CAD PROJEKT K&A

operation manual

CAD Decor 2.3

a comprehensive program for designing
various types of interiors

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CHAPTER 1
System and hardware requirements

1. System requirements

- Operating system: Windows XP (required version SP2) - 32-bit, Vista - 32/64-bit, Windows 7 - 32/64-bit or Windows 8 - 32/64-bit;
- IntelliCAD program(delivered with CAD Decor software, free of charge);

Note! CAD Decor does not operate in Linux or Mac OS systems.

2. Minimum hardware requirements

- single-core processor 2,0 GHz
- minimum RAM memory: for Windows XP: 2 GB, for Windows Vista/7/8 – 4 GB;
- graphic card with NVIDIA GeForce chip, minimum GeForce series 8600 GT (512 RAM) and better models in this series(cards supporting OpenGL 3.0 and GLSL 1.3 or higher);

3. Recommended hardware requirements

- dual-core or multi-core processor 2,6 GHz
- RAM memory: 4GB;
- graphic card with NVIDIA GeForce chip (card memory 768 MB and more);
- exemplary models are given in the table below:

Note! By the graphic card series the following sequence is understood: GT/GTS/GTX sign and the first number in the cards name, e.g. GeForce GT 3xx. The following numbers, marked by xx, stand for the model of the graphic card. For example, GeForce GT320 comes from series GT 3xx, and is a model GT 320

Note! The proper operation of the program is not guaranteed with other graphic cards than listed in the table on the next page.

	For desktop computer:	For notebooks:
GT	GeForce 8600 GT and better models in this series* GeForce 9600 GT and better models in this series* GeForce GT 220 and better models in this series* GeForce GT 420 and better models in this series* GeForce GT 630 and better models in this series*	GeForce 8600M GT and better models in this series* GeForce 9600M GT and better models in this series* GeForce GT 120M and better models in this series* GeForce GT 220M and better models in this series* GeForce GT 320M and better models in this series* GeForce GT 420M and better models in this series* GeForce GT 520M and better models in this series* GeForce GT 620M and better models in this series*
		GeForce MX 130 and better models in this series* GeForce MX 150 and better models in this series*
GTX	GeForce GTX 550 and better models in this series* GeForce GTX 670 and better models in this series* GeForce GTX 780 and better models in this series*	GeForce GTX 660M and better models in this series* GeForce GTX 770M and better models in this series* GeForce GTX 1060M and better models in this series* GeForce GTX 1060 Max-q and better models in this series*

4. Requirements for a Professional Rendering module

- quad-core processor, e.g. Quad Core i5, i7 (on a dual-core processor the program operates slower);
- minimum RAM memory: for Windows 32-bit – 4GB (does not guarantee proper calculation results in big scenes), for Windows 64-bit - 8GB (optimal RAM in case of big scenes: 16GB)
- recommended optimal configuration: Windows 7 64-bit, RAM memory: 8-16GB, Processor Intel Core i5 2500 K, i7 2600 K, graphic card GeForce GTX 470 or GTX 560 Ti.

Note! As a optimal choice, we recommend the card GTX 470 or GTX 560 Ti.

5. Other elements

- DVD-ROM driver for software installation (required DVD drive min. 8x);
- hard disc space 2048MB (or more, dependant on number of installed databases);
- Internet access (to enable iUPDATE system operation);
- color printer, minimum resolution - 1200dpi and more (e.g. Canon i560, Canon i455; the usage of inkjet paper is recommended);
- large display is also recommended (17”, 19”).

CHAPTER 2
Installation of CAD Decor software

1. Introductory remarks

Note! For Windows XP, 2000, NT, Vista, 7 and 8 administrator rights are required.

Note! In Windows Vista, 7 and 8 the program should not be installed in the location: C:\Program Files.

2. Changing settings for Windows Vista

Before starting the installation of CAD Decor program in Windows Vista it is necessary to change system setup to enable correct program operation. In order to do so:

- Open **User Accounts** in menu **Start → Control Panel** (Fig. 1) (or **User Control and Family safety and then User Accounts);**
- Select the option **Turn User Account Control on of off** (Fig. 2);
- If necessary, enter the administrator password or provide confirmation;
- Unselect the option **Use User Account Control (UAC) to help protect your computer.**

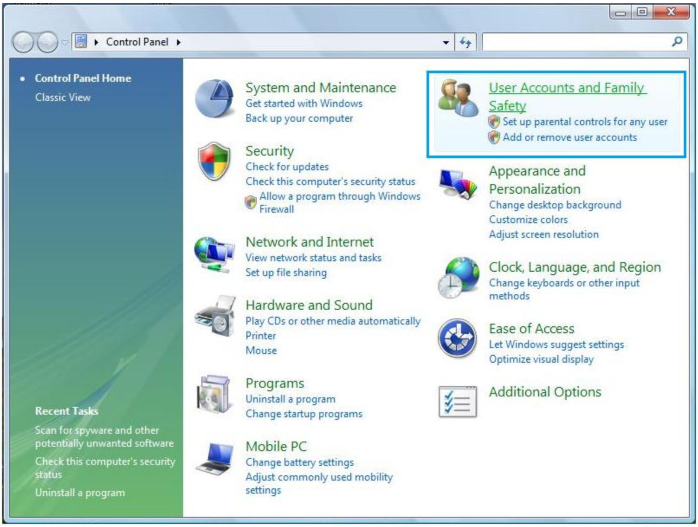

Control Panel
Control Panel Home
Classic View
Recent Tasks
Scan for spyware and other potentially unwanted software
Check this computer's security status
Uninstall a program
System and Maintenance
Get started with Windows
Back up your computer
Security
Check for updates
Check this computer's security status
Allow a program through Windows Firewall
Network and Internet
View network status and tasks
Set up file sharing
Hardware and Sound
Play CDs or other media automatically
Printer
Mouse
Programs
Uninstall a program
Change startup programs
Mobile PC
Change battery settings
Adjust commonly used mobility settings
User Accounts and Family Safety
Set up parental controls for any user
Add or remove user accounts
Appearance and Personalization
Change desktop background
Customize colors
Adjust screen resolution
Clock, Language, and Region
Change keyboards or other input methods
Ease of Access
Let Windows suggest settings
Optimize visual display
Additional Options

Fig. 1 - Control Panel

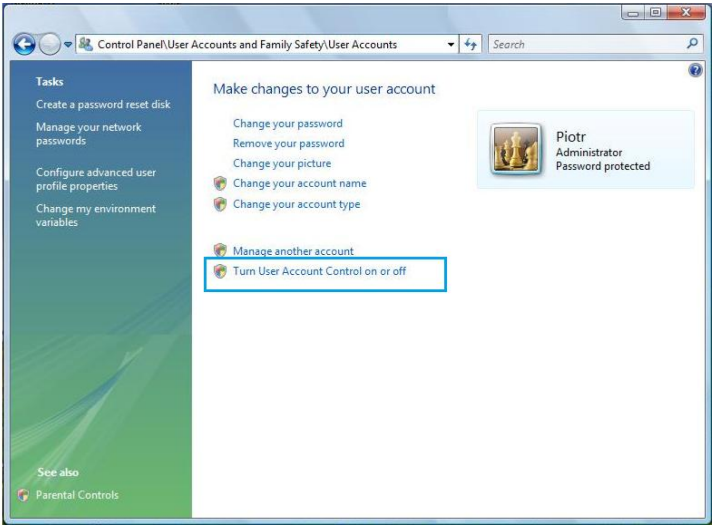
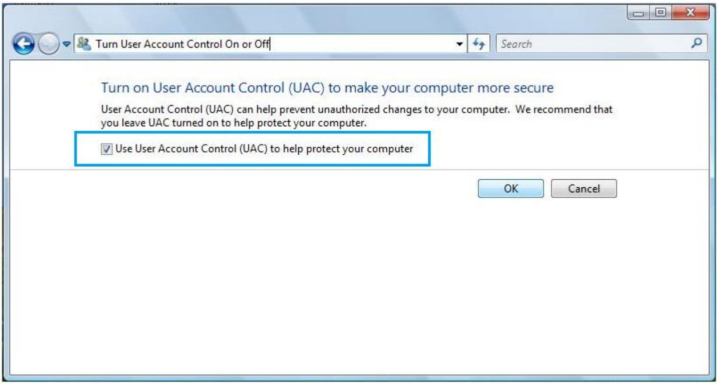

Control Panel\User Accounts and Family Safety\User Accounts
Search
Tasks
Create a password reset disk
Manage your network passwords
Configure advanced user profile properties
Change my environment variables
See also
Parental Controls
Make changes to your user account
Change your password
Remove your password
Change your picture
Change your account name
Change your account type
Manage another account
Turn User Account Control on or off
Piotr
Administrator
Password protected

Fig. 2 – Turn User Account Control on or off


Turn User Account Control On or Off
Search
OK
Cancel

Turn on User Account Control (UAC) to make your computer more secure

User Account Control (UAC) can help prevent unauthorized changes to your computer. We recommend that you leave UAC turned on to help protect your computer.

☑ Use User Account Control (UAC) to help protect your computer

Fig. 3 – Use User Account Control (UAC) to help protect your computer

3. The installation of CAD Decor 2.X program

2.2. Introduction to the installation of CAD Decor 2.X

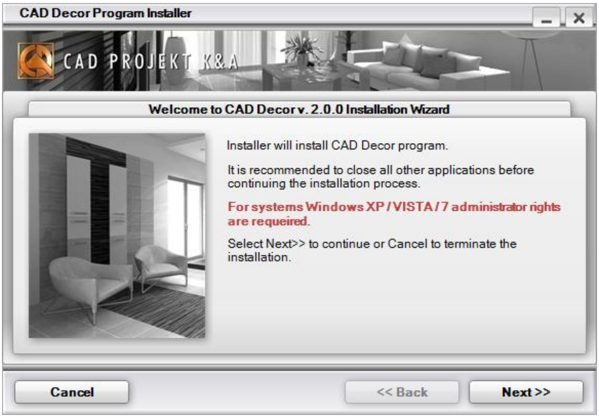
Before the installation it is highly recommended to close all running applications and to uninstall the database server, if it is in a version other than required (this is: **Firebird** older than 2.5 or any **Inter Base** server).

If the inappropriate version of a server is present on the disk at the moment of initiating the installation of CAD Decor 2.X, the program will demand to uninstall it in the way described in this chapter (pages 16 and 17).

To begin the installation of CAD Decor 2.X, insert the disc in the DVD-ROM drive.

The installation should start automatically. If the **autostart** option is disabled, start the installation manually. To do this, find the file called **Setup.exe** (***My computer* → *DVD drive* →** Setup) and run it.

- a dialog box with information about the installation wizard will be displayed first;
- please read the information carefully,
- in order to proceed press **Next >>**;
- alternatively - to exit the installation wizard press **Cancel**;
- the **License Agreement** dialog box (Fig. 5) will display;
- please read it carefully;
- tick the check-box to accept the terms of **Agreement** - otherwise the installation process will be cancelled;
- the agreement can be printed using the icon .


CAD Decor Program Installer
CAD PROJEKT K&A
Welcome to CAD Decor v. 2.0.0 Installation Wizard
Cancel
<< Back
Next >>

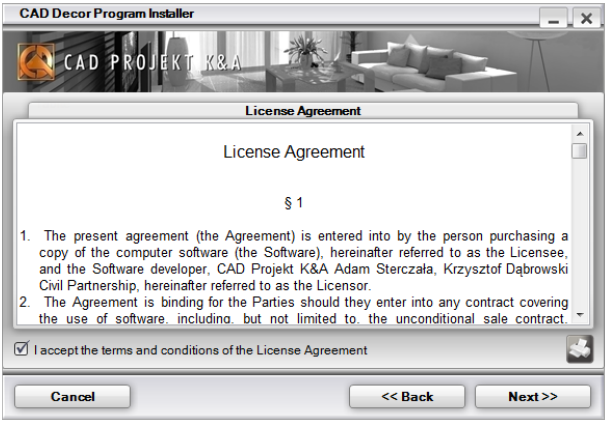
Installer will install CAD Decor program.

It is recommended to close all other applications before continuing the installation process.

For systems Windows XP / VISTA / 7 administrator rights are requeired.

Select Next>> to continue or Cancel to terminate the installation.

Fig. 4 – CAD Decor 2.X installation wizard



License Agreement

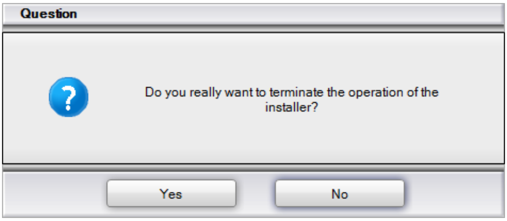
§ 1

1. The present agreement (the Agreement) is entered into by the person purchasing a copy of the computer software (the Software), hereinafter referred to as the Licensee, and the Software developer, CAD Projekt K&A Adam Sterczała, Krzysztof Dąbrowski Civil Partnership, hereinafter referred to as the Licensor.
2. The Agreement is binding for the Parties should they enter into any contract covering the use of software, including, but not limited to, the unconditional sale contract.

☑ I accept the terms and conditions of the License Agreement

Fig. 5 – License Agreement dialog box

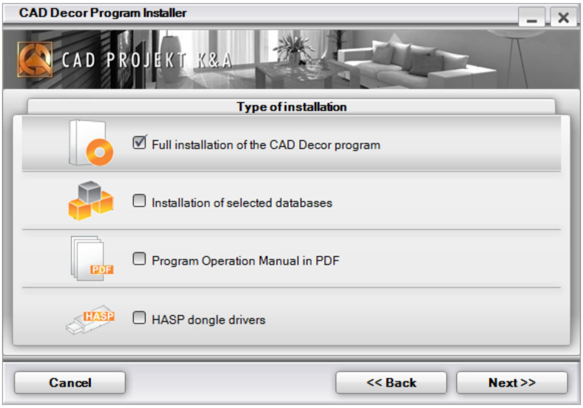
Installation can be aborted in any moment by clicking the **Cancel** button in the bottom left corner of the installer dialog box. The program will ask if the user really wants to abort the installation (Fig. 6). If **Yes** is chosen the installation will be then aborted. In such case the program will not operate properly.



Do you really want to terminate the operation of the installer?

Fig. 6 – request for confirmation of aborting the installation

After accepting the terms and conditions of the **License Agreement** and clicking **Next>>** in a new dialog the type of installation should be chosen w (Fig. 7). Four available options are described below:



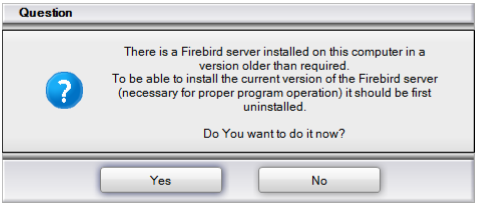
☑ Full installation of the CAD Decor program
☐ Installation of selected databases
☐ Program Operation Manual in PDF
☐ HASP dongle drivers

Fig. 7 – selection of the type of an installation

- **Full installation of CAD Decor program -** initiates the complete standard installation of CAD Decor, described in subchapter 2.3;
- **installation of selected databases -** allows to add selected databases available on DVD to an already existing application. This option is active only if CAD Decor 2.X has been already installed; after selecting this option the program will calculate the size of databases available for installation to check, if it does not exceed free disk space (recommended free space on the disk is about 2 GB – dependant on the number and size of databases);
- **Programs Operation Manual in PDF -** installs an electronic operation manual for CAD Decor program with Adobe Acrobat Reader viewer, if there is no program for viewing PDF files already installed on the computer;
- **HASP dongle drivers** - installs the drivers for the HASP key.

If there is a **Firebird** server installed on the computer in a version older than 2.5, or any server **Inter Base**, then after selection of installation option and clicking **Next >>**

the program will inform about this problem and propose its solution, this is deinstallation of the server (Fig. 8).


Question

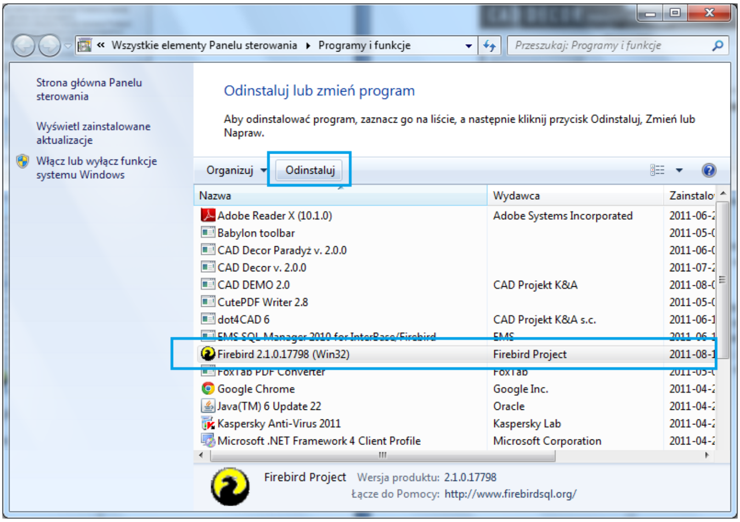
There is a Firebird server installed on this computer in a version older than required.
To be able to install the current version of the Firebird server (necessary for proper program operation) it should be first uninstalled.

Do You want to do it now?

Yes
No

Fig. 8 – a communicate about the necessity of deinstallation of the Firebird server in an inappropriate version

After clicking **Yes** a new dialog box will automatically open – **Uninstall or change a program** (Windows 7) or **Add / Remove programs** (older versions of Windows), in which the user should select the Firebird item and click **Uninstall** (Fig. 9). If No is chosen, then the installation of CAD Decor 2.X will not be continued.


« Wszystkie elementy Panelu sterowania ▸ Programy i funkcje
Przeszukaj: Programy i funkcje
Strona główna Panelu sterowania
Wyświetl zainstalowane aktualizacje
Włącz lub wyłącz funkcje systemu Windows
Organizuj
Odinstaluj

Odinstaluj lub zmień program

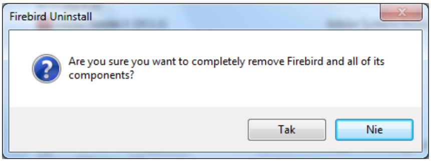
Aby odinstalować program, zaznacz go na liście, a następnie kliknij przycisk Odinstaluj, Zmień lub Napraw.

Nazwa	Wydawca	Zainstalo
Adobe Reader X (10.1.0)	Adobe Systems Incorporated	2011-06-
Babylon toolbar		2011-05-
CAD Decor Paradyż v. 2.0.0		2011-06-
CAD Decor v. 2.0.0		2011-07-
CAD DEMO 2.0	CAD Projekt K&A	2011-08-
CutePDF Writer 2.8		2011-05-
dot4CAD 6	CAD Projekt K&A s.c.	2011-06-
EMS SQL Manager 2010 for InterBase/Firebird	EMS	2011-06-
Firebird 2.1.0.17798 (Win32)	Firebird Project	2011-08-
FoxTab PDF Converter	FoxTab	2011-05-
Google Chrome	Google Inc.	2011-04-
Java(TM) 6 Update 22	Oracle	2011-04-
Kaspersky Anti-Virus 2011	Kaspersky Lab	2011-04-
Microsoft .NET Framework 4 Client Profile	Microsoft Corporation	2011-04-

Firebird Project Wersja produktu: 2.1.0.17798
Łącze do Pomocy: http://www.firebirdsql.org/

Fig. 9 – Uninstall or change a program dialog box

After clicking **Uninstall** the program will ask to confirm that the selected program is to be uninstalled (Fig. 10).


Firebird Uninstall

Are you sure you want to completely remove Firebird and all of its components?

Tak
Nie

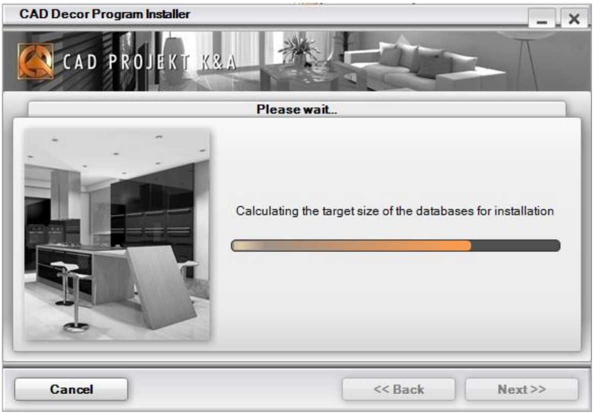
Fig. 10 – a request for confirmation of the deinstallation of a Firebird server

After confirming by clicking **Yes**, the process of deinstallation of an inappropriate version of a server will begin. When it is completed, close the dialog box **Uninstall or change a program** and proceed to the next step of the installation of CAD Decor 2.X.

2.3. The process of full installation of CAD Decor 2.X

After selecting the first option of installation (**Full installation of CAD Decor program**) and clicking **Next >** the program will estimate the overall size of databases, available to install from the installation disk (Fig. 11).

The required amount of free disk space is about 2 GB.

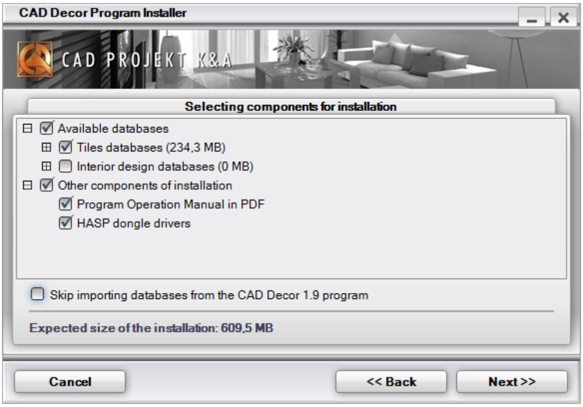

CAD Decor Program Installer
CAD PROJEKT K&A
Please wait...
Cancel
<< Back
Next >>

Calculating the target size of the databases for installation

Fig. 11 – estimation of the overall size of the databases on the disk

The first step to install the program is the selection of databases, on which the projects will be based. On the list of available libraries there are categories of databases included on the installation disk (Fig. 12), that can be expanded to see the list of all databases they include (Fig. 13).

In the same dialog box the user can also select other elements to be installed (this is the Operation Manual and the HASP key drivers).


CAD Decor Program Installer
CAD PROJEKT K&A
Selecting components for installation
Cancel
<< Back
Next >>

- ⊟ ☑ Available databases
  - ⊞ ☑ Tiles databases (234,3 MB)
  - ⊞ ☐ Interior design databases (0 MB)
- ⊟ ☑ Other components of installation
  - ☑ Program Operation Manual in PDF
  - ☑ HASP dongle drivers

☐ Skip importing databases from the CAD Decor 1.9 program

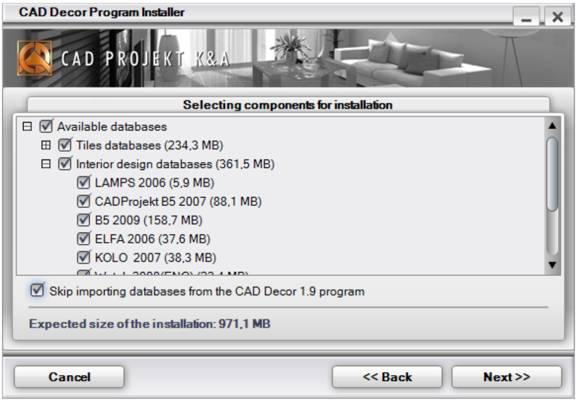
Expected size of the installation: 609,5 MB

Fig. 12 – selection of databases and other elements for installation – default view, collapsed lists of databases

All elements are by default selected – so to omit the installation of some of them, it is necessary to unselect the particular item or items.

It is possible to select and unselect the whole groups of items (e.g. the category of databases).

There are two ways of installing the databases in CAD Decor 2.X.


CAD Decor Program Installer
CAD PROJEKT K&A
Selecting components for installation
Cancel
<< Back
Next >>

- ⊟ ☑ Available databases
  - ⊞ ☑ Tiles databases (234,3 MB)
  - ⊟ ☑ Interior design databases (361,5 MB)
    - ☑ LAMPS 2006 (5,9 MB)
    - ☑ CADProjekt B5 2007 (88,1 MB)
    - ☑ B5 2009 (158,7 MB)
    - ☑ ELFA 2006 (37,6 MB)
    - ☑ KOLO 2007 (38,3 MB)

☑ Skip importing databases from the CAD Decor 1.9 program

Expected size of the installation: 971,1 MB

Fig. 13 – selection of elements for installation – expanded list of bases

They can be either installed from the installation disk or imported from the older version of the program – CAD Decor 1.9.

After clicking **Next >>** the installer will estimate the size of databases available for importing from the previous version of the program (Fig. 14) and will check, if there are any databases among them, that are not included on the installation disk, or which have not been selected to be installed from the disk. If such databases are detected, the list of them will be presented on the next screen (Fig. 15).

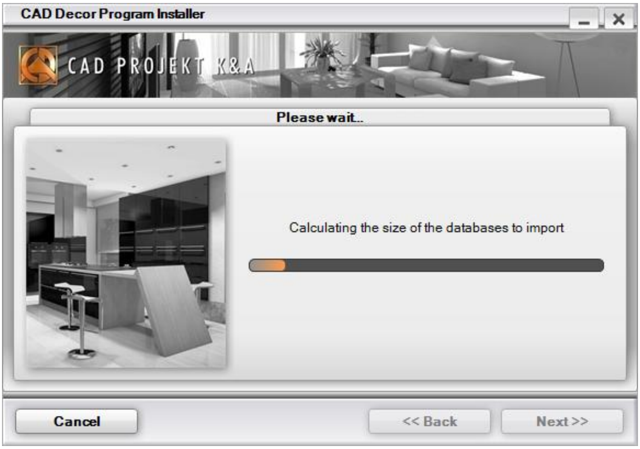
If the user unselect some of the categories of databases available on the installation disk (e.g. **interior design elements databases** – see Fig. 12), resigning from installing them, then all databases in old version of the program that belong to this category will be available for importing and will be displayed on the list (Fig. 15).

If the user unselect a particular database (e.g. **CAD_LAMPY_2009**), then this particular database will be available for importing (under the condition that it is present in the previous installation of the program).

When the entire category of databases is selected during the selection of elements for installation (what means that the used wants to install this group of databases from the installation disk) it may still happen that the installer founds some databases belonging to this category in the old version of the program, that are not present on the installation disk. In this case they will be also displayed on the list of databases available for importing.

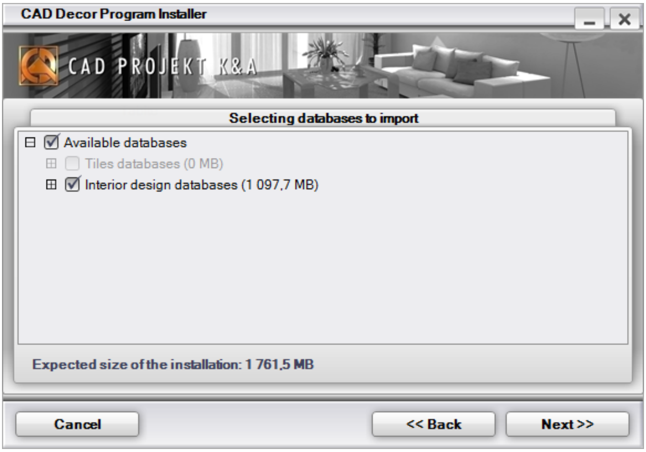
To skip checking the availability of databases for importing from the older version of the program, click the option **Skip importing databases from the CAD Decor 1.9 program.**

Note! When the installation is proceeded by an installer downloaded from the Internet, then importing the databases from the previous version of the program is the only available option of installation of databases.


CAD Decor Program Installer
CAD PROJEKT K&A
Please wait...
Cancel
<< Back
Next >>

Calculating the size of the databases to import

Fig. 14 - estimating the size of databases available in the previous version of the program


CAD Decor Program Installer
CAD PROJEKT K&A
Selecting databases to import
Cancel
<< Back
Next >>

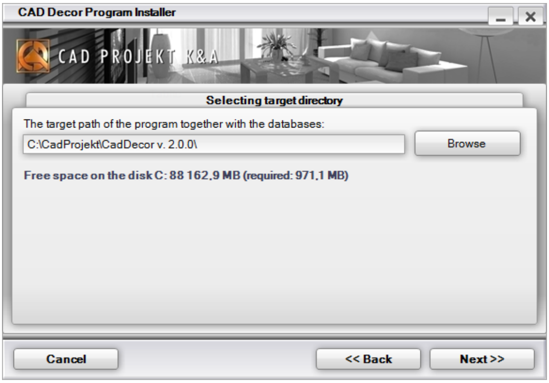
⊟ ☑ Available databases
  ⊞ ☐ Tiles databases (0 MB)
  ⊞ ☑ Interior design databases (1 097,7 MB)

Expected size of the installation: 1 761,5 MB

Fig. 15 – the list of databases available for importing form the older version of the program

If the user does not want to import databases available in the older version of the program, then it is necessary to unselect them on the list. It is possible to select and unselect the whole groups of databases. To proceed to the next step of the installation of CAD Decor 2.X, click **Next >>**.

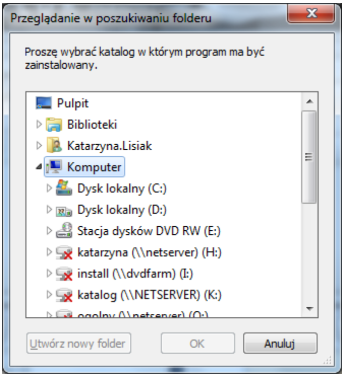
The next required action is the selection of the destination location on the computer disk, in which the files of CAD Decor 2.X are to be installed (in other words – the indication of the installation path) (Fig. 16). After clicking **Browse** a new dialog will open – **Browse for folder** (Fig. 17), in which the location can be indicated. If this action is skipped, the program will be installed in a default location, this is on disk **C:** in the **CadProjekt** folder, in the **CadDecor v.2.x** subfolder.


CAD Decor Program Installer
CAD PROJEKT K&A
Selecting target directory
Browse
Cancel
<< Back
Next >>

The target path of the program together with the databases:
C:\CadProjekt\CadDecor v. 2.0.0\

Free space on the disk C: 88 162,9 MB (required: 971,1 MB)

Fig. 16 – indication of the installation path


Przeglądanie w poszukiwaniu folderu
Pulpit
Biblioteki
Katarzyna.Lisiak
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
Stacja dysków DVD RW (E:)
katarzyna (\\netserver) (H:)
install (\\dvdfarm) (I:)
katalog (\\NETSERVER) (K:)
Utwórz nowy folder
OK
Anuluj

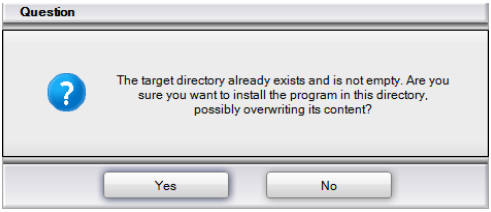
Proszę wybrać katalog w którym program ma być zainstalowany.

Fig. 17 – browsing for the folder

> *Note! Please remember that in Windows Vista and 7 the CAD Decor 2.0 program must not be installed in C:\Program Files.*

If CAD Decor 2.X has been already installed in the indicated location, the installer will informa about this fact and will ask for confirmation, that the program is to be installed in the same location, overwriting its content (Fig. 18).

An analogical communicate will be displayed if in the selected folder any other files are found (not being files of CAD Decor 1.9 or even older version – in this case the communicate presented on Fig. 19 will be displayed). If the user choses **No**, then the installer will go back to the indication of the destination location screen, providing the possibility to indicate a different location.

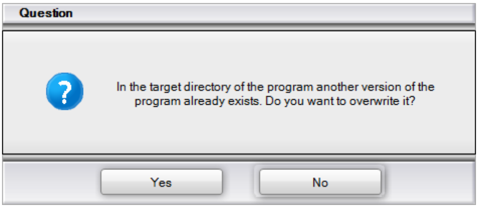

Question
Yes
No

The target directory already exists and is not empty. Are you sure you want to install the program in this directory, possibly overwriting its content?

Fig. 18 – the installer detected some files in the indicated installation location

If the user choses **Yes** the files inthe indicate folder will be overwritten with the new files. Note: before you decide to actualize the program this way, please make sure that the installed version is in fact newer than the already installed one.

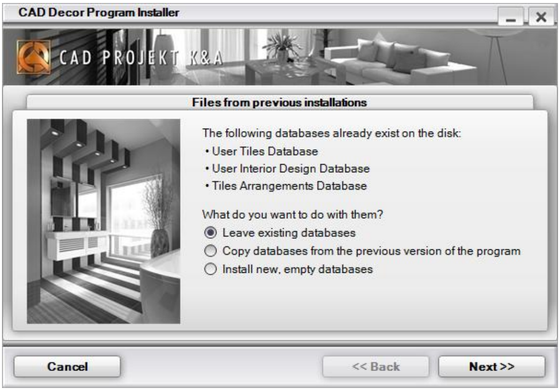
If in the indicated installation folder there is a previous version of CAD Decor 1.9 (or older), than the user will be informed about this fact (Fig. 19). In this case it is recommened to indicate a different location for installation, because overwriting the files may result in some problems with program operation.



In the target directory of the program another version of the program already exists. Do you want to overwrite it?

Fig. 19 – information about a previous version of the program present in the selected installation location

If in the destination location or in the location of the previous version of the program any user databases are found (it can be user interior design elements, ceramic tiles database, or tiles sets database), a dialog called **Files from previous installations** in which the user can choose what to do with these databases – whether they should be left, copied from the previous version or installed in the new version (Fig. 20).


CAD Decor Program Installer
CAD PROJEKT K&A
Files from previous installations

The following databases already exist on the disk:
- User Tiles Database
- User Interior Design Database
- Tiles Arrangements Database

What do you want to do with them?

● Leave existing databases
○ Copy databases from the previous version of the program
○ Install new, empty databases

Fig. 20 – resignation from the installation of new, empty user databases

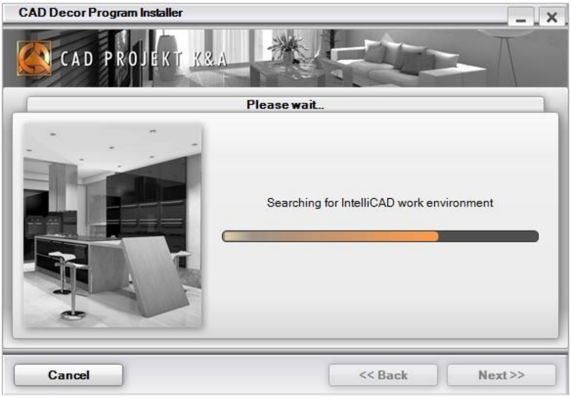
- **Leave existing databases** – leaving user databases in the destination locations, what prevents them from losing the content that was previously saved in them (this is 3D models, tiles and tiles sets added by the user);
- **Copy databases from the previous version of the program** – copying user databases existing in the previous locations of installations of CAD Decor, CAD Kitchens or CAD Decor Paradyz; elements saved in these databases will be maintained;
- **Install new, empty databases** – installation of completely new databases from the installation disk, not including any elements.

If in the selected location of the database (e.g. in the folder of the previous program installation) some base is not present (e.g. user databases of tiles sets), the particular database from some other location will be considered to be installed, accordingly to the following rules:

- If the option **Copy databases from the previous version of the program** has been chosen, but the particular base does not exist in the previous version of the project, and is in the destination location – the installer will use the one from the destination location;

- If the option **Leave existing databases** (in the destination location) has been chosen, but the particular database is not present there, then the installer will copy a new database from the installation DVD – even, if it exists in the location of program previous version;
- If one of the above variants has been chosen, but the particular database is not present neither in the destination location, nor in the location of the previous program version, then it will be copied from the installation disk;
- If the option **Install new, empty databases** has been chosen, then all databases will be copied from the installation disk.

Now the program will search for CAD work environment on computer disks (Fig. 21)..



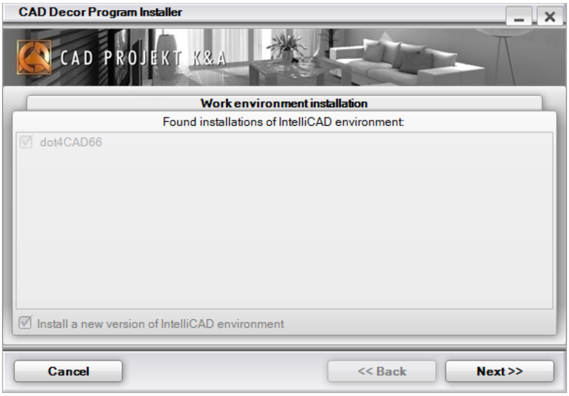
Please wait...

Searching for IntelliCAD work environment

Fig. 21 – searching for work environment

The environment is necessary for program installation and operation Currently used environment is **.4CAD (dot4CAD)** which is a version of the **IntelliCAD** environment, produced by CAD Projekt K&A. If **.4CAD** environment is not found on the computer disk, or is in a version other than necessary, then it will be automatically installed from the DVD disk.

Found versions of work environment will be displayed on the list on the following screen (Fig. 21). If there is more than one version, the user will be able to chose which one is to be used by the program. If the installer does not detect any work environment (because it was not installed), its installation will be automatically started.



Work environment installation

Found installations of IntelliCAD environment:

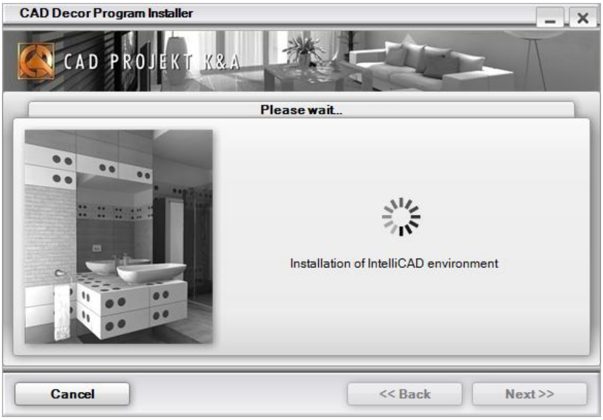
☑ dot4CAD66

☑ Install a new version of IntelliCAD environment

Fig. 22 – selection of work environment version

When the existing version of work environment is detected on the computer disk, the user can still decide to install a new version from the installation DVD.

To do so, select the option **Install a new version of IntelliCAD environment**, and then click **Next >>** to begin the installation of **.4CAD** (Fig. 23).



Please wait..

Installation of IntelliCAD environment

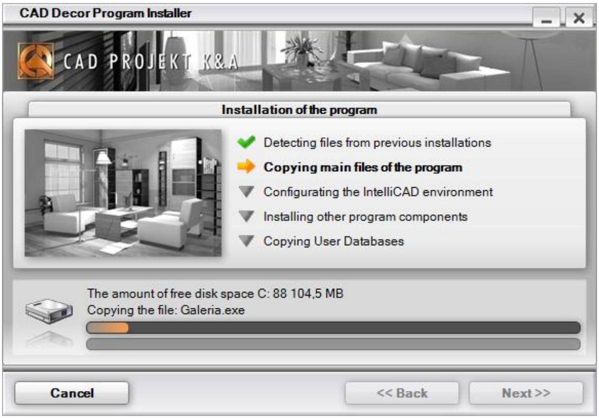
Fig. 23 – the initiation of installation of work environment

> *Note! In our nomenclature the names.4CAD and IntelliCAD are used interchangeably..*

> *Note! The process of installation of IntelliCAD is described in details in point 4 (page 30).*

After installation of .4CAD environment, the installer will begin the proper installation of CAD Decor 2.X. The following steps will be performed automatically.

The currently realized process will be marked in bold letters on the list (Fig. 24) and indicated by an orange arrow: ➡. Awaiting points will be designated with a grey triangle ▼, and actions that have been already completed will be marked with a green 'tick': ✓. The progress of the consequent stages can be monitored on the progress bars in the bottom part of the dialog box (Fig. 24).



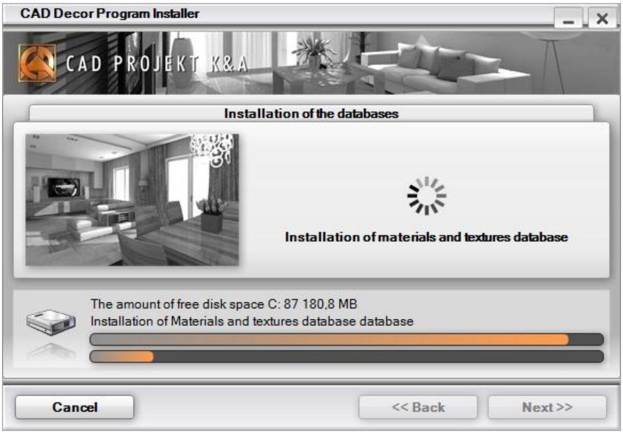
Installation of the program

- ✓ Detecting files from previous installations
- ➡ **Copying main files of the program**
- ▼ Configurating the IntelliCAD environment
- ▼ Installing other program components
- ▼ Copying User Databases

The amount of free disk space C: 88 104,5 MB
Copying the file: Galeria.exe

Fig. 24 – the following steps of the installation process

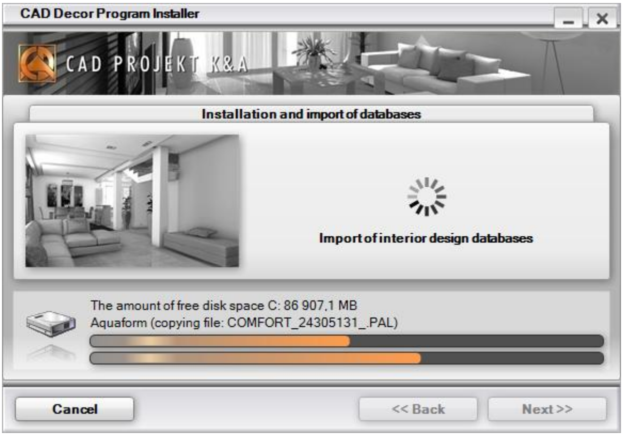
During the installation or import of the databases, the user will be informed what category of bases is currently copied (in the central part of the dialog box) and what database in particular is being installed or imported, and what is the amount of free space left on the disk (in the bottom part of the dialog box) (Fig. 25 and 26).


CAD Decor Program Installer
CAD PROJEKT K&A
Installation of the databases
Cancel
<< Back
Next >>

Installation of materials and textures database

The amount of free disk space C: 87 180,8 MB
Installation of Materials and textures database database

Fig. 25 – the progress of tiles databases installation

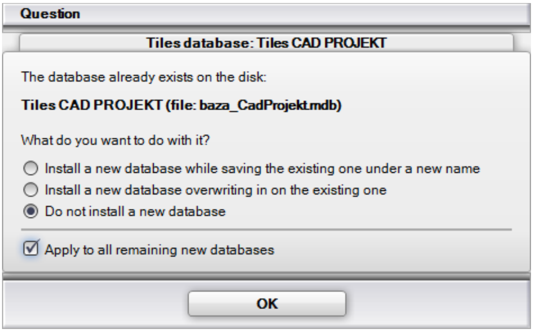

CAD Decor Program Installer
CAD PROJEKT K&A
Installation and import of databases
Cancel
<< Back
Next >>

Import of interior design databases

The amount of free disk space C: 86 907,1 MB
Aquaform (copying file: COMFORT_24305131_.PAL)

Fig. 26 – the progress of interior design elements import

The installation is performed fully automatically. However, if the CAD Decor program has been already installed before, it is possible that the installer will detect an existing database of the same name, as currently installed. In such case the user will be offered three options to choose from (Fig. 27).


Question
Tiles database: Tiles CAD PROJEKT
OK

The database already exists on the disk:

Tiles CAD PROJEKT (file: baza_CadProjekt.mdb)

What do you want to do with it?

○ Install a new database while saving the existing one under a new name
○ Install a new database overwriting in on the existing one
● Do not install a new database

☑ Apply to all remaining new databases

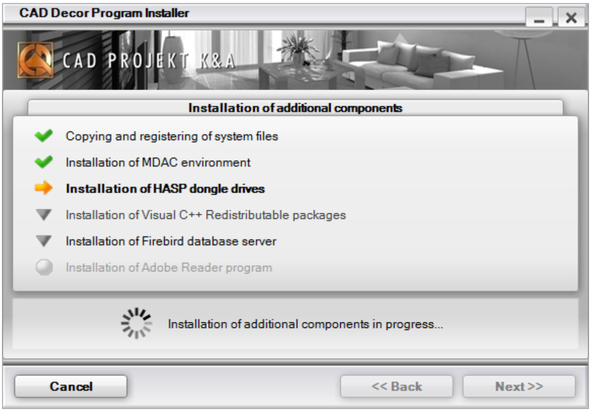
Fig. 27 – installation of a database when an existing base has been detected

If the same solution is to be applied with all databases, then click the option **Apply to all remaining new databases** – the installer will then stop asking each time when another existing database is detected, and will apply the selected option to all following databases. Available options are as follows:

- **Install a new database while saving the existing one under a new name** – a newer version of the database will be installed, but it will be not overwritten on the older one, because the name of the older base will be automatically changed. It will allow the user to use both bases simultaneously (in case of interior design databases and kitchen cabinets databases) or will create copies (in case of tiles databases – the old version will be not available in the program at the same as the new one);
- **Install a new database overwriting in on the existing one** – the older version will be replaced by the newer, currently installed one.
- **Do not install a new database** – the installation of the newer database will be skipped, so the unchanged older version will stay on computer disk.

When copying of databases is complete, the installer will begin the installation of additional components (Fig. 28), this is: system files, MDAC environment, Visual C++ package, Firebird database server and Adobe Reader, which will enable the user to open the Operation Manual (if on the computer there are no programs to read PDF documents).

The following steps of the installation of additional components can be monitored. The currently proceeded action is marked in bold in the list and indicated by an orange arrow: ➡. Positions designated with a grey circle: ○ have not been selected for installation. Remaining actions are marked with grey triangle ▼, and the completed ones with a green 'tick' ✓.


CAD Decor Program Installer

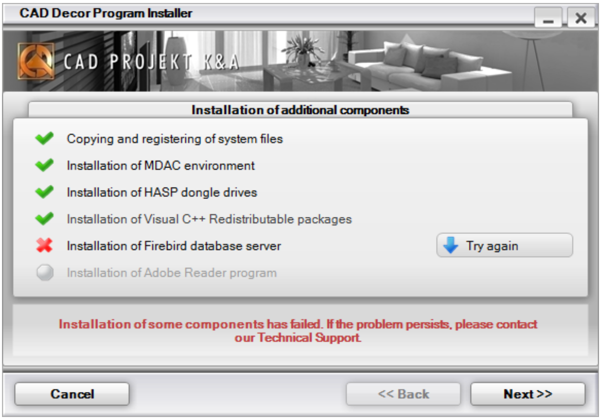
Installation of additional components

✓ Copying and registering of system files
✓ Installation of MDAC environment
➡ **Installation of HASP dongle drives**
▼ Installation of Visual C++ Redistributable packages
▼ Installation of Firebird database server
○ Installation of Adobe Reader program

Installation of additional components in progress...

Fig. 28 – installation of additional components

It may happen that the installation of some of the additional components fails. In such situation the installer will enable to try to install them again (Fig. 29). If even then the particular component is not successfully installed, please contact our technical support (contact details can be found at the end of the Manual - page 245).

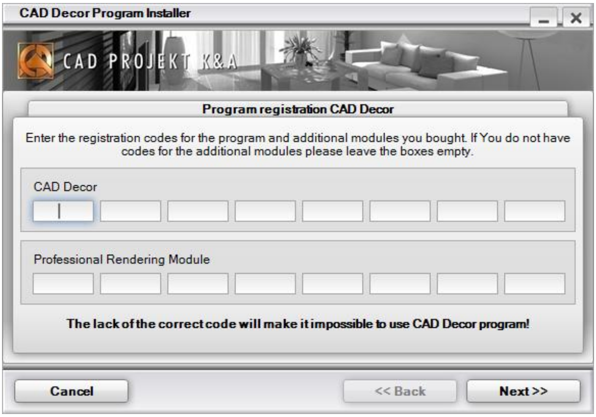

CAD Decor Program Installer
CAD PROJEKT K&A
Installation of additional components
Try again
Cancel
<< Back
Next >>

- ✓ Copying and registering of system files
- ✓ Installation of MDAC environment
- ✓ Installation of HASP dongle drives
- ✓ Installation of Visual C++ Redistributable packages
- ✗ Installation of Firebird database server
- ○ Installation of Adobe Reader program

Installation of some components has failed. If the problem persists, please contact our Technical Support.

Fig. 29 – installation of a Firebird server failed – Try again option available

After the installation of additional components, which is the last step of the entire installation of CAD Decor 2.X, a registration screen will appear, in which the registration code to the program should be entered, and – optionally – also the codes for additional modules (in the case of the CAD Decor program the only one additional module is the Professional Rendering Module – status as at 19/09/2011) (Fig. 30).


CAD Decor Program Installer
CAD PROJEKT K&A
Program registration CAD Decor
CAD Decor
Professional Rendering Module
Cancel
<< Back
Next >>

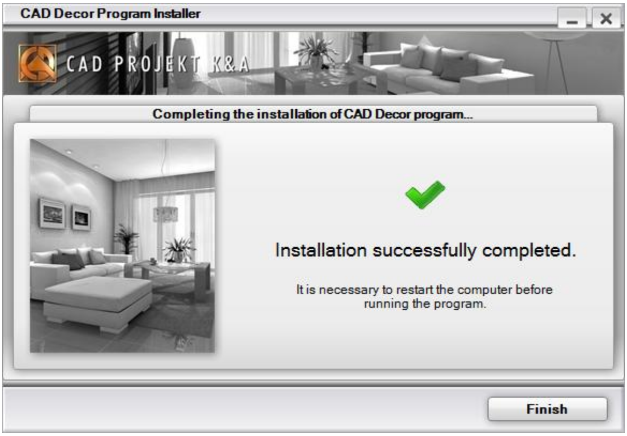
Enter the registration codes for the program and additional modules you bought. If You do not have codes for the additional modules please leave the boxes empty.

The lack of the correct code will make it impossible to use CAD Decor program!

Fig. 30 – entering the registration codes during the

The codes can be found on the **Registration Card**, which you have received together with the program. After entering them click **Next >>**. You will be then informed that the installation was successfully completed (Fig. 31).

Note! On the last screen, informing about the installation being successfully completed, an additional message may appear, asking to restart the computer before running the program. In such situation restart the computer.



CAD Decor Program Installer

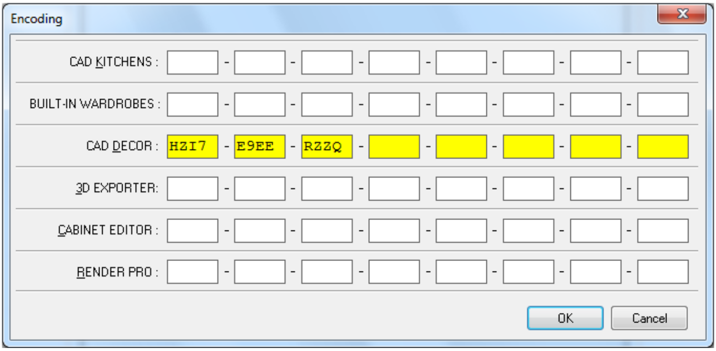
Completing the installation of CAD Decor program...

Installation successfully completed.

It is necessary to restart the computer before running the program.

Fig. 31 – successful completion of the installation

If the user does not have the **Registration Card** with the codes beside him at the moment of installation of the program, the codes may be entered on other occasion – when the program is run for the first time. In this situation after running the program the **Encoding** dialog box will open (Fig. 32). In this dialog codes should be entered in appropriate fields besides all owned modules. An incorrect or incomplete is displayed in yellow, and the correct one – in white.

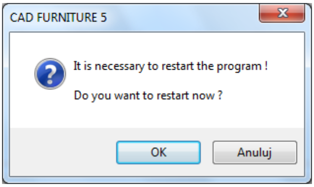


Encoding

CAD DECOR : HZI7 - E9EE - RZZQ

Fig. 32 – entering the registration codes after running the program for the first time

After entering the codes to all owned programs and modules click **Ok**. The program will ask you to restart it (Fig. 33).



It is necessary to restart the program !

Do you want to restart now ?

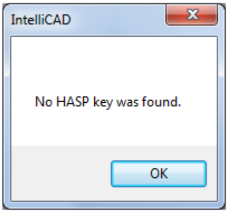
Fig. 33 – communicate about a necessary restart of the program

If possible, restart the program immediately (if the new code was added during working with the program - e.g. the code for the standard CAD Decor program has been entered before and after starting the work the user decided to add also the code for the Professional Rendering Module), first save changes in the project and then restart the program.

If the code for standard CAD Decor program was entered during the installation or first run of the program and the **Encoding** dialog box is not automatically opened anymore, to be able to add codes for additional modules, run the program and click the **Access codes** 🔒 icon, available in the **Standard** icon bar.

To be able to run the program, it is necessary to insert the HASP key into one of available USB ports. Otherwise you will see the communicate presented on the illustration (Fig. 34) and the program will not be start.

If the USB dongle LED (signaling its proper operation) is off, insert the dongle to another port or exchange with another USB device. If these operations do not bring positive results, check if the USB port drivers are properly installed.



No HASP key was found.

Fig. 34 – communicate about a missing HASP key

4. The installation of the work environment - IntelliCAD

The IntelliCAD program is an excellent Computer Aided Designing system of capacities comparable with world's standards in this group of applications — AutoCAD system family. It is one of the vital elements of the whole design system.

When purchasing CAD Decor, our customer receive a licensed version of the IntelliCAD software on the installation disk together with the program. The author version of the environment by CAD Projekt K&A is called **dot4CAD** (.4CAD). The original IntelliCAD installer is started automatically during the installation of CAD Decor.

CAD PROJEKT K&A
POWERED BY
IntelliCAD
TECHNOLOGY

.4CAD powered by IntelliCAD 6 Technology.
This program is protected by U.S. and international copyright laws.
Copyright 1999-2009 IntelliCAD Technology Consortium . All rights reserved

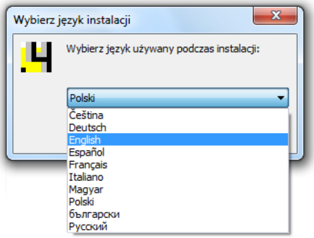
Fig. 35 – IntelliCAD dialog box

If necessary, the User can run the installer manually. In order to do so, go to the **SetupIcad** directory (on the installation disc), find the **dot4CAD_setup_6.6.xxx.xx.exe** file and run it.

Also, if the CAD Decor installation wizard detects an older version of the environment already existing on the computer disc, the user will be able to proceed an installation of the newest version, using the option **Install a new version of IntelliCAD environment.**

In each case the installation of the work environment proceeds as follows:

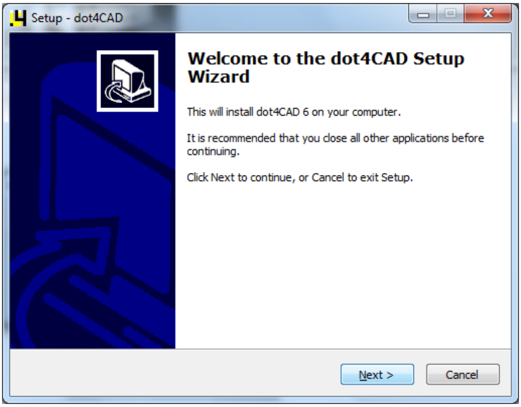
- First of all, the dot4CAD installation wizard will ask to choose the language (Fig. 36);
- After choosing a language, click **Ok**;
- If any other applications are open, close them before beginning the installation;
- The **dot4CAD Setup Wizard** dialog box will open;
- Click **Next** to start an installation or **Cancel** to abort it (Fig 37);



Wybierz język instalacji

Wybierz język używany podczas instalacji:

Fig. 36 – language selection



Setup - dot4CAD

Welcome to the dot4CAD Setup Wizard

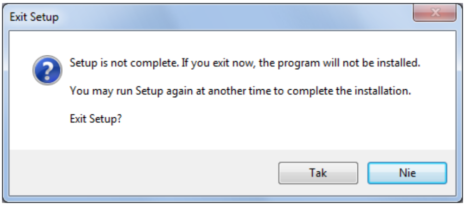
This will install dot4CAD 6 on your computer.

It is recommended that you close all other applications before continuing.

Click Next to continue, or Cancel to exit Setup.

Fig. 37 – dot4CAD Setup Wizard

- Installation can be aborted in any moment by clicking the **Cancel** button in the bottom right corner of the dialog box, but in such case program will not be installed. This is why the program will ask if the user really intend to abort the installation (Fig. 38);



Exit Setup

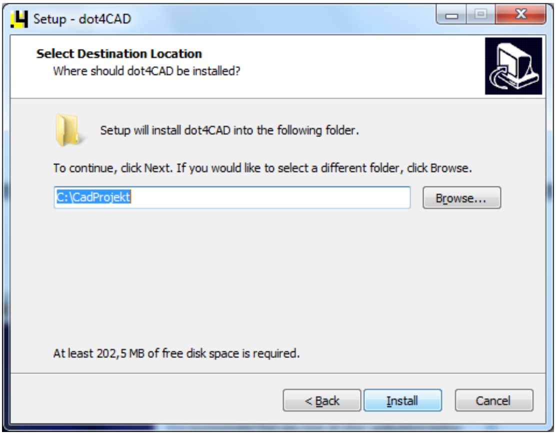
Setup is not complete. If you exit now, the program will not be installed.

You may run Setup again at another time to complete the installation.

Exit Setup?

Fig. 38 – request for confirmation of aborting the installation before it is complete

- In the next dialog it is possible to select the location on the computer disc, where the dot4CAD files are to be installed – by default it is: **C:\Program Files\dot4CAD**;
- To change the localization choose **Browse**, select the location and click **Ok**;
- Then press **Install**.



Select Destination Location

Where should dot4CAD be installed?

Setup will install dot4CAD into the following folder.

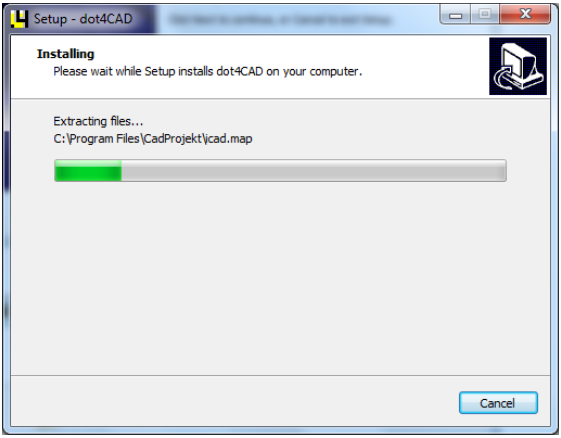
To continue, click Next. If you would like to select a different folder, click Browse.

C:\CadProjekt

At least 202,5 MB of free disk space is required.

Fig. 39 – selection of the destination location for IntelliCAD

- The time left to complete the installation can be viewed on the progress bar (Fig. 40);



Installing

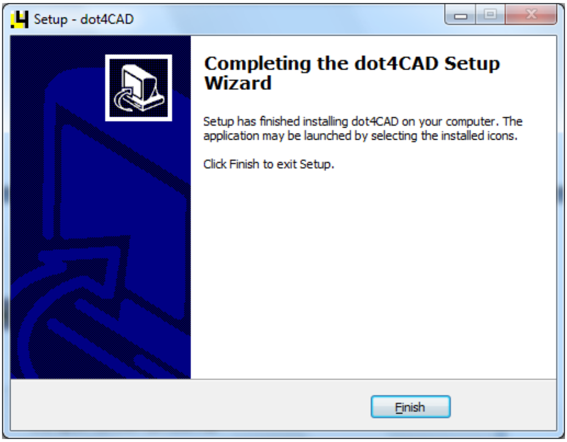
Please wait while Setup installs dot4CAD on your computer.

Extracting files...

C:\Program Files\CadProjekt\icad.map

Fig. 40 – installation progress

- After completing the installation, the wizard will ask the user to close the **Setup – dot4CAD** dialog – by clicking **Finish** (Fig. 41);



Completing the dot4CAD Setup Wizard

Setup has finished installing dot4CAD on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

Fig. 41 – new version of dot4CAD successfully installed

- The installation of the IntelliCAD environment is then completed.

CHAPTER 3

Running the software for the first time

1. Introductory remarks

The tools described in this chapter which use the IntelliCAD features, are based on version 6. If a previous version of the environment is used, there can be slight differences in the details of the described functions.

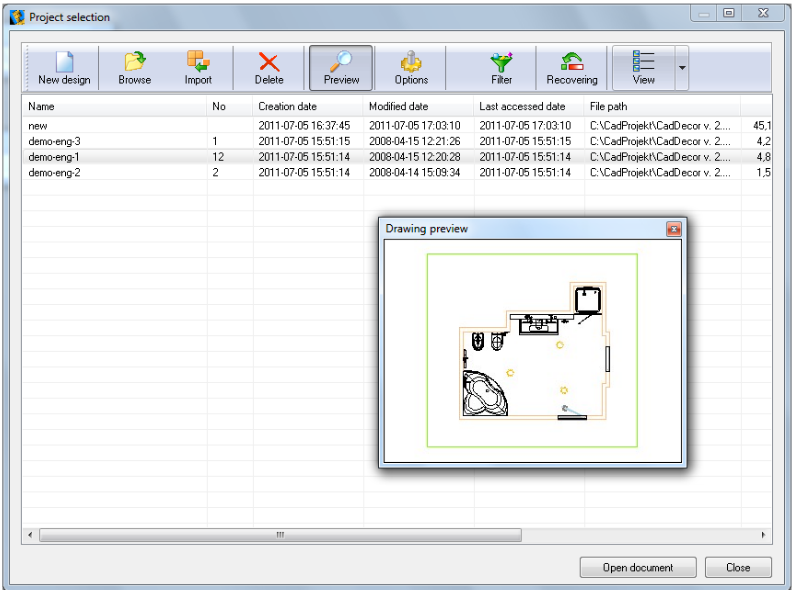
After running the program – by a double left-click on the shortcut icon on the desktop or the **CadDecor.exe** file in the program location (c:\CadProjekt\CadDecor v. 2.X.X\), a welcome screen will appear (Fig. 42) and then the dialog box called Project selection will automatically open (Fig. 43).

CAD Decor 2.3
Copyright by CAD Projekt K&A. All rights reserved
Sprawdzanie aktualizacji...

Fig. 42 – a splash screen of CAD Decor 2.X

2. Design selection dialog box

Design Selection dialog is displayed straight after the start of the program. This dialog is designed for creating new designs and opening the existing ones (Fig. 29). In order to open an existing design, select the required file in the displayed table and press **Open document** button.


Project selection
New design
Browse
Import
Delete
Preview
Options
Filter
Recovering
View
Drawing preview
Open document
Close

Name	No	Creation date	Modified date	Last accessed date	File path	
new		2011-07-05 16:37:45	2011-07-05 17:03:10	2011-07-05 17:03:10	C:\CadProjekt\CadDecor v. 2....	45,1
demo-eng-3	1	2011-07-05 15:51:15	2008-04-15 12:21:26	2011-07-05 15:51:15	C:\CadProjekt\CadDecor v. 2....	4,2
demo-eng-1	12	2011-07-05 15:51:14	2008-04-15 12:20:28	2011-07-05 15:51:14	C:\CadProjekt\CadDecor v. 2....	4,8
demo-eng-2	2	2011-07-05 15:51:14	2008-04-14 15:09:34	2011-07-05 15:51:14	C:\CadProjekt\CadDecor v. 2....	1,5

Fig. 43 - Design selection

If you have some designs created by means of the earlier program versions close **Design selection** window and open the required design by pressing **Open** button.

Additional functions of **Design selection** window:

- Deleting designs that are no longer needed,
- Viewing the designs selected in the table,
- Choosing design archive folder location by selecting **Options**,
- Searching designs by means of **Filter** function,
- Restoring lost designs (by means of Auto save function: a current working file is being saved every 5 minutes),
- Toggling between view and table mode;

Additionally, if you select one or more positions in **Design selection** window, you will access the following context menu by clicking the right mouse button (Fig. 44).

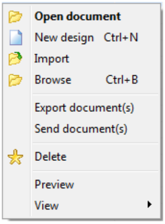

Open document
New design Ctrl+N
Import
Browse Ctrl+B
Export document(s)
Send document(s)
Delete
Preview
View

Fig. 44 – Design selection window context menu

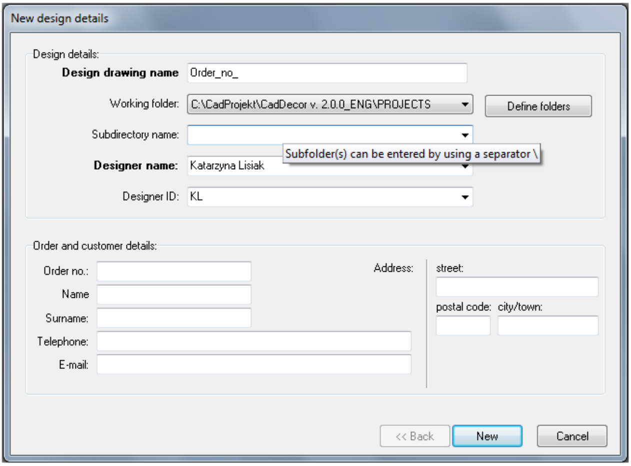
There are some additional items in the menu:

- **Export document(s)** – saves the designs in a ZIP archive in the selected folder,
- **Send document(s)** – sends an e-mail with attached selected designs.

3. Creating new design

In order to create a new design, press **New** button. A new window will open (Fig. 45). You have to enter some data in provided fields. Positions in bold font are necessary.

- **Design drawing name** – do not use any special characters (=".\ , : ; * < >/ | ' ~ `?);
- **Working folder** – this is the users folder for saving designs. In order to select the folder location press **Define folders** button;
- **Subdirectory name** – if there are some subdirectories in **Working folder**, they will be displayed after **Subdirectory name** field expanding. If you want to create a new subdirectory, enter its name into the field. If you leave the field empty, a drawing will be saved in the working folder;
- **Designers name & ID** – these are the designers data – once entered they will be saved for the future use.



New design details

Design details:

Design drawing name Order_no_

Working folder: C:\CadProjekt\CadDecor v. 2.0.0_ENG\PROJECTS

Subdirectory name:

Subfolder(s) can be entered by using a separator \

Designer name: Katarzyna Lisiak

Designer ID: KL

Fig. 45 - New design details window

4. Icon layout and toolbars

Icons are very useful elements of the program - they make it possible to issue most of the commands only with a mouse. Placing the cursor over any icon without clicking it will display the name of the function represented by the icon. Icons are group into several icon bars (toolbars). Their layout can be easily customized. Toolbars can be moved freely, not to use too much space and to be comfortable to use, in the following ways:

- In order to move a toolbar click on ‖ bar with the left mouse button and – holding it – drag the toolbar into new location.
- In order to minimize space, you can place the toolbars side by side, in the appropriate areas: under the menu list, just over the window lower edge and on the window sides (recommended especially if a wide screen monitor is used). It will maximize the workspace.

- When a toolbar is moved into the design area the bar ‖ will disappear and the toolbar header with its name will display. A toolbar in such a form can be closed if it is not needed at the moment.
- If a toolbar happens to be accidentally closed or the User just want to get it back after closing it, it is easy to restore it using the right mouse button clicking on the toolbar area. Then find the needed toolbar name in a context menu (it is easy to locate, because it is not marked with √) and click on it (Fig. 46).

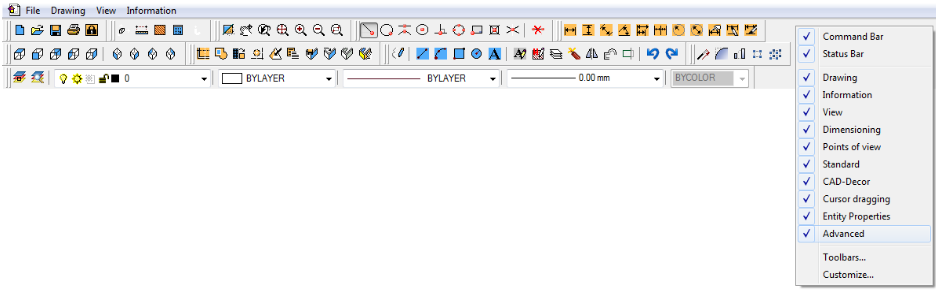
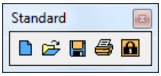

File
Drawing
View
Information
0
BYLAYER
BYLAYER
0.00 mm
BYCOLOR
Command Bar
Status Bar
Drawing
Information
View
Dimensioning
Points of view
Standard
CAD-Decor
Cursor dragging
Entity Properties
Advanced
Toolbars...
Customize...

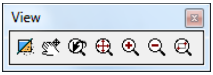
Fig. 46 –managing toolbars

CAD Decor icons are group into following toolbars:

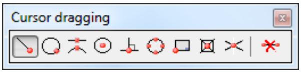
The icon bar called **Standard** (presented below) is used for creating new drawings, opening existing ones (from the disk and from the list), saving or printing the designs and to entering the activation codes for programs or additional modules.



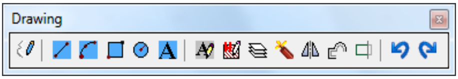
Another group of icons – toolbar **View -** is used for zooming the drawing and refreshing it (removing any unnecessary elements, appearing during drawing):



The **Cursor dragging** toolbar enables You to use characteristic points (entity snaps) of elements in the drawing, e.g. final, central, middle or intersection point.

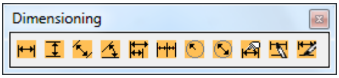

Cursor dragging

The **Drawing** icons are used for drawing polylines, lines, arches, rectangles or circles, for inserting and editing text, for modifying layers, exploding entities and other.

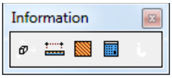


> *Note! **Polylines** drawn in CAD Decor **are red** and are based on the **POLYLINE_T** layer, while the **lines, arches and circles** are **purple**, and the layer they belong to is called **TECHNICAL_T.***

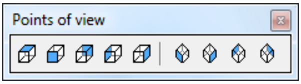
The toolbar **Dimensioning**, enables You to dimension chosen elements - horizontal, vertical, diagonal, diameter, radius and other dimensions are available, as well as setting options.



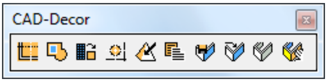
Icons on the **Information** toolbar enables You to check the co-ordinates of a selected point or measure distance or area, as well as use the Calculator.



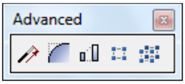
Icons of the **Points of Views** toolbar allow to switch between perpendicular and axonometric views



Using the **CAD-Decor** toolbar You will be able to insert wall and their elements, design Your own elements (e.g. platforms), convert 3D models in many formats to DWX, create posts of various shapes, insert elements of interior design and valuate them and go on to visualization (quick and full mode).



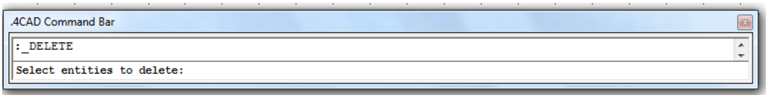
There is a new toolbar added called **Advanced**. Some icons from IntelliCAD are available here to facilitate Your drawing.



5. IntelliCAD toolbars

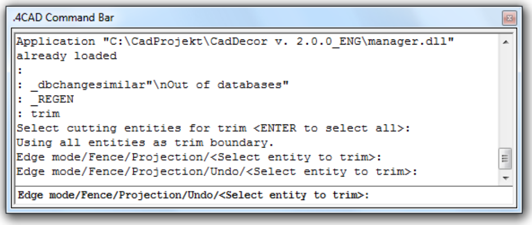
Command Bar

The **Command Bar** is used for entering commands from the keyboard and reading the prompts provided by the program (they should be carefully followed during working with the program). It can be moved in exactly the same manner as icon toolbars. In the stationary mode (by default on the bottom of the screen) 3 lines of last entries are shown on it (Fig. 47), but You can display any number of them if You move the bar in the project area (Fig. 48).


.4CAD Command Bar

```
:_DELETE
Select entities to delete:
```

Fig. 47 – .4CAD Command Bar


.4CAD Command Bar

```
Application "C:\CadProjekt\CadDecor v. 2.0.0_ENG\manager.dll"
already loaded
:
: _dbchangesimilar"\nOut of databases"
: _REGEN
: trim
Select cutting entities for trim <ENTER to select all>:
Using all entities as trim boundary.
Edge mode/Fence/Projection/<Select entity to trim>:
Edge mode/Fence/Projection/Undo/<Select entity to trim>:
Edge mode/Fence/Projection/Undo/<Select entity to trim>:
```

Fig. 48 - .4CAD Command Bar - expanded

Status Bar

It is a grey line placed at the bottom of the screen and it includes IntelliCAD options. The most important ones are: **documentation, dimensions, ORTHO** and **ESNAP**. Double click the required option to access it. Inactive Status Bar functions are displayed in grey and active in black (Fig. 49).

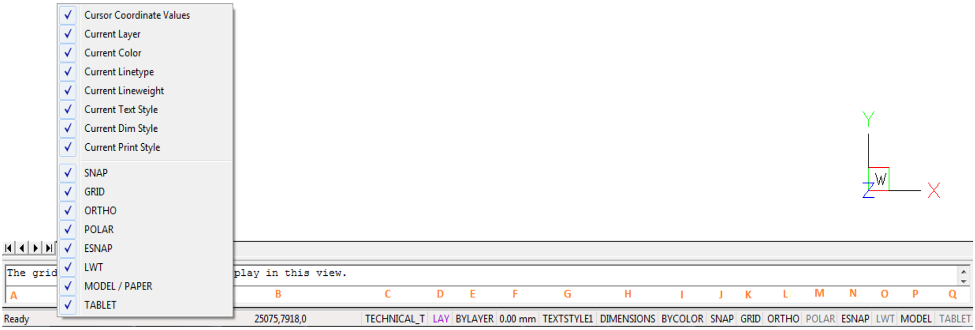

✓ Cursor Coordinate Values
✓ Current Layer
✓ Current Color
✓ Current Linetype
✓ Current Lineweight
✓ Current Text Style
✓ Current Dim Style
✓ Current Print Style
✓ SNAP
✓ GRID
✓ ORTHO
✓ POLAR
✓ ESNAP
✓ LWT
✓ MODEL / PAPER
✓ TABLET
Y
W
Z
X
The grid
play in this view.
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
Ready
25075,7918,0
TECHNICAL_T
LAY
BYLAYER
0.00 mm
TEXTSTYLE1
DIMENSIONS
BYCOLOR
SNAP
GRID
ORTHO
POLAR
ESNAP
LWT
MODEL
TABLET

Fig. 49 – IntelliCAD Status Bar

A — **information** about the current command;

B — **mouse cursor coordinates** information,

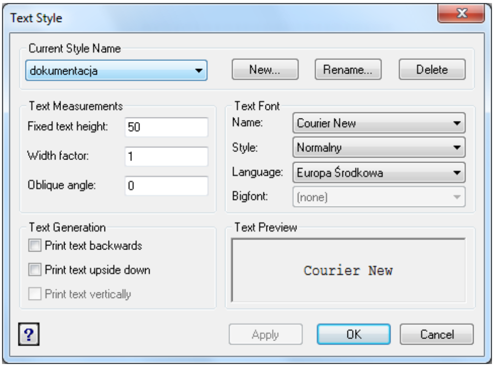
C — **name** of the current layer, double left-click to change the layer;

D — **colour** of the current layer, double left-click to change the colour;

E — **line type** - by default: **BYLAYER**, double left-click on the name to change the type;

F — **line thickness** –by default: **BYLAYER**; double left-click to select another thickness;

G — **text style**; the standard style setting is **documentation** (Fig. 50),



Current Style Name: dokumentacja

Text Measurements
Fixed text height: 50
Width factor: 1
Oblique angle: 0

Text Font
Name: Courier New
Style: Normalny
Language: Europa Środkowa
Bigfont: (none)

Text Generation
☐ Print text backwards
☐ Print text upside down
☐ Print text vertically

Text Preview
Courier New

Fig. 50 – Text Style dialog box

H — dimensions style; double left-click on the name of the option to change; also available at the icon **Dimension settings** (Fig. 51);

I – printout style – available only for drawings that use named printout style tables.

J — snap - can be enabled or disabled by double-clicking the SNAP button,

K — grid settings, double left-click switches it on and off, also at [F7];

L — orthogonal mode - when on, lines can be drawn only at right angles - when off, lines can be drawn at any angle, responsible for drawing, copying and moving elements in an orthogonal mode; can be switched on/off by clicking [F8] key. Temporary deactivation is possible by pressing and holding <Shift> key – when on the lines can be drawn in any direction.

M – polar tracking – enables drawing at any angle (increment angle); enter the angle in **Drawing settings** dialog available at **Settings** in the context menu under the right mouse button; option analogical to ORTHO, which enables drawing at right angles (90^{o}) – they cannot be both active at the same time,

N – esnap - turns characteristic points of elements on and off; also at [F3];

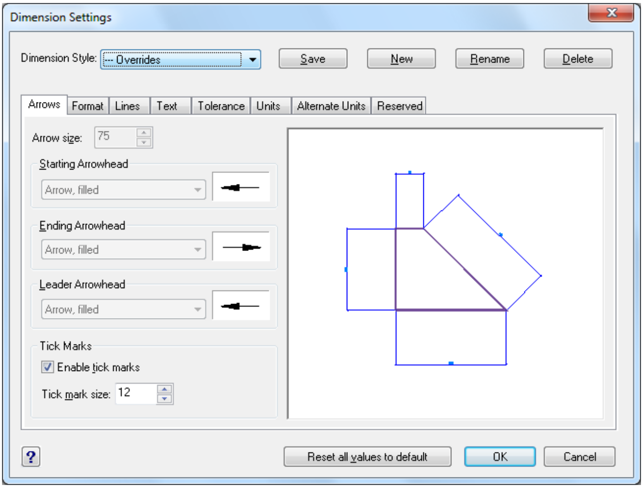
O – showing line thickness – double left-click turns it on/ off;

P – switching between 3D and 2D view – changes the mode from 3D to 2D and the other way around, analogically to **Model** and **Layout** tabs on the left hand side;

R – tablet – switches a tablet digitizer on or off.

Dimension settings

An option available under the icon and in **Status Bar**. It is used for modification of dimensions and for saving new settings as a new profile. It is possible to modify dimensioning arrows, formats, line types, texts, tolerances, units and alternative units.



Dimension Settings
Save
New
Rename
Delete
Arrows
Format
Lines
Text
Tolerance
Units
Alternate Units
Reserved
?
Reset all values to default
OK
Cancel

Dimension Style: --- Overrides

Arrow size: 75

Starting Arrowhead: Arrow, filled

Ending Arrowhead: Arrow, filled

Leader Arrowhead: Arrow, filled

Tick Marks

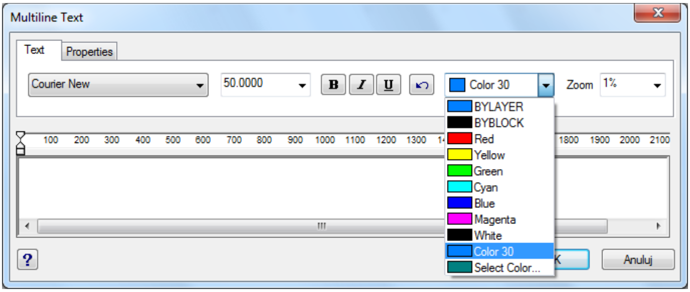
☑ Enable tick marks

Tick mark size: 12

Fig. 51 – Dimensions Settings dialog box

4. How to enter and edit text:

- Indicate the location with the cursor (by dragging a frame diagonally) where the text is to be entered;
- Click the icon **Text** A;
- The **Multiline Text** dialog will be displayed:



Multiline Text
Text
Properties
B
I
U
BYLAYER
BYBLOCK
Red
Yellow
Green
Cyan
Blue
Magenta
White
Color 30
Select Color...
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1800
1900
2000
2100
?
Anuluj

Courier New

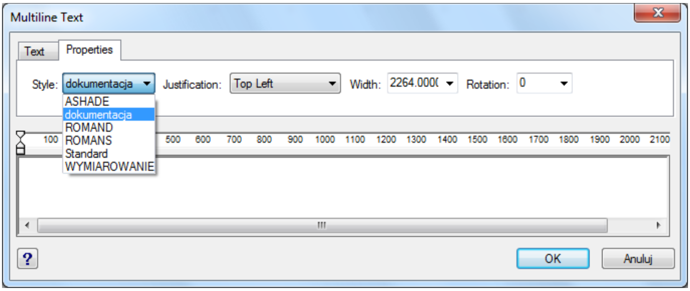
50.0000

Color 30

Zoom 1%

Fig. 52 - Multiline Text dialog box

- Set the type and the size of the font and other formatting parameters (e.g. bold or justification – in the **Properties** tab:



Multiline Text
Text
Properties
ASHADE
dokumentacja
ROMAND
ROMANS
Standard
WYMIAROWANIE
100
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
?
OK
Anuluj

Style: dokumentacja

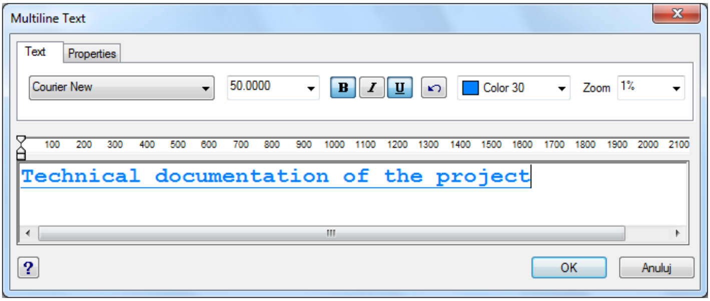
Justification: Top Left

Width: 2264.000(

Rotation: 0

Fig. 53 - Multiline Text dialog box – Properties tab

- in the **Text** tab enter information which is to be displayed in the design or documentation, then click **OK**.


Multiline Text
Text
Properties
Courier New
50.0000
B
I
U
Color 30
Zoom
1%
100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100
?
OK
Anuluj

Technical documentation of the project

Fig. 54 - Multiline Text dialog box – Text tab

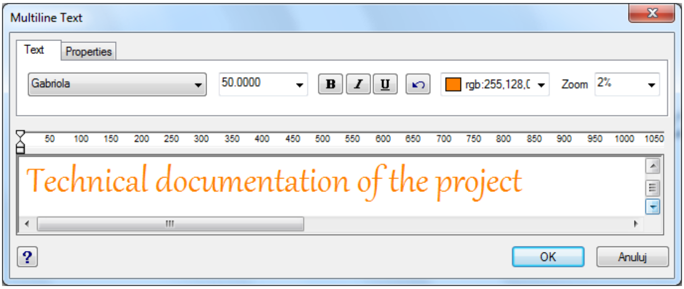
- added text will be displayed in the indicated place in the design:

Technical documentation of the project

Note! While entering text, the zoom should be set at 1%.

To edit the text:

- select the text to be edited and click the icon **Edit text** ;
- in the dialog shown below enter the changes (font, bold, point size, etc.):


Multiline Text
Text
Properties
Gabriola
50.0000
B
I
U
rgb:255,128,(
Zoom
2%
50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050
?
OK
Anuluj

Technical documentation of the project

Fig. 55 - Multiline Text dialog box – text edition

Note! Detailed information on the icon menu buttons will be presented in Chapter 27: The list of icons and their functions.

5. User Coordinate System

User Coordinate System (UCS) is a schematic representation of the three dimensions of space (Fig. 56). It is displayed in the right bottom corner of the screen.

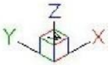


Fig. 56 – USC

Axes marked X, Y and Z relate to length, width and height, and the letter W to the world and it shows the current position of the object For example in the perpendicular view from above both the project and the ‘world’ are beneath the designer. It facilitates the orientation of 3D space of the project.

CHAPTER 4
Display control

1. Introductory remarks

Controlling the way in which the project is displayed can be done with using the icons from the **View** toolbar (Fig. 57) as well as using the mouse and keyboard commands.

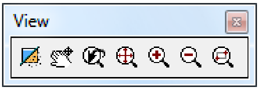


Fig. 57 – View icon bar

2. Refreshing the drawing

The icon **Refresh** regenerates the design by clearing it of remains of deleted objects and such. It should be also used when the activated entity snaps do not display during drawing. This function is also available by entering the command **RE** and confirm by pressing **Enter** and also by a delicate movement of the mouse scroll..

3. Previewing the whole project

To see the entire project with all elements that have been created or inserted, click the icon **Show all** .

4. Zooming in/out

These options significantly facilitate working with the program. The zoom level can be changed in 3 ways:

- by clicking the icon **Zoom in** or **Zoom out** – as a result the program will move the view twice as close or twice as far;
- by simultaneously pressing **<Shift + Ctrl + left mouse button>** and moving the mouse: up - zoom in, down – zoom out;
- by moving the cursor to the point to which You want to zoom in (or zoom out) and rolling the mouse scroll (up or down).

5. Zooming to the window

This option enables to directly zoom in some part of the drawing by indicating an area (window) including it. To enlarge the chosen part select the icon **Zoom window** and then draw a rectangle including that part of the project: click in the starting point - move the mouse diagonally – click in the opposite corner. After the second click the framed area will be zoomed in. This function is also available by simultaneously pressing **<Z + Enter>** and marking the window in the analogical way.

6. Going back to the previous view

To go back to the view previously displayed (e.g. before zooming in) click the icon **Previous view** . As a result the program will go back to the previous way of displaying the project.

7. Moving the current view

Moving the area on which the project is created can be done in 3 ways:

- by clicking the icon **Move view** and pressing the left mouse button with the cursor in the project area and moving the mouse to the left/right and up/down.
- by simultaneously pressing <**Shift + Ctrl + right mouse button>** and moving the mouse;
- by pressing and holding the mouse scroll and moving the mouse to the left/right and up/down;

8. Ways of selecting objects

To be able to proceed any operation on any object or objects, first they have to be selected. It can be done in a few ways, described below.

When the object is selected, the way it is displayed in the project changes – from this moment on it will be presented as a white dotted line with marked insertion points (green squares) (Fig. 58). To deselect the object press **<Esc>** on the keyboard.

The first method of selecting the object is by **clicking on the object** – to be precise: on any of the lines it consists of. The object will be marked with an intermittent line with green dots. If you want to select more objects, just click on them successively.

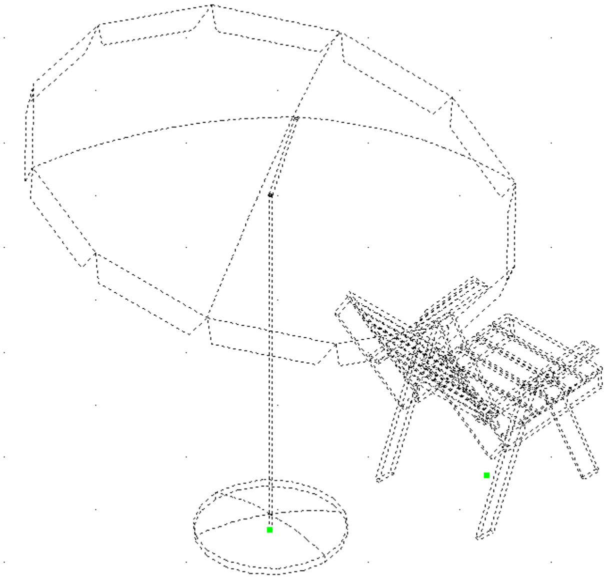


Fig. 58 – selected objects

The second way is **Area selecting** - drawing a rectangle area which includes required objects. Left-click in the rectangle first corner, release the mouse button, move the cursor along the rectangle diagonal to the place where the next corner is to be, and left-click again. Objects that happen to be inside such a rectangle will be selected.

Area selecting has **2 variants** – **from the left to the right** and **from the right to the left**. Depending on which side the drawing of the rectangle selection area will be started, You can regulate which objects will be selected. This means: when You start drawing from the right to the left then all objects that are at least crossed by the rectangle area line will be selected.

And when You are drawing the selection area from the left to the right only those objects will be selected, which are entirely contained in the rectangle (and not only cross by its line). This is more selective way than the previous one. Effects of both ways of selecting objects are presented below (Fig. 59 and 60):

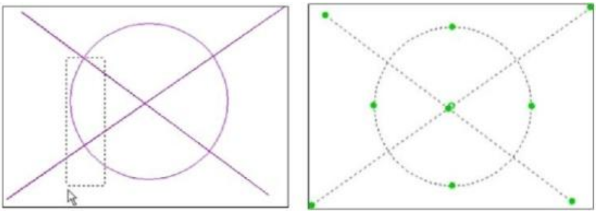


Fig. 59 – a method of object selection from the right to the left and its result

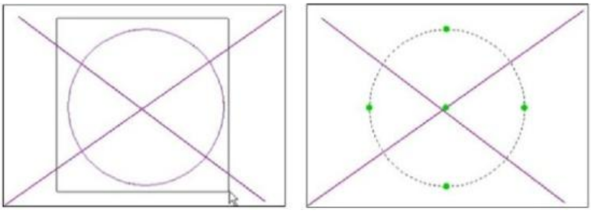


Fig. 60 – a method of object selection from the right to the left and its result

9. Changing the colour of the design background

In the .4CAD environment there are two colours of the drawing background available – black and white. It only depends of Users preferences which one is used during the designing. To change it, please open the **Information** menu and choose the option **Settings** (Fig. 61). Another submenu will display, in which functions of changing the background colour are available – **White screen** and **Black screen**. Using the same menu it is also possible to display or hide all toolbars at once, show or hide line thickness and check the version of the environment.

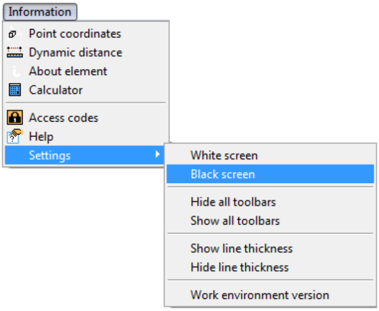

Information
Point coordinates
Dynamic distance
About element
Calculator
Access codes
Help
Settings
White screen
Black screen
Hide all toolbars
Show all toolbars
Show line thickness
Hide line thickness
Work environment version

Fig. 61 – changing the colour of the background

CHAPTER 5
Using entity snaps

1. Introductory remarks

While designing interiors it is often required to use specific points of elements to ensure full precision. For instance, while shifting or copying elements the user should specify their base and target points, which could be respectively – a back bottom corner of the element and the corner of the room. It is sometimes needed to place entities in a exact specific location in relation to other entities, and the upmost possible accuracy is vital for the proper realization of the project.

In order to help you maintain this kind of precision, CAD Decor menu contains a number of icons for indicating **entity snaps**, which are the **characteristic points** of entities. These points are also called **location modes**.

Thanks to them it is possible to select exact geometric points on existing entities without having to know the exact coordinates of these points (e.g. the end point of the line or arc, the center point of the circle, the intersection of any two elements). We suggest to use entity snaps any time the programs prompts the user to specify a point (e.g. an insertion point of a block).

It is enough to move the cursor close to the place, where the characteristic point is located (e.g. the end of the line) and when the yellow symbol of the point displays – click the left mouse button. The cursor does not have to be placed precisely at the point - it will be automatically dragged to the active snap.

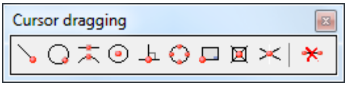


Fig. 62 – Cursor dragging icon bar

At the same time any number of entity snaps can be active but sometimes some of them can be mutually exclusive.

3. Entity snaps – overview

The active characteristic point display as a yellow symbol when the cursor is moved close to it. The shape of the yellow symbol depends on the type of the point which is selected – each one has its own symbol. One or more active points may be ON simultaneously, but sometimes they may eliminate each other.

Snap point types:	Description
End point	- indicates the closest end point of the object, e.g. the end point of the edge of a shower cabin, (displays in the project as a **yellow square**);
Nearest	- marks the point which is the closest one to the pointer arrow, but belongs to the indicated element, e.g. any point belonging to a bathtub edge line (displays as a **yellow hourglass**);
Midpoint	- finds a point located directly in the middle (half way) of an indicated line (stretch), e.g. the middle of the edge of an element, (**yellow triangle**);
Central point	- points out the middle of an arch or circle; it is very useful when indicating the characteristic points of custom elements, (**yellow circle**)
Perpendicular	- shows a point which is located perpendicularly to line is crossing the object, (**yellow right angle symbol**);
Quadrant	- shows four circle points in the rectangle mode, (**yellow rhombus)**
Insertion point	- shows insertions point of the block, (**yellow rhombus with 2 cut corners);**
Point	- drags the cursor to any points drawn before (**yellow X on the circle);**
Intersection point	- indicates the point in which objects cross one another (**yellow X**);
None	- switches all active snap points OFF

Note! While selecting characteristic points of elements, alternatively to using the icons from the Cursor dragging *toolbar, the user can use the keyboard shortcut <Shift + right-click>.*

CHAPTER 6
Dimensioning elements

1. Introductory remarks

Dimensions of different objects can be created using the **Dimensioning toolbar**. Dimensioning is being performed in 2D system (X & Y axes) by default. It is necessary to use the snap points during dimensioning.

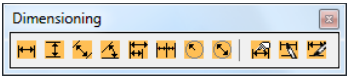


Fig. 63 – Dimensioning icon bar

> *Note! When dimensioning objects it is necessary to use entity snaps (see Chapter 5).*

2. Dimensioning icons:

Dimension	Description
Horizontal	- enables to dimension object horizontally. In order to use it, click the start and end points of the horizontal dimension with the pointer. Next you can select the dimension value position by means of the mouse clicking on the desired place. Then accept dimension's location by pressing **<Enter>**
Vertical	- enables to dimension objects vertically. Do it in the same way as in case of the horizontal dimensioning;
Rotated	- enables to dimension the angle between selected lines;
Angular	- enables to dimension an angle. Click the angle lines and then select the angle value position by means of the mouse moving. Click the left mouse button to accept;
Reference Line	- enables to enter various object dimensions with the same start point. First you have to select the dimensioning direction. In order to do it, enter the first dimension: horizontal, vertical or rotated. Then press **reference line** button and click subsequent dimensioning end points. To finish the procedure press **Esc;**
Sequence	- enables dimension objects in line series. Do it in the same way as in case of the **reference line** dimensioning

Radius	enables to define radius of a circle or an arc. In order to do it click on the object edge with the left mouse button and then on the point where you want to place the dimension value;
Diameter	- enables to define a diameter of a circle or an arc. Do it in the same way as in case of the **radius**;
Dimension Settings	- enables to change dimension settings (description in Chapter 2);
Edit Dimension Text	- it is possible to replace selected dimension text with new text. When replacing the selected text, first click the icon, then specify the change first, and then select one or more dimensions to which to apply the change – and then press **<Enter>**. All the selected dimensions are updated simultaneously.
Apply Style	- enables to quickly apply new style to a selected dimensioning after some settings have been modified (the icon Dimension Settings); Dimension styles provide a way to change various settings that control the appearance of dimensions. Those settings can be saved for reuse. If the style is not defined before creating dimensions, the program uses the Standard dimension style, which stores the default settings. Each option in the Dimension Settings dialog box relates to a variable that can be set manually

3. Examples of dimensioning

The pictures below illustrate examples of dimensioning:

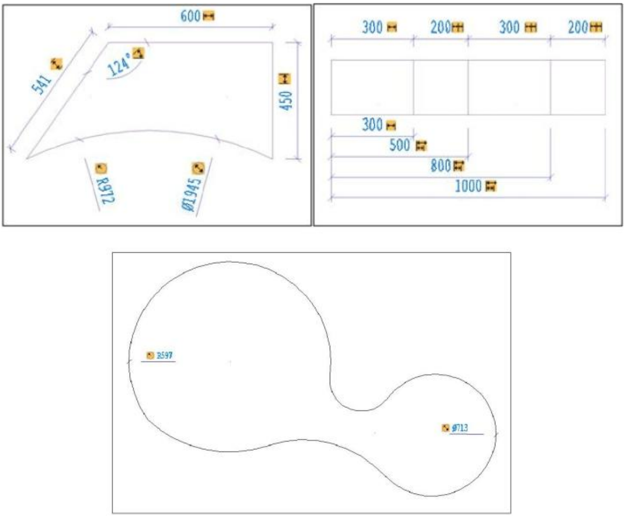


Fig. 64 – examples of dimensioning

CHAPTER 7

Drawing the interior

1. Introductory remarks

There are four ways of drawing walls available in CAD Decor:

- **Walls Wizard,**
- **Draw walls,**
- **Select,**
- **Wall editor**

The first one - **Walls Wizard** - is activated during creating a new design. In order to access the wizard and remaining two functions it is necessary to select the icon **Walls** that can be found on the CAD-Decor toolbar (Fig. 65).

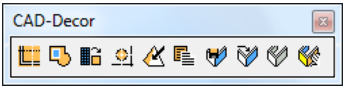
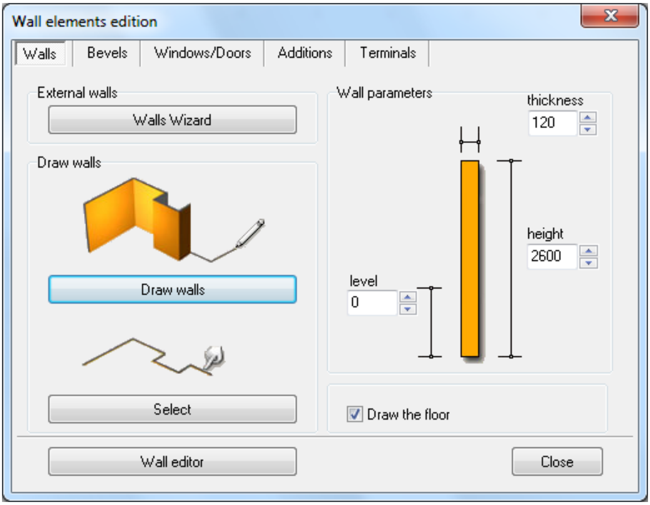


Fig. 65 – CAD-Decor icon bar

This icon opens a dialog box presented below (Fig. 66).


Wall elements edition
Walls
Bevels
Windows/Doors
Additions
Terminals
External walls
Walls Wizard
Draw walls
Draw walls
Select
Wall parameters
Wall editor
Close

thickness 120

height 2600

level 0

☑ Draw the floor

Fig. 66 – Wall Elements Edition dialog box

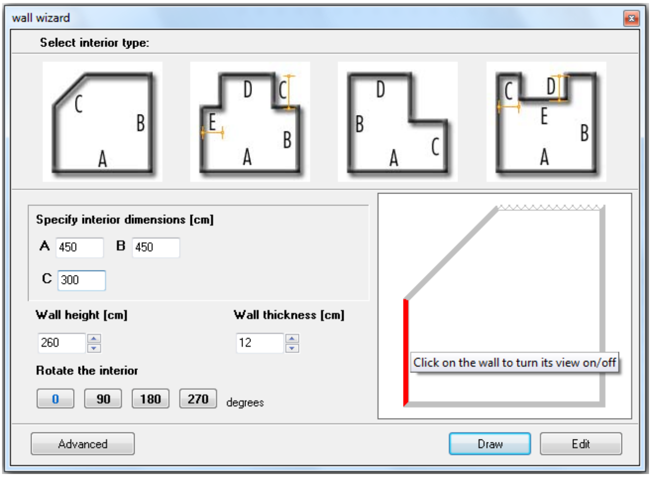
It is possible to change the shape of the premises being drawn. You can change the room shape at any moment by means of the **Wall editor** (described at the end of this chapter). Please note, however, that such changes may result in losing some information or objects, such as inserted bevels of wall or ceramic tiles.

2. Drawing walls using the Wall Wizard

When beginning working with a new project the first thing to see is the dialog box of **Wall Wizard** (Fig. 61). In this dialog it can be decided what will be the shape of the room – there is 4 templates to choose from. Selected shape can be modified by **specifying interior dimensions** (A, B, C, D, E) and **rotating the interior** (90, 180 or 270 degrees). Also height and thickness of walls can be established here (by default it is: height=260cm and thickness=12cm)

In the right part of the **Wall Wizard** dialog box You can see the current preview of the created room. Any introduced changes will be visible on this preview.

If some of the walls are not to be present in the design, they can be hidden here. To do it, click on the on the preview. The will indicated with the cursor displays in red, and when You click on it – it will change its look in the way presented below (Fig. 67).



Specify interior dimensions [cm]
A 450 B 450
C 300
Wall height [cm] 260
Wall thickness [cm] 12
Rotate the interior 0 90 180 270 degrees
Click on the wall to turn its view on/off

Fig. 67 – Wall Wizard dialog box

After setting these basic wall parameters You can either do to **Wall Editor** by clicking the **Edition** button, or click **Draw**, which will result in creating the room of the selected shape and parameters, together with the default floor (unless this option has been switched off) (the default floor displays in the project as a green rectangle surrounding the room).

If presented options do not meet all Your requirements, then click on the button Advanced to go to the **Wall Elements Edition dialog** (Fig. 60 on the previous page), where You can find some more functions of drawing walls.

Note! Dimensions here should be given in centimeters – but this rule relates only to Wall Wizard *– in all other places in the program millimeters are used*

Note! The Wall Wizard *cannot be used when the walls already exist. To be able to open it again You should remove all walls from the project, click the icon* Walls *and select* Wall Wizard.

3. Drawing walls using the function Draw Walls

This option enables you to create a contour of the room yourself. The procedure is as follows:

- Click the **Walls** icon;
- In the new window (Fig. 66) define the thickness and height of the walls and the level of the room;
- If You do not want the default floor to be drawn, unselect the option **Draw the floor**;
- Click on **Draw walls** button – you will be moved to the project space, where You have to draw a contour for walls;
- To do so click in the project in the spot where You want to start to draw the walls, and then move the mouse in the direction, in which the wall is to be drawn (the direction has to be clockwise!);
- After indicating the direction give the length of the segment (in millimeters!) by typing it (the value will appear on the Command Bar) and accept with **<Enter>**;
- Then direct the mouse cursor to the direction of the second segment, type the length and confirm it with **<Enter>**;
- Keep following these instructions until the contour of the room is ready;
- During drawing walls this way the attention should be paid to the values being shown at the beginning of each line (Fig. 68);
- Information about the length and angle of the currently drawn segment will be shown there;
- To draw a line of 1500 mm length at the angle of **45°** You should type: **1500<45** and confirm the command with <**Enter>** or place a mouse cursor in the point in which the required parameters will be shown in Command Bar and then click the left mouse button;
- It is recommended to type the values instead of using the mouse because it is easier and more precise;

- You can also use minus values of – e. g. the angle of **315°** can be typed as **- 45°**;
- To make it possible to draw segments at angles different than right angles (multiplicity of **90°**) You should switch off the orthogonal mode – by deactivating the **ORTHO** function on Status Bar or by pressing one of the keys: **<P>** and **<O>** (it will switch off drawing at right angles and when you press it again it will be switched back on);
- To finish the contour use a single right-click – the walls will be inserted to the project.

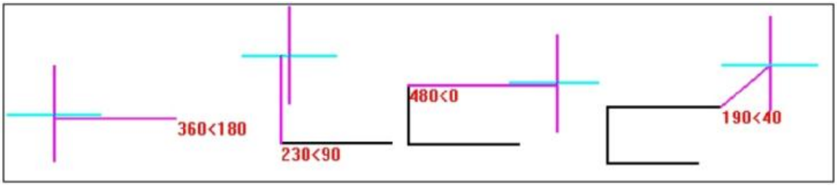


Fig. 68 – length and angle of the currently drawn lines - examples

Note! In order to draw a wall at an angle other than 90° press the 'P' key; to get back to the right angle mode press the ***<P>*** *key once again. Every operation can be undo by pressing the* ***<C>*** *key. In order to finish drawing the walls click the right mouse button.*

4. Drawing walls using the function Select

Before You use this button, You have to determine the path for the interior – in other words: draw the contour of the room using the **Draw path** drawing tool:

- Click the icon **Draw path** on the **Drawing** icon bar (Fig. 69).

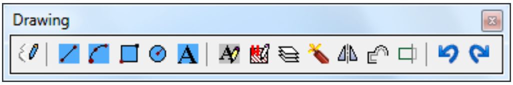


Fig. 69 – Drawing functions

- click in the start point of the path;
- move the mouse in the direction in which the wall should be drawn and type the value of the length of the new segment and confirm it with **<Enter>**;
- in the same way as in the previous case (**Draw Walls** function) You can define the length of the segment by clicking the left mouse button, but this method does not guarantee the precision;
- in an analogical way (typing the length value + **<Enter>**) draw all consequent segments until you complete the whole contour of the room;
- to finish – right-click;

- after you finish the contour go to the dialog **Wall Elements Edition** and in the **Wall** tab select the option **Select**;
- You will be taken back to the project when You should indicate the path by a single left-click;
- After you indicate the path of contour of the room the program will create wall of a defined thickness and height;
- If the option **Draw floor** was marked, the default floor will be generated;
- This technique is particularly useful when the modification of the shape of the already drawn room – in this case it is enough to click in the corners of the room; it is necessary to use the snap **end point**;
- The picture below presents the path for walls (Fig. 70); legend: 1 – start point of the path, 2, 3, 4, 5 – points in consequent corners of the room, 6 – the final point of the path;
- If the path is incorrectly drawn you will be informed about it in the communicate (Fig. 71).

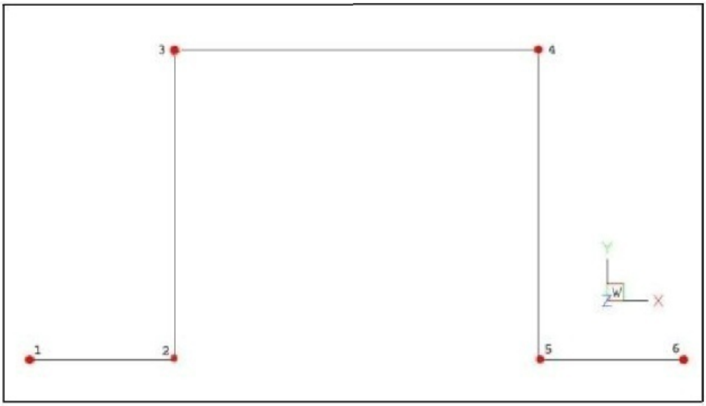
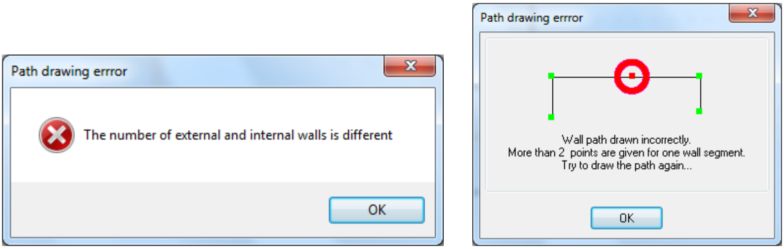


Fig. 70 – the path of the walls contour


Path drawing errror

The number of external and internal walls is different

Path drawing errror

Wall path drawn incorrectly.
More than 2 points are given for one wall segment.
Try to draw the path again...

Fig. 71 – communicates about the incorrectly drawn path for walls

> *Note! Advanced methods of drawing any shapes using the path tool have been described in* Chapter 10: Creating and using any elements.

> *Note! When using the* Draw walls *function remember to draw successive walls clockwise. It is needed for keeping internal wall dimensions of the designed room.*

5. Drawing walls using the Wall Editor

The Wall Editor enables you to create new interiors and modify any existing room at any designing stage. The only risk resulting form editing the existing room is the fact that you can lose the tile and bevel data during the new room arrangement in the **Wall Editor**.

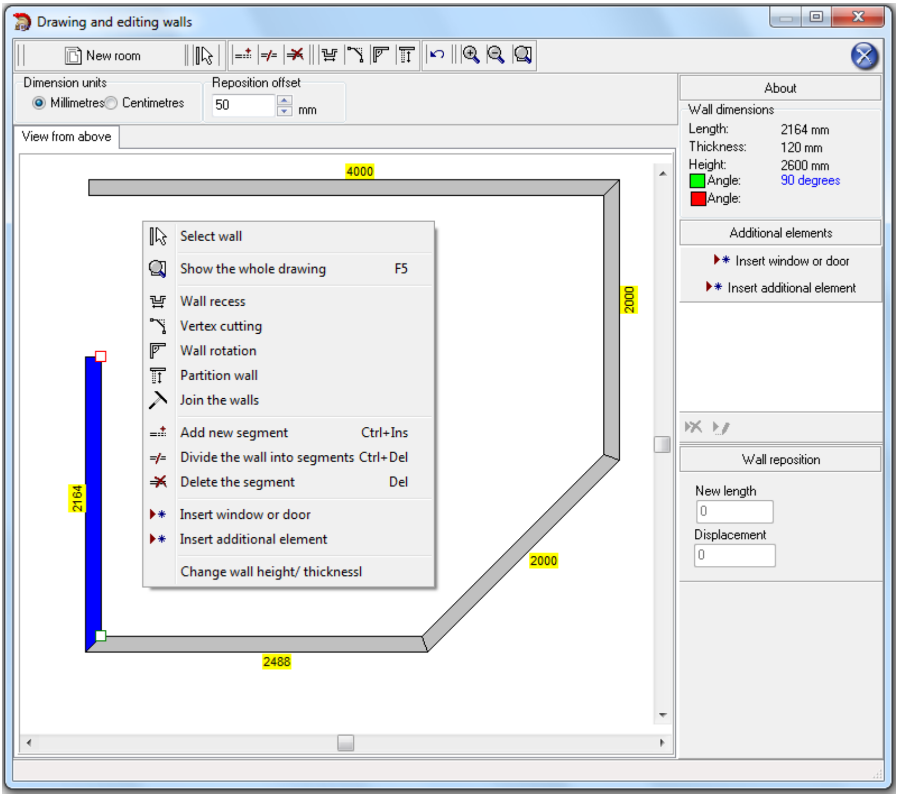
The editor can be accessed in a few ways:

- by selecting the **Wall Editor** button in the **Walls Wizard** dialog box — it creates a new interior in the editor; the wizard dialog box is displayed when you create a new design;
- by selecting the icon **Walls** and then the **Wall Editor** button Wall editor;
- by selecting the existing wall and choosing the **Edition** menu by means of the right mouse button — the existing room may be modified or a new one may be created from the beginning in a new window.

6.1. Drawing and editing walls dialog box menu

The wall selected will be displayed in navy blue and its corners in green or red (Fig. 72). The colourful designations makes defining the wall parameters easier. Most of the wall editor functions use these colours.

The functions of the buttons in the main **Wall Editor** menu, that activate after selecting the wall by a left-click, are described in the table below. They are also available in a pop-up menu under the right mouse button (the wall has to be indicated first by a left-click).


Drawing and editing walls
New room
View from above
4000
2000
2000
2488
2164
Select wall
Show the whole drawing F5
Wall recess
Vertex cutting
Wall rotation
Partition wall
Join the walls
Add new segment Ctrl+Ins
Divide the wall into segments Ctrl+Del
Delete the segment Del
Insert window or door
Insert additional element
Change wall height/ thicknessl
About
Additional elements
Insert window or door
Insert additional element
Wall reposition

Dimension units
● Millimetres ○ Centimetres

Reposition offset
50 mm

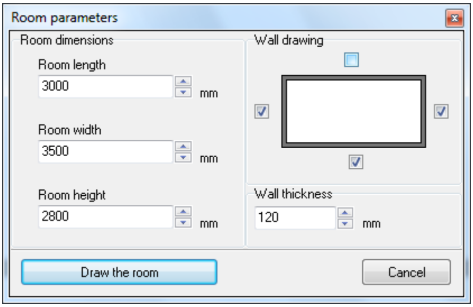
Wall dimensions
Length: 2164 mm
Thickness: 120 mm
Height: 2600 mm
🟩 Angle: 90 degrees
🟥 Angle:

New length
0
Displacement
0

Fig. 72 – Wall editor and the context menu

Function	Description
New room	- enables to draw a new wall arrangement (also under **<Ctrl+N>**); in the dialog box (Fig. 73) the room dimensions can be entered and walls to be drawn can be selected;
Select a wall	- selects the wall for edition, (selected wall displays in navy-blue);
Add a new segment	- adds a new wall segment at a selected angle and assigned length (also under **<Ctrl + Ins>**) (Fig. 77);
Divide the wall into segments	- divides a wall into two segments with a different length or into three ones of the same length; each new segment may be divided, too (Fig. 78);

Delete the segment	- after selecting the chosen wall and this icon, any segment of the wall can be deleted (also under **DELETE** button),
Walls recess	- adds walls that create a recess shape on the basis of four available recess types. It is possible to place a pedestal into the recess (Fig. 74)
Vertex cutting	- after choosing the appropriate wall and this icon, you can define the corners of the interior for cutting in this dialog box (Fig. 75);
Wall rotation	- enables the User to rotate a wall relative to the adjacent one at any angle (Fig. 76);
Partition wall	- creates a partition wall; it is possible to add new segments to it, with a specified angle and length (Fig. 79);
Connect walls	- context menu option, connects wall open corners by placing a new segment between them (Fig. 80);
Undo the last operation	- reverts the previous operations done on the walls (also under **<Ctrl + Z>**);
Zoom in	- zooms in the view
Zoom out	- zooms out the view
Show the whole drawing	- displays the whole drawing (also under **[F5]**);
Insert window or door	- context menu option; enables to insert doors and windows to the project;
Insert additional element	- context menu option; enables to insert additional wall elements (protrusions, orifices, nishes)
Change wall height / thickness	- context menu option; enables to change the height of all walls and the thickness of the chosen segments;



Room parameters

Room dimensions

Room length: 3000 mm

Room width: 3500 mm

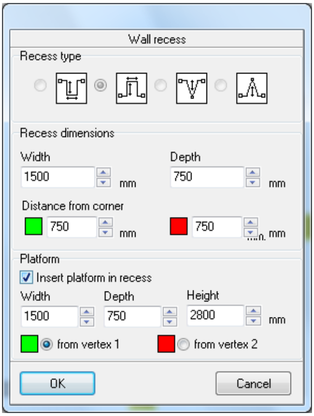
Room height: 2800 mm

Wall drawing: ☐ ☑ ☑ ☑

Wall thickness: 120 mm

Draw the room
Cancel

Fig. 73 – Room parameters dialog box



Wall recess

Recess type: ○ ● ○ ○

Recess dimensions

Width: 1500 mm

Depth: 750 mm

Distance from corner: 🟩 750 mm 🟥 750 mm

Platform

☑ Insert platform in recess

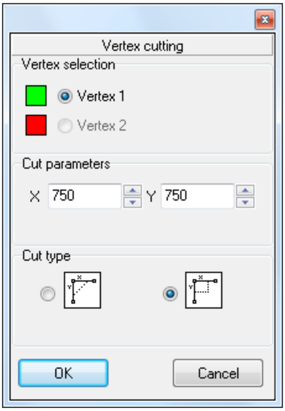
Width: 1500

Depth: 750

Height: 2800 mm

🟩 ● from vertex 1 🟥 ○ from vertex 2

Fig. 74 – Wall recess dialog box



Vertex cutting

Vertex selection

🟩 ● Vertex 1

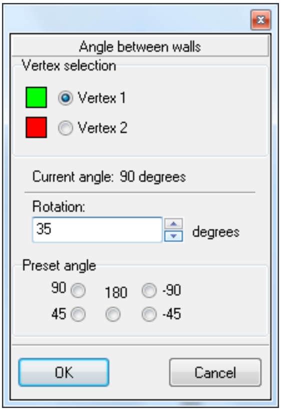
🟥 ○ Vertex 2

Cut parameters

X 750 Y 750

Cut type: ○ ●

Fig. 75 – Vertex cutting dialog box



Angle between walls

Vertex selection

🟩 ● Vertex 1

🟥 ○ Vertex 2

Current angle: 90 degrees

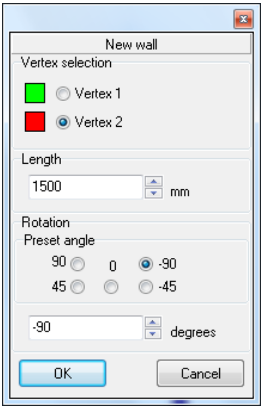
Rotation: 35 degrees

Preset angle

90 ○ 180 ○ -90 ○

45 ○ ○ -45 ○

Fig. 76 – Angle between walls dialog



New wall

Vertex selection

🟩 ○ Vertex 1

🟥 ● Vertex 2

Length: 1500 mm

Rotation

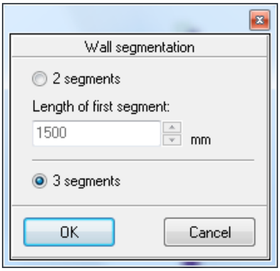
Preset angle

90 ○ 0 ● -90

45 ○ ○ ○ -45

-90 degrees

Fig. 77 – New wall dialog box



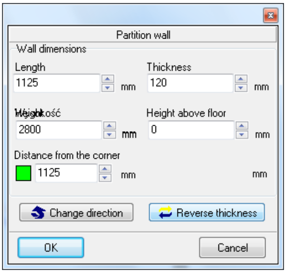
Wall segmentation

○ 2 segments

Length of first segment: 1500 mm

● 3 segments

Fig. 78 – Wall segmentation dialog



Partition wall

Wall dimensions

Length: 1125 mm

Thickness: 120 mm

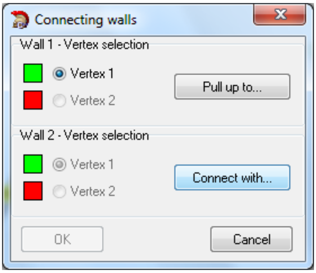
Height: 2800 mm

Height above floor: 0 mm

Distance from the corner: 🟩 1125 mm

Change direction
Reverse thickness
OK
Cancel

Fig. 79 – Partition wall dialog box



Connecting walls

Wall 1 - Vertex selection

🟩 ● Vertex 1

🟥 ○ Vertex 2

Wall 2 - Vertex selection

🟩 ○ Vertex 1

🟥 ○ Vertex 2

Pull up to...
Connect with...
OK
Cancel

Fig. 80 – Connecting walls dialog box

Note! Besides all functions described above, Walls Editor *also enables you to switch between centimiters and millimiters.*

6.2. Reposition offset

The option shown in figure 81 enables the user to enter a value of the distance by which the room's size should be to increased or decreased. The function helps to move or lengthen (or shorten) the whole wall by the given offset.

Example:

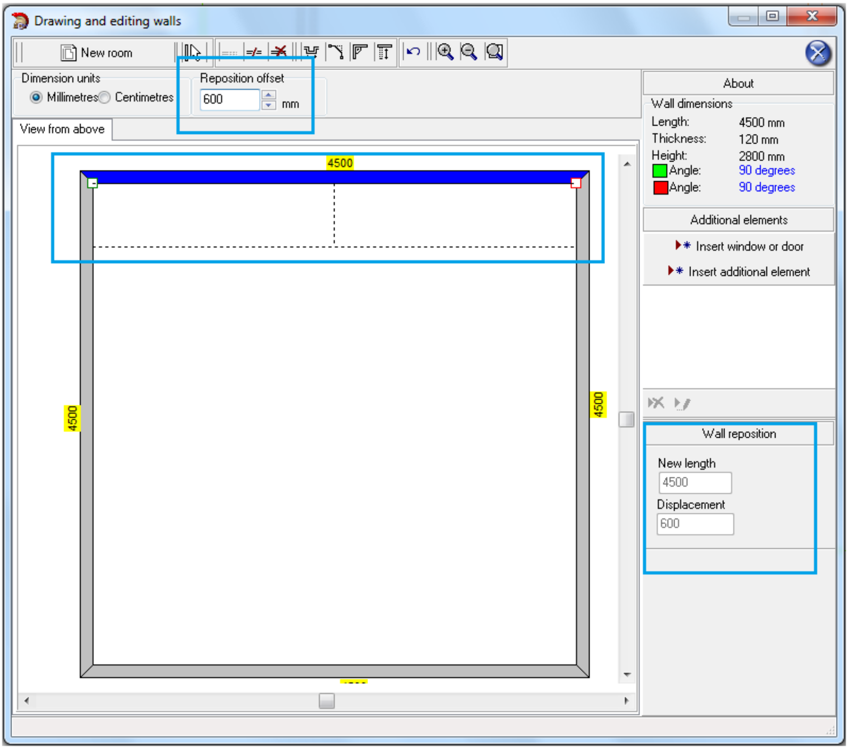
In order to change the room dimensions (in millimeters) 4500x4500 into 3900x4500 it is necessary to do the following:

- enter the offset value (difference between the existing and demanded room length – in this case 600mm);
- click the demanded wall in order to select it (the wall will be displayed in navy blue);
- place the cursor on the selected wall and move it until it changes into the ☝ indicator;
- click on the wall designed for editing, push and hold the left mouse button and move the wall inwards until it reaches the dotted offset line;
- during moving the wall You can check the current wall parameters in the right part of the dialog box **Wall reposition (Displacement)** where the moving step value is visible;
- release the mouse button.

In order to shorten / lengthen the wall by the given value:

- select it and move the cursor until it changes into the indicator ✥
- click at the wall corner and move it along the wall, watching the parameters in the area at the right side of the dialog box **Wall reposition (New length)**;
- when You reach the wanted length, release the mouse button.

Note! The maximum lenght of the wall in Wall Editor *is 46 m (46 000 mm).*


Drawing and editing walls
New room
View from above
4500
4500
4500
About
Additional elements
Insert window or door
Insert additional element
Wall reposition

Dimension units
● Millimetres ○ Centimetres

Reposition offset
600 mm

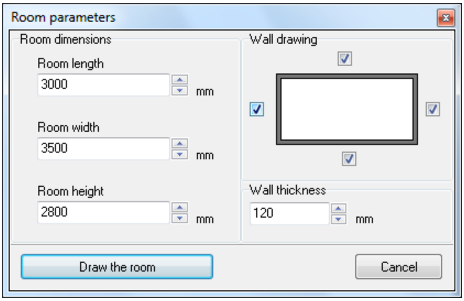
Wall dimensions
Length: 4500 mm
Thickness: 120 mm
Height: 2800 mm
🟩Angle: 90 degrees
🟥Angle: 90 degrees

New length
4500
Displacement
600

Fig. 81– moving the wall of a given length using the reposition offset

5. Drawing a new walls arrangement

In order to draw a new room select the **New interior** button. Enter the new walls dimensions in the displayed dialog box and select the walls to be drawn. Confirm the parameters with the **Draw the room** button. These walls, like all the other ones, may be edited and modified.


Room parameters
Draw the room
Cancel

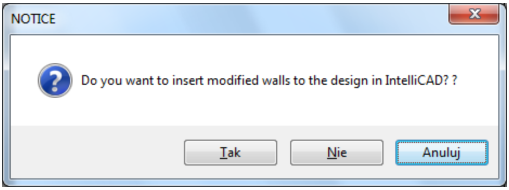
Room dimensions
Room length
3000 mm
Room width
3500 mm
Room height
2800 mm

Wall drawing
☑ ☑ ☑ ☑

Wall thickness
120 mm

Fig. 82 – establishing new interior parameters

After each change of walls layout in **Wall Editor** You will see the message presented below when You attempt to close the **Editor** to go back to work environment. To confirm that the walls should be modifies, click **Yes**. To drop the changes click **No**. To go back to **Editor** and introduce more changes click **Cancel**.

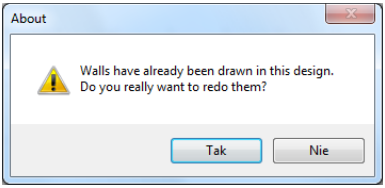


Do you want to insert modified walls to the design in IntelliCAD? ?

Fig. 83 – confirmation of changes introduced to walls

If You start to draw new walls layout in the project (in which walls are already inserted) and to this you select the icon **Walls**, you will not have access to **Wall Wizard** (untill You delete all already existing walls), but You can use **Draw Walls**, **Select** and **Wall Editor** options.

If you choose **Draw Walls**, the program will ask if you really want to draw the walls again (Fig. 84). Choosing **Yes** will begin drawing a new path for walls and as a result there will be outlines of two rooms in the project.



Walls have already been drawn in this design.
Do you really want to redo them?

Fig. 84 – information about already existing walls

CHAPTER 8
Inserting and editing elements of walls

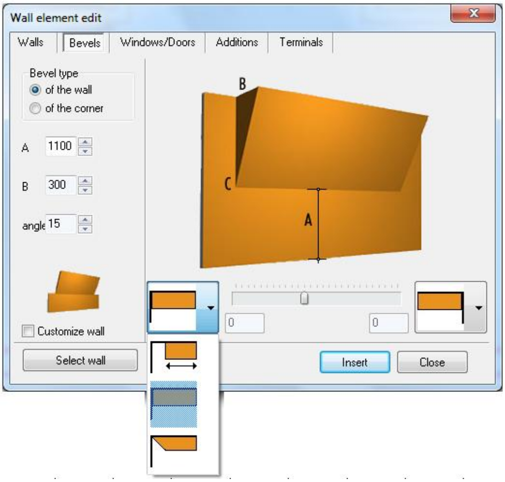
1. Introductory remarks

The **Wall Elements Edition** dialog box (opens when the **Walls** icon is selected) provides tabs for the selection and edition of windows, doors, additions and terminals (note: bevels cannot be edited). Parameters of all these elements can be freely modified – while inserting them and after they are already inserted, using edition option.

2. Inserting bevels

The function of creating wall bevels is available in the **Wall Elements Edition** dialog box. To draw a bevel:

- click on the icon **Walls** and go to **Bevels** tab in the newly open dialog (Fig. 85).



Bevel type
● of the wall
○ of the corner

A 1100
B 300
angle 15

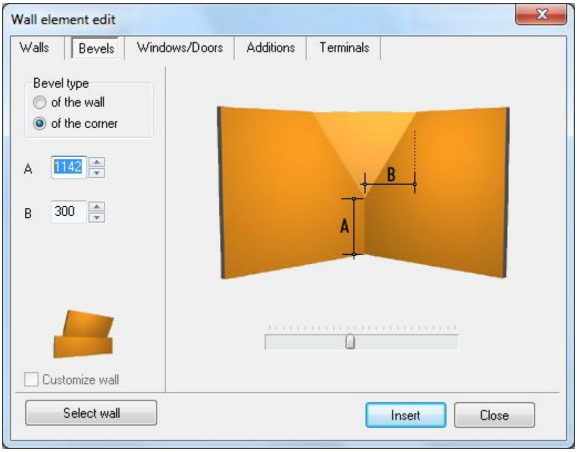
☐ Customize wall

0
0

Fig. 85 – inserting the bevel of the wall

- click the **Select wall** button and select the wall in the design where the bevel will be located;
- go back to the **Wall Elements Edition** dialog box and select one of the bevel types (bevel **of the wall** and or **of the corner**);
- next you need to define the bevel parameters:

  - **A** — from the floor to the bottom edge of the bevel,
  - **B** — distance from the ceiling to the upper edge of the bevel,
  - wall **rotation angle**,
  - bevel **distance** from the left and right edge of the wall;
- for all bevels the type of the bevel edge can be chosen: straight connected to the wall, straight separated from the wall or oblique;
- when the above parameters are set, click **Insert** button,
- the bevel will be inserted in the design.



Bevel type
○ of the wall
● of the corner

A 1142

B 300

☐ Customize wall

Fig. 86 – inserting the bevel of the corner

If the user wants to insert a window in the bevel, he/she should select the option **Adjust the wall** while defining bevel's parameters. It will result in lowering the wall on which the bevel has been placed to the level of the bottom of the bevel after clicking **Insert**, and the background will be visible through the window.

Note! Bevels cannot be edited. If the user wants to change their parameters, he/she should delete them and insert again. Please note that if the option Adjust the wall *had been selected, the wall on which the bevel has been placed would be lowered and its height needs to be changed back to the original one. Therefore it is recommended to undo the operation (using* Undo *button or* <Ctrl+Z> *keyboard command).*

Note! It is possible to set the distance from the corner for the wall bevel — if it is designed to be only placed on the wall partially. In order to do that select the option below the image at the left or right side of the bevel and move the slider to set up the offset.

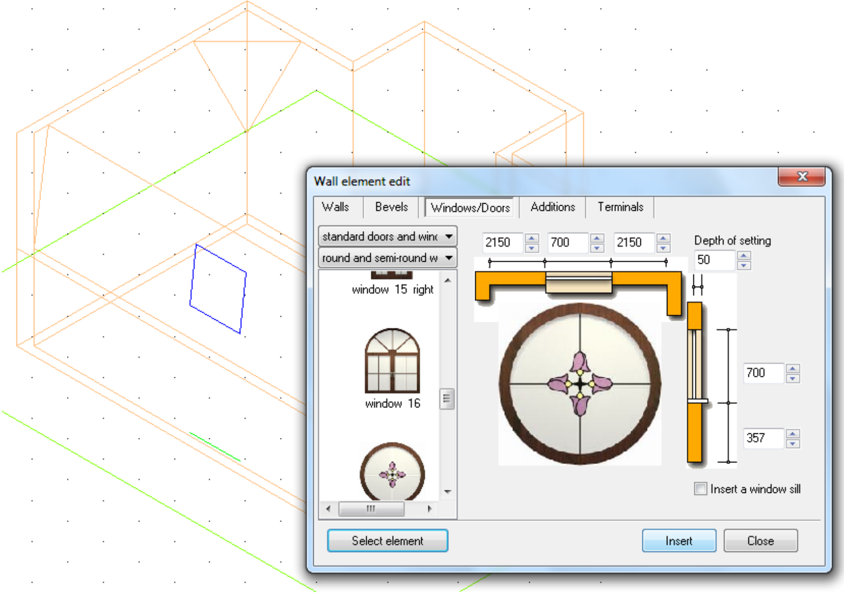

Wall element edit
Walls
Bevels
Windows/Doors
Additions
Terminals
standard doors and winc
round and semi-round w
window 15 right
window 16
2150
700
2150
Depth of setting
50
700
357
☐ Insert a window sill
Select element
Insert
Close

Fig. 87 – inserting a window into a bevel – edition dialog and the preview in the work environment

3. Windows and doors

To insert standard doors and windows please follow the procedure described below:

- first select the **Walls** icon and the tab **Windows and doors;**
- click **Select element** and after returning to the design select the line of the wall where the window or door will be inserted (by clicking it with the mouse cursor);
- when the **Wall element editing** dialog automatically opens up again - select a particular object (a window or a door) to be inserted;
- to facilitate the selection use the filter in which elements of one selected type available in the database (only doors or only windows) can be previewed;
- when the model is selected, set object's parameters:
  - distance from the left or right edge of the wall to the appropriate edges of the window or door;
  - window/door width and height;
  - distance between the floor and the window sill (or level at which the door will be inserted);
  - the depth of the embedment of door/window setting in the frame;
  - window sill depth (if the optional **Insert dialog box sill** option is selected);

- the sketch of the element will be displayed while the parameters are set, so that the data can be corrected in real time;
- when all the parameters are set, press the **Insert** button — the door/window will be inserted into the design;

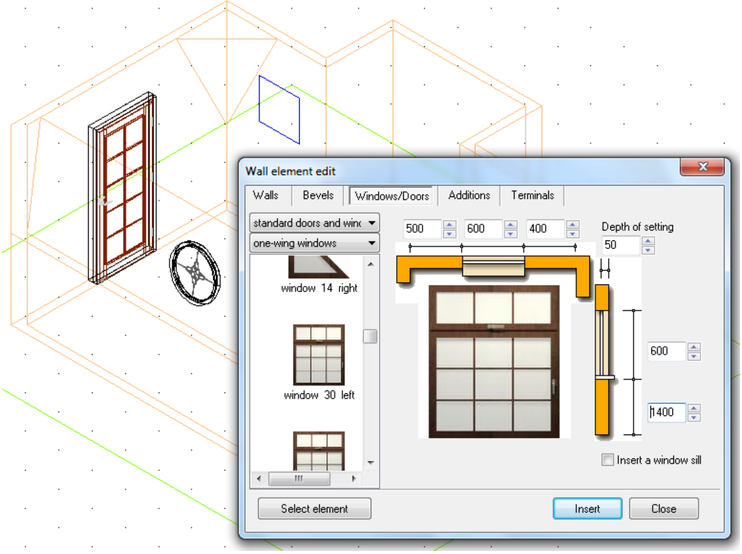
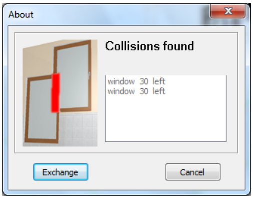

Wall element edit
Walls
Bevels
Windows/Doors
Additions
Terminals
standard doors and winc
one-wing windows
window 14 right
window 30 left
500
600
400
Depth of setting
50
600
1400
☐ Insert a window sill
Select element
Insert
Close

Fig. 88 – inserting windows and doors

- if the parameters are specified incorrectly resulting in inserting an element in the location of an element previously inserter, a collision message display (Fig. 89).


About
Exchange
Cancel

Collisions found

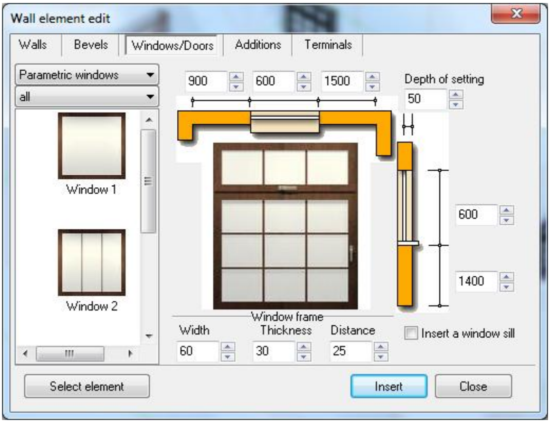
window 30 left
window 30 left

Fig. 89 – information about a collision of two windows

Note! If the User wants the model to be perfectly centred on the wall, he/she should right-click the object preview and select Centre horizontally or Centre vertically option. Note, that this option is not available for models which have been already inserted (during their edition).

It is also possible to insert parametrical windows. To do so, please select from the filter in upper left corner of the dialog the position **Parametrical windows** (the second position **Standard door and windows** enables to insert ready models from the universal database of doors and windows, distributed with the program) and then **windows** (Fig. 90). And then:

- select the model of parametrical window to insert (by default they are square and have different number of bars) – there are 4 models to choose from, which can be freely modified;
- select the element (a wall or a bevel), in which the window is to be inserted;
- define the number of vertical and horizontal bars and their width;
- define the dimensions and location of the window and its embedment depth;
- set up the width, thickness and offset of the window frame;
- optionally the window sill can be inserted as well;
- confirm the settings by clicking the **Insert** button.



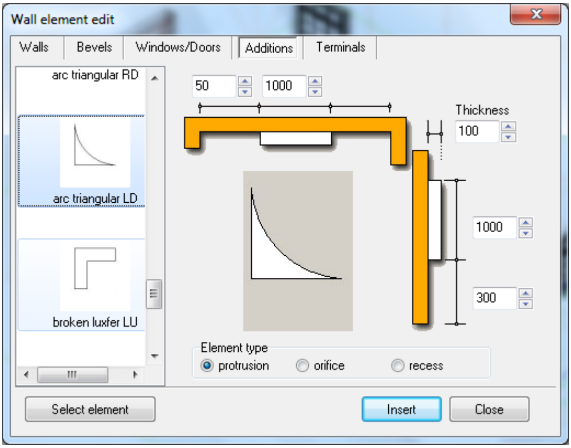
Parametric windows
all
900 600 1500
Depth of setting 50
600
1400
Window frame
Width 60
Thickness 30
Distance 25
☐ Insert a window sill

Fig. 90 – inserting parametrical windows

4. Additions

Models of decorative additional wall elements (orifices, recesses and protruding elements) can be found in the **Wall elements edition** dialog, in the **Additions** tab (Fig. 91). These elements are inserted in the same way as windows and doors, additionally defining the type of the element:

- **protrusion** – has a defined depth; sticks out from the wall into the room;
- **orifice** – in other words: a hole; it has no thickness at all;
- **recess** – in other words: a niche; its thickness cannot be bigger than the thickness of the wall;


Wall element edit
Walls
Bevels
Windows/Doors
Additions
Terminals
arc triangular RD
arc triangular LD
broken luxfer LU
Select element
Insert
Close

50 1000

Thickness 100

1000

300

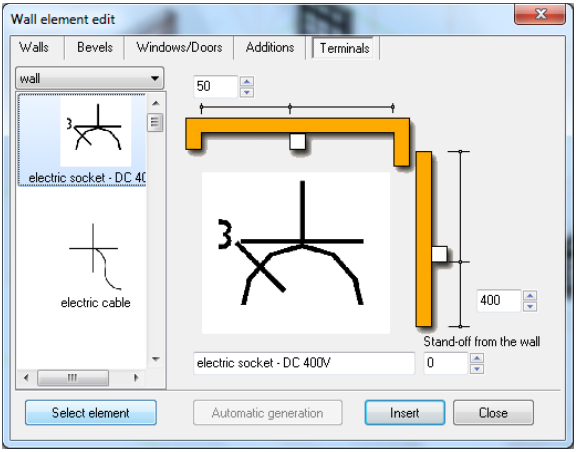
Element type: ● protrusion ○ orifice ○ recess

Fig. 91 – edition of additional elements of walls

5. Terminals

These elements may be used in design documentation. Inserting procedure for terminals is the same as for the other wall elements (Fig. 92)

> *Note! It is possible to edit windows, doors, additions and terminals inserted into the design. In order to do it select the given object with a left-click, then click the right mouse button and choose the **Edition** position from the drop-down menu.*


Wall element edit
Walls
Bevels
Windows/Doors
Additions
Terminals
electric socket - DC 40
electric cable
3
Select element
Automatic generation
Insert
Close

wall

50

400

Stand-off from the wall 0

electric socket - DC 400V

Fig. 92 – edition of terminals

CHAPTER 9

Creating and using any elements

1. Introductory remarks

Custom elements icon is the **CAD-Decor** toolbar second icon (Fig. 93). It enables the user to draw any shape and use it as a template to create various objects (option of dynamic 3D modeling). For drawing the templates icons available in the **Drawing** toolbar should be used (Fig. 94), which are various drawing tools (e.g. path, line, arc, rectangle, circle) and operations (e.g. exploding, mirroring, offsetting, trimming).

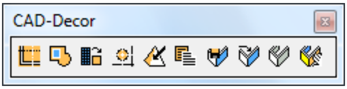


Fig. 93 – CAD-Decor icon bar

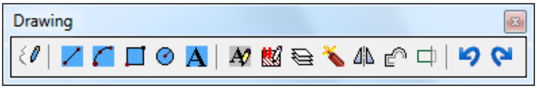


Fig. 94 – Drawing icon bar

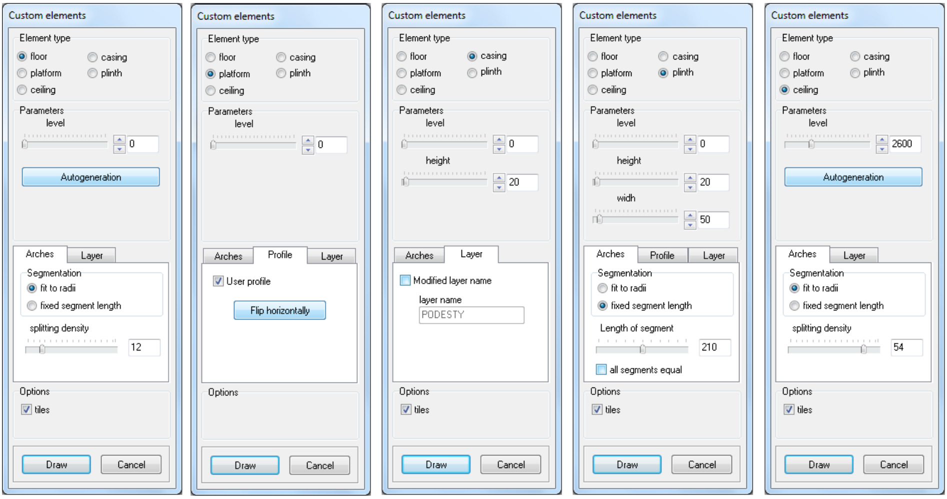
2. Creating any elements

Drawing of templates for any elements should be proceeded using the entity snaps. The characteristic points that are most commonly used are the **End point** and the **Midpoint**. It is recommended that they are switched on all the time if possible.

The attention should be also paid to the information and commands which are displayed on the Command Bar. The currently created object is visible in the drawing in the form of a schematic preview. There is 5 types of elements to choose from: **a floor, a case, a platform, a plinth** and **a ceiling**, available in **Any elements** dialog (Fig. 95). In this dialog also the option of automatic creation of the floor and ceiling in the shape of the room is available – under the **Aurogeneration** button.

The particular types of any elements and functions used for their creation are described in the following points of this chapter. Presented techniques can be freely joined to created elements of various level of sophistication.

> *Note! Using any elements creation functions it is possible to generate a floor or a ceiling in the shape exactly matching the dimensions of the room – to do so click the Autogeneration button, available after selecting the* floor *or the* ceiling *element cathegory.*



Custom elements – Element type: ● floor ○ casing ○ platform ○ plinth ○ ceiling; Parameters: level 0; Arches: Segmentation ● fit to radii ○ fixed segment length; splitting density 12; Options: ☑ tiles

Custom elements – Element type: ○ floor ○ casing ● platform ○ plinth ○ ceiling; Parameters: level 0; Profile: ☑ User profile; Options

Custom elements – Element type: ○ floor ● casing ○ platform ○ plinth ○ ceiling; Parameters: level 0, height 20; Layer: ☐ Modified layer name; layer name PODESTY; Options: ☑ tiles

Custom elements – Element type: ○ floor ○ casing ○ platform ● plinth ○ ceiling; Parameters: level 0, height 20, widh 50; Arches: Segmentation ○ fit to radii ● fixed segment length; Length of segment 210; ☐ all segments equal; Options: ☑ tiles

Custom elements – Element type: ○ floor ○ casing ○ platform ○ plinth ● ceiling; Parameters: level 2600; Arches: Segmentation ● fit to radii ○ fixed segment length; splitting density 54; Options: ☑ tiles

Fig. 95 – any elements – all variants (dimensions given in millimeters)

3. Examples of drawing techniques

3.1. A rectangle with dimensions of 800x1500 mm

- Select the top view and switch the ORTHO mode ON;
- Select the **line** drawing tool ;
- Click in the project area with the left mouse button and move the cursor to the right in order to indicate the drawing direction;
- Type the value 800 using the keyboard and accept it with **<Enter>**;
- The typed value will appear on the Command Bar in the bottom of the screen;
- Move the mouse down, enter 1500 and accept it with **<Enter>**;
- Move the mouse to the left, enter 800 value and accept it with **<Enter>**;
- Move the mouse up, towards the first point of the object. When the yellow square appears, left-click it and move the mouse away, and then right-click to finish.

3.2. Circle with the radius of 400 mm

- Select the top view;
- Select the **circle** drawing tool ;
- Click the design area where the circle centre is to be;
- Move the mouse away from the selected point in any direction;
- Enter circle’s radius (400) and accept it by pressing **<Enter>**;

Note! If you wish to use circle’s diameter instead of the radius, press <D> character first and then <Enter>. Then you can type the diameter value.

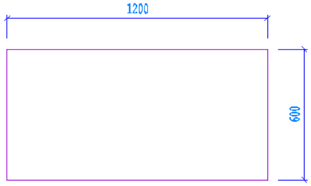


Fig. 96 – rectangle

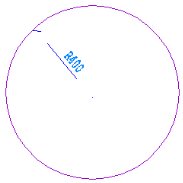


Fig. 97 – circle

3.3. Rectangular bathtub enclosure, one side is an arc:

- Draw a rectangle in accordance to Example no. 3.1.;
- With an active **Midpoint snap** select the **line** drawing tool ;
- Move the mouse cursor close to the centre of the line where an arc is to be added. When a yellow triangle lights up, click it and then move the mouse away. Enter the arc inclination value: 200 mm and accept it by pressing **<Enter>**. Click the right mouse button to finish drawing the auxiliary line;
- Now select the **arc** tool ;
- It is necessary to indicate 3 arc points. In order to do it, click subsequently: yellow square at the corner of the rectangle (the beginning of the arc), the end of the auxiliary line (this will be the top of the arc, a so-called **second point**) and the opposite rectangle's corner (the end of the arc);
- After the arc is finished, remove unnecessary lines from the template.

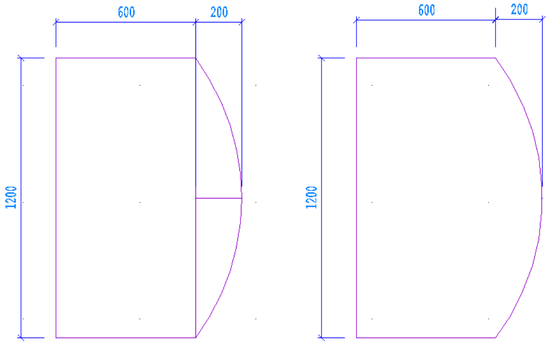


Fig. 98 – bathtub casing

3.4. Trapezoid with given dimensions of sides and angles

- Drawn with the **path** drawing tool (polyline) , without using the ORTHO;
- Select the path tool and click in the project area;
- Draw a segment 1200 mm long to the left – in order to do so, type **@1200<180** (it will appear in Command Bar in the bottom of the screen) and press **<Enter>**;

- Type the next segment parameters: **@600<55** and press **<Enter>;**
- Enter the consequent segment's parameters **@512<0** and press **<Enter>;**
- Move the cursor close to the start point and, when a yellow square appears, left-click it, and then right-click to finish work.

> *Note! The angles are being calculated on the basis of the math formulas. Data should be entered in the following way: segment length, '**less than'** character (<), angle value. The whole entry should be preceded by the @ symbol.*

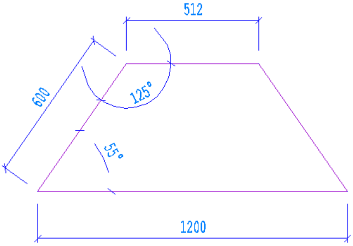


Fig. 99 – trapezoid

3.5. Trapezoid with an arc

- Drawn on the basis of the shape created in the Example 3.4.;
- Select the **path** drawing tool and click in the project;
- Draw a segment 1200 mm to the left by typing **@1200<180** and pressing **<Enter>**;
- Type the next segment parameters: **@600<55** and press **<Enter>;**
- Then press **<A>** (for English word **ARC**) and press **<Enter>** (or space key). When the mouse is moved now, the arc's preview is visible in the project. If the ORTHO mode in on, it will be drawn only in multiplicity of 90^{o}, so if it is to be drawn freely in any direction (at any angle), press and hold the **<Shift>** key;
- Enter the length of the arc's base **@512<0** and press **<Enter>** to confirm;
- Go back to line-drawing mode by entering **<L>** (for English word **LINE**) and pressing <**Enter>** and then follow the descriptions given in the previous Example top finish the figure.

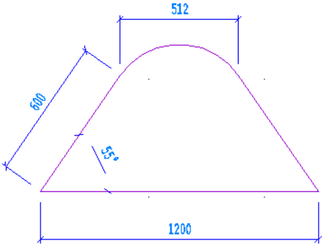


Fig. 100 – trapezoid with and arc segment

Note! The arc's height is remebered by the program. To define the new value, after indicatingarc's first point press <S> *(for* SECOND POINT*) and then* <Enter> *and indicate the 2nd point by clicking it, and then click once again in another point to define the end point of the arc.*

4. Types of any elements and a short description of solids

Examples of elements in the environment and visualization view are presented on the illustration below (Fig. 101 – from the left to the right: a floor, a platform, a casing and a plinth). A ceiling has not been presented because it looks exactly the same as floor – the only difference between them is the insertion level.

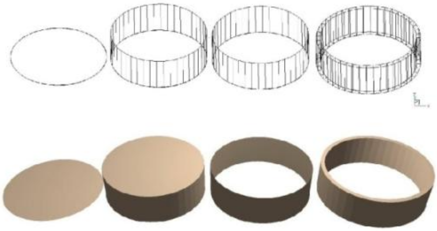


Fig. 101 – examples of various elements

Type	Description
Floor	- A flat element, used for drawing floors of various shapes. The only parameter to enter while creating this object is the insertion level. Usually rooms generated by means of any technique of drawing walls have a default floor (marked by a green square), automatically generated (if the function **Floor** is not unselected. It can be removed and replaced with the floor of any shape, also of the exact shape of the room (option: **Autogeneration**).
Platform	- It is a block with sides, a bottom and a top. While creating it the user has to define the insertion level and platform's height. Platforms are used for drawing partition walls of any shape, steps, suspended ceilings, bathtub casings and worktops.
Casing	- The block with sides but without the bottom or the top surface. It is similar to the floor, but rotated vertically. A single polyline segment is enough to create the casing (the template do not have to be a closed figure). Used for creating a background behind the window (it can be a big square surface on which some picture in placed, e.g. a nice view).

Plinth	- It can be either a frame or a ring (when created from the outline – e.g. rectangular or circular) or a cuboid (when created from a single polyline segment).
Ceiling	- A flat element similar to the floor but inserted on a different level (default 2600mm). The ceiling in the shape exactly the same as the outline of the room can be generated automatically using the function **Autogeneration**. Even if this function is not used, the ceiling will be created by the program automatically during the first switching to the visualization mode.

5. Tabs of the Any elements dialog

Tab	Functions
Layer	- This tab is active for all entity types. If you tick **Modified layer name** option, you can save the object on other layer than current one.
Arcs	- This tab is available for plinths, casings and platforms. It is closely connected with tiles ☑ tiles option. By the means of this tab, the user can define dimensions and quantity of rectangular segments creating a single arc. If the given object is to be covered with ceramic tiles, the User should tick the **tiles** option - otherwise the object, when visualized, will seem to be smooth, and if a texture is applied to it, it will be covered on its circumference, not like in a case of the tile usage — segment by segment. - When the object is to be tiled, the **Fixed segment length** option should be selected, and the tile horizontal dimension should be entered. The parameters can be edited during the overall block edition. The function enables to cover oval solids with complete (not cut) tiles. - Optionally, the option **fit to radii** can be chosen – then the tiles will be adjusted to the radius and cut in equal pieces.
Profile	- This tab appears for platforms and pedestals. It enables the user to form any object edge on the basis of a polyline previously drawn (so-called **user profile**). In order to do so the profile should be prepared with the use of polyline drawing tool. After selecting the **Any element**s icon and the type of the element and its dimenstions, open the Profile tab and select the user profile option. Then left-click on the profile to indicate it and again – click with a left mouse button to define its main point (the point of the connection between the profile and the contour of the element). The profile can be rotated (option **flip horizontally**) if it happens to be shaped wrongly (in a wrong direction).

6. Examples of practical use of any elements

6.1. Drawing an element with orifices

To draw such an element:

- Draw a contour of the object using any drawing tool;
- Draw outlines of the orifices inside the contour;
- Select the icon **Any elements** and click inside the contour;
- In the new dialog select the type of the element (a floor or a platform) and define its parameters.

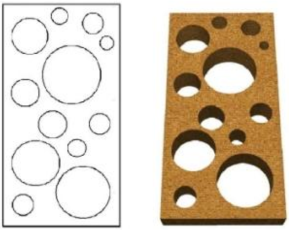


Fig. 102 - an element with orifices – the design and the result in visualization

6.2. Drawing a platform using the user profile

- Draw a contour of the object using any technique;
- Beside the contour draw the profile using the polyline;
- Select the icon **Any elements** and click inside the contour
- In the new dialog select type of the element – platform;
- Open the **Profile** tab and select the option **User profile** – back in the project left click on the profile line, and then indicate the point of connection with the contour with a second left-click;
- Back in **Any element** dialog click the **Draw** button;
- A platform with a defined profile will be inserted in the project;
- If necessary, it is possible to rotate the profile inward or outwards – using the option **flip horizontally**.

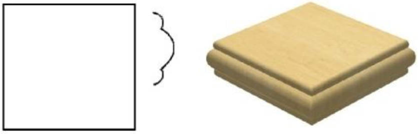


Fig. 103 – a platform with a defined profile

6.3. Drawing a plinth using the user profile

- Draw the route for the plinth using the **path** drawing tool and draw the outline for the profile;

- Select the icon **Any elements** and click on the prepared route;
- Define the type of the element in the new dialog – select **Plinth**;
- Open the **Profile** tab and select **User profile** option;
- Back in the project left-click on the profile line and then indicate the connection point with a second left-click;
- When back in **Any element** dialog, click **Draw**;
- A plinth with a defined profile will be created in the project.

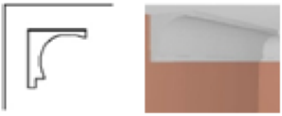


Fig. 104 – a plinth with a defined profile

Each of these elements can be freely edited and rotated in space. Both of these functions are available after selecting the block (by a left-click on one of its lines) and clicking the right mouse button. From the context menu select **Edition** or **Rotate** / **3D Rotate**. To change the shape of the element the new template for it has to be drawn .

7. Drawing a rectangle or a square using the Rectangle icon

Thanks to the **Rectangle** icon the user can quickly and easily draw rectangles. After clicking the icon indicate the first corner of the rectangle (with a single left-click) and then the opposite one. The preview of the currently drawn rectangle will be visible in the project. After the second left-click the rectangle will be drawn.

This function enables also to draw squares (Fig. 105). To do so, straight after clicking on the icon and before indicating the first corner, type the command **square** on the Command Bar and confirm with **<Enter>.** Then follow the steps of drawing a rectangle.

Rectangles and squares can be drawn at any angle. To draw them at angles different then the multiplicity of 90^o, press and hold <**Shift>** while indicating the second corner (it will temporarily switch off the ORTHO mode).

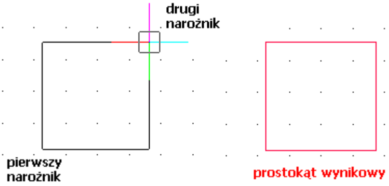


Fig. 105 – a square drawn by the means of the Rectangle function

CHAPTER 10

Basic operations on elements

1. Introductory remarks

In order to display the context menu (Fig. 106), which enables quick and efficient work with the program t is necessary to do the following::

- click on the object with the left mouse button (select it);
- click on empty space of the drawing with the right mouse button.

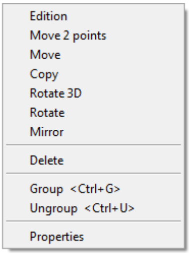


Fig. 106 – pop-up menu

2. Edition

Option of edition is available for elements such as: walls, windows, doors, additional wall elements (protrusions, orifices, recesses), any elements created by the user, posts and arc walls, and objects from interior equipment libraries used in the project. To edit element, first select it – by a single left click or by area selection, then click the right mouse button to gain access to the context menu, and select the position of **Edition**. A new dialog will open (different for different types of elements), in which some basic characteristics of the edited object can be modified or the object can be exchanged for a different one (dependant on the element type). For more details about edition see the next chapters of the manual.

3. Move 2 points

To move an object using this option:

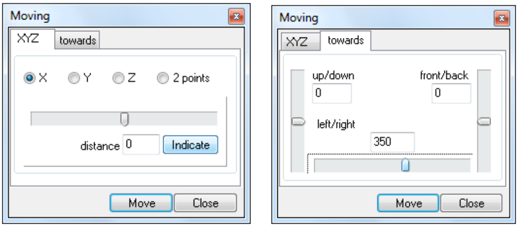
- select the element to move with the mouse cursor;
- choose **Move 2 points** option in the context menu under the right mouse button;
- using the cursor select (left-click) the point of reference for the movement (it can be either a point on the element or any other point in the project);
- if the point on the object has been selected, then with the second left click indicate the point in which the selected point of reference is to be placed (using the **Entity snaps** is recommended for precision);

- when using this method the object can be sometimes accidentally moved in Z axis (change the insertion level), so it is recommended to always make sure it is on the desired level after the movement;
- if any point in the project has been selected, then move the mouse in the direction in which the element is to be moved, and click when it reaches the desired location;
- while using the second method the particular value can be entered on the Command Bar, e.g. if the mouse is moved to the left and a value **1000** is typed and confirmed with **<Enter>**, the element will be moved 1 meter to the left;
- to move the element at an angle different than the multiplicity of 90°, press and hold **<Shift>** to temporarily switch off the ORTHO mode.

4. Move

To move the element:

- select the object to be moves with the mouse cursor (left-click or area selection);
- select **Move** in the pop-up menu;
- the **Moving** dialog box will appear (Fig. 107);



● X ○ Y ○ Z ○ 2 points

distance 0

up/down 0

front/back 0

left/right 350

Fig. 107 – 'Moving' dialog box – 'XYZ' and 'towards' tabs

The **Moving** dialog has got 2 tabs:

- **the XYZ tab** allows to move objects along a specified axis (X, Y or Z) by a specified value, indicated with the slider or entered manually;
- the **towards** tab allows to move elements freely: by moving one of 3 sliders choose the direction (up/down, front/back, left/right) and the distance (you can also enter the value manually in the proper field);
- when the direction and distance is set up, click the **Move** button;
- the object will be moved, but the dialog will stay open, so the procedure can be repeated, either to move the object once again in the same direction and by the same distance (to do so, click **Move** again, without changing any settings – this can be repeated over and over again) or to move the same object also in another direction or by a different distance (to do so, change the settings and then press **Move**);
- To finish moving the object, after clicking **Move** for the last time, click **Close**.

There is one more method of moving objects – using the option **Indicate**:

- when some of the axis is selected (e.g. X) the object will be moved in this axis;
- if the option 2 points in selected, the object will be moved in reference to the indicated points;
- after clicking the **Indicate** button, two points of reference should be indicated, analogically to the procedure described in point 3: **Move 2 points**.

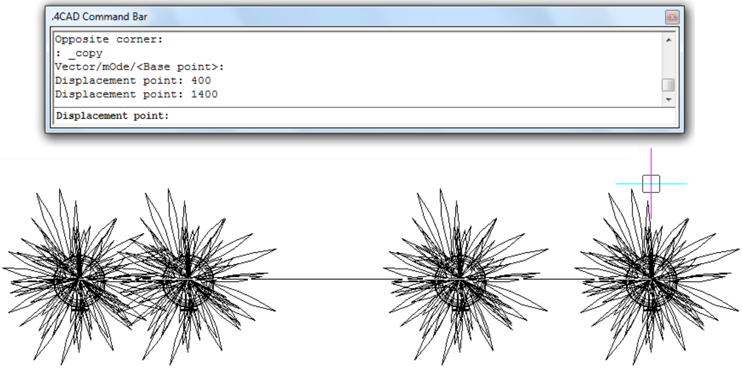
5. Delete

To remove an object from the project select it, then right-click and select the **Delete** position from the context menu. Selected element will be removed from the project. Alternatively, press **<Delete>** key after selecting the object to be removed.

6. Copy

To copy the chosen element:

- select the element to be copied using the mouse cursor;
- in the pop-up menu choose **Copy**;
- select the point or reference for copying – on the object or any point in the project;
- then click in the point in which the copy is to be inserted;
- the function operates the same way as **Move 2 points** option;
- an unlimited number of copies can be created in one session – just keep clicking the left mouse button in desired points in the project or type new distance values in Command Bar and confirm with **<Enter>**;
- copies can be inserted in equal interspaces, typing the distance from the original element in Command Bar (e.g. for 1st copy: 1000, for 2nd copy: 2000, for 3rd: 3000);
- to locate copies around the original element in angles different then the multiplicity of 90°, press and hold **<Shift>** to temporarily switch off the ORTHO mode;
- to finish copying click the right mouse button or press **<Enter>** twice or press **<Esc>.**



```
Opposite corner:
: _copy
Vector/mOde/<Base point>:
Displacement point: 400
Displacement point: 1400

Displacement point:
```

Fig. 108 – copying a decorative element

7. Rotate

To rotate the chosen element:

- select the element for rotation;
- in the pop-up menu choose **Rotate;**
- select the rotation base point;
- indicate the rotation angle;
- left-click to end the operation.

8. 3D Rotate

This feature enables to rotate object in 2 or 3 dimensions. After selecting the element and choosing this option form a pop-up menu, the **Rotation** dialog will appear. There are too tabs in this dialog: 2D and 3D (Fig. 109).

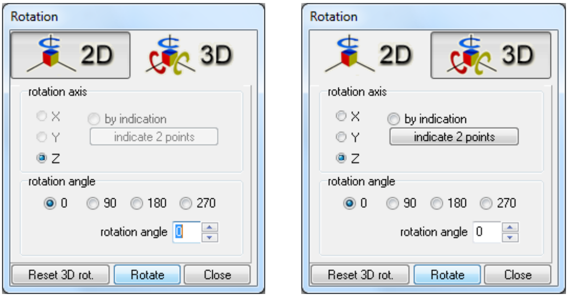


Fig. 109 – Rotation dialog, 2D and 3D tabs

2D rotation

- rotation in 2 dimensions is performed only in relation to the Z axis;
- in the **rotation angle** box indicate or type the angle by which the object is to be rotated or select one of the given values (90°, 180°, 270°);
- the preview of the rotated object will be visible to help to decide whether or not the set up value is proper;
- to confirm click the **Rotate** button;
- the element will be rotated and the dialog will stay open – so the procedure can be repeated (to repeat it, set up the parameters of a new rotation and click **Rotate**);
- exit the **Rotation** dialog box by clicking **Close;**

3D rotation

- can be performed in relation to any of 3 coordinate axes – X, Y or Z;
- rotation in the particular axis is done along the same rules as the 2D rotation;
- **by indication — select 2 points** — click in the first and last point of the reference line, on the basis of which the element is to be rotated, establish the rotation angle and confirm by clicking the **Rotate** button.

Note! To restore the settings prior to the rotation, press Reset 3D rotation.

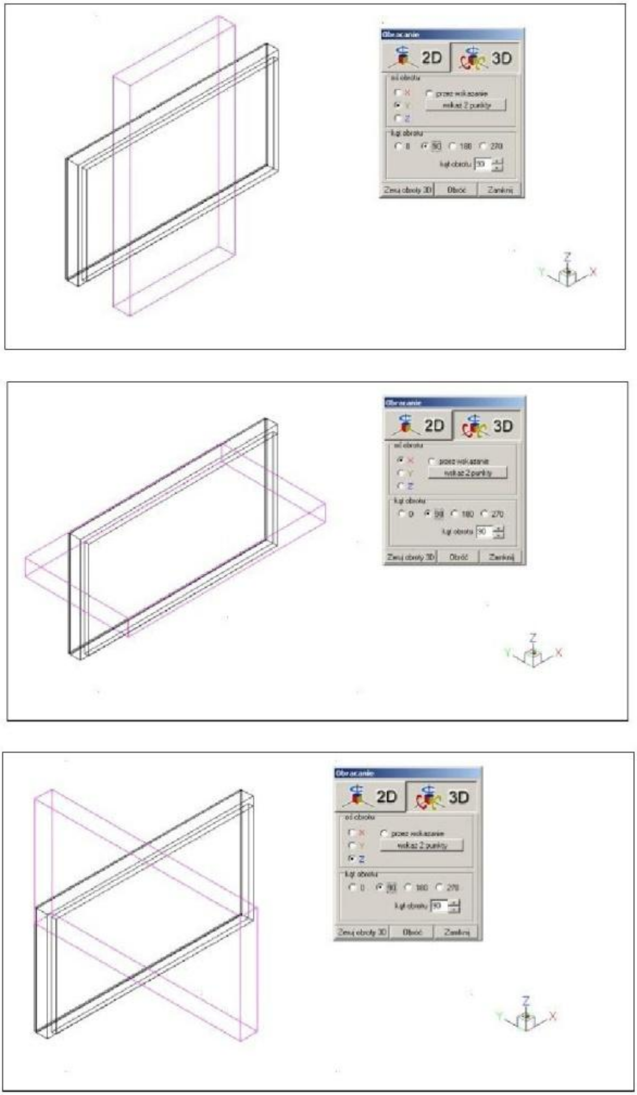

Obracanie
2D
3D
oś obrotu
○ X
● Y
○ Z
○ przez wskazanie
wskaż 2 punkty
kąt obrotu
○ 0
● 90
○ 180
○ 270
kąt obrotu 90
Zeruj obroty 3D
Obróć
Zamknij
○ X
○ Y
○ Z
● X
○ Y
○ Z
○ X
○ Y
● Z
Z
Y
X

Fig. 110 – 3D Rotate – examples

9. Mirror

This function is used for creating the element that is a mirror reflection of the original object. In order to do that follow the procedure below:

- select the element to mirrored with the cursor;
- select **Mirror** from the pop-up menu;
- left-click in the first of the reference line;

- the outline of the mirrored element will be visible in the project;
- left-click the second time in the second (and last) point of the reference line;
- to confirm, click the right mouse button;
- the reversed copy will be created.

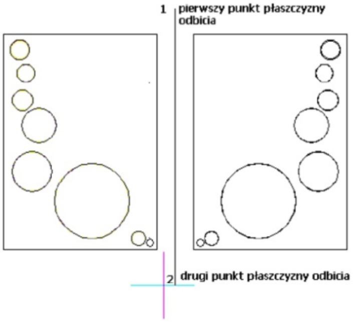

1
pierwszy punkt płaszczyzny odbicia
2
drugi punkt płaszczyzny odbicia

Fig. 111 – example of using the Mirror function

10. Group / Ungroup

Grouping of elements is useful when the user wants to create a group of objects (e.g. a table with chairs or a shelf with books) to be able to perform actions such as moving, copying or rotating on all of them at the same time.

To group elements:

- select the elements which are to be parts of the group (by left-clicking or area selection);
- in the pop-up menu select **Group** or use the keyboard command <**Ctrl +G>**;
- selected elements will be grouped and from now on, can be moved / copied / rotated or mirrored together.

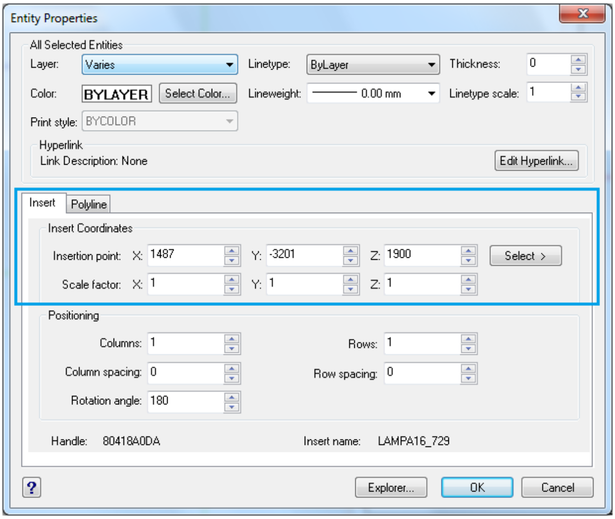
To ungroup elements than have been previously grouped, it is necessary to:

- select the group (by clicking on one of its components or area selection);
- in the pop-up menu choose the command **Ungroup** or use the keyboard command <**Ctrl +U>**;
- the group will be divided into separate elements.

11. Entity Properties dialog box

Entity Properties dialog box (Fig. 112) contains information about **a** particular selected entity or entities. If several entities that all have different properties are selected, the default value initially is **Varies**. Changes can be made in the **Layer**, **Colour**, **Thickness**, **Lineweight**, **Linetype**, **Linetype Scale** and **Print Style** (if using named print style tables) fields affect all selected entities.

The most often changed parameters are the **Insertion coordinates** of the object (X, Y, Z axis values in the **Insertion Point** boxes) and its scale in the **Scale Factor** boxes (each object can be enlarged or shrunk in one of the three axes by choosing an appropriate scale factor). In the **Layer** box the parameters of the layer to which the object belongs are displayed and can be modified.



Entity Properties

All Selected Entities

Layer: Varies

Linetype: ByLayer

Thickness: 0

Color: BYLAYER

Lineweight: 0.00 mm

Linetype scale: 1

Print style: BYCOLOR

Hyperlink

Link Description: None

Insert Coordinates

Insertion point: X: 1487 Y: -3201 Z: 1900

Scale factor: X: 1 Y: 1 Z: 1

Positioning

Columns: 1

Rows: 1

Column spacing: 0

Row spacing: 0

Rotation angle: 180

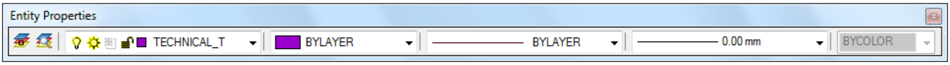
Handle: 80418A0DA

Insert name: LAMPA16_729

Fig. 112 – Entity Properties dialog

12. Entity Properties toolbar

Properties of particular objects can be also edited and modified using the tools available in **Entity Properties** bar which can be found under the toolbars with icons (Fig. 113).



Entity Properties

TECHNICAL_T

BYLAYER

BYLAYER

0.00 mm

BYCOLOR

Fig. 113 – Entity Properties bar

Functions available in this toolbar enable to manage the properties of the layer, to which the particular object belongs. It is designed for advanced users of CAD environment.

Layers in IntelliCAD are like the transparent overlays used in manual drafting. They are used to organize different types of drawing information. In IntelliCAD, each entity in a drawing exists on a layer. Every drawing has at least one layer, the default layer, named "0." Each drawing can also contain an unlimited number of additional layers. When an entity is drawn, it is created on the current layer.

The visibility of layers can be controlled. When a layer is turned off, it is no longer visible and it do not print. Although a layer may be invisible, it can be still selected it as the current layer, in which case new entities are also invisible until the layer is turned back on. Entities on invisible layers can also affect the display and printing of entities on other layers. For example, entities on invisible layers can hide other entities when you use the Hide command to remove hidden lines.

Layers can be also frozen and thawed. Entities drawn on frozen layers do not display, do not print, and do not regenerate. When you freeze a layer, its entities do not affect the display or printing of other entities. For example, entities on frozen layers do not hide other entities when you use the Hide command to remove hidden lines. In addition, you cannot draw on a frozen layer until you thaw it, and you cannot make a frozen layer current. You cannot freeze the current layer. If you attempt to freeze the current layer, a dialog box appears prompting to specify a different layer.

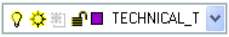
You can lock or unlock layers. The entities on a locked layer are still visible and will print, but you cannot edit them. Locking a layer prevents you from accidentally modifying entities.

Each layer has its own color, linetype, and lineweight. For drawings that use named print styles, layers can also have their own print style. Entities you draw on a particular layer are displayed in the color, linetype, and lineweight associated with that layer unless you override these settings. You control all of the associated settings for layers using the **Layers** elements in the **IntelliCAD Explorer**. You can also access layer settings for entities using the **Entity Properties** toolbar or edit a layer’s properties by right-clicking it and choosing **Properties**.

The following features are available in the **Entity Properties** toolbar:

- **Set layer by entity** – Sets a new layer as the current layer. Select entity to set the current layer: Select an entity in the layer that you want to make the current layer.

- **Explore layers…** – opens the **IntelliCAD Explorer** with the **Layer Name** list displayed (Fig. 115); in which all settings for layers can be modified;

- 

Layer change field – in here the layer can be turned on or off, frozen or thawed, locked or unlocked or the layer of the selected entity can be changed (click on the element, select the layer, press **<Enter>** to confirm);

-

Colour change field – in here the colour of the layer of the selected element can be modified; in a new drawing, entities are created in the colour BYLAYER, which adopts the colour of the current layer. Initially, layer 0 is both the only layer and the current layer. Its default color is white, so your entities appear as white. There are index colors, which contain two additional colour properties that are often referred to as **colours**, **true colours**, and **colour book colours** (Fig. 116). The two additional color properties are **BYLAYER** and **BYBLOCK**. These colour properties cause an entity to adopt the color either of the layer or of the block in which it is a member. The new colour can be chosen from the given colours or established by the user – by clicking the position **Select colour**; a new dialog opens then in which the colour can be selected in 3 ways (Fig. 116);

-

Linetype Control field – defines linetypes (sequences of alternating line segments, dots, and spaces), loads them from libraries, and sets the current linetype (e.g. continuous, dashed, dotted, center (one dot and one dash) and phantom linetype (two dots and one dash);

-

Lineweight Control field – the thickness of the line can be changed in here, e.g. to make it more visible in the print or the meet the standards of a technical drawing; after changing the lineweight to make it visible in the project use the function **Show line thickness** in main menu (**Information → Settings → Show…**).

The illustration below presents all fields of **Entity Properties** toolbar with expanded lists (please note that in reality only one list can be expanded in one time) (Fig. 114).

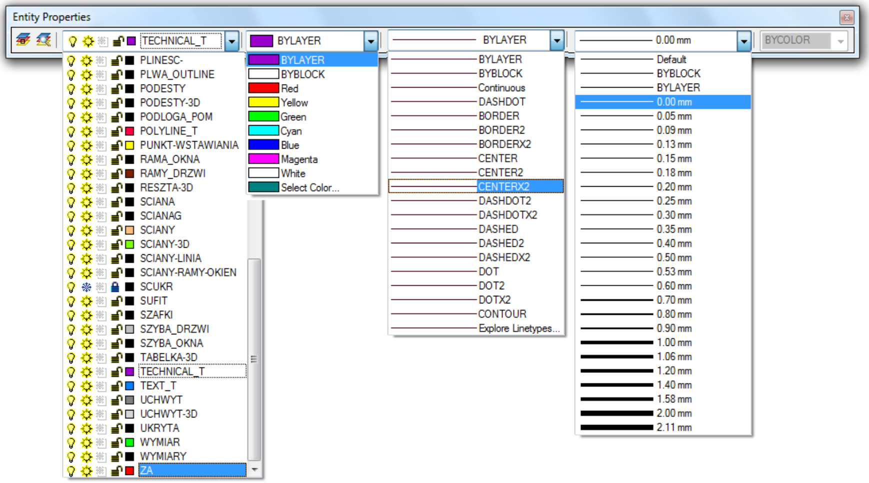
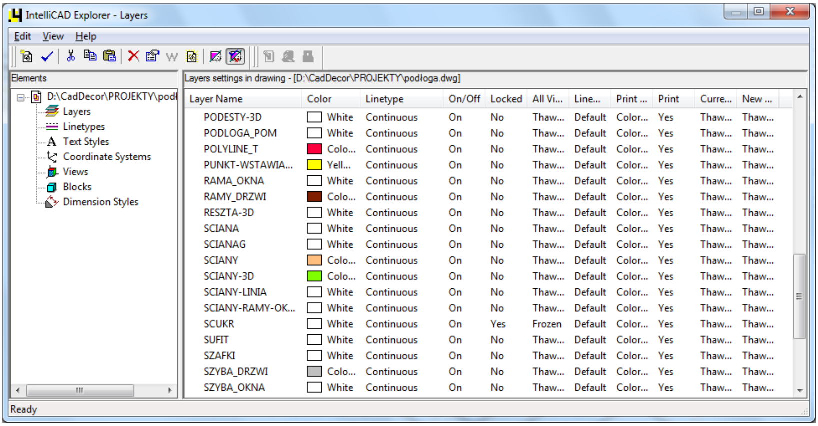

Entity Properties
TECHNICAL_T
BYLAYER
BYLAYER
0.00 mm
BYCOLOR
PLINESC-
PLWA_OUTLINE
PODESTY
PODESTY-3D
PODLOGA_POM
POLYLINE_T
PUNKT-WSTAWIANIA
RAMA_OKNA
RAMY_DRZWI
RESZTA-3D
SCIANA
SCIANAG
SCIANY
SCIANY-3D
SCIANY-LINIA
SCIANY-RAMY-OKIEN
SCUKR
SUFIT
SZAFKI
SZYBA_DRZWI
SZYBA_OKNA
TABELKA-3D
TECHNICAL_T
TEXT_T
UCHWYT
UCHWYT-3D
UKRYTA
WYMIAR
WYMIARY
ZA
BYLAYER
BYBLOCK
Red
Yellow
Green
Cyan
Blue
Magenta
White
Select Color...
BYLAYER
BYBLOCK
Continuous
DASHDOT
BORDER
BORDER2
BORDERX2
CENTER
CENTER2
CENTERX2
DASHDOT2
DASHDOTX2
DASHED
DASHED2
DASHEDX2
DOT
DOT2
DOTX2
CONTOUR
Explore Linetypes...
Default
BYBLOCK
BYLAYER
0.00 mm
0.05 mm
0.09 mm
0.13 mm
0.15 mm
0.18 mm
0.20 mm
0.25 mm
0.30 mm
0.35 mm
0.40 mm
0.50 mm
0.53 mm
0.60 mm
0.70 mm
0.80 mm
0.90 mm
1.00 mm
1.06 mm
1.20 mm
1.40 mm
1.58 mm
2.00 mm
2.11 mm

Fig. 114 – presentation of functions available in Entity Properties toolbar


IntelliCAD Explorer - Layers
Edit
View
Help
Elements
D:\CadDecor\PROJEKTY\podl
Layers
Linetypes
Text Styles
Coordinate Systems
Views
Blocks
Dimension Styles
Ready

Layers settings in drawing - [D:\CadDecor\PROJEKTY\podloga.dwg]

Layer Name	Color	Linetype	On/Off	Locked	All Vi...	Line...	Print ...	Print	Curre...	New ...
PODESTY-3D	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
PODLOGA_POM	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
POLYLINE_T	Colo...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
PUNKT-WSTAWIA...	Yell...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
RAMA_OKNA	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
RAMY_DRZWI	Colo...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
RESZTA-3D	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANA	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANAG	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANY	Colo...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANY-3D	Colo...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANY-LINIA	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCIANY-RAMY-OK...	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SCUKR	White	Continuous	On	Yes	Frozen	Default	Color...	Yes	Thaw...	Thaw...
SUFIT	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SZAFKI	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SZYBA_DRZWI	Colo...	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...
SZYBA_OKNA	White	Continuous	On	No	Thaw...	Default	Color...	Yes	Thaw...	Thaw...

Fig. 115 – IntelliCAD Explorer – Layers

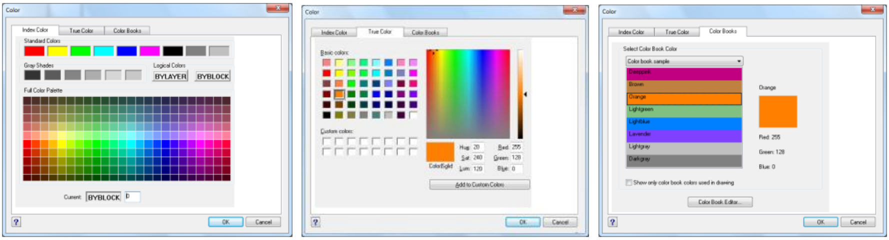

Color
Index Color
True Color
Color Books
Standard Colors
Gray Shades
Logical Colors
BYLAYER
BYBLOCK
Full Color Palette
Current: BYBLOCK
OK
Cancel
Basic colors:
Custom colors:
Hue: 20
Sat: 240
Lum: 120
Red: 255
Green: 128
Blue: 0
Add to Custom Colors
Select Color Book Color
Color book sample
Orange
Red: 255
Green: 128
Blue: 0
Show only color book colors used in drawing
Color Book Editor...

Fig. 116 – Selection of layer colour – tabs: Index Color, True Color, Color Books

13. Offset

Creates a parallel or offset copy of curves and lines.

- After clicking the **Offset** icon (or typing ***offset*** and confirming the command by pressing **<Enter>**) the program will ask to specify the distance between the original entity and the parallel copy;
- Type the value and press **<Enter>** or indicate it by left-clicking in two points;
- Select the entity to offset;
- Select the side where the parallel entity is to be located (type ***both*** to locate in on both sides of the original entity and press **<Enter>);**
- The function is active until the **<Esc>** is pressed**,** so after one cycle the new entity to offset can be selected straight away.

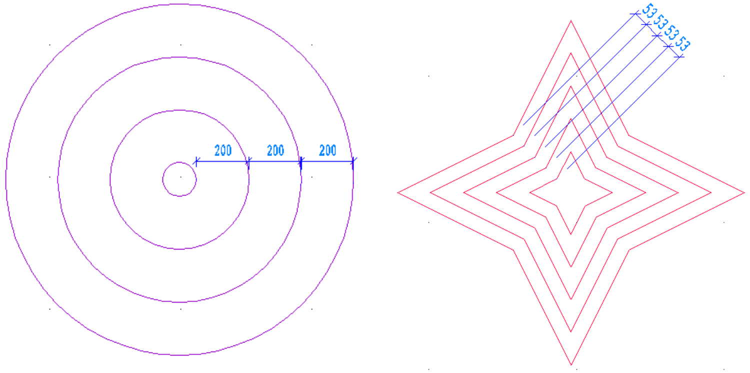


Fig. 116 – examples of shapes created using the Offset function

To specify a point through which you want the parallel copy offset, after clicking the Offset icon type the **Through point** command and press **<Enter>.** Then select the entity and click in the point through which the new line is to go through. The new entity can be selected straight away. To finish press **<Esc>**.

14. Trim

Entities such arcs, circles, lines, open 2D and 3D polylines, and rays as can be clipped, or trimmed, so they end at one or more implied cutting edges defined by other entities, and also to the point at which they would intersect an implied cutting edge. When trimming entities, first select the cutting edges and then specify the entities to trim. Arcs, circles, lines, polylines, rays, infinite lines can act as cutting edges. An entity can be both a cutting edge and one of the entities being trimmed.

To trim an entity:

- Click the Trim tool or type ***trim*** and then press **<Enter>**;
- Select one or more cutting edges, and then press **<Enter>** (to select all entities in the project, press **<Enter>** twice);
- Select the entity to trim by clicking on it;
- Trimming will last until all the entities left can be deleted in a regular way;
- To finish trimming press **<Esc>**.

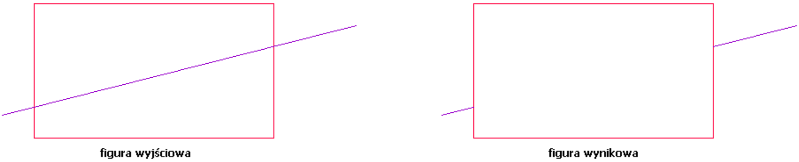


figura wyjściowa

figura wynikowa

Fig. 117 – an example of using Trim function

15. Explode

Ungroups a block, polyline, polyface mesh, solid, or hatch, creating separate entities for each element. You can use the Explode command to break apart a block or polyline into separate elements. You may need to explode nested blocks more than once (but newer more than twice, because it will be not possible to block them again).

To explode an entity:

- Click the **Explode** icon or type ***xplode*** and then press **<Enter>**;
- Select the object to be exploded and press **<Enter>** or right-click;
- The functions works once, so if more than one entity is to be exploded, they should be selected for exploding altogether;
- The entities to explode can be also selected before choosing the command;
- Wide polylines break apart into zero-thickness lines and arcs;
- Polylines break apart into separate line and arc segments;
- Multilines break apart into two separate line segments;
- Rectangles and other polyline entities break apart into line segments;
- Hatched entities created with IntelliCAD break apart so that each line in the hatch is a separate entity;
- Blocks break apart into separate entities.

CHAPTER 11
Advanced operations on elements

1. Introductory remarks

In order to facilitate the work with the program, some advanced icons of IntelliCAD have been added to the standard icon menu of CAD Decor. They are available on the Advanced icon bar, which is hidden by default while running the program for the first time. To open it, right-click in the toolbars area and thick the Advanced position of the list.

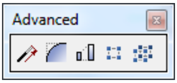
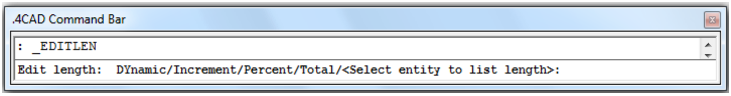


Fig. 118 – Advanced toolbar

2. Edit Length

The length of entities can be quickly and easily changed, using the **Edit length** tool . After clicking this icon, several options will be available on the Command Bar to chose from (Fig. 119).



```
: _EDITLEN
Edit length:  DYnamic/Increment/Percent/Total/<Select entity to list length>:
```

Fig. 119 – the communicate in Command Bar after selecting the Edit length function

Use any of the following methods to change the length of an entity:

- **Dynamic:** Dynamically drag the endpoint or angle;
- **Increment:** Specify an incremental length or angle measured from an endpoint;
- **Percent:** - Specify the new length as a percentage of the total length or angle.– e.g. 50% will shorten the existing section by half, and 150% - will prolong it by half;
- **Total:**– Specify a new length by typing the value and pressing **<Enter>**.

To select one of the above options, type its name and press **<Enter>**. Then type the value, confirm with **<Enter>** and select the entity. When using a dynamic option, do not type anything, just click on the entity and then click in its new endpoint.

This feature is particularly useful to change the length of entities drawn at an angle different than the multiplicity of 90^{o}.

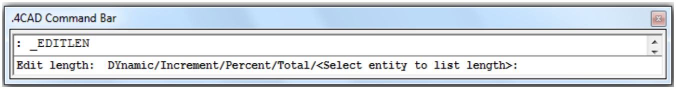
3. Fillet

A **Fillet** tool connects two entities with an arc of a specified radius to create a rounded edge. If both entities you are working with are on the same layer, the fillet is drawn on that layer. If they are on different layers, the fillet is drawn on the current layer.

The entities that can be filleted are: pairs of line segments, straight polyline segments, arcs, circles, rays, infinite lines and parallel lines. When filleting a polyline, multiple segments between two selected segments can be filleted, or the entire polyline.

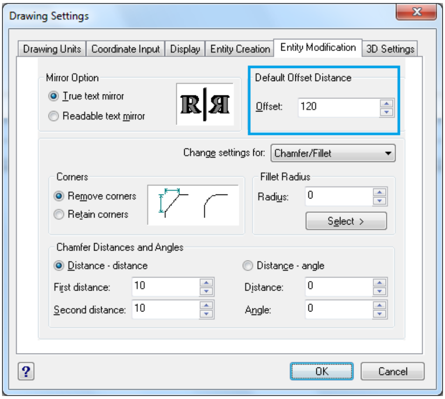
To fillet two entities

- Click the **Fillet** tool or type ***fillet*** and then press **<Enter>**;
- In the prompt box (Command Bar), choose **Fillet Settings** (Fig. 120);
- In the **Drawing Settings** dialog box (Fig. 121), specify the fillet radius and click **OK**;
- Select the first entity;
- Select the second entity;



```
.4CAD Command Bar
: _EDITLEN
Edit length:  DYnamic/Increment/Percent/Total/<Select entity to list length>:
```

Fig. 120 – the communicate in Command Bar after selecting the Filler function



Drawing Settings

Mirror Option
● True text mirror
○ Readable text mirror

Default Offset Distance
Offset: 120

Change settings for: Chamfer/Fillet

Corners
● Remove corners
○ Retain corners

Fillet Radius
Radius: 0

Chamfer Distances and Angles
● Distance - distance
First distance: 10
Second distance: 10
○ Distance - angle
Distance: 0
Angle: 0

Fig. 121 – Drawing Settings dialog box

To fillet an entire polyline

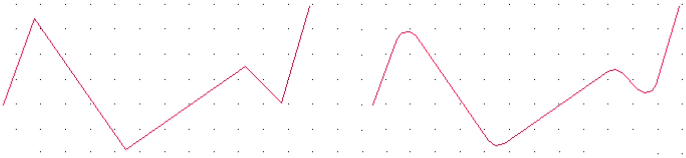
- Click the **Fillet** tool or type ***fillet*** and then press **<Enter>**;
- In the prompt box, choose **Polyline** and press **<Enter>**;
- Select the polyline.

To fillet selected vertices in a polyline

- Click the **Fillet** tool or type ***fillet*** and then press **<Enter>**;
- Select the polyline along the segment where you want to begin the fillet;
- Select the polyline along the segment where you want to end the fillet.

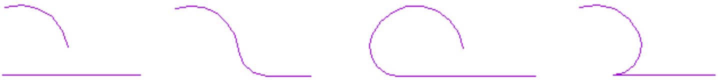
When you fillet circles and arcs, more than one fillet can exist between the entities. The point at which you select the entities determines the fillet.

You can fillet parallel lines, rays, and infinite lines. The first entity must be a line or ray; the second entity can be a line, ray, or infinite line. The diameter of the fillet arc is always equal to the distance between the parallel entities. The current fillet radius is ignored.



the original polyline **the same polyline after filleting**

Fig. 122 – an example of using the Fillet function for a polyline



original objects **variant 1** **variant 2** **variant 3**

Fig. 123 – an example of using the Fillet function for a line and an arc

4. Align

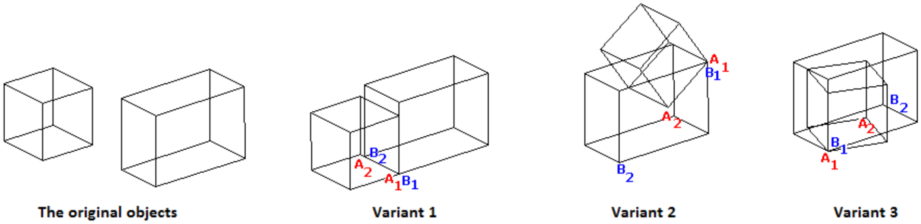
Selected entities can be aligned with other entities in three-dimensional space. To do so, select the entities you want to align, and specify one, two or three pairs of points to align the selected entities.

To align an entity an entity with another

- Click the **Align** tool or type ***align*** and then press **<Enter>**;
- Select the entities, and then press **<Enter>**;
- Specify the first source point (on the illustration below: A1);
- Specify the first destination point (on the illustration below A2);
- Specify additional source and destination points if desired (up to three pairs);

- After selecting 1 or 2 pairs of points, to press **<Enter>** or right-click to complete the command;
- After selecting 3 pairs of points, the command will be completed automatically;
- In which axis the object will be rotated depends on the selected pairs of source and destination points.

The illustration below (Fig. 124) presents options of the use of the **Align** function.



The original objects **Variant 1** **Variant 2** **Variant 3**

Fig. 124 – examples of using the Align function

5. Array

Using this feature it is possible to copy an entity in a rectangular or polar (circular) pattern, creating an array. For a rectangular array, the number of copies in the array can be controlled by specifying the number of rows and columns. Also the distance between each row and column can be z specified. For a polar array, the number of copies that compose the array can be controlled, as well as whether to rotate the copies.

To create a polar array:

- Click the **Array** tool or type ***array*** and then press **<Enter>**;
- Select the entities and press **<Enter>**;
- In the prompt box (Commad Bar), choose **Polar** and press **<Enter>**;
- Specify the center point of the array;
- Specify the number of items to array, including the original selection set.
- Specify the angle the array is to fill, from 0 to 360 degrees (the default setting for the angle is 360 degrees. Positive values create the array in a counterclockwise direction; negative values create the array in a clockwise direction);
- In the prompt box, choose one of the following:
  - **Yes, Rotate Entities** – rotates entities as they are arrayed.
  - **No, Do Not Rotate** – retains the original orientation of each copy as it is arrayed.
- A polar array will be created.

To create a rectangular array:

- Click the **Array** tool or type ***array*** and then press **<Enter>**;
- Select the entities and press **<Enter>**;
- In the prompt box (Command Bar), choose **Rectangular** and press **<Enter>**;
- Type the number of rows.;
- Type the number of columns.
- Specify the distance between the rows.
- Specify the distance between the columns.
- A rectangular array will be created.

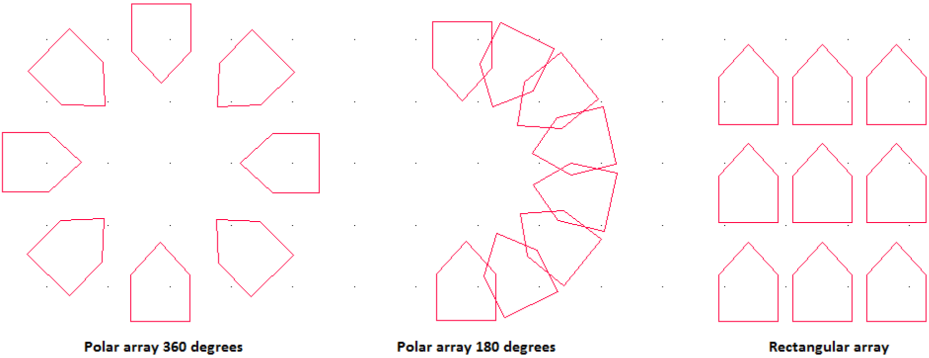

Polar array 360 degrees **Polar array 180 degrees** **Rectangular array**

Fig. 125 – examples of arrays in 2D

6. 3D Array

It is also possible to proceed arraying in three dimensions**.** Using the tool **3D Array** it is possible to can copy selected entities and arrange them in a three-dimensional rectangular or polar (circular) pattern. For a rectangular array, the number of copies in the array can be controlled by specifying the number of rows and columns and the number of levels, and the distance between each of them can be specified as well. For a polar array it is necessary to you specify the axis around which to array the entities, the number of copies of the entities to create, and the angle subtended by the resulting array.

To create a three-dimensional rectangular array:

- Click the **3D Array** tool or type ***3darray*** and press **<Enter>**;
- Select the entities and press **<Enter>**;
- In the prompt box (Command Bar), choose **Rectangular** and press **<Enter>**;\

- Type the number of rows in the array, the number of columns and the number of levels.
- Specify the vertical distance between the rows, the horizontal distance between the columns and the depth between the levels.
- A rectangular three-dimensional array will be created.

To create a three-dimensional polar array;

- Click the **3D Array** tool ▦ or type ***3darray*** and press **<Enter>**;
- Select the entities and press **<Enter>**;
- In the prompt box (Command Bar), choose **Polar** and press **<Enter>**;
- Type the number of copies to make, including the original selection set;
- Specify the angle the array is to fill, from 0 to 360 degrees;
- The default setting for the angle is 360 degrees. Positive values create the array in a counterclockwise direction; negative values create the array in a clockwise direction;
- In the prompt box, choose one of the following:
  - **Yes-Rotate Entities** to rotate entities as they are arrayed.
  - **No-Do Not Rotate** to retain the original orientation of each copy as it is arrayed.
- Specify the center point of the array;
- Specify a second point along the central axis of the array;
- A polar three-dimensional array will be created.

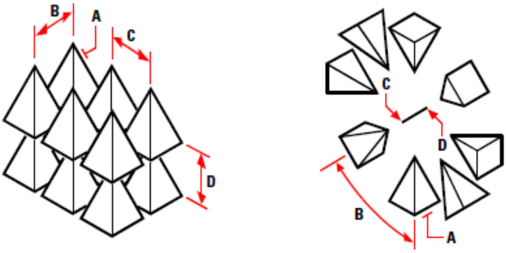


Fig. 126 – examples of arrays in 3D

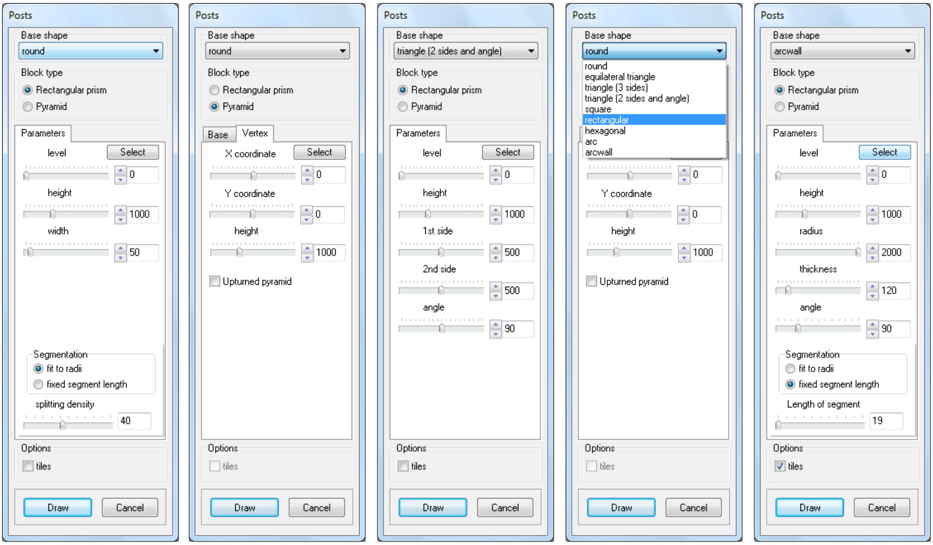
Note! While working please follow the instructions given in Command Bar.

CHAPTER 12

Creating and using posts and arc walls

1. Introductory remarks

Posts and walls (under icon) are used for creating basic solids without preparing templates for them. They are cuboids or pyramids of different bases (also: upturned pyramids). This function of dynamic 3D modeling can be used for creating various decorative elements. Various objects: posts, columns, pilasters and partition walls of different kinds - are created on the basis of a single point indicated by the user directly after clicking the **Posts and walls** icon, and the parameters defined in the dialog displayed below (in all possible variants - Fig. 127).



Base shape: round
● Rectangular prism ○ Pyramid
level 0
height 1000
width 50
Segmentation: ● fit to radii ○ fixed segment length
splitting density 40
☐ tiles

Base shape: round
○ Rectangular prism ● Pyramid
X coordinate 0
Y coordinate 0
height 1000
☐ Upturned pyramid
☐ tiles

Base shape: triangle (2 sides and angle)
● Rectangular prism ○ Pyramid
level 0
height 1000
1st side 500
2nd side 500
angle 90
☐ tiles

Base shape: round
- round
- equilateral triangle
- triangle (3 sides)
- triangle (2 sides and angle)
- square
- rectangular
- hexagonal
- arc
- arcwall

Y coordinate 0
height 1000
☐ Upturned pyramid
☐ tiles

Base shape: arcwall
● Rectangular prism ○ Pyramid
level 0
height 1000
radius 2000
thickness 120
angle 90
Segmentation: ○ fit to radii ● fixed segment length
Length of segment 19
☑ tiles

Fig. 127 – various variants of options available in Posts dialog

Posts can be covered with tiles in visualization. To divide their rounded surfaces into segments, select the **tiles** option and then choose the suitable option: **fit to radii** or **fixed segment length**, and move the slider to define the number of segments or the density of the division. Please note, that the **tiles** option is not available for pyramids.

2. Inserting posts

To insert a post follow the procedure below:

- Select an appropriate view (top orthogonal seems to be the most convenient);
- Select the icon and indicate the point in which the post is to be inserted;
- In the new dialog box (Fig. 127) choose the type of the post and define its parameters (there are two main types to choose from - cuboid (default) and pyramid, and a number of various basis: round, square, triangle etc.);
- The preview of the created post is visible in the project, so the user can control what are the results of currently set up parameters and modify them if needed;
- When all parameters are correct, confirm them by clicking the **Draw** button.

3. Types of posts

Available sections of blocks and their definable parameters are listed in the table below, and examples of created blocks are presented on the illustration (Fig. 128).

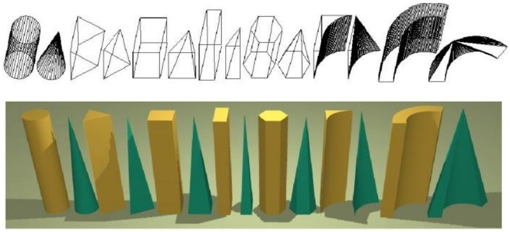


Fig. 128 – examples of posts (the view in the project and in the visualization)

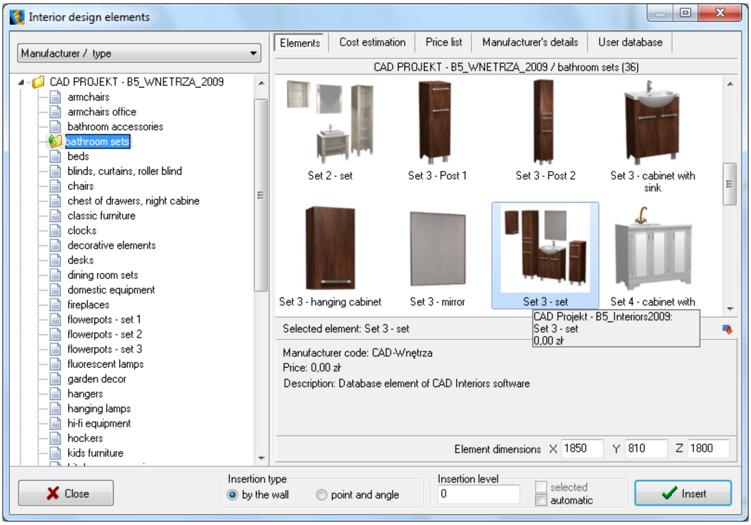
Section	Parameters	Characteristics
Round	level, height, width	round base; width is equal to the diameter;
Triangle	level, height, width length of each side	3 options of base shape: equilateral triangle, 3 sides defined, 2 sides and an angle defined; the length of each side of the triangle can be defined;
Square	level, height, width,	Square base; width is equal to the side's length;
Rectangle	level, height, width length	Rectangle base; particularly useful for creating partition walls and suspended ceilings;
Hexagonal	level, height, width	Hexagonal base; the width is equal to the diameter of the figure;
Arc	level, height, width	The base is ¼ of a circle contained in ½ of a square; useful for creating concave arc walls; the back of this block matches 90° wall corners; the width is equal to the radius of ¼ of a circle;
Arc wall	level, height, radius, thickness, angle	The base is created by 2 parallel segments of a circle of various radii but identical angles; useful for creating concave or convex arc walls;

CHAPTER 13

Inserting interior equipment

1. Introductory remarks

CAD Decor has been equipped with databases of various elements of interior design, both universal and producer. To place these elements in the project, choose the icon **Interior design elements** from the CAD-Decor toolbar. The **Interior design elements** dialog box will open, in which all databases loaded in the program are available (Fig. 129). The databases are available on the DVD with the program as well as to download from our website (completely new or updated databases).


Interior design elements
Manufacturer / type
CAD PROJEKT - B5_WNETRZA_2009
armchairs
armchairs office
bathroom accessories
bathroom sets
beds
blinds, curtains, roller blind
chairs
chest of drawers, night cabine
classic furniture
clocks
decorative elements
desks
dining room sets
domestic equipment
fireplaces
flowerpots - set 1
flowerpots - set 2
flowerpots - set 3
fluorescent lamps
garden decor
hangers
hanging lamps
hi-fi equipment
hockers
kids furniture
Elements
Cost estimation
Price list
Manufacturer's details
User database
CAD PROJEKT - B5_WNETRZA_2009 / bathroom sets (36)
Set 2 - set
Set 3 - Post 1
Set 3 - Post 2
Set 3 - cabinet with sink
Set 3 - hanging cabinet
Set 3 - mirror
Set 3 - set
Set 4 - cabinet with
CAD Projekt - B5_Interiors2009:
Set 3 - set
0,00 zł
Close
Insert

Selected element: Set 3 - set

Manufacturer code: CAD-Wnętrza
Price: 0,00 zł
Description: Database element of CAD Interiors software

Element dimensions X 1850 Y 810 Z 1800

Insertion type ● by the wall ○ point and angle

Insertion level 0

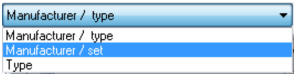
☐ selected
☐ automatic

Fig. 129 – Interior design elements dialog box

2. Options of the Interior Design Elements dialog box

On the left hand side of the dialog a list of available databases is displayed. After a double left-click on a particular database, the list of types of elements in it will display. After a single left-click on the particular category, elements' previews will display in the upper right part of the dialog.

The list of databases and types of elements can be filtered in 3 ways: by the manufacturer and type, by the manufacturer and by the type only:

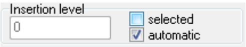


To select a particular model please use the previews of models. After clicking on a chosen preview, information provided by the producer about the model will display in the bottom part of the dialog, including: manufacturer code, price and a description and element's dimensions (in millimeters) or scale factor. On the very bottom of the dialog various options of inserting models are available.

3. Inserting elements

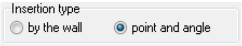
When the model is chosen the insertion level has to be specified (it is the height on which the element will be inserted). In can be done in a few ways:

- In the **Insertion level** field the value for the current model can be entered;
- In this field a default level given by the producer for a particular element is displayed, e.g. 2600 mm for ceiling lamps, 850 mm for washbasins etc.;
- Alternatively the **Automatic** button can be selected – then the element will be inserted on the level, on which the program finds an obstacle, e.g. a worktop;
- The last possibility is the selection of the **indicated** option – in this case the axonometric view should be chosen because the insertion w be proceeded on the basis of the particular point indicated by the user in the project;
- The last method requires the highest precision.


Insertion level
0
☐ selected
☑ automatic

After defining the insertion level the way of inserting the model should be selected:

- If the element is to be placed directly against the wall at an angle which is a multiplicity of 90^o, the **by the wall** option should be selected – the object will be located next to the indicated wall (used for coaches, pictures, shelves etc.);
- If the model is to be placed at any angle and in any spot in the project, the **point and angle** option should be selected (this method requires two left-clicks – first of them defines the main point of the insertion, which is at the same time the axis for the object rotation, and the second left-click defines the angle – to establish the angle, move the mouse around the rotation axis);

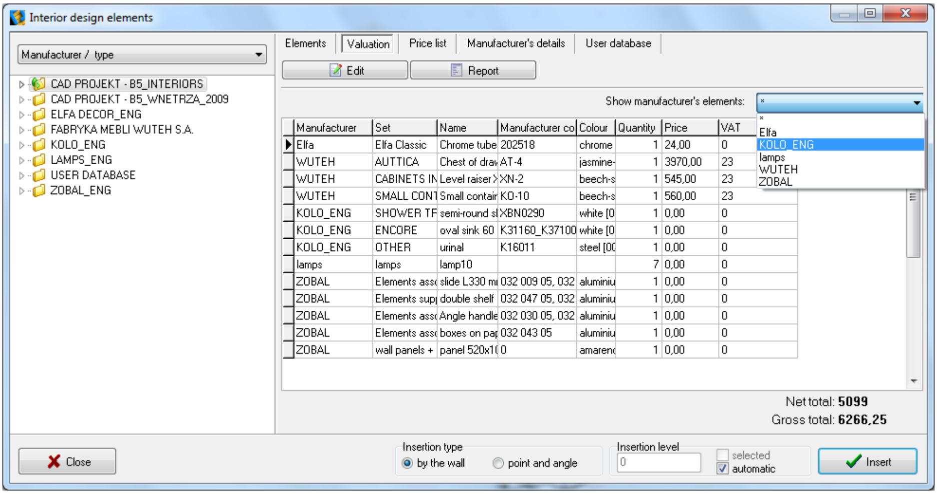

Insertion type
○ by the wall
● point and angle

- After the insertion level and the way of insertion are defined, click **Insert**;
- The best view in most cases for inserting models is the orthogonal view from above because it is the most precise to establish the point and angle of insertion of the model and properly locate the adjacent objects.

CHAPTER 14
Valuation of used elements and the price-list

1. Introductory remarks

The **Elements specification** ☰ icon opens the **Interior design elements** dialog box, open on the **Valuation** tab (Fig. 130). The specification is currently actualized each time a new model is used in the project. It enable the user to instantly view and change the prices of particular elements of interior design inserted in the project.


Interior design elements
Manufacturer / type
CAD PROJEKT - B5_INTERIORS
CAD PROJEKT - B5_WNETRZA_2009
ELFA DECOR_ENG
FABRYKA MEBLI WUTEH S.A.
KOLO_ENG
LAMPS_ENG
USER DATABASE
ZOBAL_ENG
Elements
Valuation
Price list
Manufacturer's details
User database
Edit
Report
Show manufacturer's elements:
*
Elfa
KOLO_ENG
lamps
WUTEH
ZOBAL
Close
Insert

Manufacturer	Set	Name	Manufacturer co	Colour	Quantity	Price	VAT
Elfa	Elfa Classic	Chrome tube	202518	chrome	1	24,00	0
WUTEH	AUTTICA	Chest of drav	AT-4	jasmine-	1	3970,00	23
WUTEH	CABINETS IN	Level raiser X	XN-2	beech-s	1	545,00	23
WUTEH	SMALL CONT	Small contair	KO-10	beech-s	1	560,00	23
KOLO_ENG	SHOWER TF	semi-round sl	XBN0290	white [0	1	0,00	0
KOLO_ENG	ENCORE	oval sink 60	K31160_K37100	white [0	1	0,00	0
KOLO_ENG	OTHER	urinal	K16011	steel [00	1	0,00	0
lamps	lamps	lamp10			7	0,00	0
ZOBAL	Elements ass	slide L330 m	032 009 05, 032	aluminiu	1	0,00	0
ZOBAL	Elements sup	double shelf	032 047 05, 032	aluminiu	1	0,00	0
ZOBAL	Elements ass	Angle handle	032 030 05, 032	aluminiu	1	0,00	0
ZOBAL	Elements ass	boxes on pap	032 043 05	aluminiu	1	0,00	0
ZOBAL	wall panels +	panel 520x1(	0	amarenc	1	0,00	0

Net total: **5099**
Gross total: **6266,25**

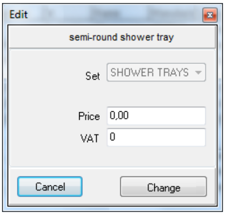
Insertion type: ● by the wall ○ point and angle
Insertion level: 0
☐ selected
☑ automatic

Fig. 130 – valuation of interior design elements

2. Edition of valuation elements

Prices of elements included in databases can be freely modified. To do it, click on the particular position in the specification and select he **Edit** [Edit] button. A new dialog will open (Fig. 131), in which element’s price and VAT rate can be changed.

In the bottom part of the **Valuation** tab total net and gross prices of whole equipment and furnishings used in the project are presented.


Edit
Cancel
Change

semi-round shower tray

Set: SHOWER TRAYS

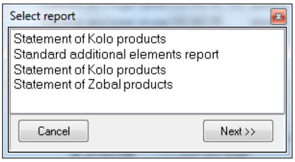
Price: 0,00

VAT: 0

Fig. 131 – price change

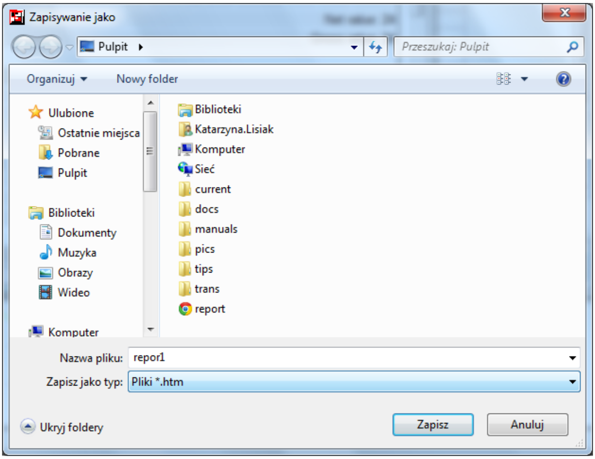
3. Report generation

The specification can be presented in a form of a report, which can be saved to the disk as a HTM file or printed. To do it, simply click the **Report** [Report] button. A list of available reports will appear – a standard or producer's ones (Fig. 132). Select the report to be created and click **Next>>** - the report will be generated (Fig. 134 on next page). To save the report, click the icon 💾 in upper left corner and select the location for the HTM file to be saved (Fig. 133)., and to print it click 🖨.


Select report
Cancel
Next >>

Statement of Kolo products
Standard additional elements report
Statement of Kolo products
Statement of Zobal products

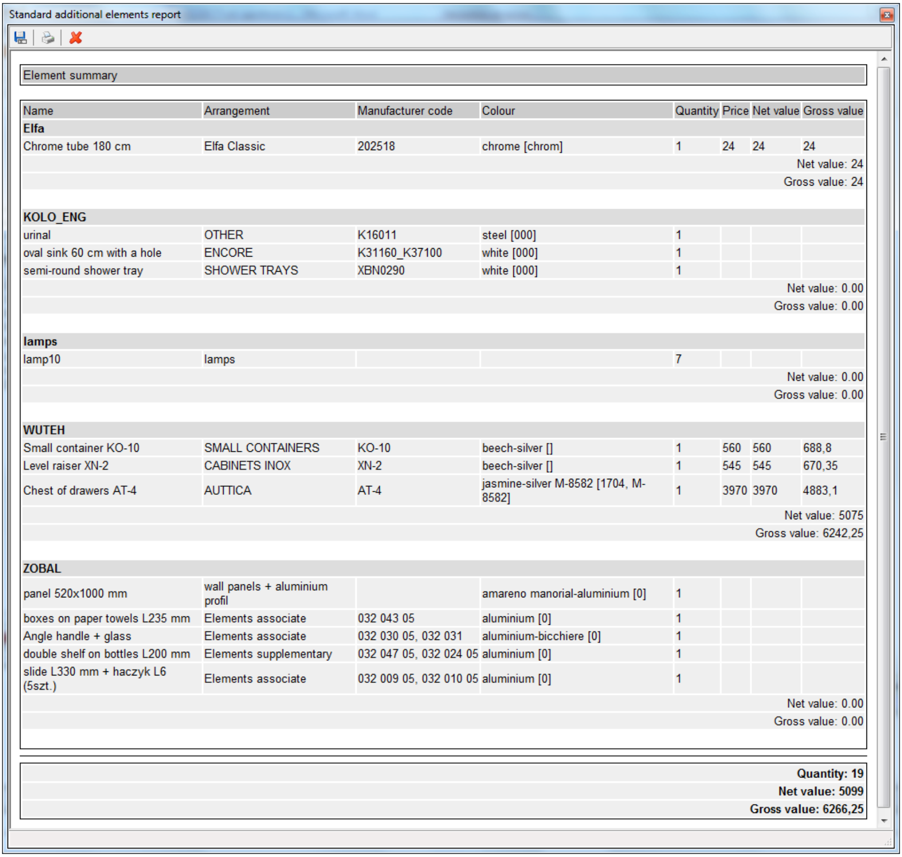
Fig. 132 – list of reports


Zapisywanie jako
Pulpit
Przeszukaj: Pulpit
Organizuj
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Biblioteki
Katarzyna.Lisiak
Komputer
Sieć
current
docs
manuals
pics
tips
trans
report
Ukryj foldery
Zapisz
Anuluj

Nazwa pliku: repor1

Zapisz jako typ: Pliki *.htm

Fig. 133 – selecting the location for the report to be saved



Element summary

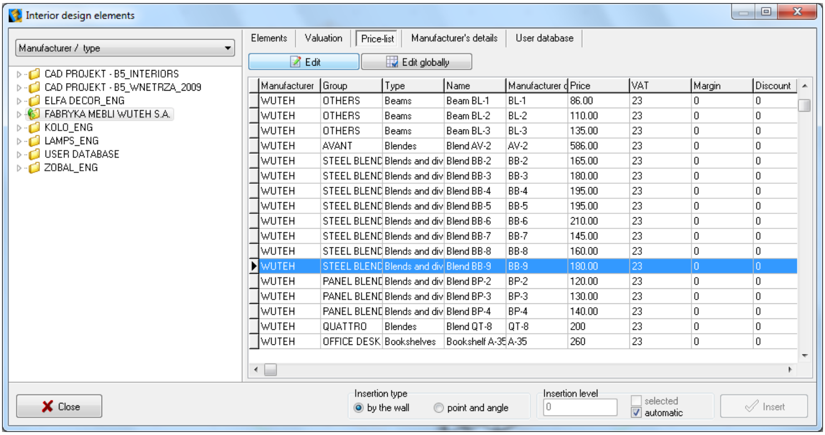
Name	Arrangement	Manufacturer code	Colour	Quantity	Price	Net value	Gross value
Elfa							
Chrome tube 180 cm	Elfa Classic	202518	chrome [chrom]	1	24	24	24
							Net value: 24
							Gross value: 24
KOLO_ENG							
urinal	OTHER	K16011	steel [000]	1			
oval sink 60 cm with a hole	ENCORE	K31160_K37100	white [000]	1			
semi-round shower tray	SHOWER TRAYS	XBN0290	white [000]	1			
							Net value: 0.00
							Gross value: 0.00
lamps							
lamp10	lamps			7			
							Net value: 0.00
							Gross value: 0.00
WUTEH							
Small container KO-10	SMALL CONTAINERS	KO-10	beech-silver []	1	560	560	688,8
Level raiser XN-2	CABINETS INOX	XN-2	beech-silver []	1	545	545	670,35
Chest of drawers AT-4	AUTTICA	AT-4	jasmine-silver M-8582 [1704, M-8582]	1	3970	3970	4883,1
							Net value: 5075
							Gross value: 6242,25
ZOBAL							
panel 520x1000 mm	wall panels + aluminium profil		amareno manorial-aluminium [0]	1			
boxes on paper towels L235 mm	Elements associate	032 043 05	aluminium [0]	1			
Angle handle + glass	Elements associate	032 030 05, 032 031	aluminium-bicchiere [0]	1			
double shelf on bottles L200 mm	Elements supplementary	032 047 05, 032 024 05	aluminium [0]	1			
slide L330 mm + haczyk L6 (5szt.)	Elements associate	032 009 05, 032 010 05	aluminium [0]	1			
							Net value: 0.00
							Gross value: 0.00

Quantity: 19
Net value: 5099
Gross value: 6266,25

Fig. 134 – standard report of additional elements

4. Price-list – singular and global edition of elements

In the next tab of the Interior design elements dialog – **Price-list** (Fig. 135)– the prices of all elements included in databases can be viewed and edited. To view the prices, left-click on a database's folder in the left part of the dialog to select it. Elements are added to the price-list when they are added to the database. To change one particular element from the price-list, left-click on it to select it and then press the **Edit** Edit button. A new dialog will open (Fig. 136), in which the price, VAT rate, discount and margin can be modified, updated or supplemented. To save the changes click **Add**. To drop the changes click **Cancel**.


Interior design elements
Manufacturer / type
CAD PROJEKT - B5_INTERIORS
CAD PROJEKT - B5_WNETRZA_2009
ELFA DECOR_ENG
FABRYKA MEBLI WUTEH S.A.
KOLO_ENG
LAMPS_ENG
USER DATABASE
ZOBAL_ENG
Elements
Valuation
Price-list
Manufacturer's details
User database
Edit
Edit globally
Close
Insert

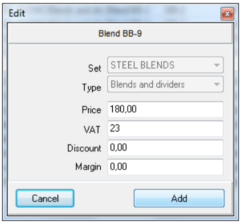
Manufacturer	Group	Type	Name	Manufacturer c	Price	VAT	Margin	Discount
WUTEH	OTHERS	Beams	Beam BL-1	BL-1	86.00	23	0	0
WUTEH	OTHERS	Beams	Beam BL-2	BL-2	110.00	23	0	0
WUTEH	OTHERS	Beams	Beam BL-3	BL-3	135.00	23	0	0
WUTEH	AVANT	Blendes	Blend AV-2	AV-2	586.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-2	BB-2	165.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-3	BB-3	180.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-4	BB-4	195.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-5	BB-5	195.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-6	BB-6	210.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-7	BB-7	145.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-8	BB-8	160.00	23	0	0
WUTEH	STEEL BLEND	Blends and div	Blend BB-9	BB-9	180.00	23	0	0
WUTEH	PANEL BLEND	Blends and div	Blend BP-2	BP-2	120.00	23	0	0
WUTEH	PANEL BLEND	Blends and div	Blend BP-3	BP-3	130.00	23	0	0
WUTEH	PANEL BLEND	Blends and div	Blend BP-4	BP-4	140.00	23	0	0
WUTEH	QUATTRO	Blendes	Blend QT-8	QT-8	200	23	0	0
WUTEH	OFFICE DESK	Bookshelves	Bookshelf A-35	A-35	260	23	0	0

Insertion type: ● by the wall ○ point and angle

Insertion level: 0

☐ selected
☑ automatic

Fig. 135 – Price-list tab in Interior design elements dialog box

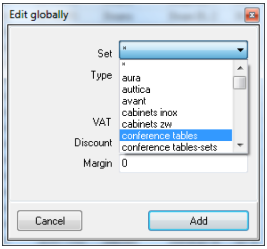

Edit
Cancel
Add

Blend BB-9

Set: STEEL BLENDS
Type: Blends and dividers
Price: 180,00
VAT: 23
Discount: 0,00
Margin: 0,00

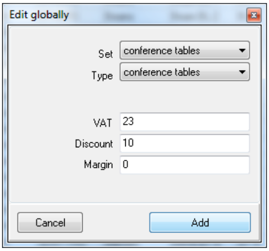
Fig. 136 – singular edition of a selected price-list position

To change the VAT, discount or margin globally, for all elements in the selected set or type in the chosen database, click the **Change globally** Edit globally button and in the newly opened dialog box select the **Set** or the **Type** of elements, for which the changes are to be introduced (Fig. 137). Then enter new value of VAT rate, discount or margin. Confirm the changes by clicking **Add** (Fig. 138). To close the dialog without saving changes, click **Cancel**.


Edit globally
Type
VAT
Discount
*
aura
auttica
avant
cabinets inox
cabinets zw
conference tables
conference tables-sets
Cancel
Add

Set: *
Margin: 0

Fig. 137 – global edition – Set selection


Edit globally
Cancel
Add

Set: conference tables
Type: conference tables
VAT: 23
Discount: 10
Margin: 0

Fig. 138 – global edition – introducing changes

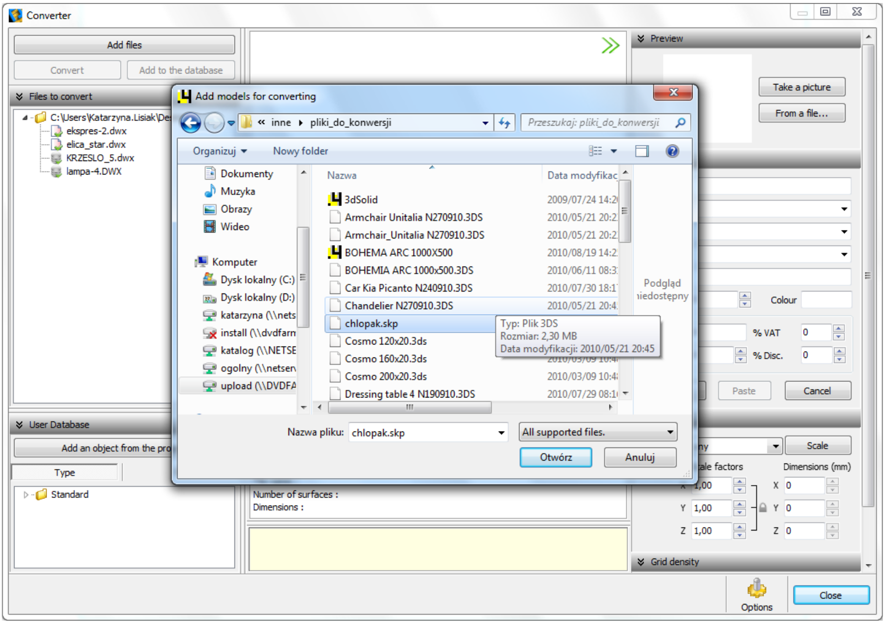
CHAPTER 15
Conversion of 3D models

1. Introductory remarks

Converter 3D module makes it possible to convert files saved in many different formats, not used by CAD Decor program, and in DWG format (used by AutoCAD and read by CAD Decor) to the CAD Projekt K&A's format: DWX. Thanks to this functionality, the users of our software have a great freedom of using models created in other applications to create their own unique user database of 3D models. The module is available under the icon **Converter 3D** in **CAD-Decor** toolbar. It can be also opened by typing the ***konw*** command and pressing **<Enter>**.

2. Adding files to the list

First thing to do while working with **Converter 3D** is loading the files for conversion to the list. To do it, click the **Add files** button in the upper left corner of the converter's dialog and select the localization of those files on computer disk (Fig. 139).


Converter
Add files
Convert
Add to the database
Files to convert
C:\Users\Katarzyna.Lisiak\De
ekspres-2.dwx
elica_star.dwx
KRZESLO_5.dwx
lampa-4.DWX
User Database
Add an object from the pro
Type
Standard
Add models for converting
« inne ▸ pliki_do_konwersji
Przeszukaj: pliki_do_konwersji
Organizuj ▾
Nowy folder
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
katarzyna (\\nets
install (\\dvdfarn
katalog (\\NETSE
ogolny (\\netsen
upload (\\DVDFA
Nazwa
Data modyfikac
3dSolid 2009/07/24 14:2
Armchair Unitalia N270910.3DS 2010/05/21 20:2
Armchair_Unitalia N270910.3DS 2010/05/21 20:2
BOHEMA ARC 1000X500 2010/08/19 14:2
BOHEMIA ARC 1000x500.3DS 2010/06/11 08:3
Car Kia Picanto N240910.3DS 2010/07/30 18:1
Chandelier N270910.3DS 2010/05/21 20:4
chlopak.skp
Cosmo 120x20.3ds
Cosmo 160x20.3ds 2010/03/09 10:4
Cosmo 200x20.3ds 2010/03/09 10:4
Dressing table 4 N190910.3DS 2010/07/29 08:1
Typ: Plik 3DS
Rozmiar: 2,30 MB
Data modyfikacji: 2010/05/21 20:45
Podgląd niedostępny
Otwórz
Anuluj
Preview
Take a picture
From a file...
Colour
% VAT
% Disc.
Paste
Cancel
Scale
Scale factors
Dimensions (mm)
Number of surfaces :
Dimensions :
Grid density
Options
Close

Nazwa pliku: chlopak.skp
All supported files.

Fig. 139 – adding files to the list for conversion

Converter offers the possibility to convert files in the following formats:

- **DWG** – AutoCAD' file format; already read by CAD Decor and CAD Kitchens but only in its 3Dface version; now also the 3Dsolid models can be read and converted, under the condition of using IntelliCAD work environment (.4CAD) – the option does not operate in BricsCAD);
- **DXF** – a very popular format created by Autodesk, read by AutoCAD and 3D Studio and other programs;
- **3DS** – a format used by 3D Studio Max and other programs;
- **SKP** – Google Sketch Up's file format;
- **PLY, STL, OBJ, LWO, OFF, DAE** – standard formats used in many 3D computer graphics programs;
- **CTM** – Open CTM's file format.

When the files are loaded to the list they are marked in the way presented on the illustration beside (Fig. 140). The directory tree is located in the left-hand side of the module's dialog and divided in the same directories as those in which the files are saved on the disk. Under the list there is a field in which the content of User Database is displayed.

To manage the list left-click on a selected position in it and when its marked in navy blue – right-click. The context menu will display, in which the following options are available: to clear the entire list, to remove a particular position from the list and to remember the state of the list after restarting the program (Fig. 141).

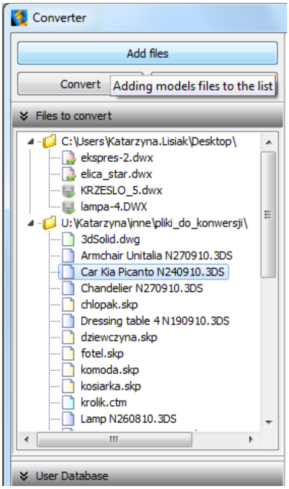

Converter
Add files
Convert
Adding models files to the list
Files to convert
C:\Users\Katarzyna.Lisiak\Desktop\
ekspres-2.dwx
elica_star.dwx
KRZESLO_5.dwx
lampa-4.DWX
U:\Katarzyna\inne\pliki_do_konwersji\
3dSolid.dwg
Armchair Unitalia N270910.3DS
Car Kia Picanto N240910.3DS
Chandelier N270910.3DS
chlopak.skp
Dressing table 4 N190910.3DS
dziewczyna.skp
fotel.skp
komoda.skp
kosiarka.skp
krolik.ctm
Lamp N260810.3DS
User Database

Fig. 140 – a list of files for conversion

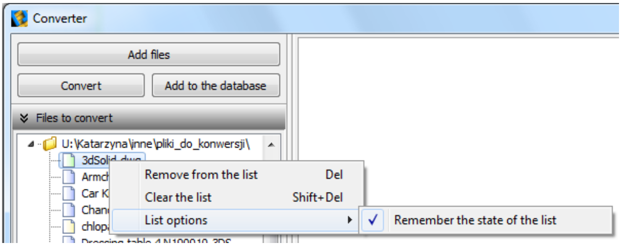

Converter
Add files
Convert
Add to the database
Files to convert
U:\Katarzyna\inne\pliki_do_konwersji\
3dSolid.dwg
Armc
Car K
Chan
chlop
Dressing table 4 N190910.3DS
Remove from the list Del
Clear the list Shift+Del
List options
✓ Remember the state of the list

Fig. 141 – a list of files and its options

3. The layout and features of Converter 3D dialog box

As it was mentioned before, in the left part of the converter dialog the lists of files are displayed – files for conversion (in the upper part) and files added to the User Database (in the bottom part).

In the central part of the dialog box a visualization of the converted model is displayed. It can be moved and rotated in the same way as standard visualization of the entire project. 3 dimensions axis (X, Y, Z) of a length 1 meter each are presented in the visualization, to help to quickly judge the size of the model and possibly decide to scale it. In the bottom central part the following features are also displayed:

- Information about last actions and their effects;
- Information about the model currently being converted (its name, number of surfaces of which it consists of and dimensions);
- Options of taking (or not) into account transformations of 3DS objects, that occur during the conversion.

> *Note! In case of some 3DS files taking the geometry transformations into account helps to achieve better visual effects, but with others is has opposite results. It is up to a user to decide whether or not the transformation should be taken into account.*

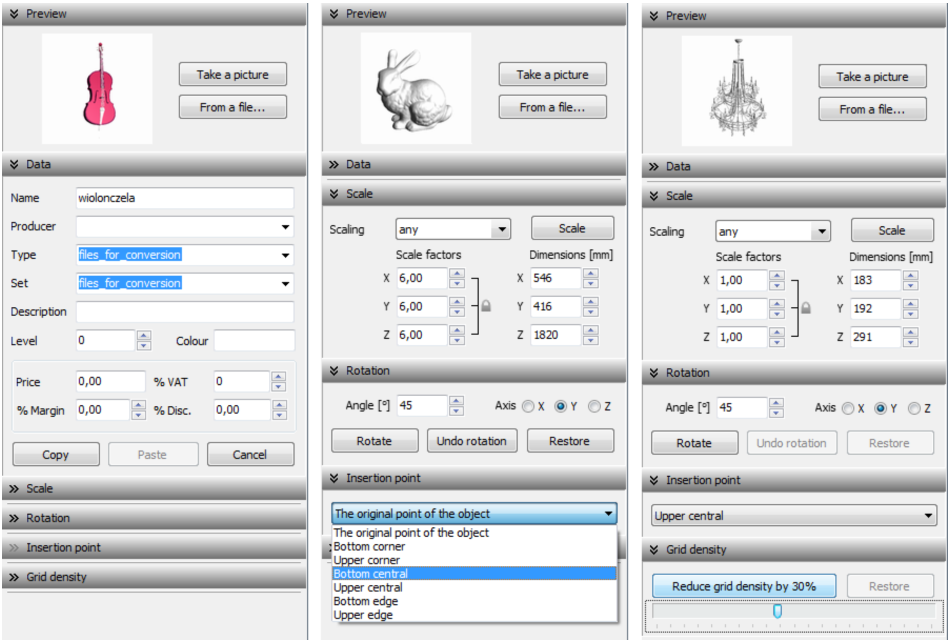
In the right part of the **Converter 3D's** dialog several panes are located:

Pane	Functions
Preview	- a photo of a current view of a visualized model may be taken (option **Take a picture**) or a picture file (e.g. found in the internet) can be downloaded from the disk (option **From a file**) to serve as a preview, which will be used as model's illustration in the User Database;
Data	- information about the model can be entered here before adding it to the User Database of during the edition; - the procedure is described in point 6 of this chapter;
Scale	- parameters of a model's scale can be modified here, if it is required (if the model is too big or too small in relation to reality); - this pane is hidden by default when the **Converter** is opened for the first time – to open it, click ⌄ beside the name of the pane;
Rotation	- in here converted model can be rotated in X, Y or Z axis; - an axis and angle of rotation can be selected; - the rotation is performed to the right, so if e.g. 90^{o} is selected, the object will rotate to the right by this angle around the selected axis;

	- to easily imagine it, clench your right hand into a fist and direct the thumb up – the thumb represents the axis and other fingers show the direction of rotation; - the rotation can be undone – option **Undo rotation** (1 step back) or you can go back to the original position of the model – option **Restore**; - this pane is closed by default – to open it click the » button;
Insertion point	- used to establish an insertion point on the model, on the basis of which the insertion of the model to the project will be performed; - this point will be inserted first to the project when the **Point and angle** method of insertion is used, and it designate the axis of rotation; - the insertion point locates itself in the project on a defined level (it can be established in the **Data** pane – by default it is 0 mm – the floor level); - there is 7 available types of points – **the original point of the object**, **upper** and **bottom corner**, **upper** and **bottom central** and **upper** and **bottom edge**; - **the original point of the object** is a point that has been originally designated for the given model by its drawer (useful if it is untypically located, this is when it cannot be attributed using any of the points described below); - all other points are located in characteristic points of a hypothetical cuboid outline of the object; - **corner points** are located in left end points of the sides of the hypothetical rectangle which is a back side of the outline; - **central points** are points located on the axis of symmetry of the model (looking from above or from beneath) this is in the intersection of the diagonals of the rectangle being the ‘base’ or the ‘top’ of the model outline; - **edge points** are located exactly in the middle of the side of the rectangle, which is a back side of the hypothetical outline; - examples: **bottom corner**: rectangle bathtubs, bottom cabinets; **upper corner**: upper cabinets; **bottom central**: table lamps, human figures; **upper central**: ceiling lamps; bottom edge: sofas, standard toilets and bidets; upper edge: washbasins, mirrors, suspended toilets and bidets; - the **Insertion point** pane is by default closed when the **Converter** is run for the first time – to open it, click » beside its name;
Grid density	- in this pane model’s grid (mesh) can be minimized; - it is recommended for objects with too many faces; - the limit number of surfaces is 100 000 – when it is exceeded a communicate will be displayed in the bottom central part of the dialog, informing that the minimization of the grid is recommended; - it is suggested to minimize the grid of converted models as much as possible until it starts to negatively influence their appearance, because the biggest is the number of surfaces in the project, the slower is the program operation; - the grid can be minimized up to 70% at once;

- the operation results in reducing the number of faces of which the model consists;
- the minimization can be performed many times;
- to undo introduced changes click the **Restore** button – the model will be restored to the original form;
- the pane is hidden by default – to open it, click ︾ beside the name of the pane;
- the slider of the **Grid density** minimization becomes active after the conversion of the model;

All panes described above can be freely hidden or opened (examples presented on the illustration on the next page – Fig. 142). When the module is run for the first time only two panes (**Preview** and **Data**) are open. To open another pane, click ≫ beside its name. To hide a pane, click the same button (it will look this way this time: ︾).



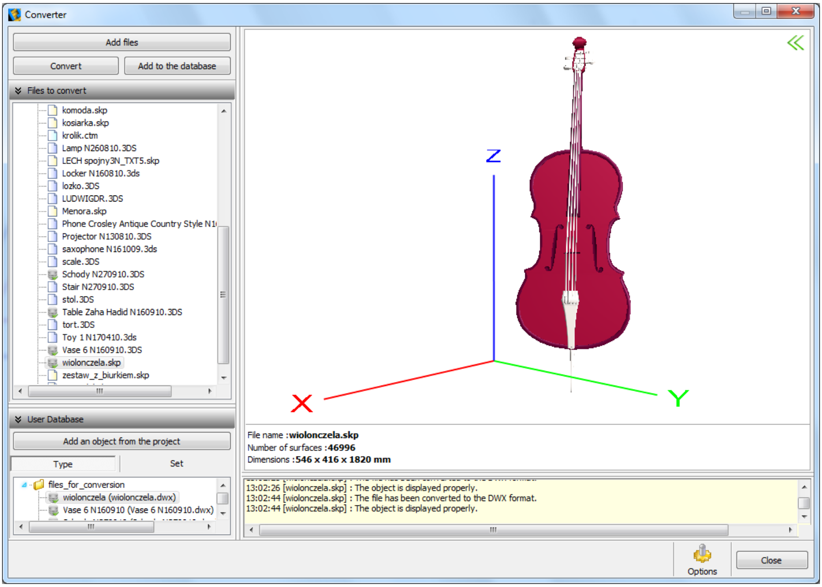
Name: wiolonczela
Producer:
Type: files_for_conversion
Set: files_for_conversion
Description:
Level: 0
Colour:
Price: 0,00
% VAT: 0
% Margin: 0,00
% Disc.: 0,00

Scaling: any
Scale factors: X 6,00; Y 6,00; Z 6,00
Dimensions [mm]: X 546; Y 416; Z 1820
Angle [°]: 45
Axis: ○ X ● Y ○ Z
Insertion point: The original point of the object
The original point of the object
Bottom corner
Upper corner
Bottom central
Upper central
Bottom edge
Upper edge

Scaling: any
Scale factors: X 1,00; Y 1,00; Z 1,00
Dimensions [mm]: X 183; Y 192; Z 291
Angle [°]: 45
Axis: ○ X ● Y ○ Z
Insertion point: Upper central

Fig. 142 – various configurations of panes in right side of Converter's dialog (the default view presented on the left)

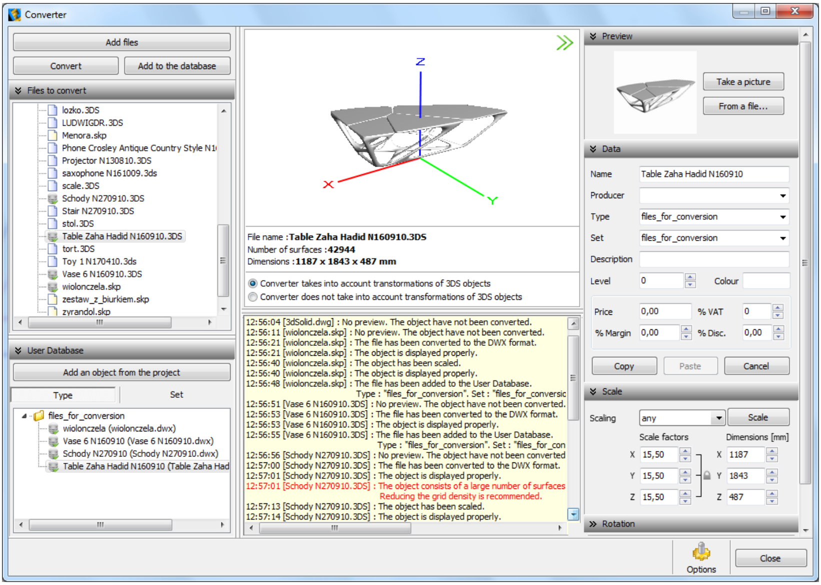
It is possible to close the whole right-hand part of the **Converter's** dialog to gain more space for visualization of the model. All parts of the dialog can be freely moved and adjusted, accordingly to current user's needs. (Fig. 143 and 144).


Converter
Add files
Convert
Add to the database
Files to convert
komoda.skp
kosiarka.skp
krolik.ctm
Lamp N260810.3DS
LECH spojny3N_TXT5.skp
Locker N160810.3ds
lozko.3DS
LUDWIGDR.3DS
Menora.skp
Phone Crosley Antique Country Style N1
Projector N130810.3DS
saxophone N161009.3ds
scale.3DS
Schody N270910.3DS
Stair N270910.3DS
stol.3DS
Table Zaha Hadid N160910.3DS
tort.3DS
Toy 1 N170410.3ds
Vase 6 N160910.3DS
wiolonczela.skp
zestaw_z_biurkiem.skp
User Database
Add an object from the project
Type
Set
files_for_conversion
wiolonczela (wiolonczela.dwx)
Vase 6 N160910 (Vase 6 N160910.dwx)
Z
X
Y
Options
Close

File name :**wiolonczela.skp**
Number of surfaces :**46996**
Dimensions :**546 x 416 x 1820 mm**

```
13:02:26 [wiolonczela.skp] : The object is displayed properly.
13:02:44 [wiolonczela.skp] : The file has been converted to the DWX format.
13:02:44 [wiolonczela.skp] : The object is displayed properly.
```

Fig. 143 – right part of the dialog is closed, and the list of files added to the User Database is hidden


Converter
Add files
Convert
Add to the database
Files to convert
lozko.3DS
LUDWIGDR.3DS
Menora.skp
Phone Crosley Antique Country Style N1
Projector N130810.3DS
saxophone N161009.3ds
scale.3DS
Schody N270910.3DS
Stair N270910.3DS
stol.3DS
Table Zaha Hadid N160910.3DS
tort.3DS
Toy 1 N170410.3ds
Vase 6 N160910.3DS
wiolonczela.skp
zestaw_z_biurkiem.skp
zyrandol.skp
User Database
Add an object from the project
Type
Set
files_for_conversion
wiolonczela (wiolonczela.dwx)
Vase 6 N160910 (Vase 6 N160910.dwx)
Schody N270910 (Schody N270910.dwx)
Table Zaha Hadid N160910 (Table Zaha Had
Z
X
Y
Preview
Take a picture
From a file...
Data
Copy
Paste
Cancel
Scale
Scale factors
Dimensions [mm]
Rotation
Options
Close

File name :**Table Zaha Hadid N160910.3DS**
Number of surfaces :**42944**
Dimensions :**1187 x 1843 x 487 mm**

● Converter takes into account transtormations of 3DS objects
○ Converter does not take into account transformations of 3DS objects

```
12:56:04 [3dSolid.dwg] : No preview. The object have not been converted.
12:56:11 [wiolonczela.skp] : No preview. The object have not been converted.
12:56:21 [wiolonczela.skp] : The file has been converted to the DWX format.
12:56:21 [wiolonczela.skp] : The object is displayed properly.
12:56:40 [wiolonczela.skp] : The object has been scaled.
12:56:40 [wiolonczela.skp] : The object is displayed properly.
12:56:48 [wiolonczela.skp] : The file has been added to the User Database.
                         Type : "files_for_conversion". Set : "files_for_conversic
12:56:51 [Vase 6 N160910.3DS] : No preview. The object have not been converted.
12:56:53 [Vase 6 N160910.3DS] : The file has been converted to the DWX format.
12:56:53 [Vase 6 N160910.3DS] : The object is displayed properly.
12:56:55 [Vase 6 N160910.3DS] : The file has been added to the User Database.
                              Type : "files_for_conversion". Set : "files_for_con
12:56:56 [Schody N270910.3DS] : No preview. The object have not been converted
12:57:00 [Schody N270910.3DS] : The file has been converted to the DWX format.
12:57:01 [Schody N270910.3DS] : The object is displayed properly.
12:57:01 [Schody N270910.3DS] : The object consists of a large number of surfaces
                               Reducing the grid density is recommended.
12:57:13 [Schody N270910.3DS] : The object has been scaled.
12:57:14 [Schody N270910.3DS] : The object is displayed properly.
```

Name: Table Zaha Hadid N160910
Producer:
Type: files_for_conversion
Set: files_for_conversion
Description:
Level: 0
Colour:
Price: 0,00
% VAT: 0
% Margin: 0,00
% Disc.: 0,00
Scaling: any
Scale factors: X 15,50; Y 15,50; Z 15,50
Dimensions [mm]: X 1187; Y 1843; Z 487

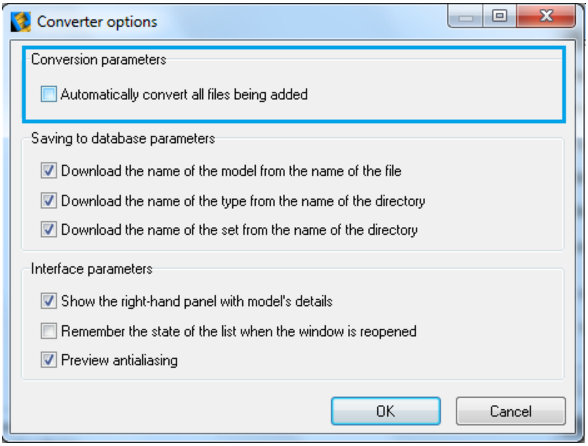
Fig. 144 – right part of the dialog is open and the part with information about undertaken actions is expanded

4. Conversion of 3D models

During the conversion reading of model's geometry is performed. There are 2 procedures of conversion available.

Firstly, files can be added to the list for conversion and then converted in any order by left-clicking on a selected file and then clicking the **Convert** Convert button.

Secondly, an automatic conversion of each added model can be set up (it will be converted straight after loading to the list). This function is available at the **Options** Opcje button in a bottom right corner of the dialog box, which opens another dialog box, presented below (Fig. 145).


Converter options

Conversion parameters

☐ Automatically convert all files being added

Saving to database parameters

☑ Download the name of the model from the name of the file

☑ Download the name of the type from the name of the directory

☑ Download the name of the set from the name of the directory

Interface parameters

☑ Show the right-hand panel with model's details

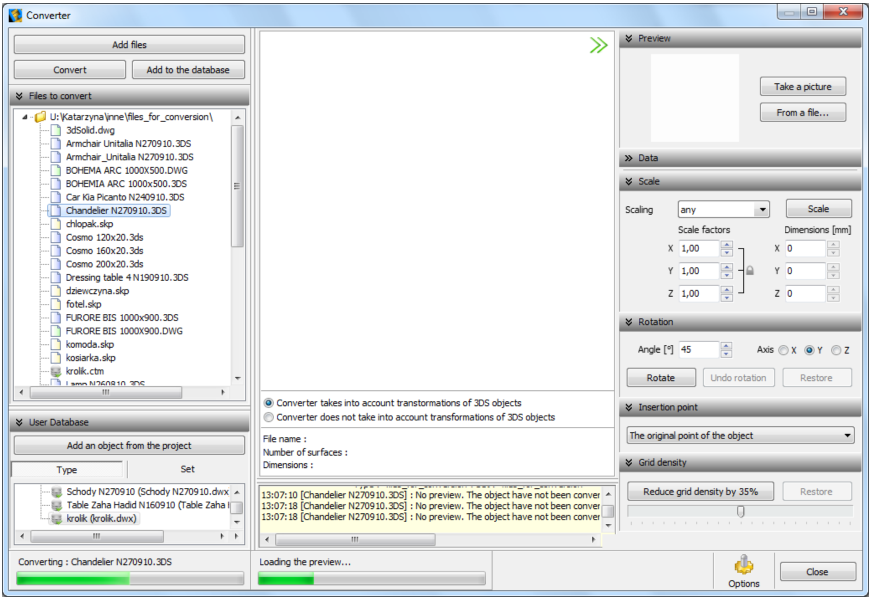
☐ Remember the state of the list when the window is reopened

☑ Preview antialiasing

Fig. 145 – additional converter's options

During the conversion in the bottom of the dialog progress bars are displayed for each conducted operation (Fig. 146).

After the conversion is successfully completed in the central part of the dialog the visualization of the converted model will be displayed, and below there will be information given: **time: [file's name]: The file has been converted to the DWX format** and **time: [file's name]: The object is displayed properly** (Fig. 147).


Converter
Add files
Convert
Add to the database
Files to convert
User Database
Add an object from the project
Type
Set
Preview
Take a picture
From a file…
Data
Scale
Scaling
Scale
Scale factors
Dimensions [mm]
Rotation
Rotate
Undo rotation
Restore
Insertion point
Grid density
Reduce grid density by 35%
Restore
Options
Close

U:\Katarzyna\inne\files_for_conversion\
3dSolid.dwg
Armchair Unitalia N270910.3DS
Armchair_Unitalia N270910.3DS
BOHEMA ARC 1000X500.DWG
BOHEMIA ARC 1000x500.3DS
Car Kia Picanto N240910.3DS
Chandelier N270910.3DS
chlopak.skp
Cosmo 120x20.3ds
Cosmo 160x20.3ds
Cosmo 200x20.3ds
Dressing table 4 N190910.3DS
dziewczyna.skp
fotel.skp
FURORE BIS 1000x900.3DS
FURORE BIS 1000X900.DWG
komoda.skp
kosiarka.skp
krolik.ctm

Schody N270910 (Schody N270910.dwx
Table Zaha Hadid N160910 (Table Zaha I
krolik (krolik.dwx)

Scaling: any
X 1,00 Y 1,00 Z 1,00
X 0 Y 0 Z 0

Angle [°] 45 Axis ○ X ● Y ○ Z

The original point of the object

● Converter takes into account transformations of 3DS objects
○ Converter does not take into account transformations of 3DS objects

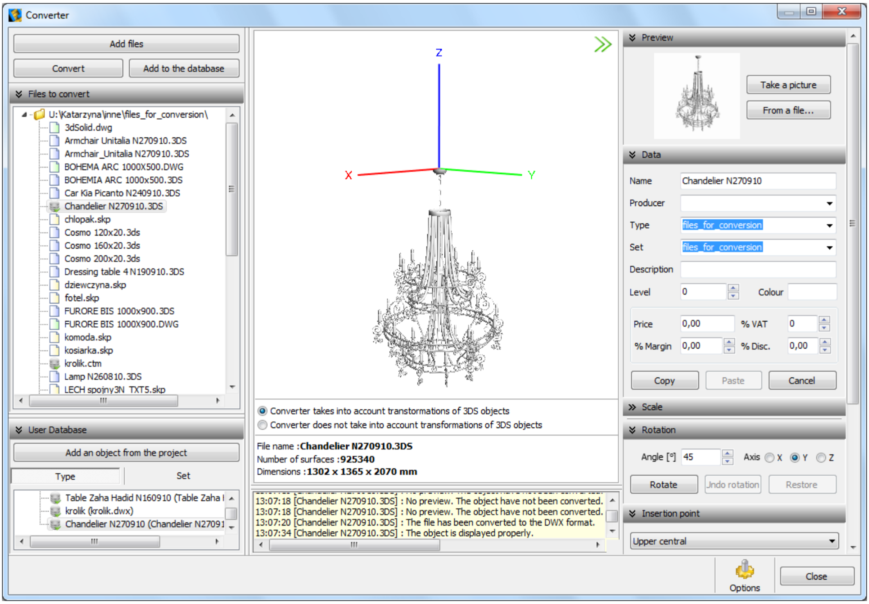
File name :
Number of surfaces :
Dimensions :

```
13:07:10 [Chandelier N270910.3DS] : No preview. The object have not been conver
13:07:18 [Chandelier N270910.3DS] : No preview. The object have not been conver
13:07:18 [Chandelier N270910.3DS] : No preview. The object have not been conver
```

Converting : Chandelier N270910.3DS

Loading the preview…

Fig. 146 – conversion in progress


Converter
Add files
Convert
Add to the database
Files to convert
User Database
Add an object from the project
Type
Set
Z
X
Y
Preview
Take a picture
From a file…
Data
Copy
Paste
Cancel
Scale
Rotation
Rotate
Undo rotation
Restore
Insertion point
Options
Close

U:\Katarzyna\inne\files_for_conversion\
3dSolid.dwg
Armchair Unitalia N270910.3DS
Armchair_Unitalia N270910.3DS
BOHEMA ARC 1000X500.DWG
BOHEMIA ARC 1000x500.3DS
Car Kia Picanto N240910.3DS
Chandelier N270910.3DS
chlopak.skp
Cosmo 120x20.3ds
Cosmo 160x20.3ds
Cosmo 200x20.3ds
Dressing table 4 N190910.3DS
dziewczyna.skp
fotel.skp
FURORE BIS 1000x900.3DS
FURORE BIS 1000X900.DWG
komoda.skp
kosiarka.skp
krolik.ctm
Lamp N260810.3DS
LECH spojny3N_TXT5.skp

Table Zaha Hadid N160910 (Table Zaha I
krolik (krolik.dwx)
Chandelier N270910 (Chandelier N27091

Name: Chandelier N270910
Producer:
Type: files_for_conversion
Set: files_for_conversion
Description:
Level: 0 Colour:
Price: 0,00 % VAT: 0
% Margin: 0,00 % Disc.: 0,00

Angle [°] 45 Axis ○ X ● Y ○ Z

Upper central

● Converter takes into account transformations of 3DS objects
○ Converter does not take into account transformations of 3DS objects

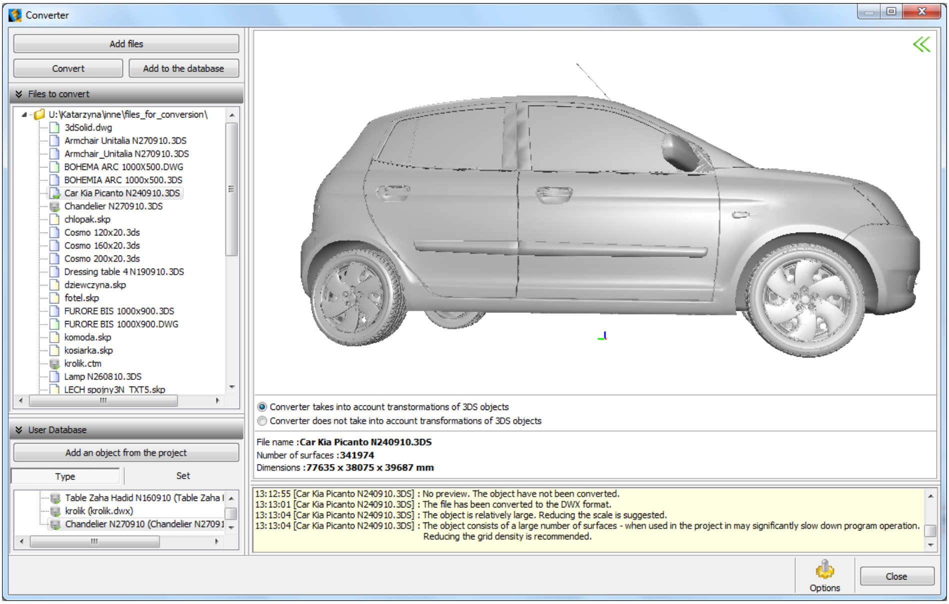
File name :**Chandelier N270910.3DS**
Number of surfaces :**925340**
Dimensions :**1302 x 1365 x 2070 mm**

```
13:07:18 [Chandelier N270910.3DS] : No preview. The object have not been converted.
13:07:18 [Chandelier N270910.3DS] : No preview. The object have not been converted.
13:07:20 [Chandelier N270910.3DS] : The file has been converted to the DWX format.
13:07:34 [Chandelier N270910.3DS] : The object is displayed properly.
```

Fig. 147 – an example converted model

In case of some files an information about recommended scaling or minimizing the object's grid may display (Fig. 148). This will happen if the converted object has been recognized by the program as too big or too small or if it consists of too many surfaces.

If the model with a very big number of surfaces is used in the project, it significantly slows down program operation because time-consuming calculations of all those surfaces are necessary.


Converter
Add files
Convert
Add to the database
Files to convert
U:\Katarzyna\inne\files_for_conversion\
3dSolid.dwg
Armchair Unitalia N270910.3DS
Armchair_Unitalia N270910.3DS
BOHEMA ARC 1000X500.DWG
BOHEMIA ARC 1000x500.3DS
Car Kia Picanto N240910.3DS
Chandelier N270910.3DS
chlopak.skp
Cosmo 120x20.3ds
Cosmo 160x20.3ds
Cosmo 200x20.3ds
Dressing table 4 N190910.3DS
dziewczyna.skp
fotel.skp
FURORE BIS 1000x900.3DS
FURORE BIS 1000X900.DWG
komoda.skp
kosiarka.skp
krolik.ctm
Lamp N260810.3DS
LECH spojny3N_TXT5.skp
User Database
Add an object from the project
Type
Set
Table Zaha Hadid N160910 (Table Zaha I
krolik (krolik.dwx)
Chandelier N270910 (Chandelier N27091
Options
Close

● Converter takes into account transtormations of 3DS objects
○ Converter does not take into account transformations of 3DS objects

File name :**Car Kia Picanto N240910.3DS**
Number of surfaces :**341974**
Dimensions :**77635 x 38075 x 39687 mm**

```
13:12:55 [Car Kia Picanto N240910.3DS] : No preview. The object have not been converted.
13:13:01 [Car Kia Picanto N240910.3DS] : The file has been converted to the DWX format.
13:13:04 [Car Kia Picanto N240910.3DS] : The object is relatively large. Reducing the scale is suggested.
13:13:04 [Car Kia Picanto N240910.3DS] : The object consists of a large number of surfaces - when used in the project in may significantly slow down program operation.
                                         Reducing the grid density is recommended.
```

Fig. 148 – recommended scaling and grid minimization

Beside the file that has been successfully converted, this symbol: appears on the list of files for conversion. The visualization of the model can be saved as a preview of the object and use as illustration of this model in the database (option **Take a picture** Take a picture in the upper right corner). The axis of dimensions will not be visible on the picture.

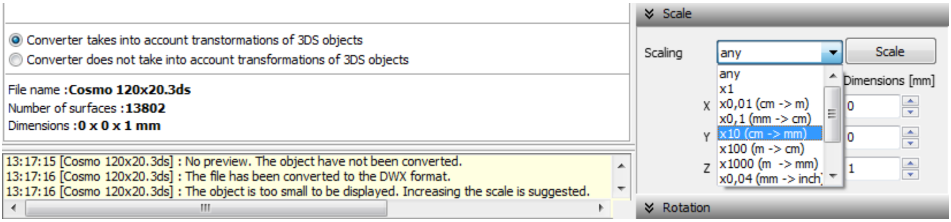
As a preview in the database also any JPG or BMP file can be used, e.g. downloaded from the Internet together with the 3D file for conversion. In this case use the option **From a file** From a file....

During the conversion reading of object’s geometry is performed. If information about different colours is saved in this geometry, the program will recognize these differences and divide the converted model to a few layers, accordingly to those original colours. Various layers can be attributed with various textures and properties in visualization (after inserting the object to the project – the procedure described in the next chapter). And so the object in visualization can have e.g. wooden, metal and glass parts, if the original model had been properly drawn.

5. Scaling converted models

Converted models can be freely scaled, accordingly to user’s needs. If no scale is selected, the program will perform default scaling.

The scale can be defined before the conversion of after it, if the size of the model is inappropriate, this is: too big or too small in relation to reality. The user will be informed about this is a communicate displayed in the bottom central part of the dialog (Fig. 149). Model’s dimensions are given below the list of available scales and below the visualization of the model.



● Converter takes into account transtormations of 3DS objects
○ Converter does not take into account transformations of 3DS objects

File name :**Cosmo 120x20.3ds**
Number of surfaces :**13802**
Dimensions :**0 x 0 x 1 mm**

```
13:17:15 [Cosmo 120x20.3ds] : No preview. The object have not been converted.
13:17:16 [Cosmo 120x20.3ds] : The file has been converted to the DWX format.
13:17:16 [Cosmo 120x20.3ds] : The object is too small to be displayed. Increasing the scale is suggested.
```

Scaling: any

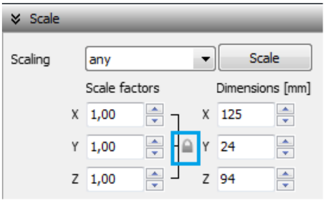
Dimensions [mm]
X 0
Y 0
Z 1

Fig. 149 – a communicate about a necessary scaling and selection of the scale

By default all dimensions are changed simultaneously and proportionally (Fig. 150).

To change dimensions independently from each other (this is: establish the values of X, Y and Z separately), select **any** on the list of available scales, and then click on the **locker** (option **Keep aspect ratio**) beside the **Scale factors**.

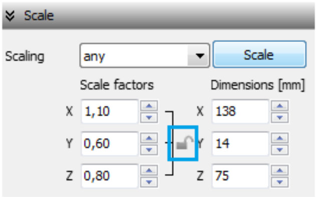
Illustrations below present the mode of keeping proportions and not taking the proportions into account (Fig. 150 and 151). To perform scaling, click the **Scale** button.



Scaling: any

	Scale factors		Dimensions [mm]
X	1,00	X	125
Y	1,00	Y	24
Z	1,00	Z	94

Fig. 150 – Scale pane – keeping proportions turned on

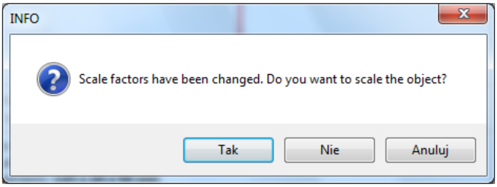


Scaling: any

	Scale factors		Dimensions [mm]
X	1,10	X	138
Y	0,60	Y	14
Z	0,80	Z	75

Fig. 151– keeping proportions during scaling turned off

If the user sets new aspect ratio for a model but then clicks on another model on the list of files for conversion without clicking the **Scale** button, program will ask if the previous model (for which the ratio has been changed) should be scaled, to prevent the user from forgetting to do it (Fig. 152).



Scale factors have been changed. Do you want to scale the object?

Fig. 152 – a request for confirmation if the model should be scaled

6. Adding converted models to the User Database

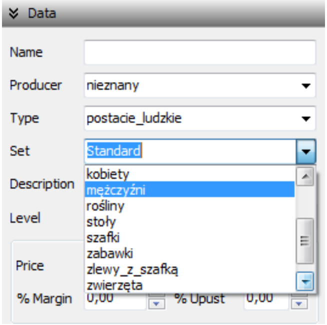
After performing the conversion the models can be quickly and easily added the user's own database by clicking the button **Add to the database** Add to the database in an upper left corner of the **Converter's** dialog box.

Added models are available to use them in the current project straight away. Beside the position of the file added to the database on the list a new symbol displays: , and at the same time a new position is added on the list of the models saved in the database in the bottom left corner.

While adding a model to the User Database enter the information about the model in the **Data** pane in the right part of the **Converter's** dialog:

- **models name** – may be copied from the name of the file which has been converted (this option is active by default - to disable this function click the **Options** Opcje button and deselect the position **Download the name of the model from the name of the file**);

- you can enter your own name for the model as well as change the name during the edition of the element;
- in the **producer** field the name of the company from which offer the model comes from can be entered;
- in the **Type** and **Set** fields the name of the directory in which the file has been located on the disk is displayed by default (option is active by default - to disable this function click the **Options** button and deselect positions Do**wnload the name of the type from the name of the director**y and **Download the name of the set from the name of the directory**;
- you can also enter your own names of the type and set of the element;
- each new position entered in fields **Producer**, **Type** or **Set** is added to the drop-down list and can be selected from this list in the future instead of being entered again (Fig. 153);



Name

Producer: nieznany

Type: postacie_ludzkie

Set: Standard

kobiety
mężczyźni
rośliny
stoły
szafki
zabawki
zlewy_z_szafką
zwierzęta

% Margin: 0,00

% Upust: 0,00

Fig. 153 – drop-down list of sets

- if the type and the set are not defined, the program automatically creates a directory called **Standard** in the database, to which all models without specified set or type will be added;
- a short characteristic of the product can be added – up to 70 signs – in the field **Description**;
- for some models it is recommended to set the insertion level (e.g. mirrors, washbasins, suspended toilets, ceiling lamps etc.);
- the default insertion level is 0 mm – this is the level of a standard floor in the project;
- available colours for the model can be also given – in the field **Colour**; the designation entered here has no real influence on the colour of the object but is added as an information in the summary of used elements stating in which colours the model can be purchased;
- model saved in the User Database can be attributed a palette compatible with the designed colour – the procedure is described in Chapter 16 (page 118).

If the user wants to supplement some data later on, it will be possible after editing the model saved in the User Database. The **Converter's** dialog will open and it will be possible to enter new information or change the entries in the **Data** pane.

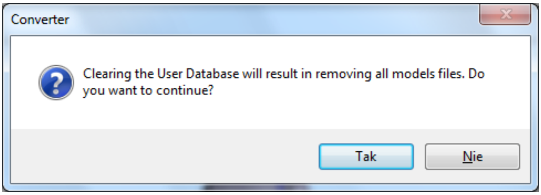
To actualize the information, click in some other field in this pane than the one you modified. It will result in modification visible on the list in User Database field in bottom left corner of the module's dialog (e.g. after adding a new type a new directory will appear on the list, and if the name of the model has been changed – the new name should be displayed on the list). Closing the Converter's dialog after entering modifications will also update the data in the base.

7. Removing objects from the User Database in Converter 3D module

To remove a single object from the **User Database** from the Converter's level, click on the chosen position on the list first with the left, and then right mouse button and select the position **Remove from the database** in the expanded menu (or press **<Delete>**).

To remove a few objects at the same time, press **<Ctrl>** or **<Shift>** and then left click on all chosen positions on the list to select them, then right-click to open a context menu and select the position **Remove from the database** in it (or press **<Delete>**).
To remove all objects from the database right-click in any position on the list and select the option **Clear the User Database** (or press **<Shift + Del>**).

In each case selected objects will be removed from the database. After selecting the **Clear…** option the user will have to confirm that all the elements really should be deleted (Fig. 154).



Clearing the User Database will result in removing all models files. Do you want to continue?

Fig. 154 – a request for confirmation that the database should be cleared

8. Importing and exporting the User Database in Converter 3D module

The User Database can be exported or imported as a whole from the converter window. To do it, right-click in the User Database list and select one of the following options: **Export database** or **Import database** (available also under keys **<Ctrl+I>** and **<Ctrl+E>**) (Fig. 155).

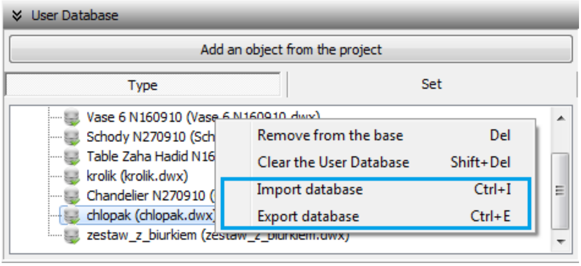
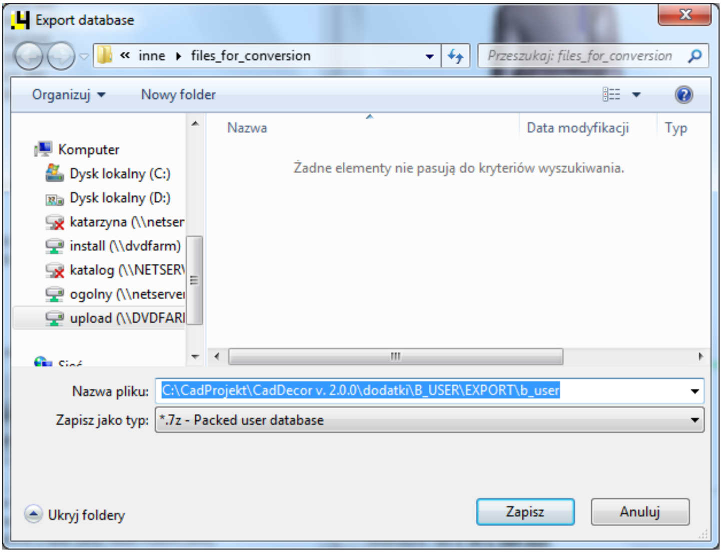

User Database
Add an object from the project
Type
Set
Vase 6 N160910 (Vase 6 N160910.dwx)
Schody N270910 (Sch
Table Zaha Hadid N16
krolik (krolik.dwx)
Chandelier N270910 (
chlopak (chlopak.dwx)
zestaw_z_biurkiem (zestaw_z_biurkiem.dwx)
Remove from the base Del
Clear the User Database Shift+Del
Import database Ctrl+I
Export database Ctrl+E

Fig. 155– options of export and import of the User Database

After selecting the **Export database** option a dialog called **Saving as** will open, in which the location for the packed copy of the database should be defined.

By default the program will use the following location to save the exported database: **c:\CadProjekt\CadDecor v. 2.X.X\dodatki\B_USER\EXPORT\b_user**, but it may be changed to any other location (Fig. 138).

After selecting the Import database option a dialog called **Opening** will open, in which the location of a packed copy of the User Database should be indicated and the **Open** button should be clicked (Fig. 156).

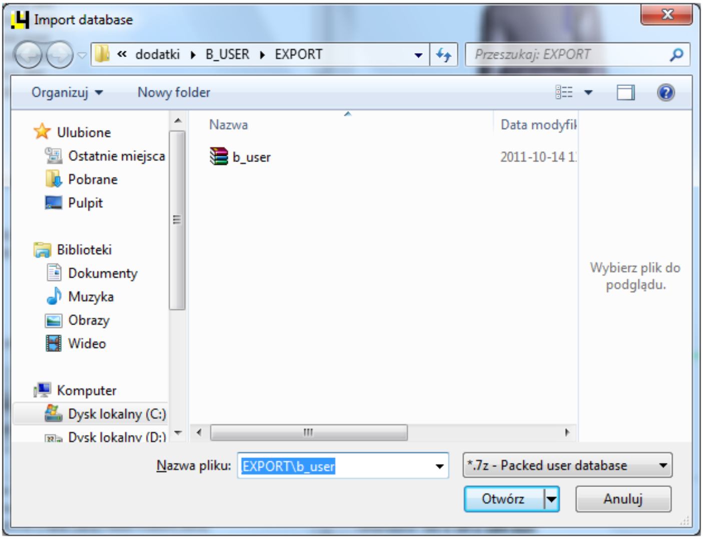

Export database
« inne ▸ files_for_conversion
Przeszukaj: files_for_conversion
Organizuj ▾
Nowy folder
Nazwa
Data modyfikacji
Typ
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
katarzyna (\\netser
install (\\dvdfarm)
katalog (\\NETSER\
ogolny (\\netserve
upload (\\DVDFARI
Sieć
Zapisz
Anuluj
Ukryj foldery

Żadne elementy nie pasują do kryteriów wyszukiwania.

Nazwa pliku: C:\CadProjekt\CadDecor v. 2.0.0\dodatki\B_USER\EXPORT\b_user

Zapisz jako typ: *.7z - Packed user database

Fig. 156 – exporting the User Database


Import database
« dodatki ▸ B_USER ▸ EXPORT
Przeszukaj: EXPORT
Organizuj ▾
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
Nazwa
Data modyfi
b_user
2011-10-14 1
Otwórz
Anuluj

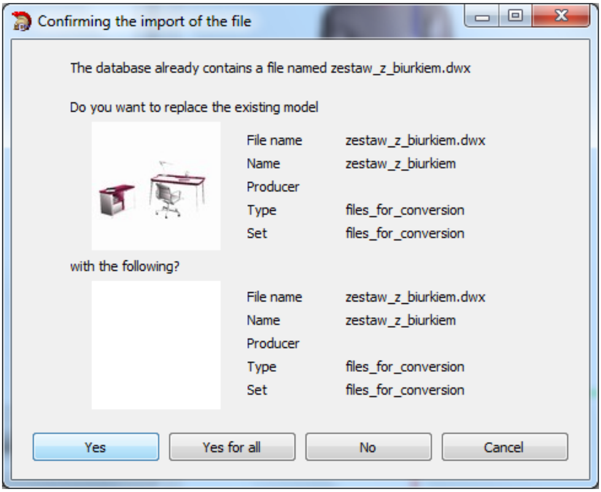
Wybierz plik do podglądu.

Nazwa pliku: EXPORT\b_user

*.7z - Packed user database

Fig. 157 – importing the User Database

Elements already existing in the **User Database**, different then the ones from the imported database, will remain unchanged. If the file of the same name as an existing one is detected, the program will ask what to do with it – whether it should be overwritten on the existing file or omitted (Fig. 158).


Confirming the import of the file
Yes
Yes for all
No
Cancel

The database already contains a file named zestaw_z_biurkiem.dwx

Do you want to replace the existing model

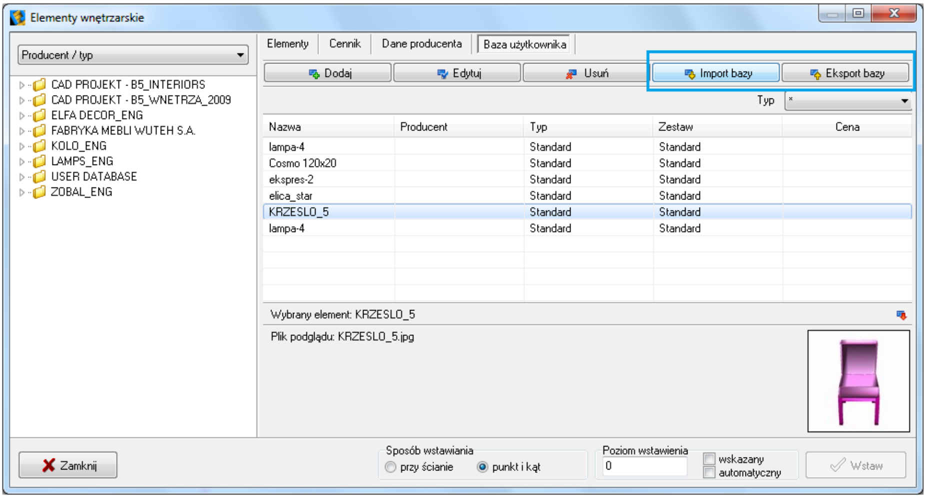
File name zestaw_z_biurkiem.dwx
Name zestaw_z_biurkiem
Producer
Type files_for_conversion
Set files_for_conversion

with the following?

File name zestaw_z_biurkiem.dwx
Name zestaw_z_biurkiem
Producer
Type files_for_conversion
Set files_for_conversion

Fig. 158 – confirming an import of a file with a name identical with the one already existing in the database

Options of import and export of the **User Database** of 3D models are available also in the **Interior design elements** dialog box, available under the icon (Fig. 159). The procedure is analogical to the one described above.


Elementy wnętrzarskie
Producent / typ
Elementy
Cennik
Dane producenta
Baza użytkownika
Dodaj
Edytuj
Usuń
Import bazy
Eksport bazy
Typ
*
Zamknij
Wstaw

CAD PROJEKT - B5_INTERIORS
CAD PROJEKT - B5_WNETRZA_2009
ELFA DECOR_ENG
FABRYKA MEBLI WUTEH S.A.
KOLO_ENG
LAMPS_ENG
USER DATABASE
ZOBAL_ENG

Nazwa	Producent	Typ	Zestaw	Cena
lampa-4		Standard	Standard	
Cosmo 120x20		Standard	Standard	
ekspres-2		Standard	Standard	
elica_star		Standard	Standard	
KRZESLO_5		Standard	Standard	
lampa-4		Standard	Standard	

Wybrany element: KRZESLO_5

Plik podglądu: KRZESLO_5.jpg

Sposób wstawiania
○ przy ścianie ● punkt i kąt

Poziom wstawienia
0

☐ wskazany
☐ automatyczny

Fig. 159 – Import database and Export database in Interior design elements dialog box

CHAPTER 16
The User Database of 3D models

1. Introductory remarks

In CAD Decor it is possible to create user's own personal database of various elements, which can be edited. This functionality is available in CAD Interiors module, which used to be a separate application but currently is an integral part of CAD Decor, CAD Decor Paradyz and CAD Kitchens programs. In the newest versions of our software **User Database** is closely related to the **Converter 3D** module, described in the previous chapter of this manual. The access to the **User Database** can be gained in the **Interior design elements** or in the **Converter 3D** dialog box. Models that are being added to the database have to be saved in DXW format, which is an original CAD Projekt K&A's file format.

2. Creating a User Database

To gain the access to the **User Database** follow one of the procedures below:

- click the icon **Interior Design Elements** located on **CAD-Decor** icon bar;
- click the icon **Converter 3D** located on the same icon bar.

In the first case functions of adding, editing and deleting elements from the database, as well as options of importing and exporting the whole base, are available in the **User Database** tab (Fig. 160). After clicking the **Add** button, the **Converter's** dialog will open. If the list of files for conversion is empty (when the program is run for the first time or when run without an active option of remembering the list), the dialog called **Add models for conversion** is automatically opened to enable selection of files which are to be converted or simply added to the database (Fig. 161).

In the second case the current content of the database is displayed in the User Database field in the lower left corner of the **Converter's** dialog box.

Note! Not all files that are being added to the User Database have to be converted – this refers to models downloaded from our website, which are saved in DWX format, and inserts – this is blocks used in the project, which can also be added to the database.

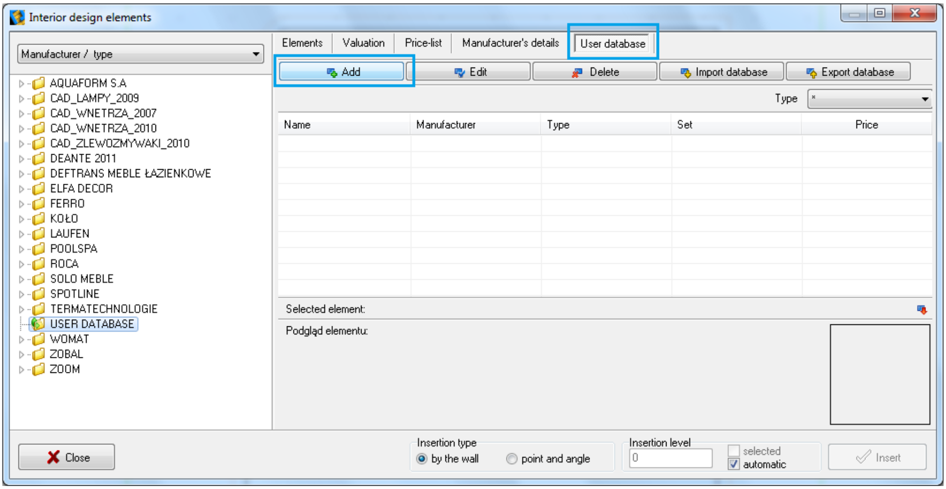
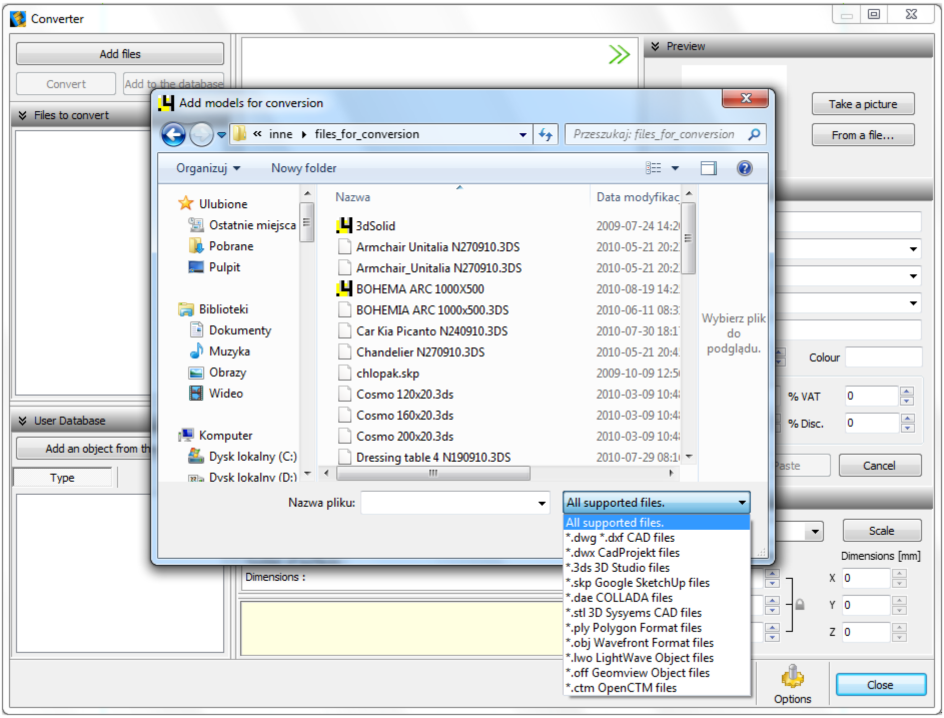

Interior design elements
Manufacturer / type
AQUAFORM S.A
CAD_LAMPY_2009
CAD_WNETRZA_2007
CAD_WNETRZA_2010
CAD_ZLEWOZMYWAKI_2010
DEANTE 2011
DEFTRANS MEBLE ŁAZIENKOWE
ELFA DECOR
FERRO
KOŁO
LAUFEN
POOLSPA
ROCA
SOLO MEBLE
SPOTLINE
TERMATECHNOLOGIE
USER DATABASE
WOMAT
ZOBAL
ZOOM
Elements
Valuation
Price-list
Manufacturer's details
User database
Add
Edit
Delete
Import database
Export database
Type
Name
Manufacturer
Type
Set
Price
Selected element:
Podgląd elementu:
Close
Insertion type
● by the wall
○ point and angle
Insertion level
0
☐ selected
☑ automatic
Insert

Fig. 160 – Interior design elements dialog, User Database tab


Converter
Add files
Convert
Add to the database
Files to convert
User Database
Add an object from th
Type
Preview
Take a picture
From a file…
Colour
% VAT
0
% Disc.
0
Paste
Cancel
Scale
Dimensions [mm]
X 0
Y 0
Z 0
Dimensions :
Options
Close
Add models for conversion
« inne › files_for_conversion
Przeszukaj: files_for_conversion
Organizuj
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
Wybierz plik do podglądu.
Nazwa pliku:
All supported files.

Nazwa	Data modyfikac
3dSolid	2009-07-24 14:2
Armchair Unitalia N270910.3DS	2010-05-21 20:2
Armchair_Unitalia N270910.3DS	2010-05-21 20:2
BOHEMA ARC 1000X500	2010-08-19 14:2
BOHEMIA ARC 1000x500.3DS	2010-06-11 08:3
Car Kia Picanto N240910.3DS	2010-07-30 18:1
Chandelier N270910.3DS	2010-05-21 20:4
chlopak.skp	2009-10-09 12:5
Cosmo 120x20.3ds	2010-03-09 10:4
Cosmo 160x20.3ds	2010-03-09 10:4
Cosmo 200x20.3ds	2010-03-09 10:4
Dressing table 4 N190910.3DS	2010-07-29 08:1

All supported files.
*.dwg *.dxf CAD files
*.dwx CadProjekt files
*.3ds 3D Studio files
*.skp Google SketchUp files
*.dae COLLADA files
*.stl 3D Sysyems CAD files
*.ply Polygon Format files
*.obj Wavefront Format files
*.lwo LightWave Object files
*.off Geomview Object files
*.ctm OpenCTM files

Fig. 161 – Converter 3D and a dialog of selecting files for conversion

To add a file in a format different than DWX:

- run the module **Converter 3D** (icon or the **Add** button in the **User Database** tab in the **Interior design elements** dialog box);
- if the list of models for conversion is empty, the dialog **Add models for conversion** will open (if not, click the button **Add files**);
- select a file (or any number of files) in a format subject to conversion, e.g. **DWG: 3dFace and 3dSolid, DXF, 3DS, SKP, DAE, STL, PLY, OBJ, LWO, OFF, CTM** and click **Open;**
- selected files will be downloaded to the list Files for conversion, displayed in the left part of the **Converter's** dialog;
- before saving a file in the **User Database** it should be converted;
- if necessary also scaling and or minimization of the grid should be performed;
- these procedures have been described in Chapter 15;
- after conversion and possible modifications of the model, it is recommended to fill up the information in the **Data** pane in the right part of the **Converter's** dialog (name, type, set, description, insertion level, colour, price, margin, Vat and price) and then click the button **Add to the database**;
- information can be also entered or modified later, while editing an element from the database;
- the object added to the base it available to be used in the project straight away – to do it, close the **Converter**, open the Interior design elements dialog (**Elements** tab), select **User Database** on the list of libraries in the left part of the dialog box, then select the model you want to use and click Insert (procedure of inserting objects in the project has been described in Chapter 13);

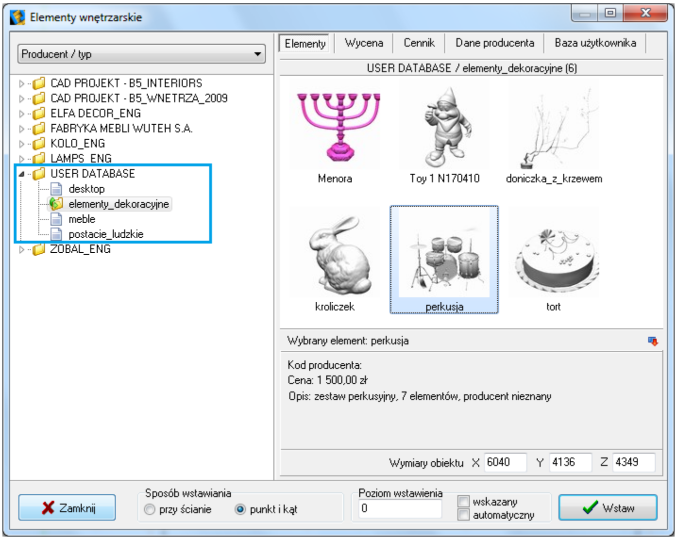
To add a DWX file, downloaded from our website: www.cadprojekt.com.pl/EN

- download the file and save it in a convenient location on the disk (e.g. on the desktop);
- run **Converter 3D** module;
- in the **Add models for conversion** dialog select the DWX file;
- when the file appears on the list, complete its data and click **Add to the database**;
- the model will be saved in the **User Database** and can be used in the project straight away.

To add an object from the project (e.g. modified model from a producer database, such as bathtub with removed battery):

- run **Converter 3D** module and click the **Add to the database** button;
- the **Converter's** dialog will close to make it possible for the user to select an object in the project, that is to be saved in the **User Database**;

- it can be any 3-dimensional object, also a self-created element, generated post or arc wall, as well as any model from producer or universal database;
- selected object will be added to the base with the same name, as is the name of the original object;
- the name can be changed and other data can be completed or modified – they will be updated immediately (e.g. newly added set will appear on the list in the **User Database** at once);
- to insert a model to the project, close the **Converter**, go to **Interior design elements** dialog (**Elements** tab), click on the position User Database on the list of databases in the left part of the dialog, select a type or set an finally – indicate the model and click **Insert** (Fig. 162).


Elementy wnętrzarskie
Producent / typ
CAD PROJEKT - B5_INTERIORS
CAD PROJEKT - B5_WNETRZA_2009
ELFA DECOR_ENG
FABRYKA MEBLI WUTEH S.A.
KOLO_ENG
LAMPS_ENG
USER DATABASE
desktop
elementy_dekoracyjne
meble
postacie_ludzkie
ZOBAL_ENG
Elementy
Wycena
Cennik
Dane producenta
Baza użytkownika
USER DATABASE / elementy_dekoracyjne (6)
Menora
Toy 1 N170410
doniczka_z_krzewem
kroliczek
perkusja
tort
Zamknij
Wstaw

Wybrany element: perkusja

Kod producenta:
Cena: 1 500,00 zł
Opis: zestaw perkusyjny, 7 elementów, producent nieznany

Wymiary obiektu X 6040 Y 4136 Z 4349

Sposób wstawiania ○ przy ścianie ● punkt i kąt

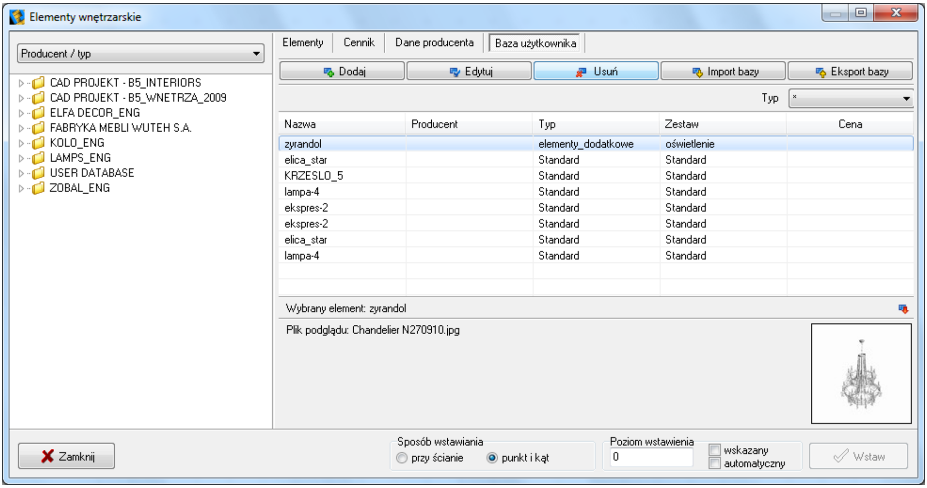
Poziom wstawienia 0 ☐ wskazany ☐ automatyczny

Fig. 162 – example models saved in the User Database

3. Editing and removing elements from the User Database

All elements saved in the **User Database** can be edited, e.g. to complete or change their data. After clicking the **Edit** Edit button the Converter's dialog will open. In its right part the modification of data can be performed (name, producer, the directories of type and set to which the model belongs, description, price etc.), as well as scaling the object and minimizing the grid of faces of which it consists. Introduced changes are saved immediately.

Selected elements can be also removed from the database – by clicking on them with the left mouse button and then selecting the **Delete** button (Fig. 163).


Elementy wnętrzarskie
Producent / typ
CAD PROJEKT - B5_INTERIORS
CAD PROJEKT - B5_WNETRZA_2009
ELFA DECOR_ENG
FABRYKA MEBLI WUTEH S.A.
KOLO_ENG
LAMPS_ENG
USER DATABASE
ZOBAL_ENG
Elementy
Cennik
Dane producenta
Baza użytkownika
Dodaj
Edytuj
Usuń
Import bazy
Eksport bazy
Typ
Zamknij
Sposób wstawiania
przy ścianie
punkt i kąt
Poziom wstawienia
wskazany
automatyczny
Wstaw

Nazwa	Producent	Typ	Zestaw	Cena
zyrandol		elementy_dodatkowe	oświetlenie	
elica_star		Standard	Standard	
KRZESLO_5		Standard	Standard	
lampa-4		Standard	Standard	
ekspres-2		Standard	Standard	
ekspres-2		Standard	Standard	
elica_star		Standard	Standard	
lampa-4		Standard	Standard	

Wybrany element: zyrandol

Plik podglądu: Chandelier N270910.jpg

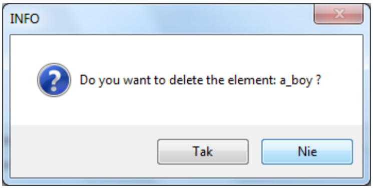
○ przy ścianie ● punkt i kąt

Poziom wstawienia: 0

☐ wskazany ☐ automatyczny

Fig. 163 – deleting a model from the User Database

The program will request a confirmation that the object should be deleted (Fig. 164).


INFO
Tak
Nie

Do you want to delete the element: a_boy ?

Fig. 164 – request for confirmation that the element is to be deleted from the User Database

4. Import and export of the User Database in the Interior design… dialog

The database of models can be imported or exported by using the buttons **Import database** or **Export database** in the **Interior design elements** dialog. During exporting the content of the database is copied and packed (to a **7z** format) and saved to a selected location. During importing this procedure is reversed – the user has to select the location of the packed base and click **Open** – the individual files saved in the imported database will be unpacked and saved to the User Database. If the program detects a file of the same name as the model already existing in the base, the user will be asked what to do with such file – whether is should be overwritten or omitted. A detailed description of these procedures can be found in Chapter 15.

5. Defining colours and properties – attributing palette to the object

To attribute a palette to an object from the **User Database** of 3D models (as a result it will have the same colours and properties in visualization each time it is used in the project), follow the procedure described below:

- insert a selected object to the project using any method described in Chapter 13;
- go to visualization (**[F12]** or icon);
- using the ‘drag-and-drop’ method apply textures and colours to the object, using materials provided with the program or your own, available in **Materials** tab;
- attribrute various layers of the object with appropriate properties, e.g. emission (glow effect), gloss, transparency (glass effect) or reflections (metal or mirror effect);
- to do so, double click on the selected object with a left mouse button and then click the right button to develop a context menu, in which select the **Properties** position (Fig. 165);

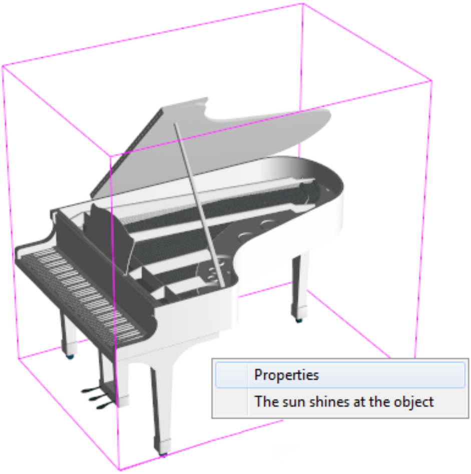


Fig. 165 – an object without textures in visualization – invoked context menu

- in a new dialog box define the properties of the object accordingly to your needs and preferences (Fig. 166);
- to check the result click or **[F1]** to turn on the lights (all attributed properties will then become visible);

- after setting all properties save the palette by clicking the **Save the palette** button in the right bottom corner of the **Material properties** dialog;

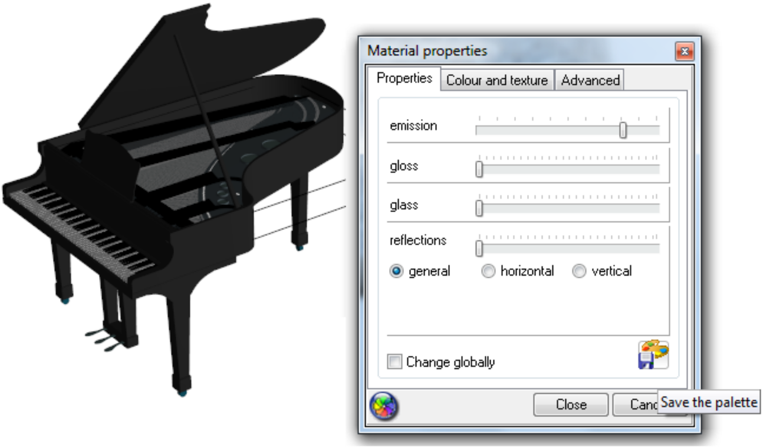

Material properties
Properties
Colour and texture
Advanced
emission
gloss
glass
reflections
● general
○ horizontal
○ vertical
☐ Change globally
Close
Canc
Save the palette

Fig. 166 - object with attributed textures, defining the properties and saving the palette

- the object with a palette saved this way will look exactly the same each time it is inserted in the project.

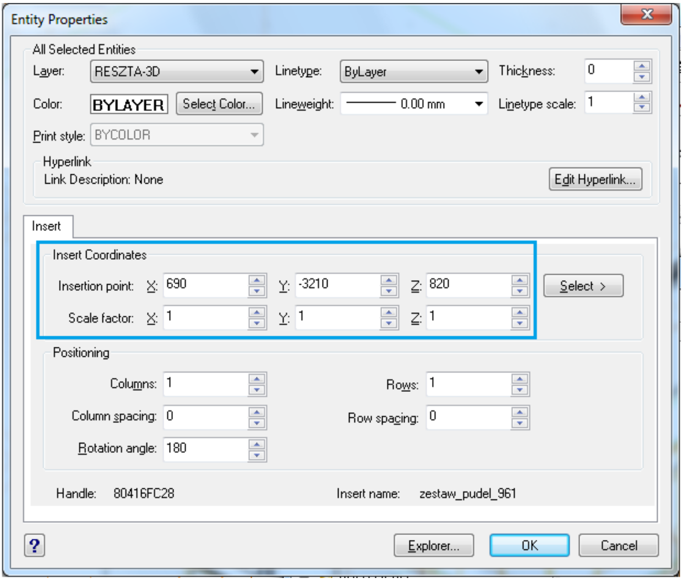
6. Scaling objects

Models used in the project sometimes are slightly to small or too big, so the program offers the possibility to quickly scale them in axes X, Y and Z (all of them or only selected ones);

To scale the object in the project follow the procedure presented below:

- in the work environment mode click on the object – first with the left, and then right mouse button;
- select the **Properties** position from the context menu;
- in newly open dialog **Entity Properties** in the **Insert** tab and in the **Scale factor** field change the values of axes – X, Y or Z;
- confirm the changes by clicking **Ok** (Fig. 167);
- the scale can be changed independently in each of 3 dimension axes (as a result the object will change its size in particular dimensions – e.g. it will get taller but no wider or longer if only the value for Z axis is increased);
- entering decimal values use **dots** - .4CAD does not recognize commas!

- in this dialog also the insertion point location can be changed – in the **Insertion point** field;


Entity Properties
All Selected Entities
Select Color...
Hyperlink
Edit Hyperlink...
Insert
Insert Coordinates
Select >
Positioning
?
Explorer...
OK
Cancel

Layer: RESZTA-3D
Linetype: ByLayer
Thickness: 0
Color: BYLAYER
Lineweight: 0.00 mm
Linetype scale: 1
Print style: BYCOLOR
Link Description: None
Insertion point: X: 690 Y: -3210 Z: 820
Scale factor: X: 1 Y: 1 Z: 1
Columns: 1
Rows: 1
Column spacing: 0
Row spacing: 0
Rotation angle: 180
Handle: 80416FC28
Insert name: zestaw_pudel_961

Fig. 167 – Entity properties dialog box

- an example of the object scaled in one axis only (Z) is presented on the illustration below (Fig. 168).

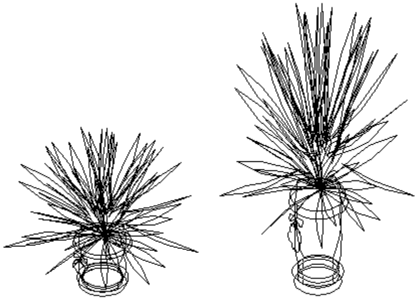


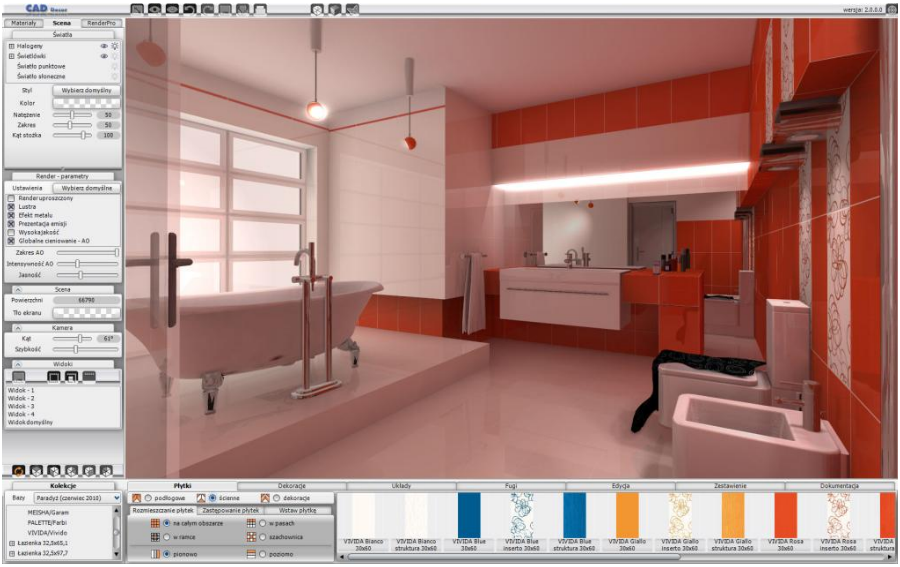
Fig. 168 – an example object in 1:1 and scaled

CHAPTER 17
Visualization

1. Introductory remarks

Visualization (also: viewfinder, rendering module) is the part of the program, in which the realistic view of the project is attained. It is a very important module in which the processes take place that are vital for the final visual effects, such as: the designing arrangements of ceramic tiles, application of paints and textures to walls and objects, setting various parameters for objects, modification of light sources settings and adjusting render parameters. In the earlier stages of designing the main focus was on precision of the project in regards to dimensions, shapes and used elements. Now close attention should be paid to colours and materials, proper light distribution and the look of particular objects, to ensure optimal results of visualization.

To go to visualization mode click the **Visualization** icon or **[F12]** key. To see a simple preview of the project (simplified visualization of one view only, without a possibility to move in the space) click the **Quick preview** icon or **[F11]** key.


CAD Decor
wersja: 2.0.0.0
Materiały
Scena
RenderPro
Światła
Halogeny
Świetlówki
Światło punktowe
Światło słoneczne
Render - parametry
Scena
Kamera
Widoki
Widok - 1
Widok - 2
Widok - 3
Widok - 4
Widok domyślny
Kolekcje
MEISHA/Garam
PALETTE/Farbi
VIVIDA/Vivido
Łazienka 32,5x65,1
Łazienka 32,5x97,7
Płytki
Dekoracje
Układy
Fugi
Edycja
Zestawienie
Dokumentacja
Rozmieszczanie płytek
Zastępowanie płytek
Wstaw płytkę
VIVIDA Bianco 30x60
VIVIDA Bianco struktura 30x60
VIVIDA Blue 30x60
VIVIDA Blue inserto 30x60
VIVIDA Blue struktura 30x60
VIVIDA Giallo 30x60
VIVIDA Giallo inserto 30x60
VIVIDA Giallo struktura 30x60
VIVIDA Rosa 30x60
VIVIDA Rosa inserto 30x60
VIVIDA struktura

Styl: Wybierz domyślny
Natężenie: 50
Zakres: 50
Kąt stożka: 100
Ustawienia: Wybierz domyślne
☐ Render uproszczony
☒ Lustra
☒ Efekt metalu
☒ Prezentacja emisji
☐ Wysoka jakość
☒ Globalne cieniowanie - AO
Powierzchni: 66790
Kąt: 61°
Bazy: Paradyż (czerwiec 2010)
○ podłogowe ● ścienne ○ dekoracje
● na całym obszarze ○ w pasach
○ w ramce ○ szachownica
● pionowo ○ poziomo

Fig. 169 – Visualization window

Nore! When the visualization mode is entered for the first time, a dialog box will display, in which the level of anti-antialisg quality, responsible for the quality of visual effects, especially the look of edges in visualization. The high level of anti-aliasing is recommended for computers with a efficient graphic card.

2. Parts of the visualization window and available features

2.1. Icon bar

In the upper part of the visualization window an icon bar can be found, containing the features listed in the table below.

Icon	Function
⤡	- **Select element** – option used for selecting objects for edition. After clicking on this icon the cursor becomes red. A single left-click on the object makes it ready for edition – a single right-click opens a context menu;
👁	- **Hide element –** option used for hiding objects that obstruct the view needed for a particular operation. The icon changes its look after clicking on it. To hide objects click the icon and the click consequently on the objects that are to be hidden. Remember to click the icon again to inactivate it, because otherwise more objects than necessary can be hidden. This action can be undone as a whole, and not in single steps;
👁	- **Show hidden –** option used to show all the objects hidden by the means of the **Hide element** option; all elements are displayed at once, and not one after another;
↶	- **Undo** – option used to undo the actions taken in visualization (function available also under the keys **<Ctrl+Z>)**; up to 20 actions can be undone;
↷	- **Redo** – option used to redo the actions previously undone (also under the keys **<Ctrl+Y**>); up to 20 actions can be redone;
💾	- **Export 3D scenes** – saves the visualization as a picture in a format: JPG, PNG, 3DE or JPS (Stereo 3D JPS). After selecting this button a new dialog will open, in which the location for the file should be defined. After confirming the location, another dialog will open, in which the resolution can be chosen (from the screen resolution up to Full HD) and add a copyright sign. To confirm – click **Save**. The entire procedure has been described in detail in Chapter 25.

	Note! Saving a scene to a picture file or animation should be taking place after turning on the lights, beacuse until then the room does not look realistic.
	- **Gallery of completed projects** – opens a viewer of graphic files and videos. Using the **Gallery** all created illustrations and videos can be quickly and attractively presented to the audience. At the same time further works in visualization can be conducted, e.g. to present the customers some alternative solutions.
	- **Print current view** – pints out directly from the program the current view of the visualized room.
	- **Display without colours and textures –** presents the project only in black-and-white mode, without colours, only with outlines of the objects and ceramic tiles marked. To go back to colourful mode can be done by clicking the icon the second time.
	- **Display without colours and textures –** operates in a similar way to the icon described above, but presents also various shades of grey colour to present shadows;
	- **Show lights –** shows the photorealistic view of the project presenting lights, shadows, reflections and other defined material properties; option available also at the function key [F1].

2.2. Tabs in the side pane

On the left-hand side of the visualization window there is a pane with 3 tabs, described in the table below.

Tab	Functions
Materials	– enables the User to select paints and textures to use in the project; – this tab is divided into 4 parts: **Paints, Materials group, Materials** and a bar with views icons; – **Paints** - the **Tikkurila** button opening the **Paint Module**, in which a particular paint or other coating in any colour can be found and used in the project; – **Materials group** – in this part of the tab lists of directories of textures are displayed; – **Materials** – previews of textures included in selected directory are shown here; – **Icons of views** – presented in table in point 4 in the current Chapter, allow to switch between different views and also save some chosen ones;

Scene	– enables the user to edit and modify light parameters and basic render settings; – the tab is divided into 5 parts: **Lights**, **Render – parameters**, **Scene**, **Camera** and **Views**; – **Lights** – light sources edition pane: halogens, fluorescent lights, spotlight and sunlight (switching the visibility on and off, switching the chosen light on or off, colour of the light and its intensity, range and cone angle, as well as selection of a style (shape of the light field generated by the source) – IES file; – **Render – parameters** – basic render settings; showing defined effects of mirror, metal, basic emission, option of simplified render or high quality, and ambient occlusion – its range, intensity and brightness; – **Scene** – the information about the total number of faces in the project and an option of changing the screen background colour is available here; – **Camera** – sliders located in this field enables the changes of camera's angle and speed; – **Views** – view display control functions, described in point 4 of this Chapter.
Render PRO	– enables the User to modify advanced render settings and creating AVI videos; – the tab is divided into 2 main part - **Render** and **Presentation**; – in the **Render** tab the following features are available: **Radiosity, GI Parameters, Final Gathering, Raytracing, Advanced options, Diagnostics** and **Statistics**; – please note that features in the **Render** tab are only available for those Users, who purchased the additional module of Professional Rendering; – they are advanced rendering algorithms, enabling to quickly create realistic and impressive visualizations; – all these features has been described in detail in **Chapter 24 Advanced Rendering**; – in the **Presentation** tab options of creating videos are available - please see Chapter 25 for more information);

3. Navigating in the visualization mode

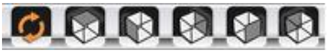
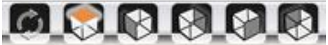
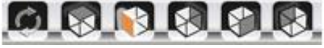
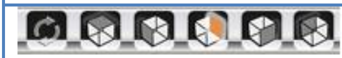
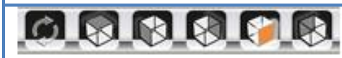
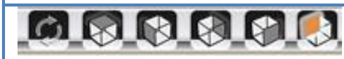
Navigating through the project in the visualization is done with the use of mouse and keyboard. In the table below all navigation options have been described.

Movement	Necessary actions
Rotation	– obtained by simultaneously pressing the left mouse button and moving the mouse to the right/left or up/down; – pressing the arrow ← or → on the keyboard results in revolving to the left or to the right;

	– pressing the arrow ↑ or ↓ results in moving the camera up or down; – pressing the **<Ctrl>** key results in switching from the rotary mode to the movement mode;
Zooming in / out	– pressing and holding the **<Shift>** key and the left mouse and moving the mouse up and down;
Movement	– pressing and holding only the right mouse button and moving the cursor in any direction results in a movement of the entire scene; – movements can be also conducted using the arrows: ↑↓ and ← → – to switch between moving and rotating press the **<Ctrl>** key;
Changing camera's angle	– in the **Scene** tab, in **Camera** pane the angle of the camera (and its distance from the project) can be regulated;
Changing camera's speed	– in the same location camera's speed can be altered (the velocity with which it moves or rotate);

5. Views of the room in the visualization mode

This function is used most often during the creation of project documentation for tilers. It enables the user to switch between the orbital mode, in which the camera moves freely in the projected space in any direction and the whole room can be rotated, and flat perpendicular views on the floor and walls. To do so, select an appropriate icon (icons described in the table below).

Icon	Function
	– the orbital mode – it is possible to freely change the position of the camera;
	– the perpendicular view from above (top view);
	– the perpendicular view from the left (west view);
	– the perpendicular view from the right (east view);
	– the perpendicular view from the back (north view);
	– the perpendicular view from the front (south view);

The User can also set and save 4 chosen views which he/she finds particularly useful or attractive, and go back to them at any moment of further work. The procedure is as follows:

- select a position on the list of views (e.g. **View 1**) by a single left-click;
- set up the camera in a chosen location and in the optimal angle;
- click the **Save** icon;
- the chosen view is saved and the User can go back to it at any time by clicking the appropriate position on the list of views (e.g**. View 1**);
- additionalty, on the list is also available a default view (position: **View-default**), useful when the user loses control on the view display.

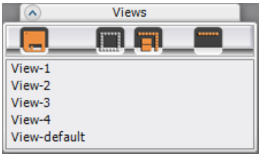


Fig. 170 – features in View pane

The table below contains a short characteristic of other icons in the **Scene** tab:

Option	Description
Save	– saves a chosen view accordingly to the procedure described above; – function useful for creating alternative colour versions of the project, e.g. after replacing some tiles collections with other ones – a set of various illustrations of the same view can be created;
Transparent walls	– the walls of the room which are between the User and the center of the room (which can obstruct the interior) are by default being hidden; – this button enables to switch their visibility on or off in a controlled way;
Show the room with equipment	– enables to quickly hide all elements of interior design used in the project without selecting them one by one (as when the **Hide element** icon is used);
Show/ hide the ceiling	– enables to hide and show the ceiling of the designed room;

CHAPTER 18
Application and edition of textures

1. Introductory remarks

It is recommended to begin work in visualization from applying textures to the various surfaces in the project. Properly chosen materials and colours are the key to satisfying final result. Besides materials available in the database distributed with the program the user can use his/her own materials and paints and other coatings, ceramic tiles and other wall and floor coverings, the use of which has been described in the following chapters of this manual (Chapter 20 and 22).

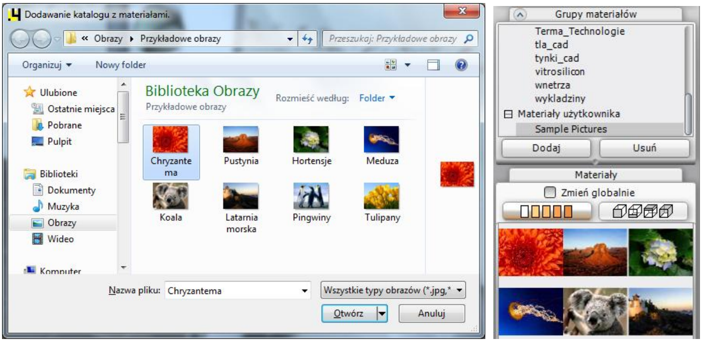
2. Materials tab

Textures are available in the **Materials** tab in the pane on the left-hand side of the visualization dialog. In the **Materials group** field there are 2 main directories: **Standard materials** and **User materials**. In the first one the database included in the program is available, and in the second any user's own textures can be loaded from the disk in formats JPG, BMP or PNG. It can be any photos or pictures, if possible in high resolution, without shadows or light reflections, set perpendicularly.

To add own picture files to **User materials** list:

- click **Add** and indicate the location of the directory on the disk in which they are stored (Fig. 171);
- mark on of the files and click **Open**;
- all files stored in this directory will be added to the **User materials** list in a new directory of the same name, as the original directory on the disk (Fig. 172);
- pictures are available to use in the project straight away;
- the number of added directories and files is unlimited;
- to remove a directory with user's own textures, mark it by a single left-click and then select the **Delete** button.

In the **Materials** tab besides the textures directories also a button opening the **Paints Module** is located – in the **Paints** field (described in Chapter 21), and a **Materials** section, in which previews of textures from currently selected directory are presented. In the bottom part of the pane there are icons of views, described in Chapter 16, point 4, enabling the user to change and saved views.


Dodawanie katalogu z materiałami.
« Obrazy ▸ Przykładowe obrazy
Przeszukaj: Przykładowe obrazy
Organizuj
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Biblioteka Obrazy
Przykładowe obrazy
Rozmieść według: Folder
Chryzantema
Pustynia
Hortensje
Meduza
Koala
Latarnia morska
Pingwiny
Tulipany
Otwórz
Anuluj
Grupy materiałów
Terma_Technologie
tla_cad
tynki_cad
vitrosilicon
wnetrza
wykladziny
Materiały użytkownika
Sample Pictures
Dodaj
Usuń
Materiały
☐ Zmień globalnie

Nazwa pliku: Chryzantema

Wszystkie typy obrazów (*.jpg,*

Fig. 171 – adding user own textures

Previews of textures can be displayed in a various number of columns – from 1 to 6 – dependently on the current need (if the User wants to see the big pictures or the biggest possible number of small thumbnails at once to quickly find the wanted one).

The fields with textures directories and previews can be freely adjusted using the little round button between the **Add** and **Delete** buttons (Fig. 172).

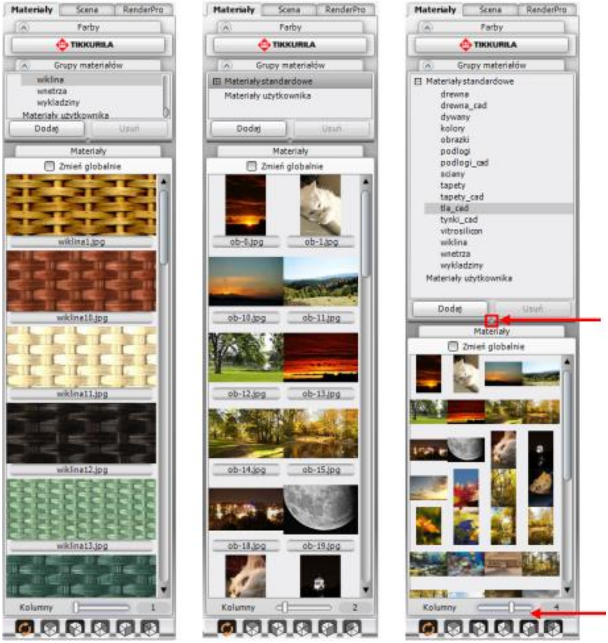

Materiały
Scena
RenderPro
Farby
TIKKURILA
Grupy materiałów
Materiały standardowe
Materiały użytkownika
Dodaj
Usuń
Materiały
☐ Zmień globalnie
Kolumny

Fig. 172 – various layouts of the Materials tab

3. Application of textures

Application of textures to the particular objects in the project in easy and pleasant. It is enough to:

- select the directory from the list in the **Materials group** field and then left-click on the preview of the chosen texture in the **Materials** section;
- after clicking on the texture hold the button and move the cursor into the project space and direct it to the object or surface, to which the texture is to be applied – and then release the button (it is so called ‘drag-and-drop’ method, frequently used in our software);
- the material will be applied to the object;
- if the same material is to be applied to all elements of the same type in the entire project, then mark the option **Change globally** before using the ‘drag-and-drop’ method.

4. Edition of textures

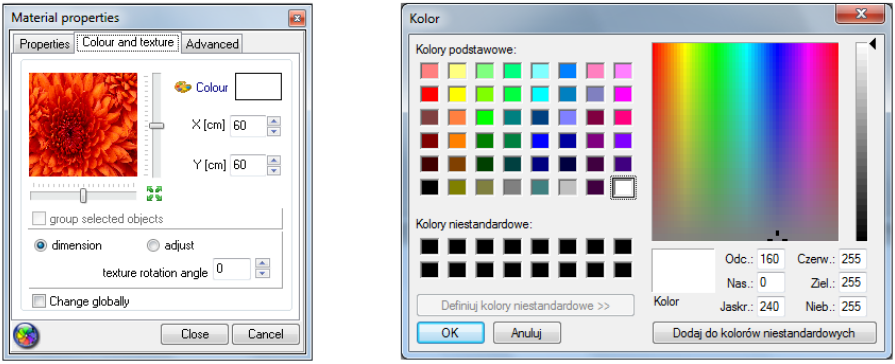
All textures used in the project can be edited in order to:

- change the dimensions of a single fragment of the texture in X or Y axis;
- move the pattern in X or Y axis or rotate the texture by any angle;
- adjust the texture meaning expanding it to cover the whole surface of the object (used e.g. for posters, background behind the window, wallpapers);
- change the colour of the texture – any colour can be freely chosen from the palette;
- additionally the option **Change globally** is available – to introduce changes to all elements of the same type in the whole project at once.

These operations can be proceeded in the **Material properties** dialog, in the **Colour and texture** tab. To do it:

- double click the left mouse button on the object to be edited (selected object will be marked with a pink cuboid outline) ;
- right-click anywhere to open a context menu;
- if clicking on the object does not bring the expected results, select the first icon in the main visualization menu: ⤡ **Select element** and then click on the object once with the left mouse button, and then right-click anywhere to open the popup menu;
- in the context menu choose the option Properties;

- a new dialog will open – Material properties – in which in the Colour and texture tab, selected parameters can be set up accordingly to individual preferences and needs;
- to adjust the parameters, select the particular option and move the slider beside it;
- to see the final result, click the **Show lights** button;
- the lights be turned on and the selected basic effects will be visible;
- if further changes are required, continue the modifications of settings;
- to change the colour click the **Colour** button and indicate the wanted shade on the palette (Fig. 146);
- if the changes are to be introduced to all objects of the same type, select the **Change globally** option;
- if the settings are optimal – confirm them by clicking **Close**;
- the **Material properties** dialog will close and further work can be proceeded;
- to anulate the whole operation click **Cancel** – changes will not be saved;


Material properties
Properties
Colour and texture
Advanced
Colour
Close
Cancel
Kolor
Kolory podstawowe:
Kolory niestandardowe:
Definiuj kolory niestandardowe >>
OK
Anuluj
Dodaj do kolorów niestandardowych

X [cm] 60

Y [cm] 60

☐ group selected objects

● dimension ○ adjust

texture rotation angle 0

☐ Change globally

Odc.: 160 Czerw.: 255

Nas.: 0 Ziel.: 255

Kolor Jaskr.: 240 Nieb.: 255

Fig. 173 – Colour and texture tab and the Colour dialog box with a colour palette

CHAPTER 19

Defining properties of objects

1. Introductory remarks

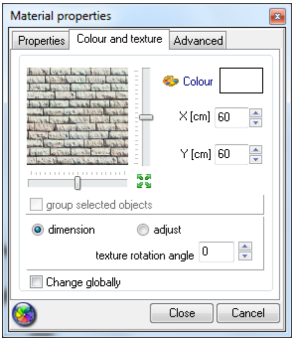
In the visualization module besides application of textures, also other operations take place that are vital for the final look of the designed room. It is – among others – attribution and modification of various properties of particular objects and surfaces. Each element of the interior design can be edited and attributed some basic effects: virtual own light emission, gloss, glass, mirror or metal effects, and also advanced properties such as bump mapping and real own light emission in any colour(this last option available only with the **Professional Rendering Module**).

The proper use of these features guarantees a natural and photorealistic look of the room and decorations and furnishings used in it.

2. Material Properties dialog

2.1. Colour and Texture tab

This tab has been already described in Chapter 17 (point 4). It is used to modify settings of textures applied to various objects in the project (Fig. 174).


Material properties
Properties
Colour and texture
Advanced
Colour
group selected objects
adjust
Change globally
Close
Cancel

X [cm] 60

Y [cm] 60

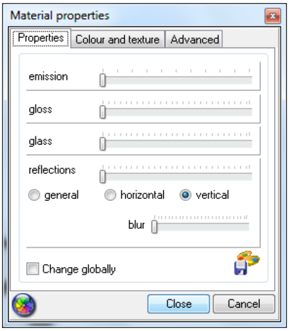
● dimension

texture rotation angle 0

Fig. 174 – Colour and Texture tab

2.2. Properties tab

In this tab the user can set the basic properties influencing the look of particular elements of interior design in visualization after the lights are turned on – in other words – the final effect of his/her The change of parameters is done by moving the particular slider beside the name of the function. (Fig. 175). Available properties have been briefly characterized in the table below.
work.


Material properties
Properties
Colour and texture
Advanced
emission
gloss
glass
reflections
general
horizontal
blur
Change globally
Close
Cancel

● vertical

Fig. 175 – Properties tab

Effect	Description
Emission	– attributing virtual own light emission effect; – with a maximum intensity the elements becomes snow-white and seem like it is emitting light; – to properly show the basic emission in visualization, turn on the **Show emission** function in the **Scene** tab; – as a result the objects with basic emission will glow, imitating the light emission (it is virtual though and has no influence on the light distribution in the whole scene); – this effect can be attributed to any elements – it is most commonly used for halogens, light tubes, window frames, ceiling skylights and other objects, that emit or let the light through in real life;
Gloss	– an effect used for polished, smooth surfaces such as plastic, wood, lacquer, ceramics or objects covered with enamel; – causes light reflection similar to the one of a porous plastic;
Glass	– attributing a transparency effect; – with a maximum intensity the object becomes totally invisible until the lights are turned on; – with lower levels of this effect the objects imitate cloudy, stained or matt glass; – a texture can be attributed the object with this property to achieve an effect of a pattern in the glass, e.g. graininess, grooving or some elements merged into glass; – to make the glass objects look good in visualization, meaning that they properly reflect and refract the light rays, use the **Raytracing** algorithm, available in **RenderPro** tab (please note that his advanced feature is available only with **Professional Rendering Module**);
Reflections	– attributions of reflections, form subtle to mirror-like ones; – thanks to this feature it is possible to create mirrors and metal-imitating objects (e.g. chrome battery); – to achieve an appropriate level of reflections, their type should be defined first (general, vertical or horizontal); – reflections will be visible in visualization after marking the option **Mirror effect** or **Metal Effect** in the **Scene tab;**
General reflections	– proper for elements of irregular or oval shape, imitating metal, e.g. batteries, flasks, chrome table legs, railings;

Horizontal reflections	– proper for horizontal surfaces, on which reflections should be seen, such as lacquered floors, worktops;
Vertical reflections	– proper for vertical surfaces that should reflect light, such as mirrors mounted on walls, window panes;
Blurred reflections	– **blur** is an additional effect connected to reflections; – it becomes active when vertical or horizontal reflections are selected; – moving the slider to the right makes the reflections look irregular and blurry; – an example has been illustrated below (Fig. 176) – the blurred reflections are visible in the steamed up mirror;

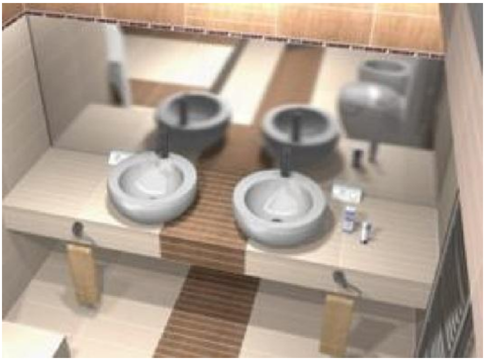
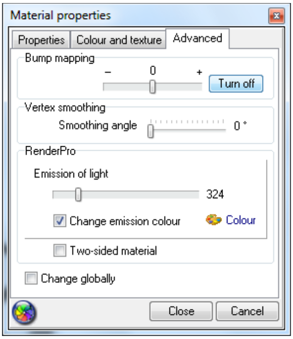


Fig. 176 – an example of blurred reflections

2.3. Advanced tab

It is a third tab of a **Material properties** dialog box . In this tab some advanced properties functions are available, such as **bump mapping**, **vertex smoothing**, **real light emission** in any colour and changing the material into **two-sided material** (Fig. 177). They have been described in the table below.



Material properties
Properties
Colour and texture
Advanced
Bump mapping
–
+
Turn off
Vertex smoothing
RenderPro
Colour
Close
Cancel

Bump mapping 0

Smoothing angle 0 °

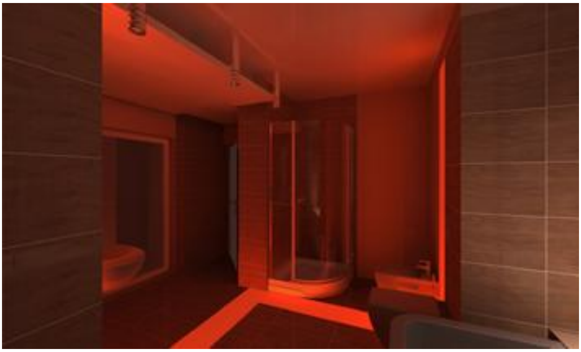
Emission of light 324

☑ Change emission colour

☐ Two-sided material

☐ Change globally

Fig. 177 – Advanced functions

Effect	Description
Bump Mapping	– a specialist method of texturing of spatial objects, consisting in representing irregularities of their surfaces in order to achieve a natural distribution of shadows on their surface; – this technique is perfect for presenting porosity, bulging, roughness, convex patterns or smoothness of objects' surfaces; – moving the slider to the right (+) results in darker elements of the surface being presented as concave; – moving the slider to the left (-) will result in opposite recognition of the pattern – dark elements will be treated as convex parts;
Real light emission	– advanced emission of a real own light; – in this case, in contrast to the basic emission, the chosen objects will no only look like it is emitting light, but it will really emit it; – light emitted by objects with the advanced emission has a great influence on the general light distribution in the rendered scene;
Change emission colour	– the light emitted by various objects can have various colours; – to change the colour, select the **Change emission colour** function, then click **Colour** and choose the colour on the palette – to confirm click **Ok**;  **Fig. 178 – real light emission in red colour**
Change globally	– this option should be selected if some property is to be changed for all objects of the same type in one time;
Show lights	– this button turns the lights on without closing the **Properties** dialog, so the results of attributed parameters for the currently edited objects can be quickly viewed;

Vertex smoothing

– this feature can be used for smoothing curves on objects, which were drawn in a way not ensuring a proper look of rounded, oval surfaces or lost their ideal shape during the conversion;

– thanks to this option is it possible to diminish or remove sharp edges or corners in places, where objects should be smooth and rounded (Fig. 179 and 180);

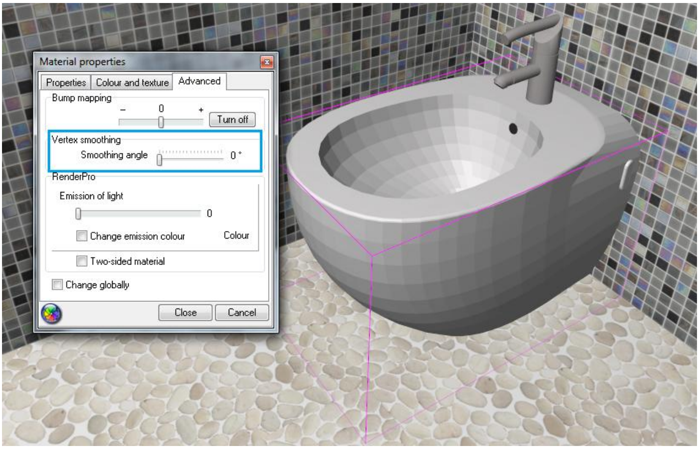

Material properties
Properties
Colour and texture
Advanced
Bump mapping
–
0
+
Turn off
Vertex smoothing
Smoothing angle
0 °
RenderPro
Emission of light
0
☐ Change emission colour
Colour
☐ Two-sided material
☐ Change globally
Close
Cancel

Fig. 179 – before using the function of vertex smoothing

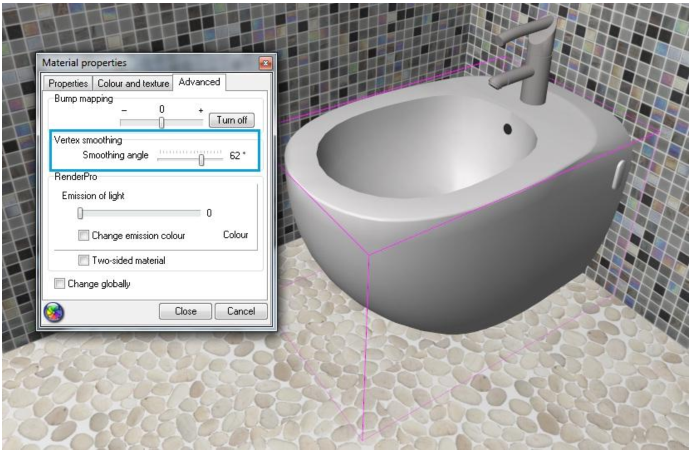

Material properties
Properties
Colour and texture
Advanced
Bump mapping
–
0
+
Turn off
Vertex smoothing
Smoothing angle
62 °
RenderPro
Emission of light
0
☐ Change emission colour
Colour
☐ Two-sided material
☐ Change globally
Close
Cancel

Fig. 180 – after using the function of vertex smoothing

Two-sided material

– some elements should have exactly the same properties on both sides (on top and underneath;

- a good example is a window-blind – each of its parts has been drawn with a single face, so to achieve a proper light distribution, each side of it should treated as 2 separate faces, drawn in opposite directions;
- in this case the **Two-sided material** feature should be used;
- it is also useful for models which has been incorrectly drawn and by some reason cannot be repaired with the use of functions of scene repair – turning this function on for them will result in proper light distribution on the object and in its environment;
- an example has been presented on the illustrations on the next page (Fig. 181 and 182);

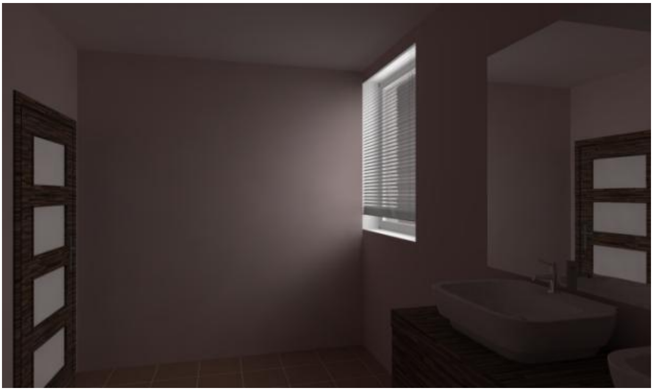


Fig. 181 – window-blind as one-sided material

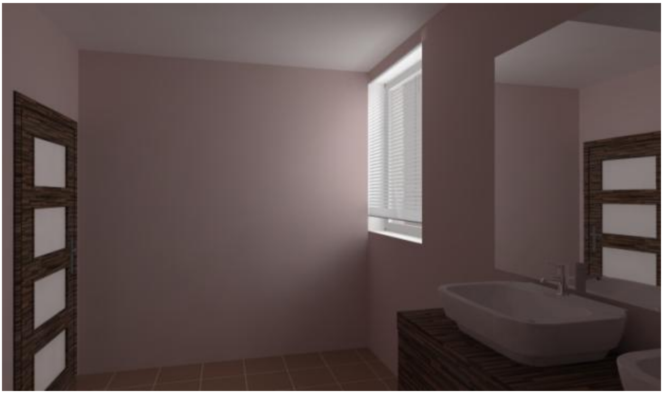


Fig. 182 - window-blind as two-sided material

CHAPTER 20
Using ceramic tiles in designing

1. Introductory remarks

CAD Decor offers multiple features of application and editions of ceramic tiles, enabling to create an impressive arrangement of the room in a short time and convenient way. The project is created on the basis of wall and floor tiles, together with decorations and inserts, and other materials (e.g. wood panels), available in producers' databases or added by the user to his/her own individual database. The procedure of creation the User Database is presented in Chapter 20. In the current chapter handling and use of all functions of projecting with tiles is described.

2. Collection selection

The first step in designing ceramic tiles is going to visualization mode (by clicking the **Visualization** icon or pressing **[F12]**). In the bottom of the screen a toolbar can be seen will tabs containing different features connected with tiles. After opening the visualization, the **Tiles** tab will be open (Fig. 183). Designing should be started from selecting a database by using the **Base** filter in the **Collections** tab in the left part of the toolbar. To do it, develop the list and by a single left-click mark the database on the basis of which you want to create your project. In the section below the tree of available collection types in this base will be displayed. To see the content of a particular collection type, left-click on it. You will see the list of all collections belonging to this type. Click on them to see what tiles they contain. Previews of tiles, together with their names and dimensions, will be displayed in the right section of the tool. First only the floor tiles will be presented – so to check what wall and decorative tiles are available in a particular collection, you can switch between these categories (Fig. 184): ○ floor ● wall ○ inserts. If you point the cursor on a tile, a label with its name, dimensions and net and gross prices will be displayed.

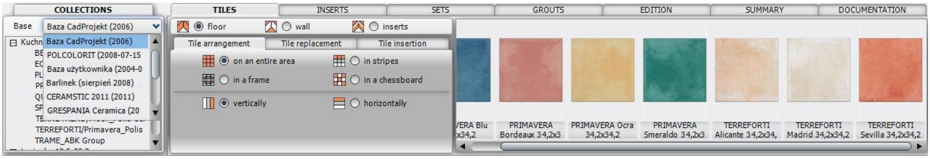
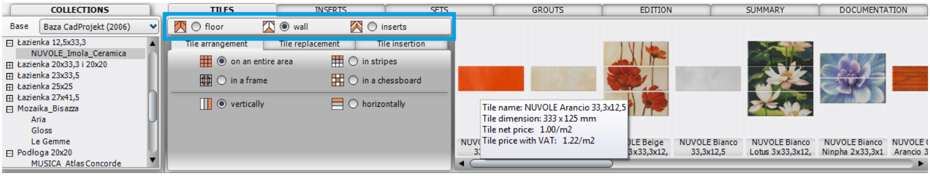

COLLECTIONS
TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
DOCUMENTATION
Base
Baza CadProjekt (2006)
Baza CadProjekt (2006)
POLCOLORIT (2008-07-15
Baza użytkownika (2004-0
Barlinek (sierpień 2008)
CERAMSTIC 2011 (2011)
GRESPANIA Ceramica (20
Kuchn
TERREFORTI/Primavera_Polis
TRAME_ABK Group
● floor
○ wall
○ inserts
Tile arrangement
Tile replacement
Tile insertion
● on an entire area
○ in stripes
○ in a frame
○ in a chessboard
● vertically
○ horizontally
VERA Blu x34,2
PRIMAVERA Bordeaux 34,2x3
PRIMAVERA Ocra 34,2x34,2
PRIMAVERA Smeraldo 34,2x3
TERREFORTI Alicante 34,2x34,
TERREFORTI Madrid 34,2x34,2
TERREFORTI Sevilla 34,2x34,2

Fig. 183 –selection of the database and collection of tiles


COLLECTIONS
Base
Baza CadProjekt (2006)
Łazienka 12,5x33,3
NUVOLE_Imola_Ceramica
Łazienka 20x33,3 i 20x20
Łazienka 23x33,5
Łazienka 25x25
Łazienka 27x41,5
Mozaika_Bisazza
Aria
Gloss
Le Gemme
Podłoga 20x20
MUSICA Atlas Concorde
TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
DOCUMENTATION
Tile arrangement
Tile replacement
Tile insertion
NUVOLE Beige 3x33,3x12,
NUVOLE Bianco 33,3x12,5
NUVOLE Bianco Lotus 3x33,3x12,
NUVOLE Bianco Ninpha 2x33,3x1
NUVOLE Arancio 3

○ floor ● wall ○ inserts

● on an entire area ○ in stripes
○ in a frame ○ in a chessboard
● vertically ○ horizontally

Tile name: NUVOLE Arancio 33,3x12,5
Tile dimension: 333 x 125 mm
Tile net price: 1.00/m2
Tile price with VAT: 1.22/m2

Fig. 184 – browsing through a collection – wall tiles displayed

3. Application of tiles

3.1. Tile arrangement

Application of tiles to various surfaces in the project is performed by the ‘drag-and-drop’ method, similarly to applications of textures. To place selected tile on some surface, e.g. a wall, left-click on its preview, hold the button and move the cursor on the object in the project. When a pink outline around the object displays, release the button. Tiles will be placed on the object. There are 4 ways in which tiles can be arranged on the object, presented in the table below.

Arrangement	Description
on the entire area ▦	– the whole surface of the selected object will be evenly covered with tiles; – it is a basic method of applying tiles, and the projecting should be always begun this way; – if the applied tiles are rectangular, it is possible to define the direction of their application – **vertically** or **horizontally**;
in a frame ▦	– tiles are applied on the perimeter of the selected area; – it is possible to define the offset from the border of the area and how wide should the frame be (in millimeters); – to be able to use this method of applying tiles the particular object has to be first covered with tiles **on the entire area** or with paint (by using the Paint Module, described in Chapter 21);
in stripes ▦	– tiles will be arranged in stripes – vertical or horizontal; – a necessary condition to use this option is to first cover the surface with paint or with tiles arranged **on the entire area**; – it is possible to define the offset from the boundary of the area (in mm) and the number of stripes (decimals also accepted;) – alternatively the height of a stripe can be defined (in mm);

in a chessboard	– tiles are applied alternately to the surface previously covered **on the entire area**; – new tiles have to have identical dimensions as the tiles used to cover the entire object – otherwise the operation cannot be performed.

The look of the **Tile arrangement** tab in different settings is presented on the illustration below (Fig. 185).

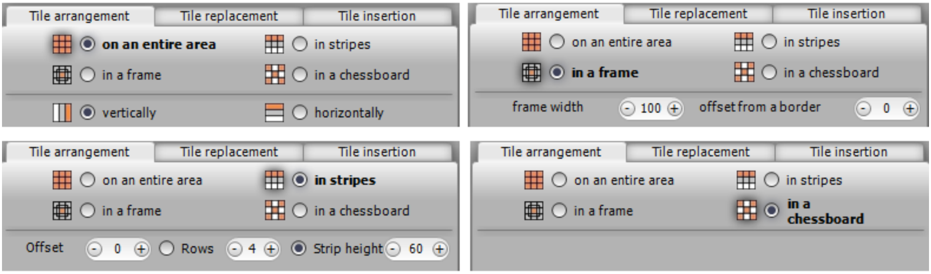

Tile arrangement
Tile replacement
Tile insertion
on an entire area
in stripes
in a frame
in a chessboard
vertically
horizontally
frame width
100
offset from a border
0
Offset
0
Rows
4
Strip height
60

Fig. 185 – four methods of arranging tiles

When tiles are applied on surfaces, with which other objects overlap (e.g. on the wall against which adhere a bathtub casing) the program will display a proposed list of areas to be omitted – in order to save material (Fig. 186).

This message will be for sure displayed when tiles are being placed on the floor – the program will suggest to remove surfaces that are located under the walls or objects located directly on the floor. The user can decide whether or not these areas are to be removed or not. To check were a particular position from the list is located in the project, left-click on it. The particular area will be marked in red. If the tiles are to be placed on that surface, deselect the position on the list. To place tiles on all suggested surfaces, click **Skip all**.

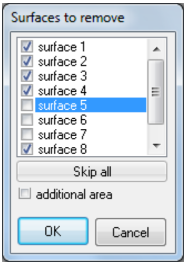

Surfaces to remove
☑ surface 1
☑ surface 2
☑ surface 3
☑ surface 4
☐ surface 5
☐ surface 6
☐ surface 7
☑ surface 8
Skip all
☐ additional area
OK
Cancel

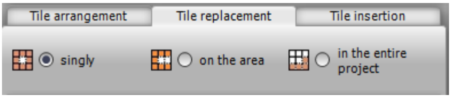
Fig. 186 – Surfaces to remove

Note! Tiles classified as floor can be applied to walls if necessary, and the other way around.

Note! Mistakes can be easily undone by clicking the icon Undo *or using a keyboard command* <Ctrl + Z> *- up to 20 operations can be undone this way.*

3.2. Tile replacement

If it becomes necessary to replace tiles on some object with other tiles, it can be performed by simply applying a new tile to this surface. But if there is many areas on which tiles should be replaced, it would be time-consuming and inconvenient. And this is why the **Tile replacement** tab was created (Fig. 187).



Tile arrangement | Tile replacement | Tile insertion

● singly ○ on the area ○ in the entire project

Fig. 187 – options of tiles replacement

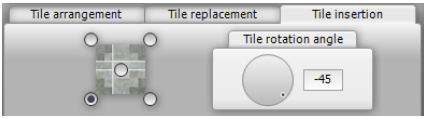
This tab enables the user to quickly replace tiles with others in a three ways:

Way of replacement	Description
singly	– used to replace a single tile with another one; – after selecting this option, click on a tile and using the 'drag-and-drop' method apply it to the desired location; – a new tile will be placed directly on the area which was indicated by the cursors when the left mouse button was released (note! The pink outline will be displayed around the entire area and not only the indicated tile which is to be replaced);
on the area	– exchanges all tiles of the same type as indicated on the entire area;
in the entire project	– exchanges tiles of a the same type to the new ones in the entire project, no matter what object was indicated by the cursor when the mouse button was released; – particularly useful then the user wants to change the colours but maintain already existing arrangement of tiles;

Note! It is only possible to replace tiles of exactly the same dimensions!

3.3. Tile insertion

The **Tile insertion** option is used while creating **sets** of tiles and applying so called **inserts**. When using this function, the point which will be an axis of rotation for an inserted tile during the application and an angle, by which the tile should be rotated (the program can recognize also negative values of angles (Fig. 188).



Tile rotation angle -45

Fig. 188 – inserting individual tiles

If the tile is inserted on the objects already covered with tiles, the area beneath it will be recognized as a separate area. An example of use of the **Tile insertion** method is presented on the illustration (Fig. 189).

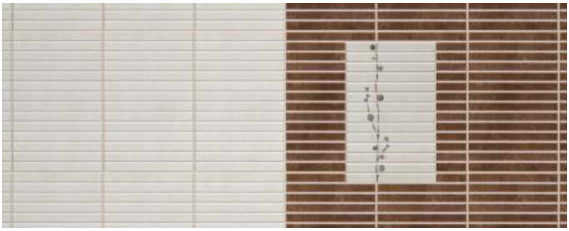


Fig. 189 – an example of use of Tile insertion option

4. Applying decorations – working with inserts

Next tab – **Inserts** – is used for advanced application of decorative tiles (so called decors). Before the user begins to apply them, the following settings should be defined:

- location of the décor - over or below the grout (relates to the **stripes** option);
- the optional shifting of tiles already existing on the area (**no cutting**) or cutting them (**cut tiles**) to the width of stripe of the decoration (relates to the **stripes** option);
- optionally: the offset from the border of the area (in millimeters) (relates to all options of application of decorations);
- the way of applying decors – among 5 available methods:

Feature	Description
stripes	- arranges decors in vertical or horizontal stripes on a selected area;
across the entire area	- when this option is selected, the stripe of decorations will be placed on a whole object, e.g. through the whole width of the wall, even if it will require crossing the borders of several separate areas;
frame	- decors will be located on the internal side of an outline of the selected area; - it is possible to define the offset from the border;
frame + corners	- arranges decorations in frames together with corners; - it is recommended to use this option only in a case if the collection

	contains special corner tiles, which are being placed by the program automatically in suitable places – otherwise the corners will be empty;
path	- to be able to use this function, first draw a path on the area covered with tiles (to find out how to do it see the table in point 7 – description of the **Path** option); - decoration may be placed on the left of on the right side of the path – dependant on the direction in which it has been drawn (if it was drawn from the right to the left, decor will be located on the right side, and analogically – drawing from the left to the right will result in placing decor on the left side of the path).

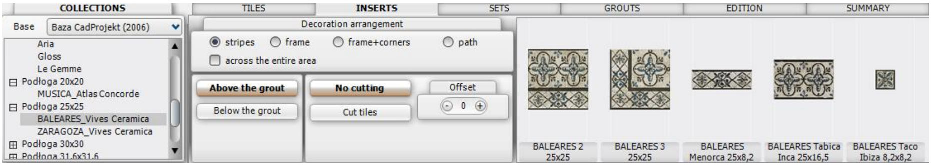
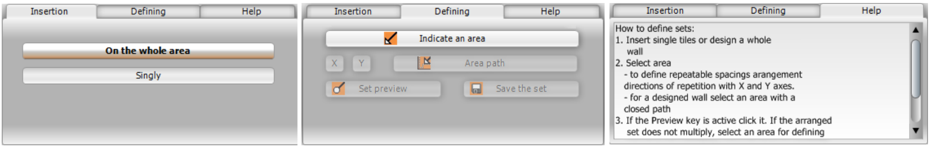

COLLECTIONS
Base
Baza CadProjekt (2006)
Aria
Gloss
Le Gemme
Podłoga 20x20
MUSICA_Atlas Concorde
Podłoga 25x25
BALEARES_Vives Ceramica
ZARAGOZA_Vives Ceramica
Podłoga 30x30
Podłoga 31,6x31,6
TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
Decoration arrangement
● stripes
○ frame
○ frame+corners
○ path
☐ across the entire area
Above the grout
Below the grout
No cutting
Cut tiles
Offset
0
BALEARES 2 25x25
BALEARES 3 25x25
BALEARES Menorca 25x8,2
BALEARES Tabica Inca 25x16,5
BALEARES Taco Ibiza 8,2x8,2

Fig. 190 – the Inserts tab in CAD Decor toolbar

5. Creating and saving sets of tiles

Creating user's own sets of tiles is one of the most difficult operations that can be performed during projecting ceramic tiles, because it requires to logically plan the arrangement of all elements of the set. It should be begun with creating a pattern of tiles on an area not covered with tiles (it is the best to use one of the walls), using the **Tile insertion** option. The pattern should consist of the smallest possible number of tiles. Examples of patterns and the following steps of sets creation are presented in the consequent points below.

The **Sets** tab is divided in 3 parts: **Insertion**, **Defining** and **Help** (Fig. 191):


Insertion
Defining
Help
On the whole area
Singly
Insertion
Defining
Help
Indicate an area
X
Y
Area path
Set preview
Save the set
Insertion
Defining
Help

How to define sets:
1. Insert single tiles or design a whole wall
2. Select area
   - to define repeatable spacings arangement directions of repetition with X and Y axes.
   - for a designed wall select an area with a closed path
3. If the Preview key is active click it. If the arranged set does not multiply, select an area for defining

Fig. 191 – the Sets tab – various views

Feature	Description
Insertion	- if in a selected producer's database there are available some ready-to-use sets, then beside the name of the **Sets** tab this symbol: will be displayed;

	- the user can use those proposed ready sets, applying them in the project – either singly or (only tiles creating one copy of a set) or on the entire selected area; - application of sets created by the user is performed analogically;
Defining	- after composing a pattern using the function of **Tile insertion** (in **Tiles** tab) the user has to define the axis of repeatability of the set; - the consequent steps are described in point 5.1., below this table;
Help	- displays a short instruction of how to create tiles sets;

5.1. Example 1: A rectangular set

To create a simple rectangular set:

- first open the **Tiles** tab and using the **Tile insertion** function create a pattern presented below (Fig. 192);
    - go to the **Sets** tab and to the **Defining** part of it;
    - click the **Indicate an area** button;
    - click **X** and indicate the repeatability of the pattern in the **X axis** (red arrow), and then click **Y** and indicate the repeatability in the **Y axis** (green arrow);
    - then click the **Preview** button to see the set on entire area (for a few seconds only) to verify its correctness;
    - properly prepared set should look like the one presented on the illustration below (Fig. 192);

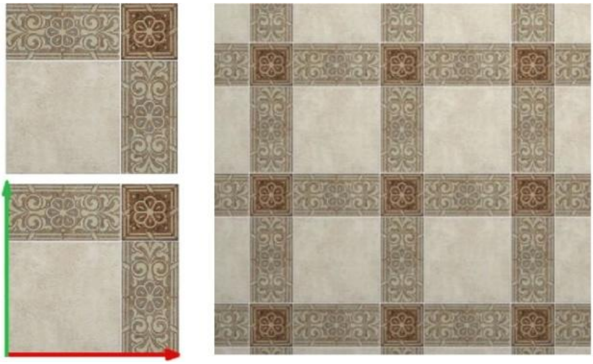
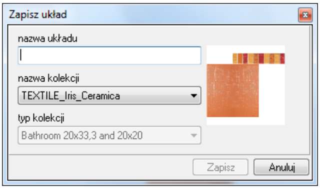


Fig. 192 – creating a rectangular set of tiles

-
    - if the preview looks satisfyingly, click the **Save** button and enter data in the **Save set…** dialog (Fig. 193);

- a set created this way can be used in the project after selecting the collection, on the basis of which it has been created, and then the **Sets** tab;


Zapisz układ

nazwa układu

nazwa kolekcji: TEXTILE_Iris_Ceramica

typ kolekcji: Bathroom 20x33,3 and 20x20

Fig. 193 – saving a set

5.2. Example 2: A set repeated diagonally

When creating this kind of a set, follow the procedure described in the previous point apart from the fact, that the tiles should be arranged in the way presented below. In the illustration you can see the pattern, marked repetitiveness axis X and Y and the final result (Fig. 194).

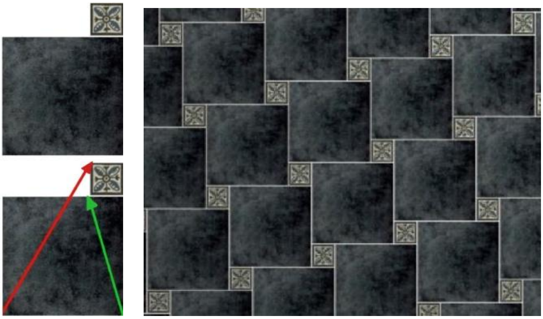


Fig. 194 – creating a set repeated diagonally

5.3. Example 3: A 'herringbone' set

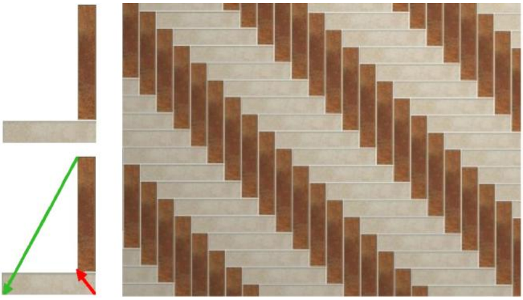


Fig. 195 – creation and a final result of creating a 'herringbone' set

5.4. Example 4: arranging tiles in stripes

Another way of creating sets is to arranges them in stripes on the entire wall. To be able to reproduce the arrangement on other walls or different objects, this layout can be saved as a set. To do it:

- arrange tiles in stripes on one of the walls;
- go to the **Sets** tab and click **Indicate an area**;
- click the **Area path** button (if the button is not activated automatically, click on any point in the area that will be indicated);
- select an area for reproduction by clicking in the consequent points of the path (the outline will be visible as a red line);
- save the set by clicking the **Save** button;
- after saving the set can be used on other walls in the project.

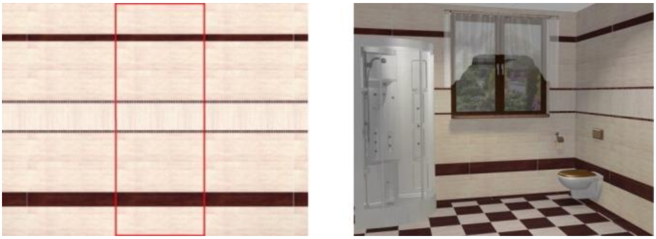


Fig. 196 – indicating the area to be reproduced and a result of placing the set on all walls in the room

6. Grouts edition

By default each grout in the project is white and 2 millimeters thick. The user can change these parameters in any moment of projecting in the visualization mode. Functions enabling the modification of grouts properties are available in the **Grouts** tab (Fig. 197).

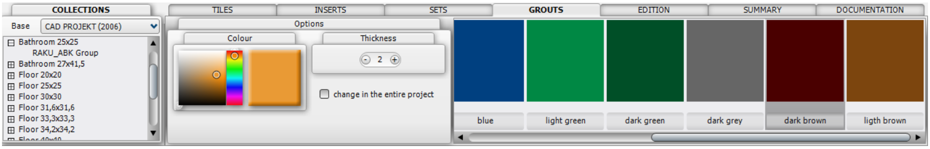

COLLECTIONS
TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
DOCUMENTATION
Base
CAD PROJEKT (2006)
Bathroom 25x25
RAKU_ABK Group
Bathroom 27x41,5
Floor 20x20
Floor 25x25
Floor 30x30
Floor 31,6x31,6
Floor 33,3x33,3
Floor 34,2x34,2
Options
Colour
Thickness
2
☐ change in the entire project
blue
light green
dark green
dark grey
dark brown
ligth brown

Fig. 197 – the Grouts tab

In producers' databases colours selected by the particular producer are available to choose from. Their previews are presented in the right part of the tab. If none of the proposed shades is suitable to user's needs, then it is possible to choose any other colour – using the colour palette in the **Options** field.

After finding a proper colour apply it to the selected area in the project, using the ‘drag-and-drop’ method (left click on a pane with a colour, hold the button, move the cursor to indicate the area and release the button).

The thickness of the grout can be change in a similar way. First – define the new thickness using the arrows in the **Thickness** field, and then drag the grout to the selected area – it will be applied again with a new thickness and the tiles will be rearranged. To change parameters for all grouts in the whole project at once, select the option **change in the entire project**.

7. Edition of areas covered with tiles

Areas on which tiles have been arranged can be edited. To do it, double left-click on the particular area – a pink outline will mean that the area has been selected. The bottom toolbar will automatically switch to the **Edition** tab (Fig. 198). A context menu can be opened now – by a single right-click (Fig. 199). Options in the context menu are analogical to those available in the toolbar below.

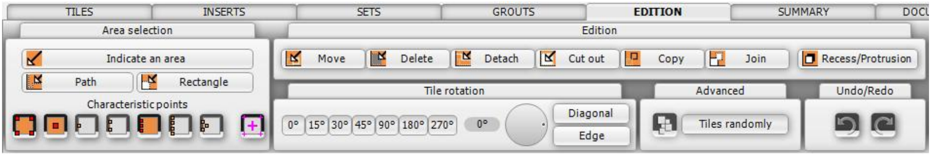

TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
DOCU
Area selection
Indicate an area
Path
Rectangle
Characteristic points
Edition
Move
Delete
Detach
Cut out
Copy
Join
Recess/Protrusion
Tile rotation
0°
15°
30°
45°
90°
180°
270°
0°
Diagonal
Edge
Advanced
Tiles randomly
Undo/Redo

Fig. 198 – the Edition tab

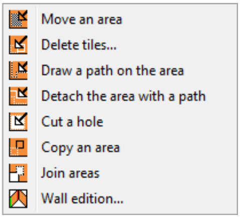

Move an area
Delete tiles...
Draw a path on the area
Detach the area with a path
Cut a hole
Copy an area
Join areas
Wall edition...

Fig. 199 – the context menu

Particular functions of edition are described in the table below:

Function	Description
Move an area (Move) Move	– allows to move the tiles so the grout lays in a particular location; – to do it select **Move** and then click on the edge of the tile, release the button and move the mouse to move them to a desired location; – after reaching the new destination, click the left mouse button again;

Delete tiles... (Delete) Delete	– removes tiles in 3 ways: ▪ only tiles from the selected area (e.g. from the indicated fragment of the wall); ▪ all tiles from the object, which includes the indicated object (e.g. a whole wall); ▪ all tiles from the entire project;
Indicate an area Indicate an area	– allows to indicate a new area for edition; – after selecting this button it is possible to draw a path or a rectangle on this area, and detach a new area based on this path or rectangle;
Draw a path on the area (Path) Path	– draws a path on tiles; – is displayed as a red line with a red square at the end; – it is possible to draw any outline, using the characteristic points of tiles (e.g. corners); – directly after finishing drawing the outline click the right mouse button and select the **Detach the area with a path** option from the context menu – or click **Detach** in the **Edition** tab; – if the path is not to be closed, right-click and select the **Finish** option (a path drawn this way can be used to apply decors);
Detach the area with a path (Detach) Detach	– operates on the basis of previously drawn, closed outline (path); – separates the area outlined with the path from the rest of the object; – after detaching the area it will be possible to apply tiles to it;
Rectangle Rectangle	– draws a rectangle on the indicated area; – to draw a rectangle it is necessary to click in two points – the first corner and the opposite corner of the rectangle; – when the rectangle is being drawn, its current dimensions are displayed; – drawing is based on the characteristic points of tiles;
Characteristic points	– it is possible to select various points on tiles, to which the cursor will be dragged and on the basis of which drawing of paths or rectangles on areas covered with tiles can be performed; – to define which points are to be taken into consideration click the appropriate icon (e.g. only corners, central points, 2 or 3 or more points on the edge etc.); – the choice depends on what shape the user wants to drawn; – the last icon displays the grid of selected points;

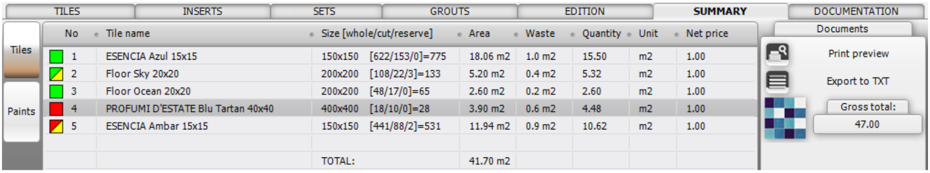
Cut a hole (Cut out) 	– used to create holes in bathtub casings and in tops around the under-counter washbasins; – to cut a hole in a bathtub casing follow these steps: ▪ apply tiles to the object; ▪ left-click twice on some element of the bathtub (e.g. its edge) to select it (you should see a pink cuboid outline) ▪ left-click twice on the area covered with tiles on the top surface of the platform, which is a casing; ▪ open the context menu and select the **Cut out** option; – you can monitor the progress of the operation of cutting on beside the **Show lights** icon; – the procedure of cutting a hole in a a washbasin top is analogical; – (in each case two 2 elements have to be selected at the same time – in this situation – the washbasin and the surface of the top covered with tiles);
Copy an area (Copy) 	– to copy tiles from one area to another: ▪ select the are to be copied; ▪ click **Copy**; ▪ indicate the area, to which the tiles are to be copied with a single left-click; – this function is very useful when applying tiles to cylindrical objects; – you can use keyboard shortcuts: ▪ first deselect all previously selected area by pressing **<Esc>**; ▪ then move a cursor over a tile on the area to be copied and press the combination of keys **<Ctrl +C>**; ▪ next indicate (do not click) the areas to which to copied tiles are to be applied, and – holding **<Ctrl>** all the time – move the mouse and press the letter **<V>** one time after another, applying single tiles this way; ▪ only tiles of identical dimensions can be replaced. *Note! Holding the button **V** for a longer time may result in cutting out a hole in an element!*
Join areas (Join) 	– used for connecting separate (previously disconnected) areas covered with tiles; – to do it, double left-click on the first area, then select the **Join** button and left-click once on the area that is to be joined; – the division between the areas will be removed and tiles from the first area will be copied to the joined area; – differences in tiles dimensions do not matter;

	Note! Joining areas will result in automatically moving tiles from the first area to the second one.
Wall edition…	– enables to shorten or lengthen a wall covered with tiles directly in visualization, – useful when the user already arranged the tiles and then decides to modify the dimension of the room or to change the parameters of a partition wall (if these modifications were performed in **Wall Editor** all the tiles would be lost); – to change the length of a wall: in a newly opened dialog called **Wall edition** in the **length change** field enter a new value or change it dynamically by moving a slider below; – to select the side of the wall which is to be moved, mark an option in the modified side field (left = green or right=red); – selecting the option adjust changes to tile size will result in changing the slider from a constant to an interval one (one interval will be equal with the width of a tile on the edited wall); – this solution enables the user to precisely adjust the length of a wall to the size of the tiles so they do not have to be cut; *Note! If there is a white area (without tiles) visible on the floor after shortening a wall, then remove all tiles from the floor – using an option:* delete all tiles from the object*, and then apply tiles again.*
Recess/ Protrusion Recess/Protrusion	– enables to create concave and convex decorative elements: recesses (niches) and protrusions, based on the outline of already applied tiles; – significantly simplifies the process of designing interiors with ceramic tiles, because it enables to introduce modifications in walls after floor and wall coverings are already applied; – to be able to create a recess or protrusion first specify the outline you want to use – marking it using the **Path** or **Rectangle** function; – when the outline is specified, click the Recess/Protrusion button and define the size and the type of the element using the slider (when you move it to the left – you will get a recess, and to the right – a protrusion will be created);
Tile rotation 0° 15° 30° 45° 90° 180° 270°	– rotates tiles on a selected areas by an indicated angle; – the angle can be specified by clicking the buttons of angles values: 0°, 15°, 30°, 45° etc.; – alternatively it can be done dynamically by indicating a point on

270° Diagonal Edge	the circle in a wanted location; – introduced changes are immediately visible in visualization, what helps to verify the results; – **Diagonal** and **Edge** buttons can be used for blocks of irregular shapes that are covered with tiles; – to adjust a grout to a diagonal or an edge of a block, select one of these options and left-click on the particular object or edge;
Tiles randomly	– works on areas covered with identical tiles of an irregular pattern (e.g. imitating stone); – arranges tiles in random order rotating them in different directions – to avoid the repeatability of their pattern;
Undo / Redo	– used for cancelling (undoing) or repeating (redoing) individual operations; – to undo an operation it is also possible to use a combination of keys **<Ctrl + Z>**, and to redo the operation: **<Ctrl + Y>**; – it is possible to undo or redo up to 20 operations;

8. Summary

Can be prepared when all project works are finished. A detailed summary of all tiles used in the project in included in it (it is also possible to create a summary of used tiles by switching between the buttons **Tiles** and **Paints** on the left-hand side of the **Summary** tab (Fig. 200).



	No	Tile name	Size [whole/cut/reserve]	Area	Waste	Quantity	Unit	Net price
🟩	1	ESENCIA Azul 15x15	150x150 [622/153/0]=775	18.06 m2	1.0 m2	15.50	m2	1.00
◩	2	Floor Sky 20x20	200x200 [108/22/3]=133	5.20 m2	0.4 m2	5.32	m2	1.00
🟩	3	Floor Ocean 20x20	200x200 [48/17/0]=65	2.60 m2	0.2 m2	2.60	m2	1.00
🟥	4	PROFUMI D'ESTATE Blu Tartan 40x40	400x400 [18/10/0]=28	3.90 m2	0.6 m2	4.48	m2	1.00
◩	5	ESENCIA Ambar 15x15	150x150 [441/88/2]=531	11.94 m2	0.9 m2	10.62	m2	1.00
			TOTAL:	41.70 m2				

Gross total: 47.00

Fig. 200 – a summary of tiles used in the project

The summary contains the following data:

- names of collections from which the tiles used in the project come from;
- dimensions of used tiles (whole or cut tiles);
- units in which tiles are sold;
- net and gross prices;
- weight of tiles used in the project;
- a number of boxes of tiles;
- an entire area covered with tiles in square meters.

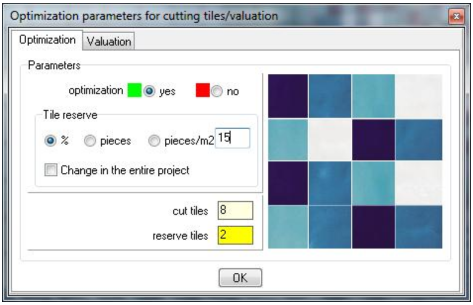
When a particular position on the summary list is marked, a place in the project where indicated tiles have been used will be marked. A red colour is used to present whole tiles, and a pink colour – cut ones. Additionally – in a right part of the screen you can see a little preview of a marked tile.

Besides ordinal numbers in the left part of the screen there are little squares – red (if the tile is not optimized) or green (it the tile is optimized, this is – it the cut waste is used in another place in the project to save the material). By default all floor and wall tiles are optimized – and the decorative tiles are not (to ensure the proper pattern repeatability).

8.1. Optimization parameters for cutting tiles/valuation

Optimization is a unique functionality of CAD Decor program, enabling the user to use a cut waste of tiles in another place in the project, to use less material. It can be freely turned on and off for particular tiles. By default it is switched off for decorative tiles because it their case it is important to maintain a proper, recurrent pattern. Optimization helps to save the material and minimize the costs.

To change the optimization settings or add a reserve of tiles double left-click on a particular tile position in the summary and changing settings and entering data in a newly opened dialog box called **Optimization parameters for cutting tiles/valuation** (Fig. 201).


Optimization parameters for cutting tiles/valuation

Optimization | Valuation

Parameters

optimization 🟩 ● yes 🟥 ○ no

Tile reserve

● % ○ pieces ○ pieces/m2 15

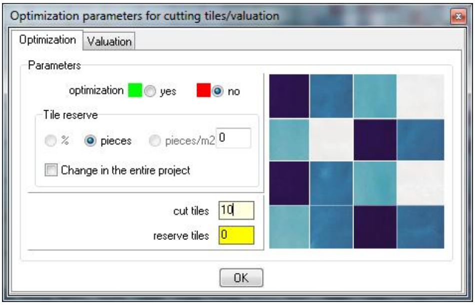
☐ Change in the entire project

cut tiles 8

reserve tiles 2

Fig. 201 – the amount of cut tiles with optimization

A reserve of tiles can be given in percentage, units or units per m^2. First and third option are not available for tiles that are not optimized (Fig. 202).


Optimization parameters for cutting tiles/valuation

Optimization | Valuation

Parameters

optimization 🟩 ○ yes 🟥 ● no

Tile reserve

○ % ● pieces ○ pieces/m2 0

☐ Change in the entire project

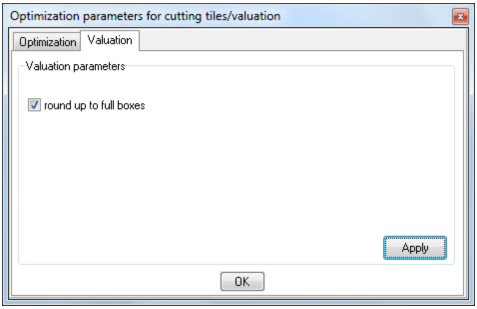
cut tiles 10

reserve tiles 0

Fig. 202 - the amount of cut tiles without optimization

A reserve added for particular tiles will be marked in the **Summary** tab in a form of a yellow triangle besides the ordinal tile number: 🟩 or 🟥 and will be included in the summary.

Besides the function of optimization in the **Optimization parameters for cutting tiles/valuation** there is also a function of rounding to full boxes available. (Fig. 203).



☑ round up to full boxes

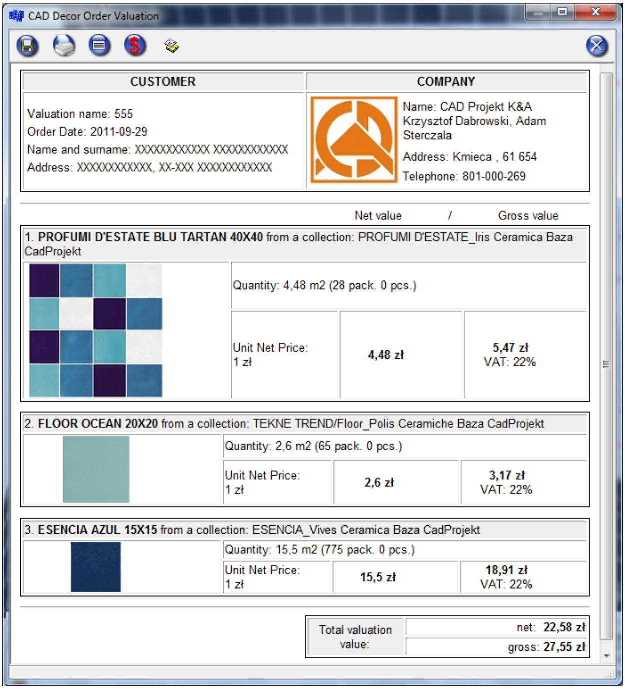
Fig. 203 – an option of rounding up to full boxes

8.2. Summary printout

Two icons: **Print preview** and **Export to TXT** enable the user to print a **Summary.** The first one generates a valuation report in a graphic form (**CAD Decor Order Valuation** - Fig. 204), and the second one in a text file. After clicking on the first icon the user can enter project's or studio's data (the only one necessarily required information is a number of an order) and confirm it by clicking the **Save** button, and when the second icon is clicked – it is also required to indicate the location to save the file and specify its name.

Icons in the **CAD Decor Order Valuation** dialog box perform the following functions:

- saves the valuation report to the disk (as HTML file);
- prints the valuation report;
- hides or displays previews of files;
- hides or displays prices of tiles;
- sends the valuation report by e-mail.



CUSTOMER

Valuation name: 555
Order Date: 2011-09-29
Name and surname: XXXXXXXXXXXX XXXXXXXXXXXX
Address: XXXXXXXXXXXX, XX-XXX XXXXXXXXXXXX

COMPANY

Name: CAD Projekt K&A Krzysztof Dabrowski, Adam Sterczala
Address: Kmieca , 61 654
Telephone: 801-000-269

Net value / Gross value

1. **PROFUMI D'ESTATE BLU TARTAN 40X40** from a collection: PROFUMI D'ESTATE_Iris Ceramica Baza CadProjekt
Quantity: 4,48 m2 (28 pack. 0 pcs.)
Unit Net Price: 1 zł | **4,48 zł** | **5,47 zł** VAT: 22%

2. **FLOOR OCEAN 20X20** from a collection: TEKNE TREND/Floor_Polis Ceramiche Baza CadProjekt
Quantity: 2,6 m2 (65 pack. 0 pcs.)
Unit Net Price: 1 zł | **2,6 zł** | **3,17 zł** VAT: 22%

3. **ESENCIA AZUL 15X15** from a collection: ESENCIA_Vives Ceramica Baza CadProjekt
Quantity: 15,5 m2 (775 pack. 0 pcs.)
Unit Net Price: 1 zł | **15,5 zł** | **18,91 zł** VAT: 22%

Total valuation value: net: **22,58 zł** gross: **27,55 zł**

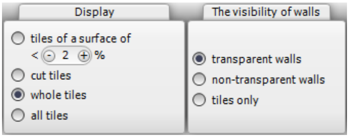
Fig. 204– a report about used tiles generated in CAD Decor program

Note! Tile waste smaller than 2% of a total tile area is not inluced in the Summary.

9. Documentation of tiles

In the **Documentation** tab it is possible to see which areas in the project are covered by tiles: of a surface smaller than x%, cut or whole, as well as all areas covered with tiles at all. The position **without tiles** deselects previously selected options – no areas will be marked.

*Note! The above options of previewing tiles can be used together with various settings of wall display (*transparent walls, non-transparent walls *or* tiles only*).*


Display
○ tiles of a surface of < 2 %
○ cut tiles
● whole tiles
○ all tiles

The visibility of walls
● transparent walls
○ non-transparent walls
○ tiles only

Fig. 205 – The tile Display and Visibility of walls panes

9.1. Statistics

The **Statistics** pane enables to check the percentage of whole and cut tiles used in the current project.

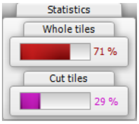

Statistics
Whole tiles 71 %
Cut tiles 29 %

Fig. 206 – proportion between whole and cut tiles

9.2. Documentation

The function of technical documentation generation, available in the **Documentation** section, enables the user to copy the layout of the arranged tiles to the linear view (CAD environment). To generate documentation:

- hide all elements of the equipment and decoration in the room that block out the view at elements covered with tiles (walls, platforms, steps, casings etc.);
- then select the view that is to be generated in the work environment using the
- icons: (e.g. a view of a selected wall);hide walls which are between you and the selected wall;
- go to the **Documentation** tab and select one of the options – **add legend** or **no legend** (dependant on your preferences regarding adding a list of tiles names to the generated projection) - click the **Generate** button in the appropriate field;
- the selected projection will be inserted to the project in CAD environment together with a short description of tiles – if the option **add legend** has been selected;
- now dimensions can be added (Fig. 207).

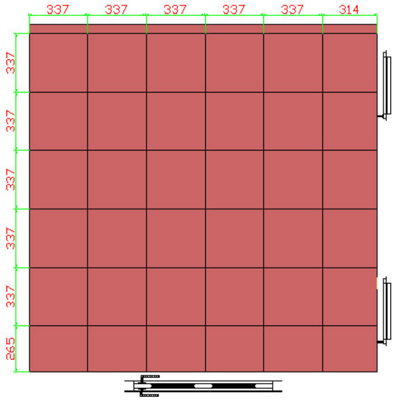


Fig. 207 – a projection of tiles with added dimensions

If the orbital view has been selected (icon:) at the moment when the **Generate** button is clicked, tiles will be presented in the environment as a mesh visible on walls and other elements covered with tiles. In this case a legend will not be generated.

9.3. Features in Information icon menu

Distance – shows the distance between two selected points – left-click the icon, then click in the first and then in the second point on the screen and you will see a message informing about a distance in 3 dimensions.

About a tile – shows an information about a tile (a name of the collection from which it comes from and a hyperlink to that collection) – left-click on the icon and then direct the cursor to indicate the tile; useful during the final corrections in the project; available also at **[F2]** key.

Area – shows the size of an area covered by tiles; available also at **[F3]** key.

10. Saving and loading the interior

In CAD Decor it is possible to save a designed interior and insert it to the project again – as a result there will be 2 identical rooms in the same project. This feature is available in CAD environment, in CAD-Decor toolbar.

To do it, click the icon **Save interior** and select elements (walls) to be saved (by clicking on their edges), then press **<Enter>**. Then indicate an insertion point for the saved interior. Then in the **Saving file** dialog box enter the name of the file and indicate location on the disk where it should be saved. 2 files will be created:

- **DWG** – file with information about the geometry of the interior;
- **P3I** – file with information about arrangement and colours of tiles;

When you click on the **Load interior** icon, you will be able to open a DWG file of a previously saved interior and insert it in the current project.

Note! The DWG you want to open has to be created by using the Save interior *function. Otherwise you will be informed that the file does not exist.*

Note! The name of the project with an inserted inertior has to be different that the name of the DWG file of the interior. Otherwise the user will be informed that the file already exists.

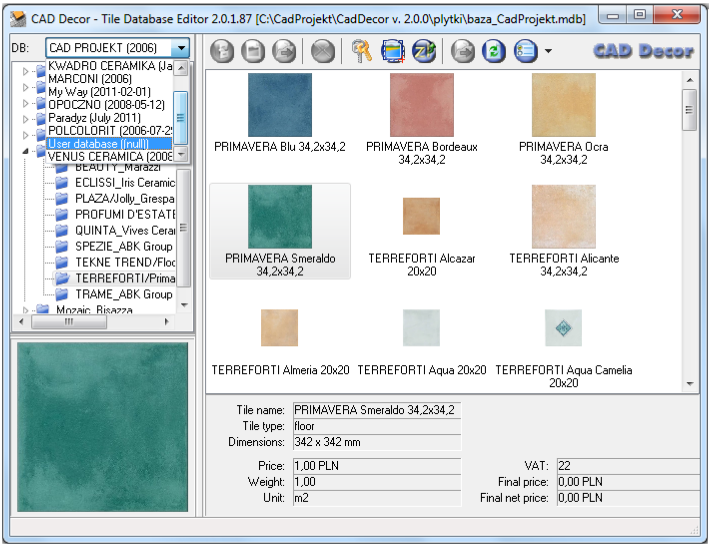
CHAPTER 21
Tile Database Editor

1. Introductory remarks

The **Tile Database Editor** module offers a possibility to edit prices in the existing tiles manufacturers' databases, as well as create your own tile library - by adding tiles to the User Database. To run the **Tile Database Editor** go to***: Start> All programs > CAD Decor v. 2.X. > Tile Base Editor*** Tiles Base Editor.

2. Getting started

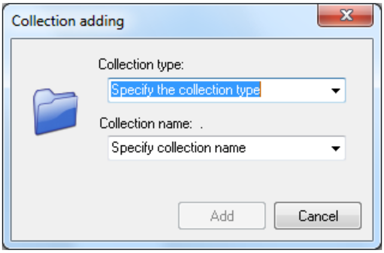
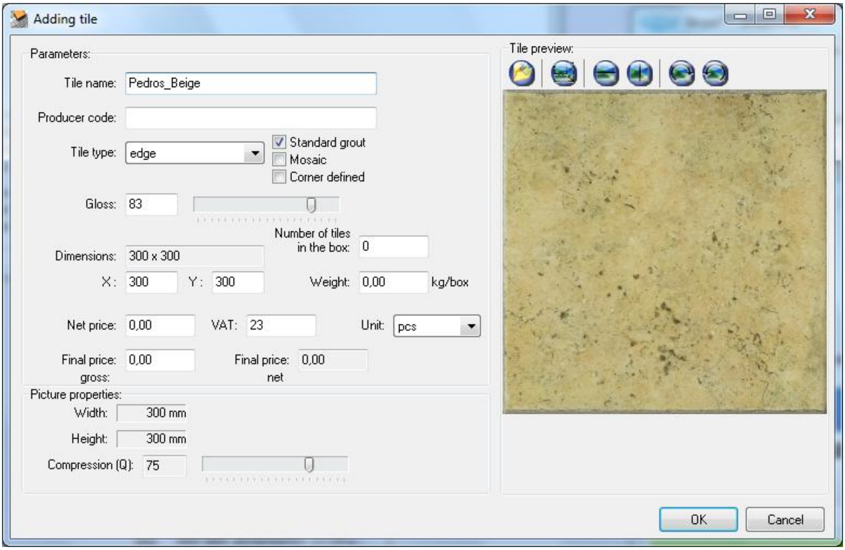
After running the **Editor** select a tile database for edition (Fig. 208). If the User wants to modify prices in producer's database, he/she should left-click on the producer's name on the list. If he/she wants to create his/her own collection of tiles, then the **User Database** position should be selected. Under the name of the database a list of available collections will be displayed and in the right part of the dialog previews of all tiles included in the currently selected collection will be shown.


CAD Decor - Tile Database Editor 2.0.1.87 [C:\CadProjekt\CadDecor v. 2.0.0\plytki\baza_CadProjekt.mdb]
DB: CAD PROJEKT (2006)
KWADRO CERAMIKA (Ja
MARCONI (2006)
My Way (2011-02-01)
OPOCZNO (2008-05-12)
Paradyz (July 2011)
POLCOLORIT (2006-07-2
User database ((null))
VENUS CERAMICA (2008
BEAUTY_Marazzi
ECLISSI_Iris Ceramic
PLAZA/Jolly_Grespa
PROFUMI D'ESTATE
QUINTA_Vives Cera
SPEZIE_ABK Group
TEKNE TREND/Floo
TERREFORTI/Prima
TRAME_ABK Group
Mozaic_Bisazza
CAD Decor
PRIMAVERA Blu 34,2x34,2
PRIMAVERA Bordeaux 34,2x34,2
PRIMAVERA Ocra 34,2x34,2
PRIMAVERA Smeraldo 34,2x34,2
TERREFORTI Alcazar 20x20
TERREFORTI Alicante 34,2x34,2
TERREFORTI Almeria 20x20
TERREFORTI Aqua 20x20
TERREFORTI Aqua Camelia 20x20

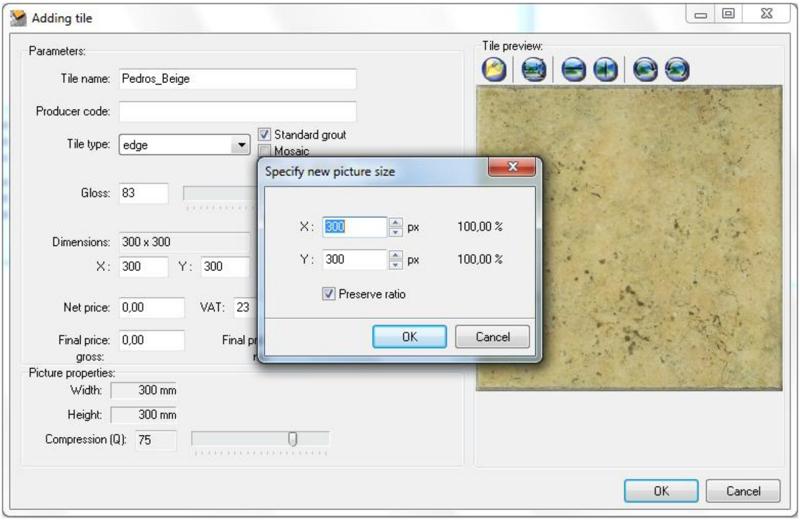
Tile name: PRIMAVERA Smeraldo 34,2x34,2
Tile type: floor
Dimensions: 342 x 342 mm
Price: 1,00 PLN
Weight: 1,00
Unit: m2
VAT: 22
Final price: 0,00 PLN
Final net price: 0,00 PLN

Fig. 208 – Tile Database Editor dialog – database selection

3. Tile Database Editor icons

Icon	Description
	Add new collection or collection type – creates a new collection in the **User Database** (available also under **<Ctrl + K>**); a name of a new collection type and of the new collection itself should be entered (Fig. 209);  Collection type: Specify the collection type Collection name: Specify collection name **Fig. 209 – adding a new collection to the User Database**
	- **Add a new tile to the selected collection** – adds new tiles to the **User Database** (also under **<Ctrl + N**>); in the newly opened dialog necessary data about a tile should be entered (Fig. 210).  Parameters: Tile name: Pedros_Beige Producer code: Tile type: edge ☑ Standard grout ☐ Mosaic ☐ Corner defined Gloss: 83 Number of tiles in the box: 0 Dimensions: 300 x 300 X: 300 Y: 300 Weight: 0,00 kg/box Net price: 0,00 VAT: 23 Unit: pcs Final price: gross: 0,00 Final price: net 0,00 Picture properties: Width: 300 mm Height: 300 mm Compression (Q): 75 **Fig. 210 – adding a new tile to the User Database**

- **Load the picture from the disk** - use it to download a preview file for the tile from any location (also under <**Ctrl + O**>); after loading the picture file other icons become active, this is: the scaling, flipping and rotation buttons. Scaling has been presented on the picture below (Fig. 211).



Parameters:

Tile name: Pedros_Beige

Producer code:

Tile type: edge

☑ Standard grout

☐ Mosaic

Gloss: 83

Dimensions: 300 x 300

X: 300 Y: 300

Net price: 0,00 VAT: 23

Final price gross: 0,00

Picture properties:

Width: 300 mm

Height: 300 mm

Compression (Q): 75

Specify new picture size

X: 300 px 100,00 %

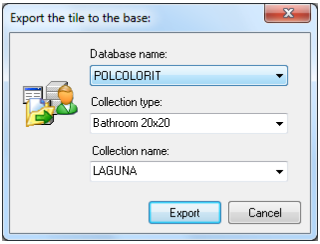
Y: 300 px 100,00 %

☑ Preserve ratio

Fig.

Fig. 211 – scaling the preview picture

- **Export the tile to User Database** – exports the selected tile from the other base collection to the **User Database** (Fig. 212); (also under **<Ctrl + E>**);



Export the tile to the base:

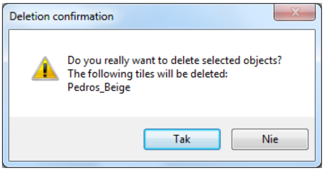
Database name: POLCOLORIT

Collection type: Bathroom 20x20

Collection name: LAGUNA

Fig. 212– exporting a tile to the User Database

- **Delete selected object** – deletes the selected tile, collection or collection type (also under **<Del>**); each time a request for confirmation, that the selected element is to be deleted will be displayed, because it is not possible to undo this action (Fig. 213);

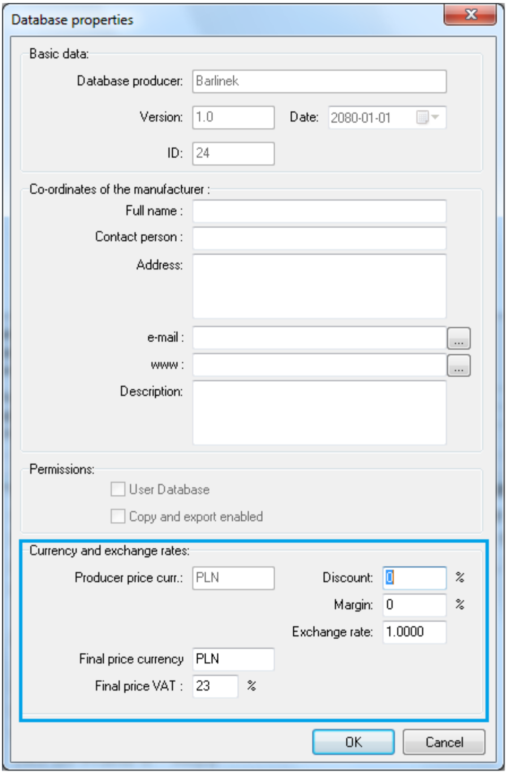


Deletion confirmation

Do you really want to delete selected objects?
The following tiles will be deleted:
Pedros_Beige

Fig. 213 – request for confirmation of removing a tile from the user database

- **Currency and exchange rate settings** – opens the **Database properties** dialog in which it is possible to change the currency of a producer's price and of a final price, as well as set the currency rate accordingly to the current rate and modify discount, margin and VAT values for prices in the whole database (Fig. 214), both the User Database and a producer's one.



Database properties

Basic data:
Database producer: Barlinek
Version: 1.0
Date: 2080-01-01
ID: 24

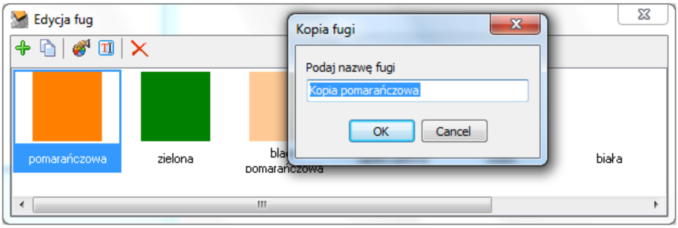
Co-ordinates of the manufacturer :
Full name :
Contact person :
Address:
e-mail :
www :
Description:

Permissions:
☐ User Database
☐ Copy and export enabled

Currency and exchange rates:
Producer price curr.: PLN
Discount: 0 %
Margin: 0 %
Exchange rate: 1.0000
Final price currency PLN
Final price VAT : 23 %

Fig. 214 – currency and exchange rate settings section

- **Grout editor**– opens a dialog in which the user defines colours and names of grouts, e.g. names conforming to the given producer's names. It is possible to add, copy and edit colours and names of the grouts in the dialog box (Fig. 215) using the icons or the context menu.

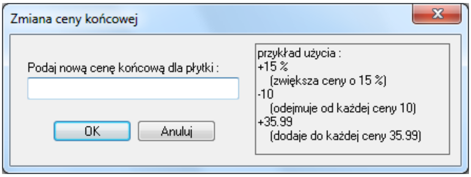


Podaj nazwę fugi

Kopia pomarańczowa

Fig. 215 – grout edition – creating a copy of a grout

- **Change price –** allows to modify a price for any tile in the User Database or in a producer's one (available also under **[F3]** key); it the user does not select a particular tile, then the prices will be changed for all tiles in the selected collection; if an individual tile is selected, then only its price will be changed (Fig. 216).



Podaj nową cenę końcową dla płytki :

przykład użycia :
+15 %
(zwiększa ceny o 15 %)
-10
(odejmuje od każdej ceny 10)
+35.99
(dodaje do każdej ceny 35.99)

Fig. 216 – changing the final price of a selected tile

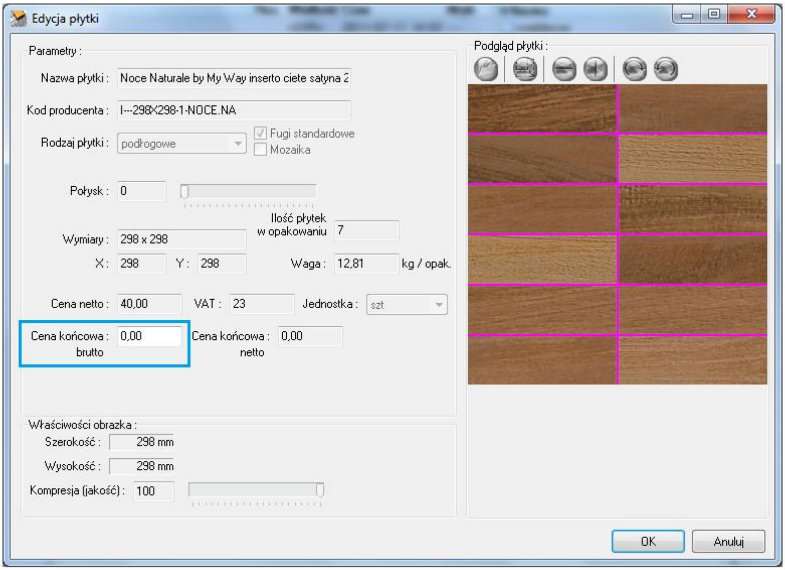
- **Import a database** – allows to import a tile database in MDB or XML file format from any location.

- **Reload the database from the disk** – refreshes the content of the database, including all recent changes, and makes the newest version available directly in the CAD Decor program (also under [**F5**]);

- **Views** – switches the dialog box view between: thumbnails (tile images preview), list (names only) and tile detailed information.

4. Manufacturers databases edition

The only element of producers' databases that can be modified is the price of tiles. To change the price of an individual tile, select the database from the list, then the type and name of the collection and double click on the preview of the selected tile. The edition dialog will open in which the only one editable position is the **Final gross price** (Fig. 217). After entering a new value, close the dialog by clicking **Ok**.



Parametry :

Nazwa płytki : Noce Naturale by My Way inserto ciete satyna 2

Kod producenta : I--298X298-1-NOCE.NA

Rodzaj płytki : podłogowe

☑ Fugi standardowe

☐ Mozaika

Połysk : 0

Ilość płytek w opakowaniu 7

Wymiary : 298 x 298

X : 298 Y : 298

Waga : 12,81 kg / opak.

Cena netto : 40,00 VAT : 23 Jednostka : szt

Cena końcowa brutto : 0,00 Cena końcowa netto : 0,00

Właściwości obrazka :

Szerokość : 298 mm

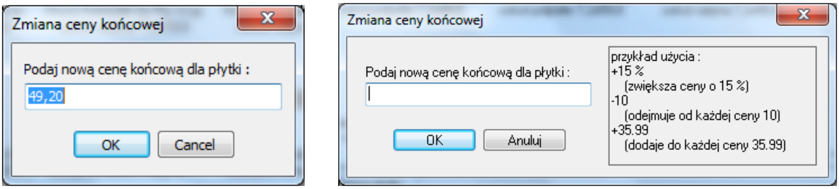
Wysokość : 298 mm

Kompresja (jakość) : 100

Fig. 217 – edition of a tile from a producer database

It is also possible to click the **Change price** icon in the main dialog of **Tile Database Editor** (or **[F3]**) and enter a new value in the new dialog. If one individual tile is selected when the icon is clicked, the new price will be introduced only to that particular tile. But it the name of a collection on the list in the left part of the dialog is selected, changes will be introduced to all elements in this collection (Fig. 187). New prices will be introduced to the database available in CAD Decor program.

To leave the edition dialog without introducing changes, click **Cancel** or ☒.



Podaj nową cenę końcową dla płytki : 49,20

Podaj nową cenę końcową dla płytki :

przykład użycia :
+15 %
(zwiększa ceny o 15 %)
-10
(odejmuje od każdej ceny 10)
+35.99
(dodaje do każdej ceny 35.99)

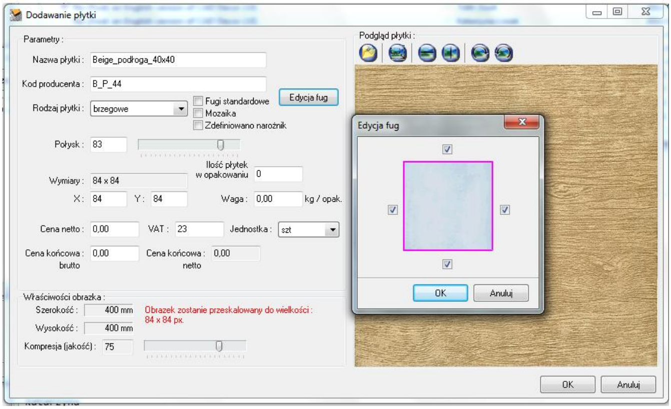
Fig. 218 – changing prices of tiles – of an individual tile and of all tiles in selected collection

5. Creating and editing the User Database of tiles

To create your own database of tiles, follow the procedure below:

- select the item User Database from the list of available databases;
- click the icon **Add new collection or collection type** ;
- enter the type and the name of a new collection and click **Add**;
- a new position will be added to the list of collections in the left part of the **Editor**;
- select it (single left-click) and add tiles to it by clicking the **Add a new tile to the selected collection** icon;
- in a new dialog **Adding tile** enter data about the new element and load the picture file with a preview of the tile;
- optionally you can drag-and-drop a few picture files to the Editor dialog without clicking the **Add a new tile…** icon – this will result in adding a few tiles at once;
- required information about a tile is:
  - a **name** of a tile, **producer code** and **type** of a tile - floor, wall or edge tiles;
  - **standard grout** - by default added around the tile; if this option is deselected, the button **Grout edition** becomes active and a new little dialog can be opened, in which the grout can be removed (Fig. 219) – it is necessary to deselect ALL edges (Fig. 220) – if only 1, 2 or 3 edges are deselected, the grout will be still added around a tile while applying tiles in the project;
  - **defined corner** – this option is available for collections that include edge tiles and allows to select a corner to add it to the edge tile (e.g. when creating a frame made of decorative tiles);
  - **gloss** – defined in the scale from 1 to 100;
  - **dimensions** – in axis X and Y (tiles in the program are flat objects with no thickness) – given in millimeters;
  - **the number of tiles in a box** – optional information;
  - **weight** – in kilograms per a box, optional information;
  - **net price, VAT, final net** and **gross price** – if the price is not defined, the tile will be not visible in the collection in CAD Decor program;
  - **unit** – pieces or square meters;

Note! It is possible to add more than 1 tile to the currently created collection in one time. To do it, after adding a new collection, without clicking the Add new… *icon, move prepared picture files of tiles (in JPG format) to the* Tile Editor *dialog, using the 'drag-and-drop' method. It will result in opening a few new dialogs* Adding a tile from a file*, one for each picture file dragged to the editor's dialog. Fill out the data fields in each dialog (Fig. 221).*



Dodawanie płytki

Parametry :

Nazwa płytki : Beige_podłoga_40x40

Kod producenta : B_P_44

Rodzaj płytki : brzegowe

☐ Fugi standardowe
☐ Mozaika
☐ Zdefiniowano narożnik

Połysk : 83

Wymiary : 84 x 84

X : 84 Y : 84

Ilość płytek w opakowaniu : 0

Waga : 0,00 kg / opak.

Cena netto : 0,00 VAT : 23 Jednostka : szt

Cena końcowa brutto : 0,00 Cena końcowa netto : 0,00

Właściwości obrazka :

Szerokość : 400 mm

Wysokość : 400 mm

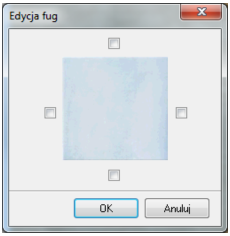
Kompresja (jakość) : 75

Obrazek zostanie przeskalowany do wielkości : 84 x 84 px.

Edycja fug

☑ ☑ ☑ ☑

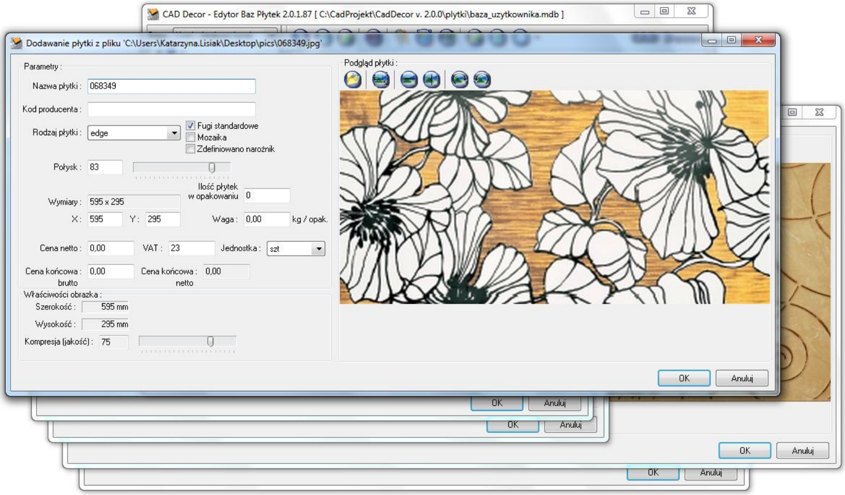
Fig. 219 – grout edition – this tile will have a grout



Edycja fug

☐ ☐ ☐ ☐

Fig. 220 – this tile will be applied in the project without a grout



CAD Decor - Edytor Baz Płytek 2.0.1.87 [C:\CadProjekt\CadDecor v. 2.0.0\plytki\baza_uzytkownika.mdb]

Dodawanie płytki z pliku 'C:\Users\Katarzyna.Lisiak\Desktop\pics\068349.jpg'

Parametry :

Nazwa płytki : 068349

Kod producenta :

Rodzaj płytki : edge

☑ Fugi standardowe
☐ Mozaika
☐ Zdefiniowano narożnik

Połysk : 83

Wymiary : 595 x 295

X : 595 Y : 295

Ilość płytek w opakowaniu : 0

Waga : 0,00 kg / opak.

Cena netto : 0,00 VAT : 23 Jednostka : szt

Cena końcowa brutto : 0,00 Cena końcowa netto : 0,00

Właściwości obrazka :

Szerokość : 595 mm

Wysokość : 295 mm

Kompresja (jakość) : 75

Fig. 221 – adding a few tiles in one time to the User Database

6. Adding mosaics to the User Database

To add a mosaic to your own database:

- prepare a picture of a mosaic in a resolution identical to the real size of a tile (**1 pixel = 1 mm**);
- the original resolution can be higher – it can be modified in a professional program for processing pictures;

- the picture should be in a perpendicular view with no shadows or reflections;
- using a tool for processing pictures draw grouts on the picture;
- it should be done in a following way: in places, when grouts are visible on the picture apply lines of the thickness the same as the thickness of the grout in reality (**1 pixel = 1 mm**), in the colour of a RGB sign code: **R = 255, G = 0, B = 255** (magenta) (Fig. 222);
- it is really important to use exactly this colour because this is the only colour recognized by the program as grouts;
- grouts should be drawn using a tool which guarantees a homogenous shade of the applied line - e.g. Pencil Tool or Rectangular Marquee Tool;
- Brush Tool does not allow to properly draw grouts;

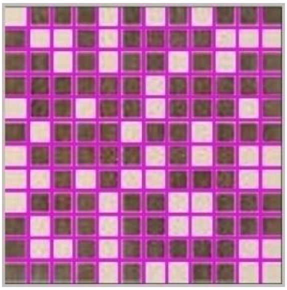


Fig. 222 – grouts drawn in a program for processing pictures

- there is no need to draw grouts around a mosaic (on its edges);
- after the lines for grouts are applied, save the picture in a BMP file format;
- when saving a file make sure, that its settings are as follows: File Format: Windows, Depth: 24 Bit;
- a file prepared in this way should be drag-and-dropped to the **Editor** dialog (the collection to which the mosaic is to be added should be selected first)
- in a new dialog enter necessary information about a mosaic;
- options **Standard grout** and **Mosaic** should be selected;
- selected option **Standard grout** will result in adding grouts around a tile during application in the project;
- selected option **Mosaic** will result in an automatic optimization of the mosaic in the project, which is different than the optimization of other tiles, because the mosaic contains a number of small independent cubes, that can be easily used in another place in the project;
- the valuation of mosaics is therefore different than other tiles: only square meters covered with a mosaic are included in the valuation, after rounding up to full tiles (sets of mosaic cubes, established by the user when adding a mosaic to the database – e.g. a square of 12 rows and 12 columns of cubes – as presented in the illustration 222) necessary to cover the area;
- it is not necessary to change any other settings (of course the gloss should be attributed accordingly to requirements);
- to add a mosaic to the database click **Ok**.

Note! Remember that it is necessary to save a picture with drawn grouts in a BMP format.

Note! There is an alternative way of preparing mosaics – during processing the picture the grouts can be also drawn around the mosaic (on edges), but in this case it is necessary to:

- *draw the grouts on the external edges by half more narrow than the rest;*
- *deselect the* Standard grout *option and uncheck ALL edges of a tile (see Fig. 220 on page 167) to prevent the program from adding grouts automatically;*

7. Picture properties

To load a file preview click the **Select picture** icon and in a new dialog indicate the location of a proper picture file on the disk. A tile applied to the wall or other object in the project will have a good image quality only if the size of the picture in pixels is at least the same as the tile in millimeters. If the size of the tile in pixels is different then the size of a tile in millimeters, the program will inform the user that changing the scale of a picture is necessary (Fig. 223).

The parameters of the picture can be change by the user by clicking the **Scale** and by using the **Compression** option in the **Picture properties** section (Fig. 223).

Compression (quality) of the picture is the level of its simplification in order to minimize its size in MB in a way that preserves the best possible visual quality but also saves the disk space.

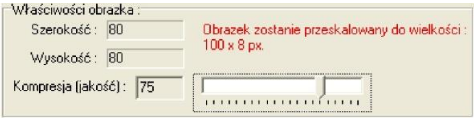

Właściwości obrazka :
Szerokość : 80
Wysokość : 80
Kompresja (jakość) : 75
Obrazek zostanie przeskalowany do wielkości : 100 x 8 px.

Fig. 223 – Picture properties section

If the picture is loaded in a wrong position, it can be flipped or rotated, using:

- or - to flip horizontally or vertically;
- or - to rotate by 90° to the left or to the right.

8. Finishing work with the Add tile dialog

After entering all data and defining settings in the **Adding tile** dialog and confirming them by clicking **Ok.**, a new tile will be added to the collection, and its preview and name will be displayed in a right part of **Tile Database Editor** dialog.

A newly created collection can be used in the CAD Decor program straight away. To do it, refresh the database by clicking in the Collections list in visualization (left side of the bottom toolbar) on a position of any producer's base, and then going back to the User Database. As a result the database will be reloaded from the disk and all newly added elements and changes will be introduced.

CHAPTER 22
Using paints in designing

1. Introductory remarks

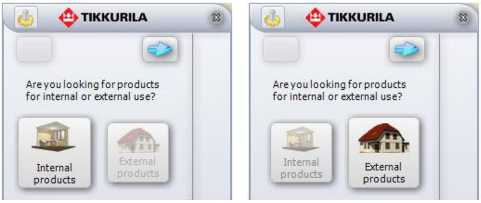
Tikkurila Colours is a tool enabling the users of CAD Decor, CAD Decor Paradyz and CAD Kitchens to select paints and other coatings for interior or exterior use. Among others, products like primers, enamels, paints and lacquers are available. They come from the offer of Tikkurila, one of the leaders of European paints market. The paint selection is possible on every stage of designing in the visualization mode. The selection can be proceeded in a few different ways, which have been described in the following chapters of this manual. All products can be used in the project and saved to the individual **User Palette**. For each product the detailed technical description is available for downloading in PDF format from the producers website. It is also possible to create a final report, including all data necessary for preparing an order.

2. First steps with the Tikkurila Colours module

The Tikkurila Colours module can be found in the visualization mode under the button **Tikkurila** in **Materials** tab, in left upper corner of the screen. To get started, the User should click on it once, with the left mouse button.

The first step when working with the paints module is to choose the general kind of products, that will be used in the project. There are two main types of products – designed for the use on internal or external surfaces (Fig. 224). After indicating the proper type, click on the blue arrow pointing right, to proceed to the next step.

Note! If the user indicates the icon that is already highlighted, the module will proceed to the next step automatically, and it will not be necessary to click the arrow button.

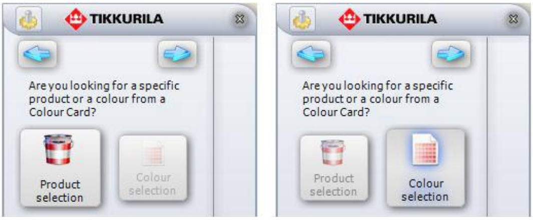


Are you looking for products for internal or external use?

Are you looking for products for internal or external use?

Fig. 224 – choosing the type of the products – interior or exterior

After this preliminary selection there are two available modes of module operation – the **Product selection** and the **Colour selection** mode (Fig. 225). If the User is looking for a specific product (e.g. alkyd enamel, emulsion paint, acrylic lacquer or a decorative plaster) he/she should choose the **Product selection** icon, and then the blue arrow pointing right. But if he/she knows what colour interests him/her, but is not sure, for which products it is available, he/she should click on the **Colour selection** button and then the arrow. If the arrow pointing left is selected, the User will be taken back to the first stage of choosing the internal and external products.


Are you looking for a specific product or a colour from a Colour Card?

TIKKURILA
Product selection
Colour selection
TIKKURILA
Product selection
Colour selection

Fig. 225 – selection by the product or by the colour

3. Operating the paints module in the Product selection mode

Browsing the producer offer using the product criterion is the first possible way of working with the module. After choosing this mode - by selecting the option **Product selection** and proceeding to the next stage - the next step is to indicate the chosen group of products on the drop-down list called **Products of a group**. This will show all the products, belonging to the given group, on the list below named **Selected products**. The User should point out the particular product on this list. To do it, the User should left-click on the tick-box beside the name of the chosen product. The navy cross will then appear (Fig. 226).

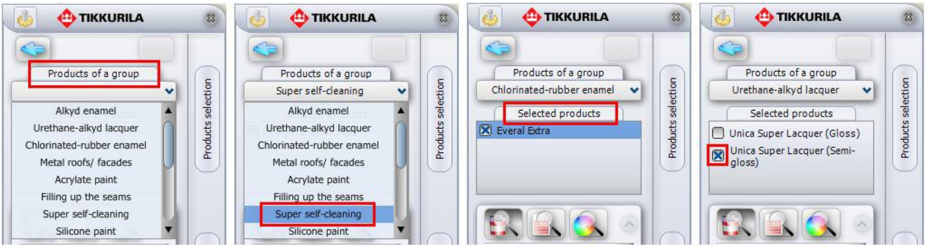

TIKKURILA
Products of a group
Alkyd enamel
Urethane-alkyd lacquer
Chlorinated-rubber enamel
Metal roofs/ facades
Acrylate paint
Filling up the seams
Super self-cleaning
Silicone paint
Products selection
TIKKURILA
Products of a group
Super self-cleaning
Alkyd enamel
Urethane-alkyd lacquer
Chlorinated-rubber enamel
Metal roofs/ facades
Acrylate paint
Filling up the seams
Super self-cleaning
Silicone paint
Products selection
TIKKURILA
Products of a group
Chlorinated-rubber enamel
Selected products
☒ Everal Extra
Products selection
TIKKURILA
Products of a group
Urethane-alkyd lacquer
Selected products
☐ Unica Super Lacquer (Gloss)
☒ Unica Super Lacquer (Semi-gloss)
Products selection

Fig. 226 – product selection

At this moment, the following 3 methods of proceeding further selection will become available:

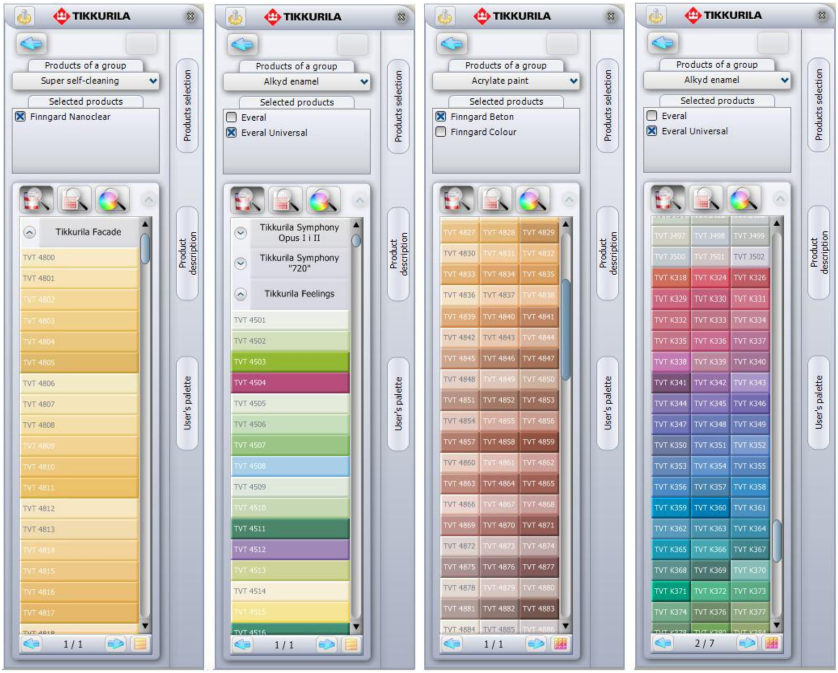
- the option **Available for a Colour Card** - icon
- the option **Search by the code from the template** – icon
- the option **Search by the colour** – icon

3.1. Product selection using Colour Cards

The first way of selecting the product is to do it by checking all colours available for this product in **Colour Cards** the product in question belongs to. Colour Cards contain products along with colours assigned to them, what allows the program to quickly scan the whole producer offer in order to find the material best suiting the criteria set up by the User.

In this case the procedure of selection is as follows:

- After selecting the icon **Available for a Colour Card** the list of available colours will automatically show up;
- Colours are displayed in a form of a vertical panels with codes, appearing under the name of each **Colour Card** the selected product is available in (Fig. 227);
- Lists assigned to particular **Cards** can be collapsed or expanded using buttons ⌃ ⌄, placed beside the name of the **Card**, on the left-hand side;
- The view of the closed **Cards** is shown on the second picture from the left in the illustration presented below (Fig. 227);
- The view of the colour panels can be also changed using the icon on the right bottom corner of the module - **Change the view** or (dependent on the currently used view);
- To scroll the list, use the slider on the right-hand side;
- If the list of available colours is very long, the program will divide it into several tabs (pages); to move from one tab to another use the arrows on the bottom of the module window: ⇦ 1 / 37 ⇨;
- The number of colours displayed in one tab can be changed using the **Settings** function, available after clicking on the **Options** icon (detailed description in point 4.1);
- The numbers displayed on the bottom of the module window inform the User which tab is currently being shown;
- At this moment it is possible to save the chosen products in preferred colours to the individual **User Palette** (and at the same time to the computer disc) by simply using the ‘drag-and-drop’ method;


TIKKURILA
Products selection
Product description
User's palette
Tikkurila Facade
Tikkurila Symphony Opus I i II
Tikkurila Symphony "720"
Tikkurila Feelings
1 / 1
2 / 7

Products of a group: Super self-cleaning
Selected products: ☒ Finngard Nanoclear

Products of a group: Alkyd enamel
Selected products: ☐ Everal ☒ Everal Universal

Products of a group: Acrylate paint
Selected products: ☒ Finngard Beton ☐ Finngard Colour

Products of a group: Alkyd enamel
Selected products: ☐ Everal ☒ Everal Universal

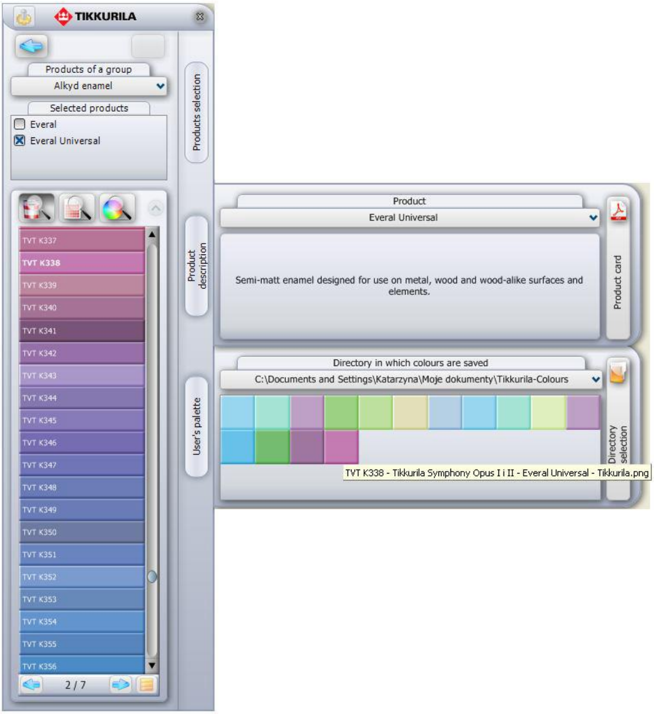
Fig. 227 – examples of available ways of displaying colours

- To add the colour to the palette, first click on the button **User Palette** in order to expand the pane;
- Then left-click on the product and holding the button, move the cursor to the pane and release the mouse button;
- The colour will be added to the palette and will be displayed in a form of a square (Fig. 238);
- At the same moment the colour will be saved to the computer disc in one of the following formats: JPG, BMP, PNG or GIF (more information on this subject can be found in point 4.4. of this chapter);
- Selected colour can be also applied to any surface or object in the project.
- It is done in analogical way to described above - using the 'drag-and-drop' method.

3.2. Product selection using the code from the template

If the user knows the code mark of the particular product he/she would like to use in the project (for instance, he/she found it earlier on in the producer template), the option **Search by the code from the template** can be used. In this mode the procedure of selection is as follows:

- After choosing the icon 🔍 the **Colour code** pane will appear;
- Type the code in here and confirm by clicking ✓ (Fig. 228) (the capitalization does not matter);


TIKKURILA
Products selection
Product description
User's palette
Product card
Directory selection
TVT K337
TVT K338
TVT K339
TVT K340
TVT K341
TVT K342
TVT K343
TVT K344
TVT K345
TVT K346
TVT K347
TVT K348
TVT K349
TVT K350
TVT K351
TVT K352
TVT K353
TVT K354
TVT K355
TVT K356
2 / 7

Products of a group: Alkyd enamel

Selected products:
☐ Everal
☒ Everal Universal

Product: Everal Universal

Semi-matt enamel designed for use on metal, wood and wood-alike surfaces and elements.

Directory in which colours are saved: C:\Documents and Settings\Katarzyna\Moje dokumenty\Tikkurila-Colours

TVT K338 - Tikkurila Symphony Opus I i II - Everal Universal - Tikkurila.png

Fig. 228 – an effect of the selection by the code, and adding the product to the User Palette and the description display

- In the same way as in the previously described case, **Colour Cards** will be scanned through, until the wanted product will be found and displayed under the name of the **Card** that contains it (as a colour pane with a code);
- At this stage it will be possible to add the product to the **User Palette**;
- This is also the moment when the user has an access to the basic information about the product: after placing the cursor over the square icon in the palette, the label with the following data will show up: the code, the name of the **Colour Card** to which the product belongs, the name of the paint and also the file, which has been saved to the disk;

- It is also possible to go to the **Product** pane (by choosing the button **Product description** in which a short characteristic of the chosen paint is given;
- At this level there is also a detailed technical description available to download from manufacturer's website after clicking on the button **Product Card** (the detailed description of this function can be found in the subchapter 4).

3.3. Product selection using the indicated colour

After clicking the icon **Search by the Colour** in the part of the dialog box below the three icons of selection type, the square colour palette will display (Fig. 229). The palette can be used by the user to indicate the colour of the wanted shade and intensity.

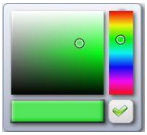


Fig. 229 – the colour palette

In this case the procedure of paint selection proceeds as follows:

- First the user should indicate the colour he/she is looking for on the palette;
- In order to do so, please click on the vertical colour stripe on the right-hand side of the palette, marking the tint that should be used in the project (the little circle will appear in the marked point);
- Then click on the square colour palette in the spot, where the intensity of the colour best suits users preferences (another little circle will appear there);
- The chosen shade will display on the horizontal stripe below the palette;
- When the displayed colour achieves proper parameters, the User should confirm the choice by clicking the button ✓;
- It will result in the program browsing the producer's offer in search of any products available in the chosen tint;
- This process includes searching for the most similar colours to the one indicated by the user in producer's **Colour Cards**;
- After it is accomplished, the list of Cards, in which the wanted colour has been found, will appear below the palette (Fig. 230);
- Below each **Card** information about products being available in the sought tint will appear;
- The colours with the closest parameters to the tint indicated by the User on the palette will be listed in the form of the colour panels with the code of the product displayed;
- In one **Card** there may be more than one colour found to chose from;
- In the 'brick panels' view, the names of the **Colour Cards** will not be listed;
- An example result of this kind of selection has been illustrated on the illustration on the next page (Fig. 230);

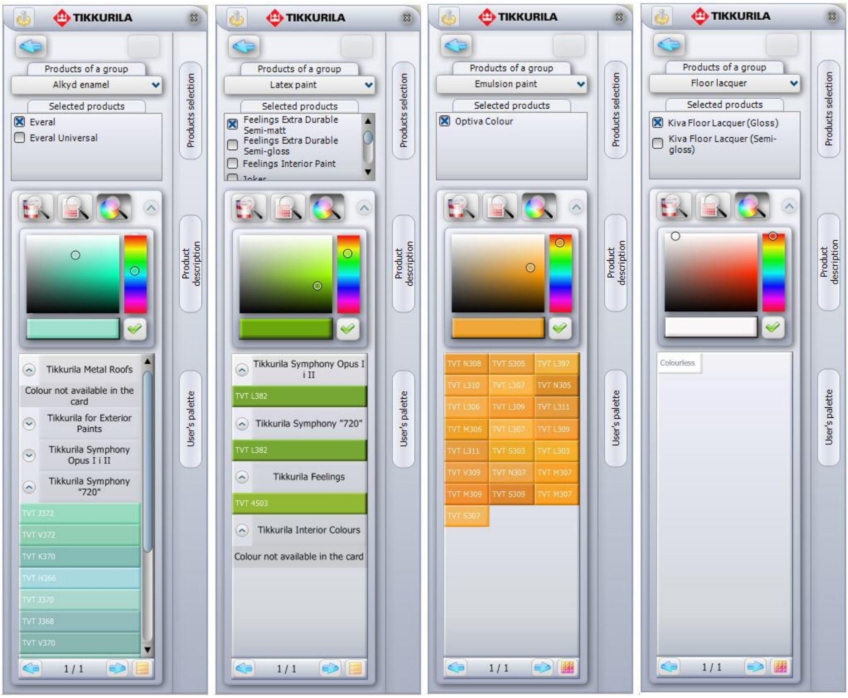

TIKKURILA
Products of a group
Alkyd enamel
Selected products
☒ Everal
☐ Everal Universal
Products selection
Product description
User's palette
Tikkurila Metal Roofs
Colour not available in the card
Tikkurila for Exterior Paints
Tikkurila Symphony Opus I i II
Tikkurila Symphony "720"
TVT J372
TVT V372
TVT K370
TVT H366
TVT J370
TVT J368
TVT V370
1 / 1
TIKKURILA
Products of a group
Latex paint
Selected products
☒ Feelings Extra Durable Semi-matt
☐ Feelings Extra Durable Semi-gloss
☐ Feelings Interior Paint
☐ Joker
Tikkurila Symphony Opus I i II
TVT L382
Tikkurila Symphony "720"
TVT L382
Tikkurila Feelings
TVT 4503
Tikkurila Interior Colours
Colour not available in the card
1 / 1
TIKKURILA
Products of a group
Emulsion paint
Selected products
☒ Optiva Colour
TVT N308
TVT S305
TVT L397
TVT L310
TVT L307
TVT N305
TVT L306
TVT L309
TVT L311
TVT M306
TVT L307
TVT L309
TVT L311
TVT S303
TVT L303
TVT V309
TVT N307
TVT M307
TVT M309
TVT S309
TVT M307
TVT S307
1 / 1
TIKKURILA
Products of a group
Floor lacquer
Selected products
☒ Kiva Floor Lacquer (Gloss)
☐ Kiva Floor Lacquer (Semi-gloss)
Colourless
1 / 1

Fig. 230 – results of searching for the preferred colours for the chosen product

4. Operating the paints module in the ‘Colour selection’ mode

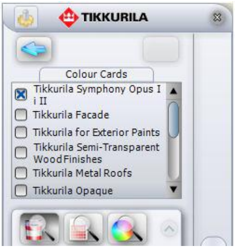

TIKKURILA
Colour Cards
☒ Tikkurila Symphony Opus I i II
☐ Tikkurila Facade
☐ Tikkurila for Exterior Paints
☐ Tikkurila Semi-Transparent Wood Finishes
☐ Tikkurila Metal Roofs
☐ Tikkurila Opaque

Fig. 231 - the list of Colour Cards and the three selection icons

This way of selecting works rather analogically to the procedures described above. After choosing the option **Colour selection** at the second step of working with the program and after proceeding to the next window, the user will gain access to the list of all available **Colour Cards** in Tikkurila’s offer, and also the three icons that determine the way the final selection will be operated (Fig. 231).

The **Colour Card** that should be a filter for the final selection should be marked by clicking on the empty box beside its name – the navy cross will appear. At this point there are 3 ways of running the final selection available, alike to the situation described in the previous part of this manual: **Available for a Colour Card**, **Search by the code** from the template and **Search by the colour**.

4.1. Colour selection using Colour Cards

After clicking on **Available for a Colour Card** all the colours available in the previously marked card will appear on the list below. Among them the user may find the ones that suit the character of the interior he/she is currently designing. In this case the selection goes as follows:

- Click the box beside the chosen **Colour Card** to mark it;
- Then click the icon **Available for a Colour Card**;
- The list of available colours in the **Card** will appear (Fig. 232);
- As it has been mentioned before, there is a possibility to change the view of available colours as well as collapsing and expanding the lists (buttons: ▤ or ▦ and ⌃⌄);
- After finding the proper colour, the user can add it to the **User Palette** as well as apply to any surfaces in the design.

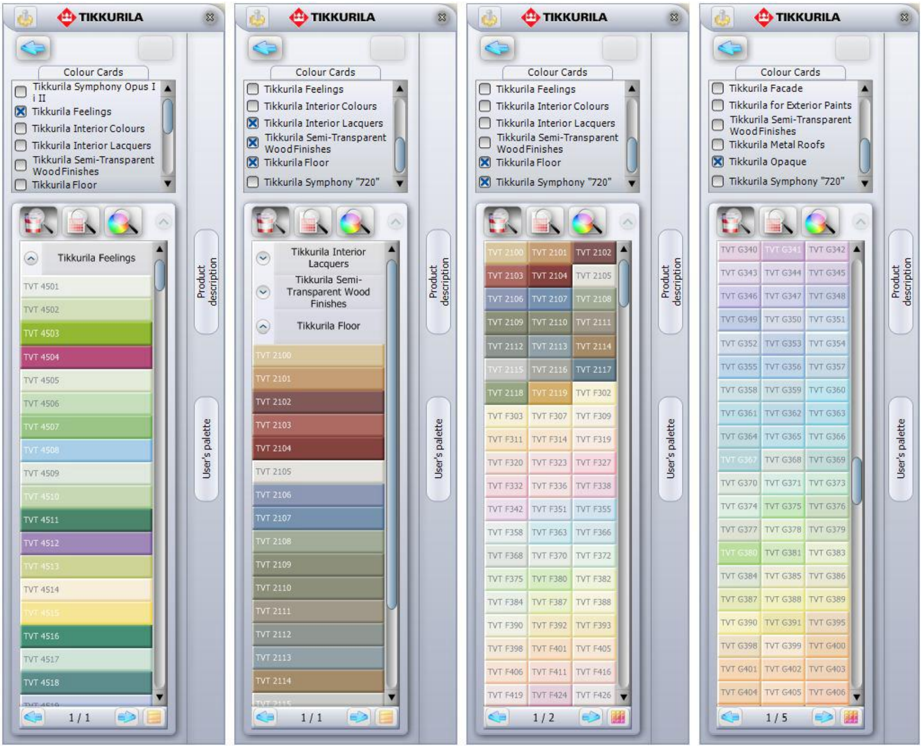

TIKKURILA
Colour Cards
☐ Tikkurila Symphony Opus I i II
☒ Tikkurila Feelings
☐ Tikkurila Interior Colours
☐ Tikkurila Interior Lacquers
☐ Tikkurila Semi-Transparent WoodFinishes
☐ Tikkurila Floor
Tikkurila Feelings
TVT 4501
TVT 4502
TVT 4503
TVT 4504
TVT 4505
TVT 4506
TVT 4507
TVT 4508
TVT 4509
TVT 4510
TVT 4511
TVT 4512
TVT 4513
TVT 4514
TVT 4515
TVT 4516
TVT 4517
TVT 4518
1 / 1
Product description
User's palette
TIKKURILA
Colour Cards
☐ Tikkurila Feelings
☐ Tikkurila Interior Colours
☒ Tikkurila Interior Lacquers
☒ Tikkurila Semi-Transparent WoodFinishes
☒ Tikkurila Floor
☐ Tikkurila Symphony "720"
Tikkurila Interior Lacquers
Tikkurila Semi-Transparent Wood Finishes
Tikkurila Floor
TVT 2100
TVT 2101
TVT 2102
TVT 2103
TVT 2104
TVT 2105
TVT 2106
TVT 2107
TVT 2108
TVT 2109
TVT 2110
TVT 2111
TVT 2112
TVT 2113
TVT 2114
1 / 1
Product description
User's palette
TIKKURILA
Colour Cards
☐ Tikkurila Feelings
☐ Tikkurila Interior Colours
☐ Tikkurila Interior Lacquers
☐ Tikkurila Semi-Transparent WoodFinishes
☒ Tikkurila Floor
☒ Tikkurila Symphony "720"
TVT 2100 TVT 2101 TVT 2102
TVT 2103 TVT 2104 TVT 2105
TVT 2106 TVT 2107 TVT 2108
TVT 2109 TVT 2110 TVT 2111
TVT 2112 TVT 2113 TVT 2114
TVT 2115 TVT 2116 TVT 2117
TVT 2118 TVT 2119 TVT F302
TVT F303 TVT F307 TVT F309
TVT F311 TVT F314 TVT F319
TVT F320 TVT F323 TVT F327
TVT F332 TVT F336 TVT F338
TVT F342 TVT F351 TVT F355
TVT F358 TVT F363 TVT F366
TVT F368 TVT F370 TVT F372
TVT F375 TVT F380 TVT F382
TVT F384 TVT F387 TVT F388
TVT F390 TVT F392 TVT F393
TVT F398 TVT F401 TVT F405
TVT F406 TVT F411 TVT F416
TVT F419 TVT F424 TVT F426
1 / 2
Product description
User's palette
TIKKURILA
Colour Cards
☐ Tikkurila Facade
☐ Tikkurila for Exterior Paints
☐ Tikkurila Semi-Transparent WoodFinishes
☐ Tikkurila Metal Roofs
☒ Tikkurila Opaque
☐ Tikkurila Symphony "720"
TVT G340 TVT G341 TVT G342
TVT G343 TVT G344 TVT G345
TVT G346 TVT G347 TVT G348
TVT G349 TVT G350 TVT G351
TVT G352 TVT G353 TVT G354
TVT G355 TVT G356 TVT G357
TVT G358 TVT G359 TVT G360
TVT G361 TVT G362 TVT G363
TVT G364 TVT G365 TVT G366
TVT G367 TVT G368 TVT G369
TVT G370 TVT G371 TVT G373
TVT G374 TVT G375 TVT G376
TVT G377 TVT G378 TVT G379
TVT G380 TVT G381 TVT G383
TVT G384 TVT G385 TVT G386
TVT G387 TVT G388 TVT G389
TVT G390 TVT G391 TVT G395
TVT G398 TVT G399 TVT G400
TVT G401 TVT G402 TVT G403
TVT G404 TVT G405 TVT G406
1 / 5
Product description
User's palette

Fig. 232 – example results of using Available for a colour card procedure

4.2. Colour selection using the code from the template

If the user knows the code of the colour he/she is looking for (for instance it has been found earlier in the producer's template), the option **Search by the code from the template** may be used.

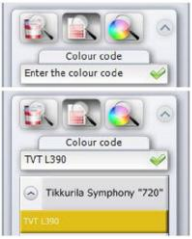

Colour code
Enter the colour code
Colour code
TVT L390
Tikkurila Symphony "720"
TVT L390

Fig. 233 – Colour Code pane

- After choosing this icon, the **Colour Code** pane will appear (Fig. 233);
- Enter the code of the wanted colour in it (letter capitalization does not matter);
- Confirm by clicking ✓;
- As it has been mentioned before, adding the colour to the **User Palette** will automatically result in saving it to the computer disc as well in one of the following formats: JPG, BMP, PNG or GIF (the format can be changed using the **Settings** option);
- The product saved to the **User Palette** will be an identical copy of the product in Tikkurila offer.

4.3. Colour selection using the indicated colour

When the **Search by the colour** option is chosen, in the part of the dialog box below the three icons determining the type of selection, the square colour palette will appear. In this palette the colour with the wanted shade and intensity should be indicated, in the same way as it has been described in subchapter 3 (Fig. 234).

- After finding the colour that suits designers needs (it will be shown on the horizontal stripe below the square palette) it should be confirmed by clicking ✓;
- It will result in browsing the previously marked **Colour Cards** in search of the colours with maximally close parameters to the one indicated by the User in the square palette;

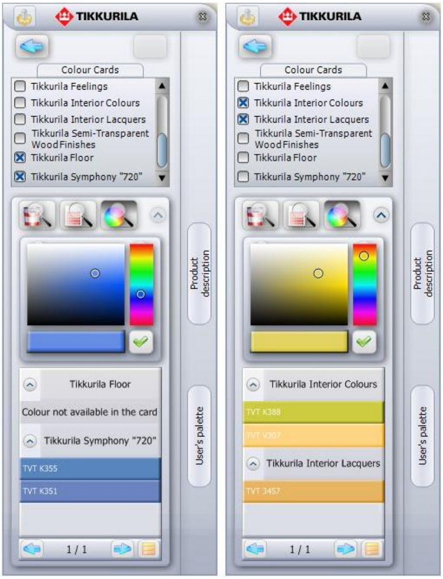

TIKKURILA
Colour Cards
☐ Tikkurila Feelings
☐ Tikkurila Interior Colours
☐ Tikkurila Interior Lacquers
☐ Tikkurila Semi-Transparent Wood Finishes
☒ Tikkurila Floor
☒ Tikkurila Symphony "720"
Product description
Tikkurila Floor
Colour not available in the card
Tikkurila Symphony "720"
TVT K355
TVT K351
User's palette
1 / 1
TIKKURILA
Colour Cards
☐ Tikkurila Feelings
☒ Tikkurila Interior Colours
☒ Tikkurila Interior Lacquers
☐ Tikkurila Semi-Transparent Wood Finishes
☐ Tikkurila Floor
☐ Tikkurila Symphony "720"
Product description
Tikkurila Interior Colours
TVT K388
TVT V307
Tikkurila Interior Lacquers
TVT 3457
User's palette
1 / 1

Fig. 234 - the results of Search by the colour procedure

- In each **Card** there may be a few similar colours available – they will all be listed (Fig. 234);
- This procedure can be repeated for many times - until finding the proper shade;
- After finding the colour user can add it to his/her personal **Palette** or use in the project.

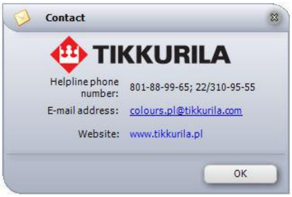
5. Other options of the Tikkurila Colours module

Apart from the options discussed above, the user has an access to other functions, available via the icon **Options** , as well as to the collapsible panes, hidden under the three vertical buttons on the right-hand side of the module dialog box, presented in the following subchapters: .

User's palette
Product description
Products selection

5.1. The Options icon

By clicking the **Options** icon the following options become available: **Settings**, **Contact**, **Help** and **Report**. The **Contact** option provides access to basic data of the manufacturer: the helpline phone numbers (offices located in Poland); e-mail address and website (Fig. 235);



Contact

TIKKURILA

Helpline phone number: 801-88-99-65; 22/310-95-55

E-mail address: colours.pl@tikkurila.com

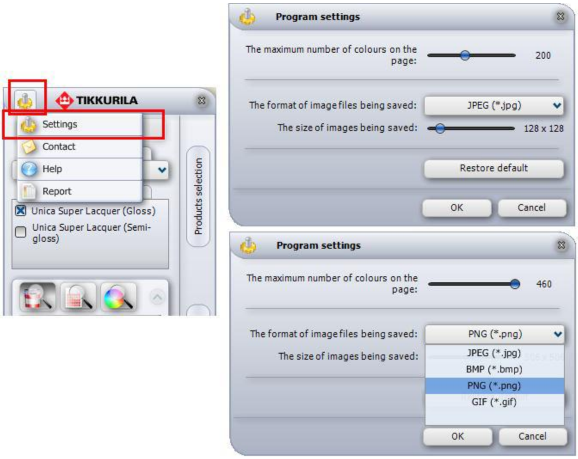
Website: www.tikkurila.pl

OK

Fig. 235 - the manufacturer's contact details

The **Settings** options enables the user to:

- Modify the number of colours being shown at one time on the list (page) from 20 to 500 at one time;
- Modify the resolution of the JPG, BMP, PNG or GIF files being saved to the disc simultaneously to adding them to the **User Palette** (more information is provided in subchapter 4);
- Restore default settings.
- The exemplar settings modification has been illustrated below (Fig. 236).



☒ Unica Super Lacquer (Gloss)

☐ Unica Super Lacquer (Semi-gloss)

Program settings

The maximum number of colours on the page: 200

The format of image files being saved: JPEG (*.jpg)

The size of images being saved: 128 x 128

Restore default

OK Cancel

Program settings

The maximum number of colours on the page: 460

The format of image files being saved: PNG (*.png)

The size of images being saved:

Fig. 236 – changing the settings

The option **Help** opens the PDF file, containing this manual and **Report** enables the User to create a report containing data of all paints used in the project – it has been described in the subchapter 6 – **Summary and report generation**.

5.2. Advanced product selection

The first of the collapsible side panes is called **Products selection**. It is only available in the **Product selection** mode. It enables advanced paint selection based on various criteria.

First, the **Product type** or **Destination** (the type of the surface the coating will be applied to in the real world) should be chosen. Secondly, the **Key word** (for instance: acrylate lacquer or emulsion paint) or **Brand** (product family – for example: *Pure White, Feelings*). These positions are simply indicated by putting the navy cross in the adequate tick-box. Examples of possible configurations of selection criteria is being shown on the picture below (Fig. 237).

In the last section of this pane the products that meet established criteria are being displayed. After marking the products that interest the User by putting a navy cross beside them, and then consequently confirming the choice by clicking ✓ button, the selected products will show up on the list **Selected product** in the left section of the module dialog box.

It is necessary to indicate products on this list as well. Then the User should choose one of the icons determining the type of final selection and follow the rules described in the previous subchapters of this chapter.

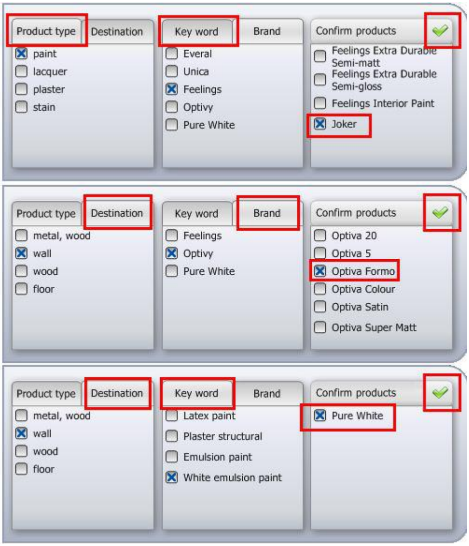
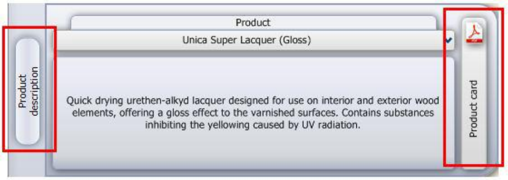

Product type
Destination
☒ paint
☐ lacquer
☐ plaster
☐ stain
Key word
Brand
☐ Everal
☐ Unica
☒ Feelings
☐ Optivy
☐ Pure White
Confirm products
☐ Feelings Extra Durable Semi-matt
☐ Feelings Extra Durable Semi-gloss
☐ Feelings Interior Paint
☒ Joker
Product type
Destination
☐ metal, wood
☒ wall
☐ wood
☐ floor
Key word
Brand
☐ Feelings
☒ Optivy
☐ Pure White
Confirm products
☐ Optiva 20
☐ Optiva 5
☒ Optiva Formo
☐ Optiva Colour
☐ Optiva Satin
☐ Optiva Super Matt
Product type
Destination
☐ metal, wood
☒ wall
☐ wood
☐ floor
Key word
Brand
☐ Latex paint
☐ Plaster structural
☐ Emulsion paint
☒ White emulsion paint
Confirm products
☒ Pure White

Fig. 237 – examples of configurations of selection criteria

5.3. Product technical specifications

The second of the side collapsible panes – **Product description** – is responsible for providing the User with the short product characteristic. It opens after left-clicking on the button **Product description**. In the upper part of the pane the name of the product in shown. The User can manually change the displayed product to another from the same group, for example to compare them. This pane also enables the User to gain access to detailed technical product specifications in PDF format, available online at Tikkurila’s website. The access can be gained after left-clicking the button **Product Card** (Fig. 238).

Of course, this option is only available when the connection with the Internet is established. The **Product Card** can be saved to the computer disc as a PDF file, printed directly from the website or shared with other Internet users.


Product
Product description
Product card

Unica Super Lacquer (Gloss)

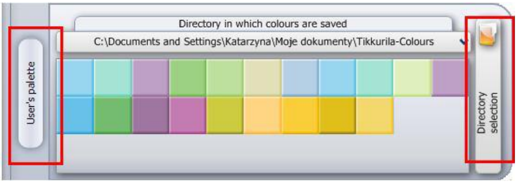
Quick drying urethen-alkyd lacquer designed for use on interior and exterior wood elements, offering a gloss effect to the varnished surfaces. Contains substances inhibiting the yellowing caused by UV radiation.

Fig. 238 – Product description pane

5.4. Saving colours to the User Palette

It has been already mentioned, while describing the several ways of proceeding the paint selection, that the User has a possibility to add his/her favourite colours to the individual Palette. It can be done simply by moving the chosen colour from the list, where it is displayed, to the **User Palette** pane, with the use of the ‘drag-and-drop’ method. It will result, at the same time, in saving the colour in the form of JPG, BMP, PNG or GIF file to the computer disc.

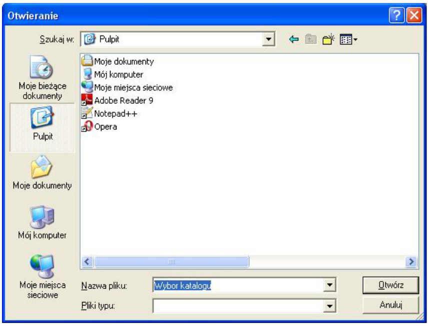
The files will be saved in the default directory (**My Documents**), unless the user changes the localization manually. To do so, the User should click the **Directory selection** button on the right-hand side of the expanded pane (Fig. 239).


Directory in which colours are saved
User's palette
Directory selection

C:\Documents and Settings\Katarzyna\Moje dokumenty\Tikkurila-Colours

Fig. 239 - User’s palette’ pane with the button enabling to select the directory in which colours will be saved

A new dialog will then open (Fig. 240), in which the destination directory should be chosen.


Otwieranie
Moje bieżące dokumenty
Pulpit
Moje dokumenty
Mój komputer
Moje miejsca sieciowe
Moje dokumenty
Mój komputer
Moje miejsca sieciowe
Adobe Reader 9
Notepad++
Opera
Otwórz
Anuluj

Szukaj w: Pulpit

Nazwa pliku: Wybor katalogu

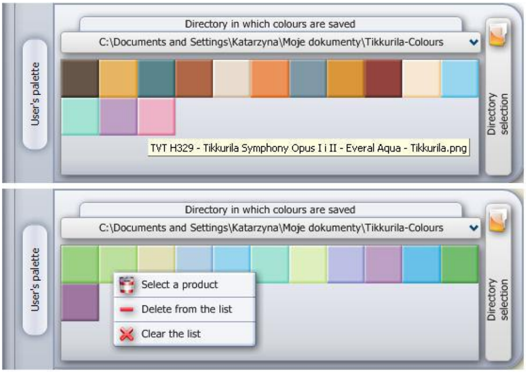
Pliki typu:

Fig. 240 – choosing the directory for saving elements of the User Palette in the new dialog box

Thanks to the individual palette, it is possible for the User to create a library of the most commonly used colours and products from the producers database. Elements that have been once entered are remembered by the program and are available to use again in the future.

Because it is possible to add multiply new directories for saving Tikkurila colours, the user can create a few separate libraries (for instance for products designed to use in various interiors, such as bedrooms or bathrooms, as well as colours of diverse kinds – for example: cold or warm), and then, while operating the module, switch between them accordingly to his/her current needs. In this pane the user also gains access to the basic information about the product. After placing the cursor – without clicking - over the chosen colour in the palette, the label with the most important information, such as the code and the name of the Colour Card that contains the colour, will be displayed (Fig. 241).

In addition, after right-clicking the square icon of the chosen product in the palette, the user will gain access to the pop-up menu, enabling him/her to delete single or several items from the **Palette**, as well as to edit them in order to add the product to the chosen colour (if it had been previously saved without assigning this information). Functions available in the **User Palette** and the **Product selection** dialog box are presented on the illustrations below (Fig. 241 and 242).

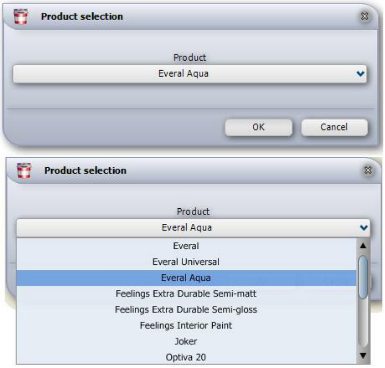


Directory in which colours are saved: C:\Documents and Settings\Katarzyna\Moje dokumenty\Tikkurila-Colours

TVT H329 - Tikkurila Symphony Opus I i II - Everal Aqua - Tikkurila.png

User's palette
Directory selection
Select a product
Delete from the list
Clear the list

Fig. 241 – the look and features of the User Palette pane



Product: Everal Aqua

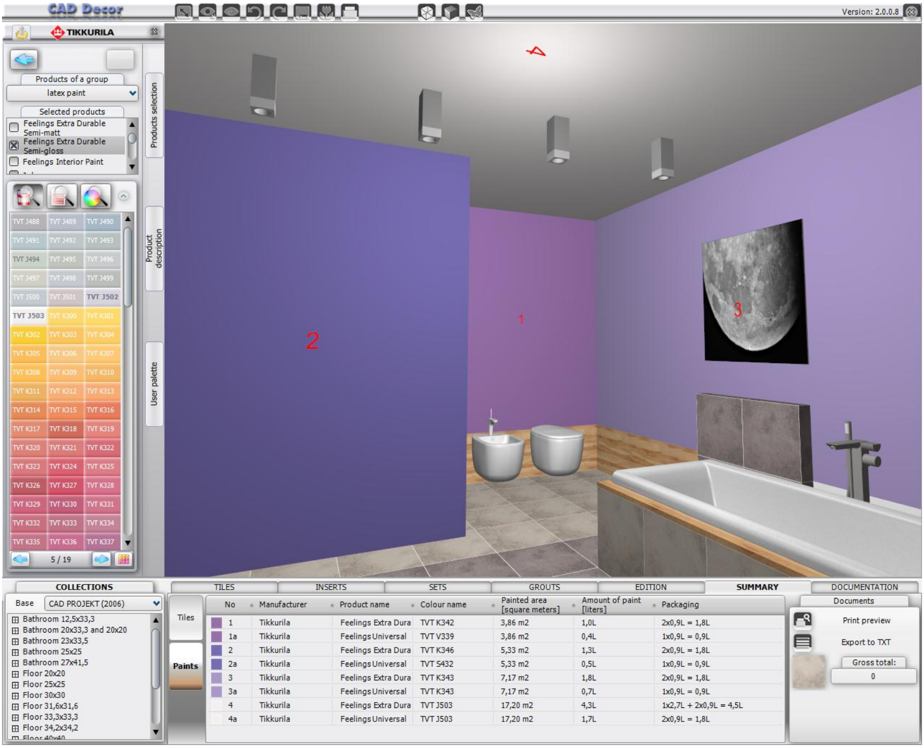
Product selection
OK
Cancel
Everal
Everal Universal
Everal Aqua
Feelings Extra Durable Semi-matt
Feelings Extra Durable Semi-gloss
Feelings Interior Paint
Joker
Optiva 20

Fig. 242 – assigning the product to the selected colour in the User Palette

6. Applying chosen paints to the project

The **Paints Module** enables quick and simple application of the chosen coatings to any surfaces and object in the design. It depends only on user's abilities either the coating is correctly chosen as far as the material to which it will be applied is concerned, as well as its colour being harmonious with the overall view of the arranged interior. All necessary information can be obtained during working with the module, in particular with the use of the option giving the access to the on-line specifications document on Tikkurila's website (function described in subchapter 4).

The process of adding paints and other coatings to the project operates in an analogical way to textures application – using the ‘drag-and-drop’ method. When the suitable material is found, the user should left-click on the panel on the list (or the square in the **User Palette**) symbolizing it and – holding the left mouse button – drag it to the surface or object destined to be coated with it. Then release the button. The paint (or any other product) will be applied to the indicated area.


CAD Decor
Version: 2.0.0.8
TIKKURILA
Products of a group
latex paint
Selected products
☐ Feelings Extra Durable Semi-matt
☒ Feelings Extra Durable Semi-gloss
☐ Feelings Interior Paint
Products selection
Product description
User palette
5 / 19
2
1
3
COLLECTIONS
Base
CAD PROJEKT (2006)
Bathroom 12,5x33,3
Bathroom 20x33,3 and 20x20
Bathroom 23x33,5
Bathroom 25x25
Bathroom 27x41,5
Floor 20x20
Floor 25x25
Floor 30x30
Floor 31,6x31,6
Floor 33,3x33,3
Floor 34,2x34,2
Tiles
Paints
TILES
INSERTS
SETS
GROUTS
EDITION
SUMMARY
DOCUMENTATION
Documents
Print preview
Export to TXT
Gross total:
0

No	Manufacturer	Product name	Colour name	Painted area [square meters]	Amount of paint [liters]	Packaging
1	Tikkurila	Feelings Extra Dura	TVT K342	3,86 m2	1,0L	2x0,9L = 1,8L
1a	Tikkurila	Feelings Universal	TVT V339	3,86 m2	0,4L	1x0,9L = 0,9L
2	Tikkurila	Feelings Extra Dura	TVT K346	5,33 m2	1,3L	2x0,9L = 1,8L
2a	Tikkurila	Feelings Universal	TVT S432	5,33 m2	0,5L	1x0,9L = 0,9L
3	Tikkurila	Feelings Extra Dura	TVT K343	7,17 m2	1,8L	2x0,9L = 1,8L
3a	Tikkurila	Feelings Universal	TVT K343	7,17 m2	0,7L	1x0,9L = 0,9L
4	Tikkurila	Feelings Extra Dura	TVT J503	17,20 m2	4,3L	1x2,7L + 2x0,9L = 4,5L
4a	Tikkurila	Feelings Universal	TVT J503	17,20 m2	1,7L	2x0,9L = 1,8L

Fig. 243 - applying paints to surfaces in the project

Note! In case of the colourless coatings (e.g. floor lacquer) it is not possible to apply them to any surfaces that have been previously covered by any other of Tikkurila products. They can be only applied to the objects, on which any other coating has not been laid. At the same time it is necessary to apply any kind of texture to go underneath them.

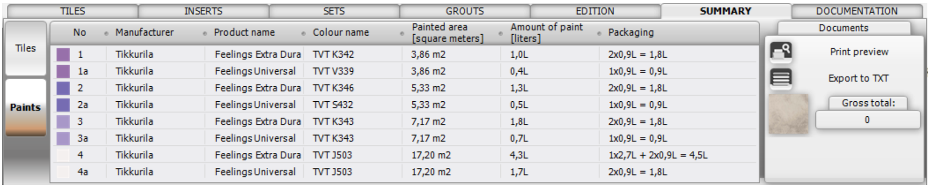
As it can be seen on the illustration above (Fig. 243), after applying a new paint to some area in the project, a new red ordinal number will appear. These numbers are listed in the **Paints Summary** beside the appropriate product (Fig. 180). For example paint applied to the wall on the left-hand side of the screen has been marked with a number ‘**5’**. The same number is visible beside this paint’s position in the **Summary**.

Please note that some products in Tikkurila’s offer require to use the primer first, before applying them (in real world – there is no need to apply primers in the project). For those products an additional position will be added in the **Summary** and relatively numbered, with a letter ‘**a**’ added – in this case ‘**5a’**. So the position ‘**5a’** means a primer from the Tikkurila offer that have to be used underneath the chosen paint with a number **‘5’** assigned in the project.

> *Note! If the user wants only a define part (area) of the wall to be coated, and the other part to be omitted during the paint application, he/she should, before dragging the chosen paint to the surface in question, apply ceramic tiles to this very wall and, accordingly to the rules of tiles edition, described in Chapter 20, detach the areas.*

7. Paints summary and report generation

During applying Tikkurila product to objects and surfaces in the project, each newly applied coating will be automatically added to the **Paints Summary** (Fig. 244), which is available in the tab **Summary**. In the same tab the user gains the access to the **Ceramic Tiles Summary** (described in Chapter 20). Switching between tiles and paints summaries is enabled by 2 buttons of the left side of the screen – **TILES** and **PAINTS**.



No	Manufacturer	Product name	Colour name	Painted area [square meters]	Amount of paint [liters]	Packaging
1	Tikkurila	Feelings Extra Dura	TVT K342	3,86 m2	1,0L	2x0,9L = 1,8L
1a	Tikkurila	Feelings Universal	TVT V339	3,86 m2	0,4L	1x0,9L = 0,9L
2	Tikkurila	Feelings Extra Dura	TVT K346	5,33 m2	1,3L	2x0,9L = 1,8L
2a	Tikkurila	Feelings Universal	TVT S432	5,33 m2	0,5L	1x0,9L = 0,9L
3	Tikkurila	Feelings Extra Dura	TVT K343	7,17 m2	1,8L	2x0,9L = 1,8L
3a	Tikkurila	Feelings Universal	TVT K343	7,17 m2	0,7L	1x0,9L = 0,9L
4	Tikkurila	Feelings Extra Dura	TVT J503	17,20 m2	4,3L	1x2,7L + 2x0,9L = 4,5L
4a	Tikkurila	Feelings Universal	TVT J503	17,20 m2	1,7L	2x0,9L = 1,8L

Fig. 244 – the summary of all coatings used in the project

In the summary the following information will be given:

- The ordinal number and a colour sample of each product (as it has been mentioned, the program attributes a new number to each applied material, and the number is visible in the project in red colour; if the particular product needs a primer to be used underneath, in the summary there will be also included a position with attributed a number with an added letter **‘a’** (Fig. 244);
- Manufacturers name;
- The name of the product;

- The name of the colour (usually it is a colour code);
- The size of the coated area (in square meters);
- The amount of paint necessary to coat this area (in liters);
- The number and volume of packages of paint needed.

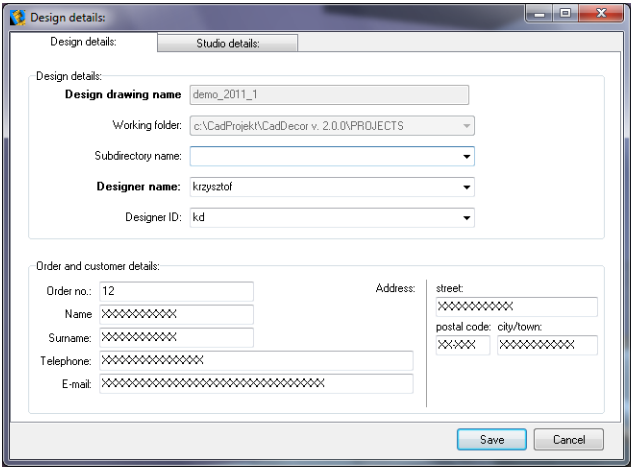
> *Note! Only in the Polish version of CAD Decor the Gross Value and Total will be displayed.*

The User can also create the **Paint Report**, containing the following data:

- Tikkurila's logo, e-mail address, website and helpline phone number;
- The name of the current report (it is the same as the number of the order assigned to the current project)
- The date of receiving the order;
- Clients name and address;
- Information about the company realizing the order (previously entered in the dialog box called **Projects Data**);
- Information about each product used in the project (codes and names);
- A colour sample;
- The painted area and the number of coatings (established by the manufacturer for each product, cannot be modified by the user);
- The amount of paint needed and the number of packages;
- Optional: **Net** and **Gross Value** (only in Polish version);
- Total summary: total area, total amount of paint, total value (in Polish version);

In order to create the **Report**, the left-click the **Print preview** button in the **Summary** tab or choose the position **Report** under the **Options** icon. Then fill up all necessary information in the newly open dialog box (Fig. 245 and Fig. 246) and click the **Save** button. The report, called **Tikkurila Paints Report** , containing all basic information about the paints used during designing, will be generated (Fig. 247). The **Report** can be saved to the disc (in HTML format), printed or send via e-mail. These functions are available after selecting the icons:, and in the upper left corner of the **Tikkurila Paints Report** dialog.

> *Note! The icon* Show/hide prices *enables to show or hide prices in the report. Please note that prices are only available in a Polish language version of the Tikkurila paint library. Due to this fact it is recommened for our foreign Clients using an English version, to set up the mode with the hidden prices.*


Design details:
Design details:
Studio details:
Save
Cancel

Design details:

Design drawing name demo_2011_1

Working folder: c:\CadProjekt\CadDecor v. 2.0.0\PROJECTS

Subdirectory name:

Designer name: krzysztof

Designer ID: kd

Order and customer details:

Order no.: 12

Name XXXXXXXXXX

Surname: XXXXXXXXXX

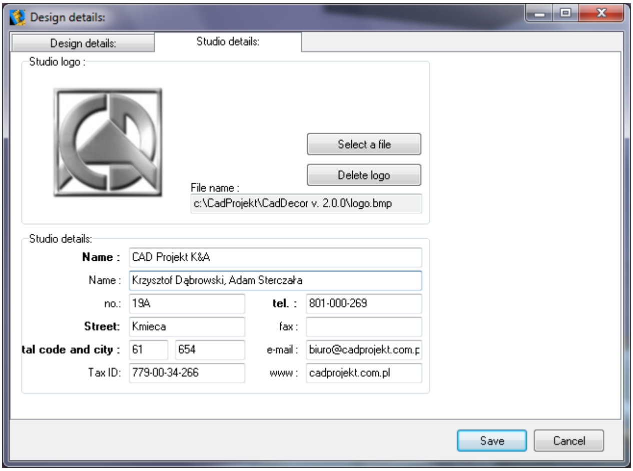
Telephone: XXXXXXXXXXXXXX

E-mail: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Address: street: XXXXXXXXXX

postal code: XX-XXX city/town: XXXXXXXXXX

Fig. 245 – Design details dialog box – filling up the data in Design details tab


Design details:
Design details:
Studio details:
Studio logo :
Select a file
Delete logo
Save
Cancel

File name : c:\CadProjekt\CadDecor v. 2.0.0\logo.bmp

Studio details:

Name : CAD Projekt K&A

Name : Krzysztof Dąbrowski, Adam Sterczała

no.: 19A

tel. : 801-000-269

Street: Kmieca

fax :

tal code and city : 61 654

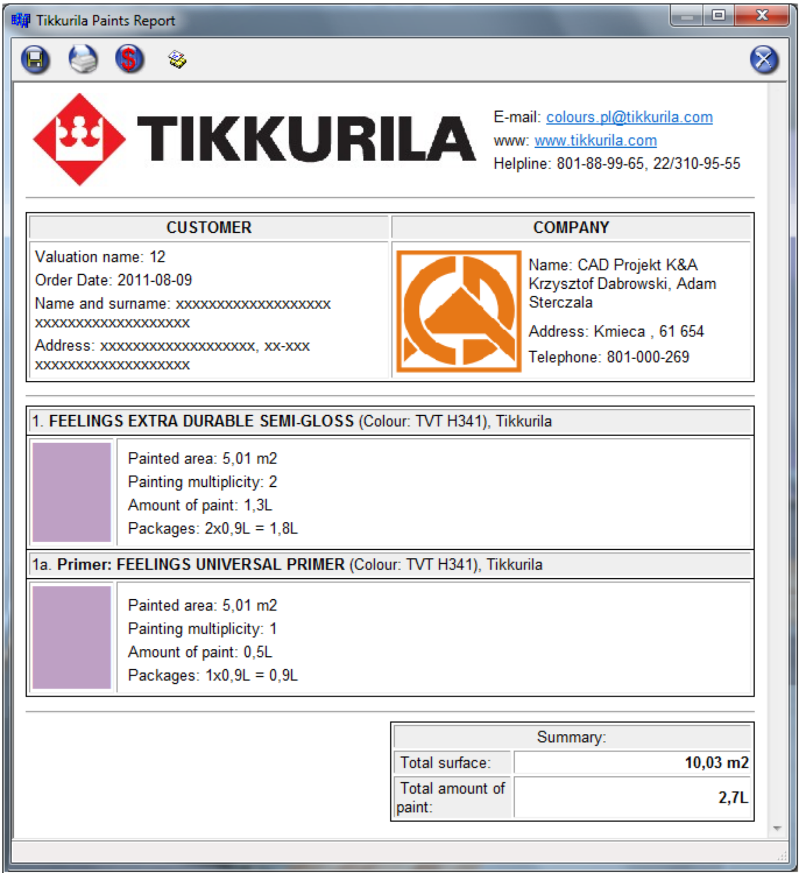
e-mail : biuro@cadprojekt.com.p

Tax ID: 779-00-34-266

www : cadprojekt.com.pl

Fig. 246 – Design details dialog box - filling up the data in Studio details tab

Note! While working in the module Tikkurila Colours (in CAD Decor) it is possible to generate the Documentation – *analogical to the technical documentation for tillers, available during designing with ceramic tiles. However it should be noted that both documentations look the same, so if in the project both tiles and paints are used, the attention should be paid not to mistake which one is which. For more information about the documentation in CAD Decor program see Chapter 20.*



E-mail: colours.pl@tikkurila.com
www: www.tikkurila.com
Helpline: 801-88-99-65, 22/310-95-55

CUSTOMER	COMPANY
Valuation name: 12 Order Date: 2011-08-09 Name and surname: xxxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx Address: xxxxxxxxxxxxxxxxxxx, xx-xxx xxxxxxxxxxxxxxxxxxx	Name: CAD Projekt K&A Krzysztof Dabrowski, Adam Sterczala Address: Kmieca , 61 654 Telephone: 801-000-269

1. **FEELINGS EXTRA DURABLE SEMI-GLOSS** (Colour: TVT H341), Tikkurila

Painted area: 5,01 m2
Painting multiplicity: 2
Amount of paint: 1,3L
Packages: 2x0,9L = 1,8L

1a. **Primer: FEELINGS UNIVERSAL PRIMER** (Colour: TVT H341), Tikkurila

Painted area: 5,01 m2
Painting multiplicity: 1
Amount of paint: 0,5L
Packages: 1x0,9L = 0,9L

Summary:	
Total surface:	**10,03 m2**
Total amount of paint:	**2,7L**

Fig. 247 – Tikkurila Paints Report (with hidden prices)

CHAPTER 23

Defining parameters and edition of light

1. Introductory remarks

Light is an essential decorative element of the project, and its proper use not only helps to achieve a realistic look of designed room, but also emphasizes its aesthetic values. This is why the knowledge of how to properly set and edit light should be important for every professional designer. Technologically advanced solutions of computer 3D graphics used in CAD Decor 2.X enables its users to create unique character of arranged interiors and accurately reflect reality in visualizations.

2. Types of light sources in the program

There are 4 types of light sources available in the program: halogens, fluorescent lights, spotlight and sunlight. Lighting (halogen and fluorescent lights) are placed in the project by the user while inserting elements of interior design, using objects from universal and producers' databases available in the program. Each element introduced to the project is displayed on the list of lights in the **Lights** pane, in the upper section of the **Scene** tab in visualization (Fig. 248).

Individual light sources on the list are numbered and assigned to particular categories.
After left-clicking on a selected position on the list, in the preview of the room in visualization an outline of the light cone will be presented – the object is now ready for edition. The rules of edition of particular light sources are described in the following subchapters.
Apart from lights entered to the project by the user, there are several default light sources (they are presented in the table below).

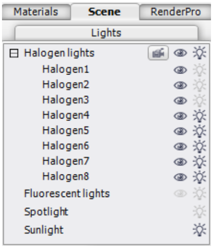


Fig. 248 – the list of lights used in the project

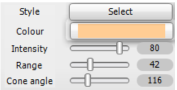
Type of lights	Description
4 halogens in the ceiling	– they appear in the project when the user switches to a visualization mode for the first time; – from that moment on they are visible in the CAD environment as 4 symbols of little 'suns';

	– while working in the environment they can be freely moved, copied or deleted, if they are not wanted; – the default halogens are necessary to light up the scene before the user inserts any other light sources; – they are invisible in visualization – they are only points emitting light in the ceiling of the room (no visible objects); – the default halogens can be edited in the same ways as halogens entered in the project by the user (see subchapter 3: *Edition of halogens*); – they light up after clicking the **Show lights** icon or pressing [F1].
Spotlight	– an element emitting very strong light used for lighting up the design while working with textures; – it is recommended to switch it off when the final view of the room is generated and the visualization is saved as illustration, animation or video, to avoid overexposure;
Sunlight	– intense light, penetrating orifices and glass objects and blocked by impenetrate (opaque) elements in the same way, as in the real world; – its hypothetical source is located far away from the project; – it enters the room through windows and orifices in walls, as well as doors with glass elements; – in the visualization (when edited) is presented as a cuboid with a red line in the middle, directed to the centre of the room; – can be used for additional decoration of the interior;

3. Edition of halogens

Halogens are the light sources which emit pin light. Their edition includes the following operations:

- selecting the element for edition by a single left-click on the position on the list;
- more than one element can be edited in one time;
- the button helps to select all halogens visible at the moment in one move;
- to select all elements on the list click the first item, press **<Shift>** and click on the last item on the list; to select only some elements use **<Ctrl>**;
- selected lights can be switched on or off by clicking the symbol of a light-bulb ;
- light sources can be hidden (so they are invisible despite emitting ligth) by clicking the symbol of an eye beside the name of the particular element on the list;
- to adjust the light parameters to your needs, use sliders and buttons in the section directly under the list of lights (Fig. 249);
- it is possible to modify the style of the light source (IES file), colour of the light, its intensity, range and an angle of a cone;

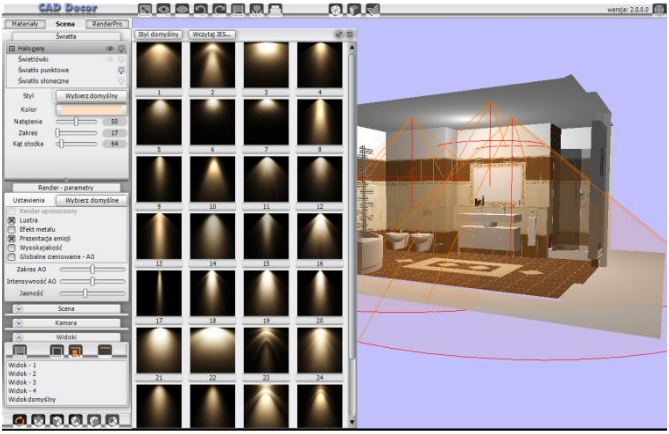


Intensity 80
Range 42
Cone angle 116

Fig. 249 – halogens edition pane

Particular edition features are presented in the table below:

Parameter	Description
Style	– it is possible to choose and change the shape of a light-field generated by a particular light source in the project (a style of distribution of light by a given light fixture); – can be used to achieve original, unique and realistic effects of illumination of the scene; – IES files are a digital representation of an actually existing light sources - their intensity and geometry of light distribution; – IES data is provided by lighting manufacturers in the form of texts files; – there is 32 styles available to choose from in a standard version of CAD Decor 2.X (Fig. 250); – on the list of lights, beside halogens attributed with some IES style there will be a IES sign – after placing a cursor over it, the user can see a preview of the particular IES style; – users who purchase the additional Professional Rendering module can also download their own IES files, e.g. found in the Internet;
Colour	– this feature enables the user to attribute any colour to the light; – after clicking it a small pane will open in which the wanted shade can be selected in 2 ways – by clicking on a palette or by indicating it on a scale (Fig. 251) (to switch between the palette and the scale click ▨ / ▨); – selected colour will be displayed beside the **colour** button; – to confirm click ✓; to close the without introducing changes, click ✖;
Intensity	– lights can have various intensity – the bigger intensity, the brighter light; – the power of the light can be defined by moving the **intensity** slider;
Range	– determines how broad are the borders of a particular light field; – if the range is minimal, light will not reach the floor (e.g. for a ceiling lamp), and with at a maximal level light will fully fulfill the whole light cone and will create a visible light-circle on the floor;
Cone angle	– determines the size of the are on which the light from a single light source is spread; – changes in this setting are clearly seen in the preview in visualization – when the slider is moved, the shape of an orange schematic outline of the edited light cone changes; – if light is to be spread broadly on the biggest possible surface, move the slider to the right – and if the given light source is to emit light only on a very small area, move it to the left;

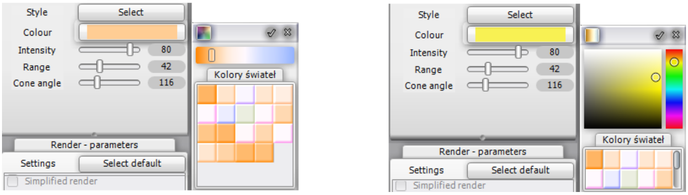

CAD Decor
Materiały
Scena
RenderPro
Światła
Styl domyślny
Wczytaj IES...
wersja: 2.0.0.0
Scena
Kamera
Widoki
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Halogeny
Świetlówki
Światło punktowe
Światło słoneczne
Styl: Wybierz domyślny
Kolor
Natężenie: 50
Zakres: 17
Kąt stożka: 64

Render - parametry
Ustawienia: Wybierz domyślne
☐ Render uproszczony
☒ Lustra
☐ Efekt metalu
☒ Prezentacja emisji
☐ Wysokajakość
☐ Globalne cieniowanie - AO
Zakres AO
Intensywność AO
Jasność

Widok - 1
Widok - 2
Widok - 3
Widok - 4
Widokdomyślny

Fig. 250 – edition of the default halogens – selection of a style of a light fixture


Kolory świateł
Kolory świateł

Style: Select
Colour
Intensity: 80
Range: 42
Cone angle: 116
Render - parameters
Settings: Select default
☐ Simplified render

Fig. 251 – a pane of colour selection in two variants

All changes of light sources parameters can be currently viewed in the visualization. The program calculates new values and adjusts the view of the scene to the current settings, what enables direct verification and correction of effects.

4. Edition of fluorescent lights

Fluorescent lights are light sources that emit linear light.

Parameter	Description
Colour	– this button enables to change the colour of the light; – after clicking it a small pane will open in which the wanted shade can be selected by clicking on a palette or by indicating it on a scale; – selected colour will be displayed beside the **colour** button; – to confirm it, click ✓ and to cancel the operation click ☒;
Intensity	– lights can have various intensity – the bigger intensity, the brighter light; – the power of the light can be defined by moving the **intensity** slider;

5. Edition of the spotlight

Spotlight is an additional light-emitting element in the project, used to light up the scene before other, physically existing light sources are inserted and adjusted, e.g. while applying textures to walls and objects. Its source is not visible in work environment or visualization, unless it is selected for edition (then it is represented by a yellow sphere).

It is recommended to turn the spotlight off when the final view of the scene is prepared, because it can distort the effects of illumination in the project (e.g. the room will look much brighter than in reality, or the direction of light will be different than is should, taking into account all existing light sources).

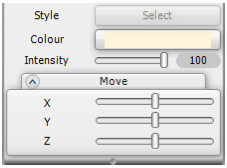


Fig. 252 – spotlight edition pane

To edit spotlight, left-click on its item on the list of lights. Parameters available for modification are described in the table below.

Parameter	Description
Colour	– the colour of the light emitted by the spotlight can be freely changed in the same way as in a case of other light sources; – to make the scene look more natural, a warm shade of yellow or orange can be used (day scenes) or blue (night scenes); – to do it, click the **colour** button and indicate the wanted colour; – confirm your choice by clicking ✓ ;
Intensity	– intensity of spotlight can be modified in the same way as other light sources; – it is recommended to make sure that the intensity is not to high, because is may result in overexposure of the scene;
Move	– the spotlight can be freely moved by moving sliders, representing 3 dimension axis: X, Y and Z (Fig. 252); – moving these sliders gives a direct result – the spotlight in the project moves (it can be seen because the yellow sphere representing the spotlight is visible);

6. Edition of the sunlight

To edit sunlight, left-click on a appropriate item on the list of lights. Parameters that can be modified in this case are: colour, intensity, height, direction and the size of beam of light.

When the sunlight is edited, it is represented by a large orange cuboid outline, simulating light coming from a very distant source. When the direction is changed, the source moves around in an orbit, the center of which is the same as the center of the room (marked with a red axis of symmetry of the cuboid). The red axis in the middle of the cuboid may be moved to some particular object, so that object becomes a center of the rotation of an artificial 'sun' in the program (by selecting the option **Sun shines on the object**, available under the right mouse button after a double left-click on the particular object) (Fig. 186).

If the sunlight is to be visible in the project, it has to be turned on by clicking ☼ beside its position on the list, because by default this light is turned off.

Parameter	Description
Colour	– the modification of the sunlight colour can be performed in the same way as with all other types of lights; – recommended shade is a pale yellow, imitating a natural daylight, or shades of orange – to create an illusion of a sunset;
Intensity	– it is necessary to make sure that the intensity of the sunlight is not too high – the scene can be easily overexposed if this parameter is set at a maximal value;
Height	– this feature is responsible for placing the artificial 'sun' at a wanted height over the 'horizon'; – if the sun is 'rising' or 'setting' or if the room is located e.g. on a hill or a top floor of a tall building, move the slider to the left – the sunlight will falls from below; – to present a sun in its zenith, move the slider to the right – then the sunlight will fall almost vertically from above;
Direction	– the parameter used to determine the direction from which the sunlight falls into the room; – when setting it remember to keep in mind the actual position of the designed interior to the directions of the world;
Size	– determines the width of the beam of sunlight; – if the room is large and the default size of the beam is not enough to cover all windows, it should be increased by moving the slider to the right;

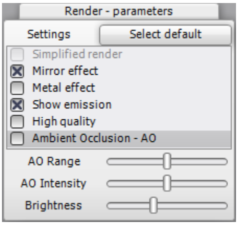
CHAPTER 24
Standard rendering

1. Introductory remarks

Rendering determines the quality, contrast and depth of the visualization after turning on the lights. The basic difference between previous and new functionality of the rendering, offered in CAD Decor 2.X on a standard level, is that it is much easier to set lighting parameters properly and the effects are far more attractive. Even with the minimal effort it is easy to achieve very good visual results. This is so because of used solutions, based on the newest achievements of computer 3D graphics, in particular advanced algorithms for calculating light in the scene – ambient occlusion and bump mapping, and in the additional module of **Professional Rendering** – also **Radiosity**, **Raytracing** and **Global Illumination**. In the standard the features presented in the table below are at your disposal.

2. Standard rendering control panel

The control panel is located in the central part of the **Scene** tab. Selection and deselection of particular positions influence the look of the rendered scene. For example – selecting the **Mirror effect** option will result in showing the properties of vertical reflections on all objects, to which there properties have been attributed, and if the option is deselected, the objects will not look as mirrors.


Render - parameters

☐ Simplified render
☒ Mirror effect
☐ Metal effect
☒ Show emission
☐ High quality
☐ Ambient Occlusion - AO

Fig. 253 – Render – Parameters control panel

3. Standard rendering features – table

Function	Description
Simplified Render	- more economical version of render, uses less memory - useful particularly with computers with weaker performance, with less processing power, - shorter time necessary to achieve the final effect, - worse appearance of the shadows – less realistic, more sharp, ‘angular’ and ‘serrated' - less visible bump mapping – ‘flattened’ a devoid of shades.

Mirror effect	- displays attributed properties of vertical reflections for objects imitating mirrors – all effects visible after the lights are switched on;
Metal effect	- displays attributed properties of general reflections for objects imitating metal when the lights are switched on.
Show emission	– displays attributed properties of own light emission; – there are 2 kinds of emission available – **basic** and **advanced** – the first one is available in standard and makes the objects look like they glow, but in fact they do not emit the real light; – the second one is available only with an additional module of Professional Rendering and gives an effect or a real light emission; – the **Show emission** function displays the basic emission (**glow effect**, also called **light bloom**, that creates an impression of the object glowing brightly with an intensive, white light); – as a result object which have been attributed the basic emission are surrounded by a halo that looks like they were emitting light;
High quality	- improves the quality of obtained effects of visualization, if only the processing power of the computer allows it*;* - most significant changes regard the quality of shadows in the project*;* - they become softer and natural, and more gradual – like in the real world;
Bump mapping	- a specialist method of texturing, simulating even the smallest unevenness of the surface of objects, - gives an effect of a totally realistic look of the visualized surfaces, e. g. ceramic tiles, wood, printed wallpapers - thanks to bump mapping all protuberances of textures and tiles gain natural gloss and roughness. - function available in **Material properties** dialog box, in the **Advanced** tab; - to open this dialog, select the object in visualization (double left-click or the icon ⤡, then right-click and select **Properties** from the context menu;
Ambient occlusion	- a special method of shading the spatial objects, consisting of calculation of the degree in which the given fragment of the object's surface is expose to the ambient (diffused) light in the room, - gives the extra depth and perspective to the scene, increasing a reality of its look, - this option is responsible for a naturally looking shadows and shades, especially in the corners of the room and between the walls and the ceiling, - the level of the ambient occlusion can be regulated: **range**, **intensity** and general **brightness** of the entire scene;

AO Range	- changes the scope of the shadows created by ambient occlusion - when set to the minimum the shadows occupy the smallest space, and at maximum – stretch on a much wider area;
AO Intensity	- regulates the strength of the shadows; - at minimum they are pale and delicate, at maximum – dark and expressive;
Brightness	- defines the level of a general illumination in the scene and the contrast between light and dark objects;
Creating animations and project presentation	- function of recording and saving animations in AVI format; – available in the **RenderPRO tab → Presentation**; – animation is created on the basis of a freely defined path, at any angle and with changeable speed of the camera, which can be set before starting recording in the **Scene tab → Camera**; – the speed and angle can be changed during recording – to do so, click **Pause**, go to **Scene tab → Camera**, change the settings and then go back to **Presentation** and resume recording; – many levels of resolution are available to choose from – form the screen resolution up to Full HD; – the number of frames per second can be changed; – after recording the video turn on the lights, click on the S**ave as AVI file** button and select the codec; – in the result video the camera moves around the room with various speed and changes the view angle freely, and the scene in which it moves is rendered in the real time.

4. Ambient occlusion

The use of ambient occlusion (global shading) improves the quality of the look of the scene by adding an effect of a soft shadow, which adds some depth to the image. The range and intensity of ambient oclussion can be modified by the user, as well as the overall brightness of the scene, what helps to set the contrast and the intensity of shades and shadows accordingly to preferences of the user.

5. Bump mapping

Thanks to this specialist method of texturing, materials used on walls and floors and surfaces of all objects gain an impression of being 3-dimensional.

The program recognizes brighter and darker fragments of the texture and presents them as cavities or convexities (depending on the selected option + or -). When the lights are on it is clearly visible which surfaces are smooth, and which are rough and porous. Even when using the **Simplified render** option, which results in lower memory consumption, bump mapping is still visible, however it is much more flat. Bump mapping can be switched off by selecting the **Turn off** button (Fig. 254).

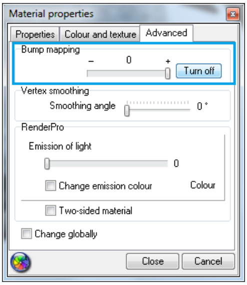

Material properties
Properties
Colour and texture
Advanced
Bump mapping
–
0
+
Turn off
Vertex smoothing
Smoothing angle
0 °
RenderPro
Emission of light
0
☐ Change emission colour
Colour
☐ Two-sided material
☐ Change globally
Close
Cancel

Fig. 254 –bump mapping slider

6. Basic emission (bloom effect)

In the previous versions of our software the function of own object's light emission used to cause some problems. Even when setting this parameter to the maximum, the emission sometimes did not look convincing enough. Now it is improved and the objects to which this property has been attributed, glow with an intense white light (it looks the same as used in computer 3D graphics bloom or glow effect). The light is not real though, but only imitated, and it has no influence on the lighting in the entire scene.

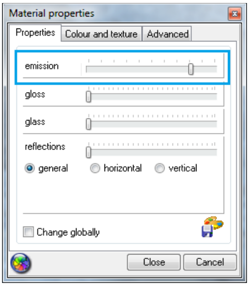

Material properties
Properties
Colour and texture
Advanced
emission
gloss
glass
reflections
● general
○ horizontal
○ vertical
☐ Change globally
Close
Cancel

Fig. 255 – attributing basic emission

To attribute the basic emission to the object, double left-click on the object and then right-click to open a context menu, and select the **Properties** option. In the opened dialog **Material Properties** go to the **Properties** tab and move the first slider in the upper part of the dialog (Fig. 255). To make the effect visible in the visualization, select the **Show emission** option in the **Render-parameters** section in the **Scene** tab. It will result in adding a special bloom effect – a glow around the object, which will look like emitting intense own light, but it will not influence the scene.

Additionally – but only with a Professional Rendering module (option not available in standard!) – there is a possibility of attributing objects with a property of a real own light emission (in Watts per m^2) which has an actual influence on the light distribution in the entire scene. This function is available in the **Material properties** dialog box, in the **Advanced** tab (Fig. 256).

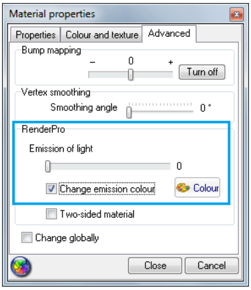

Material properties
Properties
Colour and texture
Advanced
Bump mapping
–
0
+
Turn off
Vertex smoothing
Smoothing angle
0 °
RenderPro
Emission of light
0
☑ Change emission colour
Colour
☐ Two-sided material
☐ Change globally
Close
Cancel

Fig. 256 – attributing an advanced (real) light emission

CHAPTER 25

Advanced rendering

1. Introductory remarks

The module of Professional Rendering is a modern tool for a very advanced visualization. Its main task is ensuring a perfect quality of the visualization in a relatively short time. The shortening of the time necessary for proceeding all calculation was possible thanks to cooperation of the graphic card processor (GPU) and a multi-core nature of a modern processor (CPU).

Two main processes proceeded by this module are: **Radiosity** – in other words a Global Illumination algorithm, and **Raytracing** – a method of calculating the reflections and refractions of light rays.

2. Functionality of Professional Rendering module – table

Function	Description
Radiosity	- a method of calculating the indirect light in 3D scenes, the main global illumination algorithm; - takes into consideration reflection and absorption of light by different objects and colours; - parameters of global illumination calculated this way are remembered by the program and used for visualization in a real time; - improves the efficiency of the rendering and enables to attain a natural look of the scene; - effects are independent on the position of the observer; - the calculation process has two stages – in the first one the program prepares data for analysis, in the second one – displays the calculated illumination of the visualization in cycles (their interval can be adjusted by the user from 0 to 20 seconds), - the final look is obtained by the gradual improvement of the rendered scene; - edition of lights (in the **Scene** tab) can be performed after the beginning of **Radiosity** calculation – but the emission has to be attributed before they are started (emission cannot be changed during the calculation);

Scene diagnostics and repair	- each scene before the calculation has to be prepared and this is why this feature has been designed – it repairs errors in the scene, this it the reversed faces in 3D models, which can cause irregularities in the light distribution – objects with reversed surfaces are always much darker than they should after switching on the lights, - organizing all faces in the proper order is vital for the correct light distribution calculation and because of that this function is active by default.
GI Parameters	- available settings of global illumination are designed to adjust rendering to designer's preferences, - **Global Illumination** is a lighting model in which not only the direct light emitted by the light sources is taken into account (local light), but also beams reflected by objects such as walls, floors, furniture and equipment (indirect, global light), - ensures a realistic light distribution in the room.
GI Influence	- this function regulates the influence of the diffused light on the general light distribution, - when the slider is moved to the left, diffused light has no influence on the scene at all – only direct light is taken into account, - this parameter can be adjusted during the **Radiosity** calculations and after they are completed,
GI Contrast	- influences the way in which the number values are changed into components of RGB colours, - the Global Illumination **Contrast** can be changes in a real-time during or after the Radiosity calculations,
Ambient	- this term relates to the ambient light (light diffused in the scene), which illuminates the room evenly and without shadows, - ambient adds some white color to the scene, which makes it look brighter, - this function is useful in the scenes that should be bright but the current settings of light sources do not allow to attain such effect; - especially good results can be achieved when using both this parameter and functions of **Ambient occlusion** in the **Scene** tab.
GI Colours	- increases the coefficient of light reflected by all surfaces in the scene (in other words: decreases the level of light absorption), - as a result the image gets brighter and at the same time there is stronger color bleeding effect (this phenomenon takes place when the light reflects from a diffusive surface and takes over its color),

	- this function determines the intensity of which the colors spread in the scene, - it is useful when there is a lot of dark materials used in the scene, that have a high level of absorption, and share little of their color with the rest of the scene.
GI Emission	- it is a multiplier of all emissive materials in the scene, - enables to quickly modify the intensity of advanced light emission of all emissive objects at once, - the scale for this factor is from 0 to 200 % (with default level of 100%); - to change the properties of each element one after another would be time-consuming, so instead of that the level of emission for all objects can be changed with one movement of this slider; - when the slider is set at 0% all emissive objects have no influence on the light distribution in the scene.
Final Gathering	- the final calculation of the distribution of light for the chosen objects, - if some little object in the project does not look properly, it can be subjected to an additional treatment – the program will proceed some extra calculations of the amount of light beams reaching its surface, - particularly useful with objects consisting of a big number of little surfaces – they may be not properly illuminated by the indirect light; - to do so, select the object or objects and start the **Final Gathering**; - there more objects is selected, the more time is needed to achieve a final result; - it is recommended also while creating illustrations of the project with close-ups of some concrete elements of interior design.
Raytracing	- it is an algorithm analyzing reflections and refractions of light rays, which reaches the observer of the scene, - it calculates reflections and refractions of light rays generated on mirror and glass objects, - adds to the scene those light rays, which have been omitted by **Radiosity**, which takes into account light diffused in the whole scene, - creates lusters on metal surfaces, refractions on glass and – what is worth noticing – multiple reflections in mirrors; - adds reflected or refracted rays to the scene, which were omitted by **Radiosity**, which is taking into account only indirect, diffused light;
Quality (Raytracing)	- there are 4 levels of **Raytracing** quality available: 1x1, 2x2, 1x1 AA and 2x2 AA (where AA stands for antyaliasing), - antyaliasing is a technique that minimizes distortion errors (aliasing), occurring while creating representations of the image of a high resolution

	in the lower resolution, - 1x1 mode is usually used to quickly see initial results of **Raytracing**, - the level of quality of **Raytracing** depends on the processing power of the computer – the better quality the higher memory consumption and a longer time of performing the operation.
Reflections (Raytracing)	- **Raytracing** works on the basis of rays defined by the user; - rays are sent from the item to the scene and analyzed and user can decide how many rays should be taken into account, - the program can analyze from 1 to 10 reflected rays; - a standard setting is 1 reflected ray and 4 refracted ones.
Refractions (Raytracing)	- the user can define how many refracted rays will be analyzed, - the level of this function greatly influence the look of transparent objects such as glass, - the program counts how many rays go through such objects, so the more rays we decide to analyze, the more realistic will be the picture; - the program can analyze from 1 to 20 refracted rays; - the user decides how to set this parameter, accordingly to current needs; - in this case the program analyzes the rays going through transparent objects; - if there are 2 glasses located one next to another and each of them has 4 sides (it is necessary that glass has defined thickness), then for the proper result **Refractions** should be set for 8 rays.

Advanced options	- calculation of the light distribution is done only for the corners of objects mesh,
	- the mesh for walls is by default established to fit the calculations and divided into faces of 100x100 mm,
	- the rest of the objects in the project is not divided automatically and they can require a modification of mesh density,
	- there are 2 options of mesh modification available:
	    - **adaptive mesh division** – changes the division of walls and platforms, to which other objects adjoin (e.g. kitchen cabinets) and cover some of the corners of the mesh (what artificially increases the range of the shadow); this function enables to automatically subtract such corners from the calculation and improves the distribution of indirect shadow on the border between the wall and the object,
	    - **scene mesh division** – thanks to this option You can choose by yourself the size of the mesh of the whole scene – from 40 mm to 200 mm (by default it is 100 mm) to improve the shadows distribution, the smaller size of a single face – the more faces and

	more memory and time needed to proceed calculations.
Diagnostics	- there are 2 features of scene diagnostics available: - **show emissive objects** – marks these objects which hale been attributed an advanced light emission; function useful the modification of the light distribution in the room is necessary and it is not clear which objects are emitting the light, - **show inverted surfaces** – shows those faces which hale been drawn in an opposite direction, what has a negative influence on the light distribution on the object; the surfaces can be drawn clockwise or counterclockwise and for the proper light distribution it is vital that all of them are drawn in the same way; – to repair a scene (meaning: to revert wrongly drawn surfaces) select the **Scene diagnostics and repair** in the **Radiosity** pane and start the **Radiosity** calculations (click **<START>**);
Statistics	- **Surfaces** – provides an information regarding the overall number of faces in the project, including faces of walls and all inserted objects (this number changes when the mesh division is modified); - **FPS** – the number of frames per second that can be generated; - **Calculation time** – time necessary for calculation of the direct light sources, and when the **Radiosity** is turned on – the time from the beginning of the calculation process; - **Memory** – current memory consumption (**Radiosity** calculations are not taken into account, because they are run in another process). If the consumption is below 1GB, the colour is of the caption is green, and when this value is exceeded, it changes the colour to red. It means that there may be not enough memory to perform new actions.
Colour tones	- this function enables the user to quickly change the influence of the light distribution, calculated by the Radiosity process, on the overall colouring of the scene; - changes can be introduced during or after the complettion of the Radiosity calculations, but the colour tones change the scene exposition, so it is worth it to set the lighting parameters to match the particular filter; - this feature gives the designer bigger flexibility in creating the final visualization.
Downloading IES files	- the selection of a style of the light sources (e.g. halogens) is available from the level of a basic render, - the style (saved in a form of an IES file) determines the way the light is distributed by a light sours, e.g. a halogen); - there are 32 ready-to-use styles to choose from,

- for owners of the Professional Rendering module also the option of downloading own IES files, found in the Internet or created by them, is available.

3. Radiosity – introduction

Radiosity is one of the calculation methods, which is responsible for achieving a total distribution of light in the scene. It takes into account indirect, diffused light (in contrast to local illumination models, which analyze only direct light, simulating the way of rays between the light source and the surface).

Indirect light (**Global Illumination**) is reflected from one surface to another. It is enough to look around to realize that the majority of light that reaches our eyes is indirect. Indirect light can be divided into two categories:

- light reflected in a diffusive way by rough surfaces (e.g. painted walls);
- light reflected in a mirror-like way by smooth surfaces.

Because the processing powers of computers are relatively low in comparison to processes taking place in our environment, some simplifications has been applied, so the calculations are performed in a acceptable time. In case of the **Radiosity** process the scene is divided into a mesh of small surfaces, and the calculations are performed for this divided scene – exactly – at the corners of the surfaces.

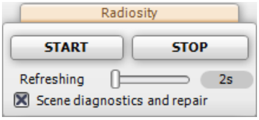
These calculations are a very complex process. If the processed scene consists of 100 000 little surfaces, then to calculate the exact light distribution in it the scene, the interaction of all 100 000 surfaces has to be analyzed, what gives 10 000 000 000 single operations to perform! As you can see – so many necessary calculations has to take some time.

The main advantage of our method and the reason why it is better than similar **Global Illumination** calculation solutions is that once computed light distribution (at the corners of surfaces) is remembered by the program, so the scene can be viewed from any location and angle without any additional calculations. This characteristic is vital for creating videos, in which the camera moves freely in the designed space. Unfortunately there is also one serious drawback – the accuracy of the calculations depends on how many surfaces the project contains of (the more – the better), what significantly influence the calculation time and program’s requirements in regards to available operational memory.

4. Professional Rendering control panel

The **RenderPro** control panel contains several groups of features, divided accordingly to their functions (Fig. 258). They are arranged in a way that facilitates the intuitional use of particular options. The most important features are placed at the top of the panel, and the less significant can be found in its lower parts. Such arrangement suggests the recommended order of stages of work – use the top features first and consequently go down. All processes which require some calculation time are designed with a **<START>** button. To make it easier to identify the most important groups of features, they have been marked with colours. The less important groups can be hidden or displayed by using the arrow located at the left-hand side of the Control Panel: ⌃ (opened pane) or ⌄ (collapsed pane).

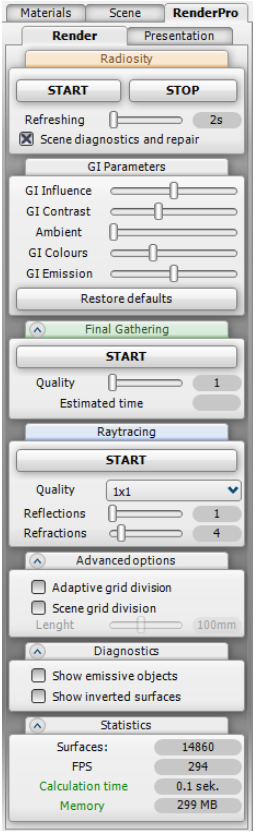
5. Radiosity group


Radiosity
START
STOP

Refreshing 2s
☒ Scene diagnostics and repair

Fig. 257 – Radiosity pane

It is the most important feature which is responsible for main indirect light calculations. This main calculation process can be called ‘an interactive **Radiosity**’.


Materials
Scene
RenderPro
Render
Presentation
Radiosity
START
STOP
GI Parameters
GI Influence
GI Contrast
Ambient
GI Colours
GI Emission
Restore defaults
Final Gathering
START
Raytracing
START
Advanced options
Diagnostics
Statistics

Refreshing 2s
☒ Scene diagnostics and repair
Quality 1
Estimated time
Quality 1x1
Reflections 1
Refractions 4
☐ Adaptive grid division
☐ Scene grid division
Lenght 100mm
☐ Show emissive objects
☐ Show inverted surfaces
Surfaces: 14860
FPS 294
Calculation time 0.1 sek.
Memory 299 MB

Fig. 258 - Professional Rendering module control panel

After pressing the **<START>** button the user can change the settings of lights in the project by switching to the **Scene** tab, and freely modify their parameters: colour, intensity, range and cone angle. Switching back to the **RenderPro** tab will result in actualization of the global illumination within a few seconds. It is possible to start the calculations even if there no lights on at all.

The **<START>** button begins the process of calculations. The process is performed in two stages. At the beginning the program gathers and prepares the data for calculations (it usually last for a few seconds), and in the second stage the results of calculations are cyclically displayed in visualization (the length of one cycle depends on the interval of refreshing the view that can be set by the user). The final look of the visualization is gradual improvement of the rendered scene.

Showing the new light distribution depends on two factors:

- an interval of refreshing the view set by the user:
  - it is possible to set the interval of refreshment of the look from 0 to 20 seconds;
  - when the interval is set to 0 seconds, then the program does not have to display the results and the whole processing power is used for calculations;

- changes made to the light distribution by the user during the calculations:
  - light sources parameters and settings (intensity, light colour, range, cone angle, visibility, turning on and off);
  - attributing new objects with a real light emission, changing light colour and intensity.

After some time the changes will have a minimal influence on the rendered scene, and the program will refresh the view with other frequency then the one set by the user.

Illustrations below present an example scene processed by the algorithm of calculation of the global illumination. This test scene contains about 110 000 surfaces and is lighten up with only 4 halogen lamps, which illuminates the worktop.

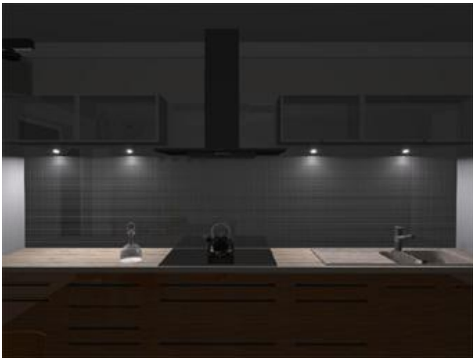


Fig. 259 – a scene with direct light only – to improve the visibility the scene has been slightly brightened up

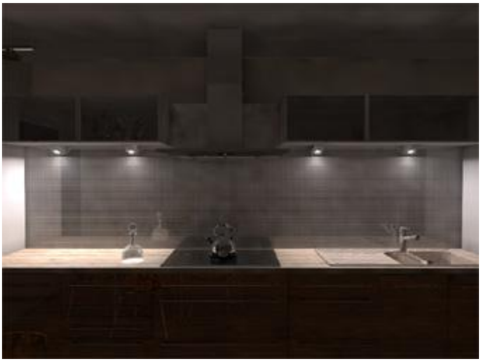


Fig. 260 – a scene with direct and indirect light – it is clearly seen that the light falling on the worktop reflects from it and illuminates the bottoms of the upper cabinets. Radiosity calculation time - 8 seconds.

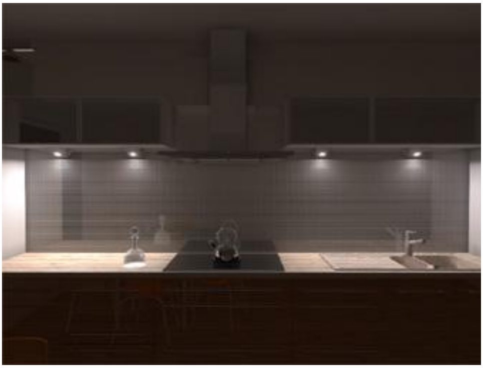


Fig. 261 – a scene with direct and indirect light after another 60 seconds – it is clearly seen that the inequalities on the ceiling has been replaced with the shadows of cabinets. The shadow was created by the indirect light.

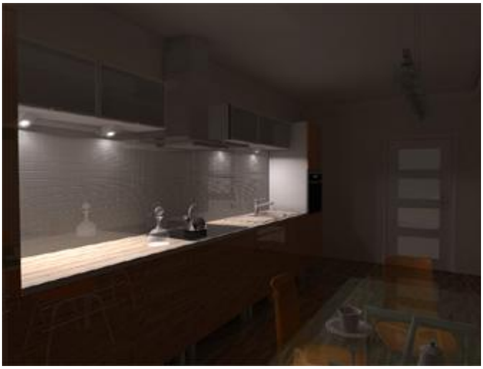
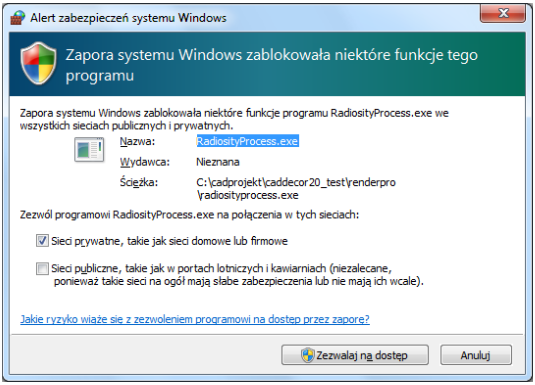


Fig. 262 - a scene with direct and indirect light after 60 seconds – a different view without any additional calculations

> *Note! When the program is run for the first time it may happen that the* RadiosityProcess.exe *will be blocked. The dialog box presented below (Fig. 263) will open – to be able to use the program click* Unblock. *Otherwise no Global Illumintation calculations will be performed. Sometimes after the Windows system update it is necessary to select the Unblock option again.*



Alert zabezpieczeń systemu Windows

Zapora systemu Windows zablokowała niektóre funkcje tego programu

Zapora systemu Windows zablokowała niektóre funkcje programu RadiosityProcess.exe we wszystkich sieciach publicznych i prywatnych.

Nazwa: RadiosityProcess.exe
Wydawca: Nieznana
Ścieżka: C:\cadprojekt\caddecor20_test\renderpro \radiosityprocess.exe

Zezwól programowi RadiosityProcess.exe na połączenia w tych sieciach:

☑ Sieci prywatne, takie jak sieci domowe lub firmowe

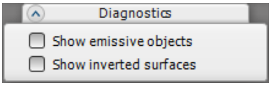
☐ Sieci publiczne, takie jak w portach lotniczych i kawiarniach (niezalecane, ponieważ takie sieci na ogół mają słabe zabezpieczenia lub nie mają ich wcale).

Jakie ryzyko wiąże się z zezwoleniem programowi na dostęp przez zaporę?

Fig. 263 – the dialog box blocking the Radiotisty calculations

6. Scene diagnostics and repair

Each scene which will be calculated has to be previously prepared for this. **Diagnostics** features help to do it.



☐ Show emissive objects
☐ Show inverted surfaces

Fig. 264 – diagnostics options

The calculations performed by the program are an attempted to imitate the reality, and this is why the objects present in the scene are such an important element. These objects (3D models) consist of a grid of surfaces, from which each can be drawn either clockwise or counter-clockwise.

The **Diagnostics** option's task is to properly order all surfaces so they are all organized in the same direction.

It is a vital condition for the proper light distribution, and this is why this option is selected by default when the **RenderPro** tab is opened for the first time.

The program repairs (turn to the other side) all incorrectly drawn surfaces in the room. If there is more then one room in the project, it is recommended to use this function more than once – whenever any unnaturally dark surfaces appear (Fig. 266).

Surfaces should be seen from the camera to be detected and repaired.

To check, if there are any incorrectly drawn surfaces in the currently rendered scene, go to the **Diagnostics** tab and select the option Show inverted surfaces. All incorrect surfaces will be marked with magenta colour, as it is presented on the illustration at the top of this page (Fig. 265).

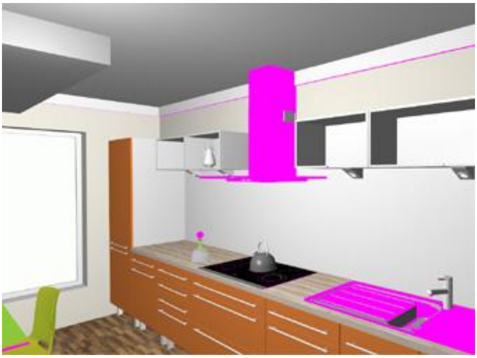


Fig. 265 – the look of the scene after turning on the function Show inverted surfaces

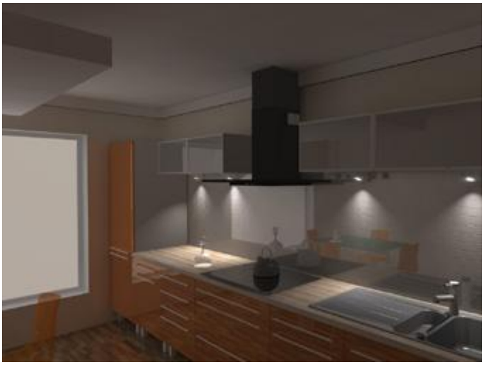


Fig. 266 – GI calculations for a scene with incorrectly drawn objects – it is clearly seen that the objects previously marked with a magenta colour are unnaturally dark

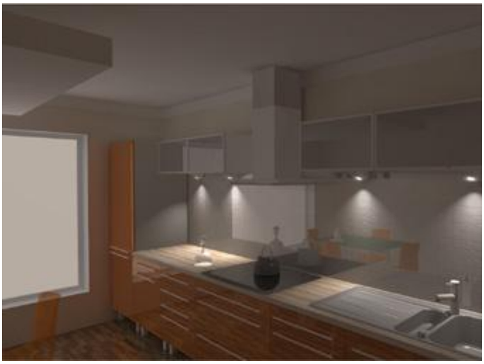


Fig. 267 - GI calculations in a repaired scene – all objects properly displayed

7. Global Illumination parameters

In this pane the rendering effect can be adjusted to user's individual needs and preferences. Use the sliders to change the levels of particular effects.

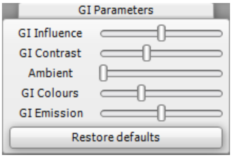


Fig. 268 – Global Illumination parameters

7.1. GI Influence

When this slider's locations is changed, then the influence of indirect light on the scene is lower or higher than the calculations results. When the slider is moved to the left – then indirect (diffused, reflected) light will have no influence at all on the scene. Only direct light will be seen. The default level is 50 % - so moving the slider to the right will increase the **Global Illumination Influence** on the scene (please see the pictures below for an example).

It is possible to change this parameter during the calculations as well as after they are finished.

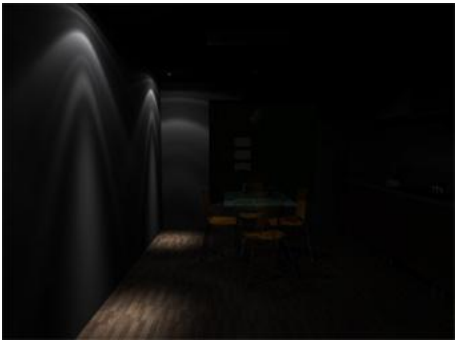


Fig. 269 – GI Influence set to 0%

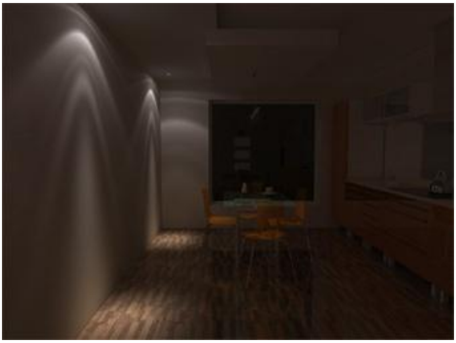


Fig. 270 – GI Influence set to 50% - default settings

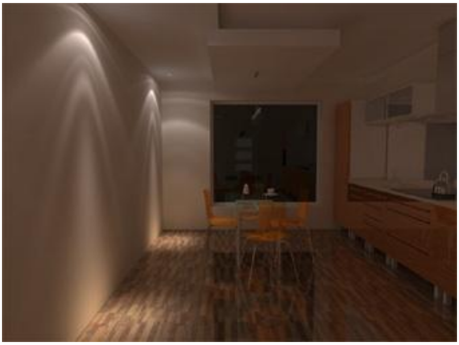


Fig. 271 - GI Influence set to 100% - maximum

7.2. GI Contrast

This parameter is responsible for converting numerical values into RGB colours components.

The **Global Illumination Contrast** can be changed during the calculations, but the results of any its modifications will be visible after the global illumination is refreshed.

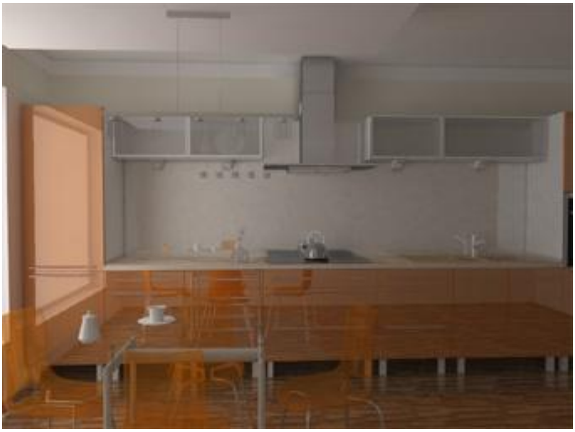


Fig. 272 – standard contrast

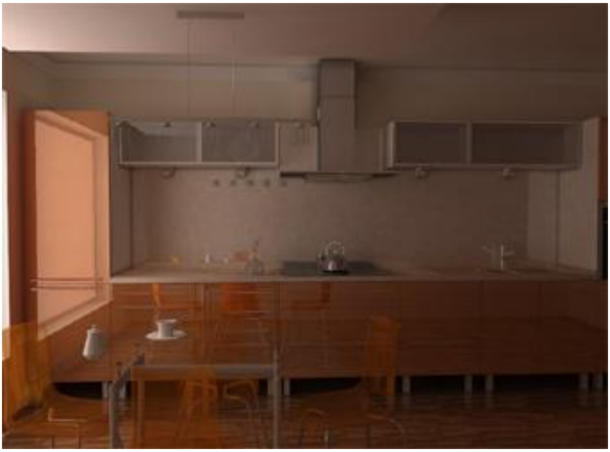


Fig. 273 – increased contrast

7.3. Ambient

The term 'ambient' relates to the ambient light, this is: light diffused in the environment. This light is homogeneous and does not generate shadows. In the **Global Illumination** calculations **Ambient** is set to a zero value, opposite to the rendering using direct lights models. When you use ambient, you add a white colour to the scene that brightens it up – overally and equally. This feature is useful when the scene should be bright but the light settings do not ensure an appropriate level of brightness. In such case it is of course possible to stop the calculations and change the intensity of surfaces emitting their own light (attributed with an advanced emission), but sometimes it is just easier to add some ambient light to the scene. Particularly good results can be achieved when both **Global Illumination Ambient** and **Ambient Occlusion** features are used at the same time (the **Ambient Occlusion** feature in available on the standard rendering level - in the **Scene** tab).

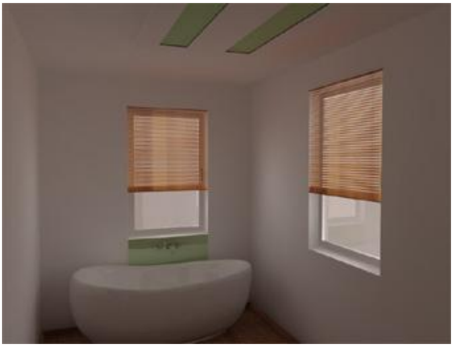


Fig. 274 – windows emit daylight. The intensity of light has been purposely diminished

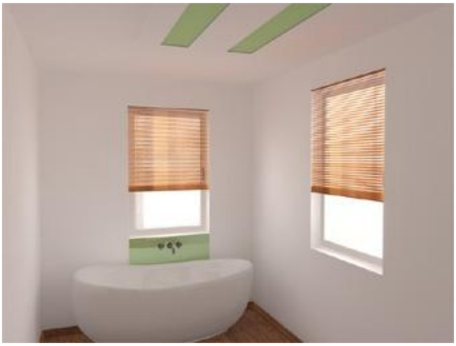


Fig. 275 – after adding 55 % of ambient It is clearly seen that the scene is much brighter

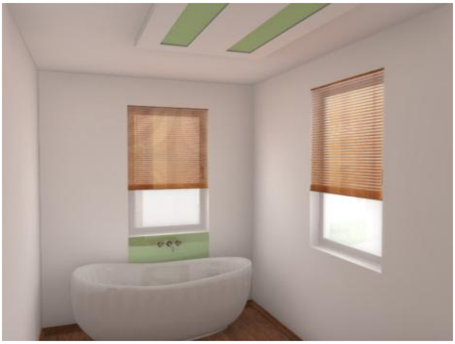


Fig. 276 – this picture was created by adding some ambient occlusion to the scene brightened up with ambient light – when compared with the figure 196 if is clearly seen that some more details became visible

7.4. GI Colours

As it has been mentioned before, all surfaces in the project interact with one another. Some part of energy coming from the light source is reflected, and some is absorbed by every object.

Completely smooth surfaces reflects majority of the light rays falling on them, and absorb almost none. The best example of such a surface is a mirror. The ray that falls on it is reflected in one direction. This characteristic of a mirror was used in the past to transmit the sunlight to long distances (light signals). Diffusing surfaces, such as walls, behave differently. Light that falls on them is strongly diffused in all directions.

And there is one more regularity – the ratio of absorbed and reflected light depends on the colour of the object. Some colours absorb more energy than they reflect. It can be assumed that in general dark colours absorb more much more light than bright colours.

The colour with a property of a total absorption of light is black. This is why this colour is used in cinemas, when walls are painted black to prevent the audience from seeing any other light than coming directly from the screen. If the cinema is painted white it would be very difficult to focus on a movie, because the intensity of light reflected from walls would change all the time, distracting the spectators.

After this introduction we can explain, what are the consequences of changing the level of **Global Illumination Colours** parameter.

When this effect is modified, the coefficient of light rays reflectivity is increased or decreased. When the slider is moved to the right, the black colour is recognized by the program as grey, so more energy is reflected and less is absorbed. It is the same with all other colours. As a result the scene becomes brighter and at the same time the effect or colour bleeding (transition of a colour from one object to another together with the reflected light rays) is more visible.

Colour bleeding effect occurs because light reflected from a surface change its colour to a colour of that surface. The transition of colours is visible most clearly at the junction between a wall and a ceiling – as you can see in the illustrations on the next page, white ceilings takes on a colour of a nearby wall.

It is worth mentioning that it is particularly recommended to change this parameter when there is a big number of dark colours used in the scene, which absorb a lot of light. It is not possible to modify this parameter during the **Radiosity** calculations.

Illustrations presented on the next page show the phenomenon described above. We would like to draw your attention to the differences in the light distribution between the scenes in which exactly the same light sources parameters have been set.

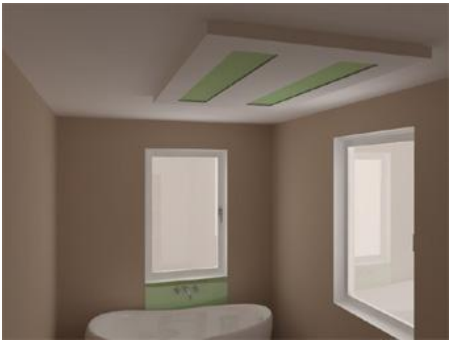


Fig. 277 - basic visualization before increasing the GI Colours parameter

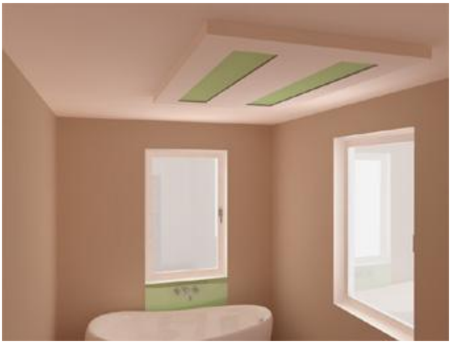


Fig. 278 - parameter GI Colours increased by 20 %

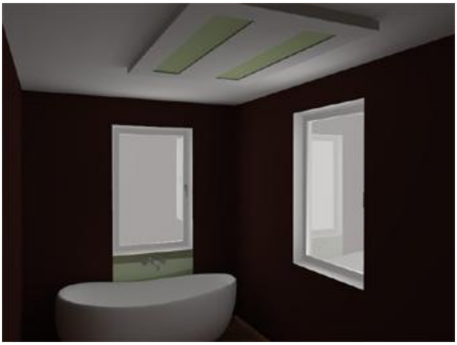


Fig. 279 – dark colour on walls, the room looks much darker

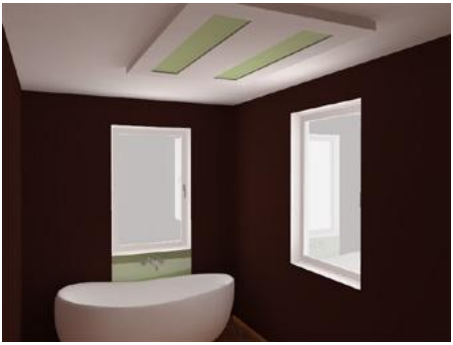


Fig. 280 - parameter GI Colours increased by 50 %

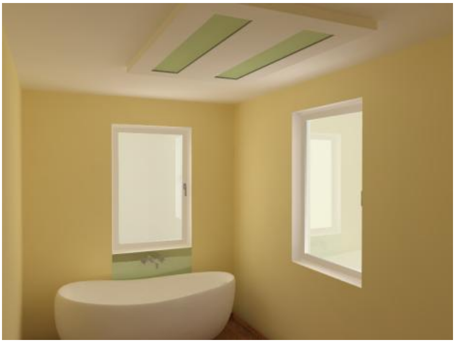
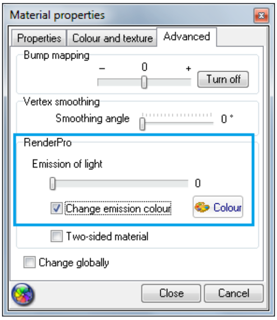


Fig. 281 – well visible the colour bleeding effect – yellow colour reflected by walls can be seen on the ceiling

7.5. GI Emission

This parameter can be understood as a multiplier of all emissive objects in a project.

In the **Material properties** dialog box – in the **Advanced** tab there is a slider for attributing selected objects with a real **light emission effect**. This emission unit is W/m^2. It means that the bigger is the object, the more light it will emit. For example, if the user sets the emission of 100 Watts for a window of a surface 1 m^2, then this window will emit light with a power of 100 Watts. But if the same level of advanced emission is attributed to a surface with dimensions of 10 x 10 cm (as presented on illustrations below), the emitted light will only have a power of 1 W.



Bump mapping 0

Smoothing angle 0 °

Emission of light 0

☑ Change emission colour

☐ Two-sided material

☐ Change globally

Fig. 282 – the Advanced tab in the Material properties dialog box

In illustrations beside 6 emissive surfaces have been presented. Each of these luminescent surfaces of dimensions 10 x 10 cm would have to be edited, if the user wanted to change the intensity of light produced by them.

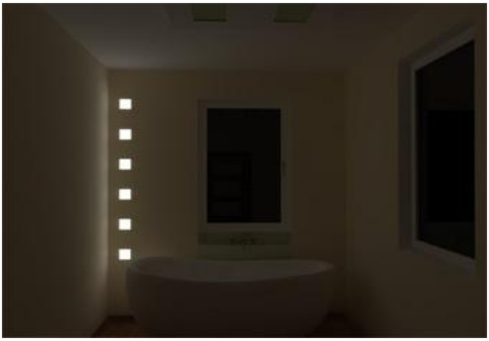


Fig. 283 – 6 small emissive objects – default GI Emission settings (100 %) 6x5W=30 W

To make it easier and quicker, we added an option of **Global Light Emission**, which influences all emissive objects in the room at the same time. This solution makes in a lot easier to set a proper level of advanced emission, achieving the best visual effects.

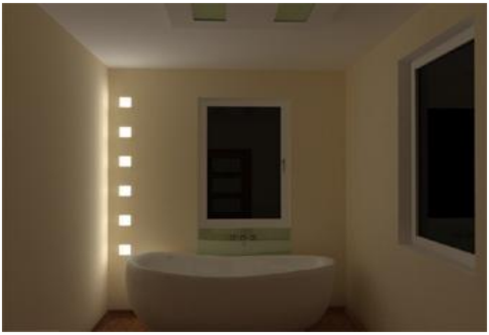


Fig. 284 - – 6 small emissive objects – the maximum level of GI Emission (200 %) 6x10W=60 W

The **Global Illumination Emission** parameter can be changed in a range from 0 to 200 %. A default level is 100 %. When this option is set at 0, then the influence of all emissive objects in a project is totally switched off.

8. Final Gathering

In case of object consisting of a big number of small surfaces it may happen, that they are not properly illuminated by the indirect light. In such case it is recommended to use the functions of additional calculations, performed only for selected object or objects – **Final Gathering**. Its name relates to the fact, that the program 'gathers' information about the global illumination for each corner of each surface of this object. This process uses a lot of operation power and due to that it is recommended to use it only in exceptional circumstances (e.g. if the object is a very important element in the project and is to be presented in illustrations).

In contrast to the interactive **Radiosity** process, where all calculations are performed in small portions and it is possible to present the results in real time, **Final Gathering** uses the maximum computational power of all available CPU cores.

To check the estimated time of FG calculations – move the slider. This time is proportional to a number of objects, for which the additional calculations will be performed. After the calculations for each object are complete, the visualization will be refreshed. To stop the calculations press **<Esc>**.

If no particular object is selected then the program will estimate the time needed to proceed this calculations for an entire scene. Sometimes it is worth it to set the minimal quality and perform calculations for the whole scene to improve its overall visual quality.

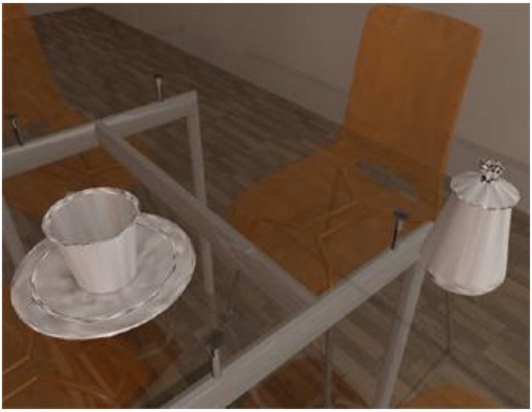


Fig. 285 – before Final Gathering calculations

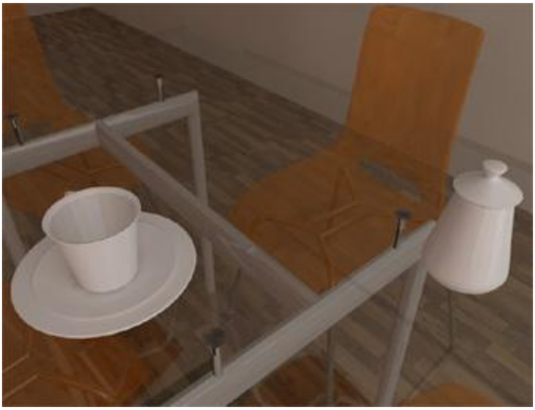
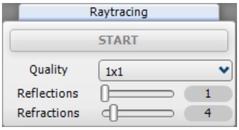


Fig. 286 - after calculations with a maximum quality. Time for the scene including 155 000 surfaces was about 200 seconds (100 seconds for one object)

9. Raytracing



Quality 1x1
Reflections 1
Refractions 4

Fig. 287 – the Raytracing functions

Another of the two most important processes in Professional Rendering module. While **Radiosity** calculates the diffused light distribution and saves the results for the corners (vertexes) of surfaces in the project, **Raytracing** calculates reflections from mirror and glossy objects that reach the observer of the scene, as well as analyzes objects refracting light, such as glass and translucent plastic.

Because the analyze of refractions and reflections lasts for relatively long time, there are 4 levels of **Raytracing** quality available.

- 1x1 – 1 ray send from the camera (the observer of the scene) goes through each pixel of the screen (this is the way the program analyzes the reflections – checks which rays go between the observer and the object – in reverted direction);
- 1x1 AA – through 1 pixel of the screen goes 1 ray from the camera and in places where there is not enough accuracy – the anti-aliasing (vertex smoothing) algorithm is used;
- 2x2 – through each pixel goes 4 rays;
- 2x2 AA – 4 rays per 1 pixel and anti-aliasing is used in case of lack of accuracy.

The 1x1 mode can be used for checking the initial results of **Raytracing**. It is also recommended to export illustrations using **Raytracing** in the view resolution (it is a screen resolution diminished by the toolbars visible in the visualizaton window). In such case the view is ready for saving without any other additional calculations. If the illustration is to be exported in some higher resolutions, then the **Raytracing** calculations will be performed for a multiply time, what will significantly prolong the time of exporting the file.

Because the **Raytracing** algorithm's operation is based only on rays set by the user, it is possible to adjust the number of sent rays – both reflected and refracted. The reflected rays can be set from 1 to 10 and the refracted ones – from 0 to 20.

Standard settings is 1 reflected ray to 4 refracted rays. The bigger number of rays is set to be analyzed in the program, the longer the calculation time.

It is recommended to perform calculations first on the standard settings and only in the final stage – just before saving the file as illustration – increase the number of analyzed reflections and refractions.

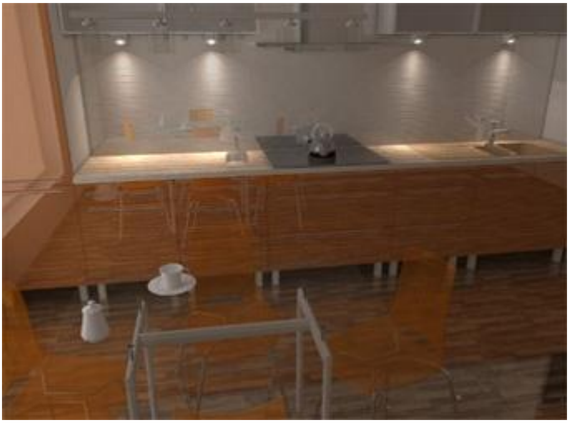


Fig. 289 – before using Raytracing

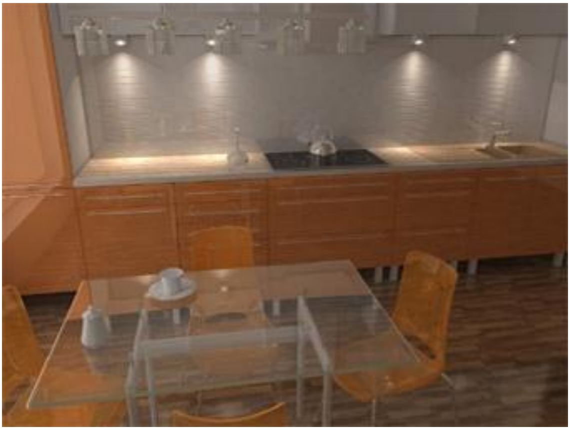


Fig. 290 – after using Raytracing – a perfect look of a glass table and translucent plastic chairs

In the case of refracted rays the program calculates the number of rays going through the translucent objects. If two glasses are placed besides each other and each of them has 4 sides (it is required to define some thickness for glass objects), then to properly calculated the refractions the program will need to analyze 8 rays, and this is the value of refractions the user should set.

In illustrations (Fig. 291 and 292) below two examples of using the **Raytracing** function to make translucent objects look naturally have been presented. To achieve such effects of refractions, properly drawn models have to be used – the glass and transparent plastic has to have some thickness.

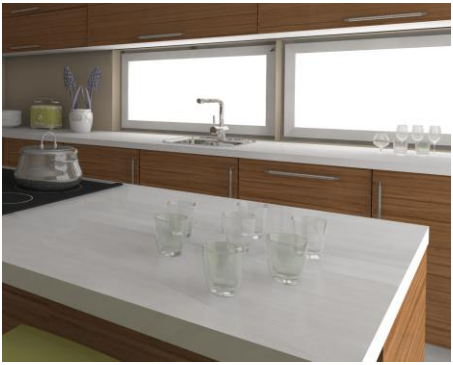


Fig. 291 – example of using Raytracing - 1

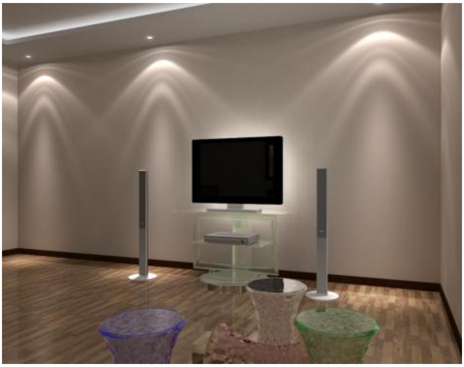


Fig. 292 – example of using Raytracing - 2

The next illustration (Fig. 214) presents multiply reflections in mirrors, which are generated by the **Raytracing** function.

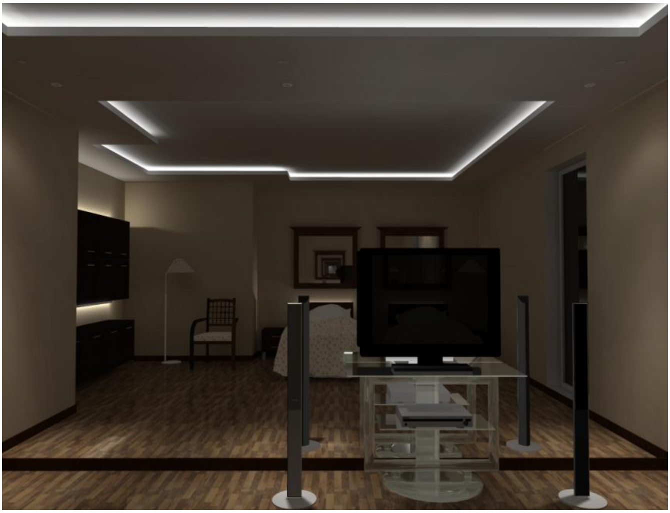
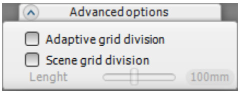


Fig. 293 – using Raytracing: raytracing of refracted rays is responsible for natural look of the glass TV stand, and the raytracing of reflected rays is in the multiply reflections in the mirror (10x)

10. Advanced options

As it has been mentioned before, the **Radiosity** calculations are performed only for the corners (vertexes) of surfaces. The grid of walls is prepared for calculations by default – it is divided into surfaces of dimensions 100x100 mm.



☐ Adaptive grid division

☐ Scene grid division

Lenght 100mm

Fig. 294 – Advanced options

Because of that it is possible to achieve a proper light distribution in a relatively short time.

But the program does not divide objects other that walls and platforms (created by the user by using the **Any elements** feature) automatically, and this is why an option of modification of the grid of other objects has been added.

10.1. Adaptive grid division

This function allows to automatically deduct walls and platforms from other objects, e.g. kitchen cabinets, what results in a better distributions of indirect shadows at the junction between the wall and the object.

In illustrations 295 and 296 the effect of using this option has been presented.

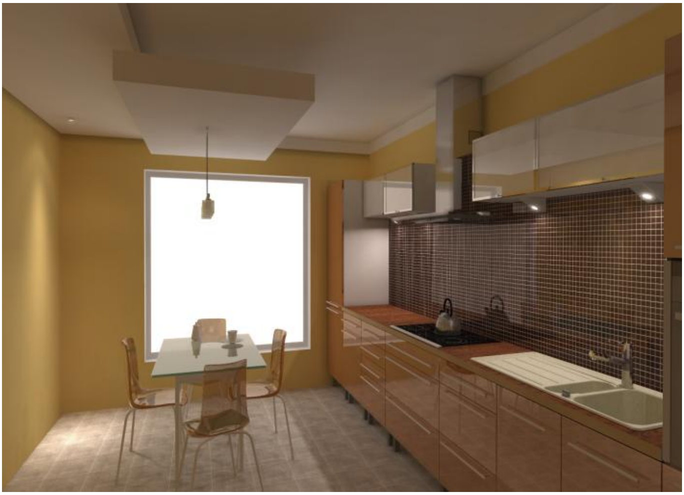


Fig. 295 – before using the Adaptive grid division – please see the unnaturally looking shadow between the wall between the wall and the suspended ceiling

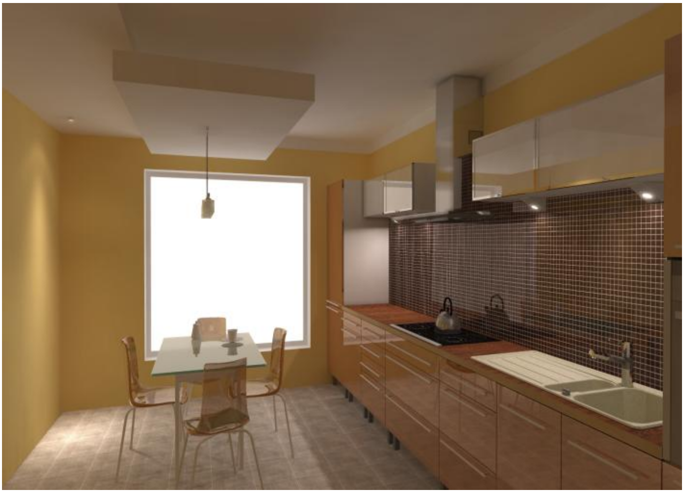


Fig. 296 – after using the Adaptive grid division - the unnaturally looking shadows are gone

10.2. Scene grid division

Sometimes it happens that olny one corner of some big surface is visible, and the rest of them is obscured by other objects.

Such situation has been presented in the illustration 297. Corners of the surface (a side of a tall cabinet) have been marked with red squares. It can be clearly seen that the side of the cabinet is too dark. This is an example to a big, almost totally obscured surface.

In such case the option of **Scene grid division** can be used to divide the scene into smaller surfaces.

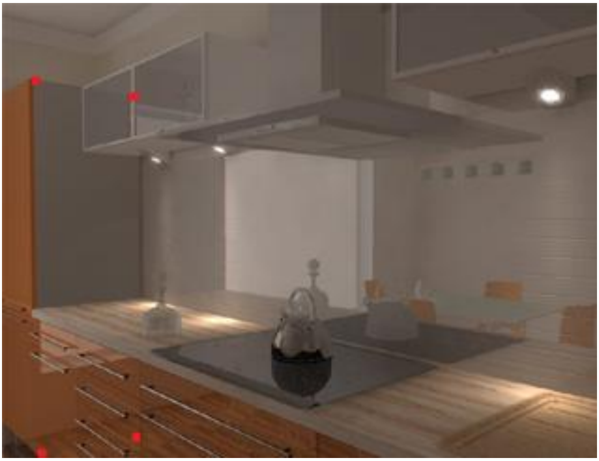


Fig. 297 – a scene before the division, clearly visible gray colour of the cabinet's side. The size of the scene - 103 000 surfaces.

In the illustration 298 the same scene has been presented, after using the option of **'Scene grid division'** – the length of a single surface has been changed to 40mm. Now the shadows between the cabinet and worktop can be seen. They appeared because some of the surfaces are located below the worktop, and the light does not reach them.

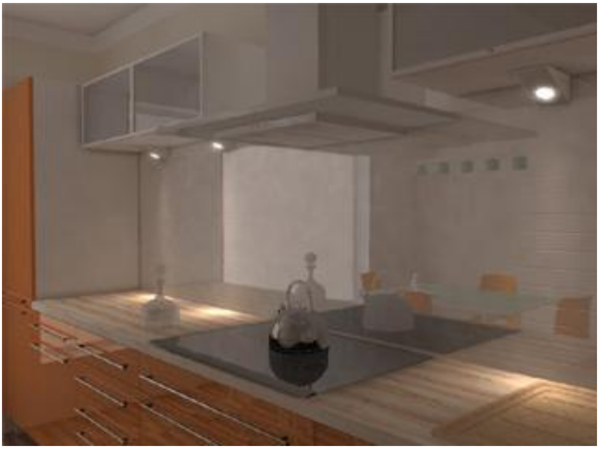


Fig. 298 – the same scene after the division (new size of the surface: 40x40 mm). More details visible (e.g. delicate light reflected from the worktop). The size of the scene increased to 155 000 surfaces

The division of the scene grid prolongs the calculation time because the number of the surfaces to be analyzed increases.

11. Diagnostics

The option **Show emissive objects** is a tool used for graphic presentation of object which were attributed with a real emission.

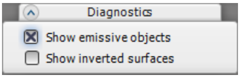

Diagnostics
☒ Show emissive objects
☐ Show inverted surfaces

Fig. 299 – Diagnostics pane

Especially useful in big projects when the user defined many emissive objects and is not sure, which objects were the, and it is necessary to locate them to modify their parameters to change the overall light distribution in the scene.

Objects with advanced emission influence the distribution of light even if the level of emission is low. The result of using this function is presented in the illustration 219. The emissive objects are marked in purple.

The option show inverted surfaces has been described in detail in the fragment of the manual referring to the **Scene diagnostic and repair** function, available in the **Radiosity** tab (subchapter 6 on page 206).

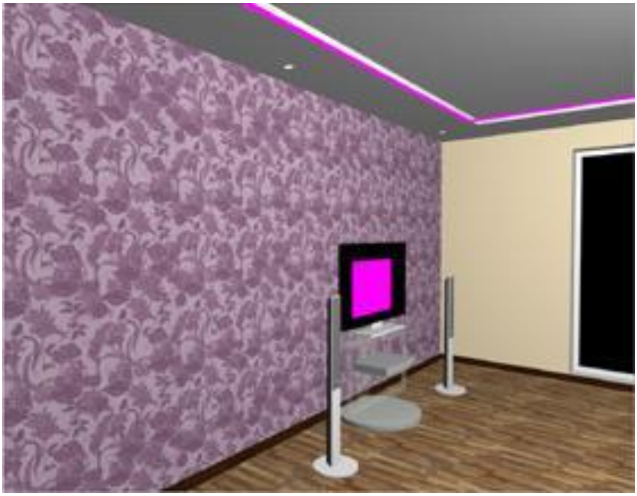


Fig. 300 – using the function Show emissive objects (emissive objects are marked in purple colour)

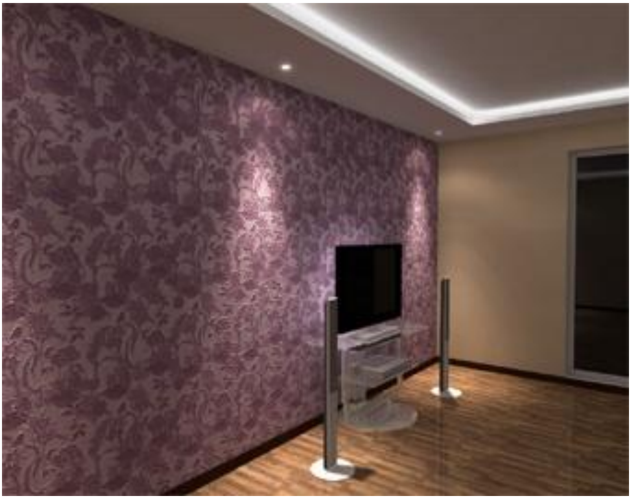
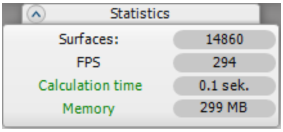


Fig. 301 – an emission effect after turning on the lights

12. Statistics

In this pane the user is provided with a basic information about the current project and processes necessary to its proper opearation:



Surfaces: 14860
FPS 294
Calculation time 0.1 sek.
Memory 299 MB

Fig. 302 – Statistics pane

- **Surfaces** – a current number of surfaces in the project. This number changes accordingly to the selected method of scene division. The amount of surfaces influences the time of calculations and system resources. Sometimes one object can have more surfaces than the entire scene.
- **FPS** – a number of frames per second that the program can present – the bigger, the better. This number is usually lower during the **Radiosity** calculations.
- **Calculation time** – the time of calculation of the direct light distribution, and when the **Radiosity** calculations are on – the time that passed from the beginning of calculations.
- **Memory** – a current memory consumption. Only occupied memory is shown, including CAD environment. The **Radiosity** calculations are performed in a separate process, so they are not included here. If the memory consumption is less than 1 GB the inscription **Memory** is in green colour, and if tit exceeds 1 GB - the inscription changes to red. This may mean a possible lack of memory to perform following tasks. If there is not enough memory to perform the Radiosity calcualtions, then the program will stop them automatically and display the message: ‘Radiosity calculations were stopped due to lack of memory!’.

13. Colour tones

This function enables the user to quickly change the influence of the light distribution, calculated by the Radiosity process, on the overall colouring of the scene. Changes can be introduced during or after the complettion of the Radiosity calculations. There is 23 different filters available on users disposal.

The colour tones change the scene exposition, so it is worth it to set the lighting parameters to match the particular filter. This feature gives the designer bigger flexibility in creating the final visualization.

14. Frequently Asked Questions - FAQ

Question 1. Is it possible to change intensity of lights during Global Illumination calculations?

Yes. This is in fact a recommended. While the calculations are proceeded, it is possible to go to the **Scene** tab and modify lights parameters. Please remember, that the **[F1]** key refreshes the calculations of the direct light. When you go to the **Scene** tab, refreshing of results of **Radiosity** calculations is stopped (the calculations are still performed in the background – with a maximum speed). Going back to the **RenderPro** tab results in actualization of lighting results without a few seconds. Only the objects that influence the scene by emitting their own light have to be set before starting the calculations.

Question 2. How long do the calculation of the direct light, Radiosity and Raytracing take?

The time of the direct calculations, e.g. of light emitted by halogen lights, is usually about a few seconds. It is difficult to establish the time of **Global Illumination** calculations. The length of this process depends mostly on the number of surfaces and geometry of the scene itself. On the picture below an example kitchen scene after 70 seconds of calculations (including 10 seconds of **Raytracing** 1x1 AA). The Core2 Duo E 8400 processor was used (Fig. 303).

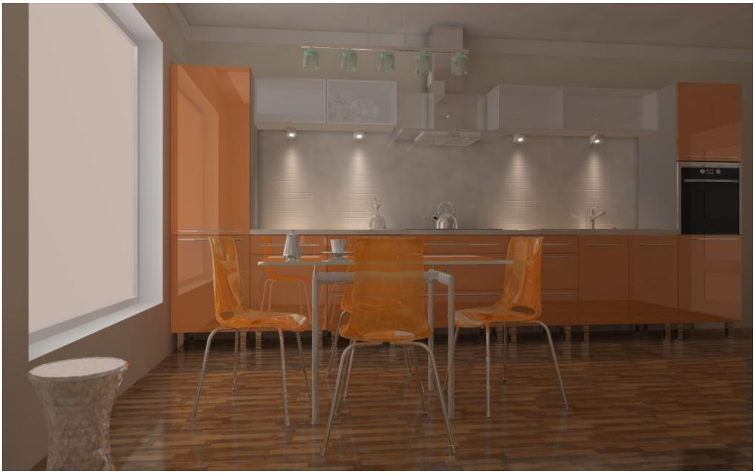


Fig. 303 – the look of an example kitchen scene after 70 seconds of calculations (including 10 seconds of Raytracing 1x1 AA). The Core2 Duo E 8400 processor was used

Question 3. Are the calculations performer on the computer processor or on the graphic card?

The **Radiosity**, **Raytracing** an **Final Gathering** calculations are performed in total on the processor (CPU).

Question 4. Does the Professional Rendering module use the multi-core processors?
Yes. It can be assumed, that the more cores, the faster are the calculations, especially in case of **Raytracing** and **Final Gathering**.

Question 5. What it the most economically optimal processor in regards to Radiosity calculations?
The most optimal processor is 4-core i5, available in a similar price Core2 Duo.

Question 6. Does the refreshing time, set in the Radiosity pane, have any influence on the speed of performer calculations?
Yes. Differences checked for a few different scenes are about 10-20%. If the calculations are to sped up, it is recommended to set the refreshment time to 20 second. For the same scene a refreshing time of 2 seconds will have worse results in regards to time. It is understood, because the program does not have to render a scene, what can take more time than the CI calculations in more elaborated scenes.

Question 7. Is it possible to change the time of refreshing the scene during the calculations of global illumination?
Yes. It is recommended to set the time at the beginning to 2-4 seconds, because then the first results of calculations can be seen and it is possible to abort the calculations to change the settings, or to decide to continue them. If the first results are satisfying, then the time interval of refreshing the results can be prolonged, to maximally speed up the calculations.

Question 8. . Does the program use the 64 architecture?
Yes, when the program recognizes, that Windows is a 64-bit system then the **Radiosity** calculations are performed in a 64-bit mode.

Question 9. What are the advantages of using 64-bit Windows 64 in case of Professional Rendering module?
The main advantage is the possibility of more efficient memory reserving. In 32-bit systems it is possible to reserve up to 3.3 GB of memory for all processes. It means that for one process it is possible to reserve not more than 1.5 GB. It is different with 64-bit systems. In this case for user's disposition is as much memory as has been installed on the computer. It means that in 32-bit Windows the calculations can be stopped because of the lack of memory. Scenes consisting of 500 000 surfaces and

smaller can by calculated in 32-bit Windows. For bigger scenes it is recommended to use 64-bit Windows. An additional advantage is approximately 5-10% higher efficiency of calculations in 64-bit system.

Question 10. Does the CAD environment work in the 64-bit mode?
Unfortunately not. This is why the calculations are performer in other process, not to block the **Radiosity** calculations.

Question 11. When the Radiosity calculations are finished?
They are performer until the user click the **<STOP>** button.

Question 12. What could be done if the calculations are performed for a long time and some important object in the project still does not look good enough?
In this case the **Final Gathering** feature should be use. Select the object and click the **Final Gathering** button. The program will perform additional calculations for this object only.

Question 13. Is it possible to record a video with previously calculated illumination?
Yes. Calculations once performed are remembered by the program until some modifications are introduced, and they can be used multiple times to record the video frames or to export the scene to picture files as separate images.

Question 14. How to divide a wall into surfaces of a different than standard (10X10 cm) size?
To establish a division of the wall to surfaces of a different size than 10x10 cm you can use ceramic tiles. For example you can apply tiles of dimensions 5x5 cm to a selected wall or platform and then apply a texture or colour to the same object. The division 5x5 will be remembered. An additional advantage of this method is that the neighboring surfaces are subtracted, what results in better quality of shadows displayed in vertexes of surfaces.

Question 15. Is it possible to change parameters of a rendered scene after pressing <STOP> (finishing Radiosity calculations) in a way preventing from losing the calculations results?
Yes, but only two parameters can be changed this way – **GI Influence** and **Ambient**. These two parameters can be changed at any time, also after stopping the

calculations (their results will not be lost). After moving sliders of these features the visualization is immediately displayed with the new settings. After stopping the calculations, it is also possible to change settings in **Render-parameters** group available in the Scene tab, and then to refresh the view by pressing Show lights button or [F1] key.

When these parameters are set in a satisfying way, the scene can be exported to JPG, PNG or JPS file or recorded as a video in an AVI file format.

Question 16. Is it necessary to use the surfaces inversion algorithm?
Yes. It may looks it would be easier to redraw the incorrectly drawn models, drawing all surfaces in a proper direction, but unfortunately this solution would not solve the problems with models created by users themselves, or downloaded from the Internet, which can be drawn in an incorrect way or just in a different direction than models created by CAD Projekt K&A.

Question 17: What to do when this message appear: 'Display driver stopped responding and has recovered…' during rendering calculations?
On some graphic GeForce cards (especially in 64-bit Windows 7 OS) you may see the communicate 'Display driver stopped responding…' and the rendering calculations will be terminated. If it happens to you, close the visualization mode and in the CAD environment type the **'anty'** command in the Command Bar. In the new window click **'Slow rendering'** button and go back to visualization. Rendering calculations will be slower, but it will protect you from switching the driver off. To switch to the slower mode, you do not need to restart the program.

15. Examples of differences between standard and advanced rendering

The effects of a basic and professional rendering vary in a clearly visible way.

Example differences are presented in the illustrations below. They all present one room but in various configurations of used features of basic and advanced rendering.

Detailed description can be found under the illustrations.

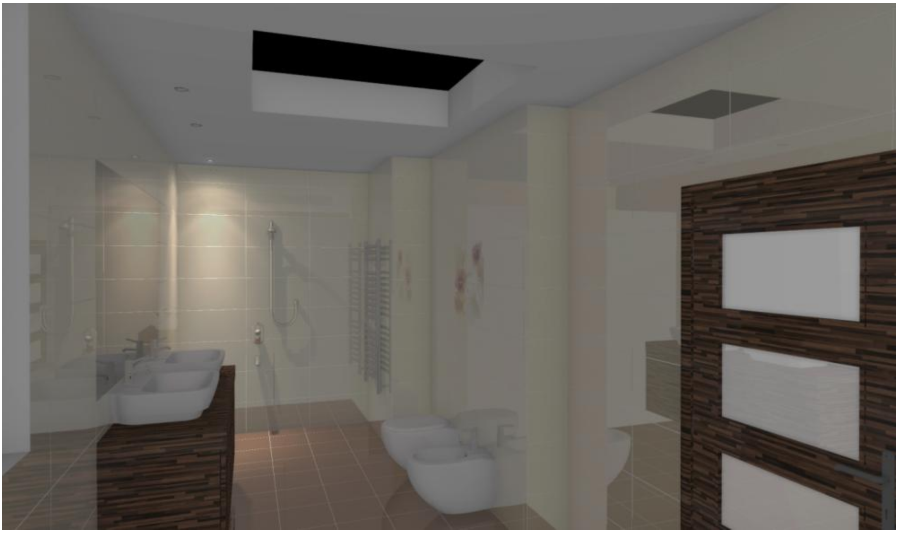


Fig. 304 - STANDARD RENDER: Only one halogen light has been used to light up this scene. It was necessary to use additional lighting up effect (the Brightness feature), because the scene was underexposed. In all cases exactly the same tiles were used – the differences in visible colours are caused only by the differences in light distribution.

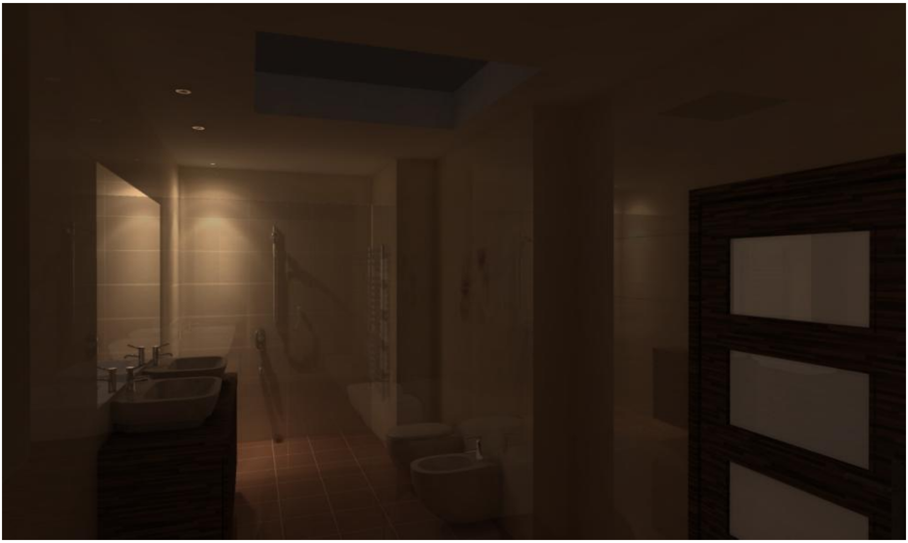


Fig. 305 - PROFESSIONAL RENDER: Only one halogen light was used to light up this scene but – as you can see – all the details are visible, and the illumination looks naturally. The visible colours are determined by the diffused light distribution and a colour bleeding phenomenon.

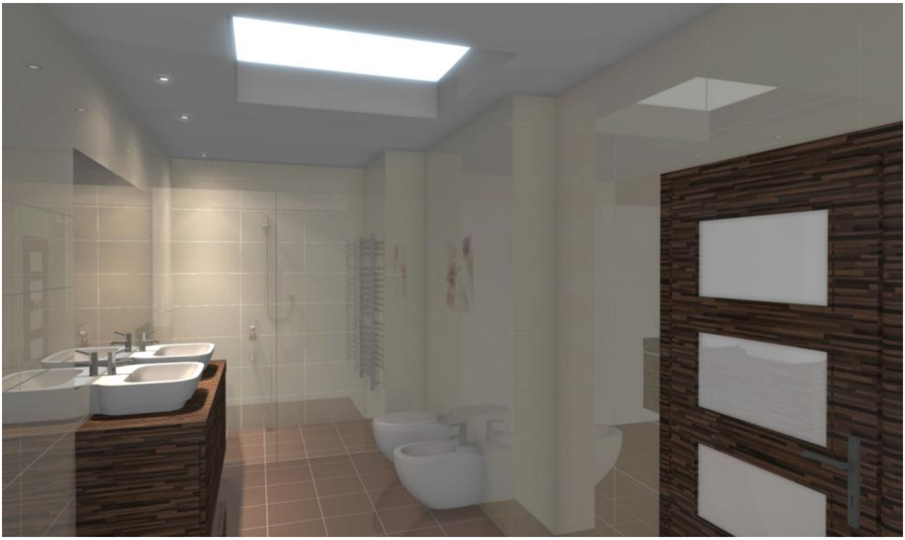


Fig. 306 - STANDARD RENDER: In this scene there are 3 halogens and a material in the ceiling which has been attributed with a basic light emission and imitates the light (the Show emission option is on, so the bloom effect is visible). Then Ambient Occlusion function was used and the scene was slightly brighten up (the Brightness feature).

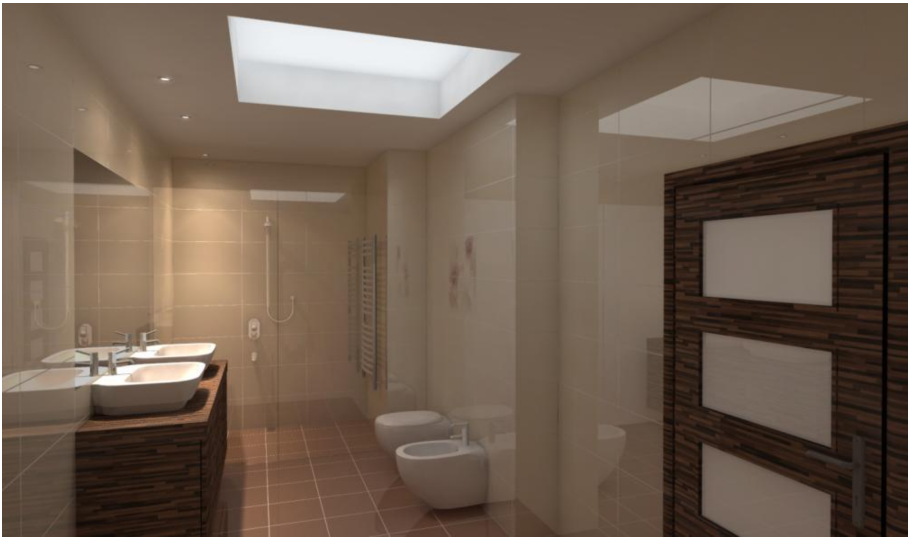


Fig. 307 - **PROFESSIONAL RENDER: The same 3 halogen lights were used but the skylight has been attributed with the real light emission, what can be clearly seen on the edges of ceramic objects. Please notice the difference of a light distribution and colours in both cases.**

CHAPTER 25

Presentation of a project – creating illustrations, animations and videos

1. Introductory remarks

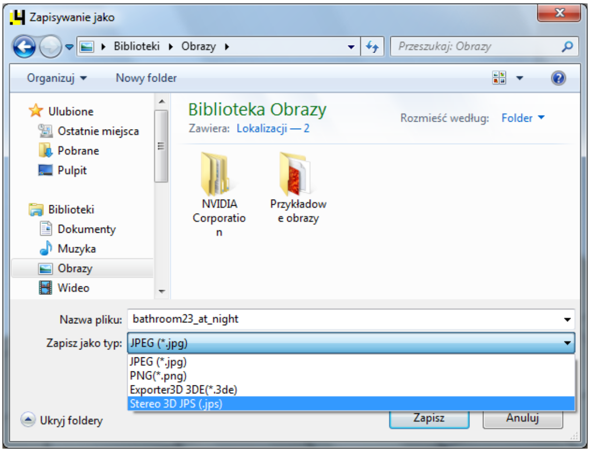
Our software offers some very attractive ways of presenting the results of Your work to the clients – as illustrations (**JPG**, **PNG** or stereoscopic pictures – **JPS** file format), simple animations played in **Export 3D** module (**3DE** file format) or as real videos (**AVI** file format) of any length, created on the basis of defined path of the camera, that freely floats in the space which rendered in real time. The user can define the speed and angle of the camera, a number of frames per second, a resolution of the video and select an appropriate codec. Illustrations and videos can be presented in the **Gallery**, an application available under the icon in visualization.

2. Export of a scene in visualization – creating illustrations and animations

2.1. Export to JPG, PNG and JPS

When the arrangement of the room is finished, and all textures, materials, paints and coverings are applied and all properties and effect are attributed to selected objects, and most of all – when the settings of lighting and render are established in the most visually attractive way, then the user can save any number of illustrations of the project, e.g. in various views and proposed alternative colour versions or presented.

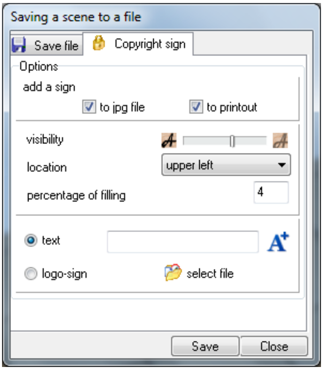
In order to do it:
- set the view in the way ensuring the most attractive look of the room;
- turn on the lights (clicking the **Show lights** icon) to make all attributed properties and lighting effects visible;
- click the **Export 3D scenes** icon;
- enter the name of a created file, choose its format and indicate the destination location in the **Saving as** dialog box (Fig. 308);
- click the **Save** button.


Zapisywanie jako
Biblioteki ▸ Obrazy ▸
Przeszukaj: Obrazy
Organizuj ▾
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Biblioteka Obrazy
Zawiera: Lokalizacji — 2
Rozmieść według: Folder ▾
NVIDIA Corporation
Przykładowe obrazy
JPEG (*.jpg)
PNG(*.png)
Exporter3D 3DE(*.3de)
Stereo 3D JPS (.jps)
Ukryj foldery
Zapisz
Anuluj

Nazwa pliku: bathroom23_at_night

Zapisz jako typ: JPEG (*.jpg)

Fig. 308 – saving a file of an exported scene in visualization


Saving a scene to a file
Save file
Copyright sign
Options
add a sign
visibility
text
logo-sign
select file
Save
Close

☑ to jpg file ☑ to printout

location: upper left

percentage of filling: 4

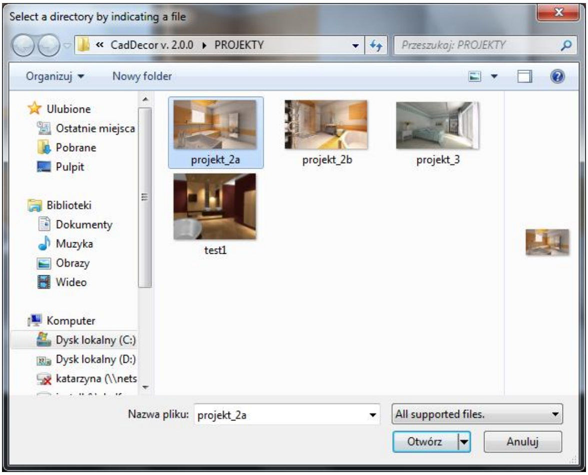
● text ○ logo-sign

Fig. 309 – adding a copyright sign

- a new dialog box will open - **Saving a scene to a file**, in which it is possible to add a signature or logo – in the **Copyright sign**, and set its location, size and percentage of filling (transparency level) (Fig. 309);
- after setting the sign or logo, click the **Save** button;
- it is also possible to save the scene to a file without adding a sign – to do so, stay in the **Save file** tab (do not switch to the **Copyright sign** tab) and click **Save**;
- the file will be saved in the indicated location.

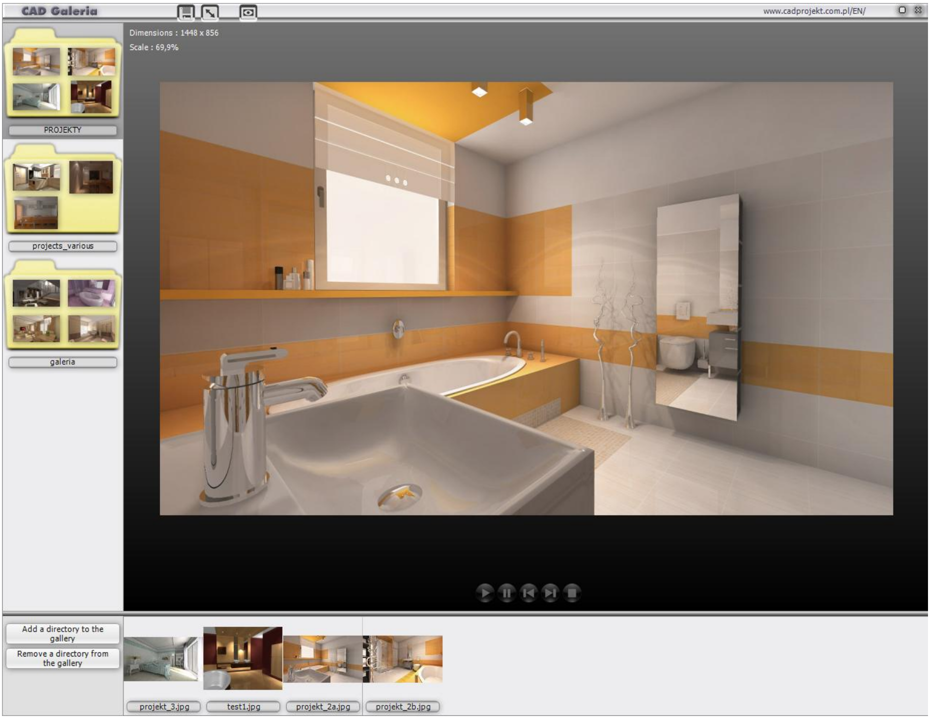
Illustrations created this way can be quickly and easily presented using the **Gallery** module, under the icon in visualization.

- to add a new directory with pictures to the list in the **Gallery**, click the button **Add a directory to the gallery** and then indicate the location of the directory with images on the disk (Fig. 310);
- to add a directory click on a name of one of the files in it and then the **Open** button (Fig. 310);
- the directory will be added to the list on the left side of the **Gallery** dialog box (Fig. 311);


Select a directory by indicating a file
« CadDecor v. 2.0.0 ▸ PROJEKTY
Przeszukaj: PROJEKTY
Organizuj ▾
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Komputer
Dysk lokalny (C:)
Dysk lokalny (D:)
katarzyna (\\nets
projekt_2a
projekt_2b
projekt_3
test1
All supported files.
Otwórz
Anuluj

Nazwa pliku: projekt_2a

Fig. 310 – opening a new directory in the Gallery


CAD Galeria
www.cadprojekt.com.pl/EN/
PROJEKTY
projects_various
galeria
Add a directory to the gallery
Remove a directory from the gallery
projekt_3.jpg
test1.jpg
projekt_2a.jpg
projekt_2b.jpg

Dimensions : 1448 x 856

Scale : 69,9%

Fig. 311 – the Gallery module

- after clicking on a directory previews of illustrations will be presented in the bottom part of the dialog and a big preview of the first selected picture will be displayed in the main part;
- to switch between illustration use the arrows on the keyboard or click on the selected picture with a left mouse button.

2.2. Export to 3DE

Exporting scenes in visualization to simple animations in a format of **Export 3D** module (3DE) can be performed in a similar way to saving them as JPG, PNG and JPS files. The only difference is that the camera should be carefully located in a suitable location (e.g. the center of the room), because during displaying the animation the room will rotate around the axis, based on the position of the camera in the moment of exporting the scene.

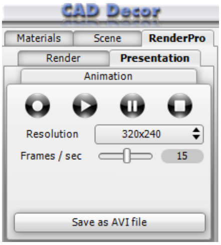
- set the camera in a suitable location, turn on the lights and click the **Export 3D scenes** icon, enter the name of an animation file and its destination location and select the proper extension: **Exporter3D 3DE (*.3de)**;
- click **Save** – a new dialog box will open (**Saving a scene to a file**), in which a copyright sign or logo can be added to the animation (in the **Copyright sign** tab);
- click **Save** for a second time – a file will be saved in the indicated location and will be ready to display in the **Export 3D** module;
- to present the animation first locate the **Export 3D** module on the disk;
- if there is no icon on the desktop, it can be found in the program location;
- there is a few ways to do it – e.g. right-click on the shortcut icon of CAD Decor 2.X on the desktop and:
  - in Windows XP – select from the context menu the **Properties** position, and then – **Find target element**;
  - in Windows Vista and 7 – **Properties** and then **Open file location**
- the user will be brought to the location of the installation of CAD Decor 2.X, where on the list of program files the position **Export3D.exe** should be found and double clicked with a left mouse button - the **Export 3D** module will open;
- to load an animation, in the main module menu select **File** and **Open 3D file** (in the upper left corner) and then indicate the location of an animation file;
- to play an animation select **View** and then **Animation**;
- to change the mode to full screen, select **View** and **Full screen** or press **<Alt + Enter>** on the keyboard;
- to zoom in click **<+>** in a bottom right corner of the **Export 3D** dialog box, to zoom out click **< - >**;
- to end the presentation press **<Esc>** or select **File** and **End**.

> *Note! It is possible to view animations using the Export 3D application on computers on which CAD Decor 2.0 is not installed. It is enough to save animations and the Export3D.exe file on this computer.*

3. Creating videos in AVI file format

Functions of recording and saving AVI videos is available for all users of CAD Decor 2.X in a control panel in the **RenderPro → Presentation** tab (Fig. 312).

Videos in visualization are created on the basis of freely defined path, and the whole procedure is as follows:

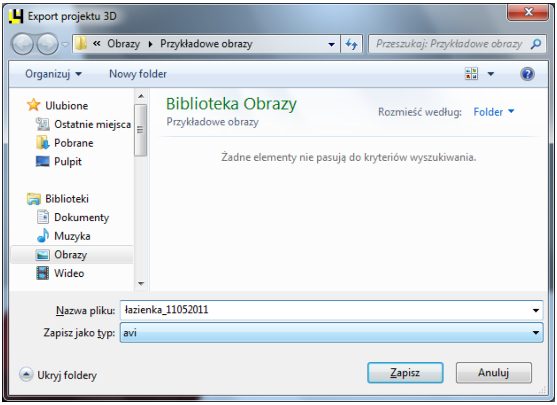


Resolution 320x240
Frames / sec 15

Fig. 312 – Presentation tab

- first go to the **Scene** tab and in the **Camera** pane set the angle and the speed of the camera accordingly to your needs and preferences;
- it will be possible to change this setting during recording;
- if the path for a video is created at the same time as the **Radiosity** calculations are performed (note! This is an additional functionality available only with the Professional Rendering module!) then it is recommended to set the interval of showing effects of calculations to zero (no current changes will be displayed), because this helps to reduce processor load and avoid slowdowns;
- after setting the camera parameters, go to **RenderPro** tab → **Presentation**;
- before recording set up the resolution – you can choose from: 320x240, 640x480, 800x600, 1024x768, 1280x720 and 1920x1080 – Full HD;
- also a number of frames per second can be changes – by default this parameter is set for 15 frames/sec, what is a value typical for computers (it the video will be played on TV it is recommended to change it to 24 frames/sec);
- the number of frames influences the time of recording and fluency;
- to start recording click **Record**: ⏺ - it will change the colour to red: ⏺;
- during recording move the camera freely in any directions you like, using the mouse, arrows on the keyboard ↑ ↓ ← → (moving or rotating to the left or to the right, up or down), **<Ctrl>** key (switching between moving and rotating and the other way around) and **<Shift>** (zooming in/ out);
- it is important that camera's movements are fluent;
- to change camera's angle or speed, click **Pause** ⏸ (it will change the colour ⏸) and then go back to the **Scene** tab → **Camera** and change these settings;
- then go back to the **RenderPro** tab → **Presentation** and resume recording;

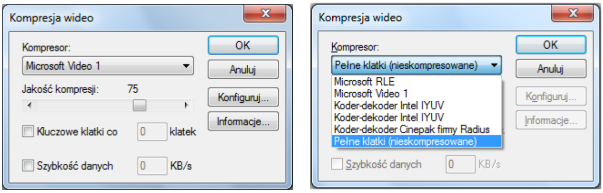
- to end recording click **Stop**: ⏹ (active: ⏹);
- recorded video can be played to check the result – click **Play** ▶;
- to check the final result turn on the lights (press **<F1>** or **Show lights** icon);
- if the video meets the requirements, it can be saved to the disk in AVI format;
- before saving turn on the lights and then click the **Save as AVI file** button;
- enter the name of the file and select the destination location for it (Fig. 313);


Export projektu 3D
Obrazy
Przykładowe obrazy
Przeszukaj: Przykładowe obrazy
Organizuj
Nowy folder
Ulubione
Ostatnie miejsca
Pobrane
Pulpit
Biblioteki
Dokumenty
Muzyka
Obrazy
Wideo
Biblioteka Obrazy
Przykładowe obrazy
Rozmieść według: Folder
Żadne elementy nie pasują do kryteriów wyszukiwania.
Ukryj foldery
Zapisz
Anuluj

Nazwa pliku: łazienka_11052011
Zapisz jako typ: avi

Fig. 313 – saving an AVI video to the disk

- in the next step – if it is the first time that an AVI file is saved to the disk after running CAD Decor program – it is necessary to select the codec (Fig. 314);

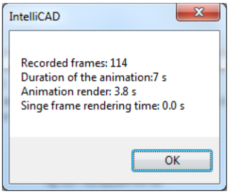

Kompresja wideo
OK
Anuluj
Konfiguruj...
Informacje...
Kompresja wideo
OK
Anuluj
Konfiguruj...
Informacje...
Microsoft RLE
Microsoft Video 1
Koder-dekoder Intel IYUV
Koder-dekoder Intel IYUV
Koder-dekoder Cinepak firmy Radius
Pełne klatki (nieskompresowane)

Kompresor: Microsoft Video 1
Jakość kompresji: 75
☐ Kluczowe klatki co 0 klatek
☐ Szybkość danych 0 KB/s

Kompresor: Pełne klatki (nieskompresowane)
☐ Szybkość danych 0 KB/s

Fig. 314 – selecting codec

- each next time it will not be necessary – until CAD Decor is restarted;
- saving can last a few seconds;
- the user will be informed when it is finished in a message including details of the saved video: number of frames, length of the video, the time of rendering the whole video and a time of rendering of a single frame (Fig. 315);
- a video saved to the disk can be played directly by double left-click on its icon in its location using any media player;
- video of a project in visualization can be presented on any computer without installing CAD Décor 2.X.


IntelliCAD
OK

Recorded frames: 114
Duration of the animation:7 s
Animation render: 3.8 s
Singe frame rendering time: 0.0 s

Fig. 315 – message informing that the AVI file has been saved to the disk

CHAPTER 26
Printing the project

1. Introductory remarks

In CAD Decor the project can be printed directly from the CAD environment. It is very useful when preparing a technical documentation for tilers. It is possible to print both projections of tiles, generated by using options in the **Documentation** tab in visualization, or a mesh of tiles. Please remember that the projections can be created in orthogonal views in visualization, and the mesh – when the orbital mode is used. To switch between them use icons of views in visualization: . More information about creation of tiles projections and mesh can be found in Chapter 19, subchapter 9.

2. Print settings

To print a project in a form of a linear drawing, follow the procedure below:

- go to CAD environment and select the view (or projection of tiles arrangement) that is to be printed;
- from the main **File menu select** the option **Print project** or click the **Print** icon on the **Standard** icon bar (Fig. 316);

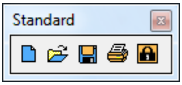
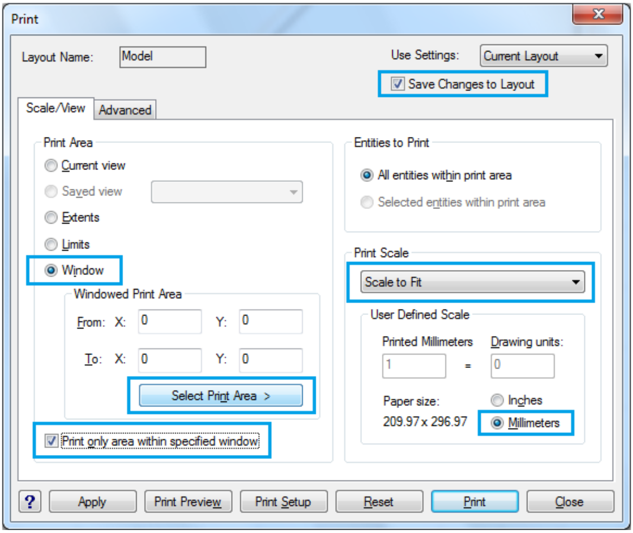


Fig. 316 – the Standard icon bar

- the **Print** dialog box will open (Fig. 317);
- in the **Scale / View** tab, in the **Print area** field select the option **Window**;
- in the upper right part of the dialog the option **Save changes to layout** can be selected, to save the current print settings for another time;
- in here it can be also determined, which settings should be displayed – of the current or of the previous layout (Fig. 318);


Print

Layout Name: Model

Use Settings: Current Layout

☑ Save Changes to Layout

Print Area

○ Current view

○ Saved view

○ Extents

○ Limits

● Window

Windowed Print Area

From: X: 0 Y: 0

To: X: 0 Y: 0

☑ Print only area within specified window

Entities to Print

● All entities within print area

○ Selected entities within print area

Print Scale: Scale to Fit

User Defined Scale

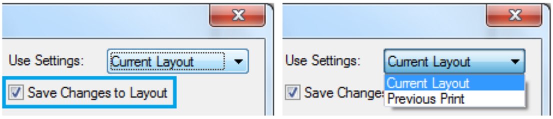
Printed Millimeters: 1 = Drawing units: 0

Paper size: 209.97 x 296.97

○ Inches

● Millimeters

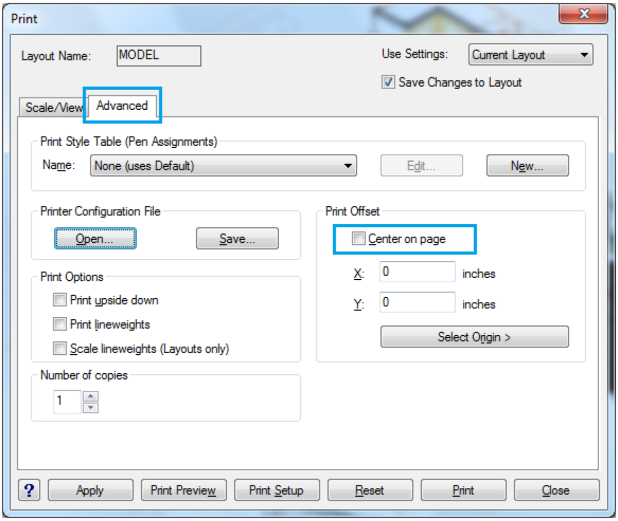
Fig. 317 – Print dialog box


Use Settings: Current Layout

☑ Save Changes to Layout

Fig. 318 – selecting a print layout – the current or the previous one

- to select an area for printing click **Select Print Area** and after being brought to the project environment, select the area from the left to the right (e.g. a whole project);
- in the **Print Scale** field the **Scale to fit** position should be selected (it is set up by default);
- in the **User Defined Scale** select **Millimeters**;
- then go to the second tab of the **Print** dialog box - **Advanced**;
- in this tab it is necessary to select the **Center on page** option in the **Print Offset** field (Fig. 296) to place the printout directly in the middle of the page;


Layout Name: MODEL

Use Settings: Current Layout

☑ Save Changes to Layout

Print Style Table (Pen Assignments)

Name: None (uses Default)

Print Offset

☐ Center on page

X: 0 inches

Y: 0 inches

Print Options

☐ Print upside down

☐ Print lineweights

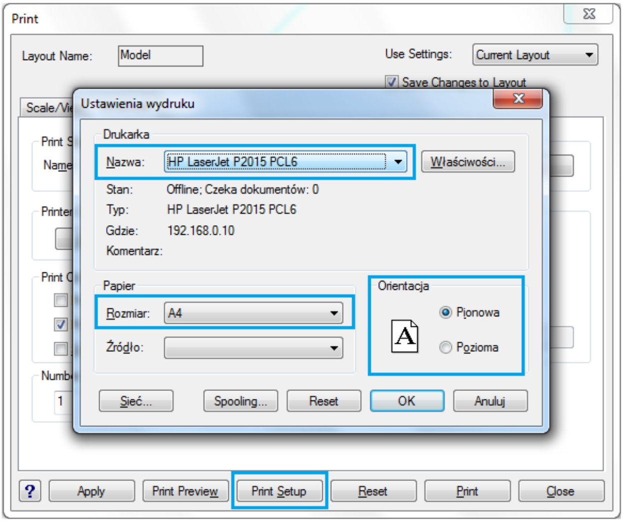
☐ Scale lineweights (Layouts only)

Number of copies: 1

Print
Scale/View
Advanced
Edit...
New...
Printer Configuration File
Open...
Save...
Select Origin >
?
Apply
Print Preview
Print Setup
Reset
Print
Close

Fig. 319 – Advanced tab – Center on page option

- then click the **Print Setup** button and select the printer, size of the page (e.g. A4, A3) and orientation - vertical or horizontal (Fig. 320).
- printing can be started – click **Print**.


Layout Name: Model

Use Settings: Current Layout

☑ Save Changes to Layout

Ustawienia wydruku

Drukarka

Nazwa: HP LaserJet P2015 PCL6

Stan: Offline; Czeka dokumentów: 0

Typ: HP LaserJet P2015 PCL6

Gdzie: 192.168.0.10

Komentarz:

Papier

Rozmiar: A4

Źródło:

Orientacja

● Pionowa

○ Pozioma

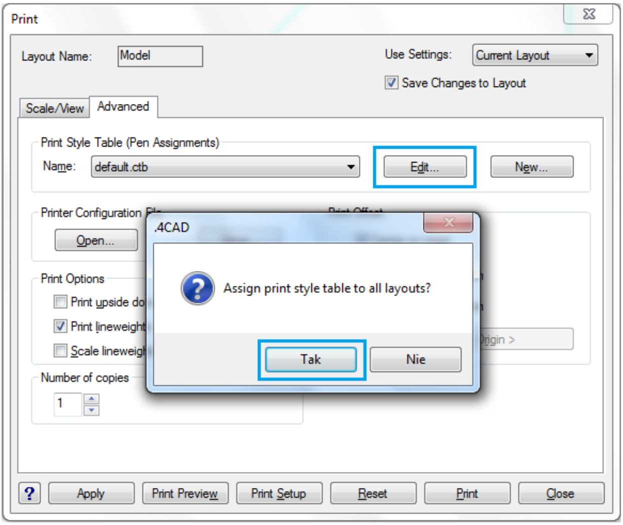
Print
Scale/Vi
Właściwości...
A
Sieć...
Spooling...
Reset
OK
Anuluj
?
Apply
Print Preview
Print Setup
Reset
Print
Close

Fig. 320 – printout settings

3. Defining parameters of lines in IntelliCAD 6

In some cases it is necessary to modify the thickness or colour of the lines on the printout (e.g. to fulfill the required standards of a technical drawing or when the lines are drawn with light colours and because of that – not visible after printing). To do it:

- select the position **default.ctb** in the **Print** dialog box → the **Advanced** tab → the **Print style table (Pen Assignments)** section → the drop-down menu of the **Name** option (Fig. 321);
- then click **Yes** in .4CAD dialog and then – click the **Edit** button;



Print

Layout Name: Model

Use Settings: Current Layout

☑ Save Changes to Layout

Print Style Table (Pen Assignments)

Name: default.ctb

☐ Print upside do

☑ Print lineweight

☐ Scale lineweig

Number of copies: 1

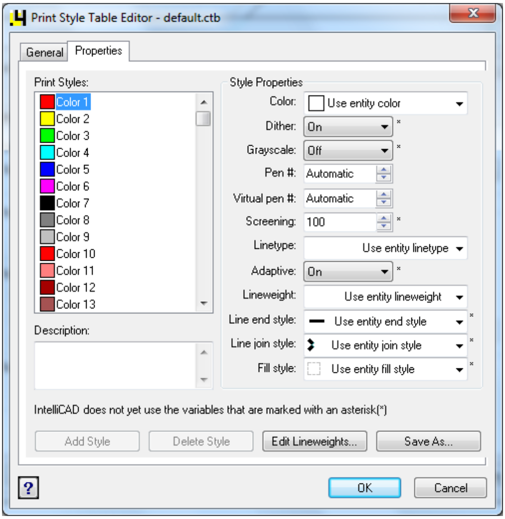
.4CAD

Assign print style table to all layouts?

Scale/View
Advanced
Edit...
New...
Printer Configuration File
Open...
Print Offset
Print Options
Origin >
Tak
Nie
?
Apply
Print Preview
Print Setup
Reset
Print
Close

Fig. 321 – Print style table option

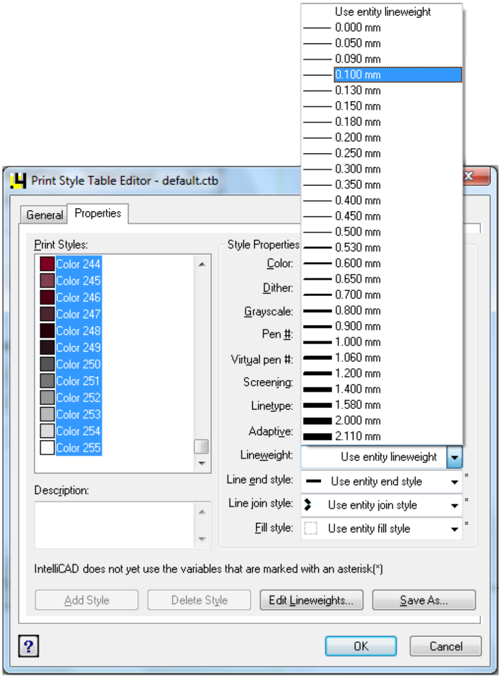
- in a newly opened dialog called **Print Style Table Editor – default.ctb** (Fig. 322), exactly in the **Print styles** section, click on the first **Color** position, press **<Shift>** and then press the last position (not releasing the **<Shift>** button);
- as a result, all positions will be selected at the same time (Fig. 323);
- in the **Style Properties** section → field **Color**, select the black colour and in the **Lineweight** – the thickness of 0.100mm;
- new settings should be confirmed with **Save & Close** button, what will result in saving them until the user decides to change them again.


Print Style Table Editor - default.ctb
General
Properties
Print Styles:
Color 1
Color 2
Color 3
Color 4
Color 5
Color 6
Color 7
Color 8
Color 9
Color 10
Color 11
Color 12
Color 13
Description:
Style Properties
Add Style
Delete Style
Edit Lineweights...
Save As...
OK
Cancel

Color: Use entity color
Dither: On *
Grayscale: Off *
Pen #: Automatic
Virtual pen #: Automatic
Screening: 100 *
Linetype: Use entity linetype
Adaptive: On *
Lineweight: Use entity lineweight
Line end style: Use entity end style *
Line join style: Use entity join style *
Fill style: Use entity fill style *

IntelliCAD does not yet use the variables that are marked with an asterisk(*)

Fig. 322 – Print Style Table... dialog box


Print Style Table Editor - default.ctb
General
Properties
Print Styles:
Color 244
Color 245
Color 246
Color 247
Color 248
Color 249
Color 250
Color 251
Color 252
Color 253
Color 254
Color 255
Description:
Style Properties
Use entity lineweight
0.000 mm
0.050 mm
0.090 mm
0.100 mm
0.130 mm
0.150 mm
0.180 mm
0.200 mm
0.250 mm
0.300 mm
0.350 mm
0.400 mm
0.450 mm
0.500 mm
0.530 mm
0.600 mm
0.650 mm
0.700 mm
0.800 mm
0.900 mm
1.000 mm
1.060 mm
1.200 mm
1.400 mm
1.580 mm
2.000 mm
2.110 mm
Color:
Dither:
Grayscale:
Pen #:
Virtual pen #:
Screening:
Linetype:
Adaptive:
Add Style
Delete Style
Edit Lineweights...
Save As...
OK
Cancel

Lineweight: Use entity lineweight
Line end style: Use entity end style *
Line join style: Use entity join style *
Fill style: Use entity fill style *

IntelliCAD does not yet use the variables that are marked with an asterisk(*)

Fig. 323 – marked list of colours and lineweight selection

Note!
The lineweight for walls can be optionally changed to e.g. 0,200mm, to distinguish them from other lines in the printout. To do it, select the position Color_31 *from the list and attribute it with a new thickness value.*

Note!
The settings presented above can be optionally saved to the disk (using the option Save as*) in a form of a CTB file, and loaded when another project will be printed.*

CHAPTER 27

The list of icons and their functions – table

Name of an icon bar	Icon	Name of a function	Description of a function
Standard	🗋	**New drawing**	Starts drawing of a new project or DWG drawing
	📂	**Open**	Opens an existing project or DWG drawing from the disk
	💾	**Save**	Saves the current project or DWG drawing
	🖨	**Print**	Prints out the current project or DWG drawing
	🔒	**Access codes**	Allows to enter codes for the program and separate modules
Drawing	✎	**Draw path**	Draws a path (polyline)
	╱	**Line**	Draws a line
	◜	**Arc**	Draws an arc
	□	**Rectangle**	Draws a rectangle (or square)
	○	**Circle**	Draws a circle
	A	**Text**	Allows to enter a text to a drawing
		Edit text	Edits a texts added to a drawing
		Drawing settings	Allows to change settings of a drawing
		Layers	Edits layers of a drawing
		Explode	Explodes an object to its component parts
		Mirror	Creates a reflected copy of an object based on an indicated reflection plane
		Offset	Copies objects (lines polyline, arcs etc) and locates them parallel to the original
		Trim	Deletes fragments of objects (lines, polylines etc) using other objects as a die
	↶	**Undo**	Undoes the last operation (up to 20 steps back)
	↷	**Redo**	Redoes the last undone operation (up to 20 steps forward)

Advanced	**Edit length**	Allows to quickly and easily modify line section's length
	Fillet	Joins two elements with an arc or rounds corners
	Align	Places objects next to each other at specified angles (in 2D or 3D)
	Array	Creates symmetrical spatial arrangements of identical objects in 2D
	3D Array	Creates symmetrical spatial arrangements of identical objects in 3D
Cursor dragging	**End point**	Drags the cursor to the end point of an indicated object
	Nearest	Drags the cursor to the nearest point on the indicated object
	Midpoint	Drags the cursor to the middle of an indicated object
	Central point	Drags the cursor to the centre of an indicated arc or circle
	Perpendicular	Drags the cursor to the perpendicular line intersecting an indicated object
	Point	Drags the cursor to any previously defined point on the object
	Insertion point	Drags the cursor to the base point of an indicated object
	Quadrant	Drags the cursor to the corner of a quadrilateral inscribed in a circle
	Intersection point	Drags the cursor to the common point of two lines or arcs
	None	Turns of all cursor snaps
Dimensioning	**Horizontal**	Draws a horizontal dimension
	Vertical	Draws a vertical dimension
	Rotated	Draws a rotated dimension
	Angular	Draws a angular dimension
	Reference line	Draws a basic dimensional chain
	Sequence	Draws a dimension of a serial chain
	Radius	Draws a dimension of arc or circle's radius
	Diameter	Draws a dimension of arc or circle's diameter

		Dimension Settings	Allows to quickly modify style of dimension lines (e.g. arrows, line thickness or type etc.)
		Edit Dimension Text	Allows to quickly modify a text of a selected dimension line
		Apply Style	Applies a new style to selected dimension lines
Information		**Point co-ordinates**	Displays the co-ordinates of a selected point of the object
		Distance	Displays the distance between two selected points
		Area	Displays the total area of a project
		Calculator	Opens Windows calculator
		About elements	Provides information about an indicated object
Points of view		**Top view**	Sets the view from above
		Front view	Sets the view from the front
		Back view	Sets the view from behind
		Left view	Sets the view from the left
		Right view	Sets the view from the right
		SW Isometric view	Sets the view in southwestern axonometry
		SE Isometric view	Sets the view in southeastern axonometry
		NW Isometric view	Sets the view in northwestern axonometry
		NE Isometric view	Sets the view in northeastern axonometry
View		**Refresh**	Refreshed the overall view of the project
		Move the view	Moves the view
		Previous view	Goes back to the previously set view
		Show all	Displays an entire project
		Zoom in	Zooms in the view of the project
		Zoom out	Zooms out the view of the project

		Zoom window	Enlarges a fragment of a project in a specified window
CAD-Decor		**Walls**	Allows to draw walls in a few ways and to insert wall elements
		Any elements	Draws floors, casings, platforms, plinths and ceilings
		Converter 3D	Converts 3D models files in many formats to DWX
		Posts	Draws posts, columns and arc walls of specified parameters and shapes
		Interior design elements	Inserts elements of interior design available in databases
		Elements specification	Creates a summary of interior design elements used in the current project
		Save interior	Saves and interior to the disk
		Load interior	Loads an interior from the disk
		Quick preview	Presents the current project in a simplified visualization preview
		Visualization	Presents the current project in a visualization

☎ Tel. 61 642 90 82 or 61 662 38 83

TECHNICAL SUPPORT

Any questions or concerns?
Contact our technical support
e-mail: pomoc@cadprojekt.com.pl
or look for information in the 'Knowledge center'
at our website **www.cadprojekt.com.pl**

CAD PROJEKT K&A

CAD Projekt K&A Sp.J. Dąbrowski, Sterczała, Sławek
ul. Rubież 46 | 61-612 Poznań
tel. +48 61 662 38 83 | fax +48 61 642 94 55,
biuro@cadprojekt.com.pl | www.cadprojekt.com.pl

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