



# PRO↑100

Software to design furniture and interiors

**Users' Manual**

# 1. Introduction

We have tried to make the program easy and intuitive to use thus rendering this manual necessary only sporadically. You can either start working with the program straight away or after reading *The PRO100 Quick start*. You can use the manual for future reference or to help solve problems which crop up as you work with the program.

## 1.1. What is the program for?

PRO100 is for designing furniture and decorating interiors. Instant visualization and simplicity of use make it a powerful tool for co-operating directly with the client.

## 1.2. System requirements

Minimum system configuration:

- PC with Pentium 100MHz or faster
- 64 MB RAM
- CD-ROM drive
- MS Windows 95 or later version
- at least 256 color display (16 bit Hi color or 24 bit True color recommended)
- approx. 130MB free space on hard disk (for maximum installation)
- mouse
- printer (optionally)

It is possible to run the program on a slower computer with less RAM, but it will slow down the functioning of the software.

Optimum operation requirements:

- PC with Celeron/PII/PIII/Duron/Athlon 300MHz or faster
- 128 MB RAM
- CD-ROM drive
- MS Windows 95 or later version
- display: 16 bit Hi color or 24 bit True color
- approx. 130MB free space on hard disk (for maximum installation)
- mouse
- printer (optionally)

## 2. Installation of the program

### 2.1. Installation of the hardware key

Before installing PRO100 you should insert a hardware key in parallel port LPT1 or LPT2. To do so, switch off your computer, disconnect the printer cable, insert the hardware key in the parallel port according to the instruction on the key and connect the printer cable to the key. In case of Windows 95/98, the hardware key is ready to use. In case of Windows 2000 or NT you should initiate access to the key through the program (see 2.2).

*NOTE: For technical reasons no signals apart from the printer signals may pass through the hardware key. A connected scanner, exterior disk drives or key protection for other programs may de-program the PRO100 key and force you to replace it. If the above devices are connected, install a card with additional parallel port LPT2 where we suggest inserting the PRO100 hardware key (parallel port LPT2 card is not included in the standard PRO100 program), and connecting all the remaining peripheral devices to port LPT1. Ecrú provides technical assistance in all problems and difficulties connected with the functioning of the program and the key at +48 12 623 75 57*

### 2.2. Installation of the program

To install the program insert the installation disk in the CD-ROM drive after starting Windows 95/98/2000/NT. In the majority of the cases the program will start automatically. If it does not, run the “*setup.exe*” (or “*setup*”) from the main folder of the CD-ROM disk. When installation is successfully completed the program is ready to run. In Windows Millenium, 2000, XP or NT you should initiate access to the hardware key before running PRO100 for the first time. To do so, run “Key initialization – Windows ME, NT, XP and 2000” from the Start menu in a group of PRO100 programs.

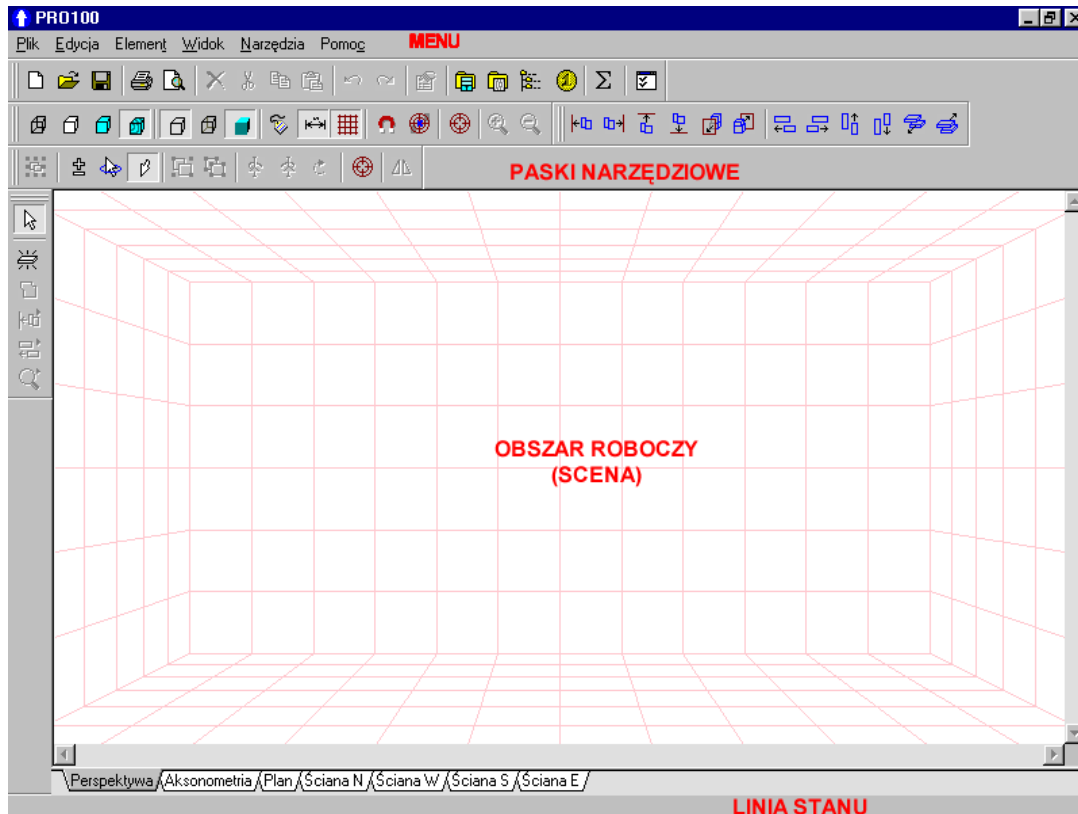
### 3. Description of the edition mode

After starting the program its main window appears on the screen.

It is divided into four main parts:

- **Menu** – as usual in MS Windows it provides access to all commands and program options.
- **Tool bars** – allow faster access to most useful commands. To work efficiently use the tool bars. Select a command by clicking a suitable button on the bar. To find out about a given button, point the cursor to it and wait about one second. A description will appear next to the cursor. To find out more about tool bars see unit 4.4.19.
- **Work area (virtual room)** – this is where designing and decorating takes place. Red grid on the walls of the virtual room facilitates 3D orientation in the project. To find out how to move around the room see the next unit.

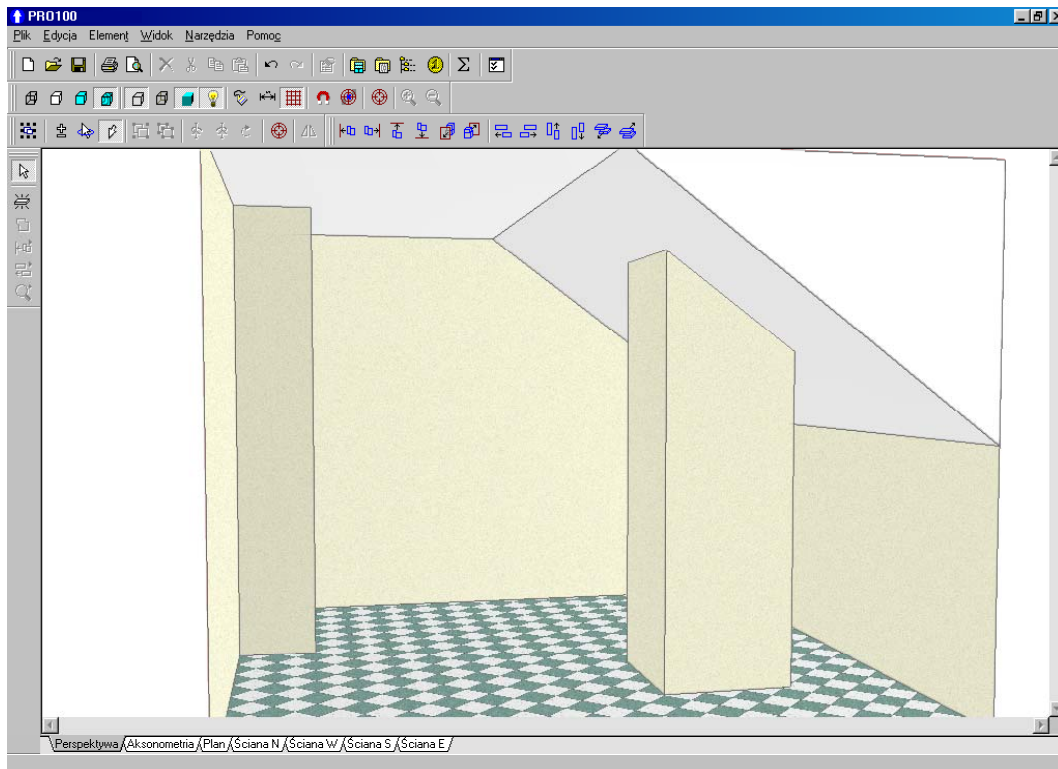
- **Status bar** – this is where information (such as location or dimensions) about selected elements or furniture is displayed. There are also tips about using certain commands.



*Figure 1: Program after starting.*

### 3.1. The room

When you open a new project (4.1.1), the room is a rectangular prism. The program only wants to know its dimensions. However, in







**Figure 2: Irregular interiors – attics, chimneys, and recesses.**

reality there are many interiors with irregular shapes, so the program is not limited to a default one. All irregular interiors are designed using pieces. To give an example, chimney is a piece with horizontal dimensions of the chimney stretched from the floor to the ceiling; an attic may be easily designed by adding a triangular piece in the top corner. When the colors of such auxiliary elements match those of walls or the ceiling, the pieces fully simulate the fixed elements of the interiors (automatic collision detection means that every element will behave like the walls). To find out how to edit the piece, see subunit 4.3. You can resize the interior any time by double-clicking on any of its surfaces. You can change the dimensions and the colors of particular walls or surfaces in an open dialog window. See units 4.3.4 and 4.5.2 for further information about changing colors.

The program also enables you to work in pre-prepared interiors, for further information, see unit 4.1.2 and 4.1.5.

### 3.2. Views

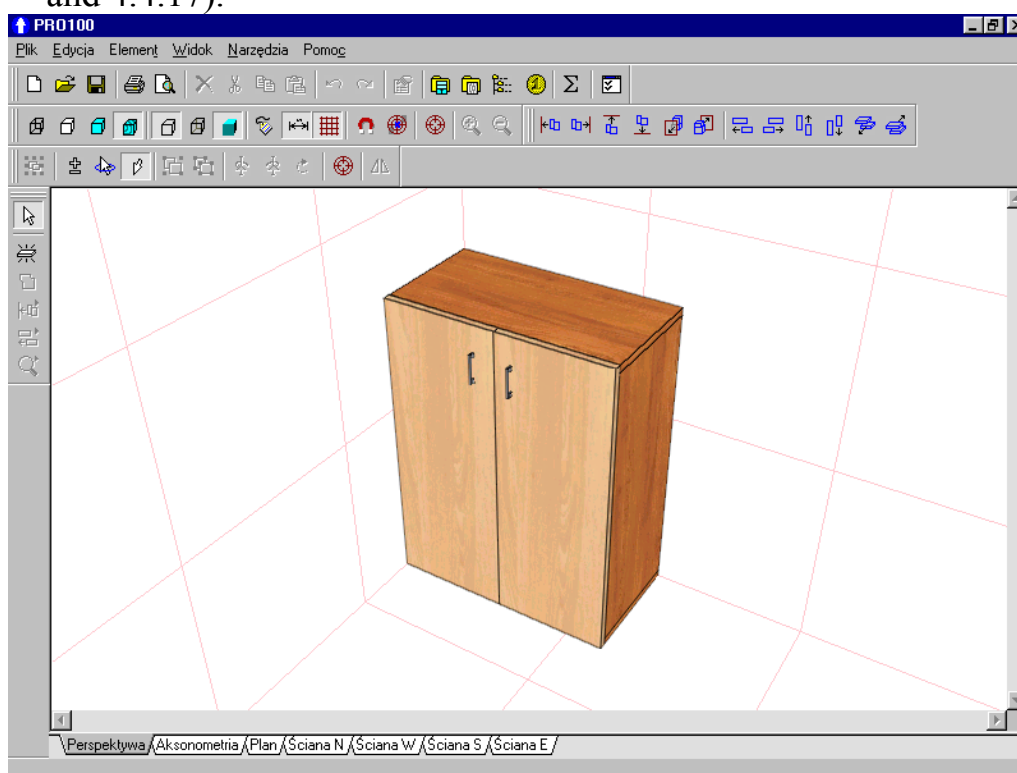
There are view bookmarks below the work area. Click any one of them to get the required view. Rules for moving the virtual room are common for all views. The mouse lets you change the orientation of the view (the observer location) and the distance from the observed virtual room quickly and intuitively.

- **Rotating the virtual room (changing the perspective)** – only for perspective view – **left-drag** outside the project wall or area with no objects. To do so, point the cursor to a wall or empty part of the drawing window, press the left mouse button and move the mouse in any direction without releasing the button. During this operation the cursor should change and look like this: 
- In axonometric and orthogonal projections rotating the virtual room is not possible and **left-drag** outside walls or object area results in **moving the view**. During this operation the cursor should change and look like this: . You can also use scrollbars below or on the right of the work area.
- **Zooming in and out - right-drag** the mouse button in any point in the work area. By moving the mouse up you zoom in and by moving it down you zoom out. When zooming in or out the cursor changes to look like this:  in a perspective view or like this:  in axonometry and orthogonal projections. You can also **Zoom in** (4.4.17) and **Zoom out** (4.4.18) using the commands from the **View** menu or suitable buttons on the toolbar.

It is possible to simultaneously change the perspective, magnification and observer location to make a selected element appear in the center by using the **Center** (4.4.15) and **Auto center** (4.4.16) commands from the **View** menu or suitable buttons from the toolbar.

### 3.2.1. Perspective

Perspective is the most frequently used projection, which provides a 3D view of the project. According to the rules for perspective views, objects that are located further are presented as smaller. Using the mouse you can quickly and intuitively change the orientation of the projection (observer location) and distance from the viewed virtual room (see units 3.2 and 4.4.17).

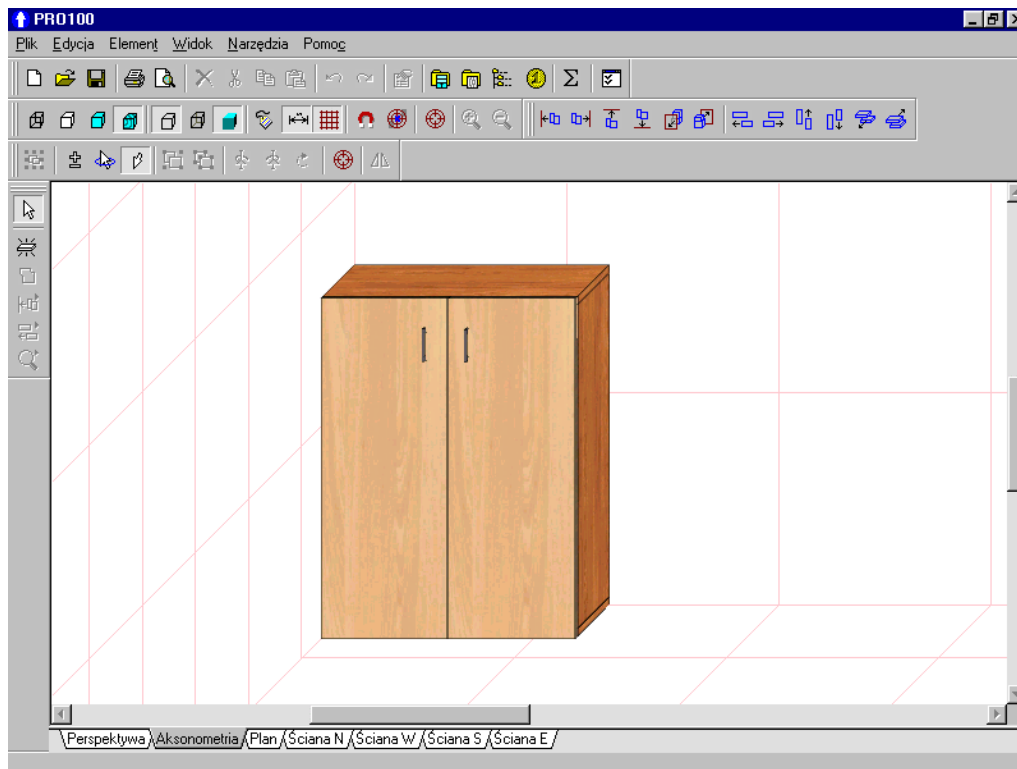


*Figure 3: Perspective.*

### 3.2.2. Axonometry

**Axonometry** is the axonometric view – **Rotating the virtual room (changing the perspective)** is not possible in this view. The viewing angle of the virtual room is 45 degrees.

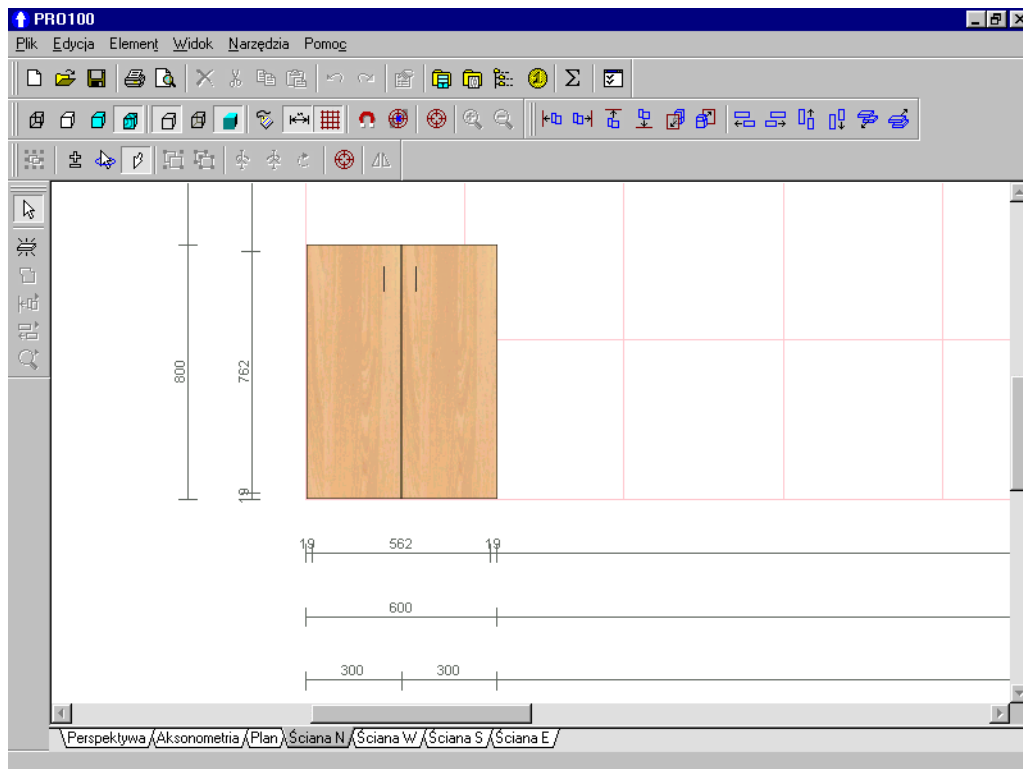




*Figure 4: Axonometry.*

### 3.2.3. Orthogonal projections - Plan, walls

These are five orthogonal projections created as a result of projecting the design onto one of four perpendicular walls of the interior or the floor.



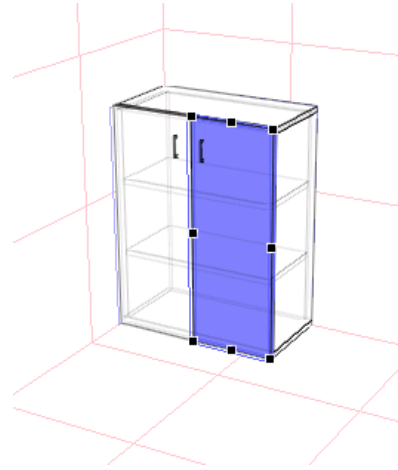
**Figure 5: Orthogonal projection with enabled dimensioning.**

**Rotating the virtual room (changing the viewing angle)** is not possible in this view. The viewing angle of the virtual room is at 90 degrees to a selected plane.

It is possible to enable **Dimensioning** (4.4.10) in orthogonal projections. You can hide elements that are distant from projection plane to obtain the view of the facade instead of the whole room (see 4.5.6).

### 3.3. Selecting and editing elements

Regardless of the currently used view, you can edit by pointing the cursor to the desired object. All operations on this element require that you select it, or a part of it first. Further on we will refer to marking (of an area or an element), as *selection* and the activity will be called *select*.



**Figure 6: Selected element (door).**





#### 3.3.1. Selecting

In all views you can select by clicking once on a particular object. Depending on whether the element is separate or grouped, either it alone or the whole group will be selected (see description for grouping 3.3.2). The selected object is inscribed into a blue rectangular prism. Black handles which facilitate re-dimensioning using the mouse (3.3.4) appear on the wall visible in the front. Moreover, to improve orientation orthogonal projections of a selected rectangular prism are shown in blue on the visible walls of the virtual room - *Figure 6*.





Simultaneously the status bar below the view bookmarks displays information about the number of elements selected, location and dimensions of selected elements (right bottom corner of the PRO100 program window).

When selecting several elements (see below) both the rectangular prism and the handles refer to the borders of the selected group of objects representing the smallest prism in which all the selected elements are contained. You can select several ungrouped objects by pressing **Shift** when selecting each consecutive element. In such a situation the previously selected elements are not unselected. The table below contains descriptions of other modes of selecting.

*NOTE: Remember that when selecting, the Shift, Ctrl, Alt keys or their combination should be pressed **before** clicking on the selected element!*

Select mode	Key	Cursor	Note
Single element	<b>None</b>		When selecting a new element, the previous one is unselected.
Selects (unselects) elements	<b>Shift</b>		Adds elements to be selected – the previously selected elements remain selected. When selecting an element, which has already been selected, it is unselected (unselecting).
Selecting a single element in a group	<b>Ctrl</b>		Selects a single element from a group – the group is not selected.
Selecting an element covered by another element	<b>Alt</b>		Each click selects the element below the one previously selected.

You can also combine the above select modes:

Select mode	Key	Cursor	Note
Selects (unselects) elements in a group	<b>Shift + Ctrl</b>		Selects or unselects elements in a group but does not influence the selection of the whole group.
Selects (unselects) covered elements	<b>Shift + Alt</b>		Selects or unselects subsequent elements covered by previously selected elements. Note: Selected elements remain selected.
Selects covered elements in a group	<b>Ctrl + Alt</b>		Selects subsequent elements in a group by switching the selection to the element below the one previously selected.
Selects (unselects) covered elements in a group	<b>Ctrl + Shift + Alt</b>		Selects subsequent element in a group by selecting (unselecting) elements covered by ones previously selected. Note: Elements selected previously remain selected

If you want to select all the elements in the rectangular area, you can use **cumulative selection**. To do so, point the cursor to an empty area of the virtual room (you should avoid all elements), which is one of the corners of the rectangle, press **Shift** and without releasing it press and hold the left mouse button. If you now move the cursor you will see a blue box following it. After releasing the left mouse button, all elements or groups which were **entirely** in the box will be selected.

You select **all** the elements in the work area by pressing a combination of **Ctrl+A**.

### 3.3.2. Grouping

A function called **Group** is used to combine elements into groups which in further edition behave as a single element. Elements combined in a group, later referred to as a *group*, are edited together. Their location, size and properties are also changed together. If you click on a single element of a group without pressing **Ctrl**, the whole group will be selected.

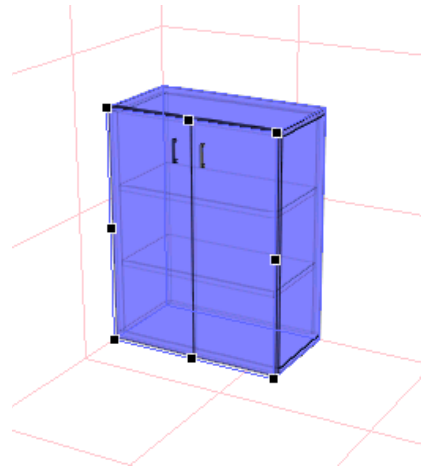
Groups usually correspond to the actual project: e.g. individual pieces combine to form kitchen cabinets (groups) that you can select and move by clicking just once.

Groups may be **nested**, which means that one group may be an element of another group. In such a case clicking on an element selects the biggest group, e.g. one which itself is not an element of any other bigger group. For instance: a design of kitchen furniture contains two groups of cabinets, the top and the bottom ones. Each of the groups is made up of individual cabinets and these cabinets are themselves made up of individual pieces. In such a case if you click once on any door of any cabinet, the whole top or bottom row will be selected.

**Group** (4.2.9) and **Ungroup** (4.2.10) from the **Edit** menu or corresponding buttons from the toolbar are used to operate in groups.

### 3.3.3. The plane of the handles

When you select an element or a group, handles appear on the selected rectangular prism. There are eight of them and they are located around the wall most perpendicular to the plane of the screen. The handles mark the plane where moving or resizing will take place. To change the plane of moving or scaling an object, you should rotate the virtual room as to make the required wall the most visible (most perpendicular to the plane of the screen). The handles will be transferred automatically to enable you to edit an object. In case of





*Figure 7: A selected group of elements (cabinet).*

orthogonal projections (**Plan** and particular **Walls**) one plane of handles designated by the direction of the view is always available.

You can also change the plane of the handles non-automatically when setting an object at an angle from which all the walls of the selected element are visible. When this happens the handles change from black to blue and it is enough to click on the wall where you want the handles.

### 3.3.4. Moving and resizing

You can move or resize a selected object by dragging with a mouse. When moving, drag the selected object. If you want to resize it, drag it by one of the handles.

- **Moving:** the cursor looks like this  after you point it to a selected object. Next press the left mouse button and move the mouse without releasing it. On the screen you can see a moving object following the movement of the mouse.
- **Resizing:** the cursor looks like this  after you point it to one of the handles. Next press the left mouse button and move the mouse without releasing it. On the screen you can see a resized selected element represented as the movement of the handle following the mouse. Resizing using the mouse is not possible if one of the dimensions the object (or one of the objects in a selected group) is locked (see 4.3.3).

Moving and resizing only takes place in the plane marked by the handles. See the previous sub-unit (3.3.3) to find out how to change the plane of the handles.

You can check how much an object is moved or resized by looking at the bottom of the program window at the right side of the status bar where the information is displayed. It is even more comfortable to work with some orthogonal projections (3.2.3) when dimensioning is enabled (4.4.10) – the constantly updated dimension lines give you total control of relations between the objects. You can also get the exact dimensions by using the keyboard with the aid of the **Dimensions** bookmark in the object **Properties** window (4.3.3).

During both moving and resizing the surroundings of the edited object is also considered. The possibility of a collision with a neighboring object or wall of the room does not allow further moving or resizing in a particular direction. This prevents errors connected with collision and gives you the feeling or working in an actual virtual room.

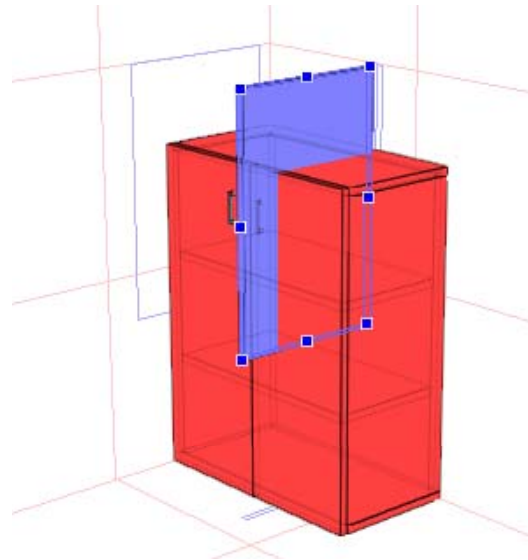
However, in a situation in which colliding is permanent and conscious, you can **disable** an option for **detecting collisions**. To do so, select an object, move it or resize it and pressing **Shift**, without releasing the left mouse button, continue moving or resizing it. When you release the mouse button, the object that collides with the currently edited element is displayed in red to warn you about the collision. Unselect to disable it. Remember that when collision detection is disabled, walls are no longer a constraint. This means that a selected object may not only collide with another object, but it may also protrude through a wall of the room. This is easy to check using orthogonal projections (3.2.3).

When resizing the dimensions of a group, the dimensions of the components are proportionally calculated. The exceptions are objects with locked dimensions (4.3.3), e.g. when resizing a piece of furniture, it will not be possible to change the thickness of the piece it is made of.

Exact resizing and moving objects using the mouse can be done using **Snap to grid** (4.4.14). Resizing and moving are done discreetly (e.g. every 5 cm). This helps avoid errors which are usually difficult to spot.

### 3.3.5. Reshaping

After selecting a single element you can change its shape. To do so, choose **Shape** from the **Element** menu (unit 5). This command



*Figure 8: Collision of an element with a cabinet.*

opens the two-dimensional **Shape Editor**, which enables you to choose any edition of the piece shape in a selected plane.

### 3.3.6. Double click

If you **double click** with the left button on a selected element, group or object, the **Properties** window is displayed (it is described in unit 4.3.2 and further on). Changes approved in this window will refer to all selected objects (not just the element which was double clicked). However, for some mass changes to make sense, the selected elements should be grouped. For instance, resizing several ungrouped elements using the **Properties** window results in **each** of the selected elements acquiring the dimensions entered in this dimensions window (the program warns you about resizing ungrouped elements by not displaying any value in the field of the **Dimensions** bookmark of the **Properties** window, for more information, see unit 4.3.3). This may lead to uncontrollable collision of certain objects. Resizing the group leads to changes to all components, which may be useful when e.g. editing cabinets.

### 3.3.7. Easy duplication

You can duplicate selected objects by using **Copy** (4.2.4) and **Paste** (4.2.5) or **Duplicate** (4.2.11) from the **Edit** menu. It is much easier and comfortable to duplicate using the right mouse button while moving. To do so, without releasing the left mouse button while moving an object, press and release the right button. A duplicate will appear in the area where you started moving the object. This is one of the more important ways of speeding up your work, so try using it.

## 4. The Menu Commands

This unit describes all the program commands accessible through the menu. Most commands also have keyboard shortcuts enabling access directly from the keyboard. Some commands are also accessible by using buttons from the toolbar. In this case, a picture representing the command will appear on the button.



## 4.1. File

This menu contains commands which appear in the majority of MS Windows system programs and are connected with working with the files, printer, starting and ending work with the program.

### 4.1.1. New



This command opens a new project. A window where you should enter the dimension of your virtual room appears on the screen. You can resize the room any time by left clicking twice on any wall of the room (you can also change the color of a selected wall in the open dialog window – see 3.1). If the previous project has been altered but not saved, the program asks you if you want to save it.

### 4.1.2. New from template


This command opens a new project from templates of rooms saved previously. Template files are files of the PRO100 “\*.sto” program saved in a special folder called **Templates**. You can find the location of the **Templates** folder from configuration settings of the PRO100 (4.5.6).

### 4.1.3. Open...

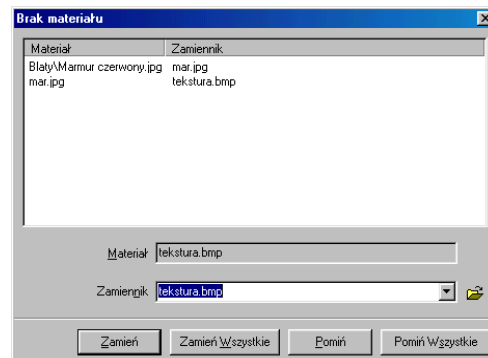


This command displays a window with projects to be opened. If the previous project has been changed but not saved, before opening a new project the program will first ask if you wish to save the previous one.

If the opened project contains materials that are impossible to find for the program, it will display a “material not found” window. Such a situation may occur when you want to open a project created with the aid of another material catalog (e.g. one on a different computer). The **Material** field displays the name of the material file which the program is unable to find. Enter the name of the material file you want to change the missing file into in the **Substitute** field.

If the name is unknown, pressing the  button results in displaying the window of the local Material Catalog (4.5.2) enabling you to select materials.

The following buttons are available in the “material not found” window:



**Figure 9: Substitute window.**

- **Replace** – replaces the material by its substitute.
- **Replace All** – replaces all the unfound materials in the project by a substitute.
- **Ignore** – the material is not replaced (it will be shown in project as a warning **Missing material**).
- **Ignore All** – none of the remaining unfound materials will be replaced (they will be shown in project as a warning **Missing material**).

A list on the top of the window shows the already replaced unfound materials in the project to be opened.

#### 4.1.4. Save

Saves the project in a “*file name.sto*” type file. The previous version of the project is transferred to a file of the same name but with the following extension: “*file name.~sto*”, and the new version is overwritten in the “*file name.sto*” file without checking the user’s intentions. This way the user has a backup copy of the project. If you want to restore the backup copy, simply change the extension from “*\*.~sto*” to “*\*.sto*”.

If you want to save a new project (with no name), the command acts the same as **Save as...** (4.1.5).

*NOTE 1: The specification of PRO100 files (projects and furniture, element and varia catalog modules) does not allow to save textures (only the location of the texture file in the Material Catalog). So to get proper visualization, after moving files to another computer, you should check if materials to be used are in the right location – or move Material Catalog together with files (more about problems with finding materials in sub-units 4.1.3 and 4.5.2).*

*NOTE 2: For technical reasons the older versions of PRO100 will not open files stored in a later version. When you copy files you should make sure that the same or a later version of PRO100 has been installed in the computer you have in mind.*

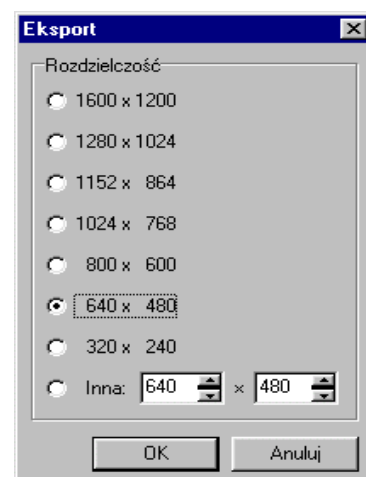
#### 4.1.5. Save as...

Saves the project after asking for a name and location on the disk. If the project is saved in the **Template** folder it will also be accessible as a template in **New from template** (4.1.2). You can find the location of the **Template** folder in the configuration settings of PRO100 (4.5.6) – it is usually in the main folder of PRO100.

Take a look at the Notes in the previous unit (4.1.4) – they also refer to **Save as...**

#### 4.1.6.Export

This command lets you export the currently visible area of your virtual room to graphic files. It also facilitates and simplifies the creation of e.g. company folders on the basis of the PRO100 catalog. If you use this command, a dialog window is opened. You should enter the desired resolution of the graphic file. Confirming the resolution results in opening “save” window, to chose file name type („\*.bmp” or „\*.jpg”) and location on disk.



**Figure 10: Graphic export window.**

### 4.1.7. Page setup

This opens a dialog window in which you can change settings for printing depending on the printer installed.

*NOTE: Changes to page setups in this command are local and only concern the current session with PRO100. When the program is started again it returns to the default settings of the Windows operating system. You can change the default settings of the Windows system in the Control Panel of the Printer folder. You should keep in mind the fact that all other programs started in the Windows system use the default settings and that this could result in errors when printing from other applications.*

### 4.1.8. Print preview



Displays a window with print preview including paper size and orientation in the current printer. You can print from this window by pressing **Print** or cancel by pressing **Close**.

### 4.1.9. Print



After the user accepts printing settings, the visible part of the virtual room is printed. In order to utilize paper in the best manner possible we suggest selecting the horizontal option in drawing orientation (**Landscape** mode in printer setting).

### 4.1.10. Quick access

The program displays five recently opened projects allowing you to re-open them quickly.

### 4.1.11. Exit

Quits the program. If the previous project has been changed but not saved, the program will ask you if you wish to save the changes before exiting.

## 4.2. Edit

This command is yet again characteristic of most Windows system menus. It includes commands related to working with the catalog,

selecting and duplicating objects in addition to more typical commands.

### 4.2.1.Undo

Reverses the last change. It functions multiply. With this command you can reverse the last 30 changes in the project.

### 4.2.2.Redo

Reverses the last **Undo**. It mirrors the functioning of undo and also operates multiply.

### 4.2.3.Cut

Moves the selection to the Clipboard cutting it from the project. You can paste it (also multiply) using the command **Paste** (4.2.5).

### 4.2.4.Copy

Copies the selection to the Clipboard. The project remains unchanged.

### 4.2.5.Paste

Inserts the Clipboard contents in the project. The object is inserted in the center, at the point of the axis of the rotation of the virtual room in perspective. The inserted object is selected; earlier selections of other objects in the project are canceled.

### 4.2.6.Delete

Deletes a selected fragment from the project.

### 4.2.7.Add to Catalog

Adds a selected object to the catalog with a name given in the “save” window. The Catalog window is described along with the **Furniture Catalog** (4.5.1). Adding objects to the Catalog later enables you to insert objects in projects (4.2.8).

*NOTE: In order to ensure proper functioning in other computer systems, avoid using signs other than alphanumeric signs when saving files (it is particularly dangerous to use the following signs: dots, commas and %, /, \, >, <, \*, etc.).*

### 4.2.8. Insert from Catalog

This command displays a window enabling the selection of an object from the Catalog and inserting it in the project. After selecting the object (e.g. left double-click on an icon of a particular catalog module) the object is inserted in the center, at the point of the axis of the rotation of the virtual room in perspective. The inserted object is selected; earlier selections of other objects in the project are cancelled. This window also lets you insert catalog elements based on cabinet name or symbol. In this case when you are in a suitable folder you should enter the symbol in the **Name** field and accept with **Open**. If the file (catalog module) cannot be found at a given location, the user is informed through a message. In any other case the element appears in the manner described above in the work area of PRO100.

The Catalog window is described along with the **Furniture Catalog** (4.5.1). This subunit also contains a description of a more comfortable way of inserting objects from the Catalog.

### 4.2.9. Group

Groups the selected objects, both single elements and groups of elements. For more information about grouping see subunit 3.3.2.

### 4.2.10. Ungroup

Ungroups into single elements or groups of elements. Groups of elements, which constitute elements for further grouping, remain grouped. The selection does not change its range; all the elements of the ungrouped unit remain selected.

### 4.2.11. Duplicate

Inserts a copy of the selected object next to the original. Only the inserted object is selected. Another, easier way of duplicating is described in unit 3.3.7.

### 4.2.12. Select all

Selects all the objects in the project.

## 4.3. Element

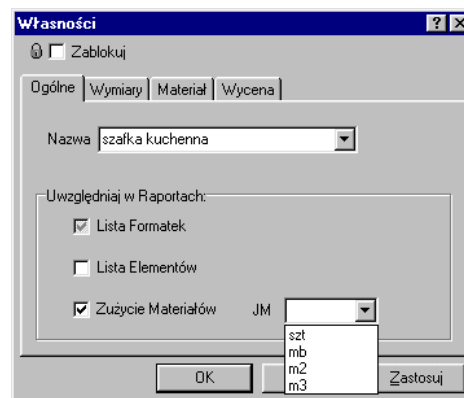
This menu contains commands for the edition of objects and changing their properties. Remember that each command refers to the current selection.

### 4.3.1. New

Inserts a new element. On selecting this element there is a possibility of entering the thickness of the inserted piece on the toolbar. You should then click on one of the walls of the virtual room. The inserted piece will have the same orientation as the wall on which you clicked; it will be parallel to it. When editing further, you should remember about the texture orientation in relation to the inserted element and the initial settings of the element (thickness in particular) and modify its dimensions with reference to planned designs of the element. Consistency in edition is prerequisite for the proper generation of reports (see 4.3.4 and 4.5.5).

### 4.3.2. Name

Opens the element's **Properties** window in the **General** bookmark. The **Name** field allows you to name a selected object or objects. In case of a group of pieces it will be the name of the group, if several elements are selected, every one of them will get a given name. Below the **Name** field you can find fields that let you assign the objects to particular reports called **Include in Reports**. If you check the **Piece list** box, the objects will be displayed in the Piece Report (Piece Report enters element data according to dimensions – see 4.5.5), if you check **Element List** – they will be selected in the Element Report (Element




*Figure 11: Properties window General bookmark.*

Report enters elements as items - see 4.5.5). If you check **Material consumption** and choose units, element data will be displayed in Material Consumption Report (see 4.5.5) in units chosen by the user.

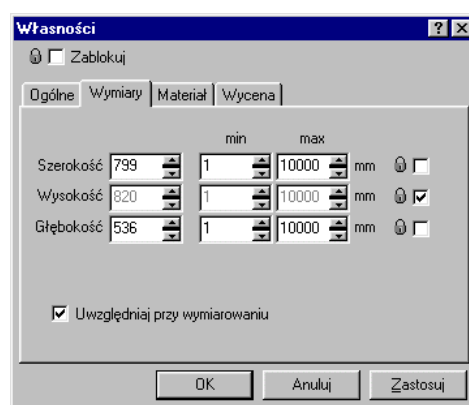
If the **Properties** window has been opened for several elements (either grouped or not), the selection in the **Piece list, Element list** or **Material consumption** box will be gray. If you click on this box, a black check will appear and all the elements from the selected group will acquire the property, all the elements will appear in the Piece Report. If you click on this box again, the check is cancelled and all the elements get the property, none of the elements appear in the Piece Report.

The **lock** box at the top of the window locks the possibility of changing in all the bookmarks of the **Properties** window. Checking this box also means that in case of a nested group (see 3.3.2) in a parent group, left-click with a pressed **Ctrl** key (mode for selecting an element in a group – see 3.3.1) on an element from a nested **and locked** group, selects the whole nested group, not just a single element. In other words, a group locked in this way behaves like a single element on selection.

You can also open the **Properties** window quickly for selected object using  on the toolbar or by double-clicking on any selected element (see 3.3.6).

### 4.3.3. Dimensions

Opens the **Properties** window of a selected object in the **Dimensions** bookmark. The **Width, Height, Depth** fields allow to precisely establish the dimensions of an object. The **min** and **max** fields are used to describe the extreme values of dimensions for given objects. Boxes with the picture of a padlock next to a dimension mean that they are locked – if a box is checked, a certain dimension is locked and will not be changed when other dimensions are



*Figure 12: Properties window Dimensions bookmark.*



altered. In newly inserted elements the dimension for the thickness of pieces is locked automatically. By suitable locking of dimensions of elements belonging to groups it is e.g. possible to get cabinets with a constant height of the plinth.


If several elements or groups are selected only these dimensions are available which are identical for all the selected objects. Dimensions where the elements differ are left blank. If the dimension lock boxes of at least one selected element are checked, then the field for edition of several elements will be gray. If you unlock them and change the dimensions, this will result in acquiring a given dimension by **every element separately**. This is useful e.g. when you want to make sure that all the selected doors are identical. If all the selected elements have a certain locked dimension, this dimension will also be locked for group edition.

To change **the external dimensions of a group of elements** (e.g. a cabinet) you should first group them using the **Group** command (4.2.9 and 3.3.2).

If you check a box called **Show dimensions** it will display the dimensions of the object with the dimensioning enabled in the orthogonal projections mode (see 4.4.10). Dimensions of a group have priority over dimensions of its constituting elements and the value of dimensions will be displayed when dimensioning is enabled (the dimensions of the constituting elements will be hidden even if their **Show dimensions** field is enabled), however the constituting elements switch is taken under consideration. This means that you will see the dimensions of the smallest rectangular cube containing all the constituting elements with **checked Show dimensions** – but not the dimensions of the whole grouped object (this allows you to get e.g. the dimension of a cabinet with no protruding handles). It is only possible to display the constituting elements of a group on the monitor by using the **Ungroup** command (unit 4.2.10).

The **Lock** field at the top of the window is used for locking all the possible changes in all the bookmarks of the **Properties** window. Selecting this field also means that in case of a group nested in a parent group left-clicking with a pressed **Ctrl** key (the mode of selecting an element in a group – see 3.3.1) on an element from a nested **and locked** group, selects the whole nested group, not just a

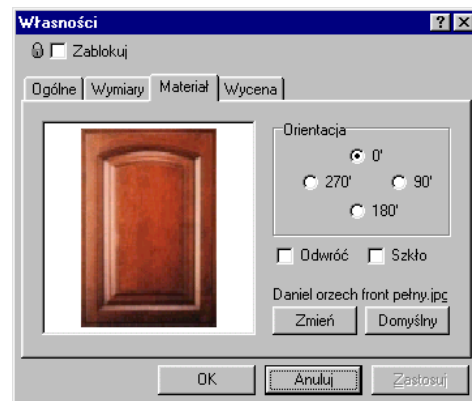
single element. In other words, a group locked in this way behaves like a single element on selection.

You can also open the **Properties** window quickly for selected object using  on the toolbar or by clicking twice on any selected element (see 3.3.6).

#### 4.3.4. Material

This opens the **Properties** window of a selected object on the **Material** bookmark. All the changes in this window will refer to all the selected pieces (grouped or not). On the left you have a preview of the material selected for a given object. There are four switches in the orientation frame which allow you to rotate the material in any way you wish. Be particularly consistent when changing the orientation of the material because it is directly connected with the interpretation of the element's dimensions in reports, e.g. the **Length** of the piece is **always** the length of the side of the element to which the material visible in the box is parallel with the side which is vertical in the 0' orientation (i.e. this side of the material which is vertical in the 0' orientation tells you about the length of the pieces; changing the orientation to 90' or 270' means that another dimension will be considered as the length than in the case of 0' or 180'). You can get a mirror reflection of the material by checking the **Flip** box. If you select **Transparent**, the element becomes transparent, however without altering the material pattern in the window. This lets you obtain different transparent patterns.

The **Change** button makes it possible to give the object a different material pattern. The **Change** window is displayed. It is later described in detail in the **Materials Catalog** (4.5.2 and 4.2.8 to search for materials by their name). It contains a description of a more convenient way of changing materials. After the choice of a new




*Figure 13: Properties window, Material bookmark.*

material is accepted, its name and access path to the material file in the folder of the Material Catalog appear above the button.

The **Default** button removes the material patterns from the element. The element will look like a standard one.


The **Texture** (4.4.4) mode best illustrates materials on elements of the project.

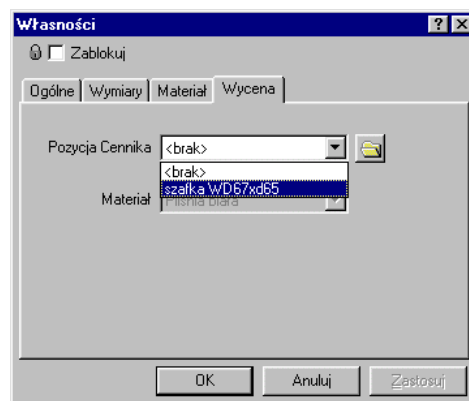
The **Lock** box at the top of the window is used for locking all the possible changes in all the bookmarks of the **Properties** window. Selecting this field also means that in case of a group nested in a parent group left-clicking with pressed **Ctrl** key (the mode of selecting an element in a group – see 3.3.1) on an element from a nested **and locked** group, selects the whole nested group, not just a single element. In other words, a group locked in this way behaves like a single element on selection.

You can also open the **Properties** window quickly for selected object using  on the toolbar or by double-clicking on any selected element (see 3.3.6).

### 4.3.5. Calculation

This opens the **Properties** window of a selected object on the **Calculation** bookmark. In the **Price ID** field, match an object with an item from the Element Pricelist. In case of a group of pieces, the price is chosen for the whole group; in case of ungrouped objects individual elements acquire a given item from the pricelist. The price is selected by choosing the item's name from Element Pricelist or from a drop-down list (see *Figure 14*),

or by using the  button, which opens the **Pricelist** roll-up in the **Elements** bookmark with no possibility of edition (only selection of a price item). You can find a description of how to make the pricelist in unit 4.5.4.



**Figure 14: Properties window, Calculation bookmark.**

If a material for an element has its own price based on the material, the inactive name of an item from the Material Pricelist for a given texture is displayed in the **Material** field. A price from the price list is matched with textures in the Materials Catalog (see 4.5.2 for a more detailed description). You can find a description of how to make the Material Pricelist in unit 4.5.4.

### 4.3.6.Shape

A command active only for a single selected piece. It opens the **Shape Editor**, where the edition of an element's shape is possible. **Shape Editor** is a big application of PRO100, so it was described separately in unit 5.

### 4.3.7.Rotate 90° counterclockwise

Rotates a selected object 90 degrees counterclockwise around the vertical axis going through the geometrical center of an element.

*NOTE: a collision may occur during this operation. When this happens the element with which the collision occurred is displayed in red. You will find more about collisions in the unit entitled Moving and Resizing (3.3.4).*

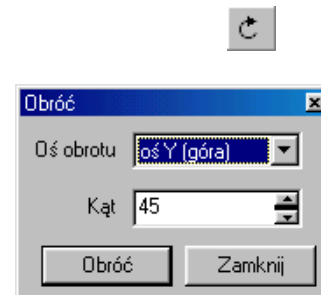
### 4.3.8.Rotate 90° clockwise

Rotates a selected object 90 degrees clockwise around the vertical axis going through the geometrical center of an element.

*NOTE: a collision may occur during this operation. When this happens the element with which the collision occurred is displayed in red. You will find more about collisions in the unit entitled Moving and Resizing (3.3.4).*

### 4.3.9. Rotate

Opens a dialog window which lets you rotate a selected element by any angle (with an accuracy of one degree) around any of the three axis going through the geometric center of an element. The selection of the axis takes place in the **Axis** field. The orientation of the axis must be selected in accordance with the general (initial) project orientation. Axonometry (unit 3.2.2) may help with orientation in space. The names of the axis in the **Rotate** dialog window are oriented in the same way as in Axonometry: **X axis (side)** goes from left to right, **Z axis (front)** goes from the front to the back; **Y axis (top)** goes from the bottom to the top.



*Figure 15: Rotate window.*

*NOTE: a collision may occur during this operation. When this happens the element with which the collision occurred is displayed in red. You will find more about collisions in the unit entitled Moving and Resizing (3.3.4).*

### 4.3.10. Flip

Flips the selected element about the perpendicular plane to N or S wall (YZ plane of the room).

### 4.3.11. Move to

Moves the selected elements according to the manner selected in the submenu of the command. Moving is done with collision detection enabled, the object stops when it encounters the first obstacle in the direction of the movement.

*NOTE: the move planes are the same as when starting the project. While designing, particularly if using the perspective, the user changes the orientation of the virtual room many times so that what was on the left at the beginning could now be on the right or in the back. Axonometry (see 3.2.2) could be useful when trying to find you way around once again. In this mode particular commands of the Move tool operate intuitively.*

### 4.3.12.Align



This command is only accessible when more than one object is selected. The **Align** submenu is displayed. It lets you change the position of the elements so that they align with the edges. Aligning is done with collision detection enabled, the object stops when it encounters the first obstacle in the direction of aligning.

*NOTE: the align planes are the same as when starting the project. While designing, particularly if using perspective, the user changes the orientation of the virtual room many times so that what was on the left at the beginning could now be on the right or in the back. Axonometry (see 3.2.2) could be useful when trying to find you way around once again. In this mode particular commands of the Align tool operate intuitively.*

## 4.4. View

This menu contains commands related to modes and ways of displaying and editing the virtual room. **View mode** refers to an individual way of displaying the project. A **Switch** is something that you can enable or disable for a particular mode of display. **View** is the way in which you see the virtual room. **Sketch** (4.4.2) is an example of a mode, **Semitransparence** (4.4.6) of a switch, and **Perspective** (3.2.1) is an example of a view.

The table below demonstrates all the different combinations of display modes and switches:

Switches	Contours	Semi transparence	Shading	Photorealism
Mode				
Wire frame	✘	✘	✘	✘
Sketch	✘	✓	✘	✓
Colors	✓	✓	✓	✓
Textures	✓	✓	✓	✓

### 4.4.1. Wireframe

The simplest and the fastest **Mode** of display, it shows the construction of the project as lines with no planes. Not recommended for more complex projects. No switches.

### 4.4.2. Sketch

A **Mode** which displays the solid figure of the project but with no colors. It resembles a drawing done by hand. It is useful when placing furniture in a room before deciding on materials and colors. If **Semitransparence** (4.4.6) is enabled you will get extra information on the construction.

### 4.4.3. Colors

A **Mode** which displays the approximate colors of solid figures. It is faster than the textures mode (4.4.4), particularly useful for printing on a printer at an economy mode (fast printing of lower quality with lower uptake of ink or toner). It is possible to enable all the modifiers.

### 4.4.4. Textures

This is the most complex **Mode**. It displays the project realistically taking materials and décor into consideration. It is possible to use all the modifiers and particularly: **Contours** (4.4.5) **Shading** (4.4.7) and **Photorealism** (4.4.8). Working in this mode is slightly slower than in the others, but it lets you instantly assess the actual view of the project.

### 4.4.5. Contours

This **Switch** outlines the edges of all the solid figures in a darker color. We recommend using it for projects with a muted color scheme and no contrasts between elements. Used in the following modes: **Colors** (4.4.3) and **Textures** (4.4.4).

### 4.4.6. Semitransparence

This **Switch** displays lighter edges covered by planes. You can use it in all modes except **Sketch**. Very useful when working directly with the client since it allows the designer to see construction details (e.g.

the number of shelves, supports), while the client sees a realistic design.

#### 4.4.7. Shading

A **Switch** which introduces shading that adds realism to the virtual room. It is used in the following modes: **Colors** (4.4.3) and **Textures** (4.4.4)

#### 4.4.8. Photorealism

A **Switch** which enables photorealism in the project. It will work only if there is a source of light in the project. A piece with a unique name, **LIGHT** – **always with capital letters** (how to enter the name of piece – unit 4.3.2) constitutes the source of light in PRO100. After you give the piece this name it starts by default to emit a stream of white light in the form of a pyramid with a square base (of course on condition that the **Photorealism** is enabled). You can rotate such a Piece in all directions (unit 4.3.9) and change materials from the default setting (changing materials – units 4.3.4 and 4.5.2) – a source of light with a texture different than the default one will emit light with the texture of a décor. This lets you choose lighting in a room at will. You will obtain the best effects for materials with décor framed in black (have a look at the contents of a folder entitled **Lights** in the **Material Catalog** in PRO100 in your computer).

*NOTE: Sources of light in a virtual room are turned on depending on the order in which they were introduced in the room. The number of sources of light is unlimited, but every light is a source of computational load for your computer. This means that if they are numerous, the time to achieve full photorealism may lengthen. We therefore recommend using this mode of display at the end of your work with a project, when all the elements are in their places.*

#### 4.4.9. Labels

A **Switch** which displays labels with the names of the objects on these objects (you can read about names of elements in 4.3.2). Names of groups are displayed in the first place. If a group does not have a name, names of elements are displayed (if they were given names).



#### 4.4.10. Dimensions



A **Switch** which can only be used for orthogonal projections (see 3.2.3). It enables dimension lines in the drawing. Only groups and elements with an enabled option called **Show dimensions** in the **Dimensions** bookmark (4.3.3) are dimensioned. For a group of objects the external dimensions of the group are given but not the dimensions of the constituents. In complex projects this option allows you to display only the most important dimension lines (dimensioning of cabinets and not of individual shelves). To get the dimensions of the constituting elements you should first **Ungroup** (4.2.10).

The dimensions **Switch** lets you monitor the size and position of objects in a project, since the dimension lines updated instantly while moving or resizing.

#### 4.4.11. Grid



A **Switch** which turns on a red grid on the visible walls of the virtual room helping you get a better orientation in the project. You can change the grid setting in the **Edit** bookmark of **Preferences** (4.5.6) in the **Tools** menu.

#### 4.4.12. Background

Turn on the background for the picture. You can find the background in the “*bkgnd.bmp*” file in the main folder of w PRO100. If you change this file, a different background is displayed.

*Note: If you want to change the background file, you should do it after you quit (or exit it and start it again).*

#### 4.4.13. Views

This opens the submenu of views. All the views have been described in unit 3.2.

#### 4.4.14. Snap to grid



Enables magnetic attraction when moving and resizing. Each change is takes place by the multiplicity of a set value, which eliminates inaccuracies connected with manual setting of the project

elements. You can change the snap settings using the **Configuration** command (4.5.6) from the **Tools** menu.


#### 4.4.15. Center


This command centers view on selected objects. If nothing is selected, the whole virtual room has a centered view. No change in the project results from this operation.





#### 4.4.16. Auto center

With enabled **Auto center** the program will **Center** (4.4.15) by itself when a selected object or its part move from the center. In this way the object you are working on will be wholly visible on the screen all the time.

#### 4.4.17. Zoom in

This command lets you magnify a fragment of the virtual room. The command, depending on the place where it is started slightly differs in functionality. If you start **Zoom in** from the **View** menu or the **View** toolbar usually located over the work area of the project (for information about toolbars, see 4.4.19), this will result in discreet magnifying of the center of the viewed virtual room. If you select the **Zoom in** icon from the **Tool kit** (usually located on the left of the work area), the cursor will change to look like this: . You can now select a fragment of the virtual room you want to magnify by dragging the mouse (if you press the left mouse button, a rectangle will be drawn, if you let it go, the fragment will appear on the screen).

The **Tool kit** contains other commands connected with dimensions of an observed fragment of the virtual room. They are grouped under this icon: :

-  - zooms out (moves the observer further) - see 4.4.18,
-  - reverses the last zoom in/zoom out change,
-  - magnifies selected elements to size them to work area,
-  - zooms out to neutral position, to let you view whole virtual room.

These commands are active only in orthogonal projection and axonometry modes. Another easy way of zooming in and out of the

observed virtual room is by right dragging with the mouse (see unit 3.2). This option is enabled in all views and in the perspective mode.

#### 4.4.18. Zoom out



This command has a reverse function to the previous one: it decreases the size of the observed part of the virtual room and makes the observed area larger. The function of this tool does not depend on the plane where it is used (compare with **Zoom in** - 4.4.17).

These commands are active only in orthogonal projection and axonometry modes. Another easy way of zooming in and out of observed virtual room is by using right-drag (see unit 3.2). This option is enabled in all views and in the perspective mode.

#### 4.4.19. Toolbars

This command opens a submenu allowing you to display or hide toolbars. The **Standard** toolbar includes the most frequently used file operation commands (unit 4.1), edit commands (unit 4.2) and commands from the **Tools** menu (unit 4.5). The **View** toolbar includes commands from the **View** (unit 4.4) menu. The **Tool kit** toolbar contains some of the most useful commands from various menus. The **Properties** toolbar includes some commands useful in element edition. The **Move to/Align** toolbar provides a shortcut to all **Move to** commands (unit 4.3.11) and **Align** commands (unit 4.3.12).

You can locate each toolbar in any part of the screen. To do this, drag it over a double line on the top or the left side of each toolbar. You cannot edit the contents of the toolbars.

#### 4.4.20. Roll-Ups

This command opens and closes the windows of particular roll-ups: **Catalog** (see unit 4.5.1 and 4.5.2) **Structure** (unit 4.5.3) and **Price-list** (unit 4.5.4).




### 4.5. Tools

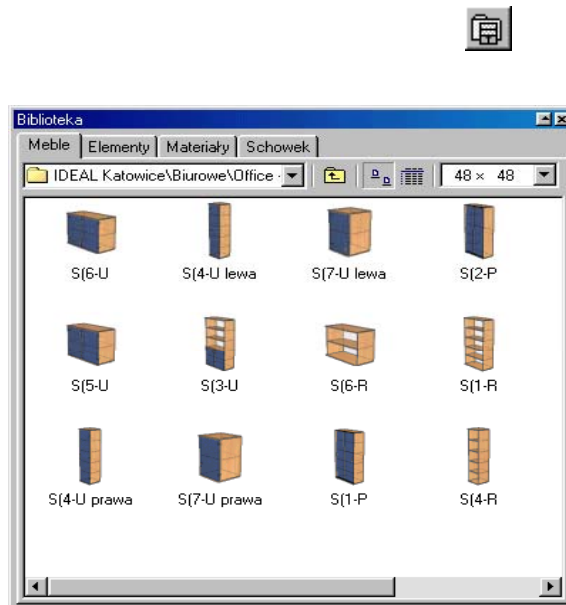
This menu contains commands for opening furniture and material catalogs, piece sets and project structure as well as price-lists and configuration.

### 4.5.1. Furniture Catalog

This command displays the window of the **Catalog** roll-up in the **Furniture** bookmark, which facilitates inserting elements in a project. To insert elements in a project, drag and drop in a required location in the project. To do so, point the cursor to the desired object in the catalog window, left-click and without releasing the button, drag the element out of the catalog window into the virtual room. Releasing the mouse button results in inserting the catalog element in the project. A collision may possibly occur (see 3.3.4). The element inserted from the catalog is **always** grouped (see unit 4.2.9 and further on for more details). You can use the Elements Catalog and Varia in the same way (**Elements** and **Varia** bookmarks respectively in the **Catalog** roll-up).



The catalog window is made up of the following elements:

- **Bookmarks** – are located at top of the window and toggle among particular catalogs (Furniture, Elements, Materials and Varia).
- **Folder list** - is located below the bookmarks and enables quick selection of subfolder in given catalog.
- The  button moves to a folder one level up.
- Switches of the view mode:  shows contents of a catalog in form of icons, and  - in form of details with element size. Setting the view mode to details lets you sort the catalog. To do this, left-click the name of the column you want to use to sort. If you click e.g. on the **Name** field, above the list of elements of catalog (or sub-catalogs) the contents of the catalog will be displayed in alphabetical order. If you click on the **Width** field, the contents of the catalog will be displayed in order of the size of modules. Another click in the same field reverts the order from incremental to



*Figure 16: Furniture Catalog window.*

decremental. If you switch the catalog view from list to icons, the sorting does not change.

- List of icon size – when the contents is displayed as icons, you can change their size (the default is 48 x 48).
- The button that switches the window of catalog contents  (top right side of the window) – lets you quickly resize the catalog window without losing track of it. If you click that button again you can restore the previous size of this widow.
- The button that closes the window of the catalog  (also top right side of the window).

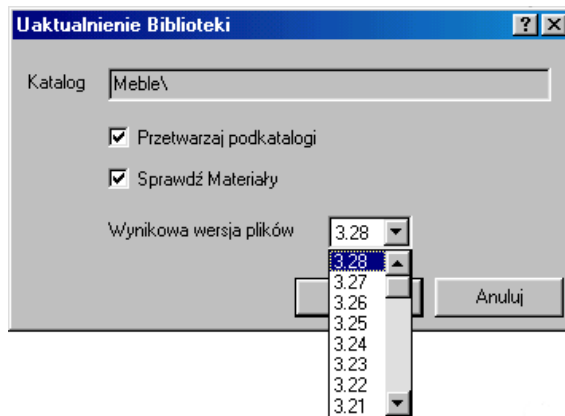


*Figure 17: Right button menu of the Furniture Catalog.*

Additional tools to work with the catalog are in the menu accessible by right click (**Błąd! Nie można odnaleźć źródła odсылacza.**). The first four items of this menu switch display mode of the contents of catalog window (**Large icons** and **Details** modes are described above, **Small icons** and **List** are an example of modes), the next four (enabled only for **Large icons** mode) switch the size of displayed icons, **Refresh** reads again from the disk and displays catalog files icons.

The **Update** command lets you check the correctness of reference materials in catalog modules and if necessary, adapt them to work with earlier versions of PRO100 software (*Figure 18*). This command, depending on the place in the catalog, which was right clicked and menu was opened, can be used for catalog (right mouse button click on an icon of a chosen catalog), or for the current location (right mouse button click on the white background of catalog module icons). The first field of dialog window called **Catalog Update** contains a description of the current location. The **Process Sub-folders** box allows you to perform operations over all subfolders of a given location. The **Verify materials** box lets you check the correctness of catalog modules links to materials collected in Materials Catalog in a fast and easy way (more about Materials Catalog in unit 4.5.2). The

**Target File Version** list of selection lets you convert the catalog from the current program version to an earlier version (for technical reasons earlier PRO100 software versions can not open files saved in newer versions. Hence the necessity of the described tool for “ageing” PRO100 software files). If you confirm using **Ok** this converts the catalog according to settings established earlier. If a link to a material which does not exist in Material Catalog is found, you will be asked to enter a correct new path (more about choosing substitute materials in unit 4.1.3). Operations resulting from using **Update** are saved in the same files, as current catalog modules “\*.mcb”. Earlier versions are converted to files of the same name but with the extension “\*.~mcb”. This way you have one emergency copy of the catalog, which is currently being used. You can restore the emergency copy by changing files extensions from “\*.~mcb” to “\*.mcb”.



**Figure 18: Update of the Furniture Catalog.**

*NOTE: Specification of PRO100 software files (both for projects and furniture, elements and varia catalog modules) does not include saving textures (only texture file location in Material Catalog is saved). Therefore for proper visualization after moving files to another computer you have to make sure that the used materials are in a proper location – or move Material Catalog together with projects and catalog files (about problems with lack of materials see units 4.1.3 and 4.5.2).*

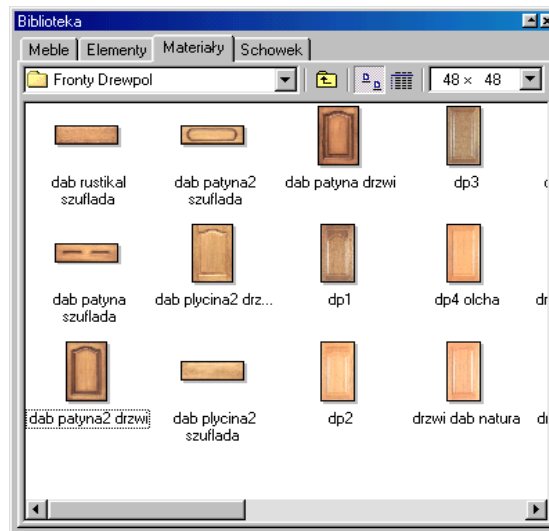
In the PRO100 software file operations on catalogs are disabled. All disk operations (copying files, renaming, deleting elements) must be done from the operating system. More in Notes in unit 6.

## 4.5.2. Material Catalog



### 4.5.2.1. Material Catalog Window

The command displays the **Catalog** roll-up window in the **Materials** bookmark. This allows quick change in the assignment of materials to particular elements and to whole project groups. You can create or change material assignment by left dragging the material standard from the catalog window and dropping on an element or project group. To do this you should point the mouse cursor to the



**Figure 19: Material Catalog**

desired element in the catalog window, press the left mouse button, and next move the cursor, keeping the button held down, out of the catalog window, to the element or selection. When you release the mouse button, the object on which the material was dropped will acquire its features. If the material was dropped on an **unselected element** – regardless of whether it belongs to any group – only **the material of the element** will be changed. If the material was dropped on **selection**, materials of **all selected elements** will be changed. Thus, to change the material of a group (i.e. cabinet) it must be selected first, however to change a single element (i.e. a front) it is enough to drop a desired material on it.

Another very useful way of changing element material is dragging the material, with pressed **Shift** key, to the element. In such a case materials of **all elements of the project with the same material** will be changed, as if they were selected before dropping. It can be used when you want to change the color scheme quickly (i.e. when choosing from many different fronts).

Modes of changing the material are presented in the table below:

Changing the material	Dragging the material	Example of usage
Single element	on element	change of work-top decor
Several elements	on selection	change of cabinet decor
Changing color	with Shift key	change of front decor

More about material change in unit 4.3.4.

Material changes are best visible in the texture mode (4.4.4)


For a detailed description of the **Catalog** window elements, see the previous unit (4.5.1). Also most commands accessible from the menu in the right mouse button are the same. The exception is the last command called **Properties**, which opens the Material Properties window. However, before we describe this command, let us present the textures used in the PRO100 software.

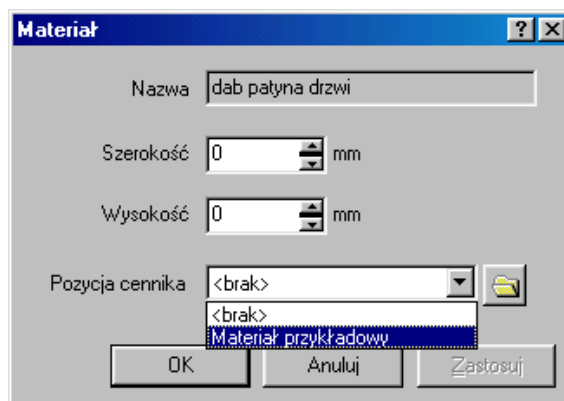
#### 4.5.2.2. Texture properties

Materials (textures) used in the PRO100 software belong to two categories:

- repetitive – a texture of this sort is repeated at a given interval after dropping in on a piece; an example of such a texture are tiles or veneer with natural grain of wood,
- scalable – a texture of this sort is expanded to cover the whole element after dropping it on a piece, an example of such a texture are paintings or fronts (and also plain colors).



In the **Material** window (material properties), the first field called **Name** gives the name of the used texture. The two following fields define texture dimensions, in millimeters, on the piece i.e. the described above repetitiveness of material on an element. If you want to make a particular texture scalable, you must enter “0” in **Width** and **Height** fields. The last field in the **Material** window is **Price ID**. In this field you can attribute a given material to an item from the Materials Price-list (more about price-list in unit 4.5.4). You can choose an item from the price-list from a pull-down list (see *Figure 20*), or using the  button, which opens the **Price-list** roll-up in the **Materials** bookmark. This way does not allow edition (you can only chose the price of an item).



*Figure 20: Material (properties)*

You can use the **Material** (material properties) window for fast edition of parameters of a bigger number of textures. Parameters set by the user in this dialog window will correspond to a single material, all materials in a given location or all materials in a given subfolder depending where the window was opened by right mouse click. To chose the first option, right click on the material icon, to chose the second one, right click on the white background between textures icons and the third one, right click on a desired folder icon. The **Name** field of the **Material** window will display a name depending on where the right mouse button menu was opened (right click). This allows the user to control the extent of the introduced changes.

*NOTE: Parameters given to all materials in a given location or in a subfolder are **default** parameters for textures in a given folder. Nevertheless, you can assign individual properties to materials – parameters given to particular materials have **priority** over default parameters in a given folder (i.e. if a material has its own properties, they will be used by PRO100, if not default values in particular catalog will be used).*

### 4.5.2.3. Material Catalog Extension

Material Catalog of PRO100 software is open, i.e. every user may add their own colors or fronts. All materials included in the catalog are in popular graphic file formats i.e. “\*.bmp” and “\*.jpg”. You can add colors of your choice by copying your own graphic files in the above formats to the Material Catalog (you can find the location of the catalog in the PRO100 software configuration – see 4.5.6). In order to do this, scan your own decors, capture them with digital camera or photograph and scan the prints then copy the obtained files to PRO100 software catalog. Please follow the tips below:

- The resolution of added materials should not be too high. Most of the currently made scanners or digital cameras let you obtain far higher resolution than the one required by PRO100 software for proper visualization. Additionally, high resolution means large files, which increases the amount of required calculations and decreases work speed and comfort. The sufficient resolution for the whole texture is approximately 300 - 500 pixels.
- We suggest working with new repetitive textures very carefully, paying special attention to edges. During visualization with the PRO100 software the bottom edge of the decor will come into contact with the top one and the left one with the right one. Improperly prepared edges of textures (i.e. grain not matching) will be visible as uneven on the lines of contact.
- Remember the properties of added textures and immediately after copying to catalog enter their proper parameters in the **Material** window (material properties – see above).
- We suggest placing your own materials in a separate subfolder of the Materials Catalog (you can find the location of the materials catalog from PRO100 software configurations – see 4.5.6). This allows you to manage your textures easily, and subsequent upgrades will not disturb the catalog. Additionally, if your catalog must be moved to another computer your materials can be easily found.

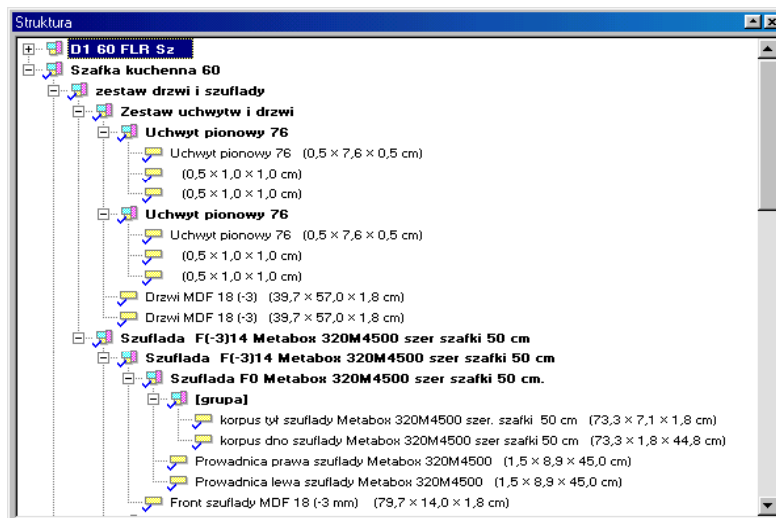
The need of a good organization of the materials catalog is related to the fact that project files and catalog modules, elements and varia do not contain textures but **only links** (indicators) to their location in the materials catalog. This way all files have low size on disk and can be transferred to floppy disk or sent by e-mail. However, you must remember that textures must have the same locations on each computer with the PRO100 software. If you don't meet this condition, opening them will result in a message about a material not found (unit 4.1.3).

Removing the unnecessary materials (material files) from catalog is possible only from the Windows system (see notes in unit 6). For reasons described above, you should delete only those files the you are sure are not used by any project catalog file.

### 4.5.3. Structure



Opens project structure window, which is very useful for complicated projects. This window gives you an insight into the hierarchy of project groups and elements, its names and relations. Each element (both single pieces and groups) is described here including size, name and assignment to a particular group. If the + symbol appears, it



*Figure 21: Project structure window.*

informs you that this object is a group and when it is clicked a list of elements appears. The project structure window also shows the current selection. Double clicking on any item in the structure window opens the **Properties** window of a given element (more about the element **Properties** window in unit 4.3.2 and the following units).

#### 4.5.4. Price-list



This command opens the **Price-list** roll-up. The PRO100 software allows separate calculation according to elements and material. Due to this the **Price-list** has two bookmarks to create particular pricelists (*Figure 22*). To build the pricelist, enter items to be calculated in the **Price-list** table. In the **Name** column, enter the name to identify a given item. This name will be shown in places where you attribute the price item to particular elements/materials (see unit 4.3.5 to find out more about element calculation, and unit - 4.5.2 about for material calculation). **It is very important** to use names, which are clear to the user, because names will appear frequently.

In the second **Price** column, enter the **gross** price to be attributed to a given item of the price-list (name). The term “attribution” is used here on purpose because the name from the price-list (item in the price-list) does not have to be the same as element name in project/catalog to which the item is attributed. This lets you modify the price of an element/material easily. It is enough to change the price attributed to the item (name) in the **Price-list** to perform the final calculation (unit 4.5.5) according to new the price for all elements attributed to a particular item of the price list (i.e. all elements with an attributed item in the **Calculation** bookmark in the **Price-list** of the **Properties** window for elements or materials).

In the following columns of the **Price-list** enter in the Element Price-list the VAT rate in % **included** in the price of a particular item

	Nazwa	Cena	VAT	Montaż	VAT
<input checked="" type="checkbox"/>	G1 60 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G1 50 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G1 40 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G1 80 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G4R 30F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G4L 30 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G3L 60 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G1 30 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	G AKR633 H57 F0	1,00	zw		zw
<input checked="" type="checkbox"/>	.....		zw		zw
<input checked="" type="checkbox"/>	G6G (71,5x57) 60R...	1,00	zw		zw
<input checked="" type="checkbox"/>	G6G (71,5x35,5) 100	1,00	zw		zw
<input checked="" type="checkbox"/>	G6D (71,5x57) 60R...	1,00	zw		zw

*Figure 22: Price-list window.*

and the **gross** price and VAT for the **assembly** of a particular element (these columns are optional), and in Material Price-list only VAT and unit (m2, m3). Let us again stress the importance of proper orientation of material on the piece in making the appraisal congruent with the user's wishes. For more details concerning this subject, see unit 4.3.4.

Since the price-list is split up into two types of calculation, according to element and material, the calculation of projects is quite flexible. If the price of the whole cabinet is known, you can calculate the price only according to elements by attributing items from the price-list to whole, ready grouped modules. The cabinets arranged this way (grouped and properly named and with a given price) can be saved in the Furniture Catalog. During later work with such a catalog element, the cabinet price and name are shown. Also semi-industrial approach to project calculation is possible: in kitchen cabinets of the same dimensions carcasses have one price and different prices are the result of different fronts. The simplicity of appraisal according to element can be combined with the flexibility of calculation according to material. For example, carcass price can be calculated according to element while a front door piece only according to material. When materials have their own prices in the material Catalog (unit 4.5.2) changing the front door texture will result automatically in changing the price of the whole cabinet. This method of creating a Furniture Catalog (whole cabinet price in which the carcass price is calculated according to element while the front according to material) together with the possibility of fast change of project colors (drag and drop with shift key – see unit 4.5.2) gives excellent results when working with a client. The most industrial approach to price calculation may require taking every single element of the project into consideration. In such a case the price-list should contain every element present in the designed furniture (hinges, handles, legs, etc.) and all the materials used for its construction. The price of each element can be calculated according to element while pieces according to material.

The element price-list is saved in the "*pro100.ese*" file, material price-list in the "*pro100.mse*" file. Both files are in PRO100 software main folder.

### 4.5.5. Reports and calculation



The command opens the **Reports** window, in which PRO100 software generates automatically lists of pieces and elements, material consumption and project calculation. The window contains four

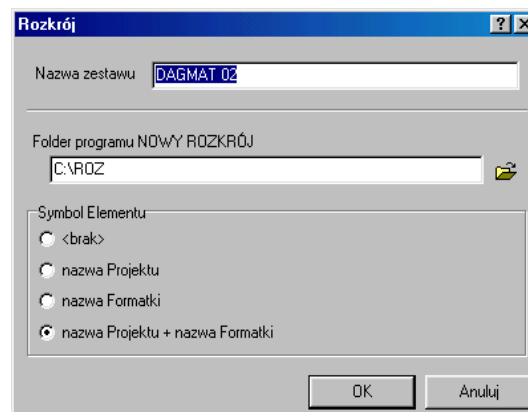
Nazwa	Długość	Szerokość	Ilość	Materiał
plyta wierząca	2710 mm	600 mm	2 szt.	Płyty\Buk 1
plecy	2560 mm	2710 mm	1 szt.	Płyty\Płisnia biała
bok	2524 mm	600 mm	2 szt.	Płyty\Buk 1
ścianka działowa	2524 mm	500 mm	2 szt.	Płyty\Buk 1
półka	879 mm	500 mm	4 szt.	Płyty\Buk 1
półka	880 mm	500 mm	1 szt.	Płyty\Buk 1
ścianka działowa	1359 mm	500 mm	1 szt.	Płyty\Buk 1
ścianka działowa	1941 mm	500 mm	1 szt.	Płyty\Buk 1
półka	530 mm	500 mm	1 szt.	Płyty\Buk 1
półka	431 mm	500 mm	1 szt.	Płyty\Buk 1
półka pod obuwie	500 mm	879 mm	4 szt.	Płyty\Buk 1

**Figure 23: Reports window.**

bookmarks – one for each report. In each bookmark the following buttons are active: **Print** (sends the contents of the current bookmark to the printer), **Copy** (sends the text contents of the report to system clipboard) and **Save..** (saves the report in “\*.txt” or “\*.csv” file, chosen by user). The buttons allows further work and report analysis of the PRO100 software. All reports can be exported from PRO100 software using the following buttons located in the bottom of the **Reports** window: **Print all**, **Copy all** and **Save all..**

- The **Piece list** bookmark contains reports of all project objects, with a checked **Piece list** checkbox in the **General** bookmark of the **Properties** window (4.3.2). Let us again emphasize here the importance of consistent usage of material orientation on pieces. This results directly in size interpretation in reports (see more in 4.3.4). In this bookmark there is additionally an active button called **Optimization**, which lets you export piece reports to optimization software.

Clicking this button



**Figure 24: Piece export window to optimization software Nowy Rozkrój.**

opens a dialog window of piece export (*Figure 24*), in which the user is asked to give the set name under which the report will be accessible in optimization software (the project name from PRO100 is the default), location of optimization software on disk and type of identifiers for particular pieces. After confirming with the **Ok** button, the piece set is exported, as individual materials, to Standard Set Database of the optimization software Nowy Rozkrój. The Nowy Rozkrój optimization software is an independent application, created by our company, and is not a part of the PRO100 software. All required information concerning our products can be obtained by phone at: +48 12 623 75 57 or on our web page [www.ecru.pl](http://www.ecru.pl).

- The **Element List** bookmark contains a list of those project objects, for which the **Element List** box in the **General** bookmark of the **Properties** window (4.3.2) is checked.
- The **Materials consumption** bookmark contains a list of those project objects, for which the **Materials consumption** box in the **General** bookmark of the **Properties** window (4.3.2) is checked according to a chosen unit. We would like to underline here again the importance of consistent usage of material orientation on pieces. This has direct results in size interpretation in reports (see more in 4.3.4).
- The **Calculation** bookmark contains the total calculation of the project according to the **Price-list** (4.5.4) and the way of attributing particular items of the **Price-list** to a project element (4.3.5) as well as to materials used in the project (4.5.2). Particular items of the calculation are listed separately including VAT and assembly (more about **Price-list** in unit 4.5.4). Also total final calculation of the project is presented.

Incremental and decremental sorting is active in each bookmark of the **Report** window. To do this, click on the name of the column to be sorted (i.e. if you click the **Name** column, piece names will be sorted alphabetically). Next click reverts the sorting order.

## 4.5.6. Preferences



The command opens the preferences window, in which program parameters can be set up.

In the **General** bookmark you can choose the start-up configuration of the program.

You can find the following fields in the **Edit** bookmark:


- **Grid** – lets you set up the parameters of the grid. You can enter all three dimensions independently. In such a case uncheck the **Same values** box.
- **Snap to** – lets you set up the pitch of object movement if this function is enabled (4.4.14). Like in the case of grid, you can enter all three pitches independently. You also have to uncheck the **Same values** box.
- **Handles** – lets you set up the size of selected object handles. You can chose from three values.

The **Display** bookmark contains the following fields:

- **Dimensions-font** lets you choose the font used for dimensioning (4.4.10). Each change is shown in the preview on the top and on the left of the available fonts list.
- **Labels – font** lets you quickly choose the font used when displaying labels (4.4.9). Each choice is shown in the preview on the top of the available fonts list.
- **Walls** – if you check the **Hide elements placed** box, you can hide those project elements which are placed further than the distance set by user in the **further than** field (the distance should be entered in mm). This function makes work with walls easier, if pieces of furniture shown in the virtual room in PRO100 software cover furniture placed near the viewed walls. To find out more about orthogonal projections, see unit 3.2.3.
- **Quick preview** – if this box is checked, the preview of room (visualization) will appear faster.

The **Folders** bookmark allows you to set paths to PRO100 software folders on disk. You can change the location of folders by



entering a new path in a suitable field, or by using a dialog window displayed after clicking the  button, located by field of the chosen folder.

*NOTE: Since changing access paths to particular folders of the PRO100 software may disable access to files, we strongly recommend that only experienced users should carry out these modifications.*

- **Materials** – the main folder of the Materials Catalog; the contents of this folder including subfolders is displayed in the **Materials** bookmark of the **Catalog** roll-up (4.5.2).
- **Furniture** – the main folder of the Furniture Catalog; the contents of this folder including sub-folders is displayed in the **Furniture** bookmark of the **Catalog** roll-up (4.5.1).
- **Elements** - the main folder of Elements Catalog; the contents of this folder including sub-folders is displayed in the **Elements** bookmark of the **Catalog** roll-up (see unit Furniture Catalog 4.5.1).
- **Varia** - the main folder of Varia; the contents of this folder including sub-folders is displayed in the **Varia** bookmark of the **Catalog** roll-up (see unit Furniture Catalog 4.5.1).
- **Projects** – default folder of the projects of the PRO100 software; the contents of this folder including sub-folders is displayed in the dialog window of the **Open...** command (4.1.3) and **Save as...** (4.1.5).
- **Templates** – folder containing examples of interiors in the PRO100 software; the contents of this folder including sub-folders is displayed in dialog window of the **New from templates** command (4.1.2).

*Expression %PROGRAM% used in the **Folders** bookmark of the **Preferences** window means a folder, in which PRO100 software is installed. The default installation folder of PRO100 is “C:\Program Files\PRO100\”, however during installation user can change its location*

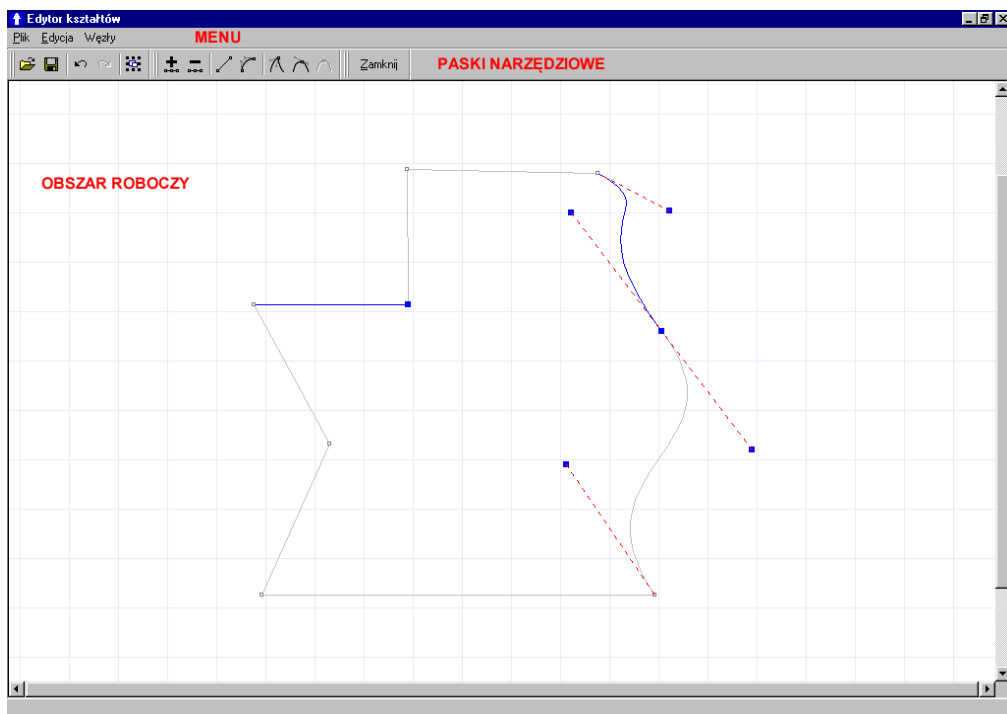
All settings are saved and valid until changed by the user or until next program installation.

## 5. Shape

Command active only for a single, selected piece. It involves Shape editor, in which element shape can be edited. Shape editor is a large application of the PRO100 software and will be described separately.

### 5.1. Edition

Shape editor window contains three main elements:



*Figure 25: Shape editor.*

- **Menu** – gives access to all commands and options of Shape editor.
- **Tool bars** - give faster access to most of useful commands. Effective work with the program is based mainly on tool bars usage. To select a command, click a suitable button on the tool bar. To find the function of a particular button, point the mouse cursor to a button and wait approximately 1 second. A description will appear next to the cursor.

- **Work area** – here shape edition of a piece is performed. The grid in the background helps to give correct proportions to the edited element.

After selecting a single piece in the main window of the PRO100 software and switching to Shape editor, the shape of the edited piece can be seen in the work area. By default it is a square eight grid squares long. Each vertex is a node, which can be edited by dragging (this is how you get the angles) or by converting to curve – of any curvature (see 5.4.4 and the following). The number of degrees of freedom can be modified without any limitations (see 5.4.1 and 5.4.2). This is why piece shape edition is not limited in any way. However, the higher number of nodes, the more computing is required which may result in lower comfort of work in the main PRO100 application. We therefore recommend not using more nodes than necessary.

As in the main part of PRO100 software those nodes which are marked blue may be edited. To select a node for edition, click it with left mouse button. Adding/deleting a node to selection is done the same way as in PRO100 software by left clicking on a particular node with the **Shift** key.

All tools available in the Shape editor are presented below with icons from the tool bar, in order in which they exist in the Menu.

## 5.2. File menu

### 5.2.1. Import



This command allows you to import a piece from a file and give a shape earlier saved on disk.

### 5.2.2. Export



This command allows you to save to disk a shape of the edited piece. You can later give this shape to another piece using the **Import** command (see 5.2.1). The **export** command opens a window, in which you should enter the name of a file to be saved and its location on disk (by default it is the **Shapes** folder in the main PRO100 software folder).

### 5.2.3. Close

Closes the **Shape editor** and returns to the main window of PRO100 software giving a designed shape to the edited piece.

## 5.3. *Edit Menu*

### 5.3.1. Undo



Reverses the last operation. This command can be used multiple times without limitations - it allows you to undo all operations on a piece all the way to the initial state.

### 5.3.2. Redo



Reverses the last **Undo** of the **Shape editor** (5.3.1). This command can also be used multiple times without limitations of the number of operations.

### 5.3.3. Select all



Selects all nodes in the edited element.

## 5.4. *Nodes Menu*

### 5.4.1. Add



Adds new nodes in the middle of the marked blue segment between nodes. Added nodes are selected as for edition, current selection is not changed. This command is active if at least one node is selected.

### 5.4.2. Delete



Deletes all selected nodes. This command is active if at least one node is selected.

### 5.4.3. Straight



Converts segments between nodes into a straight line. It deletes all curves between selected nodes. This command is active if a node and a curved segment are selected.

#### 5.4.4. Curve



Converts segments between nodes into a curve. The conversion adds to both nodes selected segment control points, which are marked blue and linked with nodes by dashed red line (*Figure 25*). Dragging the control points changes the piece edge in a selected segment. The way in which the segment is anchored in a node is controlled by the following three commands.

The **Curve** command is active if a node and line segment are selected.

#### 5.4.5. Cusp



This command defines the way, in which the segments are anchored in a node. Running this command makes edition of segments from both sides of the node independent. It allows you to make a “sharp” connection of segments in the node. The parameters of control points (distance from node and the angle) can be changed independently.

This command is active if a node of a segment converted into a curve is selected and if it is either “symmetrical” or “smooth”.

#### 5.4.6. Smooth



This command defines the way in which the curve segment is anchored in a node. Running this command correlates the edition of segments from both sides of the node. The program smoothly connects two segments. The parameters of control points (distance from the node and the angle) are partially correlated: the angle of the red line is symmetrical for both sides of the node while its length can be different.

This command is active if a node of a segment converted into a curve is selected and if it is either “symmetrical” or “sharp”.

#### 5.4.7. Symmetrical



This command defines the way in which the curve segments are anchored in a node. Running this command correlates the edition of segments from both sides of the node. The program smoothly and symmetrically connects two segments. The parameters of control points (distance from node and the angle) are correlated: the angle of

red line is symmetrical for both sides of node and its length is the same.

This command is active if a node of a segment converted into a curve is selected and if it is either “sharp” or “smooth”.

*NOTE: Grid dimensions in Shape editor are not correlated with exterior piece dimensions in the main section of the PRO100 software. The grid pitch is set independently for each edited element. This allows you to edit by proportion meters long kitchen tops and small elements. Enter the final dimensions after closing the Shape editor by proportional change of two dimensions in the Dimensions bookmark of the Element Properties window (see 4.3.3).*

## 6. Tips

This users' manual is a reference book for all the functions of the PRO100 software. Nevertheless, we would like to give you some general tips concerning the work with the program, the structure of directories, elements etc.

- Try to work out the catalog structure before starting to work – later changes may be difficult to introduce. Decide if the catalog is created for demonstration (only front elements will be included) or production (include all elements to prepare reports for production).
- Try to group elements according to their real co-elements (i.e. group a single hinge, separately group a cabinet carcass without front, than group the hinge with the carcass. Finally group the element prepared previously with a door with a grouped handle. A consistent method of grouping elements lets you introduce changes easily, and also find elements which will be dimensioned in the plan or in particular views. More about grouping in unit 3.3.2 and 4.2.9, about dimensions in unit 4.3.3 and 4.4.10.
- Use the **Element Catalog** or **Varia** frequently to save frequently used parts of your objects (i.e. hinges, legs, empty carcasses, etc.). **Export** and **Import** in the **Shape editor** have a similar function (unit 5). Why do certain things twice?

- Set up your own catalog and interior design folders in suitable folders of the PRO100 software – it makes orientation and navigation through your file resources much easier. When you create new catalog folders, you may have to rerun the program.
- Use object properties consistently if you want them to appear in suitable reports and calculations. A new element (see 4.3.1) is always treated like a piece, so it will be included in **Pieces report** (4.5.5). If you use a new element e.g. a hinge, you should remember to name the new object, locating it in suitable reports or price-list (more about reports in unit 4.5.5, about price-list in unit 4.5.4). Some elements, if they are not offered to the client, should not be included in the reports (e.g. windows, doors, room decoration not offered to client – pans, computers etc). Please keep it in mind to avoid a surprise when reading reports generated by the PRO100 software.
- Please remember to put textures on pieces in a proper orientation. It is very important for the generation of piece reports. The length and width of a piece is related to texture orientation on an object. More about properties of piece material in unit 4.3.4.
- To design irregular rooms, use pillar or niche pieces of appropriate shapes and dimensions covered by the same material as on walls (3.1).
- Only lock catalog object dimensions with established, unchanging dimensions on the highest level of grouping (i.e. build the whole object without locking the dimensions. After grouping the whole element, lock suitable dimensions in the group properties in the highest level group. This remark does not concern the thickness of the piece from which furniture made. Such a strategy allows easy object modifications in the future. More about locking dimensions in unit 4.3.3.
- The function of deleting files from the disk is locked in the PRO100 software. This is done to prevent deleting or moving files accidentally while working. Deleting, copying or renaming must be done from the Windows system. The default PRO100 software location is the following folder “*C:\Program Files\PRO100*”, but you can change it during installation. The location of the folders of the catalog, project, varia or the forms of the shape editor can be found in program configuration (see 4.5.6). The table below shows file types used by the PRO100 software.

File extension	Usage in PRO100 software
*.sto	project files
*.meb	furniture, elements and varia catalog files
*.bmp and *.jpg	graphic files of the material catalog
*.shp	shape editor form files

Forms of the **Shape editor** are stored in the **Shapes** folder located in the main folder of the PRO100 software. File names are the same as in the PRO100 software (without extensions).

## 7. Frequently asked questions

- How to design a room of an unusual shape? – unit 3.1.
- How create a price-list and calculation?
  - The price-list– unit 4.5.4.
  - Calculation– unit 4.3.5
  - Calculation materials – unit 4.5.2.2.
  - Calculation report– unit 4.5.5.
- How to add own materials to the Material Catalog? – unit 4.5.2.3.
- How to change and lock page/printer settings? – unit 4.1.7.
- What is the dimension of the grid in the Shape editor? – end of unit 5.4.7.
- Why can't I open a project?
  - Wrong file version – unit 4.1.4.
  - Materials not found– unit 4.1.3.
- Why doesn't the hardware key work? – unit 2.1.
- Why can't I see my own catalog modules in the catalog window?
  - Wrong access paths to the catalog folders– unit 4.5.6.
  - Wrong file version i.e. show-room version – unit 4.5.1.
  - Wrong file names – unit 4.2.7
- Why can't materials be found? – units 4.1.4 and 4.5.2.3.






## 8. Contact




















Dear user,























If you have any questions or suggestions concerning program usage or ideas on how to improve it, do not hesitate to contact us:















30-019 Kraków, Poland  
ul. Mazowiecka 21, 10-th floor.  
phone +48 12 623 75 57  
[www.ecru.pl](http://www.ecru.pl)  
[ecru@ecru.pl](mailto:ecru@ecru.pl)

1.	Introduction 1	
1.1.	What is the program for?	1
1.2.	System requirements	1
2.	INSTALLATION OF THE PROGRAM	2
2.1.	Installation of the hardware key	2
2.2.	Installation of the program	2
3.	DESCRIPTION OF THE EDITION MODE	3
3.1.	The room	5
3.2.	Views	6
3.2.1.	Perspective	7
3.2.2.	Axonometry	7
3.2.3.	Orthogonal projections - Plan, walls	8
3.3.	Selecting and editing elements	10
3.3.1.	Selecting	10
3.3.2.	Grouping	12
3.3.3.	The plane of the handles	12
3.3.4.	Moving and resizing	13
3.3.5.	Reshaping	14
3.3.6.	Double click	15
3.3.7.	Easy duplication	15
4.	THE MENU COMMANDS	15
4.1.	File	16
4.1.1.	New 	16
4.1.2.	New from template	16
4.1.3.	Open... 	16
4.1.4.	Save 	17
4.1.5.	Save as...	18
4.1.6.	Export	18

4.1.7.	Page setup		19
4.1.8.	Print preview		19
4.1.9.	Print		19
4.1.10.	Quick access		19
4.1.11.	Exit		19
4.2.	Edit		19
4.2.1.	Undo		20
4.2.2.	Redo		20
4.2.3.	Cut		20
4.2.4.	Copy		20
4.2.5.	Paste		20
4.2.6.	Delete		20
4.2.7.	Add to Catalog		20
4.2.8.	Insert from Catalog		21
4.2.9.	Group		21
4.2.10.	Ungroup		21
4.2.11.	Duplicate		21
4.2.12.	Select all		22
4.3.	Element		22
4.3.1.	New		22
4.3.2.	Name		22
4.3.3.	Dimensions		23
4.3.4.	Material		25
4.3.5.	Calculation		26
4.3.6.	Shape		27
4.3.7.	Rotate 90° counterclockwise		27
4.3.8.	Rotate 90° clockwise		27
4.3.9.	Rotate		28
4.3.10.	Flip		28
4.3.11.	Move to		28
4.3.12.	Align		29
4.4.	View		29

4.4.1.	Wireframe		30
4.4.2.	Sketch		30
4.4.3.	Colors		30
4.4.4.	Textures		30
4.4.5.	Contours		30
4.4.6.	Semitransparence		30
4.4.7.	Shading		31
4.4.8.	Photorealism		31
4.4.9.	Labels		31
4.4.10.	Dimensions		32
4.4.11.	Grid		32
4.4.12.	Background		32
4.4.13.	Views		32
4.4.14.	Snap to grid		32
4.4.15.	Center		33
4.4.16.	Auto center		33
4.4.17.	Zoom in		33
4.4.18.	Zoom out		34
4.4.19.	Toolbars		34
4.4.20.	Roll-Ups		34
4.5.	Tools		34
4.5.1.	Furniture Catalog		35
4.5.2.	Material Catalog		38
4.5.3.	Structure		42
4.5.4.	Price-list		43
4.5.5.	Reports and calculation		45
4.5.6.	Preferences		47
5.	SHAPE		49
5.1.	Edition		49
5.2.	File menu		50

5.2.1.	Import		50
5.2.2.	Export		50
5.2.3.	Close		51
5.3.	Edit Menu		51
5.3.1.	Undo		51
5.3.2.	Redo		51
5.3.3.	Select all		51
5.4.	Nodes Menu		51
5.4.1.	Add		51
5.4.2.	Delete		51
5.4.3.	Straight		51
5.4.4.	Curve		52
5.4.5.	Cusp		52
5.4.6.	Smooth		52
5.4.7.	Symmetrical		52
6.	TIPS		53
7.	FREQUENTLY ASKED QUESTIONS		55
8.	CONTACT		56