Allplan 2014
Building Costs and Construction Cost
Manual

Integrated solutions
for the construction industry

Welcome!

Welcome to **Allplan Building Cost Management**, Nemetschek's integrated program for tendering, awarding and invoicing.

Thank you for choosing Allplan Building Costs and Allplan Construction Cost, which allow you to manage all building costs quickly, easily and reliably - from cost calculation and tendering through to awarding and billing.

Allplan Building Costs assists you in any phase in the entire process encompassing file generation to price comparison list through to invoicing. Integrated interfaces ensure that you can easily import predefined data as well as exchange data with Nemetschek's CAD systems and other tender, contracting and costing products. The program offers you all the necessary tools to control and calculate costs and to structure costs in DIN 276-compliant cost groups. In addition, you can create room schedules and draw up accurate cost estimates based on DIN 276 or other methods.

Allplan Construction Cost assists you in the process of monitoring projects, ranging from release for payment to adjustment of costs to unexpended warranties.

We wish you fun and success with Allplan BCM!

Your Allplan BCM Team
Nemetschek Allplan Systems GmbH, Munich

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General Information

This chapter provides detailed information on:

- The system requirements the computer must meet to ensure proper operation of Allplan BCM

- The sources of information provided by the Allplan BCM user documentation and other media

- The contents of this manual

- The basic terminology, conventions and abbreviations used in the Allplan BCM user documentation

- What to do if you need assistance

Allplan Building Costs System Requirements

The requirements for running Allplan Building Costs are basically the same as for any of the Microsoft Windows versions listed in the table below.

If your computer is running smoothly under one of these Windows versions, you will have no problems installing and working with Allplan Building Costs.

Basic rule: The higher the hardware performance, the more effectively you can use Allplan Building Costs!

Allplan Building Costs requires the following minimum system configuration:

System component ...	recommended ...
Processor	**Intel Core 2** (or compatible)
RAM	**2 GB**
Hard disk space	**5 GB**
Screen resolution	**1280 x 1024**
Network card (for networked workstations)	**100 MBit/s**
Software (standard)	**Windows 8** or **Windows 7, SP 1** or **Windows Vista, SP 2**
Software (terminal server)	**Windows Server 2012** or **Windows Server 2008 R2, SP 1**

The Allplan Building Costs Documentation

The Allplan Building Costs documentation consists of the online documentation (manual in PDF format) and the online help.

You can use either component to become familiar with Allplan Building Costs. Choose the one that suits you best.

Online documentation

The online documentation consists of a set of manuals in PDF format. In contrast to printed manuals, these "electronic manuals" offer the advantage that you can access the complete contents of the user documentation for Allplan Building Costs straight from your workstation anytime.

You can open the online documentation in two ways: either by clicking **Manuals** on the program's **Help** menu or straight from the Allplan DVD by selecting **Documentation** in the **DVD Content** column and clicking **Allplan BCM**). Whichever method you choose, you need Adobe Acrobat Reader to open the files.

This manual is designed to give you a quick and practical introduction to Allplan Building Costs. Therefore, it conveys the essentials in a compact form. As the key focus of this manual is on the basics, the individual topics are outlined only briefly. Solutions for specific problems and descriptions of the settings and parameters can be found in the online help.

Online help

Allplan Building Costs provides an extensive online help system covering the entire range of modules and functions in the program. While you work with Allplan Building Costs, you can get help on the current function or situation by pressing the F1 KEY or activate **Contents and index** on the **Help** menu and point to the icon on which you require help.

The Help window shows information on commands, detailed step-by-step instructions for all the tools, information on basic concepts and terms and much more.

The index provides a convenient way of looking up topics on which you require help. In addition, you can use the integrated search tool to quickly find related Help topics.

The quickest and easiest way to get started with Allplan Building Costs is **Easy2Learn**. This quick guide outlines the most important steps in each tendering and cost calculation phase on a separate help page. All you have to do is ...

... push the F1-Button!

Terminology

The table below provides explanations for the main terms used in the documentation. As these terms describe important operations, it is essential that you are familiar with these expressions in order to work with the software.

Expression	Meaning
ALT KEY	The Alt key on the keyboard. For controlling special functions, this key is used in combination with other keys.
Activate	You activate/deactivate an option by clicking its check box. Activated options are indicated by check marks.
Select	You select a function by opening a menu and clicking a command. You can also open a menu or select a command/option by pressing the ALT key and the underlined letter of the menu/command.
PAGE UP KEY	You use the "Page ↑" key on the keyboard to control the section displayed on screen.
PAGE DOWN KEY	You use the "Page ↓" key on the keyboard to control the section displayed on screen.
Data field	Fields provided for entering data into the data sheets.
Double-click	Point to an icon, menu or command and quickly push the left mouse button twice.
Insertion marker	Vertical, blinking bar indicating the point where the program expects you to make an entry.
ENTER	The ENTER key on the keyboard. In some cases, you need to press this key in order to confirm your entries.
DEL KEY	The Del key on the keyboard. If no characters are selected, pressing this key deletes the character to the right of the insertion marker. If characters are selected, pressing this key deletes these characters.

Expression	Meaning
ESC KEY	The Esc key on the keyboard is usually used to cancel a function or command without performing the relevant operation.
Click	Point to an icon, menu or command and quickly push the left mouse button.
Mark	Drag the cursor over several elements (e.g. a number of letters or words) or double-click an element. In the case of menus or list boxes, elements are marked by clicking.
ARROW KEYS	The arrow keys on the keyboard. Small arrows and the names of the keys (LEFT, RIGHT, UP, DOWN) indicate the direction of movement.
Button	A switch, button or icon (usually denoted by a symbol or text) displayed in a dialog box. Clicking a button executes a command.
CTRL KEY	The Ctrl key on the keyboard. For controlling special functions, this key is used in combination with other keys.
TAB KEY	You can use the "→|" key on the keyboard to position the insertion marker on a tab. For controlling special functions, this key is used in combination with other keys.
SHIFT KEY	The "⇧" key on the keyboard is used to change the case (lowercase to uppercase and vice versa). In combination with other keys, this key is also used for controlling special functions.
Point to	Move the mouse/cursor to an element displayed on screen (e.g. a button or menu).
Cursor or mouse	You use the cursor/mouse to position the insertion marker or to select a command.
Drag	Point to an element (e.g. a border of a window), press and hold the left mouse button and then move the mouse (do not release the mouse button!).

Conventions

The following conventions apply to the entire documentation. Please read these conventions as they make the documentation quick and easy to use:

Character	Meaning
ATTENTION!	Please carefully read and follow the advice provided in "**ATTENTION!**" sections in order to prevent data loss or other serious problems.
ALT	Key names are written in capital letters.
ALT+D	Key combinations are represented by a "+" character. These keys need to be pressed simultaneously. Here, press and hold the ALT key while pressing the D key.
File	Names of menus, commands, buttons, icons, titles, windows, text in dialog boxes etc. – in other words, all the elements in templates and windows – are shown in **bold**.
`C:\WIN`	Messages issued by the operating system and entries you need to make at the operating system level are shown in `Courier` font. You need to press the ENTER key to confirm these entries.
"Dear customer"	(Variable) entries you make in data sheets, data fields, lines etc. – in other words, all user entries – are enclosed in quotation marks.
Memo	Options in list boxes and non-variable entries in data sheets, data fields, lines etc. – in other words, all entries controlled by the program – are shown in **bold**.
Note:	These sections provide additional information on the current topic.
Important!	Please pay special attention to sections marked as "**Important!**" as they provide essential advice and information.

If you need assistance ...

... you will find the necessary information in the online help and the online documentation (see "The Allplan Building Costs Documentation" on page 2). In addition, the status bar displays **brief information** about the individual tools on the menus.

If you have further questions, our Technical Support will be glad to help you. You can benefit from the services provided by the Technical Support free of charge for the first three months after purchase of the first license. When you conclude a **Serviceplus agreement,** you do not have to pay for these services even after expiration of this period.

Before contacting the Technical Support, please make a note of the precise wording of the error message including all numbers and abbreviations. To avoid unnecessary questions and delays, try to identify the problem as well as you can.

The Technical Support sometimes requires detailed information on the hardware and configuration of your computer. You should therefore use the **Technote** program to generate support requests.

You can reach the **Technical Support** at the Nemetschek Technology Center in Munich from Monday to Friday from 8 a.m. to 6 p.m.

> **Phone: 0049 89 / 9 27 93 – 88 88**
>
> **Fax: 0049 89 / 9 27 93 – 88 09**

... and you have a Serviceplus agreement:

For Serviceplus customers, any support provided by the Technical Support is free of charge! If you have any questions pertaining to the program, please send an email to our Technical Support team:

> **support@nemetschek.de**

The Technical Support can also be contacted by phone or fax using the numbers above.

Furthermore, you can also refer to Nemetschek's serviceportal **Allplan Connect**. In addition to a huge knowledge database, the serviceportal **Allplan Connect** provides you with the latest Line-Letters and other helpful information. And you can communicate and exchange information with countless other users.

To access **Allplan Connect**, all you need to do is register:

connect.allplan.com

... and you do not have a Serviceplus agreement:

If you have not yet concluded a Serviceplus agreement after the free 3-month support period, you can purchase **Technical Support tickets** for your support requests through our online shop. More information can be found on our website:

www.nemetschek.de/services/support

Even if you do not have a Serviceplus agreement, you have access to some areas of the serviceportal **Allplan Connect**. All you need to do is register:

connect.allplan.com

The "Technote" program ...

... is a useful aid not only for you, but also for the Technical Support to determine the basic configuration of your hardware and software environment.

Technote generates a list of your computer's configuration and assists you in editing the `AUTOEXEC.BAT`, `CONFIG.SYS`, `NEMMAN.INI` and `ALLRIGHT.INI` system files. The printed report contains all the data required for solving hardware and software problems.

To start the "Technote" program

1   Click **Start** on the Windows task bar and point to **Programs**.

2   Point to **Nemetschek**, select **Allplan BCM** and then click **Technote**.

To print a Technote document

1   Start the **Technote** program.

2   Click **Support request**.

3   Enter contact data.

     Important!
     Please fill in all the boxes; the Technote document cannot be printed otherwise.

4   Do not activate the **Include configuration files** option unless the Technical Support asks you to.

5   Enter your question or describe your problem in **3. Enter your support request**.

6   Click **Output**.

7   Select the type of output/printout by clicking the relevant button in the **Output** dialog box.

Installing Allplan BCM

This chapter shows how to install

▪ Allplan BCM on a standalone workstation

▪ Allplan BCM on a network and

▪ the sample projects provided on the Allplan DVD.

Information on Allplan BCM Setup

All Allplan BCM program modules are installed using the Allplan BCM Setup program. Allplan BCM Setup automatically prompts you for the information it needs during the installation:

• the drive on which you want to install the Allplan BCM program files (about 200 MB disk space)

• the drive on which you want to install the Allplan BCM data management (at least 200 MB disk space; 25 MB additionally for demo data)

• your license information (license disk, license file or license code).

When you are installing the program for the first time, Allplan BCM Setup also automatically installs some of the sample projects that are provided on your Allplan DVD. If you would like to load additional sample projects, simply use the archive administration in Allplan Building Costs (see "Installing Demo Data").

Before starting the installation, please make sure that there is enough free disk space on the drives you want to use. Also check that at least 30 MB free disk space is available on the drive on which you have installed your Windows system programs (= system drive).

Important!
Allplan Building Costs Version 2014 supports installation on any of the operating systems listed in the "Allplan Building Costs System Requirements (on page 1)" chapter. Please ensure that the most recent service packs are installed.

Installing Allplan BCM on a Standalone Workstation

The Allplan BCM Setup program offers you a quick and easy way to install the individual Allplan BCM program modules on your computer.

To install Allplan BCM on a standalone workstation

1   Close all running applications.

2   Log on as system administrator.

3   Insert the Allplan DVD into your DVD drive.

    The start menu of the **Allplan 2014 DVD** opens automatically.

4   Click **Programs** in the **DVD Content** column on the left.

5   The **Programs** column is displayed. Click **Allplan BCM**.

6   In the first dialog box, select a language for the setup process and for the program's user interface.

    Note: You can change the user interface language of the installed program any time (**Extras** menu -> **Settings**).

Select a language and click **OK**.

7   Read the information in the **Welcome** dialog box.

8   Click **Next**.

9   The **Software License Agreement** dialog box (not shown here) appears. Please read the license agreement carefully.

Click **Yes** to accept the license terms.

10 Activate the **Standalone workstation** radio button in the **Installation type** dialog box and click **Next**.

11 Select the license you want to use in the **Select License Information** dialog box.

Insert the license disk into the drive or click and select the folder containing the license file.

12 Click **Next.**

13 In the **Select program folder** dialog box, select a program group for Allplan BCM and click **Next.**

14 Choose the Allplan BCM program modules you want to install.

Activate the appropriate check boxes in the **Components** dialog box and click **Next.**

Tip: You can choose different drives and directories for programs and data. This is usually only necessary, however, when you install Allplan BCM on a network.

15 The **Select path** dialog box appears. Specify the drives and directories where you want to install the individual Allplan BCM components.

Important!
If you have already installed a different Allplan BCM program module, leave the default path settings unchanged. This way you ensure that all files are copied to the correct directories.

To change a default path, click the [...] icon next to it.

16 Check the information given below each directory path to make sure that there is enough free disk space available.

17 Click **Next** to continue with the installation.

18 Please check all your entries carefully before starting the installation.

19 Click **Install** when the displayed data is correct.

This starts the installation process during which the files are copied to your computer's hard disk.

20 Please read the notes in the **Information** dialog box.

Then click **Next** to continue.

21 Allplan BCM Setup issues the following message when the
installation has been successfully completed:

Click **Exit** in the confirmation dialog box.

Installing Allplan BCM on a Network

Allplan BCM is installed on a network in basically the same way as on a standalone workstation. The only differences are the installation type setting (standalone/network), which also determines the amount of files copied to the hard disk, and the settings for the path structure.

Important!
Installing Allplan BCM on a network requires an in-depth knowledge of the network software and the path structure on the network. Therefore, the installation should only be performed by the system administrator for the network.

When running Allplan BCM on Windows, it is recommended to provide each workstation with its own local hard disk on which Windows is installed. This increases processing speed and saves network resources, particularly regarding swap files.

If no local hard disks are available, proper network installation of Windows is indispensable. Besides the Windows directory of the basic installation, which contains the shared Windows files, you need to provide a separate Windows directory for each workstation. There you store the Windows files (e.g. INI files) that are specific to that workstation. The Windows network installation should also only be performed by the system administrator for the network.

The following steps describe the most common network installation procedure (data on server, programs and local working directory on clients); other constellations are of course also possible provided the required network knowledge is available.

To install Allplan BCM on a network

1   First install the server.

    Proceed as described in steps 1 to 9 in the "Install Allplan BCM on a Standalone Workstation" section.

2   In step 10, activate the **Server installation** radio button in the **Installation type** dialog box and click **Next**.

3   Select the license you want to use in the **Select License Information** dialog box.

Insert the license disk into the drive or click ⌊...⌋ and select the folder containing the license file.

4   Click **Next**.

5   The **Select path** dialog box appears. Enter the network drive on the server as the data directory.

6   Proceed from step 15 in the "Install Allplan BCM on a Standalone Workstation" section to complete the server installation.

Important!
In the above procedure, no Allplan BCM workstation is installed on the server computer. The workstations are only set up in the individual clients. If you want to use the server as an Allplan BCM workstation, run a client installation on the server after you have completed the server installation.

7   Continue by installing the clients.

Tip: You can do this directly at each client without using the Allplan DVD.

Run the ClientSetup.exe file on the client. You will find the file in the
..\Daten\Nemetschek\Allbase\Daten\Client
directory on the server. Then proceed as described in steps 7 to 9 and 11 to 14 in the "Install Allplan BCM on a Standalone Workstation (see "Installing Allplan BCM on a Standalone Workstation" on page 12)" section.

8   Enter the program directory on the client in the **Select path** dialog box.

9   Proceed from step 15 in the "Install Allplan BCM on a Standalone Workstation" section to complete the client installation.

Installing Demo Data

On the Allplan DVD, you will find a selection of sample projects and other demo data (including standard text of various providers) for your convenience. Part of the demo data is installed automatically when you install Allplan BCM for the first time. Using Allplan BCM's archive administration tool, you can quickly and easily import additional sample projects.

When you update, the demo data is not installed automatically, ensuring that existing data is not overwritten. In this case, you can also simply use the archive administration to import the demo data.

Note: Some sample projects use a predefined Allplan project. This project is also included in the Allplan DVD and can be found in the `<dvd>\programs\Allplan BCM\Demodaten_Bau-kosten\Allplandaten` directory. Load this sample project by using Allplan's archive administration (= Allmenu).

Import Demo Data into Allplan BCM

To import demo data

1 Insert the Allplan DVD into the DVD drive.

   Note: After you have inserted the DVD, the Allplan start menu usually opens automatically. If this is the case, click the ❌ Close button.

2 Start Allplan Building Costs or Allplan Construction Cost.

3 Click **Archive** on the **Project Data** menu (Building Costs) or on the **Tools** menu (Construction Cost).

   The **Archive administration** dialog box appears.

4 Click **Path**.

   The **Browse for folder** dialog box opens.

5 Select the DVD drive.

6   Set the path to a subfolder of the `<dvd>\programs\Allplan BCM\Demodaten_Baukosten` directory (Building Costs) or to `<dvd>\programs\Allplan BCM\Demodaten_Baukonto` (Construction Cost). Then click **OK**.

7   Select the project(s) you want to import in the **Archives** (Building Costs) or **Archived data** (Construction Cost) list box on the right and click ← **Restore archive** (Building Costs) or ◀ **Insert archived data** (Construction Cost).

8   Click **Close** in the **Archive administration** dialog box when the import is complete.

User Interface in Allplan Building Costs

The application window of Allplan Building Costs basically consists of three areas:

- the menu bar (see "Menu Bar in Allplan Building Costs" on page 22) below the title bar of the window,

- the toolbars (see "Toolbars in Allplan Building Costs" on page 22) below and

- the space reserved for displaying data sheets.

Menu Bar in Allplan Building Costs

The menu bar in Allplan Building Costs consists of the following menus:

Note: A description of all the tools on the menus is provided in the reference section entitled "Menus and Tools" in the online help.

Toolbars in Allplan Building Costs

You can use the buttons provided in the toolbars to activate the main tools without having to select a menu first. All you need to do is click the relevant icon.

The toolbars in Allplan Building Costs are divided into logical groups: The upper toolbar includes the most important, general tools that are not focused on any specific project. Consequently, this toolbar is named **General features** toolbar. The toolbar in the middle – **Project functions** – provides project-specific functions. In lower toolbar – **Text libraries** – you can access text catalogs of various providers. For this, you need to install these catalogs first.

Note: The sections entitled Buttons in the **General features** toolbar, Buttons in the **Project functions** toolbar and Buttons in the **Text libraries** toolbar provide an overview of all the functions you can select directly without opening a menu first.

You can display and hide as well as dock and float the toolbars separately to suit your requirements. In addition, you can customize the toolbars and create new ones.

If required, you can also install special toolbars for various applications (e.g. **CAD-XPAD-WERKZEUGE** toolbar, **CADOBJECT** toolbar (see ""CADOBJECT" Toolbar" on page 179) or **BUILDING PROCESS** toolbar).

Buttons in the "General Features" Toolbar

The four buttons in the left block of the **General features** toolbar represent the following tools:

Icon	Function	Use
	Open project overview	You can use this tool to execute the **Project overview** command on the **File** menu, which opens the **Project overview** data sheet (see ""Project Overview" Data Sheet" on page 50).
	Open address overview	You can use this tool to execute the **Address overview** command on the **File** menu, which opens the **Address overview** data sheet (see ""Address Overview" Data Sheet" on page 51).
	Open image overview	You can use this tool to execute the **Image overview** command on the **File** menu, which opens the **Image overview** data sheet (see ""Image Overview" Data Sheet" on page 52).
	Open archive	You can use this tool to execute the **Archive** command on the **Project Data** menu, which opens the **Archive administration** dialog box.

The five buttons in the next block of the **General features** toolbar represent the following tools on the **Data Record** menu:

Icon	Function	Use
	New data record	You can use this tool to execute the **New** command on the **Data Record** menu.
	Cut data record	You can use this tool to execute the **Cut** command on the **Data Record** menu.
	Copy data record	You can use this tool to execute the **Copy** command on the **Data Record** menu.
	Paste data record	You can use this tool to execute the **Paste** command on the **Data Record** menu.
	Delete data record	You can use this tool to execute the **Delete** command on the **Data Record** menu.

The four buttons in the next block of the **General features** toolbar help you select data records:

Icon	Function	Use
	Mark current line	You can use this tool to execute the **Mark line** command on the **Data Record** menu.
	Mark entire hierarchy	You can use this tool to execute the **Mark hierarchy** command on the **Data Record** menu.
	Cancel current line marker	You can use this tool to execute the **Cancel marking** command on the **Data Record** menu.
	Cancel hierarchy marker	You can use this tool to execute the **Cancel hierarchical marking** command on the **Data Record** menu.

The six buttons in the adjacent block of the **General features** toolbar are provided for quickly moving the insertion marker in a vertical direction within a data sheet:

Icon	Function	Use
	Top of data sheet	You can use this tool to move the insertion marker to the top (= first line) of the data sheet, which defines the section displayed (equivalent to the **Go to project start** tool on the **Data Record** menu).
	Hierarchy step upwards	You can use this tool to move the insertion marker up to the next data record on the same level in the hierarchy (equivalent to the **Hierarchy step upwards** tool on the **Data Record** menu).
	Up	You can use this tool to move the insertion marker up a line (equivalent to the **Line step upwards** tool on the **Data Record** menu).
	Down	You can use this tool to move the insertion marker down a line (equivalent to the **Line step downwards** tool on the **Data Record** menu).
	Hierarchy step downwards	You can use this tool to move the insertion marker down to the next data record on the same level in the hierarchy (equivalent to the **Hierarchy step downwards** tool on the **Data Record** menu).
	Bottom of data sheet	You can use this tool to move the insertion marker to the end (= last line) of the data sheet, which defines the section displayed (equivalent to the **Go to project end** tool on the **Data Record** menu).

The seven buttons in the right block of the **General features** toolbar are a collection of frequently used tools:

Icon	Function	Use
	Call processing templates	You can use this tool to execute the **Processing templates** command on the **Data Record** menu.
	Set filter	You can use this tool to execute the **Organize and filter** command on the **Tools**

Icon	Function	Use
		menu.
	Release filter	You can use this tool to deactivate a filter set. As a result, the 'unfiltered' status of the data sheet is restored.
	Print	You can use this tool to execute the **Print** command on the **File** menu.
	Help	You can use this tool to activate the context-sensitive online help; i.e. help on the tool, data sheet etc. that is currently active is displayed.
	Nemetschek Homepage	You can use this tool to execute the **Nemetschek Homepage** command provided in the **Nemetschek on the Web** tool on the **Help** menu.
	Arrangement with 3 windows	You can use this tool to open and display the memo and object windows in addition to a project-specific data sheet.

Buttons in the "Project Functions" Toolbar

The **Project functions** toolbar includes buttons for the most important tools that you need to edit projects. This way, access to the most frequently used tools is provided without requiring you to select a menu first.

Icon	Function	Use
(left)	Select scheme	You can use this button to open the **Select scheme** list box, which lets you set the data sheets' contents and appearance.

Icon	Function	Use
(right)	Switch data sheet (= processing phase)	You can use this button to open the **Data sheet** list box, where you can select a different data sheet and thus switch the processing phase of the project.
	Open project	You can use this tool to execute the **Open** command on the **File** menu.
	Undo	You can use this tool to execute the **Undo** command on the **Data Record** menu.
	Repeat	You can use this tool to execute the **Repeat** command on the **Data Record** menu.
	Hide current hierarchy	You can use this tool to execute the **Hide current hierarchy** command on the **Data Record** menu.
	Filter current hierarchy	You can use this tool to show only the data records of the current level in the hierarchy.
	Display current hierarchy	You can use this tool to execute the **Display current hierarchy** command on the **Data Record** menu.
	Display all hierarchy levels	You can use this tool to execute the **Display all hierarchy levels** command on the **Data Record** menu.
	Display relations	You can use this tool to execute the **Display relations** command on the **Data Record** menu.
	Hide relations	You can use this tool to execute the **Hide relations** command on the **Data Record** menu.
	Set up file	You can use this tool to execute the **Set up file** command on the **Tools** menu.
	Calculate hierarchy	You can use this tool to execute the **Calculate hierarchy** command on the **Calculation** menu.
	Calculate everything	You can use this tool to execute the **Calculate everything new** command on the **Calculation** menu.
	Chart wizard	You can use this tool to execute the **Chart wizard** command on the **Tools** menu.
	REB formulas	You can use this tool to execute the **REB formulas** command on the **Tools** menu.

Buttons in the "Text Libraries" Toolbar

The **Text libraries** toolbar provides buttons you can use to access the most important text libraries associated with Allplan Building Costs. Requirement: the relevant library must be installed.

Icon	Function	Use
	Architekten-Service	You can use this tool to execute the **Architekten-Service** command provided in the **Text libraries** tool on the **Tools** menu.
	ausschreiben.de	You can use this tool to execute the **ausschreiben.de** command provided in the **Text libraries** tool on the **Tools** menu.
	HeinzeBauOffice	You can use this tool to execute the **HeinzeBauOffice** command provided in the **Text libraries** tool on the **Tools** menu.
	DBD-Dynamische Kostenelemente	You can use this tool to execute the **DBD-Dynamische Kostenelemente** command provided in the **Text libraries** tool on the **Tools** menu.
	DBD-LVexpress	You can use this tool to execute the **DBD-LVexpress** command provided in the **Text libraries** tool on the **Tools** menu.
	Standard service catalog for building	You can use this tool to execute the **STLB-Bau** command provided in the **Text libraries** tool on the **Tools** menu.
	GreenBASE - Plant Disposition	You can use this tool to execute the **GreenBASE - Plant Disposition** command provided in the **Text libraries** tool on the **Tools** menu.
	sirAdos building data	You can use this tool to execute the **sirAdos building data** command provided in the **Text libraries** tool on the **Tools** menu.
	Standard service catalog	You can use this tool to execute the **StLB** command provided in the **Text libraries** tool on the **Tools** menu.

Getting Started with Allplan Building Costs

This chapter is designed to give you a quick and practical introduction to Allplan Building Costs. In a few short steps it shows you how to work with projects: in particular, you will learn how to create a new project, how to generate a file including titles, subtitles and items and how to import, delete and copy items. In addition, you will find out about the most important options provided for modifying files, you will change calculation types and set up the file and finally, you will print out the finished file.

Furthermore, you will find an introduction to cost calculation, quotation check, price comparison list, awarding, invoicing and cost control.

Note: Detailed information on the individual topics is provided in the relevant chapters.

Tip: Advanced information can be found in the online help for Allplan Building Costs under "Defining Schemes for Data Sheets."

Important!
The descriptions that follow are based on the **PROFESSIONAL** scheme! If you have set a different scheme for your data sheets, please switch to **PROFESSIONAL**.

Tendering (Quick Reference Guide)

Create a New Project

New projects can be created using the **Project Overview** data sheet, for example. To do this, click **Project Overview** on the **File** menu. The **Project Overview** data sheet opens and any existing projects are displayed. Create a new project by clicking **New** on the **File** menu. The **New Project** dialog box opens.

Enter a name for the new project, e.g. "Sample building". In addition, you can assign a status to the project.

Projects that are to be available as master files require the '**MASTER**' status. The '**ELEMENT MASTER**' status needs to be assigned to element catalogs and '**ELEMENT SCHEDULE**' to element calculations and room schedules. For tender projects select the '**PROJECT**' status.

The '**PROJECT**' option is the default setting. Confirm your entries by clicking **OK**.

The system now initializes (= creates) the database for the new project. Then this project opens automatically in the **Calculation** data sheet, which contains all the columns that are of relevance in this phase.

The project you just created is added to the **Project Overview** data sheet. As the project overview is not required for the time being, close the **Project Overview** data sheet by clicking the [X] in the top right corner.

Create Files

Specification descriptions for the new project are edited in the **Calculation** data sheet. Start by creating files.

The first line of the **Calculation** data sheet provides the following information: '**Project**' is displayed in the **Type** column and the name of your project – '**Sample building**' – in the **Short text** column. The second line includes the '**Cost**' sum line, which will be used to totalize the project costs later.

To create a file for this project, place the insertion marker in the cost line and click **New** on the **Data Record** menu. The **New** dialog box is displayed. You can choose between '**Folder**' and '**File**'. Select the '**File**' option and click **OK** to confirm.

Two new lines are added to the **Calculation** data sheet: '**File**' and '**Total/End**'.

The '**Type**' column in the data sheet indicates the hierarchic structure: whereas the '**Project**' and '**Cost**' entries are on the far left, the '**File**' and '**Total/End**' entries, which are subordinate in the hierarchy, are indented.

Enter a name for this file (e.g. "Unfinished structure work") in the **Short text** column of the file line and, for example, "TOTAL unfinished structure work" in the sum line of the file.

Create Titles

After you have created the file, you can add titles (crafts, service types) to refine the file's hierarchical structure. Place the insertion marker in the sum line of the file and click **New** on the **Data Record** menu.

The data records presented for selection in the **New** dialog box have changed: now you can choose between '**Title**', '**Item**' and '**Comment**'. Select '**Title**' and click **OK** to confirm. Two new lines are added to the file displayed in the **Calculation** data sheet: they have the entries '**Title**' and '**Total/End**' in the **Type** column. The entries are indented to indicate the hierarchic structure. Enter a name for this title (e.g. "Masonry work") in the **Short text** column of the title line and, for example, "TOTAL masonry work" in the sum line of the title.

Enter a second title (e.g. "Concrete work") in the same manner. Place the insertion marker in the sum line of the file and click **New** on the **Data Record** menu again. Select '**Title**' in the **New** dialog box and click **OK** to confirm. Then enter the name for this title in the **Short text** column.

You can also create several data records in a single step. All you need to do is enter a number that is greater than 1 in the **New** dialog box.

Now you have defined the file's hierarchic structure. As the file is still missing the items, i.e. the bottom level in the hierarchy, you need to create them now.

Create Items

Begin by creating items for masonry work: Place the insertion marker in the sum line of masonry work and click **New** on the **Data Record** menu. Select '**Item**' in the **New** dialog box and click **OK** to confirm. The new item is added to the **Calculation** data sheet.

Enter information on this item in the **Short text** and **Dimension** columns. You can also make entries in the other columns to describe the item in detail. To enter the long text for this item, double-click in

the **Long text** column of the item line. A window opens. Now you can enter the long text. To close the text window, click [X].

To create more items for masonry work, place the insertion marker in the sum line of masonry work again and repeat the steps described above.

You can also create several data records in a single step. All you need to do is enter a number that is greater than 1 in the **New** dialog box.

By the way: When you select **Paste** instead of **New** on the **Data Record** menu after having created a data record, the last definition you made is inserted again in the hierarchy.

Add Items Later

There are times you will find that you want to insert an item at a specific place within a title later.

To do this, place the insertion marker on the item above which the new item is to be created. On the **Data Record** menu, click **New** and select '**Item**' in the **New** dialog box. Then click **OK** to confirm. The item is added as you wanted.

Consequently, all the items below the new item move down a line. Now you can edit the short text, long text, dimension etc.

Delete Items

Item lines can be deleted at any time. All you need to do is place the insertion marker in the line you want to remove and click **Delete** on the **Data Record** menu. The item line is thus removed from the data sheet. All the other items within the relevant title are unaffected.

Create Subtitles

Until now, you have used the following levels to structure the project: File – Titles – Items. However, it is often necessary to refine the structure further; in other words, to create subtitles for a title. In this example, you will define subtitles (e.g. "Exterior walls", "Interior walls" and "Columns") for "Concrete work". This involves the following steps:

Place the insertion marker in the sum line of the "Concrete work" title and click **New** on the **Data Record** menu. Select '**Title**' in the **New** dialog box. Enter descriptions in the title line (e.g. "SUBTITLE exterior walls") and in the sum line (e.g. "TOTAL subtitle exterior walls") of this subtitle.

Although subtitles are given the name '**Title**' (indicated in the '**Type**' column), you can clearly see that they are hierarchically subordinate to titles – subtitles are indented.

Repeat these steps for the subtitles "Interior walls" and "Columns". Make sure that you place the insertion marker in the sum line of "Concrete work".

Here, too, you can create several data records in a single step. All you need to do is enter a number that is greater than 1 in the **New** dialog box.

To create items for a subtitle, you need to place the insertion marker in the sum line of the relevant subtitle or in an item line within this subtitle.

As you can see, Allplan Building Costs allows you to create files consisting of different hierarchic structures. This way, you can customize files to suit the task at hand.

Copy Items

If you want to create similar items that differ in length and width only, you can copy items as many times as you need and then modify them.

This involves the following steps: Place the insertion marker on the item you want to copy. Select **Copy** on the **Data Record** menu. The **Copy** dialog box is displayed. Activate the **Actual line** option and click **OK** to confirm. The item is copied to the buffer. Place the insertion marker in the line above which the item is to be inserted and click **Paste** on the **Data Record** menu. The item is inserted. You can insert the item you copied beforehand in the data sheet as often as you want – just click **Paste**. Note, however, that you need to place the insertion marker in the line above which the item is to be inserted each time you place a copy.

You can also copy several items in a single step. To do this, repeat the steps described above – the only difference is that you need to select several items. When you have clicked all the relevant items, select **Copy** and then **Paste** (**Data Record** menu).

The **Data Record** menu provides a number of tools for selecting items: **Mark Line**, **Mark Hierarchy**, **Cancel Marking** and **Cancel Hierarchical Marking**.

For example, you can use **Mark Hierarchy** to select an entire title or file. It is important that you place the insertion marker in the desired line in the hierarchy (e.g. the title or file line). This tool selects all the items within the relevant hierarchy as well as the hierarchy itself including its sum line.

You can use the **Cancel Marking** and **Cancel Hierarchical Marking** tools to unselect a single item and all the items of a level in the hierarchy, respectively. Here, too, it is important that you select the relevant item or hierarchy.

Add Items from Master Text

Items cannot only be copied within a datasheet but also across data sheets: for example, you can copy items from a project to a different one or from master text to a project.

To do this, open the **Master** data sheet by clicking **Open** on the **File** menu. On the left in the **Open data sheet** dialog box, click '**Master**' and on the right, select the '**Demo master text**' entry. Then click **OK** to confirm. (Requirement: you have installed the demo data as described in the chapter entitled "Installing Demo Data".)

The master text data sheet is now above the data sheet of the '**Sample building**' project. Select some items as described in "Copying Items" and copy them to the buffer by clicking **Copy** on the **Data Record** menu.

Now switch back to the **Calculation** data sheet by clicking a visible part of the data sheet (this activates the data sheet again) and place the items you copied where you require.

You can repeat these steps as often as you need and thus create a file based on master text.

Change the Calculation Type

It is often necessary to define different item categories for tenders (e.g. requirement or contingency items).

Place the insertion marker on an item whose category you want to change. Then, click **Properties** on the **Tools** menu. Alternatively, you can also place the insertion marker in the **Type** column and click the right mouse button.

In the dialog box, which then appears, you can open the 'Item category' list box and select a calculation type (e.g. 'Contingency item'). Click **Apply** to confirm your selection and close the dialog box by clicking **OK**.

'**Cont. Item**' is displayed in the **Type** column of the item you selected in the data sheet. Now only the unit price of this item can be determined. The total price is not calculated. Consequently, this item is not taken into account for cost calculations or subsequent proposal checks.

Set Up Files

Of course, you can always set up files manually by entering item numbers in the **Item no.** column. But it is much easier to use Allplan Building Costs' automatic algorithm.

To benefit from this feature, place the insertion marker in the '**Unfinished structure work**' file line and click **Set Up File** on the **Tools** menu. Alternatively, you can also place the insertion marker in the **Item no.** column and click the right mouse button.

A dialog box appears where you can define the formatting type in the '**Format**' list box and specify the number at which this process is to start in the '**Start with**' text box (not mandatory). Start the operation by clicking the **Set up file** button and then click **Close** to close the dialog box.

Now all the items in the file are given a hierarchic structure. You can repeat this operation as often as you want.

Calculate Quantities

Basically, Allplan Building Costs provides two methods for calculating quantities:

- The first option is to determine the quantities in a conventional manner based on the quantity information provided in your plan(s). You can then enter this data in the **Quantity** column of each item.

- Another alternative is to harness the advantages provided by using Allplan Building Costs' integrated quantity takeoff operations. This option is covered in a later chapter (see "Accounting").

Print Files

Place the insertion marker in the '**Unfinished structure work**' file line and click **Print** on the **File** menu. Please note that the contents of the printout are defined by the position of the insertion marker. When the insertion marker is placed on a level in the hierarchy ('**Project**', '**File**' or '**Title**'), the entire hierarchy is printed. When you place the insertion marker on an item, only the selected item is printed.

You can select reports in the **Print** dialog box. It also makes sense to check the foot note. To do this, click the **Options** button. The **Adjustments** dialog box is displayed. In the **Print** tab, you can edit the text that appears in the foot note. It is a good idea to enter your company address.

To check the printout on screen, click the **Preview** button in the **Print** dialog box. If the preview of the page is too small, just click it.

Click the **Print** button to start printing. In the Windows **Print** dialog box, which then appears, you can enter the number of copies and set up the printer.

Calculate Costs

Clients are often expected to submit rough cost estimates right from the beginning. Costs can be calculated in the **Calculation** data sheet.

You can enter the estimated price for every item in the UP column (unit price). As soon as you quit the item line, Allplan Building Costs calculates all the prices for this item:

- **TP checked** (total price checked = UP x number (quantity))

- **TP eff.** (total price effective = TP checked + additional fee/discount (%))

- **TP grs** (total price gross = TP eff. + VAT)

In the case of alternative items, you can enter the unit price. The total price, however, is set to zero. Consequently, any other associated prices are not calculated either.

When you have entered all the unit prices, place the insertion marker in the '**Unfinished structure work**' file line and click **Calculate Everything New** on the **Calculation** menu. Allplan Building Costs now re-calculates and updates all the prices and computes the totals, which are then displayed in the project, file and title lines.

As this project currently contains a single file, the file's total price, effective total price and gross total price are also displayed in the project line.

Print Cost Calculations

Place the insertion marker in the '**Unfinished structure work**' file line and click **Print** on the **File** menu. Select a report and proceed as described above under "Printing Files (see "Print Files" on page 36)".

Awarding (Quick Reference Guide)

Check Proposals

You have sent the file to several tenderers who have entered prices and returned it to you. Now it is a question of checking and re-calculating these prices.

Click **Open** on the **File** menu. On the left in the **Open Data Sheet** dialog box, select the '**Proposal check**' entry and on the right, select '**Sample building**'. Then click **OK**.

The selected project is displayed in the **Quotation check data sheet**. However, the price columns are empty and the **Quantity** column is also empty as this column is only displayed after you have created a tenderer.

Create Tenderers

Place the insertion marker in the '**Unfinished structure work**' file line and click **Create Tenderer** on the **Calculation** menu. In the **Create Tenderer** dialog box, you can enter a tenderer name or select a name in the address database. Click **OK** to confirm. Now this name is entered in the **Quotation check data sheet** and displayed in the **Tenderers** column of each item. The quantities are also displayed.

Now you can enter the unit prices quoted by this tenderer in the **UP** columns of the relevant items. Pressing the DOWN arrow key quickly takes you to the next data entry box.

When you have entered all the unit prices, click **Calculate Everything New** on the **Calculation** menu. Allplan Building Costs calculates and displays all the title prices and the file price. This way, you can also check the totals of the proposal.

To check other proposals, you can create additional tenderers in the same manner. Place the insertion marker in the file line, select **Create Tenderer** on the **Calculation** menu, specify a name for the tenderer, enter unit prices and calculate the total by clicking **Calculate Everything New** on the **Calculation** menu.

Note: You may have noticed that Allplan Building Costs does not display any prices in the project line and in the associated cost line at this stage. The reason for this is that project prices do not need to be calculated in this phase. The project total for the cost estimate is determined later in the **Awarding** data sheet. Proposals are always checked in a tenderer-specific manner. In other words, only the data in the relevant file are checked.

Assign Additional Fees or Discounts

You can enter additional fees and/or discounts specified by tenderers in the **%+/-** column. When a discount is to be applied to the entire file, place the insertion marker in the **%+/-** column in the file line and enter the amount as a percentage (e.g. "-5" for a discount of 5%). After you have confirmed this value, Allplan Building Costs enters a discount of 5% for all the items in the file and immediately re-calculates and updates all the total prices.

You can use the same approach to apply a discount to specific titles only. The only difference is that you need to place the insertion marker in the relevant title line. The price quoted is displayed in the **TP effective** column.

Create Price Comparison Lists

The prices entered in the **Quotation check** data sheet can now be compared in the **Price comparison list** data sheet. To do this, open the **Price comparison list** data sheet by selecting this data sheet in the list box.

The **Price comparison list** data sheet shows the individual items (including item no., short text, dimension etc.) and the price lines of all tenderers. In addition, the cost calculation – i.e., the estimated prices you entered in the file – is displayed.

Now you can select the tenderers you want to compare. Place the insertion marker in the '**Unfinished structure work**' file line and click **Select tenderer** on the **Calculation** menu. The **Select tenderer** dialog box, which then appears, lists all the existing tenderers in the file. Select the tenderers that are to be included in the price comparison list and click **OK**. Now, only the tenderers you specified are visible in the data sheet.

Now you can compare the prices of the individual tenderers: place the insertion marker in the file line and then click **Price comparison** on the **Calculation** menu. In the **Price comparison** dialog box, select the column you want to compare in the **Field to compare** list box and the tenderer or situation on which the comparison is to be based in the **100% tenderer** list box. The following entries are available: click 'MIN' if the lowest item price is to serve as the basis for the comparison. Select 'MID' to use the average price and 'MAX' to compare your selection with the highest price specified for an item. To compare tenderers, select a tenderer. Click **OK** to start the comparison. Allplan Building Costs calculates and displays the percentage figures in the % **Td. comp.** column.

Before you print the price comparison list, specify the sequence of the tenderers in the **Td. no.** (= tenderer number) column: "1", "2", "3" etc. for the individual tenderers. In addition, check that the insertion marker is placed correctly. Then click **Print** on the **File** menu.

Experiment with the numerous alternatives provided in Allplan Building Costs. For example, you can create a graphical price comparison list. To do this, select **Chart wizard** on the **Tools** menu.

Create Tenderers of Order

After you have checked all the proposals and compared the prices given by the individual tenderers, you can now appoint a tenderer of order for every file. Only one tenderer of order can be specified per file.

Tenderers of order are assigned in the **Price Comparison List** data sheet. Place the insertion marker in the '**Unfinished structure work**' file line and click **Select Tenderer of Order** on the **Calculation** menu. In the **Select Tenderer of Order** dialog box, select a tenderer and click **OK** to confirm.

Open the **Awarding** data sheet. As opposed to the **Price Comparison List** data sheet, only the tenderer of order is displayed.

You can now print out the associated file by placing the insertion marker in the file line and clicking **Print** on the **File** menu.

Remove Tenderers of Order

If you inadvertently created a tenderer of order, you can undo this step again. This causes the 'tenderer of order' property to be removed from the relevant tenderer. It simply means that the tenderer of order becomes a normal tenderer again; all the other data associated with this tenderer is not affected.

Open the **Awarding** data sheet, place the insertion marker in the file line of the file from which you want to remove the tenderer of order and click **Remove Tenderer of Order** on the **Calculation** menu.

Now you can appoint a different tenderer of order.

Note: When you have already assigned the 'tenderer of accounting' status to the tenderer of order you want to remove, you need to undo the 'tenderer of accounting' status before you can remove the 'tenderer of order' status.

Accounting (Quick Reference Guide)

Accounting

Accounting includes many approaches that are familiar to you from file generation and cost calculation. Like cost calculation, accounting is based on quantities. Here, too, two methods are provided for documenting quantities: the first option is to enter the actual quantities used in the **Quantity** column. The second option is to check the record of detailed measures (if available) using Allplan Building Costs' integrated quantity takeoff operations.

Before you can start checking accounts, you need to specify the tenderer of accounting. This frees up hard disk space as you only create a tenderer of accounting when you actually want to use Allplan Building Costs for checking your accounts.

Tenderers of accounting can only be appointed in the **Awarding** data sheet. Open this data sheet, place the insertion marker in the file line and click **Create Tenderer of Accounting** on the **Calculation** menu. Choose **Yes** at the following prompt.

Remove Tenderers of Accounting

When you want to remove a tenderer of order to whom you have already assigned the 'tenderer of accounting' status, you need to remove the 'tenderer of accounting' status first. You can then remove the 'tenderer of order' status.

Open the **Accounting** data sheet, place the insertion marker in the file line of the file from which you want to remove the tenderer of accounting and click **Delete Tenderer** on the **Calculation** menu.

All the other data associated with this tenderer is not affected.

Calculate Quantities

Switch from the **Awarding** data sheet to the **Invoicing** data sheet. The quantities and total prices in this data sheet are reset to zero as information on the actual quantities used was not available at the beginning of the invoicing phase. The unit prices for invoicing were adopted from the tenderer awarded the contract.

Note: To see better what you are doing, you can divide the **Invoicing** data sheet into two separate viewports that are mutually dependent. To do this, close all the data sheets, click **Scheme** on the **Extras** menu and activate the **Separate diagrams for quantities and tenderer prices** check box in the **Special** tab. Then open the project in the **Invoicing** phase again.

The window on the left now displays the **Invoicing** data sheet with the **Type**, **Item no.**, **Short text** and, if applicable, **Long text** columns. On the right, the **Quantities to be invoiced** data sheet window shows the quantity block with the **Description**, **Factor**, **Calculation** and **Result** columns. Please note that the quantity block always displays the data of the data record on which you have placed the insertion marker in the **Invoicing** data sheet window.

To enter quantities for an item, place the insertion marker in the quantity block (e.g. in the **Calculation** column) of the relevant item line. Click **New** on the **Data Record** menu. Specify the number of quantity lines in the **New quantity lines** dialog box and click **OK** to confirm.

Place the insertion marker in the **Calculation** column and make an entry. If you want, you can enter a comment on the calculation in the **Description** column. As soon as you leave the calculation line, Allplan Building Costs calculates the quantities and displays the result in the **Quantity** column. The result line in the price block is also calculated.

Repeat these steps with all the items and quantities from the measurement sheets. Do the same with the other invoices and/or measurement sheets. You can then enter "2nd PP" (second progress payment) or "3rd PP" (third progress payment) etc. in the **Description** column. This way, you document the status of the quantities used. In addition, you can check the current cost status of your project.

Tip: When you create a new quantity line, you can use the calculation of the quantity line in which you have placed the insertion marker (= current quantity line) for the new quantity line. Therefore, to record many individual quantities with a similar calculation, define a quantity line with this calculation, place the insertion marker in this line and create several new quantity lines in one go. Now, all that remains is to modify the calculations to suit your requirements.

Alternatively, use the **Quantity calculation** processing template for quantity takeoff operations. Place the insertion marker in the quantity block, click **Processing templates** on the **Data Record** menu and select **Quantity calculation** in the **Processing templates** dialog box.

When you have entered all the relevant data, click **Close** to quit the **Quantity calculation** processing template.

Split Quantities and Check Accounts

In addition to evaluations based on costs and/or the actual quantities used, it is often necessary to run more detailed analyses according to a wide range of different criteria, such as the costs allocated to different clients or the individual progress payments or invoices. This way you can limit the evaluation to specific quantities and/or costs. These quantities and the resulting prices and/or total prices are then analyzed as follows:

Let us assume that you want to check the second progress payment of the 'Sample building' project. You have already entered all the quantities specified in the records of detailed measures in the **Accounting** data sheet. The entire "Unfinished structure work" file is to be included in the analysis. To check the second progress payment, you need to filter out the quantities associated with this payment.

Before you can filter the data sheet according to specific quantities and quantity calculations, you need to enter the relevant split code for each quantity calculation. First, check whether each quantity line has been assigned the correct split code in the **Split** column. Add missing split codes.

Then place the insertion marker in the **Split** column of a quantity line containing the split code "2nd PP" and click **Macros** on the **Tools** menu. Select the **Mengensplit wie aktuelle Zeile** macro in the **Apply Macro** dialog box and click **Apply**. Now the data sheet displays only those quantity lines that match the selected split code "2nd PP". The total quantities and total prices are calculated automatically, based on the filtered items.

As data in filtered data sheets is lost when they are closed, you need to print out the results of the current quantity split. The procedure is basically the same as when printing a normal file, except that you

select a different report in the **Print** dialog box: **Abrechnung Mengen und Kosten**.

Then reset the quantity split. To do this, click **Macros** on the **Tools** again, select the **Mengensplit aufheben** macro and click **Apply**.

Check and Control Costs

There are times you may find that you want to compare the individual stages of a project. The phases most commonly compared are Awarding and Accounting. To do this, click **Open** on the **File** menu. Select the **Cost Control** data sheet and the '**Sample building**' project.

All the items of the project and the associated phases (calculation, awarding and accounting) are displayed in the **Cost Control** data sheet.

Click **Select Tenderer** on the **Calculation** menu. A dialog box is displayed. Select the '**Awarding**' and '**Accounting**' phases. Now the **Cost Control** data sheet only shows the price lines for the selected phases.

Place the insertion marker in the project line and click **Price Comparison** on the **Calculation** menu. A dialog box appears. Define the column which is to serve as the basis for the comparison. Here, it makes sense to select '**Effective total price**'. In addition, specify the phase for the comparison, i.e., awarding in this case. Click **Compare** to confirm your selection and **Close** to close the dialog box. Now the following information is provided in the % **Phase comparison** column: for awarding, a value of 100% is entered and for accounting, the corresponding differences are displayed.

To print out the **Cost Control** data sheet, place the insertion marker in the '**Unfinished structure work**' file line and select **Print** on the **File** menu.

Note: This way, you can check all the phases and the associated data in your project. For example, to get detailed information on the development of prices in your project, all you need to do is select all the phases (i.e., calculation, awarding and accounting).

To get a better overview, you can also harness the advantages provided by using graphics.

Basic Introduction

This chapter deals with the basics that are essential for your understanding of Allplan Building Costs.

Here, you can find general information about data sheets as well as specific information on the purpose, structure, and setup of the individual data sheet types.

In addition, this chapter provides detailed information on memo fields, object fields, and processing templates. It also shows you how you can use the user-definable settings to customize Allplan Building Costs to your needs.

Furthermore, this chapter covers how to generate printouts, i.e. how to print overviews, files, cost calculations, quantity calculations, etc..

ATTENTION!
Data backup is generally one of the *critical issues* in the IT industry. For this reason, backing up data and archiving projects are covered in a separate section. There, you will learn how to archive, back up, and restore projects and how to back up your individual column settings, column definitions and reports, and how to restore them.

About Data Sheets

Data sheets play a central role in Allplan Building Costs. Opening a data sheet establishes a link between the data sheet and the relevant database. The relevant data is read from the database into the selected data sheet where it is entered in the individual lines and columns, as in a spreadsheet. This link is retained until you close the data sheet.

There are three types of data sheets:

• Project-independent data sheets

• Data sheets for managing master data

• Project-specific data sheets

Project-independent data sheets

All the projects and master data are managed in the **Project overview** data sheet (see ""Project Overview" Data Sheet" on page 50) where you can create new projects, delete projects you no longer need, or save and load projects.

In the **Address overview** data sheet (see ""Address Overview" Data Sheet" on page 51), you can access and organize addresses. In addition to the various options provided for sorting, finding and filtering addresses, you can also print out the addresses you have archived.

Objects (e.g. images and sketches) are managed centrally in the **Image overview** data sheet (see ""Image Overview" Data Sheet" on page 52). For example, you can copy objects to this data sheet using the Windows Clipboard or add OLE objects to the image database. The objects archived in the image database can then be copied to the Windows Clipboard and pasted into the object windows of project-specific data sheets. This way, objects can be integrated into projects or used as company logos in printouts, for example.

The **CAD XPad** (see ""CAD XPad" Data Sheet" on page 53) data sheet displays the CAD data currently imported. In addition, you select the items to be integrated in a project in this data sheet.

Data sheets for managing master data

Allplan Building Costs provides the **Master** and **Element master** data sheets for managing master data.

The difference between master text and element catalogs is that master text is usually structured based on the individual items in a file (i.e. sorted by title). In element catalogs, on the other hand, items are structured on a component-oriented basis.

Note: As the **Master** and **Element master** data sheets have a data structure similar to project-specific data sheets and work in the same way, they are not explained separately. Where differences exist, they will be pointed out in the relevant description.

Project-specific data sheets

Projects are edited using the project-specific data sheets. Allplan Building Costs provides data sheets for all the phases of a project; this means that you can use the data sheet best suited to the task at hand. Only the data that is relevant to the current phase is entered in the data sheet associated with the phase in question.

Initial cost estimates are drawn up right from the outset. Using the options provided by Allplan Building Costs, an estimate can quickly be obtained as to the cost of the building and/or the individual components used. All you need to do is copy the elements you want to include from the **Element master** data sheet into the project-specific **Element schedule** data sheet. Then, you need to complete the quantities - that's all! You can also sort an element schedule by DIN 276 cost groups in the **DIN 276 estimation** data sheet.

In the **Calculation** data sheet, you can create files for a project and perform quantity and cost calculations.

To calculate costs in compliance with DIN 276, you can use the **DIN 276 Calculation** data sheet for this phase of the project. This data sheet sorts all the items of the **Calculation** data sheet by the DIN 276 cost group numbers and computes the totals for each cost group.

You then use the **Quotation check** data sheet to check individual quotations. To do this, enter the prices quoted by each tenderer into the data sheet or import them from quotations submitted in GAEB format DA 84.

You can compare the prices quoted by the individual tenderers in the **Price comparison list** data sheet. In this **data sheet, you also select to which tenderer you want to award the contract. The prices of the selected tenderer are transferred to the Awarding data sheet.**

The **Awarding** data sheet then shows the contractor's prices, i.e. the file that was awarded the contract. In this phase of the project, you can also open the **DIN 276 Awarding** data sheet to display the

individual totals that were calculated for the costs after awarding in compliance with DIN 276.

Next, you select the tenderer for invoicing in the **Awarding** data sheet. You then switch to the **Invoicing** data sheet and start checking the measurement sheet and entering the quantities used. You can also enter claims in this data sheet. When you have entered all the quantities used in the **Invoicing** data sheet, you can open the **DIN 276 Invoicing** data sheet to determine the totals for the final costs in compliance with DIN 276.

The **Cost control** data sheet gives you an easy way to monitor the cost development of a project. It lists the quantities and costs for each of the calculation, awarding and invoicing phases for direct comparison. To compare the individual phases by DIN 276 cost group, use the **DIN 276 Cost control** data sheet.

"Project Overview" Data Sheet

In Allplan Building Costs, the term "project" encompasses master text, element catalogs, element and room schedules as well as the actual files. The **Project overview** data sheet (how to open...) provides up-to-date information on the projects (in the currently set data directory) and their processing status.

You can customize the contents and layout of the **Project overview** data sheet to suit your needs. For example, a **Project overview** data sheet that has just been opened might look like this:

The projects displayed in the **Project overview** data sheet can be sorted alphabetically by column and filtered according to different criteria. This way, you keep a good overview, even with a large number of projects. Moreover, for each project overview output, only the data lines displayed in the **Project overview** data sheet will be taken into account. Thus, all sorting and filter criteria you have specified will also be included in printouts.

An overview of the projects included in the project management can be displayed on screen or sent to a printer. Here again, the output will be limited to the data lines displayed in the **Project overview** data sheet. This means that all the criteria you have defined using the **Organize and filter** tool will be taken into account.

Projects you no longer need can be deleted from the current project management data directory and from the archive.

Note: For descriptions of how to do all this, see the "Editing projects" section. The "Columns in the **Project overview** data sheet" section provides information on the columns of this data sheet and their contents.

"Address Overview" Data Sheet

The contact data of your clients, design partners and potential contractors, which you need for your daily work, can be managed in the central Allplan Building Costs address database. This means that you do not have to re-enter the addresses each time again, but you can retrieve them easily from the address database when working within any program module.

The **Address overview** data sheet (how to open...) provides an overview of all addresses archived in the central database (e.g. addresses of clients, authorities, employees etc.).

You can customize the contents and layout of the **Address overview** data sheet to suit your needs. For example, an **Address overview** data sheet that has just been opened might look like this:

The addresses displayed in the **Address overview** data sheet can be
sorted alphabetically by column and filtered according to different
criteria. This way, you keep a good overview, even with a large
number of archived addresses. Moreover, for each address overview
output, only the data lines displayed in the **Address overview** data
sheet will be taken into account. Thus, all sorting and filter criteria
you have specified will also be included in printouts.

An overview of the addresses archived in the address database can
be displayed on screen or sent to a printer. Here again, the output
will be limited to the data lines displayed in the **Address overview**
data sheet. This means that all the criteria you have defined using
the **Organize and filter** tool will be taken into account.

Addresses you no longer need or that have become obsolete can be
deleted from the address database including all associated address
data.

Note: For descriptions of how to do all this, see the "Editing
addresses" section. The "Columns in the **Address overview** data
sheet" section provides information on the columns of this data sheet
and their contents.

"Image Overview" Data Sheet

In Allplan Building Costs, you can enhance your files by adding
images and sketches (= "objects"). The image database offers the
option to centrally archive all the objects available for your projects.
Consequently, the objects saved in the image database can be
accessed from within any program module, either while editing your
projects or by retrieving them from the address database.

The **Image overview** data sheet (how to open...) provides a list of all the objects archived in the image database.

You can customize the contents and layout of the **Image overview** data sheet to suit your needs. For example, an **Image overview** data sheet that has just been opened might look like this:

The objects displayed in the **Image overview** data sheet can be sorted alphabetically by column and filtered according to different criteria. This way, you keep a better overview, even with a large number of archived objects. Moreover, for each object overview output, only the data lines displayed in the **Image overview** data sheet will be taken into account. Thus, all sorting and filter criteria you have specified will also be included in printouts.

An overview of the objects archived in the image database including the associated object information can be displayed on screen or sent to a printer. Here again, the output will be limited to the data lines displayed in the **Image overview** data sheet. This means that all the criteria you have defined using the **Organize and filter** tool will be taken into account.

Note: For descriptions of how to do all this, see the "Editing images and sketches" section. The "Columns in the **Image overview** data sheet" section provides information on the columns of this data sheet and their contents.

"CAD XPad" Data Sheet

The **CAD XPad** data sheet (how to open...) represents the interface between project handling with Allplan Building Costs and other applications such as the Allplan CAD system. The **CAD XPad** data sheet should be considered as a *temporary* database for CAD data to be imported (e.g. results from quantity calculations). In addition, this tool provides a convenient way to quickly make entries which can later be used to generate element schedules or files.

Before integrating Allplan data into an element schedule or a file, you can import this data into the **CAD XPad** data sheet first. Once the import process is complete, you can check its results by displaying the contents of the **CAD XPad** data sheet. The **CAD XPad** further enables you to filter the imported data records for the specific components you want to transfer to your file structure.

ATTENTION!
Bear in mind that the entries in the **CAD XPad** data sheet are not saved *permanently*. They will rather be overwritten whenever you import new data. To preserve the current contents of the **CAD XPad** data sheet, you need to integrate the data into a file structure.

You can customize the contents and layout of the **CAD XPad** data sheet to suit your needs. For example, a **CAD XPad** data sheet that has just been opened might look like this:

The components contained in the **CAD XPad** data sheet after importing the CAD data can be sorted alphabetically by column and filtered according to different criteria. As only the components that are displayed when you access the **CAD XPad -> Element Schedule** or **CAD XPad -> Project** tool are transferred to an element schedule or file, the filter functions play a decisive role here.

Note: For descriptions of how to do all this, see the "Editing CAD data" section. The "Columns in the **CAD XPad** data sheet" section provides information on the columns of this data sheet and their contents.

Project-Specific Data Sheets

To edit a project, you need to open it in a project-specific data sheet. To facilitate showing and hiding of parts of the hierarchy, a "navigator", which is similar to that in Windows Explorer, is displayed in the **Type** column of these data sheets (*not* available in the **CLASSIC** scheme). This navigator has much in common with the Windows Explorer: You can open and close hierarchies simply by clicking on the corresponding ⊞ or ⊟ icon. Or, for example, you can reposition or copy items to other data sheets by dragging and dropping them.

But there are some differences to the navigator in the Windows Explorer: in the Windows Explorer, there is no fixed order for the file display. After each update, the files will be reordered, e.g. alphabetically. In Allplan Building Costs however, the data records are always arranged in the order specified by you. For this reason, when dragging and dropping an item, do not drag it to the title where you want to insert it, but exactly to the line *above which* you want to insert the item.

The contents and layout of an open data sheet depend on your personal settings and of course on your project data. For example, a project-specific data sheet that has just been opened might look like this:

P×	Type	Item no	Codetext	Short text	LongImag	DIN 276	DIN 276-1981	Trade	Dim	Quantity	Wage	Miscellane	UP
◆	Project			D2CI Position List	Mem obj						0,00	0,00	0,00
◆	File				mem obj	A					0,00	0,00	0,00
◆	Title	1A			mem obj	A					0,00	0,00	0,00
◆	Title	2A			mem obj	A					0,00	0,00	0,00
	Item	2A_505_20			mem obj	351		013	m2	157,504	0,00	0,00	60,00
	Item	2A_801		CAD-Attributbearbeitungsmaske beinhalte	Mem obj	351		013	kg	1360,280	0,00	0,00	1,00
	Item	××××××××××	××××××	×××××××××××××××××××××××××××××××××××××	××××	×××××	××××××××××	×××××××	××××	××××××××	××××××××	××××××××	××××××
	Item												
	Item	2A_802		CAD-Attributbearbeitungsmaske beinhalte	Mem obj	351		013	kg	1236,778	0,00	0,00	1,00
	Item	××××××××××	××××××	×××××××××××××××××××××××××××××××××××××	××××	×××××	××××××××××	×××××××	××××	××××××××	××××××××	××××××××	××××××
	Item	××××××××××	××××××	×××××××××××××××××××××××××××××××××××××	××××	×××××	××××××××××	×××××××	××××	××××××××	××××××××	××××××××	××××××
	Total/end	2A			mem obj	A					0,00	0,00	0,00
◆	Title	2C			mem obj	A					0,00	0,00	0,00
◆	Title	2D			mem obj	A					0,00	0,00	0,00
◆	Title	2E			mem obj	A					0,00	0,00	0,00
◆	Title	2F			mem obj	A					0,00	0,00	0,00
◆	Title	2G			mem obj	A					0,00	0,00	0,00
◆	Title	2H			mem obj	A					0,00	0,00	0,00
◆	Title	3A			mem obj	A					0,00	0,00	0,00
◆	Title	3B			mem obj	A					0,00	0,00	0,00
◆	Title	3C			mem obj	A					0,00	0,00	0,00
◆	Title	5A			mem obj	A					0,00	0,00	0,00
◆	Title	5F			mem obj	A					0,00	0,00	0,00
◆	Title	5H			mem obj	A					0,00	0,00	0,00
◆	Title				mem obj	A					0,00	0,00	0,00
	Total/end				mem obj	A					0,00	0,00	0,00
	Cost			Kosten	Mem obj						0,00	0,00	0,00

While you edit a project using a project-specific data sheet, Allplan Building Costs buffers your edits line by line. This means that, each time you enter or modify data, these will be stored temporarily in the RAM of your computer. The changes are not written to the database until you exit the line to edit another line. When you are working in a network, this mode allows multi-user access; in other words, the project can be opened and edited on several computers simultaneously.

Note: For a general description of how to set up and use project-specific data sheets, see the section entitled "Using Data Sheets". The "Columns in project-specific data sheets" section provides further information on the columns of these data sheets and their contents. More detailed information on creating and editing data records is provided in the "Basics of Working with Data Records" section.

Calculation Elements in Data Sheets

As you work in Allplan Building Costs, you will find that the **Master**, **Element Master** and **Element Schedule** data sheets as well as the project-specific data sheets contain similar hierarchic structures, which consist of data lines opening levels in the hierarchy and data lines closing levels in the hierarchy.

Data lines opening levels in the hierarchy never exist on their own. Rather, they are always complemented by the associated data lines closing levels in the hierarchy. When, for example, you create a new project and open the data sheet, the '**Project**' entry has already been created in the first data line and the '**Cost**' entry in the second data line. This means that the '**Cost**' data line closes the '**Project**' level.

All the data you enter now is integrated in the hierarchy defined and delimited by "Project - Cost". Each time you create a new data record in the hierarchy, you will find that the associated data line closing this level in the hierarchy - '**Total**' or '**Cost**' - is created automatically.

These additional data lines closing the hierarchy are always appended to the end of a level in the hierarchy. When, for example, you place the insertion marker in a sum line and create a new item, this item is inserted in this line and consequently, the sum line automatically moves down a line.

P*	Type	Item no	Codetext	Short text	Long text	Dim	Quantity	Wage	Miscellaneo
	Project			D2CI Sample Item List	Memo			0,00	0,00
	Folder				memo			0,00	0,00
	File			List	memo			0,00	0,00
	Title	1	1A	CHAPTER 1A	memo			0,00	0,00
	Item	1.1	1A_200	top soil degradation	memo	m2	0,000	0,00	0,00
	Item	1.2	1A_300	excavation	memo	m3	0,000	0,00	0,00
	Item	1.3	1A_302	disposal of excavation	memo	m3	0,000	0,00	0,00
	Comment				memo			0,00	0,00
	Total/end		1A		memo			0,00	0,00
	Total/end			SUMME List	memo			0,00	0,00
	Cost				memo			0,00	0,00
	Cost			Cost	Memo			0,00	0,00

As you can see in the illustration, the '**Project**', '**Folder**', '**File**' and '**Title**' data lines open a level in the hierarchy.

The '**Total/End**' and '**Cost**' data lines close a level in the hierarchy.

The data lines of the lowest level in the hierarchy - '**Item**' and '**Comment**' – cannot open a new level in the hierarchy. Consequently, there are no associated data lines closing this level.

In addition, the DIN 276 data sheets include data records for analyzing and evaluating data.

"Project - Cost" Calculation Element

The "Project - Cost" combination opens the hierarchy in each calculation data sheet. All the other levels in the hierarchy (e.g. folders or files) are delimited by this combination, which exists just once in each calculation data sheet.

P*	Type	Item no	Codetext	Short text	Long text	Dim	Quantity	Wage	Miscellaneo
✓	Project			D2CI Sample Item List	Memo			0,00	0,00
	Folder				memo			0,00	0,00
	File			List	memo			0,00	0,00
	Title	1	1A	CHAPTER 1A	memo			0,00	0,00
	Item	1.1	1A_200	top soil degradation	memo	m2	0,000	0,00	0,00
	Item	1.2	1A_300	excavation	memo	m3	0,000	0,00	0,00
	Item	1.3	1A_302	disposal of excavation	memo	m3	0,000	0,00	0,00
	Comment				memo			0,00	0,00
	Total/end		1A		memo			0,00	0,00
	Total/end			SUMME List	memo			0,00	0,00
	Cost				memo			0,00	0,00
✓	Cost			Cost	Memo			0,00	0,00

The data records that are directly subordinate to the project level in the hierarchy are totalized both in the project line and in the cost line.

"Folder – Cost" Calculation Element

The "Folder - Cost" level, which can be inserted between the project level and the file level in the hierarchy, allows you to refine the hierarchic structure of projects (e.g. taking into account various construction stages, sections or components).

P×	Type	Item no	Codetext	Short text	Long text	Dim	Quantity	Wage	Miscellaneo
	Project			D2CI Sample Item List	Memo			0,00	0,00
✓	Folder				memo			0,00	0,00
	File			List	memo			0,00	0,00
	Title	1	1A	CHAPTER 1A	memo			0,00	0,00
	Item	1.1	1A_200	top soil degradation	memo	m2	0,000	0,00	0,00
	Item	1.2	1A_300	excavation	memo	m3	0,000	0,00	0,00
	Item	1.3	1A_302	disposal of excavation	memo	m3	0,000	0,00	0,00
	Comment				memo			0,00	0,00
	Total/end		1A		memo			0,00	0,00
	Total/end			SUMME List	memo			0,00	0,00
✓	Cost				memo			0,00	0,00
	Cost			Cost	Memo			0,00	0,00

The elements that are directly subordinate to the '**Folder**' level in the hierarchy are totalized in the '**Folder**' line and the associated cost line.

"File – Total/End" Calculation Element

The "File – Total/End" level cannot include any further files. A folder or project, on the other hand, can contain several files. Files are always subordinate to the project or folder line.

P×	Type	Item no	Codetext	Short text	Long text	Dim	Quantity	Wage	Miscellaneo
	Project			D2CI Sample Item List	Memo			0,00	0,00
	Folder				memo			0,00	0,00
✓	File			List	memo			0,00	0,00
	Title	1	1A	CHAPTER 1A	memo			0,00	0,00
	Item	1.1	1A_200	top soil degradation	memo	m2	0,000	0,00	0,00
	Item	1.2	1A_300	excavation	memo	m3	0,000	0,00	0,00
	Item	1.3	1A_302	disposal of excavation	memo	m3	0,000	0,00	0,00
	Comment				memo			0,00	0,00
	Total/end		1A		memo			0,00	0,00
✓	Total/end			SUMME List	memo			0,00	0,00
	Cost				memo			0,00	0,00
	Cost			Cost	Memo			0,00	0,00

The elements that are directly subordinate to the '**File**' level in the hierarchy are totalized in the '**File**' line and the associated sum line.

"Title – Total/End" Calculation Element

Titles refine a file's structure. The "Title – Total/End" level can include any number of subordinate titles (e.g. subtitles).

The elements that are directly subordinate to the relevant title in the hierarchy are totalized in the '**Title**' line and the associated sum line.

"Item" Calculation Element

Items are data records of the lowest level in the hierarchy. You cannot create any items that are subordinate to items. Consequently, items consist of one line only (an associated sum line does not exist!).

"Comment" Calculation Element

As with items, comments are data records of the lowest level in the hierarchy. You cannot create any comments that are subordinate to comments.

P×	Type	Item no	Codetext	Short text	Long text	Dim	Quantity	Wage	Miscellaneo
	◆ 🗐 **Project**			D2CI Sample Item List	Memo			0,00	0,00
	◆ 🏛 **Folder**				memo			0,00	0,00
	◆ 📄 **File**			List	memo			0,00	0,00
	◆ 🗂 **Title**	1	1A	CHAPTER 1A	memo			0,00	0,00
	📄 Item	1.1	1A_200	top soil degradation	memo	m2	0,000	0,00	0,00
	📄 Item	1.2	1A_300	excavation	memo	m3	0,000	0,00	0,00
	📄 Item	1.3	1A_302	disposal of excavation	memo	m3	0,000	0,00	0,00
✓	Comment				memo			0,00	0,00
	Total/end		1A		memo			0,00	0,00
	Total/end			SUMME List	memo			0,00	0,00
	Cost				memo			0,00	0,00
	Cost			Cost	Memo			0,00	0,00

"Element – Total/End" Calculation Element

The "Element – Total/End" level in the **Element Schedule** and **Element Master** data sheets can be considered equivalent to files and titles in other data sheets.

P×	Type	Item no	Codetext	Short text	Long text	Image	Time/unit	Dim
	◆ 🗐 **Project**			D2CI Sample Roomlog 20060426	memo	obj		
	◆ 📁 **Element**			SUBSTRUCTURE	memo	obj		
	◆ 📁 **Element**			EXCAVATION	memo	obj		
✓	◆ 📁 **Element**		EXCAVATION	excavation	memo	obj	0,000	m3
	📄 Item		1A_300	excavation	memo	obj	0,000	m3
	📄 Item		1A_302	disposal of excavation	memo	obj	0,000	m3
	📄 Item		1A_805	backfilling of the pit	memo	obj	0,000	m3
	📄 Item		1A_200	top soil degradation	memo	obj	0,000	m2
✓	Total/end		EXCAVATION		memo	obj	0,000	
	Total/end				memo	obj		
	◆ 📁 **Element**			EXTERNAL WORK	memo	obj		
	◆ 📁 **Element**			FRAME	memo	obj		
	◆ 📁 Element			ROOF				

It is often necessary to create mixed hierarchic structures in the Element Schedule and Element Master data sheets (for example, "Story" element, "Room" element including the "Chair" item and an additional element - "Computer"; this "Computer" element in turn contains the items "Processor", "Screen" and "Keyboard").

The elements that are directly subordinate to the relevant title in the hierarchy are totalized in the 'Title' line and the associated sum line.

"DIN 276 Classification" Calculation Elements

In the data sheets for cost calculation in compliance with DIN 276 (**DIN 276 Estimation, DIN 276 Calculation, DIN 276 Awarding, DIN 276 Accounting** and **DIN 276 Cost Control**), these lines are used for analyzing and evaluating. They are created and calculated after entry in the **DIN 276** column. All the items that can be assigned to the DIN 276 cost group are totalized.

P×	Type	DIN 276	Item no	Short text	Long text	Imag	Dim	Quantity
	◆ DIN276			DIN 276-1 Stand Nov 2006	memo	obj		0,000
	◆ DIN276	1		Grundstück	Memo	obj		0,000
	◆ DIN276	2		Herrichten und Erschließen	Memo	obj		0,000
	◆ DIN276	3		Bauwerk-Baukonstruktionen	Memo	obj		0,000
	◆ DIN276	31		Baugrube	Memo	obj		0,000
	◆ DIN276	32		Gründung	Memo	obj		0,000
	◆ DIN276	321		Baugrundverbesserung	Memo	obj		0,000
✓	◆ DIN276	322		Flachgründungen	Memo	obj		0,000
	◆ DIN276	323		Tiefgründungen	Memo	obj		0,000
	◆ DIN276	324		Unterböden und Bodenplatten	Memo	obj		0,000
	◆ DIN276	325		Bodenbeläge	Memo	obj		0,000
	◆ DIN276	326		Bauwerksabdichtungen	Memo	obj		0,000
	◆ DIN276	327		Dränagen	Memo	obj		0,000
	◆ DIN276	329		Gründung, sonstiges	Memo	obj		0,000
	◆ DIN276	33		Aussenwände	Memo	obj		0,000
	◆ DIN276	34		Innenwände	Memo	obj		0,000
	◆ DIN276	35		Decken	Memo	obj		0,000
	◆ DIN276	36		Dächer	Memo	obj		0,000
	◆ DIN276	37		Baukonstruktive Einbauten	Memo	obj		0,000
	◆ DIN276	39		Sonstige Maßnahmen f. Baukonst	Memo	obj		0,000
	◆ DIN276	4		Bauwerk - Technische Anlagen	Memo	obj		0,000
	◆ DIN276	5		Aussenanlagen	Memo	obj		0,000
	◆ DIN276	6		Ausstattung und Kunstwerke	Memo	obj		0,000
	◆ DIN276	7		Baunebenkosten	Memo	obj		0,000

Memo Fields and Text Windows

Memo fields cannot be filled in directly in data sheets; in other words, you cannot make any entries in the columns of memo fields. They are rather used as placeholders for text. Therefore, these data fields are simply characterized by the entry ´**Memo**´ or ´**memo**´ in data sheets.

The difference in spelling – ´**Memo**´ or ´**memo**´ – indicates whether or not text has already been assigned to a memo field: ´**Memo**´ fields include text while ´**memo**´ fields are still empty.

When you open a memo field, the hidden text associated with this field is displayed in a separate window (also referred to as a text window). You can enter any text in a text window. This text can then be included in printouts of projects or overviews if an appropriate report has been selected.

For example, memo fields are included in the **Construction project**, **Client** and **Note** columns of the **Project overview** data sheet as well as in the **Long text** column of project-specific data sheets.

When you activate the search tool in an open text window, this tool offers an advanced option: you can search AND replace any alphanumeric character string. Starting at the current position of the insertion marker, the search tool scans text from top to bottom. The first occurrence of the specified term is selected. The selected characters can be replaced automatically with a different term, if specified.

You can use all Windows fonts installed on your computer for the on-screen display of text in text windows. In addition, you can choose from standard, italic, bold and bold/italic styles. The font sizes that are available to you depend on the fonts you have installed.

Note: You can change the appearance of fonts for the **on-screen display** of text windows using the **Data sheets** tool on the **Extras** menu.

Important!
To modify the appearance of fonts for **printouts**, use the report designer.

Object Fields and Object Windows

Object fields are data fields which only contain an ´**Obj**´ or ´**obj**´ entry in data sheets. When you double-click on an object field, the hidden object associated with this field is displayed in a separate window (also referred to as an object window).

The difference in spelling – ´**Obj**´ or ´**obj**´ – indicates whether or not an object has already been assigned to the respective object field: ´**Obj**´ fields include an object while ´**obj**´ fields are still empty.

Object fields are arranged in the **Image** column of data sheets.

Note: If the **Image** column is not displayed in your data sheet, close the data sheet and reopen it using the **ADMINISTRATOR** scheme. If you are using a user-defined scheme, add this column to the scheme (cf. "Add Normal Columns to Data Sheets").

Shortcut Menu

In addition to the menus (see "Menu Bar in Allplan Building Costs" on page 22), toolbars (see "Toolbars in Allplan Building Costs" on page 22) and shortcuts, Allplan Building Costs also provides shortcut menus as an alternative way to access tools and execute commands.

Shortcut menus have the advantage that they can be accessed directly and offer a context-sensitive set of tools and commands. This means that the available choices always depend on the state or context from which you open the shortcut menu. To give you an example, if you are setting up a file and the insertion marker is in the **Short text** column, you will get a different shortcut menu than if you are calculating quantities and the insertion marker is in a column of the quantity block. Not all input fields have a shortcut menu, though. When right-clicked, some open a dialog box instead (e.g. the **Dimension input help** dialog box opens from the **Dim** column). In other input boxes, no functionality is assigned to the right mouse button (e.g. in memo fields).

Note: The tools and commands provided on the shortcut menus are the same as those you can access or select through the menus, shortcuts or toolbars.

Here you can see the shortcut menus for the **Short text** column (left) and the **Quantity** column (right), both opened from the **Calculation** data sheet:

Processing Templates

Allplan Building Costs provides a number of processing templates for editing master text and files. As with data sheets, processing templates for all the phases of a project are available; this means that you can select the processing template that best suits your current task.

Each processing template already contains all data from a data record that is relevant to a specific phase. Therefore, processing templates provide an alternative method for displaying data sheets, allowing you to focus on the data of a specific data record (e.g. item) for a certain processing phase.

When you open a processing template, the values and texts from the data record in which the insertion marker is currently placed are entered in the processing template and can then be edited.

By using the six buttons in the lower left corner of each processing template, you can retrieve the data of a different data record for display in the processing template without having to close and re-open it for the new data record:

Icon	Function
	Display the data of the first data record in the data sheet.
	Display the data of the previous data record on same level in the hierarchy.
	Display the data of the previous line.
	Display the data of the next line.
	Display the data of the next data record on same level in the hierarchy.
	Display the data of the last data record in the data sheet.

Important!
When you display data of a different data record by using buttons or by closing a processing template, the data of the current data record in the data sheet will be updated. So before you display data of a

different data record or close a processing template, check whether you really want to keep the changes you have made to the current data record and apply them to the data sheet.

If you do not want to apply the changes you have made in the processing template, discard them before you close the processing template or display a different data record.

Macros

Allplan Building Costs provides a number of macros that facilitate more complex tasks. As with data sheets, macros are available for all the phases of a project; this means that you can use the macro that best suits the current task.

Not all macros are helpful or required in all phases/data sheets. For this reason, macros are usually associated with specific phases/data sheets, i.e. macros that are, e.g., available in the **Calculation** data sheet are not automatically available in all other phases.

However, it is possible to copy macros from one phase/data sheet to another phase/data sheet. However, please note the following:

Important!
Please note that macros that have been copied to a different phase might need to be adjusted to that phase. The program does not automatically analyze whether it makes sense to copy the macro or whether its contents need to be adjusted!

Wizards

Wizards guide you comfortably through unusual tasks.

Just like macros, not all wizards are helpful or required in all phases/data sheets. For this reason, some of the wizards are associated with specific phases/data sheets, i.e. a wizard that is

available, e.g., in the **Calculation** data sheet is not automatically available in all other phases.

The following wizards are available:

Wizard	Function	Requirements
Print user settings	Prints the user settings of the current user or of all Allplan Building Costs users set up in the Allplan Building Costs user manager.	All data sheets and dialog boxes are closed.
Copy reports	Copies reports across phases.	Available in all phases/data sheets.
Integrate DIN-Classification	Copies the entire DIN 276 classification to the new project (cf. "Copying the DIN 276 Cost Classification in Its Entirety").	The **DIN 276 Estimation** or **DIN 276 Calculation** data sheet is active and the **DIN 276 CLASSIFICATION** project has been installed.
Create data for MS Project	Copies the data relevant for scheduling with MS Project to the Clipboard from where they can be inserted into MS Project (cf. "Scheduling").	The **Calculation** data sheet is active.
Allocate variables of elements	Creates a table where you can easily assign values to all variables available in an element schedule (cf. "Calculating Element Quantities" and "Calculating Quantities by Using Variables").	The **Element schedule** data sheet is active.
Copy macros	Copies macros across phases (cf. "Copying Macros").	Available in all phases/data sheets.
Diversify display of schemes	*Temporarily* changes the representation (grid lines and font) of the current data sheet.	Any data sheet is open in a scheme *without tabs*.
Integrate Ö-Norm B 1801 structure	Copies the entire classification (or "structure") in compliance with Ö-Norm B 1801 to the current project.	The **DIN 276 Estimation** or **DIN 276 Calculation** data sheet is active and the **Ö-Norm B 1801 structure** project has been installed.

User-Definable Default and Data Sheet Settings

User-definable default settings

In Allplan Building Costs, you can select various defaults that are saved permanently.

For example you can specify

- in which paths and directories the data is stored and saved,

- whether and when prices, quantities and other entries in data sheets are calculated and/or updated,

- whether a selection dialog box is displayed when data records are copied or deleted,

- whether projects are optimized automatically when they are opened,

- whether you are running Allplan Building Costs in a network.

These default settings can be defined in the **Adjustments** dialog box.

User-definable data sheet settings and column definitions

Besides the default settings, you can also define various data sheet settings (font, columns, column sequence, column headers etc.) for the data sheets. You can save the settings in a custom scheme, so that you can open the data sheets with the settings best suited for your requirements right away.

Besides these custom data sheet settings, each data sheet provides several free columns, which you can use as required. For example, you can create columns for a separate key number or a second set of long text (comments on items or the translation of long text into a different language).

The settings for the data sheets are defined in the **Scheme** dialog box.

Mobile Working

You can turn your Allplan Building Costs workstation into a "mobile workstation" by logging off from the network. The network is then no longer required for running Allplan Building Costs (you can use a notebook, for example).

When you have finished your mobile session, log on and integrate the projects into the Allplan Building Costs database again. That's all!

Logging off from the network

When logging off, you select the projects to be transferred to the "mobile workstation".

You can specify whether the relevant projects can be edited in the network while you are away. Another alternative is to lock them.

Other data such as addresses, reports etc. can also be transferred to the "mobile workstation". Please note that any changes you make to addresses or reports while you are working in a mobile manner *cannot* be transferred to the address database or report database in the network.

Logging on to the network

When you have finished your mobile session, all you need to do is log on again.

Now you can integrate the projects you previously transferred to the "mobile workstation" in the database in the network. Finally, you can start Allplan Building Costs in network operation again and access all the data in the network.

Tendering

The "Tendering" chapter deals in detail with all the topics pertinent to tendering using Allplan Building Costs.

In particular, you will learn how to

- Create files

- Define item categories and item types

- Set up files

- Insert sketches in files

- Calculate file quantities

- Calculate the total costs of files or projects

- Print files

- Back up files

Creating Files

There are different ways of creating files in Allplan Building Costs. Files can be based on custom specification descriptions, master data (e.g. user-defined master catalogs or master files, predefined text such as sirAdos text) or on standard service catalogs. If you created files for a similar construction project some time ago, you could also copy the relevant project and then modify the specification descriptions.

A combination of custom text and master text is usually used. In practice, users often copy items from similar projects. All the possibilities mentioned above can be combined as desired.

When items in your files are associated with unit prices of other construction projects or with prices in master catalogs, Allplan

Building Costs offers the option to quickly draw up initial cost estimates for the relevant trade right from the outset. If you have already created files for all the trades, you can also calculate the costs for the entire project.

Creating Files Based on Custom Text

If no master text is available yet or if the tender is too specific to use predefined text, you can create a file based on custom text. Once the project is complete, you can copy the text you created from the file into a master directory and thus generate your own master text catalog.

Creating folders

The "Folder - Cost" level, which can be inserted between the project level and the file level in the hierarchy, allows you to refine the hierarchic structure of projects (e.g. taking into account various construction stages or components).

It is not necessary to create a folder line. A structure consisting of trades and files is usually sufficient for small construction projects. In this case, you insert the file lines below the "Project - Cost" hierarchy.

Important!
If you want to tender different companies individual titles (in the case of tenders based on sections), you **must** use the "Folder - Cost" level for files and the "File - Total/End" level for titles. It is **absolutely essential** that you stick to this hierarchic structure. Otherwise, you cannot check quotations as this requires entire files!

The elements that are directly subordinate to the '**Folder**' level in the hierarchy are totalized in the '**Folder**' line and the associated cost line.

When you have created a folder, two new indented lines – the folder and the cost line - are displayed below the project line in the **Type** column.

Enter descriptive text (e.g. "Component 1") in the **Short text** column of the folder line and a sum name for this construction stage (e.g. "Total – component 1") in the **Short text** column of the cost line.

Note: You can configure the program to transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Creating files

Subsequent awarding procedures are based on files. A file is created for each trade in a project. The "File - Total/End" level cannot include any further files. A folder or project, on the other hand, can contain several files. Files are always subordinate to the project or folder line.

Important!
It is **essential** that you create files as tenderers can only be created for files (not possible for folders, titles or items)! Otherwise, you cannot check any quotations!

The costs of the items that are directly subordinate to the '**File**' level in the hierarchy are totalized in the '**File**' line and the associated total/end line.

When you have created a file, two new indented lines – the file and the total/end line - are displayed below the project or folder line in the **Type** column.

Enter text (e.g. "Unfinished structure work") in the **Short text** column of the file line and a sum name for this trade (e.g. "Total – Unfinished structure work") in the **Short text** column of the total/end line.

Create titles

Titles refine a file's structure and are usually used for service types. You can subordinate an unlimited number of titles of the same level in the hierarchy to a file.

The "Title - Total/End" level can include any number of subordinate titles (for example, the "Masonry work" title can consist of the subordinate "Exterior walls", "Interior walls" etc. subtitles).

The elements that are directly subordinate to the relevant title in the hierarchy are totalized in the **'Title'** line and the associated total/end line.

When you have created a title, two new indented lines – the title and the total/end line - are displayed below the file line in the **Type** column.

Enter the service type (e.g. "Earthwork title") in the **Short text** column of the title line and a sum name for this title (e.g. "Total – Earthwork title") in the **Short text** column of the total/end line.

Note: To create subtitles for a title, place the insertion marker in the total/end line of the relevant title and repeat the steps above.

Creating items

Items are data records of the lowest level in the hierarchy. You cannot create any items that are subordinate to items. Consequently, items consist of one line only (an associated sum line does not exist!).

The sections that follow explain how to turn "empty" items into specification descriptions.

Creating comments

Comments can be used to describe files, titles, subtitles and items more precisely. As with items, comments are data records of the lowest level in the hierarchy. You cannot create any comments that are subordinate to comments.

To assign a comment to a title, place the insertion marker in the first item line of the relevant title.

If this title does not contain any items, place the insertion marker in the title's total/end line. To create a comment that precedes one or more items, place the insertion marker in the item line of the first item to which you want to assign this comment.

Note: To add text notes to files, you can also define items as **text items**. This item category is used exclusively for purely "textual" files and must **not** be used **within** GAEB-compliant files (for details see "Assigning Categories and Types of Items in Compliance with GAEB Guidelines").

Creating tenderer text supplements

A tenderer text supplement is additional information on the long text (e.g. item number or finish definition) that the tenderer may be requested to provide in the quotation. Tenderer text supplements can be added to one or more items.

Editing specification descriptions

You have created a file with one or more titles containing one or more empty items to which text, dimensions, quantities etc. need to be assigned. If you want to perform initial cost calculations for the trade right from the outset, you need to enter estimated unit prices.

If you are working with the DIN 276 optional module, it is advisable to define DIN 276 cost groups.

Creating Files Based on Master Data

Besides using custom text, you can also create files based on master data such as user-defined master text, predefined text (e.g. sirAdos text) or existing files.

Creating files based on master data involves the following steps:

- Open the data sheet containing the master data.

- Display or select the prices that are to be copied to the new file and that are to serve as the basis for initial cost calculations.

- Select the desired items in the master data.

- Copy the selected items, including prices, to the new file.

Selecting Estimated Prices in the Master Catalog

Data records saved as master data usually contain several price lines (e.g. items with several estimated prices in a master catalog). When you copy data records (e.g. items from a master catalog to a new file), Allplan Building Costs automatically copies a price for each data record.

Prior to copying, you can specify which price is transferred to the new file using one of the following options:

- To use the prices of a single tenderer, display the prices of this tenderer only.

- To use the prices of two or more tenderers, display all the price lines and select the line with the price you want to use for each item. These can be price lines of different tenderers.

Note: You can also copy the prices of one or more tenderers (e.g. the average prices of the MID tenderer) to an existing file later. Detailed information is provided in the "Cost Calculation" section.

Selecting Data Records in Master Catalogs

Allplan Building Costs allows you to copy entire folders, files and titles as well as individual items and comments quickly and easily. When creating files based on master data, this is very useful as you can select specification descriptions including prices and hierarchic structures from a master catalog and transfer this data to a new file in a single step. Start by selecting data records in the master catalog.

If you know the item number or code text of the specification descriptions, you can also enter this information directly.

Note: When you select entire levels in the hierarchy in a single step, only the prices of a single tenderer can be used for the individual levels in the hierarchy. To transfer the prices of different tenderers, you need to select the price lines individually.

Copying Data Records from the Master Catalog to a File

The process of copying data records is easy: select the relevant data records, activate the tool you want to execute, place the insertion marker as you need in the new file and insert the data records there. You can also drag and drop the selected data records out of the master catalog into the new file.

When you copy and insert folders, files, titles, items or comments, it is important that you take the hierarchic structure into account:

    Project

        Folder

            File

                Title

                    Comment

                    Item

                    Item

                    Item

                Total/End Title

            Total/End File

        Cost Folder

    Cost Project

To copy a title to the end of a file, place the insertion marker in the file's total/end line before you insert the title. When, for example, a copied title is to precede another title, place the insertion marker in the title line which is to be preceded by the new title prior to inserting. When inserting items, place the insertion marker on the item that is to follow the item to be inserted.

Note: When you transfer specification descriptions from an existing file to a new file and copy data records without opening the dialog box for copying data, quantity calculations are automatically copied at the same time. If you do not want to transfer these quantity calculations to the new file, you need to copy the data records without quantity calculations using the dialog box for copying data records. Alternatively, delete the quantity calculations later.

Including quantity calculations in copy operations can be useful when you want to create an alternative or contingency item based on a "normal" item, for example.

Creating Files Based on the StLB

The standard service catalog (= StLB), which is issued by the German Institute of Standardization, is designed for describing any tasks related to construction work - ranging from the building process itself to maintenance and management of buildings and real estate.

In Germany, the StLB is used especially for public tenders.

Text in the standard service catalog consists of five parts. A number of variants is available for each part. These five text parts are structured hierarchically. Users can choose one of the variants presented on each of the five levels in the hierarchy. Each text variant in the standard service catalog includes a specific number.

The advantage of the StLB is that it provides standard specification descriptions, which can be understood by everyone. A disadvantage, however, is that estimated prices cannot be entered.

Note: Before you can create a file based on the StLB in Allplan Building Costs, you need to purchase the relevant service types from the Beuth Verlag in Germany and install them.

Installing and deleting StLB service types

The individual service types of the standard service catalog can be purchased on storage media from the Beuth Verlag in Germany.

By installing the StLB, the files on the storage medium are imported to the hard disk and automatically converted to a data format that can be processed by Allplan Building Costs.

You can delete service types you no longer require from the hard disk to free up disk space, for example.

Printing StlB service types

You can print the service types you have installed. The printout has the same layout as the original standard service catalog.

Creating a file using the StLB

Specification descriptions based on the StLB are defined using the **Standard Service Catalog** processing template.

Some text parts in the StLB include additional text. Depending on the selected text part, there are three types of additional text:

• Additional text which must be entered by the party issuing the invitation to tender.

• Additional text which can be entered by the party issuing the invitation to tender; the tenderer must enter additional text if the party issuing the invitation to tender has not done this.

• Additional text which must be entered by the tenderer.

Editing specification descriptions based on the StLB

Normally, you cannot edit specification descriptions you have created based on the StLB. In other words, you cannot modify short or long text, for example. However, you can convert individual StLB items to open text items, which are editable. In this case, the StLB code of the relevant item is deleted automatically and the additional text "Based on StLB no. ....." followed by the StLB number is added to the item's long text.

Creating Files Using STLB-Bau or DBD

When you have purchased the "STLB-Bau Dynamische Baudaten" and/or "DBD Dynamische Kostenelemente" CD, you can also use the specification descriptions of these databases for Allplan Building Costs. To install this application, follow the instructions given by STLB-Bau. The CD includes the entire range of items provided by STLB-Bau. The data that is actually available to you depends on the license you have purchased. If you can access the demo data only, please contact the CD supplier.

Note: Before you work with "STLB-Bau Dynamische Baudaten" and/or "DBD Dynamische Kostenelemente", check that this application has been installed correctly.

The "STLB-Bau Dynamische Baudaten" or "DBD Dynamische Kostenelemente" database can be accessed using the **STLB-Bau Dynamische Baudaten / DBD - Dynamische Kostenelemente** processing template which has been specially developed for this application. This processing template assists you in the process of creating and editing text. The data you set up in this application can be imported quickly and easily to Allplan Building Costs.

You can use this processing template to create one or more items in a single step. The item text is transferred straight to the current data sheet and can be changed at any time. All you need to do is open the relevant processing template and modify the transferred item.

Tip: Please consult the "STLB-Bau Dynamische Baudaten" and "DBD Dynamische Kostenelemente" documentation for details.

Text that is still missing information can be completed automatically in this processing template without you having to start "STLB-Bau" and/or "DBD". In addition, this processing template allows you to check that text is complete and valid.

Icon	Use
	You can use this tool to unlock an STLB-Bau item. The item is not a standard item any longer and can be edited freely (only available if the item is STLB-Bau text).
	You can use this tool to create a new item based on STLB-Bau. Click **OK** to exit STLB-Bau. The new item is inserted below the current item.
	You can use this tool to create several new items based on STLB-Bau. Click **OK** in STLB-Bau to transfer text to Allplan Building Costs and select the next text you want to use. Click **Cancel** to exit STLB-Bau. The new items are inserted below the current item.
	You can use this tool to modify the current item in STLB-Bau (only available if the item is STLB-Bau text).
	You can use this tool to automatically complete the definition of an STLB-Bau item that is still missing information (only available if an STLB-Bau text is still incomplete).
	You can use this tool to delete the current item.
	You can use this tool to display the key number of a specific text (only available if the item is STLB-Bau text).

The text of an STLB-Bau item is standard text. It cannot be modified. However, when tenders do not necessarily have to be based on StLB, you can customize this text by removing the write protection.

When you have purchased "STLB-Bau mit Baupreisen", the unit prices calculated are transferred to Allplan Building Costs.

Creating Files Using HeinzeBauOffice

When you have purchased the BauOffice CD from Heinze, you can use the specification descriptions provided in this database for Allplan Building Costs. To install HeinzeBauOffice, follow the instructions given by Heinze. The CD includes the entire range of items provided by Heinze. The data that is actually available to you depends on the license you have purchased. If you can access the demo data only, please contact Heinze.

Note: Before you can import Heinze specification descriptions, you have to install HeinzeBauOffice.

You can activate HeinzeBauOffice straight from Allplan Building Costs using the **HeinzeBauOffice** processing template. The data you assemble in this application can be imported quickly and easily to Allplan Building Costs. The data, which is transferred via the GAEB interface, is entered in the open data sheet.

Tip: Please consult the HeinzeBauOffice documentation for details.

Besides the buttons provided by all Allplan Building Costs processing templates (at the bottom left), the HeinzeBauOffice processing template includes the following additional tools:

Icon	Function	Use
	Create new item	You can use this tool to create a new item.
	Create master item	You can use this tool to create a master item.
	Create custom item	You can use this tool to create a custom item.
	Revise text of this item	You can use this tool to modify the text of an item.
	Research	You can use this tool to research an item.

Icon	Function	Use
✕	Delete item	You can use this tool to delete the current item.
🛠	Settings	You can use this tool to make settings for interfacing with HeinzeBauOffice.

Importing individual items straight from HeinzeBauOffice

Items are always transferred to Allplan Building Costs. This applies regardless whether you create master or custom items.

The difference is that you cannot specify the contents of long text in HeinzeBauOffice when you use master items.

Tip: Master items that have already been transferred to Allplan Building Costs can be edited at any time.

In the case of custom items, however, you can quickly and easily define the contents of the items yourself by selecting the relevant questions.

You can also combine master and custom items.

Options for HeinzeBauOffice

To harness all the advantages provided by using HeinzeBauOffice in conjunction with Allplan Building Costs, the options need to be set correctly. This is done automatically when you install HeinzeBauOffice and then start Allplan Building Costs. However, if these settings have been modified, you need to correct them manually.

Creating Files Using sirAdos Building Data

When you have purchased sirAdos®-Baudaten, you can also use the sirAdos item and element catalogs for tendering in Allplan Building Costs. To do this, install sirAdos-Baudaten as described in the sirAdos/WEKA MEDIA installation instructions.

The data that is actually available to you depends on the license you have purchased. If you can access the demo data only, please contact sirAdos.

Creating Master Text for Allplan Building Costs Based On sirAdos Building Data

As opposed to previous versions of sirAdos Building Data (e.g. sirAdos-select), the latest the sirAdos Building Data CD does not contain any prepared MDI files with the complete trades. This way you can choose which trades and items you want to transfer and generate your own MDI files in sirAdos Building Data for data transfer to Allplan Building Costs.

You can import the generated MDI files into Allplan Building Costs through the MDI interface and then create your own masters, element masters, files or element schedules based on this data.

Note: As complex projects increase the computing time, it is advisable to define a maximum of 15 trades per master catalog. You should therefore spread master text among several master catalogs.

Importing Individual Items from the sirAdos Building Data CD into Allplan Building Costs

If you do not want to manage your own item masters with sirAdos text, you can use the sirAdos Building Data CD as a master. The advantage is that you need much less hard disk space and that you can immediately use the text provided on the CD without having to install it first (in the case of updates, for example).

You can import one or more sirAdos items from one or more titles either into the buffer database or directly into your current file in Allplan Building Costs. The contents of the buffer database can be inserted anywhere into any project at any time (if the data types match).

The data can be pasted into a file at the position of the insertion marker or it can be sorted by code text number. In the latter case, the **Calculation** data sheet must be open.

Two options are provided for importing data to files and to the buffer database:

- sirAdos text is pasted at the position of the insertion marker (default) - requirement: the **Sort after insertion** option in the **Settings** dialog box must be deactivated. All the levels in the hierarchy (titles) are removed from the buffer. Irrespective of the sequence and trade from which it originates, text is always pasted at the current position of the insertion marker in the data sheet.

- sirAdos text is sorted and inserted in a file - requirement: the **Sort after insertion** option in the **Settings** dialog box must be activated. With this method, it is important that you maintain the **Codetext** column as the items in a file are sorted by this **column. Consequently, this method cannot be used with elements and masters without file lines.**

  However, it is particularly useful when you create files using sirAdos text only. When the data is pasted in the data sheet, all the lines in the buffer are taken into account. Note, however, that only the lines whose code text numbers do not yet exist in the file are inserted. The lines to be inserted are sorted by code text number and added to the file accordingly.

Important!
Before you can import individual sirAdos items directly into Allplan Building Costs, you have to install the sirAdos Building Data CD and correctly configure the online interface between sirAdos and Allplan Building Costs.

Creating Files Using a Bar-Code Reader

You can use bar-code readers to quickly and easily create files based on sirAdos master text, for example. All you need to do is scan the bar-code label of an item using a bar-code reader and copy the selected specification descriptions to a project in a single step. That's all!

Note: Bar-code readers do not come with Allplan Building Costs. As they must be consistent with the bar-code labels used in specification descriptions, bar-code readers are usually distributed by the providers of tender text.

Preparations for using bar-code readers

Connect the bar-code reader or another suitable input device to your computer as described in the documentation provided by the manufacturer of the device.

In addition, you need to install all the specification descriptions you want to select with the bar-code reader as a master catalog in Allplan Building Costs.

Creating a file using the bar-code reader

You can only create a file in this manner when all the specification descriptions you want to select using the bar-code reader are available as a master catalog in Allplan Building Costs. In addition, the specification descriptions including suitable bar-code labels must be available on paper. These requirements are met by sirAdos text, for example.

Adding Specification Descriptions Using the BRUNS Plant Catalog

General information

You need to purchase a license in order to use plant catalogs in conjunction with Allplan Building Costs. Otherwise, the functions for editing plant catalogs are not available to you.

The Allplan DVD includes the specification descriptions of the BRUNS Plant Catalog 2004/2005. This project, which has already been converted to Allplan Building Costs format, is located in the directory `<dvd>\programs\Allplan BCM\Demodaten_Baukosten\Stämme` on the CD and can be loaded using Allplan Building Costs' archive administration.

Note: Updated versions of the BRUNS Plant Catalog (if any) can be obtained directly from BRUNS. How to import this data in Allplan Building Costs is described below in the "Importing the BRUNS Plant Catalog from floppy disk" section.

Plant Disposition processing template

Allplan Building Costs provides a special processing template for creating text using the BRUNS Plant Catalog: the **Plant Disposition** processing template.

You can use this template to select plants and generate estimated prices for cost estimates. The master project called "BRUNS Plant Catalog" serves as the basis.

Icon	Function	Use
➔	**Create new item**	You can use this tool to create a new item based on a specification description from the plant catalog.
✏	**Edit item**	You can use this tool to modify an item based on a specification description from the plant catalog.
✕	**Delete item**	You can use this tool to delete an item based on a specification description from the plant catalog.

Important!
Activate the **Apply price** check box to automatically transfer the unit price from the price list according to the quantity entered.

Using the price list of the BRUNS Plant Catalog

The BRUNS Plant Catalog contains a price list with prices for all the plants including quantity discounts (the discounts allowed vary depending on the selected plant).

Allplan Building Costs automatically recalculates the prices in the processing template when you change the **quantity**. When you have activated the **Apply price** check box, the unit price is copied from the price list, taking quantity discounts into account. When the **Apply price** check box is deactivated, you enter the price directly.

As quantity data can also be entered using quantity takeoff operations or via the CAD interface, for example, you can update the prices and quantity discounts in the processing template for all the plants selected from the BRUNS Plant Catalog.

Data exchange between Allplan and Allplan Building Costs

In order for the data exchange between Allplan and Allplan Building Costs to run smoothly, the two programs must use the same master data. The master data provided by Allplan Building Costs is managed as a material catalog in Allplan. The essential data field is the **Code text** column.

If Allplan and Allplan Building Costs are installed on the same computer or if the Allplan data directory is shared on the network, you can enter the destination path directly.

Note: More detailed information on exchanging data between Allplan and Allplan Building Costs is provided in the chapter entitled "Quantity Takeoff Operations using Graphics".

Importing the BRUNS Plant Catalog from floppy disk

Updated versions of the BRUNS Plant Catalog (if any) can be obtained directly from BRUNS. Before you can create tenders in Allplan Building Costs using these up-to-date specification descriptions, which you are given on a floppy disk, this data needs to be imported into Allplan Building Costs as a master project.

The BRUNS Plant Catalog is provided as a self-extracting EXE file. Copy the BRUNS catalog file to a temporary directory on your hard disk or network and unpack it by executing the file. Once the plant catalog has been imported in Allplan Building Costs, you can delete the temporary directory, including the BRUNS catalog file.

Note: The catalog file requires approx. 30 MB, the Allplan Building Costs master project that is created requires 60 MB of free hard disk space. Before you start unpacking or importing the catalog file, make sure that you have enough free hard disk space.

Adding Specification Descriptions using GreenBASE Plant Disposition

General information

You need to purchase a license in order to use plant catalogs in conjunction with Allplan Building Costs. Otherwise, the functions for editing plant catalogs are not available to you.

When you have purchased the GreenBASE Plant Disposition CD from GreenX, you can also use these plant lists for Allplan Building Costs. To install GreenBASE Plant Disposition, follow the instructions given by GreenX. The data that is actually available to you depends on the license you have purchased. If you can access the demo data only, please contact GreenX.

There are two ways to use the GreenBASE Plant Disposition application:

- You can create a catalog containing the plants you selected (including quality and price details). You can then use this catalog as a master catalog for creating tenders in Allplan Building Costs or you can export it as a material catalog to Allplan.

- While creating files in Allplan Building Costs, you can directly access the GreenBASE Plant Disposition application, select plants in its extensive database and paste these plants into a file (see the section entitled "Transferring GreenBASE plants directly to projects").

Plant Disposition processing template

Allplan Building Costs provides a special processing template for creating text using GreenBASE Plant Disposition: the **Plant Disposition** processing template.

You can use this template to select plants and generate estimated prices for cost estimates. The master project called "GreenBASE Plant List" serves as the basis.

Icon	Function	Use
	Create new item	You can use this tool to create a new item based on a specification description from the plant catalog.
	Edit item	You can use this tool to modify an item based on a specification description from the plant catalog.
	Delete item	You can use this tool to delete an item based on a specification description from the plant catalog.

Important!
Activate the **Apply price** check box to transfer the unit price from the price list automatically, according to the quantity entered.

Using the price list of GreenBASE Plant Disposition

The GreenBASE plant catalog contains a price list with prices for all the plants including quantity discounts (the discounts allowed vary depending on the selected plant).

Allplan Building Costs automatically recalculates the prices in the processing template when you change the **quantity**. When you have activated the **Apply price** check box, the unit price is copied from the price list, taking quantity discounts into account. When the **Apply price** check box is deactivated, you enter the price directly.

As quantity data can also be entered using quantity takeoff operations or via the CAD interface, for example, you can update the prices and quantity discounts in the processing template for all the plants selected from the plant catalog.

Data exchange between Allplan and Allplan Building Costs

In order for the data exchange between Allplan and Allplan Building Costs to run smoothly, the two programs must use the same master data. The master data provided by Allplan Building Costs is managed as a material catalog in Allplan. The essential data field is the **Code text** column.

If Allplan and Allplan Building Costs are installed on the same computer or if the Allplan data directory is shared on the network, you can enter the destination path directly.

Note: For more detailed information on exchanging data between Allplan and Allplan Building Costs, please consult the manual entitled "Quantity Takeoff Operations using Graphics".

Transferring GreenBASE plants directly to projects

When you do not manage your own plant master with all the GreenBASE plants, you can use GreenBASE Plant Disposition as a master catalog. For this, you can import individual plants from GreenBASE directly into the current projects.

The advantage of this is that you require not so much hard disk space and that you can immediately use the text provided on the CD without having to install it first (in the case of updates, for example).

You can copy one or more plants straight to the current file. The selected plants are inserted where the insertion marker is located in the file.

If the plant items created in the file have been generated including BRUNS price details, you can assign the relevant quantity-based unit prices to the items by using the **Plant Disposition** processing template. For details, see the section entitled "Update the Price List According to the GreenBASE Plant Catalog".

Note: Before you can import GreenBASE plants, you have to install the GreenBASE CD.

Create Files Based on CAD Data

When you have created a three-dimensional building in Allplan and used the specification descriptions prepared by Allplan Building Costs to define the materials of the components, you can create a special Allplan Building Costs schedule including the item quantities calculated during quantity takeoff operations.

This quantities schedule is transferred to Allplan Building Costs and, based on the code text, the quantities specified in this schedule are associated with the specification descriptions of Allplan Building

Costs. As you go along, the files/element schedules created in this manner can be evaluated and edited according to various criteria.

Note: A detailed description is provided in the section entitled "Importing Quantity Takeoff Schedules into Allplan Building Costs (see "Importing Allplan Quantity Takeoff Schedules into Allplan Building Costs" on page 215)".

Create Files Based on Element or Room Schedules

When element and/or component calculations are performed, several items of different trades are used to calculate elements that represent entire components. A possible element, for example, would be an interior wall consisting of masonry, plaster, wallpaper, paint and baseboard.

Using these elements, Allplan Building Costs creates a project-specific element schedule, which can then serve as a basis for automatic generation of trade-specific files. In other words, when an element schedule is used to create a file, the items of different trades of an element are written to the relevant trades in accordance with the structure of the master data.

Note: A brief description of generating files based on element schedules is provided in the section entitled "Creating a CAD Item Catalog (Master File) Based on an Element Catalog".

Defining Item Categories and Item Types

Files often contain not only normal items, which are added up, but also other item categories and types: alternative items, for example, replace normal items. If needed, contingency items may be added in case special services are required. A basic item is a normal item with one or more alternatives. In printouts, text items are larger than other items as they do not contain any prices or quantities. You can also use the 'Text' item category to give preliminary notes a hierarchical structure, for example.

The calculation results of files vary depending on the item categories used. For example, normal, requirement and basic items are taken into account when the total price is calculated. Contingency and alternative items, on the other hand, are excluded. You can combine these categories with item types. By defining reference items and repetitive items, you can create cross-references between items.

As categories and types of items can be reset and redefined at any time, you can quickly and easily calculate a number of variants when drawing up initial cost estimates or checking quotations.

The categories and types of items are defined in the **Properties of (name of item)** dialog box.

Note: When you want to exchange GAEB-format files with design partners, you have to take into account the special conditions for defining categories and types of items. For detailed information, please see "Exchanging Data via the GAEB Interface".

You can enter the item categories most commonly used in practice directly in the **Type** column:

- Alternative item
- Requirement item
- Contingency item
- Basic item
- Normal item
- Text item

If these item categories do not meet your requirements, you can also use the **Properties of (name of item)** dialog box to define items.

Points to bear in mind when defining categories and types of items:

- **Basic item** associated with **alternative item** – a basic item *must* be defined for *each* alternative item! One or more alternative items *must* be assigned to *each* basic item. These assignments are made using assignment numbers.

- **Reference item** associated with **repetitive item** – a repetitive item requires a reference item whose item number has to be entered as the reference.

- **Implementation description** associated with **repetitive item** – an item relating to an implementation description requires an implementation description whose number has to be entered as the reference.

- **Main description and sub-description** – main descriptions always require sub-descriptions and vice versa. When files are set up, sub-descriptions have to be assigned consecutive, two-digit values in ascending order starting with 01.

- Special notes on **DA82** – items without total prices cannot be exported. Basic items are treated as normal items. Open tenderer quantities have to be specified.

- Requirement and contingency items are mutually exclusive in files.

- **Comments** – text supplements to be entered by tenderers cannot be added to comments.

- **Quantity and dimension** – quantities and dimensions have to be specified for items.

Setting up Files

Files can basically be organized and structured to suit your own needs and requirements. Allplan Building Costs provides an easy-to-use algorithm that sets up files and automatically assigns item numbers according to your settings. How this is done is described in the section entitled "Setting up Standard Files".

When you want to exchange GAEB-format files with design partners, however, the files have to be set up in compliance with the GAEB guidelines. The requirements that must be met as well as the options offered by Allplan Building Costs are described in the section entitled "Setting up Files in Compliance with GAEB Guidelines (on page 99)".

Setting up Standard Files

You can set up files manually by entering item numbers in the **Item no.** column of the data sheet. But it is much easier to use Allplan Building Costs' automatic algorithm.

In automatic mode you can choose to set up files

- by applying a logical structure,

- by using consecutive numbers or

- in compliance with GAEB guidelines.

In addition, you can specify whether file, title and/or item lines are to be set up, define the values at which the operation is to start and decide which fillers and separators are to be used.

The data line in which the insertion marker is currently placed and all the associated, subordinate data records in the hierarchy can be set up in a single step. When, for example, the insertion marker is in a file line, this line and all the subordinate titles, items and/or comments can be set up. To set up an entire project including all the subordinate files, you need to place the insertion marker in the project line.

Note: When you want to exchange GAEB-format files with design partners, you have to take into account the special conditions for assigning item numbers. Detailed information is provided in the "Exchanging Data via the GAEB Interface" chapter. See the section entitled "Setting up Files in Compliance with GAEB Guidelines (on page 99)".

You can set up files as often as you want; the results are always displayed immediately. This way, you can quickly and easily test a wide range of options of structuring files by combining the different criteria and thus find the setting best suited for your purpose.

The examples that follow illustrate some basic options for structuring your files.

Example 1:

In the first example, the default setting was used. The insertion marker was placed in the project line before setting up the file:

Using these settings ...

... the result might look like this:

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked
Project			D2Cl			0,00	38.923,53
File	1		List			0,00	38.923,53
Title	1.1	1A	CHAPTER 1A			0,00	0,00
Item	1.1.1	1A_200	top soil degradation		m2	1,00	0,00
Item	1.1.2	1A_300	excavation		m3	7,00	0,00
Item	1.1.3	1A_302	disposal of excavation		m3	6,00	0,00
Item	1.1.4	1A_805	backfilling of the pit		m3	6,00	0,00
Total/end		1A				0,00	0,00
Title	1.2	2A	CHAPTER 2A			0,00	582,66
Title	1.3	2C	CHAPTER 2C			0,00	0,00
Item	1.3.1	2C_106	half-round gutter		m	14,00	0,00
Item	1.3.2	2C_107	channel invert		No	5,00	0,00
Item	1.3.3	2C_109	gutter beam		No	5,00	0,00
Item	1.3.4	2C_203	roofing		m2	15,00	0,00
Item	1.3.5	2C_206	ridge frame		m	4,00	0,00

Example 2:

In the next example, the width of format was set to three characters and "0" was selected for the filler; the text "R / 013." is to be applied to the title "Concrete and R.C. works". The insertion marker was placed in this title line before setting up the file:

Using these settings ...

... the result might look like this:

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked
⊞ 📁 Project			D2Cl			0,00	38.923,53
⊞ 📁 File	R/		List			0,00	38.923,53
⊞ 📁 Title	R/012.001	1A	CHAPTER 1A			0,00	0,00
⊞ 📁 Title	R/013.002	2A	CHAPTER 2A			0,00	582,66
⊞ 📁 Title	R/013.003	2C	CHAPTER 2C			0,00	0,00
📄 Item	R/013.003.001	2C_106	half-round gutter		m	14,00	0,00
📄 Item	R/013.003.002	2C_107	channel invert		No	5,00	0,00
📄 Item	R/013.003.003	2C_109	gutter beam		No	5,00	0,00
📄 Item	R/013.003.004	2C_203	roofing		m2	15,00	0,00
📄 Item	R/013.003.005	2C_206	ridge frame		m	4,00	0,00
📄 Item	R/013.003.006	2C_208	fence to catch the snow		m	10,00	0,00
📄 Item	R/013.003.007	2C_310	vally flashing with out web, 4 splays		m	18,00	0,00
📄 Item	R/013.003.008	2C_600	delivery of lumber		m3	248,00	0,00
📄 Item	R/013.003.009	2C_601	delivery of planed lumber		m3	266,00	0,00
📄 Item	R/013.003.010	2C_602	chemical wood preservation		m3	26,00	0,00
📄 Item	R/013.003.011	2C_604	cross battens softwood		m2	2,00	0,00
📄 Item	R/013.003.012	2C_605	joining and mounting of lumber		m	5,00	0,00
📄 Item	R/013.003.013	2C_607	ridge fish joint		m	3,00	0,00
📄 Item	R/013.003.014	2C_609	verge board		m	5,00	0,00
📄 Item	R/013.003.015	2C_633	battens softwood		m2	4,00	0,00
📄 Item	R/013.003.016	2C_815	wood coating for outside with gloss paint		m2	9,00	0,00
📄 Item	R/013.003.017	2C_903	vapor-diffusion foil		m2	6,00	0,00
⭐ Total/end		2C				0,00	0,00
⊞ 📁 Title	R/013.004	2D	CHAPTER 2D			0,00	0,00
📄 Item	R/013.004.001	2D_001	balcony balustrade		m	128,00	0,00
📄 Item	R/013.004.002	2D_004	coating		m	13,00	0,00

Example 3:

In this example, a standard numeration was entered that is to apply to items only; the width of format was set to five characters and "0" was selected for the filler so that up to 99,999 items can be numbered using a consistent logical system; no separator was specified. The insertion marker was placed in the file line before setting up the file:

Using these settings ...

... the result might look like this:

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked
Project			D2Cl			0,00	38.923,53
File			List			0,00	38.923,53
Title		1A	CHAPTER 1A			0,00	0,00
Item	00001.	1A_200	top soil degradation		m2	1,00	0,00
Item	00002.	1A_300	excavation		m3	7,00	0,00
Item	00003.	1A_302	disposal of excavation		m3	6,00	0,00
Item	00004.	1A_805	backfilling of the pit		m3	6,00	0,00
Total/end		1A				0,00	0,00
Title		2A	CHAPTER 2A			0,00	582,66
Title		2C	CHAPTER 2C			0,00	0,00
Item	00053.	2C_106	half-round gutter		m	14,00	0,00
Item	00054.	2C_107	channel invert		No	5,00	0,00
Item	00055.	2C_109	gutter beam		No	5,00	0,00
Item	00056.	2C_203	roofing		m2	15,00	0,00
Item	00057.	2C_206	ridge frame		m	4,00	0,00
Item	00058.	2C_208	fence to catch the snow		m	10,00	0,00
Item	00059.	2C_310	vally flashing with out web, 4 splays		m	18,00	0,00
Item	00060.	2C_600	delivery of lumber		m3	248,00	0,00

Example 4:

In the fourth example, the file was set up using the GAEB numeration suggested by Allplan Building Costs. To set up a file in this manner, you have to place the insertion marker in the file line (required by GAEB guidelines). You can then click the **Suggestion** button to use Allplan Building Costs' suggestions:

Using these settings ...

... the result might look like this:

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked
Project			D2CI			0,00	29.574,50
File			List			0,00	29.574,50
Title	01		Structure 1			0,00	582,66
Title	01.01	1A	CHAPTER 1A			0,00	0,00
Item	01.01. 10	1A_200	top soil degradation		m2	1,00	0,00
Item	01.01. 20	1A_300	excavation		m3	7,00	0,00
Item	01.01. 30	1A_302	disposal of excavation		m3	6,00	0,00
Item	01.01. 40	1A_805	backfilling of the pit		m3	6,00	0,00
Total/er		1A				0,00	0,00
Title	01.02	2A	CHAPTER 2A			0,00	582,66
Title	01.03	2C	CHAPTER 2C			0,00	0,00
Item	01.03. 10	2C_106	half-round gutter		m	14,00	0,00
Item	01.03. 20	2C_107	channel invert		No	5,00	0,00
Item	01.03. 30	2C_109	gutter beam		No	5,00	0,00
Item	01.03. 40	2C_203	roofing		m2	15,00	0,00
Item	01.03. 50	2C_206	ridge frame		m	4,00	0,00
Item	01.03. 60	2C_208	fence to catch the snow		m	10,00	0,00
Item	01.03. 70	2C_310	vally flashing with out web, 4 splays		m	18,00	0,00
Item	01.03. 80	2C_600	delivery of lumber		m3	248,00	0,00
Item	01.03. 90	2C_601	delivery of planed lumber		m3	266,00	0,00

Setting up Files in Compliance with GAEB Guidelines

Files you want to exchange via the GAEB interface have to be set up in compliance with GAEB guidelines. The "Set up files in GAEB format" feature lets you set up files quickly and easily.

Allplan Building Costs automatically creates a key for ordinal numbering (= ON key), which you can accept or modify (even at a later stage). Based on the format of this ON key, Allplan Building Costs then sets up the entire file in ascending order.

The ON key, which consists of a maximum of nine digits, defines the format of the item numbers to be assigned. The characters of the ON key represent the number of digits for the individual levels in the hierarchy, the items and the item index.

For example, the "1122PPPPI" ON key creates the following item number: "01.22. 12a". "01" is the number of the first title in the hierarchy, "22" is the number of the second title, " 12" is the item number and "a" the item index.

Note: The item index is not used in Allplan Building Costs.

The result might look like this:

P*	Typ	Pos.-Nr	Kurztext	L	Dl
	Projekt		GAEB D81	M	
	Verzeichnis		Information Leistungsverzeichnis.1 Satz*	M	
	Bemerkung		Hinweis	M	
	Bemerkung		Hinweis	M	
	Titel		Einleitung	M	
	Titel		Bezeichnung der LV-Gruppe S2 1	M	
	Bemerkung		Hinweis	M	
	Pos.		Einr.Raeum.Vorh.	M	
	Summe/Ende		Summe Bezeichnung der LV-Gruppe S2 1	m	
	Bemerkung		Hinweis	M	
	Titel		Bodenbelagsarbeiten	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		PVC homogen	M	
	Pos.		PVC homogen	M	
	Summe/Ende		Summe Bodenbelagsarbeiten	m	
	Summe/Ende		Summe Einleitung	m	
	Summe/Ende		SUMME Information Leistungsverzeichnis.1 Satz	m	
	Kosten		Kosten	M	

Important!
Comments and the 'Sub-description' and 'Execution description' item categories are not set up automatically. You can use the "Change item category" tool to assign consecutive numbers to these item categories when defining them.

Add Images and Sketches

Allplan Building Costs allows you to integrate objects in order to touch up your files. This way, you can enhance simple text by adding graphics or even acoustic elements – making things a lot clearer! These objects can be images or, depending on your hardware, audio elements or videos. In practice, however, images are most commonly used.

The "Basic Introduction" chapter provides detailed information on "Object Fields and Object Windows" and describes the process of "Inserting Objects in Object Windows".

When you copy specification descriptions from master text where sketches have already been inserted, these sketches are automatically included in the copy operations.

When you select an appropriate report, the objects integrated in a file are included in printouts.

Determining File Quantities for Tenders

Your file contains the specification descriptions, the definition of the item categories and the item numbers. All that is still missing in the tender is the file quantities.

There are basically two ways to enter quantities in files. You can

- specify quantities by direct entry in the **Quantity** column (individual quantities cannot be determined; quantities cannot be split) or

- calculate quantities using quantity calculations (individual quantities are easy to determine; quantities can be split).

Which method is to be preferred depends on various aspects: entering quantities directly is easier, but usually only suitable for small construction projects and only if the quantities do not have to be split up.

Tip: When choosing the method, spend some time thinking ahead: how do you want to determine the quantities in subsequent phases of the project? One advantage of quantity calculations is that they can be used throughout the project, from setting up the file all the way through to invoicing.

The initially more complex method of using individual quantity calculations is preferable when you transfer the item quantities from several different components or when you want to split quantities, i.e. if the quantities used are to be allocated to various construction projects or clients. To assist you in defining and using quantity calculations, Allplan Building Costs offers a processing template as well as the possibility to enter custom calculations, REB formulas and variables.

Note: More detailed information on calculating quantities is provided in the "Conventional Quantity Takeoff Operations" chapter.

Calculate the Total Costs of Files or Projects

You have created and set up the file, and calculated the file quantities. When all items of the file have been assigned estimated prices, you can already perform initial calculations to determine the estimated total costs of the file or entire project. This is the case, for example, when you have created the file based on master text or a master file and transferred the specification descriptions together with the associated prices.

Note: If no prices have been assigned, you need to enter them before you can calculate the costs. How this is done is described in the chapter entitled "Calculating Costs", in the "Cost Calculation" section.

Printing Files

You have created the file and calculated the file quantities. All you need to do now before dispatching the file is print it.

Note: More detailed information on printing and alternative output options (e.g. output to MS Word or output in RTF, HTML or PDF format) is provided in the section entitled "Printing Files, Cost and Quantity Calculations".

Important!
To add a cover sheet to a file, you need both the project data (e.g. name of client, project name etc.) and the file data. Please make sure that this data is complete. Where this data needs to be entered is described in detail in the "Data for the File Cover Sheet" section.

Back up Files

Printing and dispatching a file marks the end of the first stage in editing files. At this point in time, at the latest, you should create a backup of the project. not only to be able to restore it in case of data loss, but also to document the file contents at the different phases of the construction project. Allplan Building Costs' Archive Administration tool therefore offers quick and easy backup options.

More detailed information is provided in the "Backing Up Data and Archiving Projects" chapter. See the section entitled "Backing up and Archiving Projects Using the Archive Administration Tool".

Tendering Procedure Using the Tenderer Module

Today, information is increasingly exchanged electronically. To meet the requirements of modern data exchange technology, Allplan Building Costs provides options for sending electronic files to tenderers.

In addition to the file, you can include a program that the tenderer can use to edit the file: Allplan's program for editing quotations. This has the advantage that the tenderers to whom you send files do not need any additional software. The only requirement is a computer with at least Microsoft Windows 2000 or Microsoft Windows XP.

To perform analyses and evaluations, you can quickly and easily transfer the prices specified by the tenderers straight to the **Quotation check** data sheet and compare the prices there.

Tip: You can of course make the files available to tenderers in all standard ways, e.g. as a download from your web site or by email.

In this chapter, you will learn how to create files that are ready to send in electronic form. In particular, this chapter shows how to

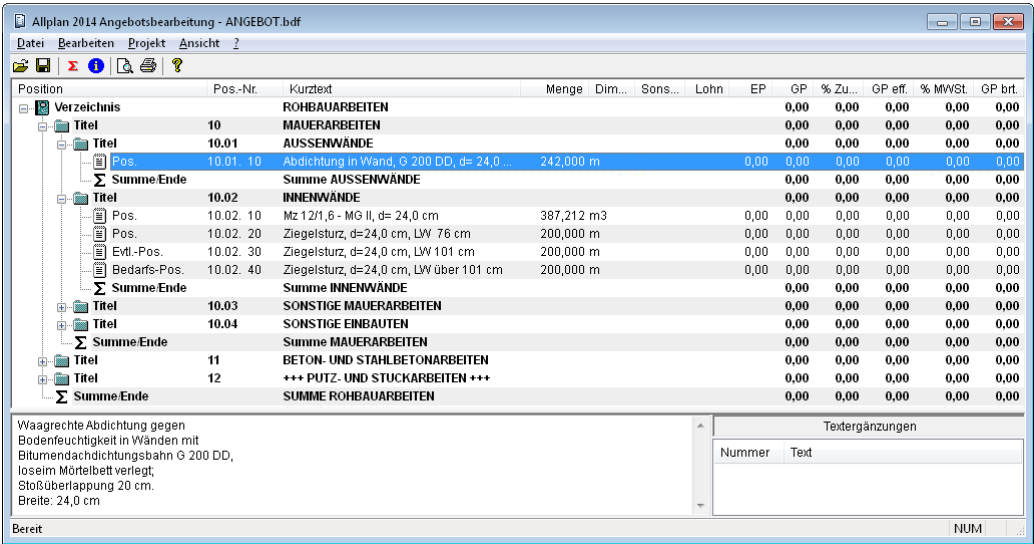- create a file in BDF format (see "Creating a BDF File" on page 103),

- load a file for editing quotations (see "Loading Files for Editing Quotations" on page 107),

- prepare a quotation (see "Editing Quotations" on page 108) using Allplan's program for editing quotations, and

- transfer prices specified by tenderers (see "Transferring Prices for Checking Proposals" on page 108) to the **Quotation check** data sheet.

Creating a BDF File

Allplan Building Costs automatically creates a file in BDF format that you can transmit directly to the tenderers. You can optionally also create Allplan's program for editing quotations, which the tenderer can then use to edit the file and enter prices.

Allplan's Program for Editing Quotations

After you have opened a file, the application window of Allplan's program for editing quotations looks like this:

The menu bar and toolbar are displayed below the title bar of the application window. The tables below briefly introduce the tools that are provided on the menus and in the toolbar.

Note: It is assumed that a file is open. Otherwise the **Datei** (File) menu, for example, will only provide the **Öffnen** (Open) and **Beenden** (Exit) tools.

The file in table form and two windows for entering text are displayed in the middle of the application window. You can adapt the application window to your needs and requirements. For example, you can modify the width of the columns or change the height of the segments.

The **Datei** (File) menu includes tools that you need to open, save and print quotations:

Tool	Use
Öffnen (Open)	You can use this tool to open files in BDF format (used by Allplan's program for editing quotations) or DA 83 format (in compliance with GAEB).
Speichern (Save)	You can use this tool to save edited files.
Seitenansicht (Preview)	You can use this tool to add data to be included in printouts and to display a print preview on screen.
Drucken (Print)	You can use this tool to print out files.
Beenden (Exit)	You can use this tool to exit Allplan's program for editing quotations.

The **Bearbeiten** (Edit) menu contains tools for editing files:

Tool	Use
Rückgängig (Undo)	You can use this tool to undo the last action.
Ausschneiden (Cut)	You can use this tool to copy the characters you have selected to the Clipboard. This process deletes the selected characters from the data entry box.
Kopieren (Copy)	You can use this tool to copy the characters you have selected to the Clipboard. This process does not delete the selected characters from the data entry box.

Tool	Use
Einfügen (Paste)	You can use this tool to paste the characters from the Clipboard to the current position of the insertion marker.

The **Projekt** (Project) menu contains tools that you need for working in data sheets:

Tool	Use
Alles berechnen (Calculate everything)	You can use this tool to calculate the total prices of the current quotation.
Informationen zum LV (Information on file)	You can use this tool to make settings (tenderer name, currency, VAT) that are valid for the entire file.

You can use the tools on the **Ansicht** (View) menu to define how the toolbar and the status bar are displayed:

Tool	Use
Symbolleiste (Toolbar)	You can use this tool to show and hide the toolbar.
Statusleiste (Status bar)	You can use this tool to show and hide the status bar.

You can use the tools on the **?** (= Help) menu to get information on Allplan's program for editing quotations and answers on questions of usage:

Tool	Use
Hilfe (Help)	You can use this tool to get help on Allplan's program for editing quotations.
Info über Bdisk (About Bdisk)	You can use this tool to display information on the program and version installed.

You can use the buttons provided in the toolbar to activate the main tools without having to select a menu first.

Icon	Tool	Use
	Projekt öffnen (Open project)	You can use this tool to execute the **Öffnen** command on the **Datei** menu.
	Projekt speichern (Save project)	You can use this tool to execute the **Speichern** command on the **Datei** menu.
	Projekt berechnen (Calculate project)	You can use this tool to execute the **Alles berechnen** command on the **Projekt** menu.
	Verzeichnisinformatione n bearbeiten (Edit file information)	You can use this tool to execute the **Informatio- nen zum LV** command on the **Projekt** menu.
	Seitenansicht einblenden (Open preview)	You can use this tool to execute the **Seitenansicht** command on the **Datei** menu.
	Projektdaten drucken (Print project data)	You can use this tool to execute the **Drucken** command on the **Datei** menu.
	Online-Hilfe aufrufen (Online help)	You can use this tool to execute the **Hilfe** command on the **Hilfe** menu.

Loading Files for Editing Quotations

Files provided in the tenderer module's BDF format are edited using Allplan's program for editing quotations. You can also use the program to edit files created by other applications for tendering, awarding and invoicing, provided the file has been stored in DA 83 format (file extension .D83) in compliance with GAEB guidelines.

You start Allplan's program for editing quotations via the BDISK.EXE file. This file is generated whenever a BDF file is created with the **Tenderer module** option enabled (see "Create a BDF File").

Editing Quotations

To edit tenders, open the relevant file using Allplan's program for editing quotations and enter data in the file displayed in table form in the application window. As certain data in the file must not be changed, you can only make entries in the fields where the program expects you to enter data.

In file and title lines, you can only enter VAT and additional fees and/or deductions as a percentage. The program then calculates and includes these values in all the subordinate items in the hierarchy. This operation has to be confirmed in a dialog box. The entry you have made in the title or file line is subsequently deleted.

BDF-format files can be saved at any time. This way, you can quit editing files as you want. To resume work, all you need to do is start Allplan's program for editing quotations and load the file you have saved (as described in the section entitled "Open a File in BDF Format for Editing").

When editing files in GAEB format of data type 83 (DA 83), however, any changes to the files *must* be saved in DA 84 format. To resume work, you need to load the file in DA 83 format again. The file then includes the changes you have made (cf. section entitled "Open a GAEB-Compliant File in DA 83 Format for Editing").

When you have finished, you can print out the file for checking.

Important!
Before you (or the tenderer) print(s) out or send(s) a quotation, make sure to recalculate it. Otherwise, it might happen that the current values and totals are not applied!

Transferring Prices for Checking Proposals

To perform analyses and evaluations, you can transfer the prices from the tenderer disk(s) straight to the **Proposal Check** data sheet and immediately compare the prices there. You do not need to copy the prices manually from the proposal to the data sheet first.

Exchanging Data via the GAEB Interface

Different software systems impose ever-increasing demands on data exchange. As a result, there has been a call for a standardized format, which simplifies the process of exchanging data used for tendering (contractual agreements, text, quantities, prices).

In November 1985, the first version of a standardized exchange format was introduced by the German committee for electronics in the construction industry (= **GAEB**). This standard was revised in June 1990 and in January 1997. Today the GAEB XML-format is commonly used.

Allplan Building Costs' GAEB interface is based on the standard specified by the German committee for electronics in the construction industry. This standard controls the exchange of data between tendering and costing applications of different providers.

This chapter provides detailed information on all the questions pertaining to the GAEB interface. In addition, you will learn about everything related to the exchange of data in GAEB format. In particular, this chapter shows how to

- create files in compliance with the GAEB guidelines,

- assign item categories in a GAEB-compliant manner,

- set up files in compliance with the GAEB guidelines (see "Setting up Files in Compliance with GAEB Guidelines" on page 99),

- add comments and technical contract conditions,

- enter additional information on files (on page 118),

- export data via the GAEB interface and

- import data via the GAEB interface.

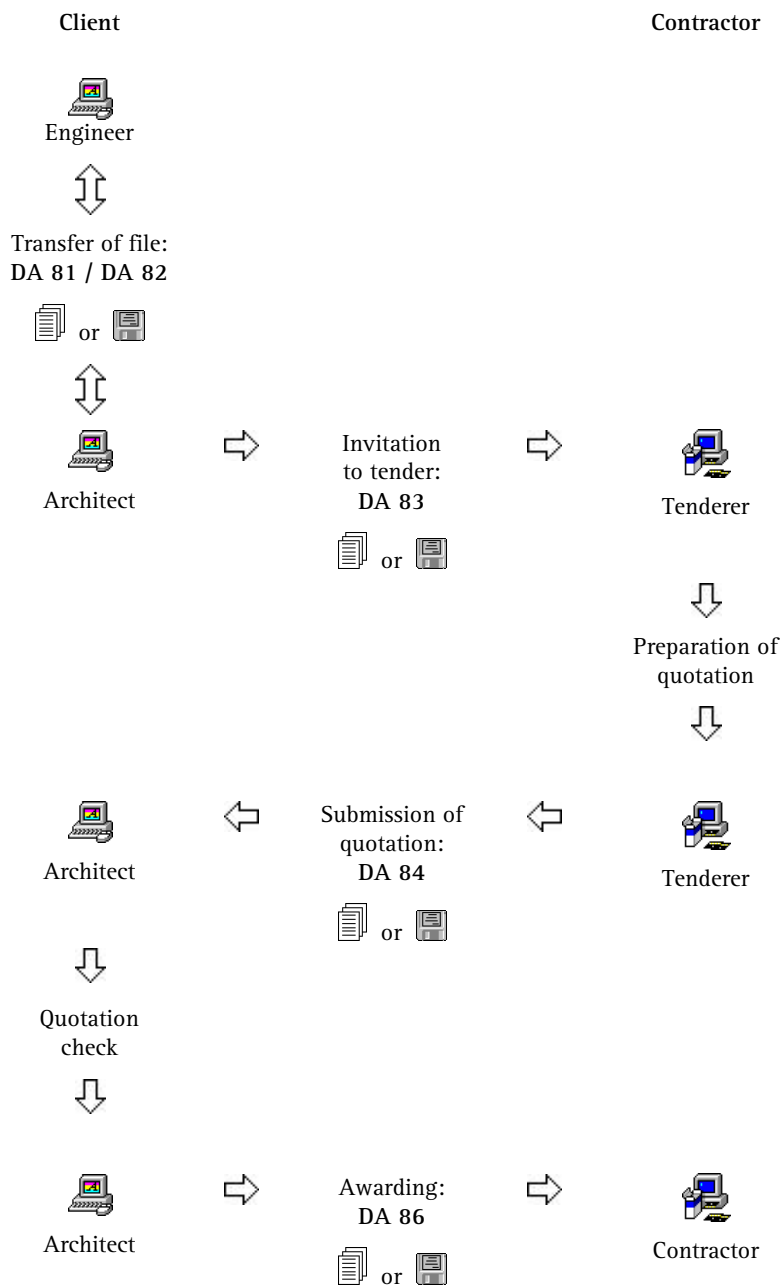# Special Feature Relevant to Exchanging Data via GAEB 90

Files in GAEB 90 format are pure text files in ASCII format. Consequently, it can happen that Windows formatting applied to text (tabs, for example) is lost.

Data Exchange Phases in Compliance with GAEB

In compliance with GAEB the process of exchanging data consists of six phases (also referred to as "data types"), which are defined as follows:

Data type	Phase
DA 81	**Transfer of file**: exchange of specification descriptions without prices
DA 82	**Transfer of estimated costs**: exchange between client – architect – engineer during the design process
DA 83	**Invitation to tender**: transfer of file to tenderer
DA 84	**Submission of quotation**: transfer of quotation (including prices, quantities etc.) from tenderer to architect
DA 85	**Additional quotation**: transfer of alternative data in addition to the main quotation
DA 86	**Awarding**: transfer of file including the checked tender data to the tenderer who is awarded the contract (contractor)

The following illustrates the relationship between the phases:

Client   **Contractor**

Engineer

Transfer of file:
DA 81 / DA 82

or

Architect   ⇨   Invitation
to tender: ⇨   Tenderer
DA 83

or

⇩

Preparation of
quotation

⇩

Architect   ⇦   Submission of
quotation: ⇦   Tenderer
DA 84

or

⇩

Quotation
check

⇩

Architect   ⇨   Awarding: ⇨   Contractor
DA 86

or

Creating Files in Compliance with GAEB Guidelines

Allplan Building Costs allows you to customize the structure of your projects to suit your own needs and requirements. But there are other applications used for tendering, ordering and billing that cannot process these structures.

If you want to transfer data to other applications via the GAEB interface, it is worth spending some time planning a project's structure before even making the first entry to ensure that the destination program can interpret the selected structure.

Special attention should be paid to the following issues:

- Files must be structured in compliance with GAEB.
- Some applications used for tendering, ordering and billing can process two hierarchical levels maximum.
- All the items must be on the same level in the hierarchy.
- Files must be set up in compliance with GAEB.
- Additional information on files must be entered correctly.

If you do not know which settings can be processed by the destination program, you should structure projects based on the guidelines given below. The project suggested is structured in compliance with GAEB and can be read by all applications used for tendering, ordering and billing that have a certified GAEB interface.

Note: These are only suggestions – try out different options yourself!

Structuring Files in Compliance with GAEB Guidelines

The process of exchanging data using the GAEB format is based on file structures. This means that individual files and text are transferred rather than entire projects. It is therefore important that

you create at least one file line in projects you want to transfer via the GAEB interface.

A file structure might look like this:

P*	Typ	Pos.-Nr	Kurztext	L	DI
	Projekt		GAEB D81	M	
	Verzeichnis		Information Leistungsverzeichnis.1 Satz*	M	
	Bemerkung		Hinweis	M	
	Bemerkung		Hinweis	M	
	Titel		Einleitung	M	
	Titel		Bezeichnung der LV-Gruppe S2 1	M	
	Bemerkung		Hinweis	M	
	Pos.		Einr.Raeum.Vorh.	M	
	Summe/Ende		Summe Bezeichnung der LV-Gruppe S2 1	m	
	Bemerkung		Hinweis	M	
	Titel		Bodenbelagsarbeiten	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		PVC homogen	M	
	Pos.		PVC homogen	M	
	Summe/Ende		Summe Bodenbelagsarbeiten	m	
	Summe/Ende		Summe Einleitung	m	
	Summe/Ende		SUMME Information Leistungsverzeichnis.1 Satz	m	
	Kosten		Kosten	M	

Assigning Categories and Types of Items in Compliance with GAEB Guidelines

The following item categories can be used without restrictions in GAEB-compliant files:

- Normal item,

- Basic item,

- Alternative item,

- Requirement item,

- Contingency item,

- Inapplicable item

  and

- Work for hourly wage.

Similarly, you can use the following item types without restrictions:

- **Normal item,**

- **Main description,**

- **Sub-description,**

- **Start of execution description**

  and

- **Block of execution description.**

Please pay careful attention to the following special features:

- Do *not* use the item categories **TextComment** or **TextItem** *within* files; use the **Comment** data record type *only*! The **TextComment** and **TextItem** item categories are used exclusively for pure "text files" (e.g."comments and technical contract conditions").

- Requirement and contingency items are **mutually exclusive** in files.

- When data is exchanged based on **DA 82**, items without total quantities must not be exported (i.e. no alternative or contingency items). Basic items are treated as normal items. Tenderer quantities must be specified as estimated quantities.

In addition, the basic rules for defining item categories and types apply.

Note: For a detailed description of item categories and types, please see the section entitled "Defining Item Categories and Item Types" in the "Tendering" chapter.

Setting up Files in Compliance with GAEB Guidelines

Files you want to exchange via the GAEB interface have to be set up in compliance with GAEB guidelines. The "Set up files in GAEB format" feature lets you set up files quickly and easily.

Allplan Building Costs automatically creates a key for ordinal numbering (= ON key), which you can accept or modify (even at a later stage). Based on the format of this ON key, Allplan Building Costs then sets up the entire file in ascending order.

The ON key, which consists of a maximum of nine digits, defines the format of the item numbers to be assigned. The characters of the ON key represent the number of digits for the individual levels in the hierarchy, the items and the item index.

For example, the "1122PPPPI" ON key creates the following item number: "01.22. 12a". "01" is the number of the first title in the hierarchy, "22" is the number of the second title, " 12" is the item number and "a" the item index.

Note: The item index is not used in Allplan Building Costs.

The result might look like this:

P*	Typ	Pos.-Nr	Kurztext	L	DI
	Projekt		GAEB D81	M	
	Verzeichnis		Information Leistungsverzeichnis.1 Satz*	M	
	Bemerkung		Hinweis	M	
	Bemerkung		Hinweis	M	
	Titel		Einleitung	M	
	Titel		Bezeichnung der LV-Gruppe S2 1	M	
	Bemerkung		Hinweis	M	
	Pos.		Einr.Raeum.Vorh.	M	
	Summe/Ende		Summe Bezeichnung der LV-Gruppe S2 1	m	
	Bemerkung		Hinweis	M	
	Titel		Bodenbelagsarbeiten	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		Belag aufnehmen PVC	M	
	Pos.		PVC homogen	M	
	Pos.		PVC homogen	M	
	Summe/Ende		Summe Bodenbelagsarbeiten	m	
	Summe/Ende		Summe Einleitung	m	
	Summe/Ende		SUMME Information Leistungsverzeichnis.1 Satz	m	
	Kosten		Kosten	M	

Important!
Comments and the 'Sub-description' and 'Execution description' item categories are not set up automatically. You can use the "Change item category" tool to assign consecutive numbers to these item categories when defining them.

GAEB-Compliant Units of Quantity

Allplan Building Costs checks the entered quantity units to verify that they are commonly used and comply with the notation according to STLB-Bau. If you use a different quantity unit or notation/spelling, Allplan Building Costs indicates this when checking the file for compliance with GAEB guidelines (cf. "Checking Files (see "Checking Files" on page 118)"). This does not mean that your entry is incorrect, but rather that you may need to clarify the quantity unit with the persons you will be exchanging the data with.

Important!
Units of quantity can consist of a maximum of four characters.

The following units of quantity are commonly used in GAEB-compliant files:

Unit	Meaning
d	Day
dam3	Cubic decameter (1000m³)
h	Hour
Jr	Year
kg	Kilogram
km	Kilometer
km2	Square kilometer
l	Liter
m	Meter
m2 *or* m²	Square meter
m3 *or* m³	Cubic meter
Mt	Month
psch	Lump sum
St	Piece
t	Ton
Wo	Week
md	Meters x days
mWo	Meters x weeks

Unit	Meaning
mMt	Meters x months
m2d	Square meters x days
m2Wo	Square meters x weeks
m2Mt	Square meters x months
m3d	Cubic meters x days
m3Wo	Cubic meters x weeks
m3Mt	Cubic meters x months
m3km	Cubic meters x kilometers
Sth	Pieces x hours
Std	Pieces x days
StWo	Pieces x weeks
StMt	Pieces x months
St/M	Pieces per month
St/J	Pieces per year
tMt	Tons x months

Comments and Technical Contract Conditions

You can also exchange comments and additional contractual agreements (e.g. technical contract conditions) via the GAEB 90 interface. All you need to do is integrate them as text files in GAEB files before and/or after the file they are associated with.

Allplan Building Costs generates the term "Start of contractual agreement" for every text line and text comment line. Similarly, "Text of contractual agreement" is assigned to long text entered in text windows using memo fields. Consequently, the text sum line is the "End of contractual agreement".

The result might look like this:

P*	Typ	Pos.-Nr	Kurztext	L;DI
	Projekt		GAEB D81	M
	Text-Verzeichnis		Vertragliche Regelungen	M
	Text-Bemerkung			M
	Text-Bemerkung			M
	Text-Bemerkung			M
	Text-Bemerkung			M
	Text-Summe/Ende		Ende Vertragliche Regelungen	m
	Verzeichnis		Information Leistungsverzeichnis.1 Satz*	M
	Bemerkung		Hinweis	M
	Bemerkung		Hinweis	M
	Titel	11	Einleitung	M
	Titel	11.10	Bezeichnung der LV-Gruppe S2 1	M
	Bemerkung		Hinweis	M
	Pos.	11.10. 10	Einr.Raeum.Vorh.	M
	Summe/Ende		Summe Bezeichnung der LV-Gruppe S2 1	m
	Bemerkung		Hinweis	M
	Titel	11.11	Bodenbelagsarbeiten	M
	Pos.	11.11. 20	Belag aufnehmen PVC	M
	Pos.	11.11. 30	Belag aufnehmen PVC	M

Additional Information on Files

Additional information on files (such as "information on the project" or "information on the client") cannot be displayed directly in the file structure.

You can use the **Properties of (name of file)** dialog box to enter additional information in an easy and comfortable manner, thus avoiding wrong entries.

Note: You can enter additional information for each file even when a project consisting of several files is to be exported in its entirety.

Checking Files

Before you export files via the GAEB interface, you should check that these files actually meet the requirements imposed by the GAEB guidelines.

A log indicates whether errors have been detected. You might see the following messages:

- When this message is displayed, the file complies with the GAEB guidelines and can be exported.

- When this message appears, the file contains errors. Correct the error causes indicated in the log and check the file again.

Exporting Files to GAEB Files

There are two ways to export files to GAEB files:

- You can export a single file to a GAEB-format file by placing the insertion marker in the file line of the relevant file before you start the export.

- You can export several files (e.g. file with text file) to a GAEB-format file by placing the insertion marker in the folder/project line of the level in the hierarchy that is superordinate to the relevant files.

Note: When exporting files with contractual agreements (= file with text file), make sure that the insertion marker is positioned correctly: to export a file including contractual agreements to a GAEB-format file in a single step, you need to place the insertion marker in the superordinate folder/project line. To add a file (e.g. a text file) to a file that has already been exported to a GAEB file, you need to position the insertion marker in the relevant file line.

Options for GAEB export

Advanced settings are available for exporting data to GAEB-format files. You can use the **GAEB Options** tab in the **Properties of (name of file)** dialog box to make these settings, which can vary depending on the GAEB phase.

Allplan Building Costs provides a number of special settings for exporting data to GAEB 90-format files.

Importing GAEB Files

GAEB-format files can be imported into Allplan Building Costs via the GAEB interface. Imported files can be inserted in existing projects or in new projects you create during import.

Note: To import prices from proposals in DA 84 format, you have to take into account the special features that are described in the section that follows.

Importing Prices from DA 84-Format Files

GAEB-format files of data type 84 (= proposal delivery) contain additional data that is created by tenderers only. Consequently, when you import GAEB files in the DA 84 format, Allplan Building Costs does not create a complete structure. Rather, the data (prices, quantities, additional text etc.) the tenderer has entered in the GAEB file is added to the existing file structure (= file in an existing project).

Before the GAEB data is actually imported, Allplan Building Costs scans the current project for the file in the GAEB file. The search criterion is the short text of the file. When the file is found in the project (otherwise, the GAEB data is not imported correctly), Allplan

Building Costs displays all the tenderers created for this file. The data in the GAEB file can then be copied to an existing or new tenderer.

If Allplan Building Costs does not find the file (in this case, the file has changed in the meantime), you can select a file to which the prices are to be copied.

During import, Allplan Building Costs checks that the data (i.e. item numbers, item categories, prices, quantities, additional text etc.) is consistent and complete. If errors are detected, a log is generated. In this case, the file has changed in the meantime. Consequently, the proposal is invalid!

Calculating Costs in Compliance with DIN 276

You can use the "DIN 276 – Cost Calculations" module to classify the costs of a construction project in compliance with the DIN 276 cost groups at any stage of a project – a process encompassing cost estimates, cost calculations, calculations of final costs, invoicing and cost control.

Allplan Building Costs comes with a predefined project including the (new) DIN 276 cost classification, which is easy to install using Allplan Building Costs' archive administration (cf. "Installing the DIN 276 Cost Classification "). The DIN 276 classification is copied to the project directory and can then be modified.

You can use the **DIN 276 cost estimates** to determine the estimated total costs of a project by assigning quantities and costs to the relevant cost groups (cf. "Cost Estimates Based on the DIN 276 Cost Classification"). In addition, you can estimate costs based on element or room schedules or by using the BKI construction cost database (see "DIN 276-Compliant Cost Estimates Based on BKI Construction Cost Database" on page 128).

Cost calculations in compliance with DIN 276, **Costs after awarding in compliance with DIN 276** and **Final costs in compliance with DIN 276**, on the other hand, are based on existing data. In these phases, the items, which were previously sorted by trade, are now sorted by DIN 276 cost group.

DIN 276 Cost control operations allow you to set up all cost-related processes in a single data sheet. In addition, Allplan Building Costs offers a wide number of options for analyzing, evaluating and graphically displaying data.

Different types of reports are available in all phases: neutral printouts or DIN 276-compliant forms.

DIN 276-Compliant Cost Estimates

Allplan Building Costs allows you to draw up cost estimates. In particular, you can

- assign quantities and costs to DIN 276 cost groups

- analyze and evaluate existing element or room schedules

- load an object of comparison from the BKI construction cost database and add estimated quantities This function is only available when you have purchased the "BKI Baukosten 2000" CD.

Cost Estimates Based on the DIN 276 Cost Classification

This approach is particularly useful when you do not create an element or room schedule or when a suitable object of comparison is not available.

To estimate costs based on the DIN 276 cost classification, you need to create a new project first. Then open this project in the **DIN 276 Estimation** data sheet and copy the DIN 276 cost groups from the '**DIN 276 CLASSIFICATION**' project. If this project is not listed in the project selection box, install it as described in the section entitled "Installing the DIN 276 Cost Classification".

Copying the DIN 276 classification

You can copy the cost classification in its entirety or just parts of it.

For example, if you merely need cost group 3 (= building structure), you can copy exactly this part of the classification to the project. If you want to use the main DIN 276 cost groups (i.e. cost groups 1 to 7), simply copy these levels to the project.

However, it usually makes sense to copy the entire DIN 276 cost classification right from the beginning as you will need the detailed classification later in subsequent phases anyway.

Note: Allplan Building Costs automatically ignores "empty" DIN 276 classification levels (i.e. lines without quantity, UP and TP entries) when printing. To make sure that all the necessary levels are available, it is therefore advisable to always copy the entire classification.

In addition, you can add your own levels to the DIN 276 cost classification you have copied.

Important!
If you want to determine estimated total costs for the individual cost/main cost groups as well as for the entire construction project, a DIN 276 project line must exist in the **DIN 276 Estimation** data sheet. If you have not copied such a line from the '**DIN 276 CLASSIFICATION**' project, you need to add it: create a classification point and delete the entry in the **DIN 276** column.

You only need to create a classification for every project once. The classification is retained and can be used for all subsequent phases.

Assigning estimated prices and quantities to DIN 276 cost groups

Next, you can assign estimated costs to the appropriate levels. All you need to do is enter values in the **Quantity** and **UP** columns.

To obtain the sums for the individual cost groups and the estimated total costs of the entire project, you have to calculate the project in its entirety . Allplan Building Costs uses the estimated prices you have entered to calculate the total prices, which are characterized by the '**Calculated**' entry in the **Price memo** column. Allplan Building Costs then adds up the total prices of the subordinate hierarchies to determine the total prices of the superordinate hierarchies, which are indicated by the '**Totalized**' entry.

Entries in the **Price memo** column of the **DIN 276 estimation** data sheet:

Entry	Meaning
Calculated	The total price entered in the **TP checked** or **TP grs** column is the product of the estimated price in the **UP** column and the estimated quantity in the **Quantity** column.
Totalized	The total price entered in the **TP checked** or **TP grs** column is the sum of the prices of the subordinate hierarchy/hierarchies.

Note: When you previously entered an estimated price and quantity for a hierarchy and assigned the '**Calculated**' property to these estimated values, they are automatically set to '**Totalized**' when you enter estimated prices for subordinate levels and re-calculate the project. This operation will replace the estimated price and quantity previously entered with the actual total values.

The estimated total of the project is displayed in the top line, that is, the DIN 276 project line (= line without entry).

Allplan Building Costs offers various reports for printing DIN 276-compliant cost estimates.

Note: Instead of drawing up cost estimates from scratch each time, just copy the cost estimates of an existing project and adjust the quantities and prices, if necessary. Then select the **Calculate everything new** tool and Allplan Building Costs automatically determines the new estimated sum.

DIN 276-Compliant Cost Estimates Based on Element or Room Schedules

You can quickly and easily draw up cost estimates in compliance with DIN 276 based on element or room schedules you have already created for a construction project. The only requirement is that the ordinal numbers of the cost groups are entered for the elements' items in the **DIN 276** column of the **Element Schedule** data sheet and that the current estimated quantities and prices are assigned to all the items.

As opposed to cost estimates based on the DIN 276 structure described above, all the items of the element/room schedule are displayed automatically in the **DIN 276 Estimation** data sheet. You do not need to enter estimated prices and quantities as the sums of the cost groups are obtained from the prices calculated for the items.

All the items are sorted by ordinal number in ascending order in the **DIN 276 Estimation** data sheet for the element/room schedule. The DIN 276 levels, on the other hand, are not included.

You can now copy either individual DIN 276 cost groups or the entire cost structure from the '**DIN 276 STRUCTURE**' project to your project. If the '**DIN 276 STRUCTURE**' project is not listed in the project selection box, install it as described in the section entitled "Installing the DIN 276 Cost Structure".

When you copy the entire cost structure, all the cost groups are available. Consequently, a sum is determined for each cost group on each level. This means that sums for the cost groups 1 to 7, sums for the cost groups 31, 32 etc., for example, and sums for the bottom level (e.g. 311, 312, 313 etc.) are determined.

The remainder of the procedure is analogous to the one for cost estimates based on the DIN 276 cost structure.

Note: Before triggering calculations, check that the cost structure is sorted correctly. The following section lists possible errors:

- You have not changed the entry "0" in the **DIN 276** column. Consequently, the relevant data records have been inserted at the top of the data sheet or below the project line.

- Ordinal numbers of items do not end with underscore characters ("_") or other characters defined as additional sorting criteria. Consequently, ordinal numbers are in the same hierarchy as the cost group that is actually superordinate.

- Due to incorrect ordinal numbers, data records are assigned to wrong cost groups.

Correct the entry in the **DIN 276** column. The element/room schedule will update automatically to reflect the changes you have made.

DIN 276-Compliant Cost Estimates Based on BKI Construction Cost Database

In its information center for construction costs (BKI), the German Association of Architects has assembled a comprehensive database of key building characteristics based on the invoicing data of about 1,600 construction projects. You can access these characteristics straight from Allplan Building Costs and use them in conjunction with the values you have defined yourself. This way, you can quickly and easily draw up DIN 276-compliant cost estimates for cost groups 300 and 400.

To use the BKI construction cost database for DIN 276-compliant cost estimates, you need to obtain the "BKI KOSTENplaner" application.

Allplan Building Costs provides an interface to the BKI database through which you can transfer the cost estimates from the BKI construction cost index to your own DIN 276-compliant cost estimates in Allplan Building Costs. The **BKI** toolbar includes all the required tools.

The **BKI** toolbar also provides the tools **BKI -> Version 1.0, 1.1** and **BKI -> Version 2.0** which allow you to use earlier BKI versions (if necessary or useful).

Note: As not all users will need this functionality, the **BKI** toolbar is *not* installed automatically. To use the tools on this toolbar, you need to install it separately.

DIN 276-Compliant Cost Calculation

Based on drafts that are to scale and qualitative building descriptions, cost calculations are performed at the stage of designing. The level of detail you choose depends on the available cost data, amongst others. If detailed data is provided, you can even calculate the costs of individual tasks.

Allplan Building Costs performs cost calculations based on a project's files (including estimated prices and quantities).

Items in files are sorted by trade (i.e. item number). When costs are calculated in compliance with DIN 276, Allplan Building Costs does little more than rearrange all the items in a project so that they are sorted by the entry in the **DIN 276** column. All the hierarchies like file lines, title lines etc. are ignored.

Calculating costs in compliance with DIN 276 only involves a few steps:

- open the DIN 276 Calculation data sheet

- copy the DIN 276 cost classification (if you have not already done so when you drew up cost estimates in compliance with DIN 276)

- determine the sums

- print out the results

To ensure that everything runs smoothly, be sure to note the following:

- The level of detail increases the more files are available in a project.

- The items in the files must include the DIN 276 cost group numbers in the **DIN 276** column of the data sheet.

  The cost group number of an item can consist of a maximum of nine digits plus one character (e.g. an underscore or the value "0") which is defined as an additional sorting criterion and which has to appear after the last digit. For example, the cost group numbers of items which are to be subordinate to cost group 331 can be "331_" or "3310".

- Estimated prices must be entered in the **UP** column and quantities in the **Quantity** column.

Open the **DIN 276 Calculation** data sheet. All the items in the file(s) of the project are sorted by cost group number:

Structure	DIN 276	Short text	Long text	Quantity	Dim	UP	TP checked	% +/-	TP eff.	% VAT	TP grs	Price note
DIN276		DIN 276	Memo				29.574,50	0,00	29.574,50	16,00	34.306,42 Totalized	
Item	325	floor cover	memo	140,325 m2	51,00		7.156,58	0,00	7.156,58	16,00	8.301,63	
Item	325	cleaning	memo	140,325 m2	1,00		140,33	0,00	140,33	16,00	162,78	
Item	325	insulation for impact sound	memo	140,325 m2	11,00		1.543,58	0,00	1.543,58	16,00	1.790,55	
Item	325	screed	memo	140,325 m2	13,00		1.824,23	0,00	1.824,23	16,00	2.116,10	
Item	3250	elastic jointing	memo	37,920 m	2,00		75,84	0,00	75,84	16,00	87,97	
Item	3250	base board	memo	128,384 m	8,00		1.027,07	0,00	1.027,07	16,00	1.191,40	
Item	331	brick wall 17,5	memo	72,008 m2	47,00		3.384,38	0,00	3.384,38	16,00	3.925,88	
Item	331	brick wall 36,5	memo	29,431 m3	74,00		2.177,89	0,00	2.177,89	16,00	2.526,35	
Item	332	window sill outside	memo	10,560 m	23,00		242,88	0,00	242,88	16,00	281,74	
Item	332	turn and tilt fitting	memo	6,000 m	38,00		228,00	0,00	228,00	16,00	264,48	
Item	3320	windows single leaf wood 225	memo	6,000 No	270,00		1.620,00	0,00	1.620,00	16,00	1.879,20	
Item	334	window sill inside	memo	2,112 m2	130,00		274,56	0,00	274,56	16,00	318,48	
Item	334	door latch	memo	6,000 No	25,00		150,00	0,00	150,00	16,00	174,00	
Item	334	door leaf 101	memo	6,000 No	100,00		600,00	0,00	600,00	16,00	696,00	
Item	3340	door frame 101_25	memo	6,000 No	110,00		660,00	0,00	660,00	16,00	765,60	
Item	335	angle bead (outside)	memo	27,360 m	5,00		136,80	0,00	136,80	16,00	158,68	
Item	345	angle bead (inside)	memo	27,360 m	4,00		109,44	0,00	109,44	16,00	126,95	
Item	345	wallpaper on walls	memo	322,398 m2	3,00		967,19	0,00	967,19	16,00	1.121,94	
Item	345	gypsum wall plaster (internal) only on brick walls	memo	417,807 m2	11,00		4.595,88	0,00	4.595,88	16,00	5.331,22	
Item	345	base coating on concrete	memo	186,564 m2	1,00		186,56	0,00	186,56	16,00	216,40	
Item	345	precoat	memo	322,398 m2	3,00		967,19	0,00	967,19	16,00	1.121,94	
Item	351	mesh reinforcement	memo	332,952 kg	1,00		332,95	0,00	332,95	16,00	386,22	
Item	351	bar reinforcement	memo	249,714 kg	1,00		249,71	0,00	249,71	16,00	289,66	
Item	352	paint coat	memo	461,722 m2	2,00		923,44	0,00	923,44	16,00	1.071,19	

Next, copy the DIN 276 cost classification to the data sheet.

When you have drawn up cost estimates in compliance with DIN 276, the cost groups you have used already exist in the project. If necessary, you can add the missing cost groups.

Important!
Do not make multiple copies of the cost classification. Otherwise, the data sheet will contain several instances of the cost classification.

If you have already done so, you can select and delete the redundant cost DIN 276 lines.

Note: To delete a large number of cost groups, you can apply a filter in order to limit the display to DIN 276 lines only. You can then select all the lines and delete them. If necessary, you can copy the cost groups again.

The next step is to calculate the sums of the DIN 276 cost groups. The result is the cost calculation.

Structure	DIN 276	Short text	Long text	Quantity	Dim	UP	TP checked	% +/-	TP eff.	% VAT	TP grs	Price note
DIN276		DIN 276-1 Nov 2006	memo				29.574,50	0,00	29.574,50	16,00	34.306,42	Totalized
DIN276	1	Property	Memo					0,00	0,00	0,00	0,00	
DIN276	2	Arrangment and Development	Memo					0,00	0,00	0,00	0,00	
DIN276	3	Structural Design	Memo				29.574,50	0,00	29.574,50	16,00	34.306,42	Totalized
DIN276	31	Excavation	Memo					0,00	0,00	0,00	0,00	Totalized
DIN276	32	Foundation	Memo				11.767,63	0,00	11.767,63	16,00	13.650,45	Totalized
DIN276	33	External Walls	Memo				9.474,51	0,00	9.474,51	16,00	10.990,43	Totalized
DIN27	331	Supporting External Walls	Memo				5.562,27	0,00	5.562,27	16,00	6.452,23	Totalized
Item	331_	reinforced concrete wall 17,5	memo		m3	250,00		0,00	0,00	16,00	0,00	
Item	331_	reinforced concrete wall 20	memo		m3	280,00		0,00	0,00	16,00	0,00	
Item	331_	reinforced concrete wall 30	memo		m3	310,00		0,00	0,00	16,00	0,00	
Item	331_	brick wall 11,5	memo		m2	30,00		0,00	0,00	16,00	0,00	
Item	331_	brick wall 17,5	memo	72,008	m2	47,00	3.384,38	0,00	3.384,38	16,00	3.925,88	
Item	331_	brick wall 24	memo		m3	55,00		0,00	0,00	16,00	0,00	
Item	331_	brick wall 30	memo		m3	60,00		0,00	0,00	16,00	0,00	
Item	331_	brick wall 36,5	memo	29,431	m3	74,00	2.177,89	0,00	2.177,89	16,00	2.526,35	
DIN27	332	Non Supporting External Walls	Memo				2.090,88	0,00	2.090,88	16,00	2.425,42	Totalized
Item	3320_	windows single leaf wood 100	memo		No	200,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 125	memo		No	220,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 150	memo		No	240,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 175	memo		No	250,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 225	memo	6,000	No	270,00	1.620,00	0,00	1.620,00	16,00	1.879,20	
Item	3320_	windows single leaf wood 250	memo		No	300,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 400	memo		No	450,00		0,00	0,00	16,00	0,00	
Item	3320_	front door element	memo		m2	450,00		0,00	0,00	16,00	0,00	
Item	3320_	french window, stepping 250	memo		No	120,00		0,00	0,00	16,00	0,00	
Item	3320_	french window, stepping 275	memo		No	130,00		0,00	0,00	16,00	0,00	
Item	3320_	french window, stepping 350	memo		No	140,00		0,00	0,00	16,00	0,00	
Item	3320_	french window, stepping 375	memo		No	150,00		0,00	0,00	16,00	0,00	
Item	3320_	french window, stepping 425	memo		No	160,00		0,00	0,00	16,00	0,00	
Item	3320_	windows single leaf wood 450	memo		No	500,00		0,00	0,00	16,00	0,00	
Item	332_	window sill outside	memo	10,560	m	23,00	242,88	0,00	242,88	16,00	281,74	
Item	332_	turn and tilt fitting	memo	6,000	m2	38,00	228,00	0,00	228,00	16,00	264,48	

Costs after Awarding in Compliance with DIN 276

When you have finished planning a project's execution, you can calculate the costs after awarding, based on the price calculations provided by the tenderers.

The DIN 276-compliant calculations of the costs after awarding in Allplan Building Costs are therefore based on the data provided in the awarded contract.

As with DIN 276-compliant cost calculations, Allplan Building Costs does little more than rearrange data – here, it's the data specified by the tenderers in the **Awarding** data sheet – and determine the sums of the superordinate cost groups.

Be sure to note the following:

- The prices specified by the tenderers are only taken into account when you have already created all the relevant tenderers to be awarded the contract. Otherwise, this data sheet does not contain any prices or quantities.

- The items in the files must include the DIN 276 cost group numbers in the **DIN 276** column of the data sheet.

Open the **DIN 276 Awarding** data sheet. All the items in the project's file(s) are sorted by cost group number.

The remainder of the procedure is analogous to the one for cost calculations in compliance with DIN 276.

Final Costs in Compliance with DIN 276

Upon completion of a project, you can calculate the final costs and prepare cost sheets, which serve to document costs.

In Allplan Building Costs, calculations of the final costs in compliance with DIN 276 are based on the data in the **Invoicing** data sheet.

As with DIN 276-compliant cost calculations, Allplan Building Costs does little more than rearrange data – here, it's the data in the **Invoicing** data sheet – and determine the sums of the superordinate cost groups.

Be sure to note the following:

- Requirements: you must have created all the tenderers for invoicing and entered the actual quantities. Otherwise, this data sheet does not contain any prices or quantities.

- The items in the files must include the DIN 276 cost group numbers in the **DIN 276** column of the data sheet.

Open the **DIN 276 Invoicing** data sheet. All the "invoicing items" in the project are sorted by cost group number.

The remainder of the procedure is analogous to the one for cost calculations in compliance with DIN 276.

Cost Control in Compliance with DIN 276

Cost control operations involve comparing the current cost situation with the costs determined at an earlier point in time. This way, you can detect any differences at an early stage and take appropriate counter measures.

Allplan Building Costs compares the individual phases and highlights any differences it comes across.

Based on the data in the **Calculation**, **Awarding** and **Invoicing** data sheets, Allplan Building Costs checks costs in the **DIN 276 cost control** data sheet. The program thus uses the same data as described in the "Cost Control" section of the "Customized Cost Calculations" chapter, but sorts them by DIN 276 cost group numbers.

The table below lists the values that are displayed in the individual phases:

Cost estimates:	Calculated values
Cost calculations:	File quantity x estimated price
Costs after awarding:	File quantity x tenderer price
Calculations of final costs:	Quantity used x tenderer price

In the **DIN 276 Cost control** data sheet, all four phases (cost estimates, cost calculations, costs after awarding and costs for invoicing) are displayed. If you want to compare specific phases only (for example, cost calculations with costs for invoicing), all you need to do is select the relevant lines.

Besides selecting tenderers in the **DIN 276 Cost control** data sheet, you can also compare prices graphically using charts.

In addition, Allplan Building Costs offers a convenient approach for comparing costs on a percentage basis. This way, you can quickly and easily check whether costs are exceeded, for example.

Open the **DIN 276 Cost control** data sheet. All the items in the project are sorted by cost group number:

Structure	Item no	Short text	Tenderer	% Phase c	Quantity	Dim	UP	TP checked	% +/-	TP eff.	% VAT	TP grs
DIN276		Supporting External Walls	Estimation		1000,000	m2	6,00	6.000,00	0,00	6.000,00	19,00	7.140,00
DIN276		***************Calculation		******				5.562,27	0,00	5.562,27	16,00	6.452,23
DIN276		***************Awarding		******					0,00	0,00	0,00	0,00
DIN276		***************Accounting		******					0,00	0,00	0,00	0,00
Item		reinforced concrete wall 17,5	Calculation			m3	250,00		0,00	0,00	16,00	0,00
Item		reinforced concrete wall 20	Calculation			m3	280,00		0,00	0,00	16,00	0,00
Item		reinforced concrete wall 30	Calculation			m3	310,00		0,00	0,00	16,00	0,00
Item		brick wall 11,5	Calculation			m2	30,00		0,00	0,00	16,00	0,00
Item		brick wall 17,5	Calculation		72,008	m2	47,00	3.384,38	0,00	3.384,38	16,00	3.925,88
Item		brick wall 24	Calculation			m3	55,00		0,00	0,00	16,00	0,00
Item		brick wall 30	Calculation			m3	60,00		0,00	0,00	16,00	0,00
Item		brick wall 36,5	Calculation		29,431	m3	74,00	2.177,89	0,00	2.177,89	16,00	2.526,35
DIN276		Non Supporting External Walls	Estimation		270,000	m2	10,00	2.700,00	0,00	2.700,00	19,00	3.213,00
DIN276		***************Calculation		******				2.090,88	0,00	2.090,88	16,00	2.425,42
DIN276		***************Awarding		******					0,00	0,00	0,00	0,00
DIN276		***************Accounting		******					0,00	0,00	0,00	0,00
Item		windows single leaf wood 100	Calculation			No	200,00		0,00	0,00	16,00	0,00
Item		windows single leaf wood 125	Calculation			No	220,00		0,00	0,00	16,00	0,00
Item		windows single leaf wood 150	Calculation			No	240,00		0,00	0,00	16,00	0,00
Item		windows single leaf wood 175	Calculation			No	250,00		0,00	0,00	16,00	0,00
Item		windows single leaf wood 225	Calculation		6,000	No	270,00	1.620,00	0,00	1.620,00	16,00	1.879,20

If there is a DIN 276-compliant cost estimate with the same project no., this phase and all its estimated sums are also displayed. However, estimated prices are only displayed for DIN 276 levels as item-specific costs are not included in cost estimates.

The values calculated are displayed in the % **Phase comparison** column: If the value is less than 100, the costs/quantities have been fallen below. If the value is greater than 100, the costs/quantities have been exceeded.

Important!
The % **Phase comparison** column is only updated when you select the **Price comparison** tool. The **Calculate everything new** tool has *no* effect on this column. Therefore, remember to execute the **Price comparison** tool whenever you change any data or settings.

Customized Cost Calculations

It is not always necessary to calculate costs in compliance with DIN 276. There are times when you will find that this approach is not suitable for cost estimates either.

In addition to DIN 276-compliant approaches, Allplan Building Costs offers you more methods for estimating and checking costs. For example, you can draw up initial cost estimates in a trade-specific manner and then perform detailed cost estimation operations using your own custom cost groups. Or, for example, you distribute an existing budget onto individual cost groups on a percentage basis and thus obtain initial cost estimates.

Furthermore, cost checking operations based on items and trades are generally more useful than DIN 276-compliant cost control procedures.

Estimating Costs Based on Custom Calculations

Cost estimates based on custom calculations are performed using the same tools as for DIN 276-compliant cost estimation operations. These customized calculations are also performed in the **DIN 276 Estimation** data sheet, which has specially been designed for all types of projects and which can be used in conjunction with a variety of methods for estimating costs.

This data sheet allows you to draw up cost estimates based on a freely definable cost structure, which can be refined later. You can also distribute an existing budget onto individual cost groups on a percentage basis.

Important!
A sophisticated cost structure is particularly important for all cost
estimation operations.

Points to bear in mind when setting up the cost structure:

- The **sequence of the lines** in the data sheet is defined by the
  numbers you specify. After you have entered the cost number or
  calculated the total sums, Allplan Building Costs automatically
  places the lines correctly in the data sheet (see example). Please
  note: numbers followed by letters and single-digit numbers
  followed by multi-digit numbers.

- In addition, the numbers define the **hierarchic structure**. The
  DIN 276 entry in the **Type** column indicates a cost group's level
  in the hierarchy. The further an entry is on the right, the lower its
  level in the hierarchy. The hierarchic level of a cost group is
  defined by its number of characters (see example: the cost group
  012345 represents the lowest level in the hierarchy).

- The numbers also define which lines are **Totalized** lines and
  which lines are **Calculated** lines. Superordinate items are always
  'Totalized' lines (see example: 1, 10, 100, 6, A, B) and subordinate
  items are always 'Calculated' lines (see example: 1000, 1001,
  1002, 1003, 101, 61, A1, A2, AA, B1, B2). If a superordinate item
  does not contain any subordinate items, these lines are also
  'Calculated' lines (see example: 012345, **7**, C).

In other words, you define your own hierarchy by setting up a
custom structure that suits your needs. However, don't forget to
create a superordinate level. Otherwise, Allplan Building Costs fails
to calculate a total sum for the cost estimation (see example: line
without entry in '**DIN 276**' column).

Cost group numbers can consist of a maximum of 9 characters
(numbers and/or letters). Numbers less than 0 are not permitted;
there is **no** differentiation between uppercase and lowercase. Cost
group numbers must not include any special characters and blanks.

Structure	DIN 276	Dim	Quantity	UP	TP checked	Price note
⊞ 📁 DIN276					65.400,00	Totalized
⊞ 📁 DIN276					65.400,00	Totalized
⊞ 📁 DIN276	1	m2	500,000	130,80	65.400,00	Totalized
⊞ 📁 DIN276	11	m2	500,000	26,00	13.000,00	Calculated
⊞ 📁 DIN276	12	m2	500,000	34,80	17.400,00	Totalized
⊞ 📁 DIN276	121	m2	600,000	20,00	12.000,00	Calculated
⊞ 📁 DIN276	123	%	1,500	60.000,00	900,00	Calculated
⊞ 📁 DIN276	124	%	4,000	60.000,00	2.400,00	Calculated
⊞ 📁 DIN276	125	%	3,500	60.000,00	2.100,00	Calculated
⊞ 📁 DIN276	13	m2	350,000	100,00	35.000,00	Calculated

Estimating Costs Based on Custom Cost Structures

Start by defining a rough structure, which will serve as the basis for subsequent cost estimation operations.

Tip: For initial cost estimates, you should use ordinal numbers of the same level in the hierarchy (e.g. 1, 2, 3 etc. or A,B,C etc.).

Now you can refine the rough structure by adding subgroups to each main group. This way, you obtain more detailed results for each phase.

When estimating the costs, Allplan Building Costs calculates the total prices of the lowest cost groups. Consequently, these prices are characterized by the '**Calculated**' entry, which is displayed in the **Price memo** column. Allplan Building Costs then adds up the total prices of the subordinate hierarchies to determine the total prices of the superordinate hierarchies. These prices are characterized by the '**Totalized**' entry.

Entries in the **Price memo** column of the **DIN 276 Estimation** data sheet:

Entry	Meaning
Calculated	The total price entered in the **TP checked** or **TP grs** column is the product of the estimated price in the UP column and the estimated quantity in the **Quantity** column.
Totalized	The total price entered in the **TP checked** or **TP grs** column is the sum of the prices of the subordinate hierarchy/hierarchies.

Note: When you previously entered an estimated price and quantity for a hierarchy and assigned the '**Calculated**' property to these estimated values, they are automatically set to '**Totalized**' when you enter estimated prices for subordinate levels and re-calculate the project. This operation will replace the estimated price and quantity previously entered with the actual total values.

Tip: It is a good idea to use this option as follows: enter the area [m²] or volume [m³] in the quantity column and Allplan Building Costs will automatically calculate the price per m² or m³ and display the result in the **UP** column. This entry has no effect on the sums determined in cost estimation operations.

The total sum of the cost estimation is displayed in the **TP** column in the line at the top. Check that you have actually created this sum line. If there is no entry in the '**DIN 276**' column, the line in question is interpreted as the total sum.

You can delete individual lines. Place the insertion marker in the line you want to remove or select several lines. Then click **Delete** on the **Data Record** menu.

Check that all the 'Calculated' lines actually include quantities. If you want to use flat-rate amounts, enter '1' for the quantities.

The total price is the product of the quantity multiplied by unit price. You can also enter the total sum instead of the UP. In this case, Allplan Building Costs calculates the unit price based on the total price divided by the quantity.

Estimating Costs by Distributing Costs on a Percentage Basis

Another option for estimating costs is provided by the **DIN 276 estimation** data sheet. You can calculate the percentage instead of '**Quantity** x **UP**'. This allows you to distribute the costs of a project, for which a specific budget is available, on a percentage basis.

Example: Fees = 10% of the total project costs amounting to EUR 500,000

Enter the percentage in the **Quantity** column. A percent symbol '%' must be displayed in the **Dimension** column. Otherwise, this line is not calculated as a percentage. Enter the total project costs in the UP column. Allplan Building Costs then calculates the total price TP automatically.

Quantity	Dim	UP	TP
10	%	500,000	50,000

Besides drawing up detailed cost estimates, you can also use this option to calculate individual lines only. But you can also calculate the entire cost estimate in this way.

Estimating Costs by Copying Data

You can quickly estimate costs by copying data from existing cost estimates or a master project.

All you need to do is check the calculations and, if necessary, add missing lines. Don't forget to recalculate the sums!

Tip: This approach allows you to copy data from different projects. It is also possible to transfer cost groups from the master project called "DIN 276 Structure" to custom cost estimates.

But you can also combine your own custom structures in a "master project" you create yourself.

Modifying Estimated Prices on a Percentage Basis

When you copy data from other projects, the calculations are also copied at the same time. You need to check and, if necessary, modify the prices and quantities you have copied. You can modify the prices on a percentage basis or specify additional fees and discounts as a percentage.

The following options are available:

- **1st option**: modify the unit prices expressed as a percentage. This causes the unit prices in the UP column to change. After this operation, they cannot be reset to their original values.

- **2nd option**: specify additional fees and discounts as a percentage.
  A percentage is entered in the **% +/-** column. The unit and total prices remain unchanged. The modified sum is displayed in the **TP eff.** column (= effective total price).

  When entering additional fees and/or discounts, you can benefit from some of the advantages provided by Allplan Building Costs:

  - When you enter an additional fee or discount for a superordinate level in the hierarchy, Allplan Building Costs automatically applies this percentage to all the subordinate levels.

  - After having calculated the total sum, Allplan Building Costs displays the average percentage in the line at the top.

Checking Costs Based on Trades

Cost control operations involve comparing the current cost situation with the costs determined at an earlier point in time. This way, you can detect any differences at an early stage and take appropriate counter measures.

Allplan Building Costs compares the individual phases and highlights any differences it comes across.

The table below lists the values that are displayed in the individual phases:

Cost calculations:	File quantity x estimated price
Costs after awarding:	File quantity x tenderer price
Calculations of final costs:	Quantity used x tenderer price

Based on the data in the **Calculation**, **Awarding** and **Invoicing** data sheets, Allplan Building Costs checks costs in the **Cost control** data sheet.

When you open the data sheet, the three phases in which costs are determined (cost calculations, costs after awarding and costs for invoicing) are displayed. If you want to compare specific phases only (for example, cost calculations with costs for invoicing), all you need to do is select the relevant lines.

Besides selecting tenderers in the **Cost control** data sheet, you can also compare prices graphically using charts.

Allplan Building Costs offers a convenient approach for comparing costs on a percentage basis. This way, you can quickly and easily check whether costs are exceeded, for example.

The values calculated are displayed in the % **Phase comparison** column: If the value is less than 100, the costs/quantities have been fallen below. If the value is greater than 100, the costs/quantities have been exceeded.

Important!
The % **Phase comparison** column is only updated when you select the **Price comparison** tool. The **Calculate everything new** tool has **no** effect on this column. Therefore, remember to execute the **Price comparison** tool whenever you change any data or settings.

Cost Calculation Based on Element Method

Using the options provided by Allplan Building Costs, you can quickly and easily determine the costs for a building.

Elements consist of several items of different trades and represent an entire component. A possible element, for example, would be an interior wall consisting of masonry, plaster, wallpaper, paint and baseboard. If you want, you can add further items (from the fields of electrical installations and sanitary facilities) to this element. These items are integrated in the element using an "estimated" factor based on experience, for example.

A distinction is made between element masters, element catalogs and element schedules. Masters and catalogs are master directories of elements. Element schedules are project-specific element directories.

Elements should be generated based on items provided in the master directories. This means that the current prices can be copied from master files to element masters or schedules.

Element schedules can be converted to (trade-specific) files and thus serve as the basis for tendering. In addition, DIN 276-compliant cost estimation operations can be based on element schedules.

When designing using the CAD system (e.g. Allplan), you can assign elements to components and transfer this data to Allplan Building Costs via the interface. You can then edit this data in Allplan Building Costs.

Element masters and element catalogs

Element masters and element catalogs are project-independent master directories of components and serve as the basis for project-specific element schedules.

It is a good idea to sort element catalogs by logical groups, facilitating quick access to the elements. Possible element masters,

that is to say different directories in the hierarchy, would be exterior walls, interior walls, slabs etc., for example.

Element schedules

Element schedules are project-specific directories of components. It is advisable to create elements in element schedules based on the items provided in the master directories. This way, you can copy the current prices from the master data to the element schedules.

Important!
Files can only be generated from a finished element schedule if you have used the items from a master directory to create elements.

Elements in element schedules are created in the same way as elements in the element master.

It is advisable to use the elements provided in element masters as the basis for the generation of element schedules.

Creating an Element Catalog

If you have already created an element schedule for a similar construction project, you can copy this element schedule and modify the elements as you need.

However, the common approach is to create a new element schedule/master based on elements you combine from items provided in the master file or elements you copy from other element catalogs. Start by creating a new element schedule/master in the project database.

Opening the "Element Master" or "Element Schedule" Data Sheet

You have created a new element master or element schedule and, if necessary, made entries in the memo columns. Now you need to open the element master/schedule in the relevant data sheet so that you can further edit it.

If you have not yet created any elements for the element master/schedule, the data sheet only includes two lines: the project line and the cost line.

The "Project - Cost" combination opens the hierarchy in each calculation data sheet. All the other levels in the hierarchy (element, sub-element and item) are delimited by this combination, which exists just once in each calculation data sheet.

The data records that are subordinate to the project level in the hierarchy are totalized both in the project line and in the cost line.

Creating the Structure of an Element Catalog

To structure an element master or element schedule, start by defining the basic structure using elements and sub-elements. Then add the relevant items for each element.

Creating elements

The "element" level is the first level in the hierarchic structure.

The sub-elements and/or items that are directly subordinate to the 'Element' level in the hierarchy are totalized in the 'Element' line and the associated cost line.

When you create the first element, two new indented lines – the element line and the total/end line - are displayed below the project line in the **Type** column.

Enter descriptive text (e.g. "Brick wall, 24 cm") in the **Short text** column of the element line and a sum name for this assembly (e.g. "Total – brick wall, 24 cm") in the **Short text** column of the cost line.

Note: You can configure the program to transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Creating sub-elements

You can further subdivide an element by combining parts of a component in sub-elements. In other words, an element can consist of one or more sub-elements, which in turn consist of several items.

> **Element**
>> **Item**
>> **Item**
>> **Item**
>> **Item**
>> **(Sub-)element**
>>> **Item**
>>> **Item**
>>> **Item**
>>> **Item**
>> **Total (sub-)element**
>> **(Sub-)element**
>>> **Item**
>>> **Item**
>>> **Item**
>> **Total (sub-)element**
> **Total/end element**

This is an example of a hierarchic structure. A structure of this type can be very useful when it comes to calculating elements. You can use it, for example, to quickly calculate different variants for a specific part of a component within the element.

Note: More detailed information is provided later in the section entitled "Defining item categories and item types".

The items that are directly subordinate to the "Sub-'**Element**' level in the hierarchy are totalized in the "Sub-'**Element**' line and the associated total/end line.

When you create the first sub-element, two new indented lines – the sub-element line and the total/end line – are displayed below the element line in the **Type** column.

Enter descriptive text (e.g. "Interior plaster, wallpaper") in the **Short text** column of the sub-element line and a sum name for this element (e.g. "Total – interior plaster, wallpaper") in the **Short text** column of the cost line.

Note: Here, too, you can have the program transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Obtaining Elements from Items

If there are not yet any items available in the master data, it is often necessary to create elements based on items. You can then copy the item text you have created to the master data of your files.

Creating the Structure of an Element Catalog

To structure an element master or element schedule, start by defining the basic structure using elements and sub-elements. Then add the relevant items for each element.

Creating elements

The "element" level is the first level in the hierarchic structure.

The sub-elements and/or items that are directly subordinate to the '**Element**' level in the hierarchy are totalized in the '**Element**' line and the associated cost line.

When you create the first element, two new indented lines – the element line and the total/end line - are displayed below the project line in the **Type** column.

Enter descriptive text (e.g. "Brick wall, 24 cm") in the **Short text** column of the element line and a sum name for this assembly (e.g. "Total – brick wall, 24 cm") in the **Short text** column of the cost line.

Note: You can configure the program to transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Creating sub-elements

You can further subdivide an element by combining parts of a component in sub-elements. In other words, an element can consist of one or more sub-elements, which in turn consist of several items.

```
Element
        Item
        Item
        Item
        Item
        (Sub-)element
                        Item
                        Item
                        Item
                        Item
        Total (sub-)element
        (Sub-)element
                        Item
                        Item
                        Item
        Total (sub-)element
Total/end element
```

This is an example of a hierarchic structure. A structure of this type can be very useful when it comes to calculating elements. You can use it, for example, to quickly calculate different variants for a specific part of a component within the element.

Note: More detailed information is provided later in the section entitled "Defining item categories and item types".

The items that are directly subordinate to the "Sub-"'**Element**' level in the hierarchy are totalized in the "Sub-"'**Element**' line and the associated total/end line.

When you create the first sub-element, two new indented lines – the sub-element line and the total/end line – are displayed below the element line in the **Type** column.

Enter descriptive text (e.g. "Interior plaster, wallpaper") in the **Short text** column of the sub-element line and a sum name for this element (e.g. "Total – interior plaster, wallpaper") in the **Short text** column of the cost line.

Note: Here, too, you can have the program transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Create Items for Elements

Items are data records of the lowest level in the hierarchy of elements. You cannot create any items that are subordinate to items. Consequently, items consist of one line only (an associated sum line does not exist!). The items are totalized on the superordinate level in the hierarchy, that is, the element or the sub-element (if available).

Add Comments to Elements

Comments can be used to describe elements, sub-elements and (one or more) items more precisely. As with items, comments are data records of the lowest level in the hierarchy. You cannot create any comments that are subordinate to comments. Comments are not added to element masters/schedules as often as to files.

To assign a comment to an element, place the insertion marker in the first item line of the relevant element. If the element in question does not include any items, position the insertion marker in the element's total/end line.

Edit Items of Elements

You have created an element with one or more sub-elements. The element consists of one or more empty items to which text, dimensions, DIN 276 cost groups, calculations etc. need to be assigned. In addition, you can add unit prices.

Copy, Move or Delete Elements

In Allplan Building Costs, you can quickly and easily copy, move or delete entire elements and sub-elements as well as individual items and comments. When you create element masters/schedules, this is very useful when you want to apply similar specification descriptions several times or when you want to create an alternative or contingency item based on a "normal" item. You can even create an entire alternative or contingency element from an element.

The procedures for copying, moving and deleting the data records mentioned above are basically the same: select the relevant data records, activate the tool you want to execute, place the insertion marker as you need and insert (or delete) the data records there.

More detailed information on copying, moving and deleting data records is provided in the chapter entitled "Basics of Working with Data Records".

Tips:

- If you want to copy, move or delete several items or entire hierarchical structures (e.g. an entire element with all subordinate sub-elements), select all the relevant lines first. Now you can edit these lines in a single step.

- Including quantity calculations in copy operations can be useful when you want to create alternative or contingency items/elements.

- However, you need to include quantity calculations when you want to move elements, sub-elements or items within a project; in other words, when you want to change the position of these elements.

- Element lines or sub-element lines containing subordinate data records can only be deleted together with all subordinate data records. In this case, you need to select the entire level in the hierarchy.

Creating Elements Based on Items in Item Catalogs

To make things easier, you can create elements based on items you have copied from item catalogs. The advantage of this is that item catalogs include valid prices, which are required in element calculations.

Element schedules for trade-specific files must always be generated based on item catalogs. Another advantage is that items in item catalogs include DIN 276 cost group numbers. This allows you to quickly and easily draw up DIN 276-compliant cost estimates based on element schedules.

Creating elements based on master data involves the following steps:

- Create the element structure in an element master or element schedule.

- Open the item catalog and select the prices you want to transfer to the new element master/schedule in order to draw up initial cost estimates.

- Copy the relevant items, including prices, to the structure of the new element master/schedule.

When you copy and insert items or comments, it is important that you take the hierarchic structure into account:

```
Project
        Element
                Sub-element
                                Item
                                Item
                                Item
                                Item
                        Total/End Sub-element
                Total/End Element
        Cost Project
```

Place the insertion marker on the item that is to follow the item to be inserted.

Note: When you transfer specification descriptions from an existing file to an element master/schedule and copy data records without opening the dialog box for copying data, quantity calculations are automatically copied at the same time. As it is not useful to transfer these quantity calculations to new element masters/schedules, you need to copy the data records **without quantity calculations** using the dialog box for copying data records. Alternatively, delete the quantity calculations later.

Creating the Structure of an Element Catalog

To structure an element master or element schedule, start by defining the basic structure using elements and sub-elements. Then add the relevant items for each element.

Creating elements

The "element" level is the first level in the hierarchic structure.

The sub-elements and/or items that are directly subordinate to the '**Element**' level in the hierarchy are totalized in the '**Element**' line and the associated cost line.

When you create the first element, two new indented lines – the element line and the total/end line - are displayed below the project line in the **Type** column.

Enter descriptive text (e.g. "Brick wall, 24 cm") in the **Short text** column of the element line and a sum name for this assembly (e.g. "Total – brick wall, 24 cm") in the **Short text** column of the cost line.

Note: You can configure the program to transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Creating sub-elements

You can further subdivide an element by combining parts of a component in sub-elements. In other words, an element can consist of one or more sub-elements, which in turn consist of several items.

      Element
            Item
            Item
            Item
            Item
            (Sub-)element
                  Item
                  Item
                  Item
                  Item
            Total (sub-)element
            (Sub-)element
                  Item
                  Item
                  Item
            Total (sub-)element
      Total/end element

This is an example of a hierarchic structure. A structure of this type can be very useful when it comes to calculating elements. You can use it, for example, to quickly calculate different variants for a specific part of a component within the element.

Note: More detailed information is provided later in the section entitled "Defining item categories and item types".

The items that are directly subordinate to the "Sub-"'**Element**' level in the hierarchy are totalized in the "Sub-"'**Element**' line and the associated total/end line.

When you create the first sub-element, two new indented lines – the sub-element line and the total/end line – are displayed below the element line in the **Type** column.

Enter descriptive text (e.g. "Interior plaster, wallpaper") in the **Short text** column of the sub-element line and a sum name for this element (e.g. "Total – interior plaster, wallpaper") in the **Short text** column of the cost line.

Note: Here, too, you can have the program transfer the contents of the short text line automatically to the first long text line (provided you have enabled the relevant option in the **Settings** tool on the **Extras** menu).

Select Estimated Prices in the Master Catalog

Data records saved as master data usually contain several price lines (e.g. minimum price, average price, maximum price). When you copy items from a master catalog to an element master/schedule, the price line you have selected for each data record in the master data is also copied. Element schedules only include one price line. In element masters, on the other hand, you can create additional price columns.

Before copying, you can specify which price line is copied to the new element master/schedule using one of the following options:

• To use the prices of a single tenderer, display the prices of this tenderer only.

• To use the prices of two or more tenderers, display all the price lines and select the line with the price you want to use for each item. These can be price lines of different tenderers.

Note: You can also copy the prices of a tenderer (e.g. the average prices of the MID tenderer) to an existing element master/schedule later. Several price lines can be created in element masters. In element schedules, only one price line can be created at a time. More detailed information is provided in this chapter. See the section entitled "Calculating Prices Based on Element Method".

Selecting estimated prices in master catalogs is described in detail in the "Tendering" chapter. See the section entitled "Selecting Estimated Prices in the Master Catalog".

Creating Elements Based on Items in GAEB-Format Files

If a file has already been created for the project and is available in GAEB format, you can use its specification descriptions as an item catalog. To do this, assign this file as the element master in Allplan Building Costs. You can then use it to define materials in Allplan.

Creating elements based on the items of a GAEB-format file involves the following steps:

• Import the file via the GAEB interface.

• Create the element structure in an element master or element schedule.

• Copy the relevant items from the file to the structure of the new element master/schedule.

You create the structure for the elements by setting up the appropriate hierarchy of elements and sub-elements in the new element master/schedule. More detailed information is provided in the section entitled "Obtaining Elements from Items".

When you copy and insert items or comments, it is important that you take the hierarchic structure into account:

> **Project**
> >   **Element**
> >   **Sub-element**
> >   **Item**
> >   **Item**
> >   **Item**
> >   **Item**
> >   **Total/End Sub-element**
> >   **Total/End Element**
> >   **Cost Project**

Place the insertion marker on the item that is to follow the item to be inserted.

Generating Element Schedules Based on Elements in Element Masters

The quickest way to determine the costs for a project based on the element method is to copy finished elements from master catalogs to the relevant project. As described earlier, it is a good idea to sort elements by logical groups. Create several element master directories. Possible element masters would be exterior walls, interior walls, slabs etc., for example. You should create a separate directory for each element master in the project overview.

Creating element schedules based on element masters involves the following steps:

- Open the element master and select the prices you want to transfer to the new element schedule in order to draw up initial cost estimates.

- Select the desired elements in the master data.

- Copy the selected elements, including prices, to the new element schedule.

Select Estimated Prices in the Master Catalog

Data records saved as master data usually contain several price lines (e.g. minimum price, average price, maximum price). When you copy items from a master catalog to an element master/schedule, the price line you have selected for each data record in the master data is also copied. Element schedules only include one price line. In element masters, on the other hand, you can create additional price columns.

Before copying, you can specify which price line is copied to the new element master/schedule using one of the following options:

- To use the prices of a single tenderer, display the prices of this tenderer only.

- To use the prices of two or more tenderers, display all the price lines and select the line with the price you want to use for each item. These can be price lines of different tenderers.

Note: You can also copy the prices of a tenderer (e.g. the average prices of the MID tenderer) to an existing element master/schedule later. Several price lines can be created in element masters. In element schedules, only one price line can be created at a time. More detailed information is provided in this chapter. See the section entitled "Calculating Prices Based on Element Method".

Selecting estimated prices in master catalogs is described in detail in the "Tendering" chapter. See the section entitled "Selecting Estimated Prices in the Master Catalog".

Copy Data Records from Element Masters to Element Schedules

To create element schedules, all you need to do is copy elements from the element master. Element masters include all the information that is required (DIN 276 cost groups, dimensions and calculations). You only need to select the relevant data records in the element master, copy these records to the element schedule and add quantities there.

The process of copying data records is easy: select the desired elements, activate the tool you want to execute, place the insertion marker as you need in the new element schedule and insert the data records there.

When you copy and insert elements, it is important that you take the hierarchic structure into account:

    Project
        Element
            Sub-element
                Item
                Item
                Item
                Item
            Total/End Sub-element
            Sub-element
                Item
                Item
                Item
                Item
            Total/End Sub-element
        Total/End Element
        Element
            Item
            Item
            Item
            Item
        Total/End Element
    Cost Project

Place the insertion marker in the element line that is to follow the element to be inserted.

Note: Here, too, it is not useful to transfer quantity calculations to new element schedules. Therefore, you have to copy the data records **without quantity calculations** using the dialog box for copying data records. Alternatively, delete the quantity calculations later.

More detailed information on selecting and copying data records in provided in the "Basics of Working with Data Records" chapter. See the sections entitled "Selecting Data Records" and "Copying Data Records".

Creating Element Schedules Including Links to Element Masters

In cost calculations based on the "normal" element method, you use elements that you have worked out in detail in a project. Allplan Building Costs offers an alternative approach for calculating elements: instead of defining elements with all the necessary sub-items, you can place links to elements provided in element masters or element schedules.

When it comes to calculating and printing out data, Allplan Building Costs follows, analyzes and processes these links without transferring the relevant data records to the project. Prices and calculations (variables defined) are taken into account.

In addition, this method provides a quick and convenient way of calculating costs and defining equipment based on master data. For example, project-specific element schedules will update automatically to reflect any changes in element masters.

Possible Applications of the Link Technology

Element schedules including links

Links can be used to set up complete element schedules. These links are associated with existing element masters/schedules which contain the relevant elements.

An example of an element schedule including links is provided on the Allplan DVD in the directory

```
            <dvd>\programs\Allplan
BCM\Demodaten_Baukosten\Elemente&Linkanalyse
```

Self-researching element schedules

You can create self-researching element schedules. This means that elements (e.g. FF-FLOOR-SPACE element) are transferred to element schedules based on the definitions you have made. These elements include the calculation logic and the initial values.

If, for example, an 'FF-FLOOR-SPACE' element is also to be calculated for 'Building 2', all you need to do is place a link to FF-FLOOR-SPACE and check that the relevant initial values are available. This way, you obtain calculation models with a relatively small amount of project data. When you analyze the links in this project, Allplan Building Costs transfers the values from the floor space element in 'Building 1' to the link while taking into account the calculation logic and initial values defined for 'Building 2'.

The following illustration will make things clearer:

Two options are available for creating the calculation logic and initial values in self-researching element schedules.

Create a new quantity line in the "floorspace" element line of Building 1. Assign a variable to this quantity line, variable '_A_', for example, and define any initial value for this element (e.g. 80).

The next step is to assign the '_A_' variable, a calculation formula and factors to the relevant items at the item level in the hierarchy. When placing the link (Building 2), you enter the '_A_' variable in the **In variable** column.

Using a variable in the **In variable** column of the element line:

Type	Codetext	Short text	Dim	Quantity	Q*	Calculation	Result	Variable
Element		Building 1b						
Element	FF-FLOOR-SPACE	floorspace	m2			80	80,000	_A_
Item	3B_401	cleaning	m2	88,000		_A_ *1,1	88,000	
Item	3B_402	insulation for impact sound	m2	96,000		_A_ *1,2	96,000	
Item	3B_501	screed	m2	120,000		_A_ *1,5	120,000	
Item	3B_300	floor cover	m2	136,000		_A_ *1,7	136,000	
Item	3B_308	base board	m	20,000		_A_ /4	20,000	
Total/end	FF-FLOOR-SPACE							
Total/end								
Element		Building 2b						
Link	FF-FLOOR-SPACE	floorspace	m2	80,000		80	80,000	_A_
Total/end								

When you want to use the '_ELEMENT_' variable to calculate the quantities of items, you do not need to define this variable in the **In variable** column. Allplan Building Costs automatically uses the quantity entered in the element line to calculate the item quantities.

Using the **_ELEMENT_** variable to calculate item quantities from the element quantity:

Type	Codetext	Short text	Dim	Quantity	Q*	Calculation	Result	Variable
Element		Building 1						
Element	FF-FLOOR-SPACE	floorspace	m2	60,000				
Item	3B_401	cleaning	m2	66,000		_ELEMENT_*1,1	66,000	
Item	3B_402	insulation for impact sound	m2	72,000		_ELEMENT_*1,2	72,000	
Item	3B_501	screed	m2	90,000		_ELEMENT_*1,5	90,000	
Item	3B_300	floor cover	m2	102,000		_ELEMENT_*1,7	102,000	
Item	3B_308	base board	m	15,000		_ELEMENT_/4	15,000	
Total/end	FF-FLOOR-SPACE							
Total/end								
Element		Building 2						
Link	FF-FLOOR-SPACE	floorspace	m2	60,000				
Total/end								

Calculating Elements Using Links

Requirements

One or more element masters and/or element schedules must exist so that you can place links.

The items provided in these element masters/schedules must include unique code text; i.e. identical items must have the same code text. Otherwise, files cannot be created.

Variables must be used for calculating item quantities.

Defining research projects

The element masters/schedules containing elements to which you want to place links have to be defined as research projects.

The sequence in which you specify projects as research projects also defines the sequence in which the projects are researched. In addition, research can be performed within the current element schedule; in other words, element schedules can be "self-researching".

Placing links

Start by creating a data record in an element schedule. The procedure is the same as for "normal" data records. The actual link is defined later.

Defining links

Tip: Spend some time thinking about how best to structure the elements in the element schedule. Create the links as the lowest level in the hierarchic structure.

You can use the **Define link** tool to define and modify links to elements included in element catalogs defined as research projects. The code text and names of the selected elements are entered in element schedules.

You can only place links to elements that are included in element catalogs you have defined as research projects.

Displaying links

You can use the **Display link** tool to get detailed information on the elements and/or the items of which these elements consist.

Analyzing links

You can use the **Analyze link** tool to update the unit prices and total prices of links in data sheets.

If you want to compare variants, it is best to copy an existing calculation to a new element schedule. You can then modify the data using the tools described above. Finally, compare the variants using the project-independent options for analyzing data provided in the project overview.

Unlinking

Links in element schedules can be unlinked using the **Unlink** tool. Allplan Building Costs copies the relevant element from the element master to the element schedule. As a result, the element schedule is no longer associated with the element master. After you have executed this tool, you can alter the element to suit the needs of your project. The following illustrations will make things clearer.

Link to element:

Unlinked element:

Creating a structure

You can use the **Create structure** tool to create file structures based on element schedules including links and elements.

The structure can be predefined: trades can be created as files or titles. Alternatively, you can arrange items in an unstructured list. Grouping is based on the first digits of the code text, which allows you to combine codes in a list.

Example of a file structure with file lines and title lines:

Structure	Item no	Codetext	Short text
File			List
Title	1	1A	CHAPTER 1A
Title	2	2A	CHAPTER 2A
Title	3	2C	CHAPTER 2C
Title	4	2D	CHAPTER 2D
Title	5	2E	CHAPTER 2E
Item	5.1	2E_202_17.5	reinforced concrete wall 17,5
Item	5.2	2E_202_20	reinforced concrete wall 20
Item	5.3	2E_202_25	reinforced concrete wall 25

This list can be transferred to a new project, pasted from the buffer or integrated as an item list in an existing structure.

Revising projects

When projects are generated based on element schedules including links, the quantity calculations defined in the element schedules are transferred. But if you want Allplan to provide these quantity calculations, the project in question must not include any quantity calculations.

Delete all the quantity calculations and quantities using the **Delete quantity lines** tool and reset the quantities and total prices specified in the item lines using the **Initialize calculation** tool.

Reports for Link Analyses

Special reports are provided for analyzing element schedules including links:

- Reports for analyzing links in compliance with DIN

- Reports for analyzing links based on buildings

- Reports for analyzing links based on trades (3-digit code)

- Reports for analyzing links based on trades (4-digit code)

A special point about these reports is that they save research operations. This way, you can print out these reports without having to repeat researches you have already performed. You only need to trigger new researches when calculations have changed.

Set up Element Catalogs

You can set up element masters or element schedules manually by entering item numbers in the **Item no** column of the data sheet. But it is much easier to use Allplan Building Costs' automatic algorithm.

In automatic mode you can choose to set up element masters/schedules

- by applying a logical structure or

- by using consecutive numbers.

In addition, you can specify whether project, element and/or item lines are to be set up, define the values at which the operation is to start and decide which fillers and separators are to be used.

The data line in which the insertion marker is currently placed and all the associated, subordinate data records in the hierarchy can be set up in a single step. When, for example, the insertion marker is in an element line, this line and all the subordinate sub-elements, items and/or comments can be set up. To set up an entire project including all the subordinate elements, you need to place the insertion marker in the project line.

More detailed information on setting up element masters and element schedules is provided in the "Tendering" chapter. See the section entitled "Setting up Files".

Calculating Element Quantities

Elements usually include items with different dimensions. A wall element could consist of a 36.5 cm wall, plaster and a coat of paint, for example. For the wall, the volume is calculated; for the plaster and coat of paint, on the other hand, Allplan Building Costs determines the area.

Variables are used to calculate quantities of elements: the unknown calculation or the unknown quantity of an element is defined as a variable. Once you have defined a variable, you can integrate it in any subsequent quantity calculations of subordinate data records (sub-elements and items).

Based on this variable and the relevant factors, Allplan Building Costs calculates the quantities of the sub-elements and/or of the items of the element. The wall element mentioned above, which consists of a 36.5 cm wall, plaster and a coat of paint, would get the unit [m^2] as most items of this element are calculated in [m^2].

The wall item would be multiplied by 0.365 and would get the unit [m^3]. If the plaster and coat of paint are to be applied to one side only, this item would be multiplied by 1.000; if they are to be applied to both sides of the wall, a factor of 2.000 would be used.

Let us assume that this wall element also includes an item defined as "wall openings", which is to be analyzed based on the number of openings. This is possible only if the factor for this item consists of a value that specifies the average number of wall openings per square meter of wall.

Note: For calculating quantities, it is a good idea to set up the data sheet as follows: Hide all the columns that are not relevant to the calculations. Alternatively, you can divide the data sheet into two viewports so that the descriptive text block and the **Quantity** column are displayed in the window on the left, and the quantity block is shown on the right.

Defining Calculation Factors for Elements

Instead of quantities, the element master contains factors for calculating the individual item quantities. Therefore, the unknown quantity of an element is entered as a variable. The item quantities of the element are determined from the variable and the factors for calculating the quantity. When the element calculation is processed, the variable is then replaced with the element quantity.

Before you start calculating the quantities, you need to create quantity lines.

Entering Quantities of Elements Manually

When you create element schedules, all you need to do is either replace the variable defined in the element line with the quantity or calculate the relevant quantities in the element line.

When the (re-)calculation is complete, the results are displayed in the **Result** and **Quantity** columns in the item lines. If the items include prices, Allplan Building Costs also takes these prices into account during calculation and enters the results in the **TP checked, TP eff.** and **TP grs** columns in the item lines, element lines and the total/end lines as well as in the cost line of the project.

Calculating Quantities of Elements

As well as entering the quantities of elements manually, you can also have the Allplan Building Costs perform quantity takeoff operations.

You first need to create new quantity lines for the element you want to include in quantity takeoff operations. The program creates the first quantity line in the same line as the specification description in the text block. You have already created this line and defined the variable. All the other quantity lines of this element, which are characterized by ´*****´ in the text block, are inserted below this line. These lines are named ´**new2**´, ´**new3**´, ´**new4**´ etc.

Enter the description and calculation for a component. The quantities of this component are calculated and entered in the **Result** column. Repeat these steps for all the other components which consist of this element.

Finally, all the quantities in the individual quantity lines have to be totalized in the first quantity line of the element.

If you have created too many empty quantity lines, you can delete the lines you do not need later.

Calculating Prices Based on Element Method

In Allplan Building Costs, you can calculate items, sub-elements (component parts) or entire elements based on different item categories and types. This way, various alternatives can be created.

To do this, element masters can be associated with several price lines. When creating element schedules, you can copy various prices (minimum price, average price, maximum price) to the data sheet. In addition, you can specify additional fees or discounts for individual items or entire elements.

Define Item Categories and Item Types of Elements

In Allplan Building Costs, you can choose different calculation types for elements, sub-elements and items.

When you create element masters, it makes sense to assign different alternative items or alternative sub-elements to an element. When it comes to generating project-specific element schedules, you can switch between calculation types, and Allplan Building Costs immediately displays the costs of the alternative you have selected. For example, contingency items can be included as normal items in cost estimates – all you need to do is change the calculation type.

Using sub-elements, you can replace the costs of entire component groups within elements simply by choosing different calculation types.

Basically, all the calculation types available in an element master/schedule can be selected. Below is a description of the item categories most commonly used In the case of elements and sub-elements, it is possible to change the item category. All the other options are only available with items.

Item category	Characteristic
Item	**Normal item** – including quantity, unit price and total price; no special features.

Item category	Characteristic
Basic	**Basic item** – including quantity, unit price and total price; in addition to a normal item, a basic item is assigned one or more alternative items based on the assignment number.
Alt.	**Alternative item** – including quantity and unit price but no total price; is not included in calculations of the total price; is an alternative to a basic item to which it is assigned based on the assignment number.
Requ.	**Requirement item** – including quantity, unit price and total price; is included in calculations of the total price; requirement and contingency items are mutually exclusive.
Cont.	**Contingency item** – including quantity and unit price but no total price; is not included in calculations of the total price; requirement and contingency items are mutually exclusive.
Text	**Text item** – including neither quantity nor unit price; can be used to give comments a hierarchical structure.

You can combine these categories with item types. This allows you to refine the structure of items. You can use the **Properties of (name of item)** dialog box to define the following item types:

Item type	Characteristic
Item	**Normal item** – an item without a structure.

Points to bear in mind when defining categories and types of items:

- **Basic item** associated with **alternative item**: using assignment numbers, you have to assign one or more alternative items to each basic item.

- Requirement and contingency items are mutually exclusive in files. This should be taken into consideration when you create elements!

- **Comments**: additional text to be entered by tenderers cannot be added to comments.

- **Quantity and dimension**: quantities and dimensions have to be specified for items.

More detailed information is provided in the "Tendering" chapter.
See the section entitled "Defining Item Categories and Item Types".

Enter or Change Prices Manually

You can enter prices manually or change the estimated prices copied
from master files, master catalogs, element masters, element
schedules or from other projects later.

To enter the unit price

1   Select the data field in the UP column of the item line for which
    you want to enter a price.

2   Enter the appropriate price and press ENTER to confirm.

Copying Prices from Master Data or Existing Projects

You can select both the data records from which you want to copy
prices and the data records to which you want to copy prices prior to
copying. This has the advantage that the program does not scan
entire projects; rather, it only checks the selected data records to see
whether they match.

In order for prices to be copied correctly from projects, master files,
master catalogs, element masters or element schedules to a new
element master/schedule, the following requirements must be met:
the **Short text**, **Item number** or **Code text** must be exactly the same
in both source project and destination project.

Allplan Building Costs automatically creates a price column both in
the element master and element schedule. This price column is called
Estimation in element schedules and **Master** in element masters. In
element schedules, it is not possible to change the names of
tenderers – i.e. the names of the price columns – or to create several
price columns at the same time. In element masters, on the other
hand, you can create several price columns as well as modify or
delete the names of the tenderers specified by Allplan Building Costs
(as with master directories).

Important!
Copy operations will overwrite the prices in the destination project!
This is irrecoverable. To calculate temporary alternatives only, you
should open the destination project as a "working copy".

Calculating Total Prices

Before you can determine the estimated total costs of element
schedules, you have to enter all the quantities and prices. Otherwise,
the sums of the items and consequently the total sums cannot be
calculated.

Note: As the **Element Schedule** data sheet includes estimated prices
only, you can calculate the costs as far as the project line.

When you (re-)calculate the total costs of a project, all the quantity
lines are (re-)calculated and the results are entered in the **Quantity**
columns of the relevant items. Next, these results are multiplied by
the unit prices to get the total prices of the items. These total prices
are finally summed up for every column. This is always done on the
next superordinate level in the hierarchy.

When the (re-)calculation is complete, the results are entered in the
Quantity, TP checked, TP eff. and **TP grs** columns in the item lines
and total/end lines of the elements as well as in the **TP checked,
TP eff.** and **TP grs** columns in the cost line of the project.

Assign Additional Fees or Discounts

You have copied prices from the master data to a new element
master/schedule. When it comes to estimating costs, you can assign
additional fees and/or discounts as a percentage to the unit prices or
total prices. The same applies for prices entered manually.

Additional fees and/or discounts can be assigned not only to entire
elements but also to individual sub-elements or items. In addition to
individual prices, you can also update and thus change entire price
columns.

If, for example, you assign additional fees and/or discounts to individual items, Allplan Building Costs immediately calculates the effective total prices of these items. The following applies:

TP ± % +/- = TP eff.

Total price ± additional fee/discount = effective total price

When you assign additional fees and/or discounts to entire levels in the hierarchy, Allplan Building Costs initially enters the additional fees and/or discounts in the % **+/-** columns of all the subordinate data records. The effective total prices are only calculated when you trigger a new calculation of the entire element master/schedule.

You can then "normalize" the unit prices; in other words, you can configure the program to include the additional fees and/or discounts in the unit prices. When additional fees and discounts are specified after you have entered the unit prices, you can use the "Normalize Unit Prices" tool to include these additional fees and discounts in the unit prices. The entries in the % **+/-** column are then reset to "0".

More detailed information is provided in the "Tendering" chapter. See the sections entitled "Assigning Additional Fees or Discounts" and "Normalizing Unit Prices".

Creating Files Based on Element Schedules

Allplan Building Costs allows you to automatically generate trade-specific files based on element schedules. In other words, when an element schedule is used to create a file, the items of different trades of an element are written to the relevant trades in accordance with the structure of the master data.

Let us assume that an element schedule contains a number of elements consisting of masonry, plaster, wallpaper and paint. If, for example, you generate an element schedule based on the 'Unfinished structure work' master text, all the items belonging to 'Unfinished structure work' are taken from the element schedule and written to a file called 'Unfinished structure work'. The same applies for plaster and painting work.

Important!
For this, the short text, item number or code text must be exactly the same in both directories.

After you have generated a file based on the trade you have selected in the element schedule, the quantity and price columns include entries. When the (re-)calculation is complete, the results are entered in the **Quantity, TP checked, TP eff.** and **TP grs** columns in the item lines and title lines as well as in the total/end lines of the file and in the cost line of the project. Now you can edit the file as usual: add items, modify quantities, calculate quantities etc.

Note: Before you can generate a file based on an element schedule, you need to create a new project in the project overview.

Print Element Catalogs

Predefined reports are available for every data sheet. For example, you can create printouts of element schedules based on various layouts straight from the **Element Schedule** data sheet. In addition, cost calculations with or without quantity calculations can be included in printouts.

Allplan Building Costs always prints the data of the open and active data sheet. In addition, printouts always include

- the data line where the insertion marker is located and

- all the data lines that are hierarchically subordinate to this data line.

The following applies: the contents of the printout is defined by the position of the insertion marker in the data sheet before the **Print** dialog box is opened. Allplan Building Costs initially assembles the printout based on the data line in which you have currently placed the insertion marker and all the data records that are hierarchically subordinate to this line. You can then refine the settings in the **Print** dialog box, where you can specify which lines are to be included in the printout (open lines only, selected lines or all the lines).

Printing involves the following steps:

- Define the contents of the printout and select the data you want to print. For example, place the insertion marker in the data line at which printing is to start, and display the data records to be printed.

- Open the **Print** dialog box.

- Select a report in the **Output** tab and specify the data records to be printed out.

- If needed, change the footer, font and currency.

- Set up the printer and start printing.

Note: More detailed information on printing element masters and element schedules is provided in the "Basic Introduction" chapter. See the section entitled "Printing Files, Cost and Quantity Calculations".

Planning Costs Using CAD Objects

When you have created a 3D building with standard materials in Allplan or imported a drawing (e.g. IFC file) from a different system into Allplan and assigned a 3D building model to this drawing, you can quickly and easily create an element schedule using the building list derived from the building model, which allows you to immediately determine the building costs for your current design.

In addition, you can use the element schedule created with a building structure to check whether the design of your building is complete and correct. Any changes made to materials and/or quality characteristics affecting the project costs can also be tracked efficiently.

CADOBJECT toolbar and BUILDING PROCESS scheme

All the tools you need to perform cost planning operations are combined in logical groups and can be found

- in the **CADOBJECT** toolbar (see ""CADOBJECT" Toolbar" on page 179) and

- in the **BUILDING PROCESS** scheme for the **Element schedule** data sheet.

Planning costs in Allplan and Allplan Building Costs

You can use the "CAD Objects" module to draw up rough cost estimates for a planned construction project in a comfortable and easy manner.

The following example is provided to illustrate this approach:

A layout with a 3D building model including standard materials has been created in Allplan or a drawing has been imported from a different system into Allplan (e.g. via the IFC interface) and a 3D building model has then been assigned to this drawing.

The general descriptions for the components drawn are entered in the **Material/Code Text** column.

Now there are two ways to perform quantity takeoff operations and/or to create material and quantities schedules in Allplan:

You can create quantities schedules

- using Allplan's building list (= method 1) or
- using the **CAD Objects** schedule (= method 2).

The quantities schedules are transferred to Allplan Building Costs and can then be analyzed and evaluated there. This way, you can draw up initial cost estimates.

Analyzing and evaluating cost planning operations

Special reports are provided for analyzing element schedules including links:

- Analyzing links in compliance with DIN
- Analyzing links based on buildings
- Analyzing links based on trades (3-digit code)
- Analyzing links based on trades (4-digit code)

More tools in the "CAD Objects" module

The "CAD Objects" module offers additional easy-to-use tools that facilitate cost planning in Allplan Building Costs and Allplan:

- Transferring additional information from research projects
- Checking quantity calculations visually using Allplan components
- Filtering components based on object type
- Converting items to links (and vice versa)
- Replacing items and links
- Modifying CAD attributes
- Transferring changes made to material definitions back to Allplan

Performing quantity and cost calculations without Allplan

You can also draw up cost estimates based on the element method *without* performing quantity takeoff operations in Allplan. In that case, however, you cannot take advantage of a set of convenient tools and automatic features that have been provided for this purpose.

"CADOBJECT" Toolbar

This toolbar has been developed specially for cost planning operations using Allplan Building Costs and Allplan.

Icon	Use
	To execute the **Import objects** tool.
	To execute the **Define research** tool.
	To execute the **Transfer source information** tool.
	To execute the **Visualize objects** tool.
	To execute the **Filter objects based on object type** tool.
	To execute the **Toggle items/links** tool.
	To execute the **Replace items/links** tool.
	To execute the **Edit attributes** tool.
	To execute the **Analyze link** tool.
	To execute the **Export objects** tool.
	To execute the **Calculate item quantities** tool.

Important!
The **CADOBJECT** toolbar is *not* installed automatically. To use the tools on this toolbar, you need to install it separately.

"BUILDING PROCESS" Scheme for the "Element Schedule" Data Sheet

The **BUILDING PROCESS** scheme for the **Element Schedule** data sheet has been developed specially for cost planning operations using the "CAD Objects" module. This scheme contains all the columns you need to perform cost planning operations.

Important!
The **BUILDING PROCESS** scheme is *not* installed automatically. To use this scheme, you need to import it separately.

Initial Cost Estimates Without Allplan IntelligenteBauDaten IBD (= Option 1)

You have created a layout in Allplan or imported it via the IFC interface, for example. The layout includes the general descriptions for the components drawn (= material definition) as well as the material IDs entered in the **Material/Code Text** column.

Now there are two ways to perform quantity takeoff operations and/or to create material and quantities schedules in Allplan:

- creating quantities schedules using Allplan's building list (= method 1) or

- creating quantities schedules using the **CAD Objects** schedule (= method 2).

The quantities schedules are transferred to Allplan Building Costs and can then be analyzed and evaluated there. This way, you can draw up initial cost estimates.

Calculating Costs Using Allplan IntelligenteBauDaten IBD (= Option 2)

An efficient way to draw up more detailed cost estimates is to place links. Instead of entering several individual items that belong together, you simply place a link that refers to the relevant element in an element master. When it comes to calculating and evaluating data, Allplan Building Costs follows, analyzes and processes these links without transferring the relevant data records to the project. Prices and calculations (variables defined) are taken into account.

To use this feature, you have to set up an element master containing the components you want to include in the element schedule by using links and assign a unique code text to each component. Allplan IBD provides predefined element masters designed to allow efficient use of links.

Here, too, you can perform quantity takeoff operations and/or create material and quantities schedules in Allplan by using either of the two methods described above in option 1.

More Tools in the "CAD Objects" Module

The "CAD Objects" module offers a set of additional tools.

Transferring Additional Information from Research Projects

When you have imported Allplan data to Allplan Building Costs element schedules, you can transfer additional information such as short text or DIN 276 numbers from research projects to element schedules. Please note that the DIN number of the **element level** in the hierarchy is automatically used for the DIN number of the **link**.

Important!
If an item includes a code text which exists in a research project, the short text and DIN number of the element are used for this item.

Structure	Codetext	Short text	DIN 276	Quantity	Dim
⊞ 📁 **Element**		./.			
📁 Link	BRICK-WALL_11.5	brick wall		36,350 m2	

Structure	Codetext	Short text	DIN 276	Quantity	Dim
⊞ 📁 **Element**		Wall			
📁 Link	BRICK-WALL_11.5	brick wall 11,5	3310	36,350 m2	

Example of a link: after importing Allplan data into Allplan Building Costs (top) and after transferring source information from a research project (bottom)

Checking Quantity Calculations Visually Using Allplan Components

Each item or element in Allplan Building Costs is derived from an original Allplan component, which can be displayed. This way, you can efficiently check and monitor the individual quantity calculations at any stage.

Allplan displays the original component in selection color

Filtering Components Based on Object Type

You can filter components in element schedules based on object type. This way, you can apply a filter that will display components of a specific object type only.

Converting Items to Links (and Vice Versa)

If you have defined materials in Allplan using not only complete elements but also individual items from item catalogs or element masters, these items are not created as links in Allplan Building Costs. Rather, these items remain unchanged and thus exist as items in Allplan Building Costs.

P*	Structure	Codetext	Short text	Quantity	Dim
	Project		Project		
	Element		Building		
	Element		Structure		
	Element		Second Floor		
	Element		Wall		
	Link	BRICK-WALL_11.5	brick wall	36,350 m2	
	Item	CONC-WALL_17.5	reinforced concete wall	14,980 m2	
	Link	LIME-SAND_11.5	lime sand wall	22,790 m2	
	Item	PLA-BOARD_7.5	gypsum plaster board wall	6,250 m2	
	Total/end		TOTAL Wall		
	Total/end		TOTAL Second Floor		
	Total/end		TOTAL Structure		
	Total/end		TOTAL Building		
	Cost		Cost		

When a material name defined in Allplan does *not* end with a backslash ("\"), items are transferred as items to element schedules in Allplan Building Costs.

The disadvantage is that you need to enter the unit prices for these items manually in the element schedule as these prices cannot be determined in research operations due to the missing links.

Items can be converted to links (and vice versa). If the code text of an item converted to a link exists in the research project, this item is also researched.

The results are available as links (items converted). You can undo this operation at any time.

P*	Structure	Codetext	Short text	Quantity	Dim
	Project		Project		
	Element		Building		
	Element		Structure		
	Element		Second Floor		
	Element		Wall		
	Link	BRICK-WALL_11.5	brick wall	36,350 m2	
✓	Link	CONC-WALL_17.5	reinforced concete wall	14,980 m2	
	Link	LIME-SAND_11.5	lime sand wall	22,790 m2	
✓	Link	PLA-BOARD_7.5	gypsum plaster board wall	6,250 m2	
	Total/end		TOTAL Wall		
	Total/end		TOTAL Second Floor		
	Total/end		TOTAL Structure		
	Total/end		TOTAL Building		
	Cost		Cost		

Replacing Items and Links

The materials of the components you have designed in Allplan and transferred to Allplan Building Costs can still be changed in Allplan Building Costs. All you need to do is replace items and links with other items and links in element schedules. Please note that an item can only be replaced by another item (e.g. from an item catalog or element catalog) and a link can only be replaced by a link to another element (from an element catalog such as Allplan IntelligenteBauDaten IBD).

Important!
New links are only researched when the element catalog containing the element linked is defined as a research project.

Code text and short text of linked elements are transferred from the research project.

Modifying CAD Attributes

You can modify the CAD attributes (and thus the material definition) of items and/or links in element schedules later.

The modified CAD attributes can then be transferred back to Allplan (cf. "Transferring Changes Made to Material Definitions back to Allplan").

Transferring Changes Made to Material Definitions back to Allplan

When you have changed CAD attributes (e.g. material definitions) in element schedules in Allplan Building Costs, you can transfer the modified attributes back to Allplan. These changes are automatically applied in Allplan and reflected in the material definitions of the Allplan components.

Important!
You can only transfer changes you have made to material definitions back to Allplan, if you have used the 🐞 **Import objects** tool to create the element schedule from a quantity takeoff schedule that was generated using Allplan's **CAD Objects** schedule. Otherwise, the required information for correct assignment to the Allplan components (referred to as CAD references) will not be available.

Performing Quantity and Cost Calculations Without Allplan

Drawing up cost estimates based on the element method *without* performing quantity takeoff operations in Allplan involves the following steps: determine the quantities of the elements in a conventional manner and enter the results directly in Allplan Building Costs. Taking into account the calculation rules you have defined for items, Allplan Building Costs automatically calculates the item quantities based on the element quantities.

Item quantities obtained in this manner can be transferred from element schedules to files (see the section entitled "Update Quantities"). This is of relevance in the **Calculation** and **Invoicing** phases.

Important!
For this, a unique code text must exist in the element schedule. In addition, this code text must be exactly the same in both the element schedule and the file. Otherwise, the quantities cannot be assigned correctly.

Scheduling

Construction drawings, time schedules and tenders are usually edited and processed by different persons. As the data available to all those involved in a project varies considerably, this can cause significant errors affecting project costs.

To ensure a smooth and consistent design process, you can associate CAD objects with services and files. This approach lets you compare the planned services and thus the cost flow with the actual situation, simulate the entire building process visually, detect collisions at an early stage and manage deadlines. You can simultaneously apply all the tools provided for the individual phases.

Consistent approach:

Allplan Building Costs's scheduling module allows you to optimize the planning of all tasks at any stage in the building process. Cost and time expenditure can be managed clearly and displayed graphically. All information is always provided in a transparent manner. This way, you can immediately see how services, deadlines and the geometric properties of a building interact.

In addition, the scheduling module forms the basis for subsequent processes such as invoicing or controlling operations, for example.

You can quickly and easily perform quantity takeoff operations, check measurement sheets, create execution plans and draw up cost estimates using Allplan's and Allplan Building Costs's interdisciplinary solutions in conjunction with MS Project.

Scheme of integrated design:

First, CAD objects are associated with elements and their items based on schematic names. The results of quantity takeoff operations are then assigned to items in files, which in turn, are then associated (together with their quantity calculations) with processes. This way, all those involved in a project can work independently although they can access the same basic data. In addition, this approach facilitates common evaluations and analyses of deadlines, geometric properties, quantities and items.

You can use the "Allplan Building Costs Mobile" option to take measurements directly on site, which provides a convenient way of quickly entering data such as quantity calculations of various items, completion dates and locations. Following this, you can use Allplan Building Costs to check the measurement sheets in a comfortable and easy manner as well as transfer the results as actual values to a time schedule.

With this approach, you can obtain a comparison of planned and actual data not only for quantities and costs but also for deadlines. Furthermore, you can quickly and efficiently perform invoicing

operations and draw up estimates while taking deadlines into account. Different reports are provided for printing the results.

BUILDING PROCESS and Import Export toolbars as well as BUILDING PROCESS scheme

All the tools and columns you require for scheduling operations are combined in logical groups and can be found

- in the **BUILDING PROCESS** toolbar in Allplan Building Costs,
- in the **BUILDING PROCESS** scheme for the **Calculation** and **Invoicing** data sheets in Allplan Building Costs and
- in the **Import Export** toolbar (see ""Import Export" Toolbar in MS Project" on page 191) in MS Project.

Analyzing and evaluating scheduling operations

In addition to the standard tools provided by MS Project, Allplan Building Costs offers a number of reports specially designed for scheduling operations. These reports illustrate the scheduled and actual progress of construction work.

This way, you can compare the planned services and cost flow with the actual situation, simulate the building process visually and detect differences at an early stage.

The following reports are available:

- Progress, trades, cash flow, deadline
- Progress, check, cash flow, overview
- Progress, forecast, process, cash flow (compact or detailed)
- Progress, payments made
- Progress, payments received

When you install Allplan Building Costs, these reports are stored in the directory `...\Daten\Berichte\EXTENDED.V2014`. To print out scheduling data, you need to set the path to this directory.

More scheduling tools

The scheduling module offers additional easy-to-use tools that facilitate scheduling in Allplan Building Costs and Allplan:

- Checking processes visually
- Filtering quantity calculations based on processes

"BUILDING PROCESS" Toolbar

This toolbar has been developed specially for scheduling operations using Allplan Building Costs.

Icon	Use
	To execute the **Import CAD data** tool.
	To execute the **Display CAD map** tool.
	To execute the **Assign processes** tool.
	To execute the **Process list to Clipboard** tool.
	To execute the **Import process data** tool.
	To execute the **Filter process** tool.
	To execute the **Accept process** tool.
	To execute the **Visualize process** tool.
	To execute the **Export progress** tool.

Important!
The **BUILDING PROCESS** toolbar is *not* installed automatically. To use the tools on this toolbar, you need to import it separately.

"BUILDING PROCESS" Scheme for the Calculation and Invoicing Data Sheets

The **BUILDING PROCESS** scheme has been developed specially for the **Calculation** and **Invoicing** data sheets. This scheme contains all the columns that are relevant to scheduling operations.

The **BUILDING PROCESS** scheme is not installed automatically. To use it, you need to install it separately.

"Import Export" Toolbar in MS Project

The **Import Export** toolbar has been developed for MS Project to ensure smooth and efficient communications with Allplan Building Costs:

This toolbar contains the following buttons:

Icon	Use
Write Deadlines	To transfer deadlines to Allplan Building Costs.
Read Progress	To import data from Allplan Building Costs into MS Project.

Important!
This toolbar is *not* installed automatically. To use it, you need to install it separately.

Scheduling using Allplan Building Costs and MS Project

The quantity calculations resulting from graphical quantity takeoff operations in Allplan are given unique identifiers (task names) in Allplan Building Costs and then transferred to MS Project for further editing.

In MS Project, you can complete the structure, adjust task names and enter scheduled deadlines. This data is then transferred back to Allplan Building Costs, where it is associated with the quantities calculated.

Checking measurement sheets involves accepting the quantities determined. In other words, the quantities used are characterized by the 'actual date' entry, which you assign in this process. Finally, this data is transferred to MS Project again, where it can be analyzed and evaluated in order to track and illustrate progress.

Assigning Task Names to Quantity Calculations

Similar to code text, which serves as a unique identifier for components and items in graphical quantity takeoff operations, unique code keys – "task names" - are entered in the **Measurement sheet** column in Allplan Building Costs and in the **Task Name** column in MS Project.

These task names can be generated automatically based on the trade and the building structure defined by the building list or transferred from a time schedule in MS Project (if available).

To do this, the **BUILDING PROCESS** toolbar and the **BUILDING PROCESS** scheme must be installed in Allplan Building Costs.

Important!
The task name of each quantity calculation **must** be exactly the same in both the **Measurement sheet** column in Allplan Building Costs and the **Task name** column in MS Project. Otherwise, the data cannot be transferred correctly.

In the example below, the task name has been generated automatically based on the trade ("brick wall") and the building structure ("6-Rooms\First Floor) and entered in the **Measurement sheet** column. In this phase, the **Scheduled date** is derived from Allplan (date on which the component in question was designed) and is *not* relevant to scheduling operations.

Entering the data relevant to scheduling operations in Allplan Building Costs (the **Measurement sheet** column includes the task name for item/quantity calculations):

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked	Q'	View	Topology	Create record of det. measures	Scheduled date	Actual date
Title		2E	CHAPTER 2E			0,00	14.911,30					. .	. .
Item		2E_216_17.5	brick wall 17,5	93,392	m2	47,00	4.389,42			\6-Rooms\First Floor\BRICK-WALL_DYN\	2E_ 6-Rooms First Floor	19.07.2006	. .

Setting up Time Schedules in MS Project

You can generate a task list in MS Project based on Allplan Building Costs data by creating a new project, inserting the data and then adding a task structure.

Tasks copied from Allplan Building Costs (if you have not yet created a corresponding project in MS Project):

	ⓘ	Task Name	Duration
1		002 B1\G1\E1\	1 day?
2		002 B1\G1\E2\	1 day?
3		009 B1\G1\E2\	1 day?
4		012 B1\G1\E2\	1 day?
5		012 B1\G1\E3\	1 day?

Task list set up for a time schedule after the superordinate lines have been added to the hierarchy and structure:

	🛈	Task Name me	Duration	Start Date	Finish Date
1		⊟Project	126 days	We 05.10.05	We 29.03.06
2		⊟ DIN 18300 Earthwork	4 days	We 05.10.05	Mo 10.10.05
3		002 B1\G1\E1\	2 days	Fr 07.10.05	Mo 10.10.05
4		002 B1\G1\E2\	2 days	We 05.10.05	Th 06.10.05
5		⊟ DIN 18306 Sewagework	5 days	Tu18.10.05	Mo 24.10.05
6		009 B1\G1\E2\	5 days	Tu 18.10.05	Mo 24.10.05
7		⊟ DIN 18330Brickwork	18 days	Tu25.10.05	Th 17.11.05
8		012 B1\G1\E2\	3 days	Tu 25.10.05	Th 27.10.05
9		012 B1\G1\E3\	3 days	Tu 01.11.05	Th 03.11.05
10		012 B1\G1\E4\	3 days	Tu 08.11.05	Th 10.11.05

Now you have entered all the data you need to compare the actual situation with the scheduled situation. You can then transfer this data to your file in Allplan Building Costs where it can be compared with the measurement sheet.

Checking Measurement Sheets and Entering Actual Dates

The process of checking measurement sheets using Allplan Building Costs involves accepting the quantity lines of the actual quantities used and/or refusing incorrect quantity lines. Only the quantity lines you have accepted are transferred to MS Project.

Checking measurement sheets in Allplan Building Costs – example of accepted and rejected quantity lines **(Q type** column):

Structure	Item no	Codetext	Short text	Quantity	Dim	UP	TP checked	Q'	Q type	Create record of det. measures
⊞ 📁 Title		2E	CHAPTER 2E			0,00	14.911,30			
📄 Item		2E_216_17,5	brick wall 17,5	72,008	m2	47,00	3.384,38		✗Rejected	2E_ 6-Rooms First Floor
📄 Item		*************	*************	*************			*************	********	✗Rejected	2E_ 6-Rooms First Floor
📄 Item		*************	*************	*************			*************	********	✓Accepted	2E_ 6-Rooms First Floor
📄 Item		*************	*************	*************			*************	********	✓Accepted	2E_ 6-Rooms First Floor

Before you can check the measurement sheets, the tenderer for invoicing must be specified in the **Awarding** data sheet and the quantity lines for invoicing must be created; in addition, the task names must be assigned in the **Measurement sheet** column.

Transferring Actual Data to MS Project

Only accepted quantity calculations included in measurement sheets are transferred to MS Project, where you can then analyze and evaluate the progress of construction work.

Actual data for analyses and evaluations in MS Project:

Task Name	Duration	Start Date	Finish Date	Completed	November 10.10. 17.10. 24.10. 31.10. 07.11. 14.11. 21.11. 28
⊟ DIN 18331 Concrete and Reinforced Concrete	25 days	Tu 11.10.05	Mo 14.11.05	20%	
013 B1\G1\E1\	5 days	Tu 11.10.05	Mo 17.10.05	0%	
013 B1\G1\E2\	5 days	Tu 18.10.05	Mo 24.10.05	100%	

More scheduling tools

The scheduling module offers a set of additional tools.

Checking Processes Visually Using Allplan Components

Each task/process in Allplan Building Costs is derived from an original Allplan component in which the item quantities of the process in question originated. These original components can be displayed in Allplan. This way, you can efficiently check and monitor the individual quantity calculations at any stage.

Allplan displays the original components of a process in selection color:

Filtering Quantity Calculations Based on Processes

To see better what you are doing in files, you can apply a filter that will select certain processes only.

Graphical Quantity Takeoff Operations Using Allplan

Both when designing in 3D using Allplan and when editing files in Allplan Building Costs, you generate data that is of relevance to the architectural design process. This data includes material and component definitions, specification descriptions consisting of items and quantities (length, area, number, volume, etc.).

You can transfer this data, which needs to be made available to both Allplan and Allplan Building Costs, from one system (in which the data originated) to the other system (where the data can be used for the subsequent design). This ensures that the data is only created once. Thus, possible sources of errors are excluded and the data volume is kept to a minimum.

The quantities which are automatically created in Allplan when you design in 3D are particularly important for Allplan Building Costs: as all the item quantities are transferred from Allplan to Allplan Building Costs, is it not necessary to perform time-consuming quantity takeoff operations in Allplan Building Costs. Furthermore, the costs of construction projects can be calculated quickly and efficiently based on master catalogs associated with prices.

Functional Principle of Quantity Takeoff Operations Using Graphics

First, the relevant specification descriptions are set up as item catalogs with a trade structure (= master file) in Allplan Building Costs. In addition, a "code text" is assigned to these specification descriptions. Then, the items of this master file are used to create elements, which are combined in an element master.

The specification descriptions prepared in this manner are accessed when materials are defined in Allplan: in the process of designing components, materials are selected from the catalogs provided and assigned based on the code text. As Allplan automatically updates all the quantities of components, quantity takeoff schedules can be created quickly and easily once the design is complete.

These schedules are transferred to Allplan Building Costs and the code text is used to assign the quantities specified to the specification descriptions. As you go along, you can run analyses based on a wide range of different criteria and/or process these files in many different ways.

Two columns of quantity takeoff schedules created in Allplan play a central role in graphical quantity takeoff operations: the **Code text** column (which can be considered equivalent to a material or item number) and the **Quantity** column. All the other columns like **Component number**, **Room number**, **Room name** and **Component ID** are primarily used to identify the individual quantity calculations in Allplan Building Costs and only have a subordinate role as far as the actual data transfer is concerned.

The significant advantage of this method is that VOB-compliant quantities are available immediately. In addition, fully automatic cost calculations can be performed when the items in the master catalogs are associated with the current prices.

Catalog Types for Quantity Takeoff Operations Using Graphics

A distinction is made between item catalogs and element catalogs.

Specification descriptions in item catalogs are structured by trade. In element catalogs, the specification descriptions of different trades are automatically combined in "item packages" that fully describe a component.

The master file is a special type of item catalog. It contains all the specification descriptions (= items) used for creating the individual elements in the element catalogs.

While designing in Allplan, you can assign individual items from an item catalog (= item method) or entire elements from an element catalog (= element method) to components and then transfer this data to Allplan Building Costs where it can then be analyzed and evaluated in conjunction with the relevant file.

Item catalogs

The item catalogs are the master directories of all specification descriptions required for the implementation of construction projects and the associated tenders.

Items in item catalogs are structured by trade.

Master file

The master file is the master directory of the specification descriptions required for creating elements in element catalogs. You can define your own specification descriptions. As an alternative, specification descriptions can be copied from item catalogs to the master file.

Items in the master file are also structured by trade.

Important!
Using a master file is the best way to ensure that the quantities will be imported correctly.

Elements

An element consists of several items of different trades and describes a complete component. A possible element, for example, is an interior wall consisting of masonry, plaster, wallpaper, paint and baseboard. If you want, you can add further items (from the fields of electrical installations and sanitary facilities, for example) to this element.

These items are integrated in the element using an "estimated" factor based on experience, for example.

You ideally create all the elements by using items from the master file. This way, you ensure that the item quantities specified in the quantity takeoff schedule can be correctly assigned to the relevant specification descriptions in the item catalog. The assignment is made based the code text and is only possible if the item catalog (= master file) used for creating the elements and the item catalog used as the basis for the import of quantities are exactly the same.

Element master

The element master is the *project-independent* master directory of all elements (= components) and serves as the basis for *project-specific* element schedules.

It is a good idea to sort the element master by logical groups, facilitating quick access to the elements. Possible directories in the hierarchy would be exterior walls, interior walls, slabs etc., for example.

Element schedules

Element schedules are *project-specific* directories of elements (= components), which are set up based on the elements provided in the element master. Element schedules are used to limit the material offered for selection to only those elements (= materials) that are to be used in a project.

Project-specific and trade-specific files are generated based on element schedules. This means that element schedules serve as the basis for item-specific quantity takeoff operations and the tender. In addition, element schedules can be used for cost calculations in compliance with DIN 276.

Important!
If you want to use element schedules to generate files later, the following requirements must be met: the elements must have been created based on items of the master file, which must include all the items and, in addition, the code text must match.

Requirements for Quantity Takeoff Operations Using Graphics

System requirements

Allplan and Allplan Building Costs must be installed on the same computer or in a common network.

In addition, the two systems must have full access to the directories described in the section entitled "System Configuration and Settings".

Software requirements

As Allplan and Allplan Building Costs are continuously refined, new versions including new functions and improvements to existing features are available at regular intervals.

To fully exploit the advantages provided by graphical quantity takeoff operations, you should always work with the *latest* versions of Allplan and Allplan Building Costs .

Design requirements

Basic requirements concerning the design:

- The building model *must* be created in 3D, so that the dimensions, quantities, cubic volume, etc. can be calculated.

- All materials and attributes you want to include in analyses *must* be defined based on the catalogs provided by Allplan Building Costs when you enter components or later.

System Configuration and Settings

To ensure a seamless and smooth exchange of data between Allplan and Allplan Building Costs, you need to make/check some settings just *once.*

Otherwise, "online" access to data is not possible. In other words, you cannot access Allplan Building Costs data while working in Allplan.

Settings in Allplan Building Costs

You need to make two path settings in Allplan Building Costs:

- A path must be set to the data exchange directory in which Allplan stores the files with the results of quantity takeoff operations.

- Another path must be set to the directory where Allplan's default settings are saved. These defaults include component attributes (e.g. information on trades), which are important for setting up catalogs in Allplan Building Costs (cf. section entitled "CAD Attributes for Items").

Settings in Allplan

You also need to make/check two path settings in Allplan:

- Before you begin designing in Allplan, make sure that the **nem_ava** catalog is selected for the components that you will need for designing. You can check this setting globally in the default settings or by calling the relevant function for each component.

  Note: The **nem_ava** catalog is usually preset by default for most components, but it still always a good idea to check just in case.

- In addition, you need to set the path to the Allplan Building Costs directory so that you can access the projects in this directory right from Allplan.

Catalogs for Quantity Takeoff Operations Using Graphics

Catalogs provide the common basis for graphical quantity takeoff operations using Allplan and Allplan Building Costs. These catalogs, which contain specification descriptions as item data, are created and maintained using Allplan Building Costs. As you work with Allplan, you can assign individual items (= item method) or entire item packages (= element method) from catalogs to quantities generated.

There are different ways of exchanging data between Allplan Building Costs and Allplan. The following descriptions explain the philosophy behind graphical quantity takeoff operations. Please note that the format of this manual puts a limit on the number of options we can present. With the wide variety of possibilities offered, you can create even very complex catalogs.

When defining materials in Allplan, you can access all the projects available in the Allplan Building Costs directory you have set. The way in which materials are defined varies depending on the catalog type (item catalogs, master file or element catalogs) selected in Allplan Building Costs (cf. section entitled "Defining Materials in Allplan"). Please note the special features of the individual catalogs.

Important!
You can specify the catalog from which the elements or items are to be taken. This allows you to select the catalog that best suits your needs.

Make sure that you are dealing with the correct catalog when importing CAD data into Allplan Building Costs later. Otherwise, the data may not be processed correctly.

It is not advisable to mix catalogs. Before you begin, decide on the specification descriptions you require in Allplan and set up an appropriate "CAD catalog" in Allplan Building Costs.

Some notes on the individual catalogs:

a) Item catalogs

When you select materials in Allplan, item catalogs are marked with an (S) after the project name (exception: master file).

CAD data generated based directly on item catalogs can be imported into Allplan Building Costs by using the "CAD XPad -> Project" tool when you import the data for the first time. When updating an existing file, use the "CAD XUpdate" tool.

It is essential to make sure that you have specified all the catalogs needed for the import; otherwise, the quantities may not be assigned correctly. The best approach therefore is to create a special, CAD-specific master file based on the items of the item catalogs.

b) Master file

As a master file is maintained like a "normal" project file, it is marked with a (P) after the project name when you select materials in Allplan.

You can also use the "CAD XUpdate" tool to import CAD data into a master file (or a copy of a master file). You can then quickly and easily delete items that are not used or associated with quantities.

c) Element catalogs

When you select materials in Allplan, element catalogs are marked with an (E) (= project-independent element catalog) or with a (R) (= project-specific schedule) after the project name.

Here, too, you can use the "CAD XUpdate" tool provided by Allplan Building Costs to import CAD data generated based on element catalogs. This data can be imported into a copy of the master file, for example.

Setup and Structure of CAD Catalogs

Why are special CAD catalogs useful?

When defining materials in Allplan, you can access all the projects available in Allplan Building Costs in order to select specification descriptions from different catalogs. In spite of significant advantages, this has several disadvantages, however:

- It can happen that you need to open several catalogs and perform tedious searches until you find the item you want to use.

- When importing CAD data into Allplan Building Costs, you need to specify the catalogs from which you have taken items (disadvantage: you must remember the catalogs you have used). As an alternative, you can also specify all existing catalogs (disadvantage: doing so can increase the time required for import).

To avoid these disadvantages, you can use special CAD catalogs customized to meet the requirements imposed by design tasks. These catalogs, which are created based on existing item catalogs,

have the following advantages:

- CAD catalogs only contain items and/or elements that are relevant to the design, providing quicker access to items/elements.

- When importing CAD data, you only need to specify a single catalog containing all necessary items.

- Items can be set up to suit the needs of designers: for example, the specification descriptions of plaster *and* paint can be used to generate a single element named "Wall with plaster and paint". Although these specification descriptions belong to different trades in the item catalogs, you do not have to perform time-consuming searches.

Type and structure of a CAD catalog

It is worth spending time carefully planning a CAD catalog's structure before even drawing the first line in Allplan: define the materials you want to use or decide on the rooms' equipment properties, for example.

Combine the specification descriptions you require for these
materials and equipment properties in a separate CAD item catalog
(= master file). You can even use this catalog to define materials in
Allplan by assigning individual items to components (= item
method).

In contrast to pure CAD item catalogs, however, CAD element
catalogs have significant advantages:

- You can combine several items in elements when defining
  materials using Allplan. You can then transfer these "item
  packages" in their entirety by making a single assignment in the
  CAD system (= element method).

- The same applies for the "Room" tool in Allplan.

- Using elements, you can create hierarchies of any structure. This
  allows you to generate well-designed CAD catalogs.

- Element catalogs can contain several instances of an item
  although duplicate data storage is avoided. For example, the
  "Plaster" item can be assigned to both exterior and interior wall
  elements.

The CAD catalog you set up should thus be customized to meet the
requirements of the design tasks and define elements by combining
items from the item catalog.

Important!
The item catalog (= master file) serves as the basis for the element
catalog. Prior to creating the item catalog, spend some time thinking
about how best to structure it and, if possible, you should not make
changes afterwards.

Element catalogs only contain copies of the actual items. When CAD
data is imported into Allplan Building Costs, however, the items are
taken form the item catalog. It is therefore important that you update
and maintain the items in the item catalog. Any changes you make
to items in element catalogs are not recognized.

Furthermore, you can only copy the current prices from the item
catalog to an element catalog when the elements in the element
catalog you want to use have been created based on items of the
item catalog.

Creating a CAD item catalog (master file) based on an element catalog

Allplan Building Costs offers the option to automatically generate trade-specific files based on element catalogs (element masters or element schedules).

If you have created a CAD element catalog based on items from different master catalogs, you can use this element catalog to generate a CAD item catalog, which is necessary for a correct import of quantities.

Code Text for Items and Elements

Code text is a freely definable combination of characters that needs to be defined for each item/element. It is essential that a **unique** code text be assigned to each item/element. You can manage code text in Allplan Building Costs using the **Code text** column.

Whereas the item number of any item may change in each file, code text always stays the same. This means that code text serves as the unique identifier for items in master catalogs, files and element schedules.

Due to its properties, code text is used as an "assignment key". In other words, materials, quantities and specification descriptions are assigned based on code text: first in Allplan Building Costs by defining "Item/Element -> Code text", next in Allplan by assigning "Material = Code text" and then again in Allplan Building Costs by specifying "Code text/Quantity -> Specification description/Quantity".

Important!
Code text of items must be entered in the item catalog. You should ensure that each item includes a **unique** code text. Unique means that each combination of characters exists just **once**. You should not modify code text later.

Note: Code text of an item can consist of a *maximum of 16 characters* and that of an element of *15 characters maximum.* Code text may include letters, numbers and "-./_".

ATTENTION!
However, it must *not* contain *blanks*!

For example, you can create code text based on a number key or character sequence:

Example 1:

Code text	stands for ...
012020110	the "Vertically perforated brick 36.5" item in its entirety
012020110	trade 012 "Masonry"
012**020**110	the second subtitle "Exterior walls"
012020**110**	the consecutive item number; increments of ten are useful as you can add items later without having to adjust numbering.

Example 2:

Code text	stands for ...
012VPB365	the "Vertically perforated brick 36.5" item
	The code text indicates the contents of the item.

Example of a code text key in an item catalog:

◆ 📁 Title	012	012	MAUERARBEITEN
◆ 📁 Title	012011	012011	GRÜNDUNGEN
📄 Item	012021	012021	AUSSENWÄNDE
📄 Item	012021010	012021010	Abdichtung in Wand, G 200 DD, d= 24,0 cm
📄 Item	012021020	012021020	Abdichtung in Wand, G 200 DD, d= 36,5 cm
📄 Item	012021025	012021025	Vollziegel VMZ 20/1,6, MG II, d= 24 cm
📄 Item	012021030	012021030	Hlz 12/1,0 - MG II, d= 36,5 cm
📄 Item	012021050	012021050	Hlz 12/1,4 - MG II, d= 36,5 cm
📄 Item	012021070	012021070	Hlz 20/1,8 - MG II, d= 24,0 cm

CAD Attributes for Items

Items in CAD catalogs can be associated with additional attributes which have already been defined in Allplan and which are necessary for correct quantity takeoff operations using Allplan:

• You can use the **Trade** option to define regulations based on which openings, niches, reveals etc. are analyzed and evaluated. You can specify different regulations for each trade.

  The trade that is to be applied to an item for evaluation and analysis is matched to the trade list in Allplan by transferring the trade and trade number from Allplan.

• In the element catalog, you can define **formulas** for all items combined in elements. This ensures that item quantities are always calculated correctly even when different regulations have been defined for individual items (e.g. wall area in m² and wall length in m).

  Important!
  To fully exploit the benefits of elements, you should always define formulas for items assigned to elements. If you have not entered formulas, the quantities of the items in question cannot be determined.

  When defining formulas, you can enter all the units required to calculate the relevant component in Allplan. These units are presented for selection. Customized formulas can also be defined.

  Example:
  A wall with a tiling pattern that is max. 1.50 m high. The formula might look like this: m*1.50

When editing the CAD attributes, you can use an attribute definition as a template and simply transfer it from one item to another.

Note: An overview of the attributes is provided in the online help for Allplan, in the chapter entitled "Attributes of Architectural Elements".

Dynamic Code Text for Items

"Dynamic code text" is a combination of code text and CAD attributes. This means that a predefined Allplan attribute is added as a variable to code text of items in the **element catalog** (*not* in the item catalog). Only when you create quantity takeoff schedules are these variables replaced by the actual values defined by the dimensions of the Allplan components. This completes the generation of "dynamic code text".

Code text created in this manner serves as an "assignment key" when files/element schedules are generated and/or the CAD XUpdate tool is executed: item quantities in quantity takeoff schedules are assigned to specification descriptions in the item catalog based on this code text.

Important!
The code text must be exactly the same in both the quantity takeoff schedule and the item catalog. Otherwise, the CAD XUpdate tool returns error messages, which are saved in the `allright.err` file.

You can use any of the attributes defined in Allplan as variables. However, the following attributes are particularly important:

- Length
- Width
- Height
- Volume

When defining the formula for "dynamic code text", be sure to note the following: a **+ character** must be used to append the attribute(s) to the end of the basic code text of an item. These attributes are then replaced by the component dimensions. The basic code text and the variables must be separated by a **hyphen**; constant parts of the code text must be enclosed in **quotation marks**.

Below is an example to illustrate the syntax of "dynamic code text" in an **element catalog**:

$$\text{"013.060000-"+ROUND(length*100;1;5)+"-"+ROUND(thickness*100;1;5)}$$

"013.060000-"	constant part: basic code text of the item (e.g. a general description of reinforced concrete columns) plus hyphen
+	instructs the program to add the next term
ROUND	instructs the program to round off the value
Length / thickness	variables: CAD attributes that are replaced by the actual component dimensions
*100	conversion of unit to meters and centimeters
1	number of decimal places
5	round-off value of the last digit

Example:	Thickness of the component in Allplan = 0.257 cm
	ROUND(0.257*100;1;5) = 26
	For example, when designing a column that is 0.365 m long and 0.405 m thick, this "dynamic code text" yields the following final code text in the quantity takeoff schedule:
	013.060000-36.5-40.5

The code text must be defined in this manner in the **item catalog**. This ensures that the quantities specified in the quantity takeoff schedule are assigned correctly to items when files/element schedules are generated.

Creating a CAD Catalog as an Element Catalog

The sections that follow explain how to create custom CAD catalogs for graphical quantity takeoff operations in Allplan Building Costs.

As these catalogs are very complex and setting them up takes much time, Nemetschek's Design2Cost initiative offers you a comprehensive database of predefined catalogs and files, which are provided in Allplan IntelligenteBauDaten (= Allplan IBD).

For more information, please visit our website at http://www.design2cost.de or contact your Nemetschek sales partner.

Defining Materials in Allplan

General information

You can assign materials to architectural components (walls, columns, slabs etc.) while designing using Allplan. If you want, you can add rooms to which you assign further material definitions based on finishing surfaces.

Not only do you have the option to assign individual items to architectural components and rooms in a single step but you can also assign entire elements together with all the associated items (provided you have prepared the element catalogs in an appropriate manner). If you are using rooms, you can quickly and easily define finishing surfaces consisting of multiple layers by selecting entire elements right from the beginning.

In addition to basic items such as "brick" and "plaster", a wall can be assigned more items for paint or tiles, for example. You can even apply bituminous coating (for sealing against dampness) to the "wall" element despite the fact that the quantities of bituminous coating are calculated based on a different regulation. To ensure that the quantities of the individual items are always calculated correctly (e.g. wall area in m² for plaster and paint; wall length in m for bituminous coating), you can define formulas for all items in Allplan Building Costs (more information is provided in the section entitled "CAD Attributes for Items".

Whenever you define materials, you access the catalogs you have prepared using Allplan Building Costs.

Note: If you are working with elements, it is important that you specify the element catalogs whose elements you want to use when defining materials in Allplan (see next section entitled "Define Research Projects").

Research projects

"Research projects" are projects the program scans for elements while creating quantity takeoff schedules. In other words, the material requirements of these projects are "researched". The sequence in which you specify element masters and element schedules as research projects also defines the research sequence (from top to bottom).

As the items of elements found can be analyzed only, it is important that you only define materials based on element catalogs that are actually used for creating quantity takeoff schedules.

Materials for architectural components

Of course, you can select an individual item in an item catalog when defining materials for architectural components. But it is much easier and more efficient to select entire elements using element catalogs you have prepared for this purpose (cf. section entitled "Setup and Structure of CAD Catalogs").

Materials for finishing and special surfaces

You can also create finishing surfaces of rooms and special surfaces that consist of one or more individual items. Here, too, it is much easier and more efficient to select entire elements using element catalogs you have prepared for this purpose (cf. section entitled "Setup and Structure of CAD Catalogs").

Important!
When defining finishing and special surfaces, be sure to note the following: Floor and vertical surfaces (as "normal" finishing surfaces) take special surfaces into account. This means that floors or vertical surfaces defined as special surfaces have a higher priority

than 'normal' finishing surfaces defined when entering rooms and consequently, these special surfaces will intersect normal finishing specs at points where they meet (e.g. tiling patterns in plastered and painted walls).

Component numbers

You can assign component numbers to all drawing elements in finished drawings. This facilitates subsequent processes of transferring data to and analyzing and evaluating data in Allplan Building Costs.

Quantity Takeoff Operations in Allplan

When you have finished assigning materials from the Allplan Building Costs material catalogs to components, you can now create a quantity takeoff schedule based on the data obtained from quantity takeoff operations and transfer this schedule to Allplan Building Costs.

Important!
If you are working with elements, it is important that you specify the research projects before you create quantity takeoff schedules (cf. section entitled "Define Research Projects"). This ensures that all the data is processed correctly, which means that item quantities are calculated and assigned to the appropriate specification descriptions.

You can define which drawing files or components are to be analyzed during quantity takeoff operations in two ways:

- **Selectively** - by choosing specific drawing files and the objects they contain.

- **Globally** - based on several drawing files assembled using a "building list". For this, the drawing files in question simply have to be selected in the project structure (you do not have to set them to active or edit mode).

Allplan offers an efficient approach for generating quantity takeoff schedules encompassing entire structures or buildings. You can structure a project's drawing files in a "building list" using the following structural levels to assist you: "Structure", "Building" and "Story".

Further quantity takeoff principles:

- Quantity takeoff operations work on a cross-file basis (i.e., you are not restricted to the information in a single drawing file): rooms and the corresponding walls with windows and doors do not have to be in the same drawing file. The system will nevertheless recognize door and window openings as belonging to the room and take these into account during calculations.

- Neighbor relationships are taken into account:

  - Doors and windows are assigned to the corresponding room.

  - Door openings are assigned to rooms (depending on the direction of swing/opening). The floor covering in the door opening in the adjacent room is included in the calculation.

  - Slab recesses and openings are recognized as such.

  - Walls recognize each other.

Importing Allplan Quantity Takeoff Schedules into Allplan Building Costs

As the possible applications for graphical quantity takeoff operations are manifold, there are a lot of ways in which you can import quantity takeoff schedules into Allplan Building Costs.

Important!
To make sure that all the data is imported correctly, you have to specify the item catalog you have used for defining materials.

The section that follows shows how to import a quantity takeoff schedule based on a material definition using an element catalog (that was created based on a master file).

The resulting quantity takeoff schedules are imported into a *copy* of the master file. This ensures that all the items used in Allplan are available.

Creating files

You can create files directly from quantity takeoff schedules. The item catalog you have used for defining materials serves as the basis for these files.

Before you import the quantity takeoff schedules, you need to copy the item catalog (= master file) whose items you have used to set up the element catalog. The original master file is retained. You can then import the quantity takeoff schedules into this copy.

Updating quantities in existing files

When you have already created files, you can import the updated CAD data directly into existing files. This way, you can quickly and easily update quantities.

Please note the following:

- Modified quantity calculations are overwritten.

- Quantity calculations that are no longer required (e.g. quantity calculations associated with components you have deleted in the meantime) are automatically removed from files.

- Additional quantity calculations (when you have drawn more walls, for example) are added.

- Specification descriptions that are no longer used are retained as "items with zero quantities" in files. If necessary, you can mark and then delete them using the **Mark zero quantity** tool on the **Calculation** menu.

- New specification descriptions are entered in the log file and can be added "manually" to files (cf. section entitled "Checking the Log File").

- Items and quantity calculations you have entered manually in files – i.e. that have not been transferred from Allplan – are unaffected by this operation.

- Items you have locked are not changed.

Checking the log file

The log file shows the materials and/or quantities that could not be assigned correctly during the import. Check the log file entry by entry, make the necessary corrections and then update the quantities once again.

This way, you can ensure that the file contains all the materials used in Allplan.

Analyzing and Evaluating Quantity Takeoff Schedules

Basic functions using standard tools

You can use all the basic functions provided in Allplan Building Costs to analyze and evaluate imported CAD data.

Graphical price comparison lists and reports in particular facilitate the procedure of analyzing and evaluating objects designed using Allplan at any stage.

Special functions

Besides the standard tools, Allplan Building Costs provides special reports for analyzing and evaluating files and element schedules that have been created based on CAD data.

Tip: You will find an overview of the most important information on each report in the **Info** tab of the **Print** dialog box.

When you install Allplan Building Costs, these reports are usually stored in the directory `...Data\Nemetschek\Allbase\Daten\Berichte\Extended.V2014`. If you will be using these reports regularly, set the default report path to this directory.

Printing files, cost and quantity calculations

Project-specific data sheets, in particular, include large volumes of data of different types. To generate printouts of overviews, files, cost or quantity calculations etc., Allplan Building Costs only requires certain types of data from the respective data sheet; these should be clearly arranged on the printout. To accomplish this, reports (= print templates) are provided which serve as the basis for every printout.

Using these reports, you can specify

- which data of a data sheet is to be printed out,

- which additional text (e.g. headings, list headers, footers) and images (e.g. logos) are to be included in printouts and

- what layout the printout should have.

Various predefined reports are available for each data sheet. For example, you can create printouts of files based on various layouts as well as print cost calculations with or without quantity calculations from within the **Calculation** data sheet.

Allplan Building Costs provides such a wide choice of reports with a vast number of details that it is hard to remember everything. To make thing easier, you can look up the most important information on each report directly in the **Info** tab of the **Print** dialog box.

Important!
When you want to print a file containing *formatted* long text, the file *must* be printed using special reports. More information can be found in the online help under "Format Long Text in a Text Window" and "Print a File with Formatted Long Text".

Printing is easy. All you do is:

- Define the contents of the printout and select the data you want to print. For example, place the insertion marker in the data line where printing is to start, display the data records to be printed or open the data of the tenderer you want to print.

- Then open the **Print** dialog box and select the report you want to use for printing. In addition, you can display a thumbnail of the currently selected report in the **Preview** tab so that you can easily check whether you have selected a suitable report.

- If required, you can change the layout template in the **Output** tab and set other report options.

- Set up the printer and start printing.

Note: You can use the report designer to modify and customize reports or to create new reports. How this is done is described in detail in the "Editing Reports (on page 267)" section.

Transfer to MS Word

You can transfer files, including cover sheet and compilation, as well as quantity and cost calculations directly to MS Word for further processing. The data is converted to a formatted table. Once the file has been transferred to MS Word, you can edit the table as well as the header and footer in the usual way there. More information can be found in the online help under "Transfer a File to MS Word".

Please note the following:

- To use this capability, MS Word Version 97 or higher must be installed.

- When you transfer the file to Word, any graphics or sketches contained in the file will *not* be included.

- For transferring data to MS Word, Allplan Building Costs uses the COM interface. For this reason, the transfer speed is not comparable to the output times you are used to; in case of comprehensive files, there may be delays.

- Since Word controls page breaks independently from Allplan Building Costs, it is not possible to set "carried over" information at the proper locations. If you wish to add this information, we recommend to add it as a header in the Word document.

Transfer to MS Excel

You can transfer your price comparison lists to MS Excel for further analyses.

As opposed to the other reports for the **Price comparison list** phase, not all tenderers contained in the file are included in the tenderer comparison and marking of the MIN/MAX values; only the tenderers selected in the **Select tenderer** dialog box are taken into account. This also applies to preselecting data by placing the insertion marker. More information can be found in the online help under "Transfer a File to MS Excel".

Please note the following:

- To use this capability, MS Excel Version 97 or higher must be installed.

- For transferring data to MS Excel, Allplan Building Costs uses the COM interface. For this reason, the transfer speed is not comparable to the output times you are used to; in case of comprehensive files, there may be delays.

- In the current version, you can only transfer one file; a project with folder structure or multiple files cannot be transferred in a single step yet.

Additional special output options

Besides printing your projects on paper, you can also choose from a variety other output options.

In addition, you can export your projects in various standard electronic formats for further processing with other applications or for electronic data exchange via email or the Internet. You can

- print a project to a file in PDF format which can be distributed via email or published to the Internet (see online help under "Output of Files in PDF Format").

- print a project to a file in RTF format in order to import it in MS Word or another word processor for further editing (see online help under "Output of Files in RTF Format").

- print a project to a file in ASCII format which can be opened in another program for further processing (see online help under "Output of Files in ASCII Format".

- print a project to a file in HTML or XML format which can be edited, displayed or published to the Internet using a web browser (see online help under "Output of Files in HTML Format" and "Output of Files in XML Format").

Defining the Contents of the Printout and Preselecting Data

Allplan Building Costs always prints the data of the open and active data sheet. In addition, printouts always include

- the data line where the insertion marker is located and

- all data lines that are hierarchically subordinate to this data line.

Thus, the contents of the printout is always defined by the position of the insertion marker in the data sheet *before* you open **Print** dialog box. Allplan Building Costs initially assembles the printout based on the data line in which you have currently placed the insertion marker and all data records that are hierarchically subordinate to this line. For printing, it is important whether or not the subordinate data records are visible. Only the *visible* data records will be printed.

If you have *selected* subordinate records, only the selected records will be printed. In this case, it does not matter whether or not these data records are visible.

Open the "Print" Dialog Box and Select Print Settings

After you have defined the contents of the printout and selected the data, open the **Print** dialog box.

This dialog box usually displays all reports for selection that are available for the active data sheet. To make it more convenient for you to find the desired report, the reports are grouped. You can also create your own report groups, e.g. for frequently used reports or for user-defined reports.

In the **Output** tab of the **Print** dialog box, you can select the print settings to be used for the current printout. Click the "More options" button to display general print settings.

Selecting Advanced Print Settings

Before printing your files, you can define some advanced print settings using a layout template. This includes the footer text to be printed and the logo you want to integrate in the printout.

You can define the following defaults in the **Print** tab of the **Settings** dialog box:

*   change footer text that is to be printed at the bottom of each page (e.g. your office contact data),

*   add your company logo,

*   create your own layout templates or

*   set the directory where the currently required reports are stored (this means that it is possible to change the current report path without exiting the **Print** dialog box).

ATTENTION!
These settings will be valid for all reports that come with Allplan Building Costs and can only be changed in the way described here.

Checking Printouts in the Preview

Before you start printing, you can open the **Preview** dialog box and review the printout you prepared. The pages can be displayed in two different modes: whole page or zoomed in.

Note: If you open a print job instead of a single report in the preview, you need to close the preview for each report included in the print job (example: a print job contains 4 reports -> you need to close the preview 4 times).

Backing Up Data and Archiving Projects

Data backup is one of the most important topics in the IT industry. Even if you are working with large amounts of data without being confronted with any problems, it is a topic you cannot afford to ignore. Not only hardware failure, but also user error can cause valuable data to be lost irrevocably. It is therefore essential that you save all the data regularly, as otherwise several man hours, weeks or even months of work might be irretrievably lost.

ATTENTION!
Back up your master data, projects and other important data regularly! We also strongly recommend backing up all data before installing a program update!

Various options are available:

You can back up

- all the data relevant to Allplan Building Costs
- specific projects using the Archive Administration tool
- particular user-specific data (e.g. macros and filter conditions) using the Resource Administration tool
- various other user-specific data (e.g. addresses, images, reports and settings)

Full Backup

The safest method is to perform a full backup, which includes *all* the *data relevant* to Allplan Building Costs – ranging from projects, masters and element catalogs to data saved in the image and address databases to your own custom settings and definitions to reports you

have modified or created – in other words, all project-specific and user-specific data is backed up.

You should always use this method to back up all the data at regular intervals. The other procedures described in the section entitled "Backing up User-Specific Data" should be used for exceptional cases only.

Backing up and Archiving Projects Using the Archive Administration Tool

In normal circumstances, you use the archive administration tool provided by Allplan Building Costs to save and archive projects, item catalogs and element catalogs. This tool is also used to export projects from the current data directory or to import projects into this directory.

When you are archiving a project, Allplan Building Costs saves the project data in a directory you specify. The original project data in your current data directory is not affected by this operation so that you can continue to edit this project without any restrictions. As projects are archived in compressed format, they take up less space in the archive (only about 10% of the original space).

In addition, Allplan Building Costs' archive administration tool offers the options to archive projects with password protection and to check out projects. When a project is checked out, it is saved in the archive directory and locked. As a consequence, the project in the current data directory it is no longer available for further editing. This way, you can make sure that this project is not being edited while it is checked out. More detailed information is provided in the section entitled "Access Rights for Archiving".

You can use any directory that is accessible and shared for archiving. In other words, floppy disks or, when you are working in a network, directories on a central computer (= network server) can also be defined as archives. The number of archives is only limited by the amount of free space on the hard disk or by the floppy disk's storage capacity.

Important!
You can only save and archive projects in existing directories
(= folders). If necessary, use Windows Explorer to create a directory
before you back up data.

Backing up Data Using the Resource Administration Tool

You can use the resource administration tool to export *user-specific*
data from the current directory to any archive and to import it from
any archive into the current directory. The resource administration
tool is a useful addition to Allplan Building Costs' archive
administration, which allows you to back up/archive and restore
project-specific data.

Here, the term "resources" encompasses in particular

• conditions defined for analyzing and evaluating data sheets (cf.
Analyze Data Sheet),

• conditions defined for modifying column contents (cf. Change
Column Contents),

• conditions defined for organizing, filtering and selecting data
records (cf. Organize and Filter),

• predefined or user-defined macros (cf. Macros) and

• existing notes (cf. Pin Board).

When you open the **Resource administration** dialog box by clicking
the **Administration of resources** tool on the menu, you can edit *all*
resource types. When you open the dialog box by clicking the
Administration button in any of the dialog boxes listed above
(either directly or via the **Selection of libraries** dialog box), only the
resources of the current resource type are displayed. In that case, the
display is automatically filtered based on the resource type; this filter
cannot be modified.

Backing up Other User-Specific Data

Tip: You can make your data sheet settings or column definitions available on a different computer. All you need to do is copy the specified files to the corresponding directories on the destination computer.

Here, the term "user-specific data" encompasses all the data that you can create, modify or define while you work with Allplan Building Costs and that is not managed by the archive administration tool. This data includes addresses (see ""Address Overview" Data Sheet" on page 51) stored in the address database and objects (see ""Image Overview" Data Sheet" on page 52) in the image database.

If you have customized default settings or data sheet settings, it is advisable to regularly create backups of those files, as well. Which files need to be included in backups is described in detail later in this section.

Tip: You can also transfer reports to a different computer. How this is done is also described in this section.

Reports modified or created using the report designer should also be backed up regularly; this is particularly important before you install a program update.

Back up and Restore the Address Database

To back up address data

1   Exit Allplan Building Costs.

2   Copy the `ADRESS.DBF`, `ADRESS.FPT` and `ADRESS.CDX` files in the directory `...\Allbase\Daten\Adressen` to a backup directory or floppy disk.

To restore address data

1   Exit Allplan Building Costs.

2   Copy the `ADRESS.DBF`, `ADRESS.FPT` and `ADRESS.CDX` files from your backup directory to the `...\Allbase\Daten\Adressen` directory.

ATTENTION!
This operation replaces all the addresses currently stored in the address database with the addresses from the backup files!

Back up and Restore the Image Database

To back up objects

1   Exit Allplan Building Costs.

2   Copy the `BILD.DBF`, `BILD.FPT` and `BILD.CDX` files in the directory `...\Allbase\Daten\Verw` to a backup directory or floppy disk.

To restore the objects

1   Exit Allplan Building Costs.

2   Copy the `BILD.DBF`, `BILD.FPT` and `BILD.CDX` files from your backup directory to the `...\Allbase\Daten\Verw` directory.

ATTENTION!
This operation replaces all the objects currently stored in the image database with the objects from the backup files!

Export/Back up and Restore Default Settings

To back up default settings

1   Exit Allplan Building Costs.

2   Copy the `EDITORS.DBF`, `EDITORS.FPT` and `EDITORS.CDX` files in the directory `...\Allbase\Daten\Verw` to a backup directory or floppy disk.

To restore the default settings

1   Exit Allplan Building Costs.

2   Copy the `EDITORS.DBF`, `EDITORS.FPT` and `EDITORS.CDX` files from your backup directory to the `...\Allbase\Daten\Verw` directory.

Export/Back up and Restore Data Sheet Settings and Column Definitions

To export or back up settings and column definitions

1   Click **Scheme** on the **Extras** menu.

    The **Scheme** dialog box appears.

2   In the **Scheme** list box, select to the scheme you want to export/back up.

3   Click ⬆ **Export scheme**.

4   Select the target directory in the **Save as** dialog box.

5   Click **Save**.

To restore settings and column definitions from backup files

1   Click **Scheme** on the **Extras** menu.

    The **Scheme** dialog box appears.

2   Click ⬇ **Import scheme**.

3   Specify the source directory in the **Open** dialog box.

4   Select the relevant scheme and click **Import**.

Export/Back up and Restore Toolbars

To export/back up a toolbar

1   Close *all* the data sheets.

2   On the **Extras** menu, point to **Customize** and click **Office**.

    The **Configure office toolbars** dialog box appears.

3   Click ⬆ **Export toolbar**.

4   In the **Save as** dialog box, select the target directory and enter a file name, if necessary (leave the `*.ART` file extension unchanged).

5   Click **Save**.

To restore a toolbar from backup files

1   Close *all* the data sheets.

2   On the **Extras** menu, point to **Customize** and click **Office**.

    The **Configure office toolbars** dialog box appears.

3   Click 🔻 **Import toolbar**.

4   In the **Open** dialog box, set the path to the folder containing the toolbar (e.g. `<dvd>\programs\Allplan BCM\Service\AddOn\CadObjekt`) and select the `*.art` file.

5   Click **Import**.

6   In the **Configure office toolbars** dialog box, activate the **Current** check box.

7   Click **Close**.

8   Click **Yes** to confirm the prompt.

    The toolbar is added to the list of available toolbars.

Export/Back up and Restore Reports

To export/back up a report

1   Open or activate the data sheet with which the relevant report is associated.

2   Click 🖶 **Print** on the **File** menu and select **No** if asked if you want to recalculate everything.

    The **Print** dialog box appears.

3   Choose a report edition in the **Report templates** list box and select the report you want to use.

4   Click **Export** on the **Edit** menu.

5   Select the target directory you want to use for archiving in the **Browse for folder** dialog box.

6   Click **OK**.

To restore a report from backup files

1   Click 🖶 **Print** on the **File** menu.

    The **Print** dialog box appears.

2   In the **Report templates** list box, select the report edition into
    which you want to import the reports.

3   Click **Import** on the **Edit** menu.

4   Select the directory containing the reports to be imported in the
    Browse for folder dialog box and click **OK**.

    The **Import reports** dialog box appears.

5   In the **Group** list box, choose the report group into which you
    want to import the reports.

6   Select the report(s) in the **Import reports** dialog box.

7   Click **OK**.

Note: You can also restore the original standard reports provided by
Allplan Building Costs. How this is done is described in detail in the
section entitled "Restore Standard Reports".

Managing contracts and payments

You can use Allplan Construction Costto manage your incoming and outgoing contracts as well as the associated invoices and payments in conjunction with the files you created using Allplan Building Costs.

Note: The Allplan Construction Cost package does not come with Allplan Building Costs. You need to purchase it separately as a bonus module. However, you can install and use it independently of Allplan Building Costs.

You can use Allplan Construction Cost to do the following:

- Enter and display data of projects, contracts, invoices and payments directly in data sheets or using masks

- Create new data records for contracts, invoices and payments and modify existing ones

- Print overviews, details and forms

- Create, modify and select report templates for printout

- Assign and list addresses

- Create overviews of contracts

- Manage and complete claims

- Calculate deductions

- Specify a payment plan

- Document tendering agreements

- Assign contracts, invoices and payments to a file and copy its data from Allplan Building Costs

- Display overviews of invoices (open, paid; you can also apply a filter using other criteria)

- Enter amounts

- Assign costs to cost groups in compliance with DIN 276

- Make requests for payment

- Calculate payments on account

- Final payments (guarantee issued by a bank to the client, on behalf of the contractor; the architect gets the security deposit = defects liability; including all payments on account; taking deductions into account)

- Invoices of additional services rendered (included in overview of payments)

- Payments retained

- Delete requests for payment

- Cost monitoring (compare estimated costs with the contract value, the payments made and the final total payment)

- Take current costs into account (e.g. of invoices, claims, requests of the client)

- And much more!

User interface in Allplan Construction Cost

The application window of Allplan Construction Cost basically consists of three areas:

- The **menu bar** (see **"Menu bar in Allplan Construction Cost"** on page 236) (below the title bar of the window) and the **toolbar** (see **"Toolbar in Allplan Construction Cost"** on page 236) below.

- The **structure window** (see **"Structure window in Allplan Construction Cost"** on page 237) (left pane in the application window) displays the existing objects in a tree structure.

- The **masks** (see **"Masks in Allplan Construction Cost"** on page 240) (right pane in the application window) display the data relevant to the current object.

The structure window and the masks, which vary depending on the object type, are always open simultaneously. If necessary, you can also display the **Contract overview** and/or **Invoice overview** data sheets (cf. "General information on data sheets").

When you switch data objects in the structure window, the contents of the masks change accordingly and you can immediately edit the data of the next object.

This way, you can switch between the structure window, masks and data sheets as you like in order to select and edit the data of a different object, for example.

Menu bar in Allplan Construction Cost

The menu bar in Allplan Construction Cost consists of the following menus:

Note: In the reference section entitled "Menus and tools in Allplan Construction Cost" in the online help, you will find a brief description of all the tools on the menus.

Toolbar in Allplan Construction Cost

The toolbar in Allplan Construction Cost is below the menu bar:

You can use the buttons provided in the toolbar to activate the main tools without having to select a menu first.

The buttons in the toolbar represent the following tools:

Icon	Function	Use
	New object	You can use this tool to execute the **New object** command on the **File** menu.
	Copy object	You can use this tool to execute the **Copy object** command on the **File** menu.
	Paste object	You can use this tool to execute the **Paste object** command on the **File** menu.
	Delete object	You can use this tool to execute the **Delete object** command on the **File** menu.
	Contract data sheet	You can use this tool to execute the **Contract data sheet** command on the **File** menu.
	Invoice data sheet	You can use this tool to execute the **Invoice data sheet** command on the **File** menu.
	Run script	You can use this tool to execute the **Run script** command on the **Tools** menu.
	Archive	You can use this tool to execute the **Archive** command on the **Tools** menu.
	Print	You can use this tool to execute the **Print** command on the **File** menu.

You can display and hide as well as dock and float the toolbar independently of the menu bar or status bar.

Structure window in Allplan Construction Cost

General information on the structure window

The structure window (left pane in the application window) plays a central role in Allplan Construction Cost. In the structure window, you create new objects (= folder or project, contract or payment), select the object whose data you want to edit using the associated mask or data sheet and delete objects you no longer need.

The structure window displays all existing data objects in a clear and simple manner. The individual data objects are displayed in a folder structure, which is similar to that in Windows Explorer (= structure tree).

This way, you can sort the data objects by logical groups. The individual data objects are combined in folders. You can also create a parent folder in which you then combine a number of these folders. All individual folders are subordinate to the **Contract admin data** master folder.

Setup and structure of the data overview

The structure window consists of two columns: the left column - **Name** - contains the structure tree with the names of the objects. The right column - **Number** - indicates the number of the individual objects.

You can sort the view so that entries are displayed in ascending or descending order by clicking the relevant column head. An icon indicates which column is being sorted and whether sorting is in ascending or descending order.

Symbols and their meaning

The folders and/or data objects displayed in the **Overview** are given unique symbols for identification. Depending on the type of data object, different graphical symbols appear:

Symbol	Meaning
✓	**Contract admin data** master folder
📁	**Folder / project** data object
🎁	**Incoming contract** data object
🎁	**Outgoing contract** data object
📄	**Invoice / payment – open** data object
📄	**Invoice / payment – released** data object
📄	**Invoice / payment – paid** data object

To display the data objects in the structure window in a simple and clear manner, you can hide the structural levels you do not need at the moment.

Icon	Meaning
⊞	to display the subordinate structural level
⊟	to hide the subordinate structural level

Context-sensitive menu control

Clicking a data object with the right mouse button in the structure window opens a shortcut menu with the following tools:

Tool	Use
New	to insert a new object below the selected data object
Copy	to copy the selected data object to the Clipboard
Paste	to insert the data object you copied to the Clipboard below the selected data object
Delete	to delete the selected data object
Print	to open the report manager
Archive	to archive the selected project directly (only available if the selected data object is a project)
Access rights	to open a project-specific dialog box for managing authorizations (only available if the

Tool	Use
	selected data object is a project)
Invoice locked	to lock/unlock the selected invoice (only available if the selected data object is an invoice)
Enter client in all subfolders	to copy the client address of a folder to all subordinate folders (only available if the selected data object is a project)

Copying and moving with drag and drop

You can drag and drop all the data objects (except for the master folder) in order to copy or move them. Press and hold down the left mouse button and drag the symbol (not the text!) of the relevant object to the desired object.

Then release the mouse button. A dialog box opens where you can specify what to do or abort the operation. This ensures that you do not copy or move objects inadvertently.

Masks in Allplan Construction Cost

The masks (right pane in the application window) change with the data object you select: when you switch data objects in the structure window, the contents of the masks change accordingly and you can immediately edit the data of the next object.

There are three types of masks in Allplan Construction Cost. In addition, the **contract data** mask includes five tabs and the **payment data** mask three tabs.

- **Folder and project data** mask
- **Contract data** mask consisting of the **Contract**, **Claims**, **Deductions**, **Bonds/amounts retained** and **Contract details** tabs
- **Payment data** mask consisting of the **Invoice**, **Check** and **Release** tabs

Working with data objects

In Allplan Construction Cost, the term "data objects" encompasses all the projects (including folders), contracts and payments.

The procedure for creating, editing and deleting data objects is basically the same for all data objects. That is why the essentials of these functions are described in a compact form.

This chapter shows how to

- Create new data objects

- Copy existing data objects

- Edit data objects

- Delete data objects you no longer need

Creating new data objects

We will use a new contract as an example to show you how to create a new data object. The procedure described here is also used for creating new folders, projects or payments.

Create a contract for each contract awarded to a contractor. The program automatically assigns the new contract to the project in which you create it.

The new data object is automatically inserted below the selected level in the structure. You can then open the data object to enter all necessary data.

Important!
Depending on the selected level, the choice of object types you can create is limited to specific types. This ensures that the structure has a uniform appearance.

Selected level in the structure		Possible data object
✓	**Contract admin data** master folder	Folder or project
📁	**Folder** or **Project** data object	Contract (incoming and outgoing)
🔴 Or 🔵	**Incoming contract** or **Outgoing contract** data object	Invoice, payment on account, final payment or other invoice
📄 Or 📄 Or 📄	**Invoice / Payment** data object	You cannot create a new data object below this data object

Copying data objects

To enter similar objects (folders and contracts only; not possible with individual invoices), you can save time by copying the data object and then modifying this copy.

Editing data objects

Each data object is modified in the appropriate mask.

Deleting data objects

If you have inserted a data object at the wrong position or if you need to make changes, you can quickly and easily remove the relevant data object from the structure window.

Working with Data Sheets

Data sheets present an overview of all the data you have entered for projects, contracts and invoices.

There are two types of data sheets: contract overviews and invoice overviews. These two data sheets work in the same way; only the data they access differs: the contract data sheet is based on the contract table and the invoice data sheet is based on the invoice table of the Allplan Construction Cost database.

Data can be combined, analyzed and evaluated in data sheets. You can control the layout of your data sheets and narrow down the contents and type of the data displayed by setting filters. You can also create custom data sheets for contracts, invoices and project overviews or modify the existing data sheets.

Note: Data sheets only display data. To edit data, use masks.

Creating new data sheets

Open the Layouts of data sheets dialog box to create new data sheets.

Setting Up Data Sheets

Open the **Layouts of data sheets** dialog box to modify existing data sheets.

General definitions for data sheets

Enter a name for the data sheet in the **List of layouts** area of the **Layouts of data sheets** dialog box (= left pane). You can use the name you specify here to set the data sheet's layout in the **Layout** list box later on.

Here, you can also define how to sort and/or filter the data in the list.

Setting up data sheet columns

You can use the functions and fields in the **Edit columns** area of the **Layouts of data sheets** dialog box (= right pane) to modify the appearance of the data sheet. For example, you can add new columns, rename columns and display or hide columns.

All changes you make are applied the next time you open the data sheet.

For operation columns, you need to specify a formula. You can use the variables in the fields of the database in conjunction with arithmetic operations and functions used by the FoxPro programming language. You can insert an unlimited number of operation columns.

Please refer to the section entitled "Using Fields and Variables" in the "Editing Reports" chapter for a list of the available variables that can be used in the fields of the database.

Choosing layouts for data sheets

You can select a predefined or custom layout for each data sheet.

Note: Please refer to the "Setting up data sheets (on page 243)" section to learn how to define custom layouts or modify existing layouts.

Sorting data sheets

You can sort the contents of data sheets by column.

Filtering data sheets

You can filter the contents of data sheets based on predefined or custom filter conditions.

Here, the term "filtering" means that the specific criteria you define for all the lines of a data sheet must be met so that the relevant line is displayed.

Defining filter expressions

There are three methods for defining filter expressions:

- You can enter filter expressions directly in the data entry field at the bottom of the **Data sheet filter** dialog box.

- You can use the expression editor to define filter expressions.

- You can use filter expressions you have already defined in the library.

The result of a filter expression must be a logical value (TRUE or FALSE). To achieve this, use the Boolean operators (=, <, >, <= or >=) to compare two values or use a function that returns a logical value, e.g. **EMPTY()**. Please note that the two values (entire expressions or individual fields or variables in the database) you want to compare need to be of the same format (character, numeric or date). The format of the fields in the database and the return values of the functions are described in the expression editor.

Simple fields or variables can be linked.

- **Numerical data:**
  You can use all arithmetic operations, numerical values, mathematical functions (see **Functions and variables** list box in the expression editor) to create an expression.

- **Characters**:
  Text (characters) can only be added. You can use the character functions (see **Functions and variables** list box in the expression editor). When you enter text in expressions, please keep in mind that characters must be enclosed in quotation marks. See example: **"this is text"**

- **Date values**:
  Date values can be added and subtracted. You can use the date functions (see **Functions and variables** list box in the expression editor). You cannot enter a date directly in an expression. You need to convert it to the date format using the **CTOD** function. Example: **CTOD("20.02.2000")**

You can use the Boolean operators **.AND.** and **.OR.** to link simple logical expressions. You can also use parentheses. .**NOT.** results in a logical negation (i.e. the expression is true if the following value is not true).

Creating new filters

Predefined as well as custom filter conditions are managed in the library.

You can define a new filter straightaway by entering the filter conditions directly. You can also use the expression editor, which offers you predefined database fields, functions and operators, to define filter expressions in a clear and simple manner.

Note: You can access the filters created in the library right from the **Layouts of data sheets** dialog box. This way, you can define a filter that will then be used automatically when you open the relevant data sheet.

Managing projects

The structure window displays all projects in a clear manner. You can open existing projects as well as create new projects.

You can use the **Folder and project data** mask to enter details for each project

Before you create a new project, select the **Contract admin data** master folder or the folder for the construction project to which you want to assign the new project.

Tip: If you require several projects that follow the same or similar scheme, create a "sample project". You can then simply copy this "sample project" and modify this copy.

Managing contracts

The structure window displays all the contracts you have created for the individual projects in a clear manner. You can create new contracts as well as open and edit existing contracts.

As you can create and manage incoming contracts in addition to "normal" outgoing contracts, you need to make a clear distinction between these two types in terms of symbols and algebraic signs.

Symbols

The following convention is used to indicate contracts in the structure window and in the **Contract overview** and **Invoice overview** data sheets: *incoming* contracts are displayed in *blue* and *outgoing* contracts are displayed in *red* (see also "Structure window in Allplan Construction Cost (on page 237)").

Algebraic signs

In Allplan Construction Cost, *outgoing* contracts and *incoming* invoices are always represented a *positive* sign (+).

According to this rule, *incoming* contracts and *outgoing* invoices would get a *negative* sign (-). Strictly speaking, however, incoming contracts and outgoing invoices generate income (i.e. capital inflow) while outgoing contracts and incoming invoices incur costs (i.e. capital outflow).

It is therefore up to you to make a decision about the sign. You can define the sign setting globally for all folders (= projects) in Allplan Construction Cost or make this setting separately for each main folder (= each project). More information is provided in the section entitled "Making sign settings for contracts".

The **Contract overview** and **Invoice overview** data sheets display the amounts for incoming and outgoing contracts and the relevant invoices/payments in accordance with the sign setting you have made.

Creating and editing contract data

Tip: For example, you can create general standard contracts in a "sample project". You can then use these contracts as a basis for other contracts. All you need to do is copy the relevant standard contract to the current project and modify the data in this copy.

Start by creating a new contract. You can then enter data for this new contract.

To edit the details of a contract, use the **Contract data** mask, which consists of the **Contract, Claims, Deductions, Bonds/amounts retained** and **Contract details** tabs.

Making sign settings for contracts

Use the **Sign settings** (Settings dialog box, Contract admin tab) to decide for yourself which algebraic sign you want to apply to contracts. You can define the sign setting globally for all folders (= projects) in Allplan Construction Cost or make this setting separately for each main folder (= each project).

Defining the sign setting globally

The **Global for all folders** option applies the same setting to all folders (= projects) in Allplan Construction Cost.

Setting the sign separately for each folder

The **In main folder** option allows you to set the sign separately for each main folder (= each project).

In other words, the sign is not set globally but you can set it separately for each main folder. In this context, the main folder is the folder of the *highest* hierarchical level; subordinate folders automatically get the sign setting of the main folder.

If you decide to set the sign separately for each main folder (= each project), you can control this setting using the **Use opposite sign** option in the Folder and project data mask.

The following illustrations will make things clearer.

Sign setting when the **Use opposite sign** option is *deactivated*: *incoming* contracts get a *negative* sign; *outgoing* contracts are given a *positive* sign.

Sign setting when the **Use opposite sign** option is *activated*:
incoming contracts get a *positive* sign; *outgoing* contracts are given a
negative sign.

Entering basic contract data freely

You can create a contract without having to assign this contract to a
file or title of a project in Allplan Building Costs.

Rather, you can enter the following basic contract data freely:

- **Contract number**,
- **Contract name**,
- **Contract date**,
- **Tender value**,
- **Discount** (as a percentage),
- **Discount period**,
- **Rebate** (as a percentage), and
- **VAT**.

Please note that the data for the estimate and the budget can only be
entered here.

Transferring contract data from Allplan Building Costs

New contracts are automatically assigned to the current project. In addition, you can assign contracts to a file or title from Allplan Building Costs.

Note: A file usually consists of exactly one contract. If a file is subdivided into lots, you should select a folder instead of a file when creating the file in Allplan Building Costs. In addition, add file lines to refine the structure of the subordinate lots.

To transfer data from a file and integrate the contract in the hierarchical structure, you need to assign a contract to a specific file or title.

The total price of the file from the "Awarding" phase is used as the tender value for the contract if the **Use tender value** option is active in the Assign file or title dialog box. If the total price of the file differs from the tender value, disable this option.

The **Use reduction/additional charge as rebate** option allows you to use these values. The **tenderer** is entered as the contractor when you have selected the relevant option in this dialog box. In addition to the name, the contractor's address is also assigned to the contract.

You can also transfer the discount specified for checking quotations. Furthermore, the total sum of the file can be used as the budget and the short text of the selected file or title as the name of the contract.

Note: The tenderer to be awarded the contract must be created in Allplan Building Costs and his/her address must be entered.

To apply a structure to the contract, you can enter a number and text in the data entry boxes or assign a structure from a project created in Allplan Building Costs. Adopting the number and associated text from Allplan Building Costs allows analyses in compliance with the cost groups of DIN 276.

Entering addresses of clients and contractors

You require the complete addresses and bank details of all the persons involved in order to manage correspondence and payments. You can enter the address of the client in the Folder and project data mask and the address of a contractor in the Contract data mask.

You can enter the data directly into the corresponding fields of the masks. But it is much easier to use the **Address selection** tool, which immediately provides all the addresses.

Note: When you create a new *outgoing* contract, the address of the client is transferred automatically from the project data.

Entering claims

Claims include items that have come up after a contract has been awarded. If, for example, additional services are rendered for an existing contract or alternative (more expensive) materials are used, you have to document these extra costs as claims.

You can create several claims for a contract. To enter claims for the current contract, use the **Claims** tab.

Important: The total of a contract includes only claims that have the "approved" status; in other words, only approved claims will increase the contract value.

Entering contractual and other deductions

Here, you can document contractual deductions in a table. Deductions must be entered in the **Deductions** tab.

The deductions you enter do not reduce the contract value. They are not directly connected with the contract services to be rendered. However, deductions are subtracted from the amount invoiced (usually from the final payment) instead of having the contractor pay these amounts separately. This is for practical reasons.

You can enter deductions as a percentage or lump sum. Contractual deductions entered on a percentage basis can be included proportionally in each payment on account or they are not taken into account until the final payment. You can choose between these two options later when you edit invoices.

Entering Bonds and Amounts Retained

You can enter bonds and amounts retained in the **Bonds/amounts retained** tab.

Amounts retained are entered as a percentage of the contract value. The security deposit can be included in all payments on account i.e. it is to be subtracted proportionally from the invoice total and retained. The total amounts retained so far are credited against the invoice total in the final payment. In other words, they are credited to the invoicing party's account. You can enter an unlimited number of bonds for a variety of purposes.

You can explicitly specify the following securities:

- **Security for contract performance**
  This amount, which is deposited before construction begins, is to guarantee the faithful performance of the contract. It can be covered by a bank guarantee.

- **Defects liability**
  An amount agreed is subtracted from the final payment and retained in case of warranty claims. It can also be covered by a bank guarantee. The defects liability amount, which is part of the building contract, is usually set up together with the contract and included in calculating the final payment.

  Important! In the **Security deposit amounts in general** and **Security deposit amounts of project** reports, a defects liability (indicated by **S** in the report) is only replaced by a bond (indicated by **B** in the report) if the defects liability is marked with **Yes** in the **Bond** column (**Amounts retained** table) *and* the relevant bond contains the words "defects liability" (please pay attention to the correct spelling!) in the **Name** column (**Bonds** table).

- **Security deposit for payments on account**
  Enter the security deposit (as a percentage) that can be subtracted from each payment on account and retained during construction work; this amount can be specified in advance (usually 10%).

Managing invoices and payments

The structure window displays all the invoices you have created for the individual contracts of a project in a clear manner. You can create new invoices as well as open and edit existing invoices.

To edit the details of an invoice, use the **Payment data** mask, which consists of the **Invoice, Check** and **Release** tabs.

Basically, handling invoices requires three important steps:

- Enter data
- Check the invoice
- Release the invoice

Payments are arranged in four groups:

- Payments on account
- Partial final payments
- Final payments
- Other invoices

In this context, the status of an invoice should be understood as the progress of invoicing or payment. This way, you can specify whether the invoice in question is still open, released or whether the client has already paid it.

You can only specify the status of an invoice using the **Status** list box in the **Release** tab of the **Payment data** mask.

First you need to create a new invoice. You can then enter details for it. Start by selecting the contract to which you want to assign the new invoice. To edit an existing invoice, select it in the structure window.

Tip: For example, you can create general standard invoices for standard contracts of a "sample project". You can then use these invoices as a basis for other invoices. All you need to do is copy the relevant standard invoice to the current contract and modify the data in this copy.

In addition, this chapter shows how to

- Enter basic invoice data
- Check payments on account and other payments
- Release payments
- Split amounts

Entering basic invoice data

Invoices are always assigned to a specific contract.

When you create a new invoice for a contract, the program automatically transfers various pieces of data to the invoice. The following data is taken from the contract. However, you can change it, if necessary:

- VAT
- Discount rate
- Bank details of contractor specified in contract

Checking payments on account and other payments

The Check tab lists all the amounts associated with this invoice.

After having entered the net amount of the invoice in the Invoice tab, you can calculate the amount to be paid in the **Check** tab. All the deductions, rebates, amounts retained you have entered so far are included in calculating the amount payable. In addition, the discount rate specified in the contract is taken into account.

The program calculates the gross amount of the invoice based on the percentage defined for VAT. The amount payable is displayed with and without discount (standard calculation).

Important:
Clicking the **Update** button causes the program to update the calculation, taking all the current data into account.

Note: The amount payable is automatically transferred to the **Release** tab.

Releasing amount for payment

You can use the Release tab to select or enter addresses, bank details and the amount to be paid. In addition, you can split the amount.

When you change the status from **Open** to **Released**, the amount calculated is automatically used as the amount released if the latter is zero. Wen you change the status from **Released** to **Paid**, the amount released is automatically used as the amount paid if the latter is zero.

Each time you change the status of an invoice, the program opens the Invoice data dialog box, where you can specify whether the amount released or paid is displayed with or without discount.

Splitting amounts

The client may ask you to split amounts. To do this, you can use the Split amount of invoice dialog box.

First you need to specify which amount you want to split. You can split the following amounts in this dialog box:

- Invoiced
- Calculated
- Released
- Paid
- Checked

Use the table to split the amount available. In each line of the table, you can associate an amount split with a classification and a name. You can use a project to classify the amounts split or simply enter you own classification and name directly in the table.

Note: You can split amounts in compliance with DIN 276. For this, you need to save the DIN 276-compliant classification as a project first.

Printing project, contract and invoice data

Special reports have been predefined for the individual areas
(= report templates for printouts). They provide a quick and easy way
to print out the data of the object currently selected in the tree
structure (contract admin data, project, contract or invoice) in
various ways.

In the reports, you can make different settings, including

- which data of the object is to be printed out,

- how the data should be arranged and which additional text (e.g.
  heading, list heads) is to be added,

- what layout the printout should have (e.g. footer text and logo in
  header), etc.

Various predefined reports are available for each object type. This
way, you can print out not only the values specified in the contract,
but also details or claims by choosing the relevant reports.

As it is hard to remember every little detail in every report, you can
look up the most important information on each report directly in
the **Report manager** dialog box. For information on the individual
areas in the report manager, see "Areas and reports for printing".

The report manager helps you to select the appropriate report and set
the print options. The **Report manager** dialog box (in the **General
settings** area and on the **Edit** menu) provides various options for
defining output and editing reports. The list box shows you which
reports are available for the current area or object. Select a report
first and check or modify its settings. You can then start printing.

Note: You can use the report designer to modify and customize
reports or to create new reports. How this is done is described in
detail in the "Editing reports" section.

Defining general print settings

You can set general print options in the **General settings** area of the **Report manager** dialog box.

To define the general print settings

1   Open the **Report manager** dialog box.

2   In **First page**, enter a number for the first page to be printed.

3   In **Date**, enter the date to be used in the printout.

4   With the **Settings dialog box** check box, you can choose whether you want to display the Windows **Print** dialog box prior to printing (so that you can make printer settings, for example).

5   In the **Layout** list box, you can select the report layout (logo for header, text for footer) you want to use for the current printout (see also "Selecting a layout template").

Areas for printing

Note: Information on the reports that are available in the individual areas is provided in the overview of predefined reports.

"Contract admin data" area

The program selects this area when you open the report manager for printing project-independent analyses (the ✔ **Contract admin data** entry is selected in the structure window).

"Folders and projects" area

The program selects this area when you open the report manager for printing a project (a 📁 **Folder / project** data object is selected in the structure window).

The standard table for printing consists of one line containing the data of the current project.

"Incoming contracts" area

The program selects this area when you open the report manager for printing an incoming contract (an **Incoming contract** data object is selected in the structure window).

The standard table for printing consists of a list containing all the data of the contract table. In addition, the data of the associated project is available.

Report templates that only require contract data must place this data in the report header, page header or group header of a predefined data group (e.g. use the grouping nesting order: 1). Deductions, claims or bonds are output in the detail section or the group header/footer of a variable data group (e.g. use the grouping nesting order: **AD_IDN**).

"Outgoing invoices" area

The program selects this area when you open the report manager for printing an outgoing invoice or an incoming payment (an **Invoice / payment** data object is selected in the structure window).

The standard table for printing consists of a list of the calculation rule of the current invoice (is equivalent to the contents of the table in the **Check** tab) containing the data of the current invoice and the associated contract. In addition, the data of the associated project is available.

"Outgoing contracts" area

The program selects this area when you open the report manager for printing an outgoing contract (an **Outgoing contract** data object is selected in the structure window).

The standard table for printing consists of a list containing all the data of the contract table. In addition, the data of the associated project is available.

Report templates that only require contract data must place this data in the report header, page header or group header of a predefined data group (e.g. use the grouping nesting order: 1). Deductions, claims or bonds are output in the detail section or the group

header/footer of a variable data group (e.g. use the grouping nesting order: **AD_IDN**).

"Incoming invoices" area

The program selects this area when you open the report manager for printing an incoming invoice or an outgoing payment (an **Invoice / payment** data object is selected in the structure window).

The standard table for printing consists of a list of the calculation rule of the current invoice (is equivalent to the contents of the table in the **Check** tab of the **Payment data** mask) containing the data of the current invoice and the associated contract. In addition, the data of the associated project is available.

"Lists: contracts" area

The program selects this area when you open the report manager from the **Contract overview** data sheet.

All the fields of the contract table and the associated data of the project table are available, regardless of the data sheet setting. The manner in which the data is displayed depends on the current filter and sorting.

"Lists: invoices" area

The program selects this area when you open the report manager from the **Invoice overview** data sheet.

All the fields of the invoice table and the associated data of the project table and contract table are available, regardless of the data sheet setting. The manner in which the data is displayed depends on the current filter and sorting.

"Budget administration" area

The program selects this area when you open the report manager from the Budget administration dialog box.

Overview of predefined reports

The section that follows outlines the reports available in the individual areas.

Tip: You can look up the most important information on each report directly in the **Report manager** dialog box. Simply select the report, click **Edit** and then click **Information**.

Reports for the "contract admin data" area:

- Overview
- Open invoices in general
- Securities in general

Reports for the "folders / projects" area:

- Bonds + securities
- Claims for projects
- Open invoices in project
- Project addresses
- Project data
- Securities of project

Reports for the "incoming contracts" area:

- Building contract
- Details of contract
- Claims for contract
- Values specified in contract

Reports for the "outgoing invoices" area:

- Cover sheet of outgoing invoice
- Invoice
- Invoice amounts split
- Payment release
- Payment overview

Reports for the "outgoing contracts" area:

- Building contract
- Details of contract
- Claims for contract
- Values specified in contract

Reports for the "incoming invoices" area:

- Cover sheet
- Invoice amounts split
- Payment release
- Payment overview

Reports for the "lists: contracts" area:

- List of contracts
- List of contracts including companies
- Cost overview, hierarchy
- Cost overview, folders with DIN-compliant cost groups
- Cost overview, folders

Reports for the "lists: invoices" area:

- Itemized invoice
- List of invoices with DIN-compliant cost groups
- List of invoices for project
- List of invoices, A4 landscape
- List of invoices
- Overview of deductions
- Payments in period

Reports for the "budget administration" area:

- Cost
- Cost forecast
- Estimate and budget

Archiving and Backing up Data

You can archive or back up projects created in Allplan Construction Cost at any time. Be sure to always archive or back up a project when it is complete. You can also store your settings, custom reports or scripts in the archive.

This means that the projects and other data are saved in the path you have selected for the archive and can still be managed. If necessary, you can retrieve projects you have already archived and edit them.

You can use the **Archive administration** dialog box to manage archived data. The **Allplan Construction Cost data** and **Archived data** list boxes display the projects and library data in the current data folder and in the archive folder, respectively.

You can quickly and easily archive projects using the shortcut menu. All other data must be archived using the archive administration.

More Allplan Construction Cost tools

Authorizations

Allplan Construction Cost provides special tools for managing authorizations, allowing you to control user access to projects, records and other data. This way, you can prevent unauthorized access and thus protect data from inadvertent changes.

General or user-specific rights

You can define and assign authorizations for individual users or user groups. This way, you can define who is authorized to edit or view specific projects by assigning read approval, read/write approval or no approval to every individual user.

Project-specific rights

To assign a specific right to all users, just click the relevant button under **Set permissions for all users to**.

To define a right for an individual user only, click the relevant entry in the **Permission** column. This opens a shortcut menu where you can select an access right.

Tip: Project-specific rights are managed in almost exactly the same way as in Allplan Building Costs.

Write access includes read access. In other words, selecting write access automatically activates read access. When you deactivate read access, write access is also deactivated.

User-definable default settings

In Allplan Construction Cost, you can define various defaults that are saved permanently.

You can define default settings in the **Settings** dialog box:

- In the Default settings tab: VAT rate, currency, data folder.

- The Data sheet tab lets you set the contents and appearance of the **Contract overview** and **Invoice overview** data sheets.

- In addition, you can make default settings for calculating and checking data in the Invoices and contracts tab.

- The "contract admin" feature, which allows you to manage *incoming* contracts in addition to outgoing contracts, can be activated and deactivated in the Contract admin tab. You can also define the sign setting for the "contract admin" feature.

- In the Contract defaults tab, you can define the defaults for creating new contracts.

- The options in the Custom text fields tab let you name the custom text and note fields for contracts and invoices. This way, you can create your own text fields.

Creating and executing scripts

A script includes one or more lines of program code which are used to execute custom designed program functions. Scripts you define must comply with the language conventions of the Visual FoxPro programming language.

Detailed information on this topic is provided in specialist literature.

Note: The descriptions of the fields in the database and functions and variables are also useful when it comes to creating scripts.

Exporting data in Excel format

Besides contract data (from the **Contract overview** data sheet) and invoice data (from the **Invoice overview** data sheet), you can also export budget data of a project from the Budget administration dialog box in Excel format.

Editing Reports

The report designer provides a convenient way of editing reports.

This chapter provides detailed information on the following topics:

- The report designer in general and how to open this tool
- Creating and modifying reports
- Customizing reports
- Adding fields and defining variables
- Defining conditions for printing objects
- Defining specific controls for reports
- Exporting/backing up and restoring reports

What is the Report Designer?

Reports are used to specify what is to be printed out and how: Reports define the design, contents and graphical appearance of printouts as well as the objects, text and fonts in printouts.

In other words, the report designer is a comfortable tool you can use to define the form and contents of reports and consequently of printouts. You can modify existing reports or create new reports.

The sections that follow provide detailed information on

- the layout window of the report designer,
- the tools in the report designer and
- the toolbars in the report designer.

Layout Window of the Report Designer

When you open the report designer, the program automatically displays the layout window (Allplan Construction Cost on the left, Allplan Building Costs on the right) and the **Report Designer** and **Report Controls** toolbars (to show the other two toolbars, click the ⊟ **Layout** and 🎨 **Color Palette** icons on the **Report Designer** toolbar).

To edit the printout templates, you can use the **File**, **Edit**, **Format** and **Report** menus and the toolbars (cf. sections entitled "Tools in the report designer" and "Toolbars in the report designer").

You can use the layout window to insert objects (text, fields, lines, rectangles, images etc.) in reports or edit existing objects. The file name of the report is displayed in the title bar of the layout window.

The layout window itself shows the individual sections of a report and the objects in these sections. You can quickly and easily define the size of sections - all you need to do is position the cursor on the bar with the section name displayed at the bottom of each section so that the cursor becomes a double-headed arrow. Now press and hold the left mouse button and drag to change the size.

Note: The field names are displayed in the layout window of the report designer. The print preview and the final printout include the actual data from the data sheet.

Reports consist of individual sections, which are separated by bars. All these sections together define the printable area of the paper.

Each section, which is delimited by a bottom bar displaying the name of the section, can include objects. The sections are described in the table below.

Section	Meaning
Page header	The page header appears at the top of every page. Besides predefined information (e.g. heading and list heads), it also includes variable data (e.g. number of pages and date).
Detail	The detail section contains the fields that are associated with the data in the data sheets. This section is printed out for every data record.
Page footer	The page footer appears at the bottom of every page. In addition to text, the footer can also include variable data (e.g. number of pages and date).
Group header/footer	Group header and group footer are only available when data has been grouped by common characteristics and contain information that is only relevant to the data group in question. The group footer may include a sub-total, for example.
Optional Bands	The report title and report summary are defined separately and appear at the beginning and/or end of a printout (e.g. cover sheet and/or final note) or on separate pages (optional).

Tools in the Report Designer

The tools needed for editing layout templates are provided on the **File**, **Format** and **Report** menus and on the standard Windows **Edit** menu (not described here).

Tools on the "File" Menu (report designer)

You can use the tools on the **File** menu to save modified or new reports (Allplan Building Costs only), discard your most recent changes and define the page layout.

Tool	Use
Save (Allplan Building Costs only)	You can use this tool to save the changes you made to a report.
Save As HTML (Allplan Building Costs only)	You can use this tool to save reports in HTML format.
Revert	You can use this tool to discard the changes you have made to a report. You can go back (undo) as many steps as you want, as far back as the last time the report was saved.
Page Setup	You can use this tool to define the page layout of a report.
Print Preview (Allplan Construction Cost only)	You can use this tool to display the print preview.
Print	You can use this tool to print out reports for checking purposes.
Exit (Allplan Construction Cost only)	You can use this tool to close the report designer.

Tools on the "Format" Menu

The **Format** menu includes tools you can use to edit objects in reports.

These tools can only be applied when at least one object is selected.

Tool	Use
Align	You can use this tool to align selected objects. Choose one of the options provided on the submenu.
Size	You can use this tool to modify the size of selected objects. Choose one of the options provided on the submenu.
Horizontal Spacing	You can use this tool to modify the horizontal spacing of selected objects.
Vertical Spacing	You can use this tool to modify the vertical spacing of selected objects.
Bring to Front	You can use this tool to move the selected objects to the front.
Send to Back	You can use this tool to move the selected objects to the back.
Group	You can use this tool to group selected objects.
Ungroup	You can use this tool to explode the selected object group into its constituent objects.
Snap to Grid	You can use this tool to place objects so that they are aligned with the grid for snapping points (option enabled). Alternatively, you can place them freely (option disabled).
Set Grid Scale	You can use this tool to set parameters for the point snap grid.
Font	You can use this tool to define the font or font size for selected text objects.
Foreground Color	You can use this tool to define the pen color for selected text or drawing objects.
Background Color	You can use this tool to define the background color or fill color for selected drawing objects.
Text Alignment	You can use this tool to specify whether the selected text objects are left-aligned, right-aligned or centered or define the spacing between lines.
Fill	You can use this tool to apply hatching styles or fills to rectangles and rectangles with rounded corners.
Pen	You can use this tool to define the linetype and line width for selected lines, rectangles and rectangles with rounded corners.
Backstyle	You can use this tool to specify whether selected objects are fully opaque or transparent.

Tools on the "Report" Menu

The **Report** menu contains tools for creating new objects or reports.

Tool	Use
Quick Report	You can use this tool to insert all necessary fields in a new report. This tool is only available when the detail section is empty.
Run Report	You can use this tool to print out the report as currently set for checking purposes. You do not need to save it.
Print Preview	You can use this tool to show the report in print preview
Load Data Environment	You can use this tool to define the data environment; however, this is not necessary for Allplan Building Costs and Allplan Construction Cost.
Private Data Session	You can use this tool to activate database functionality that is not supported by Allplan Construction Cost. This option should *always be disabled*.
Printer Environment	You can use this tool to activate database functionality that is not supported by Allplan Construction Cost. This option should *always be disabled*.
Optional Bands	You can use this tool to insert the "report title" and/or "report summary" sections.
Data Grouping	You can use this tool to group selected objects.
Variables	You can use this tool to define variables for reports.
Default Font	You can use this tool to make default settings for the font and font size, which are to be used for new text objects.
Edit Bands	You can use this tool to select individual sections whose parameters you want to edit.
Insert Control	You can use this tool to insert control elements.
Properties	You can use this tool to set the paper size, page layout and default font.

Toolbars in the Report Designer

The report designer features four toolbars for quick access to frequently used tools: the **Report Designer, Report Controls, Color Palette** and **Layout** toolbars.

They provide easy-to-use tools for editing reports.

Buttons in the "Report Designer" Toolbar

When you click one of the buttons, the program selects the relevant tool or displays an additional toolbar.

Icon	Function	Use
	Data Grouping	You can use this tool to group selected objects.
	Data environment	You can use this tool to define the data environment, which is not necessary for Allplan Building Costs.
	Page setup	You can use this tool to set the paper size, page layout and default font.
	Report controls	You can use this tool to show and hide the **Report Controls** toolbar (see "Buttons in the "Report Controls" Toolbar" on page 273).
	Color palette	You can use this tool to show and hide the **Color Palette** toolbar (see "Buttons in the "Color Palette" Toolbar" on page 274).
	Layout	You can use this tool to show and hide the **Layout** toolbar (see "Buttons in the "Layout" Toolbar" on page 275).

Buttons in the "Report Controls" Toolbar

When you activate a tool on the **Report Controls** toolbar by clicking a button, the program executes the relevant function and then automatically displays the ⌖ **marker** again.

Note: However, you can also "fix" tools: double-click to select a tool or select a tool and then click 🔒 **Repeat control element**.

Icon	Function	Use
⌖	**Marker**	You can use this tool to select objects.
A	**Text tool**	You can use this tool to enter or modify text (see "Inserting Text Objects" on page 282).
abl	**Field tool**	You can use this tool to insert fields.
┼	**Line tool**	You can use this tool to insert horizontal or vertical lines.
▢	**Tool for rectangles**	You can use this tool to insert rectangles.
⬤	**Tool for rectangles with rounded corners**	You can use this tool to insert rectangles with rounded corners.
🖼	**Tool for OLE objects**	You can use this tool to insert OLE objects (images and sketches) (see "Insert Images and Sketches" on page 283).
🔒	**Repeat control element**	You can use this tool to fix the active tool and insert several objects of the same type.

Buttons in the "Color Palette" Toolbar

Icon	Function	Use
	Foreground color	You can use this tool to define the foreground color for objects.
	Background color	You can use this tool to define the background color or fill color for objects.
	Other colors	You can use this tool to open a dialog box in which more colors are presented for selection.

Buttons in the "Layout" Toolbar

Icon	Function	Use
	Align left sides	You can use this tool to align the selected objects left.
	Align right sides	You can use this tool to align the selected objects right.
	Align top edges	You can use this tool to align the selected objects so that their top edges are flush.
	Align bottom edges	You can use this tool to align the selected objects so that their bottom edges are flush.
	Align vertical centers	You can use this tool to align the selected objects so that their vertical axes are centered.
	Align horizontal centers	You can use this tool to align the selected objects so that their horizontal axes are centered.
	Same width	You can use this tool to assign the same width to the selected objects.
	Same height	You can use this tool to assign the same height to the selected objects.
	Same size	You can use this tool to assign the same size to the selected objects.

Icon	Function	Use
	Center horizontally	You can use this tool to horizontally center the selected object. When you select several objects, they are centered as a group.
	Center vertically	You can use this tool to vertically center the selected object. When you select several objects, they are centered as a group.
	Bring to front	You can use this tool to move the selected objects to the front.
	Send to back	You can use this tool to move the selected objects to the back.

Creating and Modifying Reports

The form and contents of printouts can be modified in different ways:

- You can copy an existing report and then modify this copy. The original report is not affected by this operation.

  Important!
  This procedure *must be used for all original Allplan BCM reports* because these reports cannot be modified!

- You can modify an existing report directly.

  Important!
  This approach is only available with *your own reports* and *copies of the original reports*!

- You can create a new report.

Copying a report

If an existing report is more or less sufficient for the task at hand and you only need to make minor changes, you can simply copy the relevant report and modify the copy.

Important!
This procedure *must be used* for all standard reports provided by Allplan Building Costs in order to keep the originals.

Modifying an existing report

To modify an existing report, open the relevant report in the report designer, make changes and save the modified report.

Note: To change the *original* Allplan BCM reports, you need to copy them first and then *modify the copies.*

Creating a new report

To create custom reports, it is best to start from scratch.

In other words, create a new report and adapt it to your needs and requirements.

Customizing Reports

The report designer offers various options for defining the graphical appearance of printouts. In particular, you can

- Define the page layout
- Add a report title and report summary
- Specify the height of the individual sections
- Select, group and position objects and change their size
- Enter and format text (e.g. headings or list heads)
- Enhance the visual appearance by adding graphical elements (e.g. colored lines and rectangles) or images (e.g. logos)

The quickest way to design a report is to insert all text lines, images, lines and rectangles, select all the objects to be edited in the same way (e.g. select all the text lines to give them a uniform appearance by assigning the same font and size) and make changes.

Note: You can check the graphical appearance of printouts on screen. Click the right mouse button and select **Preview** on the shortcut menu. This preview shows all the data records of the data sheet, regardless of the insertion marker's position in the data sheet and the selected data records.

Object Types of Reports

Reports can include different types of objects, which are described in the table below.

Object type	Function
Text object	Text that is not included in data sheets is inserted as text objects in reports (see "Inserting Text Objects (on page 282)").
Field object	Field objects are associated with the columns of the data sheet to which the report is assigned (cf. "Using Fields and Variables").
Drawing object	Linear and rectangular objects can be used to enhance the graphical appearance of reports (cf. "Adding Graphical Elements").
OLE object	Objects from other Windows applications can be integrated as files or links in reports (cf. "Inserting Images and Sketches (see "Insert Images and Sketches" on page 283)").

You can define conditions for every individual object or for entire groups of objects, which are taken into account when printing.

Define the Page Layout for Reports

You can define the page setup of reports. In other words, you can specify how sections and objects are arranged in printouts.

To define the page layout

Ü The layout window of the report designer is open.

1 Click **Page setup** on the **File** menu.

The **Report Properties** dialog box appears.

2 Select the **Page Layout** tab and make the necessary settings.

Note: You can change the unit of measurement in the **Ruler & Grid** tab (e.g. from "cm" to "pixels").

3 Click **OK**.

Add or Remove a Report Title and Report Summary

Report titles and summaries are independent sections that are defined separately. The objects in these two sections always print out just once: The report title appears at the beginning of a printout and the report summary at its end.

This way, you can add a cover sheet and/or final note to a file. It is even possible to display the title and summary on separate pages.

To add a report title or summary

➲ The layout window of the report designer is open.

1   Click **Optional Bands** on the **Report** menu.

    The **Report Properties** dialog box appears.

2   Select the **Optional Bands** tab and activate the **Report has title band** option and/or the **Report has summary band** option.

3   Choose the other options, as required.

4   Click **OK**.

To remove a report title or summary

➲ The layout window of the report designer is open.

1   Click **Optional Bands** on the **Report** menu.

    The **Report Properties** dialog box appears.

2   Select the **Optional Bands** tab and deactivate the **Report has title band** option and/or the **Report has summary band** option.

3   Click **OK**.

Specify the Height of Sections in Reports

You can enter any height for the individual sections. However, check that the final printout (= all sections) does not exceed the printable area of the paper.

You can specify a minimum height or set a fixed value for the height. When you enter a minimum height for a section, please make sure that all objects actually fit in the relevant section.

To specify the height for a section

➲ The layout window of the report designer is open.

• Drag the bar that delimits the section to the required height.

Or:

1 Double-click the bar delimiting the relevant section.

   The **... Band Properties** dialog box appears.

2 Select the **General** tab and enter the **height**.

   Note: You can change the unit of measurement in the **Ruler & Grid** tab (e.g. from "cm" to "pixels").

3 Activate the **Constant band height** option if you do not want the section to be resized automatically (e.g. when adding data or deleting empty lines). This is necessary e.g. when printing reports on labels.

4 Define an expression for the section, if required, by clicking [...] next to **On entry** or **On exit** under **Run expression**.

   Detailed information is provided in the section entitled "Define Expressions".

5 Click **OK**.

Selecting Objects in Reports

Use the ⌖ **Marker** on the **Report Controls** toolbar (see "Buttons in the "Report Controls" Toolbar" on page 273) to select objects (see "Object Types of Reports").

The selected objects (any combination possible) can be addressed as a single entity for easy manipulation. You can use the Cut, Copy, Paste and Delete tools as you would in any other Windows application.

Selected objects can be grouped, moved and superimposed. In addition, you can change the size of objects (not available with text objects). Rulers and grids assist you in the process of positioning objects.

Grouping Objects

You can combine several objects (see "Object Types of Reports") in a group that can be selected, cut, copied, deleted, pasted and moved as a single entity. For example, text and lines of a header can be combined in a group and placed as a whole.

Object groups facilitate the process of positioning objects. As opposed to data groups (consisting of fields and variables), however, object groups have *no* effects on printouts.

Positioning and Resizing Objects

Rulers and grids provide additional support as you position objects (see "Object Types of Reports") or change their size. The spacing between the lines of the ruler and a unit of measurement can be set in the **Ruler & Grid** tab of the **Report Properties** dialog box.

You can activate or deactivate the grid using the **Snap to Grid** tool on the **Format** menu.

You can define the size of field objects, drawing objects and OLE objects as you need. The size of text objects, on the other hand, is determined automatically and depends on the text length, font and font size.

Inserting Text Objects

Use the A **text tool** in the **Report Controls** toolbar (see "Buttons in the "Report Controls" Toolbar" on page 273) to create fixed text and labels. You can set the A **Text tool** to active with 🔒 **Repeat control element** to create a number of text objects in succession.

New text objects are always inserted using the formatting (font and font size) you have defined in the layout settings as the default font for the report (see "Defining the Page Layout for Reports (see "Define the Page Layout for Reports" on page 278)"); you can change these defaults at any time.

You can of course also modify the formatting of existing text objects any time you like. In addition, you can apply the same font to *all* the objects in a report in a single step; this also includes all text objects in the report (see "Designing Typography and Typesetting (on page 282)").

Designing Typography and Typesetting

The report designer provides many features with which you can freely design the typography and typesetting of text objects and fields containing text and numbers, as far as supported by your operating system.

Each object you newly add to a report is automatically formatted according to the font and font size you have defined as the default font in the layout settings for the report (see "Defining the Page Layout for Reports (see "Define the Page Layout for Reports" on page 278)"). You can modify this formatting any time later using one of the methods described below.

You can also freely place objects and choose if you want a fixed offset to the top or bottom of the section (see "Positioning and Resizing Objects"). The "Fix relative to top of band" setting is the default.

Adding Graphical Elements

You can enhance printouts by adding lines and color areas. The report designer provides a number of options. In particular, you can

- Insert vertical and horizontal lines
- Add rectangles, rectangles with rounded corners, circles and ellipses as frames or color areas
- Apply color areas or hatching styles to objects (e.g. text)

Note: On black/white printers, these areas will appear as gray tones.

Insert Images and Sketches

You can either insert images and sketches directly in your report (e.g. add your company logo to the page header) or load them into the printout from fields in the relevant data sheet columns (e.g. implementation sketches for items).

Using Fields and Variables

"Fields" are used to integrate the data in the columns of the data sheets in printouts. When printing, Allplan BCM processes all the data records one after the other. The data in the fields is checked and the results are listed in the printout.

Fields can even be calculated or include variables. "Variables" are used to save values or calculation results. Besides predefined variables, you can define further variables for each report. Functions are used to link fields and variables.

You can also group this data. This way, you can print out each group (title with items) on a new page, for example.

Field types and variable types

Field/variable types describe the type of data to be output. The type is given in the list boxes in the Output window.

ID of type	Data type
C	Alpha-numeric (field length limited to 254 characters)
D	Date
F	Floating point number
G	Object
L	Logical
M	Alpha-numeric (memo fields of unlimited length)
N	Numeric

Fields in data sheets

A field is available for each column in the data sheets. In addition, there are some fields that are used to classify data more precisely. You will find a list of the most important fields and their properties in the online help under "Fields in Data Sheets". Please note that fields Allplan BCM uses only internally are not listed here.

Defining variables

Variables are used to save values or calculation results. Variables can be defined as fields in reports or as parts of expressions. They are available in the **Variables** list box in the **Expression Builder** dialog box. However, they can only be used for the report for which they have been defined. The reports that come with Allplan BCM also include variables, the page number, for example.

Variables can also be integrated in calculations. The program starts with the initial value and the result is saved in the variable.

Predefined Allplan BCM variables

You can use the variables listed below in expressions for executing reports and in initialization/finalization procedures.

Name of variable	Data type	Use
_ZV_SEITE	Numeric	Page number at which to start printing.
		This variable contains the value of the **First page** data entry box of the **Report manager** dialog box.
_ZV_LOGO	Numeric	1 = the **Print logo** option is enabled.
		0 = the **Print logo** option is disabled.
_ZLGO.BR_LOGO	Object	Image object of logo.
_ZV_FUSS1	Character	Variables for the text that appears in the footer. You can enter this text when you click the **More options** button in the report manager.
_ZV_FUSS2		
_ZV_DATE	Date	Date specified in printouts.
		This variable contains the value of the **Date** data entry box of the **Report manager** dialog box.

The most important functions

Functions are used to link fields and variables. The table below only lists the functions that are used in reports.

Note: More functions available in Allplan Construction Cost are described under "The most important functions" in the online help for Allplan Construction Cost.

Function	Meaning
evaluate(var)	Ensures that a report can be used for all data sheets. The value in the open data sheet is always used.
Character functions	
"Text"	Compares character by character.
ALLTRIM(expC)	Removes blanks from character strings.

Function	Meaning
Logical functions	
=	Boolean operator: "equal"
NOT or !	Logical negation (the expression is true if the following value is not true).
AND	Boolean operator: "and" (the expression is true if both values are true).
OR	Boolean operator: "or" (the expression is true if one of the two values is true).
EMPTY(exp)	Checks whether fields or variables are empty.
IIF(,,)	Function with syntax: "if *condition*, then....; else .....". If the condition is true, this function yields the "then" value. If the condition is not true, this function yields the "else" value.
Date functions	
DATE()	Returns the current system date.

Inserting fields

You can use the **abl** **Field** tool to insert a single field in a report where you require.

As an alternative, you can click the **Quick Report** tool to open the **Quick Report** dialog box. Here you can use tables to select several (or all) fields that exist for a data sheet. The selected fields are automatically placed in the detail section.

Note: The **Quick Report** tool is only available when the default detail section in the report is empty and no further detail sections have been added.

Defining expressions

An expression consists of data sheet fields and/or variables that can be linked using various functions. The expression defined is applied to each data record you have selected.

You can specify expressions to

- Define fields
- Define conditions which are taken into account when objects are printed
- Group data
- Define variables (assigning initial values and values to store)

Expressions are usually defined using the **Expression Builder** dialog box, which contains four list boxes you can use to select functions from various groups. **The Expression for Field on Report field displays the selected functions, fields and variables. The expression could also be entered directly in this field; however, this should only be done by database experts.**

The **Variables** list box shows all the variables (including name and type) that have been defined for the current data sheet. For more information, see the "Defining variables" section above.

Formatting fields

The format defines how a value is displayed in printouts. Formatting typical of field data specifies that uppercase letters are used for all alphabetical characters, for example.

Grouping data

Grouping data means that data records are grouped based on a common feature. For example, you can print out each group on a new page and assign headers and footers to each group. Groups are changed when the value of the grouping condition changes. Groups can also be nested.

Inserting images from fields

Sketches you have added to projects (**Image** column) can be integrated in reports using a table field.

Defining Conditions for Printing Objects

You can define conditions which are taken into account when objects are printed out. Conditions can be specified for each object. For example, you can define that short text is only printed for item lines.

Specific Controls for Reports

Reports can be controlled using a specific template.

The initialization procedure for reports consists of two parts:

- Part 1: Mask control
- Part 2: Report control

Note: When using print jobs, a few special notes need to be observed.

Specific Mask Control

The mask control is used to create dialog elements in the bottom half of the **Output** tab in the **Print** dialog box (Allplan Building Costs) or in the bottom right half of the **Report manager** dialog box (Allplan Construction Cost). The mask control is defined in the **Initialization procedure** dialog box (Allplan Building Costs) or **Initialization/finalization procedure** dialog box (Allplan Construction Cost) and indicated in the following way:

```
#MASK
.....
.....
.....
#ENDMASK
```

You can define up to six mask elements in this section. If more than six elements are specified, they are ignored. The elements created are immediately displayed in the **Output** tab of the **Print** dialog box (Allplan Building Costs) or in the **Report manager** dialog box (Allplan Construction Cost).

The most important functions for creating and controlling mask elements are described in the online help under "The most important functions".

Specific Report Control

The report control corresponds to the print feed feature known from versions earlier than V6.0. The report control is indicated in the print feed in the following way:

> **#PROG**
> .....
> .....
> .....
> **#ENDPROG**

You can use the report control to make the proper configuration settings, check filter conditions etc. In addition, you can determine the specific settings made in the mask control, which can also be determined directly in the report, however. Reports created in previous versions of course can also be used without the specially indicated sections.

The most important functions for controlling reports are described in the online help under "The most important functions".

Important!
The elements created are only effective for as long as the report is selected within the **Print** dialog box (Allplan Building Costs) or **Report manager** dialog box (Allplan Construction Cost). When you switch to another report, the specific elements change accordingly.

Special Notes on Print Jobs

In print jobs, feeds can be defined in two different ways:

- Using the feeds of the individual reports

- Using the feed of the print job

Using the feeds of the individual reports

The sections from **#PROG** to **#ENDPROG** in the individual reports are executed.

If you want to use mask options, a **#MASK .... #ENDMASK** section must be added to the print job. In this section, you define the options for all subsequent reports. When creating a new print job, this section is created automatically based on all mask control sections of the individual print jobs. In most cases, however, you will need to edit this mask section manually.

Example:

The print job includes the following section:

> **#MASK**
> **_PRMSK_CHECK("chk1","Print prices",0)**
> **_PRMSK_CHECK("chk2","Printout based on StLB",1)**
> **#ENDMASK**

For all reports controlled by the print job, this means that the variable – in this example, the one controlling the printout of prices – must be named "chk1" *in every report*. This requirement must always be met; otherwise, contradictions might occur. To inform the user, the element created is displayed as inactive in the mask.

Example:

Report 1 includes a variable "chk1", which controls the printout of prices. Report 2 also contains a variable named "chk1". This variable, however, controls color printouts. If the relevant element created in the mask control of the print job is assigned the name "chk1", this element controls both the printout of prices and color printout.

Using the feed of the print job

The print feed is defined in the same way as for an individual report. Controls specified in the individual reports are suppressed.

Backing up and Restoring Reports

The quick reports provided by Allplan BCM are usually installed along with the program files when you install Allplan BCM. You can re-import them anytime without having to run setup again.

Reports you have newly created or modified can be backed up separately and restored when needed.

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