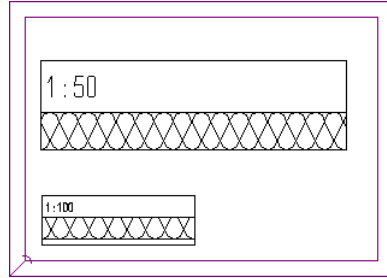
## 'Constant in layout' pattern setting

When set to **Constant in layout**, the size of the pattern elements is always constant in layouts, regardless of the scale at which the layout elements are placed.

Patterns in layouts look different from patterns in documents. It is the way patterns look in layouts that is of relevance.

### Display in layout

The size of the pattern elements is the same at 1:50 as at 1:100, but the number of pattern elements doubles. The size is based on the value entered in the pattern defaults and on the width/height factor, which is defined in the pattern parameters.



**Example:** You are using pattern 301 and the height of one pattern element should be 10 mm in the layout. In the pattern defaults, a height of 100 mm is defined for pattern 301. You therefore need to enter a factor of 0.10 in the pattern parameters (pattern height x factor = height of one pattern element in the layout). This yields a height of 10 mm (100 mm x 10), regardless of the scale set.

### Display in document

As the number of pattern elements doubles, the display in documents changes dynamically with the reference scale.

## 'Adjust to scale in layout' pattern setting

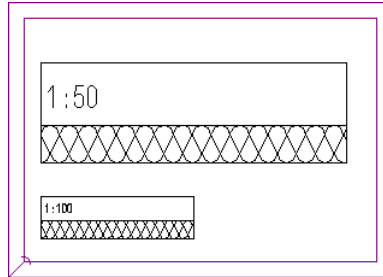
When set to **Adjust to scale in layout**, the size of the pattern elements in the layout changes dynamically with the scale at which the layout elements have been placed. Components like walls are based on this setting.

Patterns in layouts look different from patterns in documents. It is the way patterns look in layouts that is of relevance.

### Display in layout

The size of the pattern elements is twice as large at 1:50 as at 1:100, but the number of pattern elements remains constant. The size of a single pattern element depends on the following settings: the value

set in the pattern defaults, the height/width factor specified in the pattern parameters and the scale at which the layout element was placed.



**Example:** You are using pattern 301 and the height of one pattern element should be 10 mm in the layout. In the pattern defaults, a height of 100 mm is defined for pattern 301. You therefore need to enter a factor of 10 in the pattern parameters (height of a pattern element in the layout = pattern height defined in the defaults x factor x layout scale). At a scale of 1:100, the height is 10mm (100mm x 10 x 1/100); at a scale of 1:50, the height is 20mm.

#### Display in document

As the number of pattern elements remains constant, the way the pattern looks in documents does not change even when you change the reference scale.

## Applying Patterns to Architectural Components

Patterns can be applied to architectural components like walls. These patterns behave as if the **Adjust to scale in plan** option was enabled. See 'Adjust to scale in plan' pattern setting on page 176.

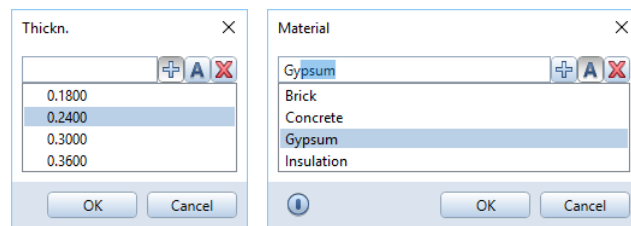
**Note:** Walls are always displayed with **one** pattern element per layer, regardless of their width and the size of a pattern element.



# Using Libraries and Styles


## Saving frequently used settings in dialog boxes

You can save frequently used text or values in dialog boxes (dropdown lists) and retrieve these whenever they are needed. For example, you can enter and save different values for wall thickness in the **Thickness** dialog box or different materials in the **Material** dialog box.




Click  to add new values or text.

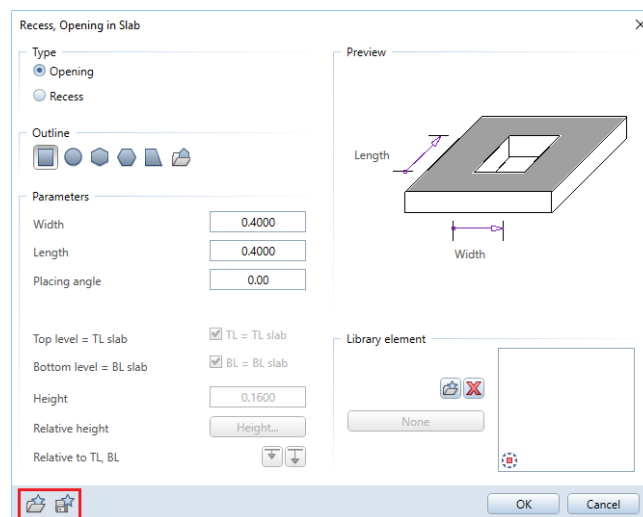
Click  to find entries or to enter a value or text without saving it in the dialog box.

Click  to remove values. You can only delete values you defined yourself.


# Saving and loading favorites of parameter settings


You can define frequently used parameter settings as favorites in almost all palettes and dialog boxes. You can store these favorites in a component-specific library. This is especially useful if you are working in a team. The use of favorites not only means that they are readily available, but also reduces the risk of errors.

For example, you can save walls, doors, windows, dimension lines or light settings as favorites. All you need to do is click  **Save as a favorite** at bottom left in the palette or in the **Properties** dialog box. The example below shows the **Properties** dialog box for a slab opening.



**Note:** The layer currently set is also saved. When you retrieve favorite files later, this layer is automatically set as the current layer.

Using  **Save as a favorite**, you can save the complete set of parameter settings as a favorite file. Favorite files are given element-specific or component-specific filename extensions.

Using  **Load favorite**, you can retrieve favorite files.



# Using symbols

A symbol is essentially a file consisting of any number of design entities. Symbols can be used repeatedly within a drawing. The size of a symbol is practically unlimited. You can even save an entire drawing file as a symbol.

You can save and retrieve symbols using the **Library** palette.

Allplan ships with libraries including symbols. But you can also create your own symbols.

## **Symbols provide the following advantages:**

- You can create a library of symbols that contains frequently used components in your office standard. Instead of drawing the component from scratch each time, just retrieve the symbol from the library.
- A symbol is placed as an entity group. This means that it can be addressed (click with the middle and left mouse buttons or use SHIFT + click) and modified as a single entity. But you can also modify each individual element separately.
- You can access the symbols in the libraries that come with Allplan.

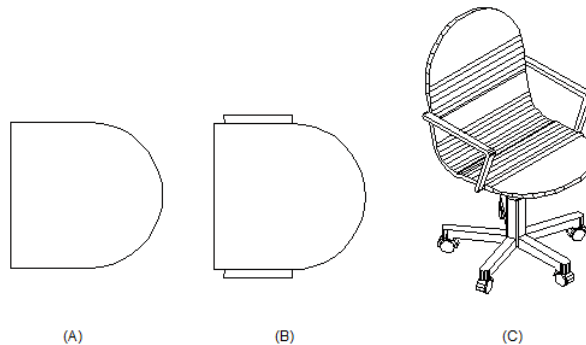
Symbols automatically adapt to the reference scale. If your symbols include text, then this, too, can be made to change with the reference scale.

# Using Smart Symbols

## What are smart symbols?



A smart symbol is an intelligent symbol whose appearance changes dynamically with the reference scale and view. A smart symbol is composed of several display foils. One foil might contain a 2D representation of an element, while another might include the same element in 3D. Yet another foil can contain a simple representation of the element at 1:100, while another could show a complex representation of the element at 1:10.

A smart symbol can have a very simple or very complex structure.



- (A) At a scale of 1:200
- (B) At a scale of 1:100
- (C) Isometric view

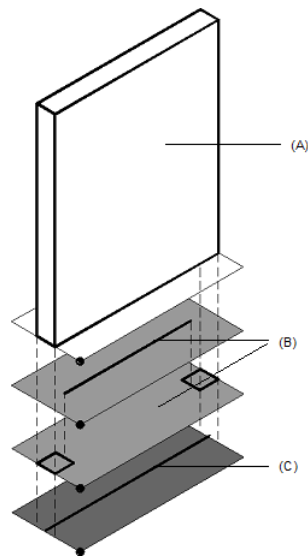
## Smart symbol properties

- You can save a smart symbol as a smart symbol file (extension **.nmk**) to a folder in the library or to any folder.
- Smart symbols take up less space. Once you have placed a smart symbol, all the other instances of the smart symbol simply reference the first instance. This means that, regardless of how many times you actually place a smart symbol, only the disk space for a single instance is required (as opposed to symbols).
- If you use  **Modify Smart Symbol** to modify an instance of a smart symbol, Allplan will automatically modify all the instances of the smart symbol in the same document.
- After you have placed a smart symbol, it no longer references the smart symbol stored in the library. This means that overwriting a smart symbol in the library with another smart symbol will not affect the instances of the original that have already been placed. Using  **Update Smart Symbols Placed from Library**, you can update placed instances of the smart symbol.
- With smart symbols, you can display design alternatives quickly and easily, as you can replace all instances or selected instances of a smart symbol in a single step.
- In conjunction with the tools in the **Attributes** area (Actionbar), smart symbols can be assigned attributes (for example, item number, price) for subsequent analyses in reports.

## Components of a Smart Symbol

A smart symbol consists of two-dimensional and three-dimensional design entities. Allplan uses the definition and assignment of the individual foils to reassemble the smart symbol at different scales and display modes. The exact position of the foils is preserved, even when you resize a smart symbol. This is made possible by setting a reference point and so-called resizing points.

When you design a smart symbol, you can define areas of the design entity as being dynamic (resizable) or static. A good example is a window frame whose sections remain constant – as opposed to the glass surface whose height and width needs to be variable.



(A) 3D view

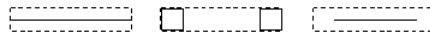
(B) 2D view (for a scale range of 1:1 to 1:99) consists of two foils as the profiles remain constant while the glass surface is resized.


(C) 2D view for a scale range of 1:100 to 1:500

## General approach for defining smart symbols



Follow the steps below to define a smart symbol:

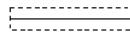
- Draw all the elements that are to make up the smart symbol. If the smart symbol is to consist of several congruent foils for different reference scales or views, place the elements that belong together beside or below each other in the workspace; this will make it easier for you to select foils and set reference points.



- Click  **Smart Symbol** (Actionbar – Architecture role – Object Definition task – Smart Symbols task area) and specify the folder where you want to save the smart symbol.

Or

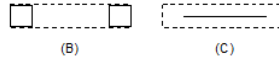
- Open the **Library** palette, navigate to the folder where you want to save the new smart symbol, point to  **Insert element** and click  **New smart symbol**.
- Specify the **smart symbol name**.
- Define the general smart symbol properties in the **Attributes** area.
- Click **Define new foil** and select the elements to be placed on the first smart symbol foil. Specify the reference point and define the parameters of the first foil.



(A)

(A) Foil 1

- Define the other foils.  
Every area that is subject to a separate resizing definition gets its own foil.



(B) Foil 2  
(C) Foil 3

- Define the attributes (min-max box) in the **Smart Symbol Definition** area.
- Click **OK** to confirm and save the smart symbol.


Select smart symbols in the **Library** palette and place the smart symbols in the workspace.

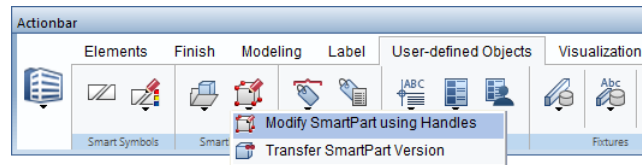
## Using SmartParts

### What are SmartParts?

A SmartPart is a parametric Allplan CAD object that acts according to its own logic, which is independent of the CAD system.

Using simple, parametric descriptions you can turn complex geometries of basic elements into new, independent and intelligent objects. These objects are worked out in great detail, including all Allplan resources that are available by default (line, pen, color, layer, and so on). To model SmartParts, you can use all general options provided. For example, you can join SmartParts, slice them or subtract them from each other. However, you need to define these options in the relevant objects beforehand. Depending on the scripting method used, the objects include 2D and 3D information.

The SmartPart objects and tools are integrated in Allplan. You can find them in the **Architecture** and **Engineering** roles – **Object Definition** task. For example, you can use the  **Insert SmartPart** tool to open the dialog box for selecting a SmartPart file. You can also find the associated modification options on the shortcut menu of the SmartParts.



The **SmartParts** library and dialog box provide a wide range of SmartParts, such as the freeform solid and freeform area. In addition, you can find a number of basic geometric elements (cylinder, box, cone, prism and ellipsoid).

## Using SmartParts

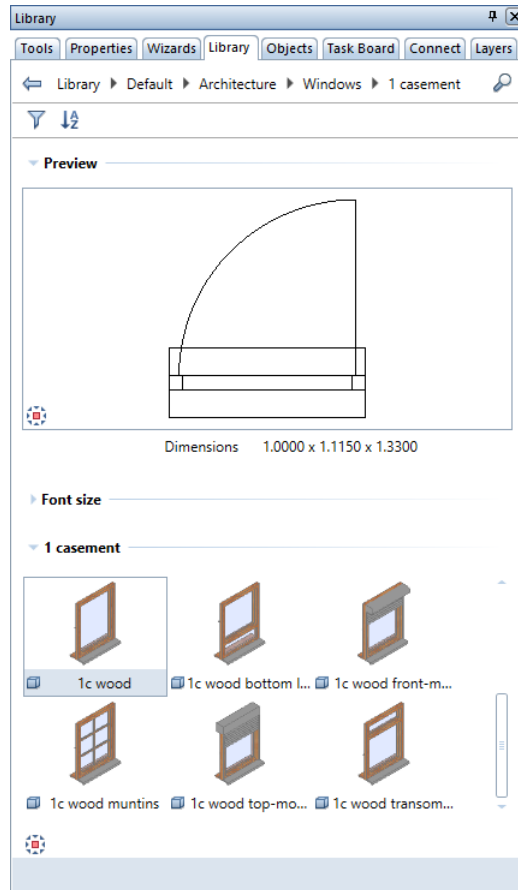
SmartParts are intelligent objects because they know their parameter values – the object properties. Parametric information is controlled by a script, which is attached directly to the object.


You can edit SmartParts using handles (graphic modification) or a dialog box (alphanumeric modification). These two tools can be selected separately on the SmartParts' shortcut menu. However, you can also use handles and the dialog box at the same time. Any changes you make to an object are displayed in real time and can be saved.

## Selecting and placing SmartParts

You can select SmartParts in one of the following ways:

- Click  **SmartPart** or open the **SmartParts** library in the **Library** palette. Select one of the Allplan SmartParts and place it in the workspace.




- Click  **Insert SmartPart**, select an existing SmartPart file in SMT format and place the SmartPart in the workspace.
- Download a SmartPart from Allplan Connect's Content area (<http://connect.allplan.com>). Save the SmartPart and place it in the workspace using a drag-and-drop operation.



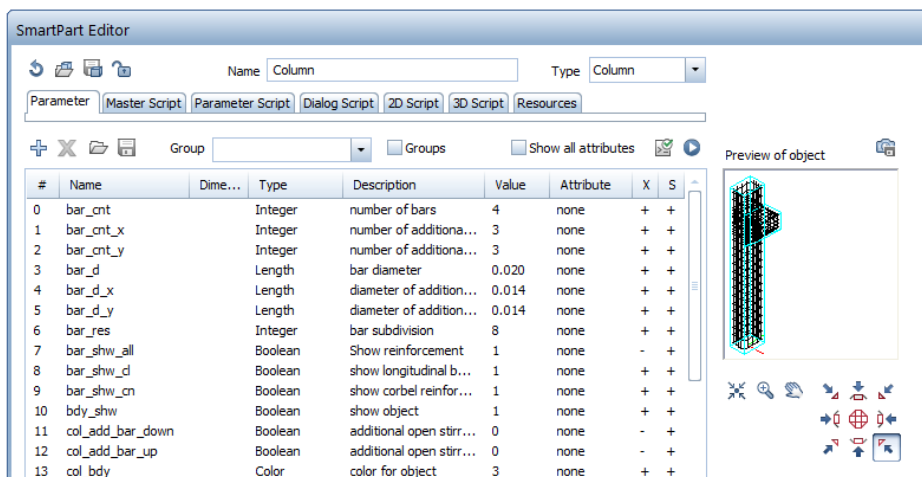
## Creating your own SmartParts

If an object you need is not available as a SmartPart, you can use Allplan SmartPart script to define your own object. Using Allplan's easy-to-learn script language, you can create customized designs of entire components for setting up your own office standard. It is also possible to insert existing objects as resources. SmartPart Script opens up a wide range of new uses: for example, for architectural objects such as roof elements, for site facilities such as containers and cranes or for engineering structures such as retaining walls, bridge piers, settling pools or wind turbines.

To access the tools for creating SmartParts such as the **SmartPart Editor**, which you can use to define your own SmartParts, open the **Tools** menu, click **Customize...** and select the **Additional tools with icons** category.

 **Create SmartPart** opens the **SmartPart Editor** dialog box, where you can define SmartParts by means of scripts. Using the tabs, you define the components that make up a SmartPart (object content).






You can find more information on the SmartParts Script Language (<http://help.allplan.com/Allplan/2017-0/0000/SmartPartsScriptReference/index.htm#73528.htm>) in the help for Allplan; see **Programming interfaces**.



Parameters tab for defining parameters and variables


## SmartPart technology for modeling objects

The **Architecture** role – **Elements** task provides tools that are based on the SmartPart technology. You can use these tools to model objects:

- Using  **Window SmartPart**, you can create SmartParts for window openings and window sills.
- Using  **Door SmartPart**, you can create SmartParts for door openings and doors.
- Using  **Shading SmartPart**, you can create SmartParts for shading elements (roller shutters, sliding shutters, folding shutters and blinds).
- Using  **Domed Roof-Light SmartPart**, you can create SmartParts for domed roof-lights.
- Using  **Skylight SmartPart**, you can create SmartParts for rectangular skylights.

You define parameters for SmartParts in palettes. Parametric information is controlled by a script, which is attached directly to the object.

You can place these SmartParts in openings. They adapt to the outline of the relevant opening.

The SmartPart you are modeling is displayed in real time. You can save the finished SmartPart as an smv file using the  **Save as a favorite** tool. You can also save the SmartPart to a folder of the **Library** palette.

# Using PythonParts

## What are PythonParts?

You can find more information on the Python programming interface (<http://pythonparts.allplan.com/>) on the Internet.

PythonParts are parametric objects based on the Python scripting language.


Allplan comes with the Python API programming interface. Using Python scripts, you can access Allplan features, thus adding new functions and objects to Allplan. If you want, you can even include reinforcement in these objects. These PythonParts have their own workflow and user interface with property palettes and handles.

You can even change a finished PythonPart with just a few clicks. Apart from creating parametric objects and scripts, you can also automate repeating steps so that you do not need to enter everything from scratch. This increases productivity, prevents planning errors and supports the BIM approach.

## Placing a PythonPart

---

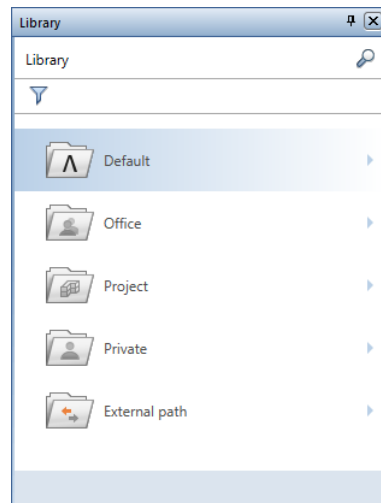
### To place a SmartPart

- 1 Open the **Library** palette (on page 37).  
If you want to see only **PythonParts**, click  **Filter** and hide **Symbols**, **Smart symbols** and **SmartParts**.
  - 2 Double-click the preview or drag the symbol into the workspace.
  - 3 Click in the workspace to place the PythonPart.  
You can use the palette or handles to change the properties of PythonParts.  
If the **Format Properties** are not defined in the PythonPart itself, Allplan uses the settings defined in the **Properties** palette.
  - 4 Press ESC to finish.
-

# Paths

When saving or retrieving favorites or standard components, the system will open a dialog box and prompt you to specify a path for the files in question. You take a similar approach when saving and retrieving symbols and smart symbols. You start by navigating to the corresponding folder in the **Library** palette.

The distinction between the **Office**, **Private** and **Project** paths is particularly important in a network environment. However, you can also structure your data if you are using a standalone version.



Path	Meaning
Default	The files in this folder come with Allplan. You cannot edit or save data in this folder.
Office	The files in this folder are available to all users on the network. By using an office standard, you ensure that the plans in your office have a uniform appearance. The office standard can only be modified by the system administrator.
Project	The files in this folder are only available in one specific project.
Private	The files in this folder are only available to one specific user.
External path	The files in this path are for backing up or exchanging data.

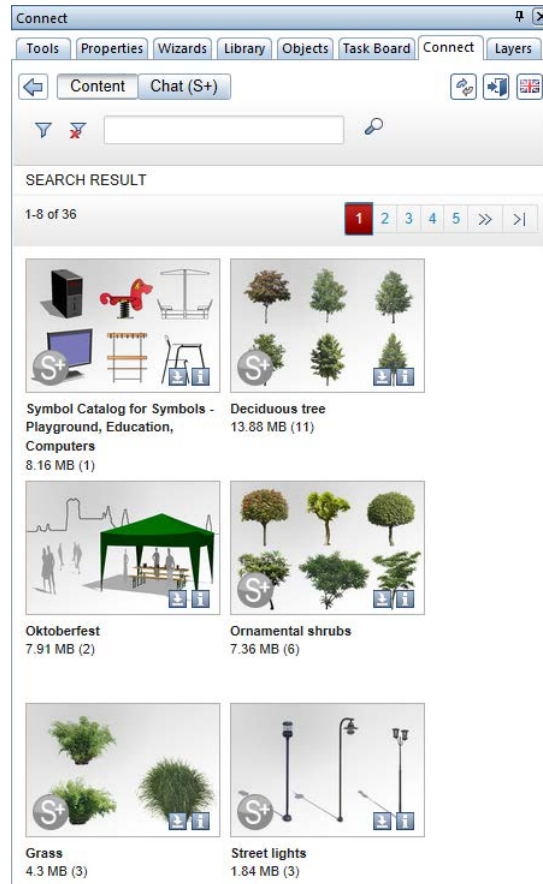
**Note:** You can use the **Folders for saving** option in the **Options, desktop environment, save area** to specify which Allplan file type is saved to which folder. These folders are automatically presented in the Save dialog box of the relevant file type and can be changed at any time.

## Using and importing content

Allplan 2018 takes much preparatory work away from architects and engineers. Using layout content, you can enhance your layouts and animations. Layout content offers a wide range of options – from symbols and symbol catalogs of any kind to textures and smart symbols to SmartParts.

To make sure that you can proceed quickly and efficiently, everything is available on the Internet – from the essentials to exclusive Serviceplus content. Architects and engineers can look for predefined, building-specific online data and information, download and install it.

Using the Connect palette, you can register for and directly log on to Allplan Connect (<http://connect.allplan.com>) and thus use the extensive selection of objects provided. You can download and install content or simply drag individual objects into the workspace.



### Import instructions

You can find short descriptions for importing the most important data provided in **Content** in the help and when you download data from Allplan Connect (<http://connect.allplan.com>).

# Using OLE Objects

## Using OLE objects

Using the OLE technology, which enables you to link and embed objects, you can exchange information between different applications. Data from a source document (e.g. Microsoft® Word) is associated with or embedded in an Allplan document. When you select the embedded data, the original application opens and you can edit the data in the source document.

**The following object types can be embedded in Allplan (depending on the applications you have installed):**

- Excel files (.xls, .xlsx)
- Word files (.doc, .docx)
- RTF files (.rtf)
- PowerPoint files (.ppt, .pptx)
- Bitmaps (e.g. .bmp, .jpg)

The linked program must be an OLE server program (such as many Microsoft Office programs). Otherwise, the linked program cannot provide OLE objects.

# Linking and embedding OLE objects

Two methods are provided for inserting OLE objects in Allplan. The difference lies in the way in which the objects are saved in Allplan:

## Linking objects

When objects are linked with Allplan, a link between the Allplan document and the object in question is established. When the object changes, the link in Allplan can be updated manually. Double-clicking the linked object in Allplan opens it in its original application and you can edit it as usual. When objects are linked with Allplan, the paths to the source document and to the original application must be retained. When you rename one of these two, you have to establish the link again.

## Embedding objects

When objects are embedded in Allplan, a copy of the source document is placed in the Allplan document. After you have inserted this copy, it is no longer linked to the source document; in other words, the Allplan document cannot be updated to reflect any changes you make to the source document. Embedded objects can be edited either in Allplan or in their original application; but any changes you make to the object have no effect on the source document.

# Transparency of OLE Objects

The background of OLE objects can only be transparent or not transparent; the default setting is transparent. Transparent background means that the background color set in Allplan is displayed instead of the background color of the OLE object.

You should therefore disable the transparent setting when you use a black background in Allplan and the OLE object you have embedded is a Word document containing black text, for example.




# Editing OLE Objects

Double-clicking an OLE object opens it in its original application and you can edit it as usual. You can also open and edit objects linked with Allplan directly in the original application and then update them in Allplan.


Just double-click these objects and edit them.

Embedded objects can be edited either in Allplan or in their original application; but any changes you make to the object have no effect on the source document.

You can use Allplan tools such as Copy, Move etc. to edit OLE objects. To change the size of OLE objects, use the  **Resize** tool.

## Restrictions applying to OLE objects in Allplan

There are some particular issues to bear in mind when using OLE objects in the current Allplan version:

- The size of an OLE object can only be modified with  **Resize**.
- OLE objects associated with Allplan do not update automatically. You need to do this manually.
- OLE objects are only printed with Windows drivers. You cannot use Allplan vector drivers.





# Using XRefs

## Using XRefs

You can place a document (drawing file or NDW-format file) as an XRef in a document as often as you need. This way, you do not have to enter the same elements again and again, such as the furniture of hotel rooms. All you need to do is create the elements once in a document. Then you can insert this document as an XRef as often as you want. Changes to the original data only need to be done once – all associated XRefs will update dynamically. XRefs can be inserted at any scale and angle. Please note that you cannot insert empty documents as XRefs.

XRefs can be placed as normal or advanced XRefs. For more information, see Comparison between normal and advanced XRefs in the Allplan help.

An XRef is always placed so that its size matches that of the elements in the document. If the size changes later, you can update the extents using **Update All XRefs** on the shortcut menu. XRefs can be clipped. However, this is only possible when you modify XRefs. You cannot clip them when you place them.


Using  **Show/Hide**, you can switch XRefs and XRef borders on and off. Regardless of this setting,  **Area detection** always takes into account the XRef border. To avoid this, you can place the XRef on a separate layer and hide this layer. In the case of advanced XRefs, the program still considers the elements in the XRef.

XRefs are always placed on the current layer. However, the individual elements of a XRef retain their layers. When you modify the status of a layer, you need to refresh the display so that the elements within XRefs are also updated.


You cannot create nested XRefs (in other words, documents including XRefs cannot be inserted as XRefs again). If a document, which has been inserted as an XRef, no longer exists, the border and the reference are retained and the file name of the associated document is displayed in the border.

## Editing XRefs

You can edit XRefs using the following Allplan tools: **Delete**, **Copy**, **Move** and **Rotate**. You can use  **Modify Format Properties** to change the format properties of XRefs (e.g. layers). Other Allplan tools cannot be applied to XRefs.

The scale and the angle at which an XRef is inserted can be modified later. You can also change the clip region later. Click  to replace the document. The program replaces the document so that the mid-points of the two min-max boxes are identical.

XRefs can only be modified and edited as a single entity; you cannot modify individual elements of an XRef. You can use **Edit Reference Drawing File** on the shortcut menu of an XRef to open the drawing file which has been inserted as an XRef.

 The shortcut menu only includes this tool if the **Show fileset structure** option is active in the  **Settings** of the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box. After having carried out this tool, you can switch to the fileset structure for further editing.

Changing the display sequence of XRefs always affects the entire contents of the XRef file.

# Comparison between normal and advanced XRefs

The following table shows a comparison between normal and advanced XRefs.

Feature	Advanced	Normal
Taken into account by area detection	x	–
Point snap restricted (end points only)	–	x
Displayed in animation mode, hidden line images and perspective views	x	–
Analyzed and evaluated in lists and schedules (not with engineering elements!)	x	–
Adjustment of dimension text and size of text when XRef is resized	x	–
Clipping	–	x
Display of detailing windows	–	x
Check text direction	x	–
Default planes from source, target	x	–

**Note:** When you insert advanced XRefs, the required disk space increases by the data volume of the document contained in the XRef, as these data are also stored in the memory. Normal XRefs do not increase the data volume.

# Special features relevant to normal XRefs

There are some particular issues to bear in mind when using normal XRefs in Allplan:

- **Point snap:** Only end points are snapped.
- **Reports, Legends:** Elements are not analyzed by reports and legends.
- **Animation:** Elements are not displayed in animated mode.
- **Element interaction:** Architectural elements within an XRef and architectural elements in the document do not interact.
- **Hidden line images:** Normal XRefs are not displayed in hidden line images.
- **Auto-detection of text direction:** This option in the Text module's options is not taken into account.

**Note:** These restrictions do not affect advanced XRefs. For more information, see Comparison between normal and advanced XRefs in the Allplan help.

# Structuring and Managing Data

## Structuring and managing data

You can use projects and documents to manage data in Allplan. The options that are actually available to you depend on the license you have purchased.








The following table helps you determine when to use which method.

Open on a project-specific basis	Open, save NDW file
Working with Allplan's project structure as usual	<ul style="list-style-type: none"><li>• Opening Allplan documents across projects</li><li>• Opening Allplan documents saved to CD or memory stick</li><li>• Designing across projects</li><li>• Sending drawing files by email</li></ul>

Working with projects and documents – comparison

The table below compares the tools for handling files provided by the two variants. When working with projects, you use drawing files and NDW files. When working with documents, you use NDW files and NPL files.

**Note:** Always use a separate document (drawing file or NDW file) for each story, regardless of whether you work with projects or documents.

Tool	Projects	Documents
Create new document, drawing file	 <b>Open on a Project-Specific Basis</b>	 <b>New</b>
Open existing document, drawing file	 <b>Open on a Project-Specific Basis</b>	 <b>Open</b>
Copy entire document, drawing file	 <b>Copy, Move Elements between Documents</b>	 <b>Save as</b>
Use data as a reference	 <b>Open on a Project-Specific Basis</b> – open a drawing file in reference mode  Or <b>XRef</b>	<b>NDW XRef</b>

You work with projects

You use drawing files which are structured by project. You can use drawing files open in reference or edit mode or XRef files as backdrops.

You work with documents

You use NDW files. You can use NDW-XRef files as backdrops.



# Overview of projects, building structure, drawing files and layouts

A project is an organizational unit. When you work in Allplan in a project-based manner, a new project is created for each construction project. Technically, a project is a folder; metaphorically speaking, it is a drawer containing the drawing files. An unnamed **private project** for practice and testing is available to each user.

You use the building structure to organize the data of a project. This way, you use hierarchical levels to logically structure a building, thus forming the basis for a Building Information Model (BIM). Each structural level gets drawing files and default planes defining the height of the components belonging to the structural level in question. You can derive and create sections, views and reports directly from the building structure.

In addition, you can assemble up to 128 drawing files in a fileset; a project can contain up to 1,000 filesets. A fileset can be placed in a layout with a single command.

The actual design and data creation process happens in drawing files. These are the equivalent of the transparencies used in conventional building design. Drawing files can be used to give projects a structure. In IT terms, a drawing file is a conventional file stored on your hard disk. You can display and edit up to 128 drawing files at once – in other words, you can have several files open simultaneously. A project can contain up to 9999 drawing files. When working without layers, the individual building elements (such as walls, stairs, labeling, etc.) are drawn on different drawing files and superimposed like transparencies.

Layers provide an additional means of applying a structure – within documents. They apply to all the drawing files in a project. Design entities and components can automatically be assigned to the correct layer. Layers can be set so that they are not visible to the user.

A layout is the unit you send to the printer. As opposed to design using a conventional drafting board, the scope of the layout does not have to be defined in advance. Generally, you leave the layout (which involves arranging and laying out drawing files or filesets) until y–

ou're finished with the design. Each project can contain up to 9,999 layouts.

To find out how to handle projects, filesets, drawing files, layers and layouts, see "Structuring and managing data (on page 203)".

# Working with Projects

## Using project templates

A project template is a project you can select as a template when you create a new project. Consequently, the new project is an identical copy of the project template selected. You can save any project as a project template. Project templates are in the office folder (`\Std\ProjectTemplates`) or in the default folder (`\Etc\ProjectTemplates`).


Using ProjectPilot, you can delete or rename project templates in the office folder.

---

### To save a project as a project template

- Start ProjectPilot and copy the project by dragging it to the **Office\Project templates folder**.

Or:


Click  **New Project, Open Project...**, open the shortcut menu of the project and click **Copy to project templates**.

---

# Working with Drawing Files

'Open on a project-specific basis: drawing files from fileset/building structure' dialog box

**Tip:** To check the current drawing file status: Unless you change the drawing file status, you can close the dialog box pressing ESC.

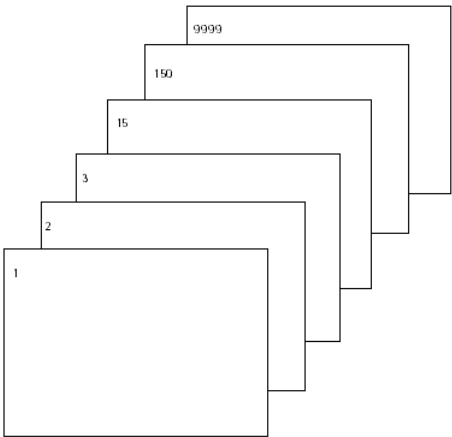
Click  **Open on a Project-Specific Basis: Drawing Files from Fileset/Building Structure** to open a dialog box where you can change the status of drawing files and create fileset structures and building structures, for example.

**The dialog box has two tabs:**

- **Building structure** tab: This is where you create and modify the building structure, assign drawing files to structural levels and select active, edit and reference drawing files by changing the drawing file status. For more information see Working with the building structure (on page 211).
- **Fileset structure** tab: This is where you create, modify and delete filesets, assign drawing files to filesets and select active, edit and reference drawing files by changing the drawing file status. For more information see Working with the fileset structure.

## Understanding drawing files

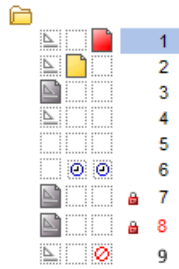
In Allplan, the actual design and data creation process happens in *drawing files*. These are the equivalent of the transparencies used in conventional building design. Drawing files can be used to give projects a structure. In IT terms, a drawing file is a conventional file stored on your hard disk. You can display and edit up to 128 drawing files at once – in other words, you can have several files open simultaneously. A project can contain up to 9999 drawing files. When working without layers, the individual building elements (such as walls, stairs, labeling, etc.) are drawn on different drawing files and superimposed like transparencies.





In order to edit the drawing files, they have to be activated (opened). You can do this using the **Open on a project-specific basis: drawing files from fileset/building structure** dialog box.

## Drawing file status

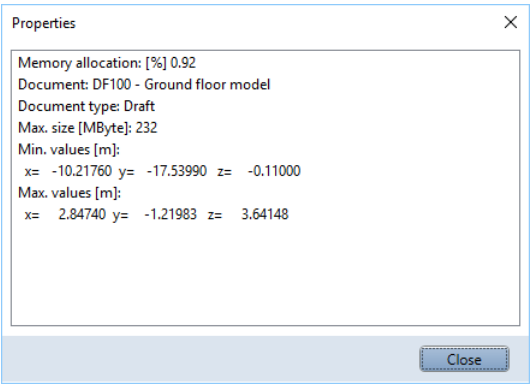
With the drawing file status, you define the drawing file on which you draw and which drawing files are visible and can be modified. The following illustration shows the different drawing file statuses. You can find an explanation in the table below.



Number	Drawing file status	Comment
1	Current, active	The current or active drawing file is the one in which you draw. There must always be one current or active drawing file.
2	Open in edit mode	Elements in drawing files open in edit mode are visible and can be modified. Up to 128 drawing files can be open simultaneously (regardless of whether they are current, in edit or reference mode).
3	Open in reference mode	Elements in drawing files open in reference mode are visible, but they cannot be modified. You can configure the program to use the same color for all elements in reference drawing files. To do this, select the  <b>Options</b> , click <b>Desktop environment</b> and open the <b>Display</b> page. You cannot open empty drawing files in reference mode.
4	Not selected	Elements in these drawing files are not visible.
5	Empty	Empty drawing files have no data type icon.
6	Assigned temporarily	The drawing file is assigned temporarily to the fileset. Allplan clears this assignment as soon as you switch to a different fileset.
7	Open in reference mode	The drawing file has been opened by another user in the workgroup environment.
8	Open in reference mode	The drawing file has been opened by another user in the workgroup environment; the color red indicates that the drawing file has changed. You can apply the changes by selecting <b>Update drawing file</b> on the shortcut menu. Using the  <b>Options</b> , <b>Desktop environment</b> page, you can configure the program to inform you of changes in reference drawing files.
9	Update locked	Using the shortcut menu, you can prevent the update of drawing files in which you generate views and sections for objects derived from the building structure. You cannot update the result until you unlock the drawing file in question. But you can create a new view or section in such a drawing file after you have confirmed a prompt.

## Information on the active drawing file

To get information on the active document, right-click in the work-space. On the shortcut menu, choose **Properties**. An information box with all the important information about the file opens.



Information	Meaning
Memory allocation	This shows how much of the memory reserved for a file has already been allocated (as a percentage). Background information: A certain amount of memory is reserved for files.
Document	This shows the number of the current file. You can also find the number in the title bar of the Allplan application window.
Document type	This shows the file type, which corresponds to the data type icon in the status bar.
Max. size	This shows the maximum amount of memory available for the file in kilobytes.
Min. values, max. values	This shows the minimum and maximum coordinates in the file.

# Working with the building structure

## What is the building structure?

The building structure provides a customizable and flexible way of structuring, organizing and using documents (=drawing files) in Allplan (think of the **B**uilding **I**nformation **M**odel). You can use the building structure to logically structure a building using several hierarchical levels.

Analyses, such as sections, views and reports, can be derived directly from the building structure.

Allplan comes with several predefined building structures.

The plane model is directly associated with the building structure.

The building structure consists of a number of hierarchically structured levels to which you can assign drawing files. You can then assign a pair of default planes to each structural level. All the drawing files belonging to a structural level can use the default planes assigned to this structural level. Consequently, the associated drawing files update automatically to reflect any changes you make to the height settings of a structural level.

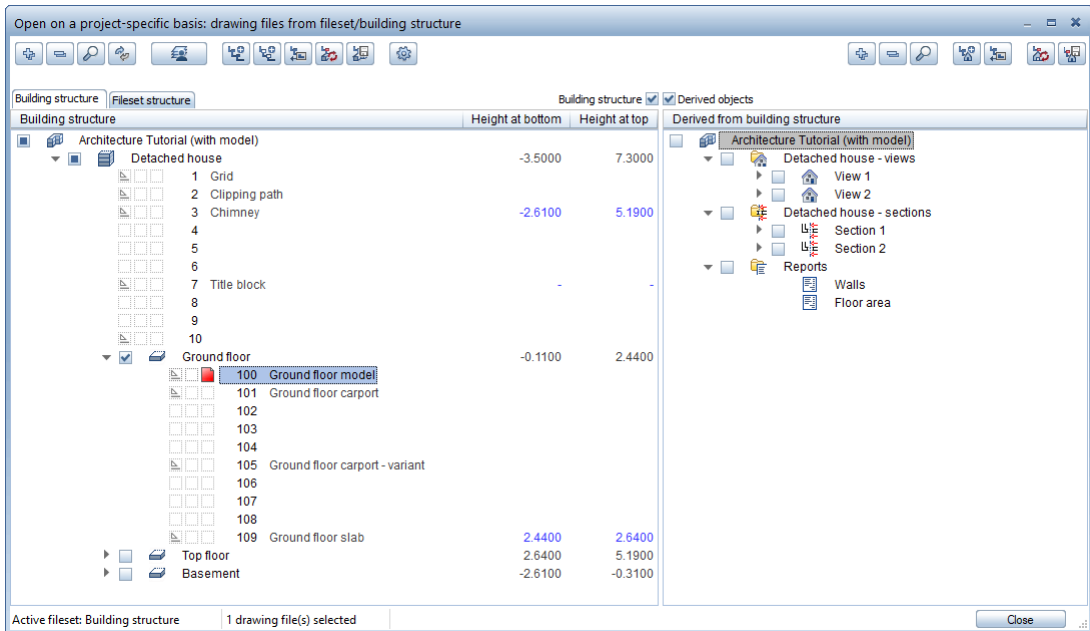
## Advantages of the building structure

**Working with the building structure has significant advantages:**

- The building structure includes an integrated plane model you can use to manage default planes and roof planes for an entire project. These planes can be assigned directly to drawing files.
- Data can be copied in an easy and comfortable manner (for example, create new stories, design alternatives etc.).
- Views, sections and reports can be generated quickly and easily.
- Source drawing files and target drawing files are saved automatically; you do not need to give any thought to which drawing files should be activated.
- Simplified data exchange via IFC.
- Structuring data based on the topological structure of a building reflects the approach of designers.

## Example of a building structure

Here is an example of a building structure (based on the **Residential house with garage** project template that comes with Allplan)



## Creating a building structure

You can create a building structure in several ways:

- You can create the building structure using the floor manager. If you use this method, you can create the building structure and the objects derived from the building structure in one go. At the same time, you can assign height settings to the structural levels.
- You can configure the program to create the building structure automatically the first time you open the **Building structure** tab. If you use this method, you can select a building structure that comes with Allplan.
- You can create the building structure using the building structure wizard.



## Using structural levels to apply a logical structure to a building

Structural levels allow you to apply a logical structure to a building. You can assign one or more drawing files to each structural level.

**There are two different types of structural levels:**

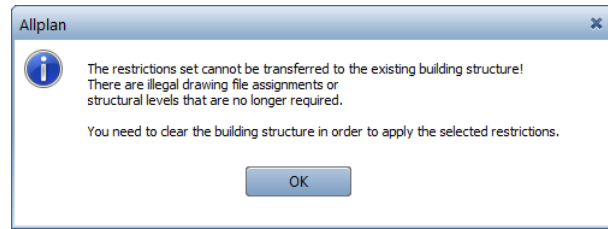
- **Predefined structural levels:** You can use predefined structural levels only in their hierarchical sequence. For example, a structure cannot be subordinate to a building. However, structural levels can be left out (e.g. a building can be subordinate to a project). The following five predefined structural levels are provided (in this hierarchy):
  - Site
  - Structure
  - Building
  - Story
  - Sub-story
- **Any structural levels:** In addition, you can use custom structural levels, which you can insert anywhere in the building structure.

Click **Restrictions of building structure** on the shortcut menu of a project to specify which structural levels can be used in the building structure and which structural levels can be assigned drawing files. For example, you can specify that only IFC-compliant structural levels can be used.

## Restrictions of building structure

You can restrict the use of structural levels and the option to assign drawing files to a structural level. This way, you can limit the structures to IFC-compliant structures. You can define restrictions by clicking **Restrictions of building structure** on the shortcut menu of a project.

If restrictions you define later are inconsistent with the existing structural levels and drawing files, you first need to eliminate these inconsistencies and remove the structural levels and drawing file assignments that are no longer allowed.



In the dialog box, a red cross indicates invalid structural levels and drawing file assignments.



## Building structure and fileset structure

You can use the building structure and the fileset structure in parallel. The drawing file status can be set both in the fileset structure and in the building structure; these two settings are independent of each other. Which drawing files are selected depends on the tab that is active when you close the dialog box.

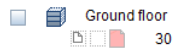
However, there is one important difference: A drawing file can only be assigned once to a structural level in the building structure.

## Selecting structural levels

You can select structural levels by clicking the relevant check box. The program takes into account the drawing file status when the corresponding structural level is selected.



**Structural level is selected**



**Structural level is not selected**

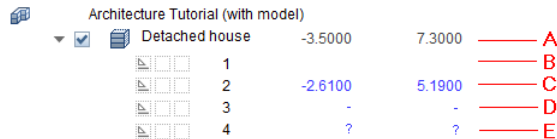


**Only subordinate structural level(s) are selected**

- Clicking a check box activates the relevant structural level and all subordinate levels.
- Clicking a check box while pressing the CTRL key only activates this structural level. Subordinate levels are not selected.
- If subordinate structural levels are selected, a fill is applied to the check box of the superordinate structural level.

## Displaying the height of default planes

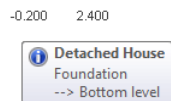
The height settings of the lower and upper default planes are displayed as follows in the dialog box:



Architecture Tutorial (with model)					
▼	☑	Detached house	-3.5000	7.3000	— A
☑	☑	1			— B
☑	☑	2	-2.6100	5.1900	— C
☑	☑	3	-	-	— D
☑	☑	4	?	?	— E

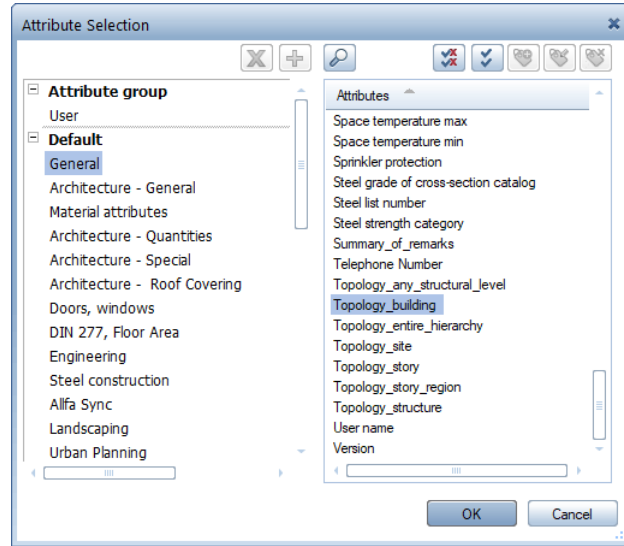
- **A:** The structural level shows the height settings of the associated default planes.
- **B:** Nothing is displayed when a drawing file adopts the height settings of the default planes from the superordinate structural level.
- **C:** The values are blue when the height settings of the default planes in a drawing file differ from the height settings assigned to the superordinate structural level.
- **D:** You can see “-” when a drawing file does not adopt its default planes from the plane model.
- **E:** You can see “?” when the default planes assigned to the drawing file are not available (for example, when you delete the planes from the plane model later).

When you move the cursor over a height displayed, the ToolTip shows the name of the plane model, the name of the pair of planes and the name of the default plane.



## Attributes for building structure

The **General** category provides a number of attributes you can use to analyze building structures.



- Topology\_structure
- Topology\_any\_structural\_level
- Topology\_building
- Topology\_story
- Topology\_substory
- Topology\_entire\_hierarchy
- Topology\_site

## Shortcuts in the building structure

Action	Applied to	Result
Click	Check box (structural level)	Select (including all subordinate structural levels)
Click	Structural level, drawing file	Select
CTRL + click	Check box (structural level)	Select (clicked structural level only)
CTRL + click	Structural level, drawing file	Add, remove selection
SHIFT + click	Structural level, drawing file	Select (range)
ALT + drag	Structural level, drawing file	Move within structural level
Click + open selection rectangle	Structural level	Select similar structural levels
Click + open selection rectangle	Drawing file	Select similar drawing files
Drag	Structural level, drawing file	Move to a different structural level
Drag outside the dialog box	Structural level, drawing file	Remove from structure
Drag to border of viewport	Structural level, drawing file	Scroll (+CTRL = faster)
CTRL + ALT + drag	Structural level, drawing file	Copy within structural level
CTRL + drag	Structural level, drawing file	Copy
Double-click	Structural level	Expand, collapse
Double-click	Drawing file	Select drawing file and close dialog box
Double-click	Report	Source drawing files for report
Right-click	Structural level, drawing file	Shortcut menu
Right-click (without selection)	-	Shortcut menu
SPACE BAR	Structural level	Expand (when closed); change drawing file status (when open)
SPACE BAR	Drawing file	Switch drawing file status
Search	Anything	Takes you to the next drawing file that matches the small letters or numbers you have just entered. F3 takes you to the next match.

F1	Anything	Open help
F2	Anything	Rename
F3	Anything	Takes you to the next match.
F4	Drawing file	<p>Takes you to the next drawing file that is selected.</p> <p>Only in dialog boxes where you can select drawing files using check marks, such as source drawing files.</p>
F5	Anything	Zoom All
ToolTip		
Point to flashing symbol of a building site	Project node	Shows information on changes
Point to 'Height at bottom' or 'Height at top'	Height column	Shows information on the plane model
Point to drawing file name	Drawing file	Shows the complete drawing file name if it does not fit in the column

## Overview of administration files for the building structure

The table below gives you an overview of the folders and files the program creates for the building structure in the `\Prj\${ProjectName}\project` folder.

Folder	File	Description
\BIM\		
	All-plan_BIM_BuildingStructure.xml	Building structure
	Allplan_BIM_LayoutStructure.xml	Layout structure
	Allplan_BIM_LevMo_*.xml	Plane models
	Allplan_BIM_LevMo_*.xml.bak	Backup files for plane models. The program creates backup files when a plane model has changed.
	Allplan_BIM_Views.xml	Derived from building structure
\BIM\Backup\		Folder for backup files. The program creates files for the building structure, layout structure and objects derived from building structure in the following format: <b>Name.dd.mm.yyyy-hh-mm-ss.bak</b>
\BIM\0000\		Folder for each user
\BIM\Backup\0000\settings\		Folder for files containing the current selection
	Layout_settings.xml	Current selection in building structure
	Structure_Settings.xml	Current selection in layout structure
	Views_Settings.xml	Current selection of objects derived from building structure
\BIM\Backup\0000\selections\		Folder for selection favorites such as source drawing files for views, sections, reports

## What is the plane model?

Default planes and roofscapes are managed in a plane model. A plane model contains pairs of default planes. Each pair of planes has a name. The same is true for the lower and upper default planes.

The pairs of reference planes in a plane model are equivalent to the stories of a building. You can assign them to the structural levels of the building structure or to individual drawing files. A project can include several discrete plane models.


You can change the height of the default planes in the plane model. Any changes made to the height are immediately reflected in the drawing files to which you have assigned a default plane from the building model.


A plane model must not include pairs of planes with overlapping height settings with the exception of the pair of planes that defines the minimum and maximum height of the building.

You can assign the height of a pair of planes to a drawing file or structural level of the building structure. However, you can also use the lower and upper default planes from different pairs of planes. This way, you can create components across several floors (e.g. chimneys).

You can also assign default planes that are not associated with the plane model to drawing files. You can even select a custom height for the lower default plane and adopt the upper default plane from a plane model.

You can also use plane models without a building structure.

In the  **Options – Planes** page, you can configure the program to display planes in elevation and isometric views.

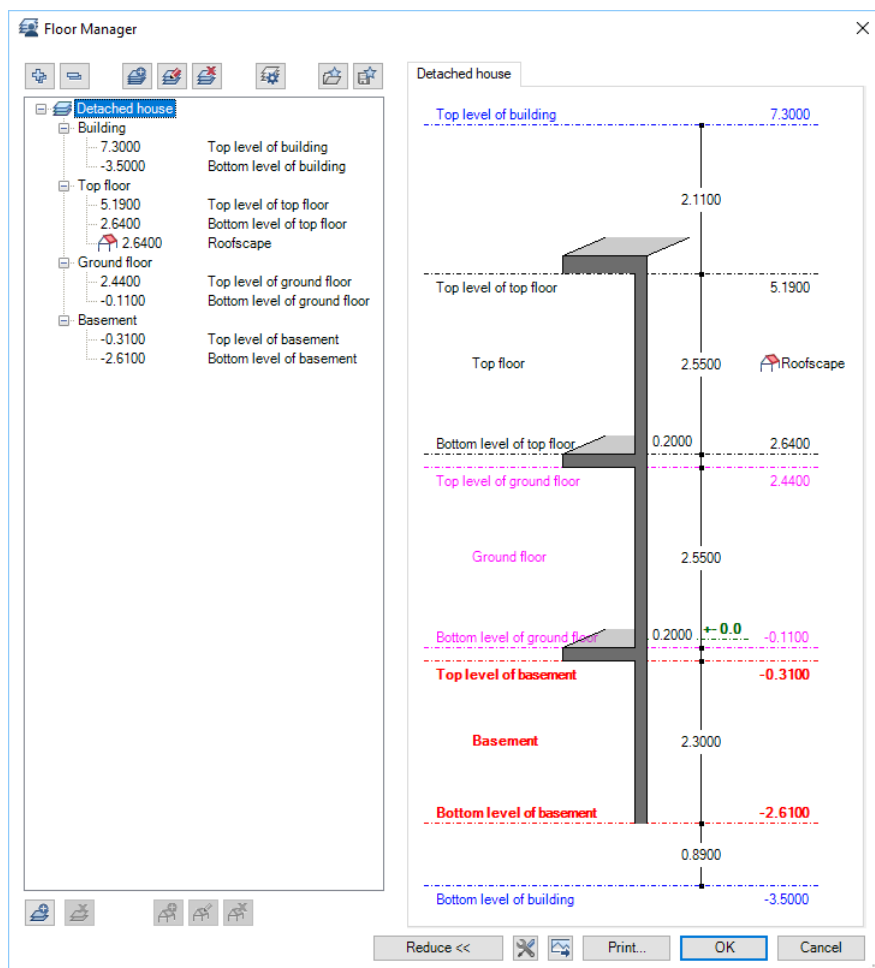
In the  **Options – Desktop environment – Animation** page, you can configure the program to display planes in viewports with the **Animation** view type.

Plane models are saved as XML files in the project-specific `\proj\bim` folder.



## Example of a plane model

Here is an example of a plane model (taken from the **Detached House** example that comes with Allplan)



# Working with layers

## Understanding layers

Layers provide an additional means of structuring design entities within drawing files. You can display exactly the information you need just by switching the relevant layers on and off. This way, you can proceed quickly, as you can see better what you are doing.


You can use layers to define the format properties of elements.

Layers are important organizational elements. Their importance increases the more people are involved in a project and the more a CAD system is used for specialist design processes. Layers do not replace drawing files. Rather, they complement them.

## Advantages of data organization using layers

**With large projects in particular, organizing data using layers has significant advantages:**

- Associative elements – such as wall dimensions or sill elevation labels – are in the same drawing file and yet can still be hidden from view.
- In order for the interaction between elements to function cleanly, the components in question have to be in the same drawing file. This is also the case for certain analyses and evaluations. With layers, you can meet these requirements easily.
- Easier to assemble layouts thanks to print sets. Print sets are user-defined compilations of layers, which are very useful for editing and assembling layouts. When assembling a layout, you can choose to display only the elements in a specific print set – switching between 1:50 and 1:100 is thus no problem.
- Exporting drawing files to DXF/DWG layers is easier as you can assign each layer in a drawing file to a different DXF/DWG layer. When importing DXF/DWG files, the DXF/DWG layer structure can be automatically integrated in the layer hierarchy.
- It is often faster to modify the layer of an element than to modify the drawing file of an element.

- You can quickly create layers that are not included in your layer structure and then use these layers in all the drawing files of a project.
- As a project can contain more layers (approximately 65,000) than drawing files (9,999), layers allow you to distinguish more precisely between the individual design entities.
- You can display and edit 65,000 layers at once whereas the number of drawing files that you can have open simultaneously is 128.
- You can show and hide layers very quickly (for example, using print sets, layer favorites, the **Layers** palette or the **Objects** palette – **Sort by layer** criterion).
- You can change the format properties of a layer later. All the elements of this layer that were drawn using the **From layer, line style** setting will adapt automatically. This way, you do not need to modify them separately.
- You can copy format properties including layers by double-clicking with the right mouse button. This method also works with wizards. Similarly, you can use  **Copy Format** to quickly copy the format properties of an element and apply them to other elements.

## Disadvantages of data organization using layers

**Besides the numerous advantages, organizing data using layers also has two disadvantages:**

- Layers involve some managing work, at least in the beginning.
- If your entire data organization is based on layers, all the data are in one drawing file (i.e. in one file). This means that only one user at a time can access the data. You have to spread the data over different drawing files, thus making sure that several users can work and access the data at the same time.

## Relationship between layers and drawing files

The use of layers doesn't mean that drawing files don't play a role when it comes to organizing your data. With large project in particular, a combination of both is essential. With the same structural depth, the number of drawing files required is far less when working with layers.

The number of drawing files you need depends not only on the size of the project but also on your hardware. Modern, fast computers with a lot of memory can handle a lot more data per drawing file without this leading to a noticeable downturn in performance.


### The interplay between layers and drawing files depends on the following factors:

- The size of the project and the number of designers involved at any one time.  
If several designers are working on one floor, create one drawing file per area of responsibility (e.g., East Wing, Central Unit, West Wing, for example.)
- Simultaneous involvement of specialist designers on the project.  
Use separate drawing files for specialist designs in order to facilitate concurrent activity.

## Defining the current layer

When created, each element is given the current layer. The layer which is used as the current layer is governed by the following settings:

- When you activate a tool (e.g. line) for the first time, a specific layer is automatically selected as the current layer (if the **Auto-select layer with tool** option is selected in the **Layer** dialog box). The layer in question depends on which tool you activate. If the **Auto-select layer with tool** option is not selected, the program automatically uses the layer you selected last.
- The **Layers** palette shows the current layer. You can change the layer status with just one click.  
You can display the entire layer hierarchy, the layers assigned to the currently selected tool or the layers used in open documents. To do this, you can use the extensive shortcut menu of the **Layers** palette.

- The **Objects** palette – **Sort by layer** criterion also shows the current layer. You can change the layer status by clicking the icon indicating the layer status.  
You can see all the layers in the documents loaded. The tree structure lists all layers with their elements sorted by element group.
- If a tool (for example, Line) is active, you can use the **Properties** palette to define a different layer as the current one. This layer will then automatically be used as the current layer the next time you activate the tool.
- When you save components as styles or favorite files, the layer currently set is also saved. When you retrieve these components later, the layer saved is automatically set as the current layer.
- Normally, openings like recesses in walls and slabs or window and door openings get the same layer as the element into which they are inserted. Click the **Special** button in the  **Options – Components and architecture – Miscellaneous area** to specify whether these openings can be assigned separate, independent layers.
- As walls can consist of multiple construction layers and each layer can have different format properties, you can define the layer for each of the construction layers in a wall or upstand directly in the **Properties** dialog box (you usually make these settings in the **Properties** palette).

## Using privilege sets

Using privilege sets, you can control users' access to layers. You should assign privilege sets if several people work on the same project. If Workgroup Manager is installed, you can assign users to one or more privilege sets. As a result, these users can only see and edit the layers that are associated with the relevant privilege set.

Privilege sets can do more than just control who accesses which layers. They simplify your whole work, as you can define privilege sets with a selection of layers that are to be available while drawing.

When you install the program, the privilege set **ALLPLAN** is created automatically. This privilege set has read and write access for all layers.

## Using print sets

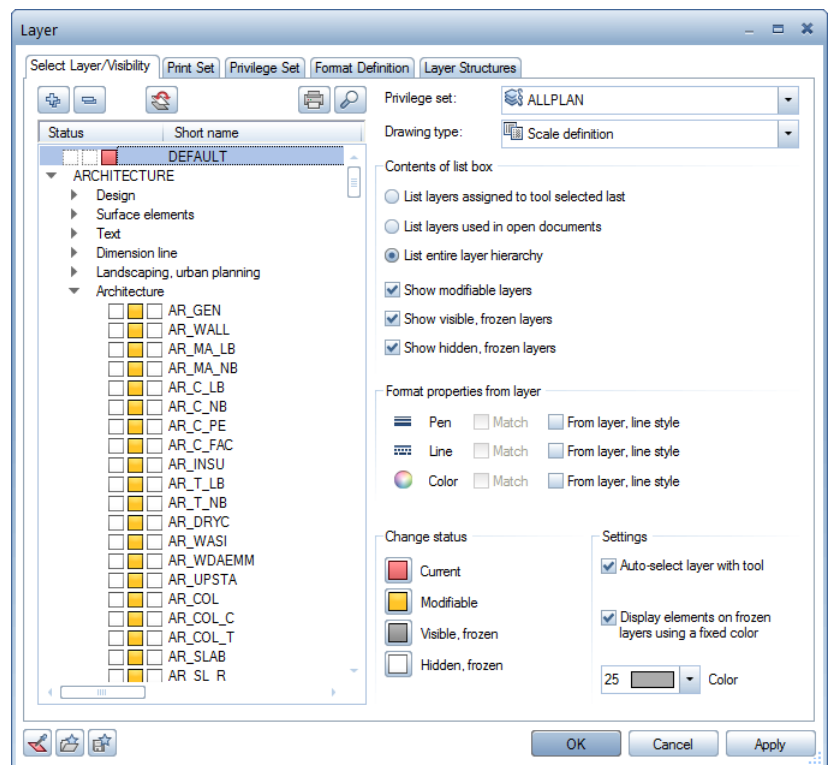
A print set is a set of layers that you can select when compiling and arranging layouts. You can also use print sets to control which layers are visible or hidden. Only the elements in the selected print set are displayed in the layout.

For example, you can select a print set for working drawings so that only the data that are relevant to a working drawing appear in the final printout.

## 'Layer' dialog box

Using the **Layer** dialog box, you can manage and handle layers in Allplan. As a normal user, you can show and hide layers and select the current layer. As the administrator or as a user with administrator privileges, you can create and manage print sets and privilege sets, assign format properties to layers and create and modify layer structures.

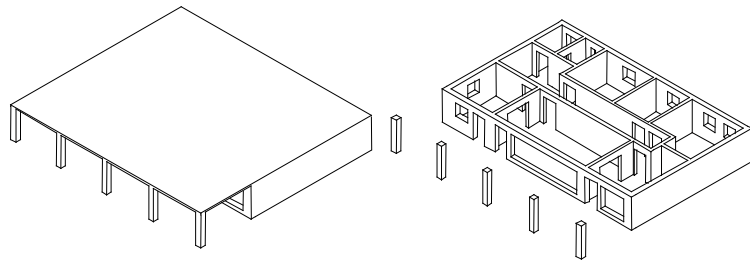
- ➡ When you work with Workgroup Manager in a network environment, you must be logged in as the administrator. Otherwise, you cannot change the settings on the **Print set**, **Privilege set**, **Format definition** and **Layer structures** tabs.





## Setting layer visibility in drawing files

You can set layers so that they are visible or invisible and thus show or hide the corresponding elements.

This way, you can quickly hide the elements you don't need during the current design phase, selectively modify elements in the displayed layers, check your plan and see whether all the elements are assigned to the desired layer. For example, you might choose to hide the slab layer and then view the spatial arrangement of the building as a hidden line image in perspective view.



**Note:** Right-click an element and, on the shortcut menu, select  **Modify Layer Status** and then  **Isolate layer – set all other layers to hidden** to hide all the layers except the layer of the element clicked.

If you find that you often require the same combination of visible and hidden layers (for dimensioning or labeling at certain scales, for example), then it is best to define what is known as a print set. You can also use this print set when you assemble your layout later. This way, you make sure that only the visible layers print.

**Note:** You can choose to **Display elements on frozen layers using a fixed color** by selecting this option in the **Layer** dialog box.

## Managing layers and layer structures

The office administrator is usually in charge of managing layers and layer structures. This person defines which layers are used, sets up the privilege sets and grants access rights. By assigning the other users (architects, engineers and so on) to the privilege sets, the office administrator grants the users access to the layers.







When you create a project, you can decide whether you want to use the layer structure of the office standard or a project-specific layer structure.

You can name and save layer structures and retrieve these structures later. If you have assigned line styles to layers, these line styles are saved together with the layer structure (with the same file name plus the extension `.sty`). When importing a layer structure you saved, you can decide whether to import the associated line style file, too.





## Layer access rights

There are different layer access rights. On the one hand, there is the visibility setting which controls whether a layer is visible or hidden. On the other hand, there is the edit setting which controls whether a layer can be edited or not (i.e. it is frozen). You can save visibility settings in print sets (see "Using print sets" on page 226) and edit settings in privilege sets. The status of a layer is represented by icons in the **Layer** dialog box (**Select Layer/Visibility** tab) and in the **Layers** palette:

Icon	Access right	Explanation
	Current	The layer on which you draw.
	Modifiable	Elements in this layer are visible and can be modified.
	Visible, frozen	Elements in this layer are visible but cannot be modified.
	Hidden, frozen	Elements in this layer are not visible and cannot be modified.

You can restrict access to layers using the **Select Layer/Visibility** tab or the **Layers** palette. For example, you can change the status of layers from **Modifiable** to **Visible, frozen**.

The **Objects** palette - **Sort by layer** criterion shows the layers in the loaded documents. The tree structure lists all layers with their elements sorted by element group.

When you point to the icon indicating the layer status in the list, Allplan opens a flyout where you can change the status of the layer. Here, too, you can change access to layers. You can switch between  **Current**,  **Modifiable**,  **Visible, frozen** and  **Hidden, frozen**.

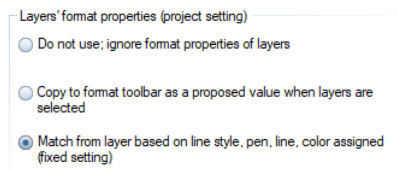
Layer access rights also depend on the privilege set to which a user belongs. Therefore, you cannot assign a higher status to layers (for example, set hidden layers to modifiable) when you belong to a privilege set that is not granted full access rights to the relevant layers.

## Defining format properties using layers

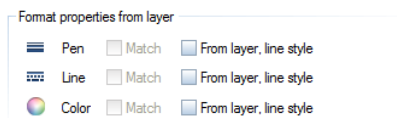
Using the **Layer** dialog box, you can specify that an element is to automatically assume the properties of the layer on which the element is drawn.

**This involves two steps:**

- Open the **Format Definition** tab and select one of the three options for matching the format properties of layers. This setting applies to the current project. It applies to all new elements and is valid until you explicitly change it. When you work with Workgroup Manager in a network environment, you must be logged in as the administrator. Otherwise, you cannot make any settings in this area.



- Switch to the **Select Layer/Visibility** tab and specify the format properties (pen thickness, line type and line color) the program is to take from the layer.



# Managing data with ProjectPilot

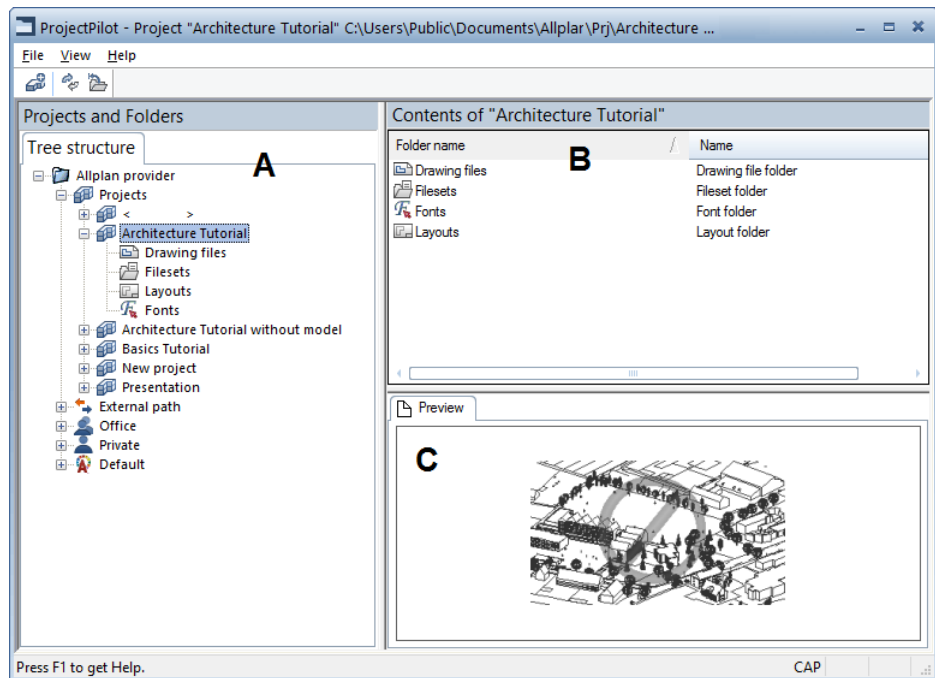
## What is ProjectPilot?

You use **ProjectPilot** to create and structure projects in a simple and clear manner.

ProjectPilot is a powerful data management tool developed specially for the data structure of Allplan. ProjectPilot provides tools for copying, moving, renaming and deleting data (e.g., projects, drawing files).

If you are already familiar with Windows Explorer, then you'll find that working with ProjectPilot is just as easy. You can use the short-cut menu for almost everything. If you find that you need to move or copy files, you can simply drag them to the new folder.

## User interface



### Left window (A)

The left window shows the projects and folders in a tree structure. The current project is selected and open. Click the plus sign (+) to display the levels in a folder. Click the name of a folder to display its contents in the right window.

By double-clicking, you can display the contents of the folder and open it at the same time.

### Right window (B)

The right window shows the folders and documents in the selected node (in the left window). You can sort the displayed documents by clicking on the title of a column. Right-click in the background to display the documents as a list or as icons.

### Preview (C)

A preview of the currently selected document (drawing file, layout) is displayed in the preview area. To move the preview, click it with the middle mouse button and drag. To zoom in on an area in the preview, open a selection rectangle using the left mouse button. Double-clicking with the middle mouse button restores the preview to its original size. Alternatively, press the \* key on the number pad.

To display an isometric view, use the number keys on the number pad. Check that the Num Lock key is active as you do so.

## Common approaches in ProjectPilot

### Finding documents

You can search for objects (documents, folders or projects) in ProjectPilot. A temporary folder – **Search results** – is created in the tree view and the objects found are displayed in the document window.

---

#### To find documents

- 1 Right-click a folder and select **Search** on the shortcut menu.  
The Define search criteria dialog box opens.

- 2 Under **Attributes** select the attribute you want to search for.

- 3 Under **Operators** select the logical operators.

**Note:** Only those operators that are appropriate to the selected attribute are displayed.

- 4 Under **Value** enter the condition that the attribute is to fulfill.

- 5 Click  **Add line**.

- 6 If you want to enter more conditions, define the next condition, specify how the conditions are to be linked and click **Add line** again.

- 7 When you have finished defining criteria, click **Search**.

A temporary folder – **Search results** – is created in the tree view and the objects found are displayed in the document window.

---

### Sorting the documents displayed

You can sort the documents displayed by clicking the title of a column. Click the column title to sort the documents in ascending order. Click the same column title again to sort the documents in descending order. An arrow indicates which column is being sorted and whether sorting is in ascending or descending order.

Name	Number	Size	Type
Basement model	120	294906	Draft
Basement slab	129	98334	Draft
Chimney	3	98334	Draft
Clipping path	2	98334	Draft
Grid	1	98334	Draft
Ground floor carport	101	98334	Draft
Ground floor carport - alternative	105	98334	Draft
Ground floor model	100	819098	Draft
Ground floor slab	109	98334	Draft

Sorted in ascending order (arrow points upwards) by drawing file name

Name	Nu...	Size	Type
Section A (result of hidden line image)	1010	98334	Draft
West elevation (result of hidden line image)	1000	98334	Draft
Basement slab	129	98334	Draft
Basement model	120	294906	Draft
Upstand - alternative	117	360430	Draft
Upstand	116	98334	Draft
Masking plane	115	98334	Draft
Roof	112	98334	Draft
Top floor model	110	425954	Draft

Sorted in descending order (arrow points downwards) by drawing file number

### Selecting documents

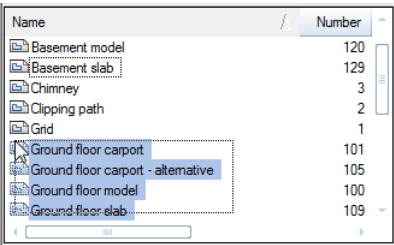
To edit several documents in a single operation (to copy or move them, for example), you need to select the documents first.

The following methods are available for selecting documents:

- To select a single document, click it.
- To select a series of non-adjacent documents, press and hold down the CTRL key and click the documents.

Name	Number
Basement model	120
Basement slab	129
Chimney	3
Clipping path	2
Grid	1
Ground floor carport	101
Ground floor carport - alternative	105
Ground floor model	100
Ground floor slab	109

- To select a range of drawing files, click the first drawing file in the range, then press the SHIFT key and click the last drawing file in the range at the same time. Alternatively, open a selection rectangle encompassing the documents you want to select.



**Tip:** You can also use key combinations to select documents. For example, you can quickly select all the entries in a list by selecting the first document in the list and then pressing SHIFT+CTRL+END.

### Copying and moving using drag-and-drop operations

Instead of using the shortcut menu, you can also use drag-and-drop operations to move or copy selected documents. Select the documents, left-click within the selection, keep the mouse button pressed down and then drag. You can tell whether this is possible by the shape of the cursor when the mouse pointer is positioned over the target area.

#### Cursor

#### Meaning



The document will be **copied** to the folder that is below the mouse pointer.



The document will be **moved** to the folder that is below the mouse pointer.

**Note:** To move documents, hold down the SHIFT key while dragging the documents.



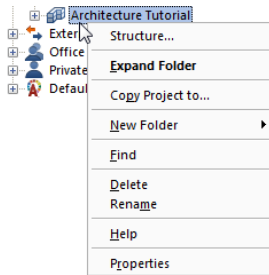
A shortcut to the document will be created in the folder below the mouse pointer (e.g., when assigning drawing files to a fileset).



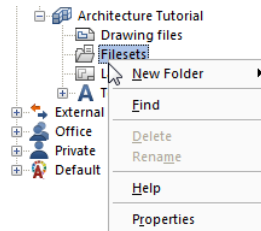
The document cannot be placed here.

## Working with the shortcut menu

Almost all tools available in ProjectPilot can be accessed via the shortcut menu. Depending on which element you click, a shortcut menu appropriate to the element opens.



Shortcut menu of a project



Shortcut menu of the fileset folder

## Using the preview

The preview area shows a preview of the selected document. You can zoom in on the preview, pan the preview and display the preview in isometric view. Click **Preview** on the **View** menu to specify whether and where the preview is placed.

- **To switch off the preview**, point to **Preview** on the **View** menu and click **None**.
- **To zoom in on the preview**, use the left mouse button to open a selection rectangle around the area you want to view in detail. The cursor changes to crosshairs.
- **To pan the preview**, move the view with the middle mouse button. The cursor changes to a hand. Alternatively, use the cursor keys.
- **To restore the preview to full view**, double-click the middle mouse button in the preview area or press the \* key on the number pad.
- **To display the preview in isometric view**, use the number keys on the number pad. Check that the Num Lock key and the preview are active as you do so.

**Note:** The preview is only available with certain documents (drawing files, layouts).



# Exchanging Data With Other Programs

## ODX interface

### Available file types for export and import

With the ODX interfaces you can convert files from and to numerous formats. The following overview shows the file types that can be exported and imported. The file types that are actually available to you depend on the configuration you have purchased.


**The following file types are available:**

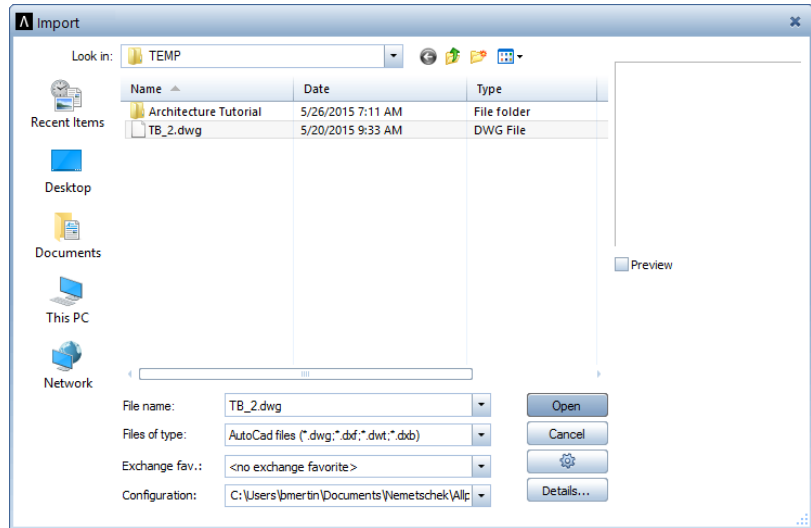
- AutoCAD files of versions V12, 2000, 2004, 2007, 2010, 2013 in the following formats: .dwg, .dwt, .dxb, .dxf.
- MicroStation files ( . **dgn**)
- HPGL2 files (for import only)
- SVG files (for export only)
- ODX batch files ( . **ncb**). See Using batch files for import and export in Allplan's help.

## Conversion procedure (overview)

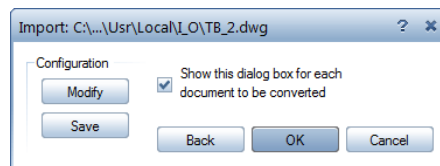
This section provides an overview of the conversion process (using data import as an example).

### To convert files

- 1 Click  **Import** to start the import.



- 2 In the **Open** dialog box, select a file type, folder and the file(s) you want to convert.
- 3 Click **Open**.  
Allplan starts the automatic assignment.






- 4 Start the conversion by clicking **OK**.  
**Note:** Click **Modify** if you want to check or modify assignments.
- 5 Finally, check the log file.

## Importing files with large coordinates

DXF and DWG files can contain elements with very large coordinates; this is especially true in the case of files with country coordinates. When you check the log file after having imported a file with large coordinates, you will find the following warning: **Coordinates exceed 5,000 m.** Large coordinates can cause problems when you edit the imported data in Allplan.

**There are different ways of using these data without any problems:**


- During import you can use the **Adjust center of gravity to:** options in the  **Settings, General Settings** tab, to tell Allplan how to handle data with large coordinates:
    - When you select the **Off** option, the data remain unchanged.
    - Select the **Adjust center of gravity to: Offset** option. This automatically sets an offset in the **Project Settings**: The origin of the file (= center of the min-max-box) is set to the origin of the coordinate system. You cannot use this option when you have already specified an offset in the **Project Settings**.
- Note:** Here, offset means that Allplan moves the data during import; the values by which the data are moved will automatically be written to the project. This offset applies to the entire project. Setting an offset changes the coordinates of the drawing files in this project.
- Select the **Adjust center of gravity to: Origin** option. This *moves* the center of the data to the origin of the Allplan coordinate system.
- During import you can specify an **Additional offset** in the  **Settings**. This *offset* is used in addition to the offset set in the **Project Settings**. Pay attention to the direction of conversion when you set an offset:
  - Negative values for import
  - Positive values for export
- Import the data and *move* the data towards the origin using the  **Move** tool in Allplan.

- Specify offset coordinates in the **Project Settings**. Allplan automatically includes the offset set when you export and import data.

**Important:** Using an offset is usually the better solution:

- Point coordinates are measured correctly, and they do not change. This is particularly important when you need to export the data again (coordinates in site plans are legally binding).
- Allplan automatically includes the offset set when you export and import data.
- Whenever you *move* data, you change the coordinates themselves. So you are advised to use this option **only** if you require the data for internal use and you do not need to export the data again (coordinates in site plans are legally binding).

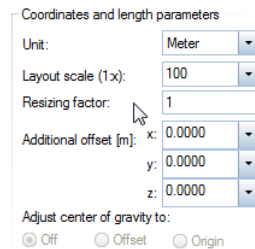
If a project with large coordinates is at an advanced stage, Allplan provides another solution that helps you improve the representation.

- Select the **Optimize working with large coordinates** option in the  **Options, Desktop environment**. The program internally optimizes the coordinates of the elements and restores the original values each time you have done something, for example, saved the file.

## Adjusting units and lengths

During conversion, there are three parameters that control how the units in the source system are adjusted to the units in the target system. Please note that it may sometimes be impossible to modify the **Unit** and **Plan scale** parameters, depending on the source system and target system. With the **Resizing factor**, however, the units can always be adjusted.

The parameters can be set in the **Options** dialog box, **Coordinates and length parameters** area.



Coordinates and length parameters

Unit: Meter

Layout scale (1x): 100

Resizing factor: 1

Additional offset [m]: x: 0.0000 y: 0.0000 z: 0.0000

Adjust center of gravity to:  
☒ Off ☐ Offset ☐ Origin

### Unit

Depending on whether your colleague is using m, cm or mm, they will enter 1.0, 100.0 or 1000.0 when drawing a one-meter line. With the **Unit** parameter, you indicate to the program whether the value is to be interpreted as mm, cm, dm, etc.

During **import**: This is where you set the unit with which the file being converted (the source file) was created.

During **export**: This is where you set the unit with which the exported file (the target file) is to be further edited.

Contact the person with whom you are exchanging data to find out which unit they are using in their files. The reason for this is that in the case of coordinate entries and length entries, only the figure is present and not the unit. In DWG/DXF files, the elements can be stored in any unit.

**Note:** In some systems, the unit in which lengths and coordinates are saved is predefined and must therefore not be altered here. In Allplan, lengths and coordinates are always saved as mm, regardless which unit was used when the data were entered. To account for different units, use the **Resizing factor** parameter (see below).

**Note:** The unit the target system saves in is **always** predefined and is based on the target system in question. For conversions to Allplan, for example, data are always saved using the unit mm; for conversions to AutoCAD the unit is always m.

### Layout scale

This is where you set the reference scale with which the file being converted was created. The layout scale controls text size, text spacing, the size of point symbols, line type definitions and hatching definitions.

**Note:** Depending on the source and target system, it is not always possible to change the layout scale. For example, when you export data from Allplan, the current drawing file scale is displayed and cannot be altered.

### Resizing factor

You can use this to enlarge ( $>1$ ) or reduce ( $<1$ ) coordinates and length values in the data being converted. This parameter is always available. For more information, see Resizing factors.

## General information on assignments

Assignments let you define how properties in the source system are mapped in the target system. For example, you can define the arrangement on layers or the assignment of colors and line types.

Allplan automatically assigns properties in the source system to properties in the target system. If you have activated **Allow incomplete assignments** in the **Source File for Conversion** dialog box, not all of the properties have to be assigned in order for the transfer to take place. If you want to change an assignment manually, you can do so in the **Configuration for Conversion** dialog box. To activate the dialog box, click **Modify** in the **Import** or **Export** dialog box.

Properties that are unassigned are marked by an asterisk (\*) beside the tab name. Click the tab.

You can quickly see which properties have not been assigned in this tab by activating **Show unassigned only**.

The assignments can be saved in configuration files. The program ships with standard configuration files for the most important systems. You can also create your own configuration files, however. For more information, see Using configuration files.

## Using configuration files

A configuration file is where the assignments between elements in the source system and those in the target system are saved. The program ships with standard configuration files for the most important systems. You can also create your own configuration files, however.

### Standard configuration files

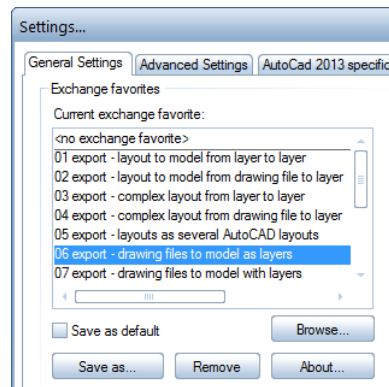
The program comes with standard configuration files for the most important systems. The standard configuration files are files tailored to the conversion requirements of the systems involved. They are defined by special names that indicate the direction of conversion and the systems. (For example, the standard configuration file for conversion from Allplan to AutoCAD is: `nx_ALLFT_AutoCAD.CFG`).

You can also create your own configuration files.

## Using favorites for exchange

Exchange favorites help you define and apply import and export options. By providing optimum default settings, exchange favorites considerably facilitate the process of exchanging data. Allplan 2018 provides favorites for all common exchange operations. An exchange favorite includes special import settings and export settings.

You can choose from 9 export favorites and 8 import favorites. Exchange favorites are predefined files (\*.ntb). Click the **About...** button to display a brief description of the currently selected favorite.



## Using prototype files

A **prototype file** is a file in which specific defaults and resources (e.g. layer names, line types) are saved. During export, these resources are displayed in the **Configuration for Conversion** dialog box and you can make assignments.

This can be very useful when the layer names must be returned to AutoCAD as they are. So that the definition in this file is presented, the file must include at least one element with these properties (pen, line, color, pattern etc). You can also use the original file as a prototype file. You have already imported this file to Allplan. Prototype files can only be used for exporting data.

**Note:** Prototype files are not compatible with earlier versions: If you want to export data to AutoCAD 2000, you have to use an AutoCAD 2000 prototype file (i.e. at least AutoCADV2000.dwg).



## Exporting bitmap areas, bitmaps and scanned images

Bitmap areas and scanned images are always transferred as complex elements; they cannot be exploded. Bitmap areas and scanned images transferred as complex elements are created as a `.bmp` file and must be transferred together with the `.dxf` / `.dwg` / `.dgn` file. When you re-import the `.bmp` files into Allplan, these files are imported as bitmap areas. Bitmaps inserted as bitmap links are not exported.

**Note:** Bitmap files can only be exported to `.dgn` when they are exploded, which means that you cannot export scanned images.


**The following properties of bitmap files are transferred:**

- The size and angle of rotation
- Information on transparency
- The bitmap file itself

**The following properties are not taken into account:**

- The color of transparency and tolerance
- The shearing angle
- Colors of bitmaps cannot be assigned. The original colors are always used.

## General information on exporting layouts

Using the  **Export Layouts** tool in the **Layout** module, you can export a layout and the documents therein as a DXF/DWG/DGN file. Two options are available:

- **Resolve and transfer layouts:** This option unlinks the documents from the layout, writing all data to a single file. Select this option if you want to achieve as identical a layout as possible in AutoCAD.
- **Transfer layouts as complex elements (not resolved):** This option keeps the link between the documents and the layouts. When you export to AutoCAD model space, the program creates a separate file for the layout itself and for each document placed in the layout. When you export to AutoCAD paper space, the program creates only a single file. Select this option if you want to process the layout in AutoCAD.

To select one of these options, click **Options...**, open the **Advanced Settings** tab and enable or disable the **Layouts/ XRef files** or **Convert XRef to smart symbol** option in the **Explode compounds** area.

The following table shows the major differences between these two options.

	Resolve and export	Export as complex elements
<b>File(s) created</b>	<p>A single file.</p> <p>If <b>Layouts / XRef Files</b> is selected: Each document becomes a group.</p> <p>If <b>Convert XRef to smart symbol</b> is selected: Each document becomes a block.</p>	<p>Export to model space: The program creates a main document for the layout and a separate file as an external reference (XRef) for each document. The individual documents are always created as .dwg-format files.</p> <p>Export to paper space: The program creates a single file; each document becomes a movable viewport.</p>
<b>Exploding elements</b> (in documents)	Always resolved	Depending on the setting in the <b>Explode elements</b> area
<b>Exploding elements</b> (in layouts)	Depending on the setting in the <b>Explode elements</b> area	Depending on the setting in the <b>Explode elements</b> area
<b>Filtering elements</b> (in documents)	 <b>Print Layouts</b> tool: Switch off the corresponding options on the <b>Printer</b> tab in the <b>Selection</b> area, <b>Elements to print -&gt; Set</b> , and select the <b>Currently visible data</b> option for export.	Depending on the setting in the <b>Transfer elements</b> area
<b>Filtering elements</b> (in layouts)	Depending on the setting in the <b>Transfer elements</b> area	Depending on the setting in the <b>Transfer elements</b> area
<b>Consider clip boundaries</b> (using layout windows, for example)	<p>Yes (regardless of the setting made in <b>Transfer</b>)</p> <p>If <b>Convert XRef to smart symbol</b> is selected:</p> <p>If a document is placed several times but with different clip boundaries, it may happen that the document is always placed in a clipped or unclipped state in AutoCAD.</p>	<p>Export to model space: No</p> <p>Export to paper space: Yes</p>
<b>Paper space – model space</b>	Model space	Depending on the setting on the <b>AutoCAD specific</b> tab

# IFC interface

IFC stands for **I**ndustry **F**oundation **C**lasses. IFC define an object-oriented data model for all those involved in the building process. It can be used by all applications that support IFC. It facilitates the accurate exchange of data between these applications. IFC are defined and developed by the IAI.

IFC provide an intelligent description of building elements: In addition to the building topology, which is transferred to the building structure, the IFC interface imports the associated components with all associated data and information (type, geometry, material properties, layout properties and element attributes).

The IFC model exported from Allplan supports the intelligent description of Allplan's architectural elements. In addition to the building topology derived from the building structure, the IFC interface exports the associated components including all data and information (geometry, material properties, layout properties and attributes managed in the **Attributes** area).

**Allplan provides the following tools for exchanging IFC data.**

-  Import IFC Data
-  Export IFC Data
- Export IFC 2x3 Data

Allplan supports the following file formats: IFC 2x3, IFC XML 2x3, IFC 4 and IFC XML 4.


# Importing and exporting PDF data

Being independent of provider and operating system, the PDF format supports the flow of information between all those involved in a project. Using Adobe technology, you can create data in PDF format straight from Allplan. In addition, you can import PDF files.

## Import





You can import 2D and 3D PDF data to Allplan by selecting **Import** in the dropdown list of the Allplan icon or on the **File** menu.

This tool transfers lines, text, bitmap areas, layers and 3D objects.

Detailed information on  **importing PDF data** is provided in the Allplan help.

## Export

You can save Allplan data as PDF files in various places:

- **Export** in the dropdown list of the Allplan icon or on the **File** menu  
Detailed information on  **exporting PDF data** is provided in the Allplan help.
-  **Print Preview** in **drawing file edit mode**  
Detailed information on the **print preview** is provided in the Allplan help.
-  **Export PDF Data** in the **Layout** module  
Detailed information on  **exporting PDF data** is provided in the Allplan help.
- **Export 3D PDF...** on the shortcut menu of an **animation window** exports the 3D model.  
Detailed information on **Exporting 3D PDF data** is provided in the Allplan help.

# Exchange formats for Allplan

General Import formats	Extension	Version, comment
DXF, DWG, AutoCAD data	.dxf, .dwg, .dwt, .dxb	Version 2013 or earlier (AutoCAD 2017 or earlier), including ACIS support
DGN, MicroStation data	.dgn	Version 8 (ODA v 3.02)
PDF, PDF/A	.pdf	Vector data and pixel data
3D-PDF	.pdf	U3D format (ECMA-363 1st edition)
IFC	.ifc, ifcXML	Versions 2x3, 4
CINEMA 4D	.c4d	Versions 12.5 to 18
SketchUp	.skp	Versions 6 to 2017
Rhino	.3dm	Versions 1 to 5
STL	.stl	3D printer format
VRML	.wrl	Version 2
XML	.xml	For example, CINEMA R9.1 and later
Hpgl/2 print files	.plt, .hp, .hpg, .hpl, .prn	

Coordinate values, terrain models	Extension	Version, comment
Coordinate values, location line values, curve values	.re1, .reb, .re2, .asc, lin	Including lines with attributes
Terrain model: longitudinal profiles, transverse profiles	.lpr, .qpr	
LandXML	.xml	Versions 1.0 to 2.0

Engineering	Extension	Version, comment
FEM data (FRILO Software GmbH, SCIA *)	.asf	Like InfoGraph GmbH, Cubus AG, mb AEC Software GmbH, Tornow-Software, PCAE GmbH (4H-ALFA), Graitex, Autodesk, SCAD
Reinforcement data	.a	
CEDRUS elements	.sin	Cubus finite elements
Bridge and civil engineering modeler	.nkb	

General export formats	Extension	Version, comment
DXF, DWG, AutoCAD data	.dxf, .dwg, .dwt, .dxb	Versions 12 to 2013 (AutoCAD 2017 or earlier), including ACIS support
DWF – AutoCAD data	.dwf	Versions 6 to 7
DGN, MicroStation data	.dgn	Version 8 (ODA v 3.02)
PDF, PDF/A	.pdf	Including layers ("planes"), from drawing files and layouts
3D-PDF	.pdf	U3D format (ECMA-363 1st edition)
IFC	.ifc, ifcXML	Versions 2x3, 4
CINEMA 4D	.c4d	Version 12 (can be read in R18)
SketchUp	.skp	Versions 6 to 2017
CPIXML	.cpixml	RIB iTWO versions 2.3 and 3
Rhino	.3dm	Version 5
VRML	.wrl	Version 2
Collada	.dae	Versions 1.4.1 and 1.5.0
Google Earth	.kmz	Version 2.1
STL	.stl	3D printer format
Universal 3D	.u3d	ECMA-363 1st edition format

Hpgl/2 print files	.plt, .hp, .hpg, .hpl, .prn
SVG	.svg
Autodesk 3ds Max	.3ds

Reports	Extension	Version, comment
Excel	.xlsx	2010
Word	.docx	2010
PDF	.pdf	

Layout attributes	Extension	Version, comment
XML	.xml	For EDM connection, for example Rivera

Coordinates, terrain models	Extension	Version, comment
Coordinate values, location line values, curve values	.re1, .reb, .re2, .asc, lin	Including lines with attributes
Terrain model: longitudinal profiles, transverse profiles	.lpr, .qpr	

Building physics, thermal insulation	Extension	Version, comment
Kern Dämmwerk	.cdk	



Engineering	Extension	Version, comment
Frilo PLT, SC, GEO	.asc	
CEDRUS elements	.sin	Cubus finite elements
Bending machines	.abs	Version 2
BAMTEC file	.tec	BAMTEC robot

Bitmap files	Extension	Version, comment
JPEG	.jpg, jff, jtf	Including geo-referenced information (import)
TIF	.tif	Including geo-referenced information (import and export)
BMP	.bmp	
EPS	.eps	
TGA	.tga	
PCT	.pct	
PCX	.pcx	
PNG	.png	
PSD	.psd	

Interfaces to Windows	Comment
OLE	Integrating or linking Word, Excel, PDF documents
Clipboard	Allplan data, text, bitmaps and so on



Programming interfaces	Comment
NOI	Interfaces for add-ons For Scia, ICS, AX3000, On-Site Survey, for example





# Printing Layouts


## Output options

Allplan 2018 provides two options for printing data:

- You can use  **Print** and  **Quick Print** to print results at any time. Often, you want to have the current edit status on paper without having to assemble a layout first. This way, you can also print details or sections of floor plans.


To create the printout, Allplan uses the settings (e.g. margins, header, footer, construction lines) defined in  **Print Preview**. You can also set a scale, define the section to be printed and set up the printer.

If you want to print the current contents of the viewport without defining print settings beforehand, select the  **Quick Print** tool in the dropdown list of the Allplan icon or on the **File** menu. The print job is immediately sent to the printer specified in print preview.

If you want to select the printer, click  **Print** in the dropdown list of the Allplan icon or on the **File** menu.

- You create the finished layouts using the tools in the **Layout** and **Crop Layout** modules. You define the sheet size and scope of the layout and place the layout border and title block. Using print sets, you can control what is printed. When printing layouts, you can select the elements to be printed and the output device.

# Print preview

The printout will be an exact match of what you see in  **Print Preview**. You can define printer settings and margins, set the scale, add headers and footers and specify how you want to display the elements. In addition, you can change the paper size and orientation of the page.






This tool works with all printers for which you have installed and configured a Windows printer driver.




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## To open and use print preview

- 1 Click  **Print Preview**.

The **Print Preview** palette opens. Everything else closes.

- 2 Define the settings for print preview in the **Settings**, **Margins** and **Display of elements** areas of the **Print Preview** palette (see "'Print Preview' palette" on page 257).
- 3 Use the tools on the viewport toolbar to define the section you want to display.
  -  **Zoom All** or double-clicking with the middle mouse button adjusts all the elements in the loaded drawing files to the maximum printable area of the paper.
  -  **Zoom Section** zooms in on a section. To do this, press and hold down the left mouse button and open a selection rectangle around the elements you want to zoom in on.
  -  **Previous View** and  **Next View** take you from section to section.
  -  **Rotate** lets you rotate the section 90° counterclockwise click by click. This does not change the scale set.
  - You can move the elements dynamically by pressing and holding down the middle mouse button.
  - **Scale** lets you set the display scale. It is identical to the value in the palette.

- 4 Go to the bar at the bottom of the palette and click
  -  **Load favorite** to retrieve (see “Loading settings for print preview” on page 260) a file with the settings of the **Margins** and **Display of elements** areas.
  -  **Save as a favorite** to save (see “Saving settings for print preview” on page 261) the settings in the **Margins** and **Display of elements** areas to a file.
  -  **Export as PDF** to save the elements in print preview to a PDF file. Define parameters for PDF export in the **PDF Export** palette and click **Export**.  
Click **Close** to return to print preview without creating a PDF file.
  - **Print** to print the elements in print preview using the printer you specified.
  - Click **Close** to exit print preview and to return to the workspace. You can also press ESC to quit print preview.

## “Print Preview” palette


Using the **Print Preview** palette, you can select and set up the printer, define the width of the margins and the width and contents of the header and footer. In addition, you can specify how the elements appear in the printout and make a number of additional settings. You can also save the settings for print preview (see “Saving settings for print preview” on page 261) and load the settings you saved (see “Loading settings for print preview” on page 260).

**Note:** When you open the palette, the program uses the most recent \*.ppv file.

### Settings

You can select and set up the printer. When you open print preview for first time, the program automatically uses the Windows default printer.

## Printer

Select the output device in the list box. Click the  **Settings** icon to specify the properties (for example, paper and color options) of the selected output device or the raster driver set.

## Format

Select the paper size in the list box. The program reads the values of the printable area from the driver, displaying them for information.

## Number of copies

Specify the number of copies.

## Orientation

Choose the orientation:  **Portrait** or  **Landscape**.

Depending on the orientation you select, the program reads the minimum values for the margins from the driver and corrects the values if this is necessary.

In order to calculate the maximum printable area, the program subtracts the width of the margins and the width of the header and footer from the printable area you define by choosing the **Format**.

## Margins

Define the width of the margins and the width of the header and footer. You can also drag the margins to the width you need.

## Top, Left, Right, Bottom

Set the width of the margins. The minimum values depend on the printer specified. The program automatically corrects these values if this is necessary.

## Header, Footer

Define the width of the header and footer from the margin.

## **Reset**

With this button, you can reset the margins back to their defaults. The default values of the margins depend on the printer specified. The default value for the header is 10 mm and that for the footer is 20 mm.

## Display of elements

Define how the elements of print preview look in the final printout and specify the contents of the header and footer. In addition, you can define where the elements are displayed in print preview after you have started it.

### Scale

Define the scale. You can use any scale. Just click in the box, type in the scale and press ENTER to confirm.

### Print construction lines

Select the **Print construction lines** check box to include elements drawn as construction lines in printouts.


### Thick line

Select the **Thick line** check box to print lines with their actual width. Otherwise, the program uses the same, thin line for all the lines in the printout.

### Active elements black

Select the **Active elements black** check box to print all the elements in active drawing files in black. Otherwise, the colors on screen match those in printouts (if you use a color printer).

### Passive elements black

Select the **Passive elements black** check box to print all the elements in reference drawing files in black (regardless of the setting of the **Use same color for elements in reference drawing files** option ( **Options – Desktop environment, Display page – Drawing file and NDW window area**)). Otherwise, color printers use the color visible on screen to print elements in reference drawing files.

### Show margins

Select this check box to display and print a border that indicates the margins and the area for the header and footer.

### Header and footer

Select this check box to display and print the header and footer. You can define the contents of the header and footer in the **Header and footer** palette, which you can open by clicking the **Set** button.

### Default position

Specify where you want to display the screen contents in print preview after you have started it.

- **Bottom left**

You can see the screen contents at bottom left.

- **Centered**

You can see the screen contents in the middle.

- **Current view**

The view in print preview matches that in Allplan.

### Display when starting

Define the scale for starting print preview. This setting will not apply until you restart print preview.



With the **As section on screen** setting, the program sets the scale in such a way that the entire contents of the workspace are visible. The program uses either the width or the height of the workspace.

## Loading settings for print preview

You can load the settings for print preview from a file in **\*.ppv** format.

---

### To load print preview settings you saved beforehand

- 1 Click  **Print Preview**.
- 2 Click  **Load** favorite at the bottom of the palette and select the **\*.ppv** file.

The program reads the settings of the **Margins** and **Display of elements** areas from the **\*.ppv** file.

---




## Saving settings for print preview


The program saves the settings for print preview to a file in \*.ppv format. When you open the palette, the program uses the most recent \*.ppv file.

---

### To save print preview settings

- 1 Click  **Print Preview**.
- 2 Specify settings in the 'Print Preview' palette (see "'Print Preview' palette" on page 257).
- 3 Click **Print** or **Close** at the bottom of the palette to save the settings to the current \*.ppv file.

Or:

Click  **Save as a favorite** and specify the name of the file and the folder.

The program saves the settings in the **Margins** and **Display of elements** areas to the \*.ppv file.

---



# Assembling and outputting layouts

Using **Layout Editor**, you can set up layouts using documents and filesets prior to printing. You can create up to 9,999 layouts per project. When you switch to **Layout Editor**, you can see the page on which you will assemble the layout and, if activated, the border of the printable area. The exterior boundary of this border defines the paper size of the output device, while the inner boundary defines the maximum printable area (printable area minus device margins). For more information, see Components of a layout (on page 268).









You place documents and drawings on the page, which is displayed as a white area with a shaded border. You do not place actual documents but a reference to the document or drawing file number. If, for some reason, you move one of these files to a new number after you have assembled the layout and before you send it to the printer, you need to replace the original document. As an alternative, you can delete it and place the new document in the layout.

You cannot use **Layout Editor** to edit data in documents. However, you can place text, dimension lines and primitives in the layout. These elements exist only in the layout; they are not included in the documents. To modify data, switch back to document edit mode.

General approach:

- 1 Select the **Layout Editor** task or click  **Layout Editor** to switch to **Layout Editor**.
- 2 Use  **Set Up Page** to specify the format, orientation and the margins of the page. Start with the properties of the page and select the layout border, title block and background.  
The layout border matches the size of the page. You can specify the distance between the title block and the layout border. When you change the page, the size of the layout border and the position of the title block adapt automatically.



**Note:** As an alternative, you can also place the layout border and title block as discrete layout elements (see steps 3 and 4). In this case, Allplan updates neither the layout border nor the title block to reflect any changes you make to the page orientation or the page format.

- 3 If you have not selected the layout border along with the page, place it now using  **Layout Border**. In this case, you can place a layout border of any size on the page. If you want to include the outer boundary of the layout border in the printout, you need to position the layout border within the printable area of the page (page format minus margins).
- 4 If you have not selected the title block along with the page, you can use the  **Label** or  **Legend, Title Block** tool to label the layout.
- 5 Use  **Layout Element** or  **NDW Layout Element** to place documents and filesets within the layout border.
- 6 Place text, dimension lines and primitives in the layout. (This is optional.)
- 7 Use  **Print Layouts** to print the layout.  
You can specify the output device, its printable area (printable area minus device margins) and a print profile.
- 8 If you have not yet created a PDF file of the layout using  **Print Layouts**, you can do this now by clicking  **Export PDF Data**.

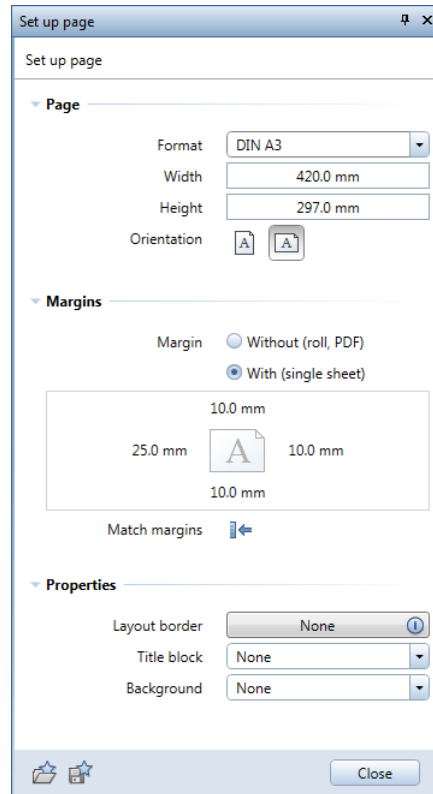
**Note:** Save the label at a reference scale of 1:1.

## Printer-independent page format

You can specify the page format independently of the printable area of the printer. The advantage of the printer-independent page format is that you can set specific layout formats or special formats even if you do not have a suitable device or driver. This way, students can create DIN A0 layouts, for example.


Due to the separate settings for page and printable area, it is essential that you use the  **Set Up Page** tool to specify the format, orientation and margins of the page. The page represents the area of the layout. You can select a layout border and title block as properties of the page. If you do not assign a background to the page, it is displayed as a white area with a shaded border and light gray margins. When you make settings for the output device using the  **Print Layouts** tool, make sure that you select the printable area so that the page is completely within the printable area. The

documents and elements that are within the printable area of the page and output device are included in the printout.




Two options are provided for defining the margins:

- Select **Without** margin to output the layout to roll paper or in PDF format. All margins are automatically set to **0.00 mm** and cannot be changed.  
With this setting, the page is always placed so that its bottom left corner coincides with the bottom left corner of the printable area of the printer specified in the **Print Layouts** tool. This ensures that the printout includes the entire page as far as the outer border.
- Select **With** margin to output the layout to a single sheet of paper. Define the individual margins. If you use Windows drivers for the current layout, you can click the button to match the de-

vice margins of the printer specified in the  **Print Layouts** tool. With this setting, the page is always placed so that its bottom left corner coincides with the bottom left corner of the single sheet. If a layout border is defined along with the page, the device margins may prevent the outer border from being printed.

**Note:** The values you enter for the margins appear red if they are smaller than the associated values of the output device. When you close the tool, the program automatically corrects the margins.

## Using Windows drivers or Allplan vector drivers

You can use Windows drivers or Allplan vector drivers in **Layout Editor**. If you want to print straight from Print Preview or if you want to use the  **Print** tool, you must use Windows drivers. The same applies to layouts with “new” element types (OLE objects, bitmap areas, fills with gradients and transparency).

As the printer manufacturers offer drivers for all current printers and Windows drivers can print all elements created in Allplan, we recommend that you generally use Windows drivers.

### Windows drivers

If you use Windows drivers, you can access any printer that has been configured under Windows just as you would from any other Windows program. You can select the output devices straight from Allplan and make printer and document settings.

If you want to print complex, large-format layouts, you can use raster drivers for HP DesignJets and compatible printers.

As OLE objects, bitmap areas, fills with gradients and transparency are being used increasingly, Windows drivers are becoming more and more important.

## Output channels

If you work with Allplan vector drivers, you can use the output channels defined in the Services application. At least one output channel needs to have been defined in the **Services** application.

Allplan vector drivers are very useful if you want to use old printers for which Windows drivers are no longer available.

# Allplan raster drivers

Allplan has its own raster drivers for HP DesignJet printers that support Hewlett Packard's (HP's) printer language called RTL (Raster Transfer Language) or that use HP's Raster Language Library (RasterLib). These printer drivers are especially useful should you want to print large-format drawings and layouts. Apart from being very reliable, raster drivers speed up printing and produce high-quality printouts. You can only use a raster driver if a Windows printer driver of the same printer type is installed.

The **HP-RasterLib** driver set optimizes the use of HP's new printer series. This ensures optimum usage of all the options provided by the devices. Compared with RTL drivers, printing is more precise. This driver set allows you to specify the level of quality depending on the paper type set. Various levels are available for each paper type. In addition, there are a number of advanced options, for example, economy mode. The options that are actually available to you vary depending on the driver selected.

**Note:** Both an RTL driver and a RasterLib driver are available for some devices. You can generally use either driver; however, output can differ due to the color profiles used. You should therefore always use the same driver for a project.

When you have selected a raster driver, the Windows printer driver is no longer used to create the output data for the printer. But it is still used to query the properties of the printer. These include paper size, print resolution, print quality and hardware interfaces.


## Using raster drivers


If you want to use an Allplan raster driver, you must connect this raster driver with a Windows printer driver.

**Note:** You can do this only with devices of the same type. For example, you can connect an "HP DesignJet 800 42" Windows driver with the Allplan "HP-RTL DesignJet 500/800" or "HP-RasterLib DesignJet 800 42" raster driver. However, it would be useless to connect an Epson Stylus Windows driver with the Allplan "HP-RTL DesignJet 500/800" raster driver.

---

### To use a raster driver

- 1 In **Layout Editor**, click  **Print Layouts**.
- 2 Select the printer for which you want to use the raster driver in the **Settings** area on the **Printer** tab.
- 3 Select the **Allplan raster driver** option and choose the raster driver appropriate to the selected printer in the list box.



**Note:** To define the properties of the Allplan raster driver, select the **Allplan raster driver** option and then click the  **Settings** icon to the left of **Printer**.

---

## Defining raster driver properties

---

### To define the properties of the raster driver

- You have selected the **Raster driver** option in the **Settings** area on the **Printer** tab and chosen the raster driver you want to use.
  - 1 In **Layout Editor**, click  **Print Layouts**.
  - 2 Go to the **Settings** area on the **Printer** tab and click  **Settings** to the left of the selected printer.
  - 3 Define the properties for the raster driver on the **General** tab and on the **Colors** tab.
-





# Placing portions of a document in a layout

There are several ways of placing just sections of a document in a layout rather than the entire document itself.

You can use the  Layout Window tool.

This is usually the easiest approach:

- As opposed to layout sections, it is not necessary to create an original layout from which to cut a section to create a new layout.
- Additional documents can subsequently be inserted in a layout window.

You can use detailing windows.

Use this option to

- Display selected elements in the section or in the original, depending on the situation.
- Work in document mode in a section.
- Use the section to hide parts of the original.

You can use the tools in the Crop Layout module to “cut” the oversize layout into a number of smaller sections.

Use this option if



- You want to create layouts in addition to the original one.
- You do not want the section to be perpendicular to the layout.
- You want to create a site plan-specific layout border.

# Sequence in which elements print

You need to distinguish between the sequence in which elements within a document print and the sequence in which documents and other elements in a layout print. The settings you make for the printer or the Windows driver also have an effect on the sequence.

## Printing sequence within a document

- Sequence in which elements are created or modified: By default, elements are drawn based on the sequence in which they were created or modified. The element you created or modified most recently is always on top, hiding the other elements with the same sequence value.
- Display sequence: You can define the sequence in which elements are displayed by entering a value between -15 and +16. The elements are displayed on screen in accordance with the value set: The greater the value, the further up the element. In other words, the element with the greatest value is on top of all the other elements. If several elements have the same value, they are displayed based on the sequence in which they were created or modified. You can generally place surface elements in the background.

New elements are given fixed default values, which you can define using the  **Options, Desktop environment** page, **General** area, **Sequence defaults** button. You can modify these values. To do this, right-click an element and choose **Format Properties - Sequence** on the shortcut menu. As an alternative, go to the **Edit** area or menu and select  **Modify Format Properties - Sequence**.






Elements from V2003 with the **Always on Top** format property get the value **+12**.

- Surface elements (hatching, patterns, fills, bitmap areas, OLE elements, XRefs): You can specify whether surface elements behave like other elements (i.e. printing based on creation sequence or display sequence) or whether they are to stay in the background. In the latter case, the creation sequence or display sequence defined only controls the sequence in which the surface elements


**Tip:** To bring an element to the top: Move the element and specify the same point for **from point** and **to point**. Allplan then "re-creates" the element, placing it on top of the other elements.

are displayed among themselves.

Specify the following settings if you want to print surface elements in the background so that they are hidden (covered) by design entities:

- To print straight from layout editor: Select the  **Print Layouts** tool and open the **Printer** tab. Go to the **Selection** area, click the button beside **Elements to print** and select the **Surface elements in background of each document** option.
- To print using  **Print**: Open the  **Show/Hide** tool and select the **Surface elements in background** option.
- Scanned images:
  - To print straight from layout editor: Scanned images always print in the background (within a drawing file).
  - To print using  **Print**: Scanned images print in the foreground or background depending on the setting in  **Show/Hide**.

### Printing sequence with several documents

- Documents are printed in the sequence in which they have been added to the layout. In other words, those placed first are printed first and are hidden (covered) by the documents added later. To place documents with fills and scans in the background, you need to place them in the layout first.
- When placing drawing files as a fileset: The sequence in which drawing files are printed depends on their number. In other words, drawing files with a higher number hide those with a lower number.
- You can use the  **List Layout Elements** tool to change the document sequence later. Documents that appear at the top of the dialog box hide those below.

### Printing sequence with documents and other elements in the layout

First, the program prints the contents of the documents and then the elements you placed directly in the layout (title blocks, symbols, fills). In other words, these elements placed directly in the layout hide the contents of the documents.

To avoid this, you need to save these elements in a separate document.

**Note:** Display on screen and PDF export take into account the display sequence of elements. Documents placed are given a value of -13, which cannot be modified. Consequently, documents placed in a layout cover elements with a display sequence of -14 and 15, which are placed directly in the layout. The **Surface elements in background** and **Surface elements in background of each document** options do not affect elements placed directly in layouts.

### Settings at the printer

The settings vary depending on the printer you use (HP, Océ etc.). Please refer to the documentation that came with your printer. To optimize the results, you may have to change the settings several times.

Example (HP DesignJet 650C): **Pen parameters – Overlay**

Example (HP DesignJet 800): **Setup menu – HP-GL/2 setting – Overlay**

- **Off** (default setting): Elements hide one another in accordance with rules 1–3.
- **On:** Elements blend (fills will become mixed colors; lines will be visible in fills). Rules 1–3 do not apply!

Example (Océ 9700, Job Director): **Data format – Language-specific settings – Controller**


- **Overlay:** Elements hide one another in accordance with rules 1–3.
- **Blend:** Elements blend (fills will become mixed colors; lines will be visible in fills). Rules 1–3 do not apply!

### Settings you can make for the Windows driver

Most Windows drivers (e.g. for HP DesignJet 650C) automatically deactivate certain printer settings (e.g. the **Overlay** function). In most cases, you cannot use the driver to control these functions. Use output channels instead.

# Printing color layouts

## Requirements for printing layouts in color:


- A color-capable printer or large format printer at which the **Color** option (if available) is switched on.
- A driver that supports color output (for example, the Allplan vector driver HPCOL\_DESIGNJET).
- With Windows drivers: Color output is selected in the printer properties (**Print Layouts** tool – **Printer** tab – **Settings** area –  **Settings** – for example, **Paper/quality** tab).
- The **Print in color** option is selected in the **More settings** area of the pen and color assignments (**Print Layouts** tool – **Print profile** tab – **Pen and color assignments** option – **Set** button).

## On-screen colors and colors in the printout


Whether the colors on screen match those in the printout depends on the settings for pen and color assignments (**Print Layouts** tool – **Print profile** tab – **Pen and color assignments** option – **Set** button). Each color of Allplan's 15 pens or of the 256 basic colors can be assigned a printout color there.

If **Pen and color assignments** are not selected or the existing colors are not redefined, the colors on screen match those in the printout.

The color assignments that are actually used depend on the setting of the **Color stands for pen** option:


- When **Color stands for pen** is selected: The element colors are based on the colors that are assigned to Allplan's pens 1 to 15 in the  **Options – Desktop environment – Pen colors**
- When **Color stands for pen** is not selected: The element colors are based on the colors that were assigned to the elements when they were created or modified.

## Printing fills and bitmap areas in color

Whether color printers print fills and bitmap areas in color or in shades of gray depends on the setting of the **Fills and bitmap areas, grayscale** option on the **Print profile** tab in the  **Print Layouts** tool.


### Printing lines, text, dimension text in color


You can specify whether lines (and other 2D design entities such as text or dimension text) print in color, in shades of gray or in black.

Select the  **Print Layouts** tool, open the **Print profile** tab, select the **Print and color assignments** check box and click the **Set** button. In the **More settings** area, you can switch between **Print in color**, **Line colors using shades of gray** and **Line colors in black**. If you have not selected the **Fills and bitmap areas, grayscale** option in conjunction with the **Line colors, grayscale** or **Line colors, black** option, lines are displayed in shades of gray or black and white and fills are displayed in color. When set to **Print in color**, all elements (lines and fills) are displayed in color.


## Creating print files

Instead of printing your layout, you can create a print file. The data, which are otherwise sent directly to the output device and processed there, are written to a file which can be printed at any time.

The print file created can be sent to a printing service or you can print it later using  **Print HPGL File**. When creating the print file, make sure you have selected the printer on which the file will be printed later. The procedure is different depending on whether you use Windows drivers or Allplan vector drivers.

**Tip:** The  **Export HPGL File, Bitmap File** tool provides a comfortable way of creating print files, as you do not need to define printers or output channels for this tool.

## Using PDF files instead of print files


Instead of creating print files, you can save layouts as PDF files and print them later. To do this, you can use the  **Export PDF Data** tool.

Using this tool, you can save and archive one or more layouts or the elements displayed in print preview as a PDF file, which you can immediately open using the associated application. If you do not archive the data, this tool takes into account the transparency and layers set in Allplan 2018.

**Note:** You can also use the  **Print Preview** tool to output contents of layouts in PDF format.

---

### To save layouts or elements displayed in print preview as PDF files

- 1 Go to **Layout Editor** and click  **Export PDF Data** (**Layout Editor** task or **Create** menu).



Or:

Open  **Print Preview** and click  **Export as PDF**.

- 2 *Only if you have selected this tool in **Layout Editor**:*  
Select the layouts using the **Layout structure** in the **Select layouts** dialog box. Then click **OK** to confirm.
  - 3 Define settings in the **Export PDF Data** dialog box or in the **PDF export** palette. Then click **OK** or **Export** respectively.
- 

#### Notes:

- To show or hide layers, which are referred to as levels in PDF files, you require Adobe Reader, which you can download for free from <http://www.adobe.de/>. Layers that are not visible in the layout will not be transferred as levels to the PDF file.
- If you want to export fills with transparency or protect the layout against unauthorized copying, select the **Export document as a bitmap** option. However, this produces much more data, which may lead to problems sending or importing PDF files of large layouts.

- If you have not selected the **Entire layout contents** option in **Layout Editor**, the size and orientation of the pages in the PDF file will be based on the size and orientation of the current page. The program will create the elements that are within the printable area of the page, ignoring the printable area of the output device.
- When you select this tool in **Layout Editor**, the way the elements look depends on the settings in the  **Print Layouts** tool. This means that the look is defined by the elements selected for printing, the page format and the print settings specified on the **Print profile** tab.  
When you select this tool in print preview, the program uses the settings defined in the **Print Preview** palette.
- When you have selected several layouts in **Layout Editor**, the file name specified in the **PDF file** area will be used for the layout with the lowest layout number.  
The names for the other PDF files will be assigned automatically. In doing so, the program takes into account the setting defined for the name of the target file in the  **Options (Import and export page – DXF, DWG, PDF export area)**.
  - The **Use prefix** option has the following effect:

With unnamed layouts and the **Use prefix** option being active, the names of all PDF files get the prefix **Plan** followed by the number of the layout. Otherwise, the program uses the layout number for the file name.

With named layouts and the **Layout or drawing file number** option being active, the layout name acts as the prefix followed by the number of the layout.




# Using print profiles

Print profiles are the equivalent of templates in a word processing program. By assigning a print profile, you ensure that the layouts have a uniform appearance and are in line with office conventions or project conventions. Print profiles are saved as a file with the extension `.npp`.

**The following settings are saved in a print profile:**



- Pen optimization, use one pen only
- Pen thickness assigned to Allplan pens 1 to 15
- Colors assigned to Allplan basic colors 0 to 255
- Line display
- How color printers print fills and bitmap areas
- Gamma correction

Using the  **Print Layouts** tool, the Allplan administrator can create print profiles for the entire office. The program comes with a default configuration (`standard.npp`), which you can use as the basis. You can assign a print profile from any path to several selected layouts using the shortcut menu in the **Open on a project-specific basis: layouts** dialog box.


When printing layouts, you can select a print profile for every layout or you can choose not to use print profiles at all. This setting is saved with the layout and applies the next time you load the layout.

You can temporarily change the settings of the print profile for a single print operation. The next time you load the layout, the settings saved in the print profile will be used again.

When printing in batch mode, you can use a fixed print profile for all the layouts or you can use the print profiles saved with the individual layouts. In this case, you can make temporary changes in the print profile of the current layout. The global print settings are used for layouts without print profiles.

The print profile you select in the  **Export PDF Data** tool has a higher priority rating than the print profiles saved with the layouts; therefore, this print profile is used for all the PDF files that are created in batch mode. This setting is saved in the favorite file and can thus be used in conjunction with  **Allplan Exchange Layout Distribution**.

## Printing in batch mode

When you have selected several layouts for output using the  **Print Layouts** tool, Allplan always prints these layouts in batch mode.

If a Windows driver is set for the current layout, you can specify the output device, paper format and print profile you want to use. This way, you can send some layouts straight to a printer and create print files for the other layouts.

If an Allplan vector driver is set in the current layout, this driver is used for all the layouts that are part of the batch. Depending on the selected setting, all layouts are sent straight to the printer or several print files are created.

### Printing several layouts with Windows drivers (batch mode)


As opposed to printing in batch mode using Allplan vector drivers, Windows drivers allow you to specify the output device, paper format and print profile for the selected layouts.

If the defined page format is not available as a paper format for the output device, you can use similar formats.

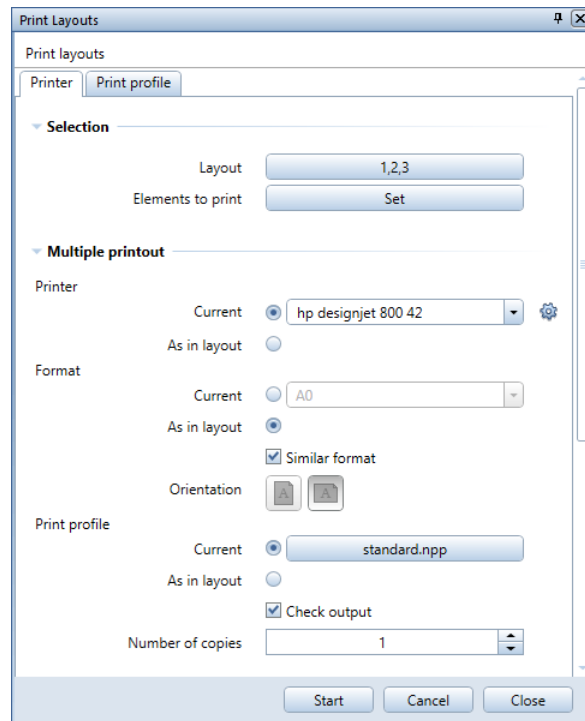
Printing in batch mode can be very time-consuming. It is therefore a good idea to check the settings before you start printing so that you can identify and solve potential problems in advance.


---

#### To print several layouts with Windows drivers

- 1 Go to **Layout Editor** and click  **Print Layouts** (Layout Editor task or **Create** menu).
- 2 Select **Windows driver** in the **Settings** area on the **Printer** tab and choose the output device you want to use.

- 3 Click the button to the right of **Layout** in the **Selection** area and use the **Layout structure** to select the layouts you want to print to file.
- 4 Specify the output device, paper format and print profile in the **Output multiple times** area.



- 5 If you want to write all the layouts to a print file and you have not explicitly installed the driver using the **FILE** option, select the **Print to file** option in the **Output mode** area.
- 6 Select the file type and specify the path where you want to save the print files. (Allplan proposes the folder set in the  **Options** on the **Desktop environment** page, **Save/load** area, Folders for saving option; you can accept this folder.)

- 7 Enter a file name and click **Save** to confirm.

Allplan uses the specified name plus the start number **0001** for the first unnamed layout. The program creates the names for other unnamed layouts using numbers in ascending order. For example, the name of the print file is **Layout**. So the first unnamed layout gets the name **Layout0001**; the other unnamed layouts are then named **Layout0002**, **Layout0003** and so on. If a layout has a name, Allplan uses this name for the name of the print file.

- 8 Click **Start** to conform the settings and to start printing.
- 9 You can see the file names proposed for each layout in the **Print file** dialog box. To change a file name, click it.

The test log provides information on possible printing problems.

- 10 Cancel the operation, solve the problems and start again.

When all the layouts have been printed, an output log is displayed.

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