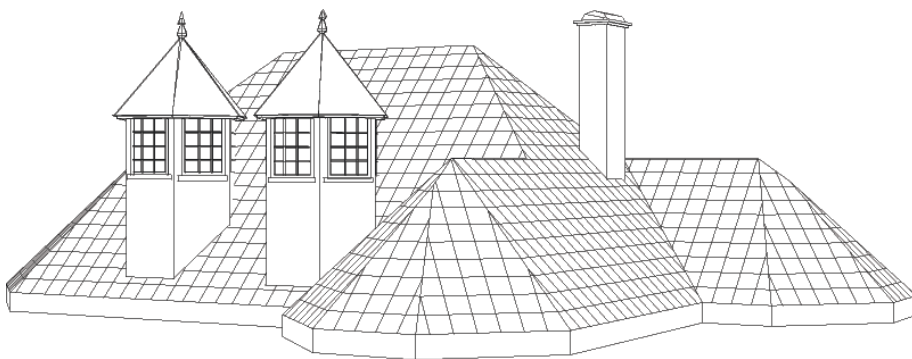


Roof Designer



USER'S GUIDE

Roof Designer

The Roof Designer makes it easy to define and place custom roofs in your project. You can start the Roof Designer independently, from the myHouse program group, by clicking Start and then selecting Roof Designer. You can also start the Roof Designer from within myHouse by clicking the Roof icon on the horizontal toolbar; then click the Automatic Roof Designer or Roof Designer icons of the vertical toolbar at the left side of the screen.

The *Roof Designer* program works in several windows. With its help, you can design independent or appropriate roofs to a given floor plan or you can design special ground surfaces. The program shows the process of designing in several windows, but at the same time, you can only design in the one active window. The *Roof Designer* program starts with the window shown in *Figure 1*.

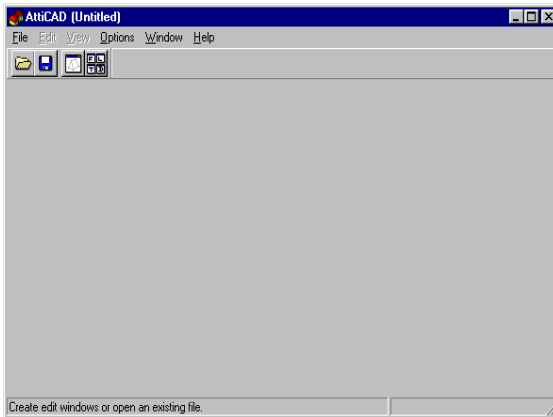




Figure 1. The main window of the *Roof Designer* program

To open the *editor-windows*, you may click on the  icon or call the **Window** menu item. Clicking on the  icon, the four *editor-windows* open together, as shown in *Figure 2*.

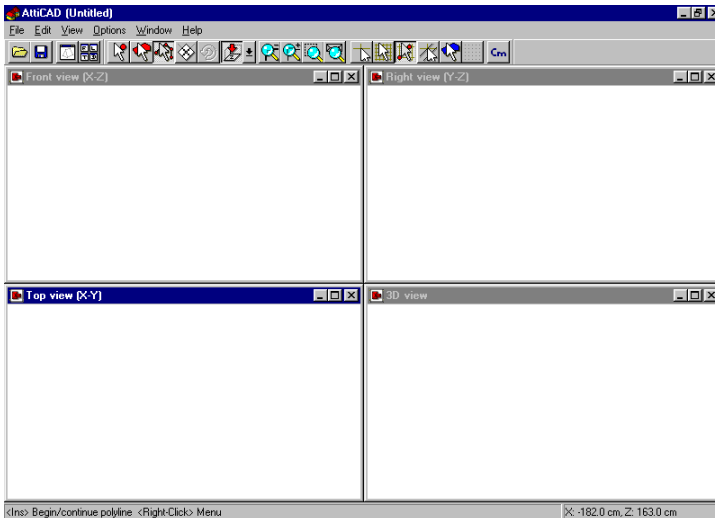


Figure 2. The window arrangement of the Roof Designer

Note: there is a detailed description of the *Roof Designer*'s window commands in the following section.

The screen is divided into the following parts:

- Upper menu line:

File Edit View Options Window Help

- Upper icon line



- Lower information line: X, Y coordinate location of the cursor for accurate editing. You may see the values in cms or inches.

- **The four *editor-windows***

The *editor windows* are as follows:

Top view (X,Y)

Front view (X,Z)

Side view (Y,Z)

and 3D view, axonometric window

Let's now see the elements in more detail.

1 The Upper menu line

The following new menu appears with the editor windows:

File Edit View Options Window Help

1.1 File menu commands:

In the **File** menu, the following commands are executable:

New	Starting & Editing a new roof
Open	Loading a saved roof
Save and exit	Suspending the editing and closing the roof
Save	Saving an edited roof
Save As...	Saving the edited roof into new file
Import roof	Loading a roof saved in a R3D file format
Export roof	Saving the edited file in a R3D file format
Exit	End of roof-editing

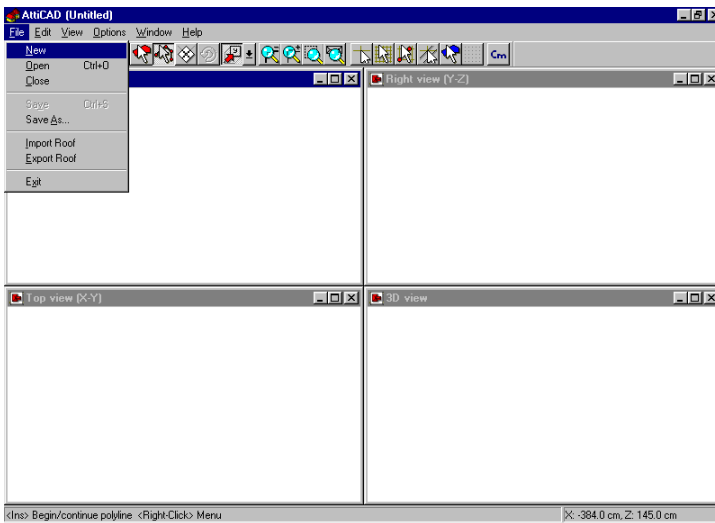


Figure 3. The File menu commands

1.1.1 New Starting and Editing a new roof

You can start a new roofplan by calling the *New* command. A roof can consist of three parts:

- The roof;*
- The roofedge-contour layer;*
- The wall-contour layer.*

The roof can consist of dots, lines, or planes placed in the space. A so-called *roofedge-contour* layer can form part of a roof. You can load it to the *roof-editor* from a saved file or make any shaped *roofedge-contour* with the program. In the Top view (X-Y), the *roofedge-contour* contains a series of contours (lines or arcs), which depict an

enclosed polygon, which is usually this is the perimeter of the roof. By calling the *automatic new roofeditor*, the program keeps these series of contours – in place, where existing previously – and you can then design a new roof around it. This contour polygon also helps the automatic roof-editor in *auto-editing*. In these circumstances, you have to add a roof plane definition to the contour-polygon (see chapter 4). Otherwise you don't need the contour polygon. But for auto-editing, you can use it as a guide for the roof-plan to help the editing process. In the same way, the editing can be guided by the *wall contour layer* that you can obtain from the myHouse program's *floor-plan editor*, which contains the constructional contour (perimeter) of the building. You can use it also as a guide for the editing process, but it is not part of the new roof itself. The contour layers overlay the X-Y plane in the Top view (X-Y) window, where they are most visible and helpful.

1.1.2 Open Loading a saved roof

You can load an edited roof saved in **name.DEF** file format with the *Open* command.



Figure 4. Open window

In the *Open* window, you can choose the required file from the desired directory and then, you can load it to the *roof-editor*. When you save an edited roof, all data about the roof is saved in a **name.DEF** file format. You can simply load these saved files by choosing this command. The file contains the roof and its adherent contours also.

1.1.3 Save and Exit Suspending the editing and closing the roof

If you wish to stop the editing on the roof shown on the screen, just click on the **Close** command. If you worked on the roof and have not saved it, the program will save the changes if you answer “yes” per as noted below.

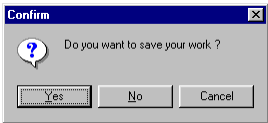


Figure 5. The window that appears when closing

How to answer:

Yes in this case all changes will be saved in the file whose name is shown on the top line, overwriting the previous version of the file.

No in this case the plan will not be saved, all changes will be lost and you are exited from the plan leaving the existing file unchanged.

1.1.4 Save Saving the edited roof

With this command, your roof plan will be saved in the file whose plan name is shown on the top line of the program-window. During the save, the edited roofs will be saved in a **name.DEF** file format. The saved file will contain the roof and also its adherent contours.

1.1.5 Save As... Saving the edited roof into a new file

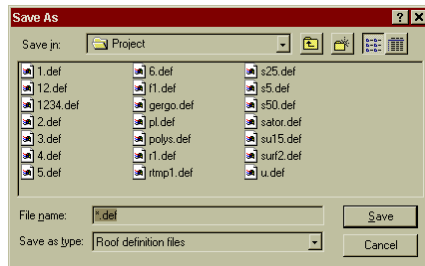


Figure 6. Save As... window

By typing the name of the roof-file into the File name field, the edited roof may be saved into a new **name.DEF** file format. The file will contain the roof as well as its adherent contours.

1.1.6 Import roof Loading a roof saved in a R3D file format

You can reload back a roof previously saved in **R3D** file format to the roof-planning-module. During the import, all the contour layers will be cleared from the screen and only the roof will be loaded from the **R3D** file. The **Modeler** 3D program can also open the **R3D** file format and with its help, you can link the models made by the roof editor to a library.

1.1.7 Export roof Saving the edited file in a R3D file format

You can save the roof without its contour lines and with the help of the **MODELER** program, you can also place and save it into a library. The myHouse system supports this library format, and so the roof is directly loadable as a ready library unit. That's

why you need to save the roof into a file type supported by the **MODELER** program; i.e. the **R3D** file format which only contains the depictions of dots, lines, planes and cuts.

1.1.8 Exit End of roof-editing

Use this command when you wish to finish your work on the roof shown on the screen. If you edited the roof and have not saved it yet, the program will ask whether you want to save the changes.

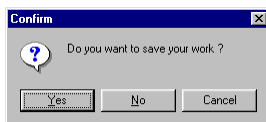


Figure 7. The window that appears when exiting.

How to answer:

Yes in this case all changes will be saved in the file which name is shown on the topline overwriting the previous version of the file and exits from the program.

No in this case the plan will not be saved, all changes will be lost and exits from the plan leaving the existing file unchanged and also exits from the roof-editor program.

1.2 Editing

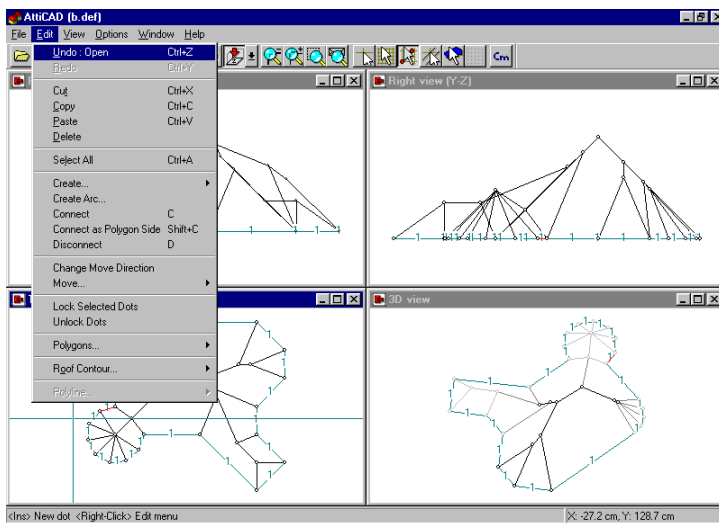


Figure 8. The elements of the Edit menu

You can execute the following tasks from the **Edit** menu:

Undo	Alt+Bkspc
Redo	Shift+Alt+Bk
Cut	Ctrl X
Copy	Ctrl C
Paste	Ctrl V
Delete	Del
Roof Contour...	
Select All	Ctrl A

1.2.1 Undo/Redo functions

The **Undo** and **Redo** functions serve to cancel a previously executed command or execute a previously canceled command. The command which this function “undo’s” or “redo’s” is shown in the menu line, so you can check the effects of the function in advance, with the safety of simply undo-ing the effects of an undesired command. Often times, instead of using the Delete function, it is more efficient to remove the edited results in the plan with other program commands. In such a case, we recommend using the **Undo** function. Example: a roof is shown on the screen. You wish to move a few dots of it some centimeters away. You select the dots and move them.

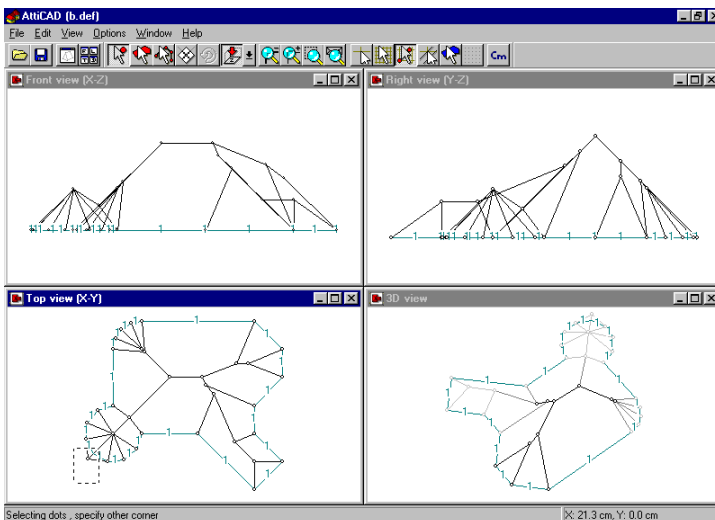


Figure 9. Moving the dots

After the move, you realize that the dots you have moved are not the right dots. Using the *Undo* function, you can restore the previous location of the dots. The command relocates all the moved dots together. These are multilevel functions, which means

there is a possibility to execute the **Undo** and **Redo** functions repeatedly. How many times depends on memory size and the task you are working on. If the program cannot step back, it tells you by changing the color of menu item to gray. All the above applies similarly to the **Redo** function, but it performs the command that you have previously cancelled via the **Undo** function. You can simply call these functions by pressing **Alt+Bkspc** or **Shift+Alt+Bk**.

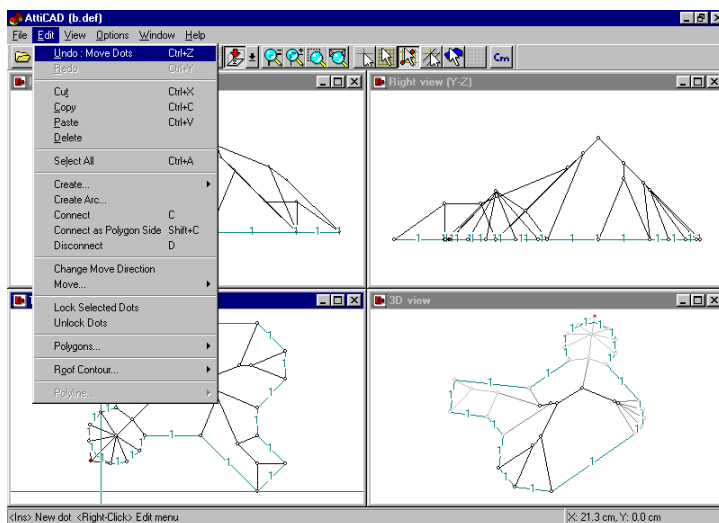


Figure 10. The effect of Undo

1.2.2 Cut Ctrl X

The **Cut** function (**Ctrl X**) – as in other programs – places the selected elements on the Clipboard in such a way that it removes the selections from the plan. You can also use **Ctrl X** hot-key to call this function.

1.2.3 Copy Ctrl C

The **Copy** function (**Ctrl C**) – as in other programs – places the selected elements on the Clipboard in such a way that it leaves the selections in the plan. You can also use **Ctrl C** hot-key to call this function.

1.2.4 Paste Ctrl V

The **Paste** function (**Ctrl V**) – as in other programs – places the elements from the Clipboard into the plan. You can also use **Ctrl V** hot-key to call this function.

1.2.5 Delete Del

The **Delete** function (**Del**) – as in other programs – removes the selected elements. The selected elements can only be dots here. This function removes the lines and planes created by the dots. You can also use **Del** hot-key to call this function.

1.2.6 Roof Contour...

In the **Roof Contour...** submenu, you may manage two types of contour layers. These two types are:

Roofedge-contour layer which you design; and the

Wall contour layer transmitted from the drawing window of *myHouse*

You can execute many tasks under this function:

Clear own;

Clear import;

Create;

Remove.

Clear own

Using the **Clear own**, you can delete your *roofedge-contour* layers. The *roofedge-contour* layer is shown in light blue on the screen.

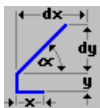
Clear import

Using **Clear import**, you can delete the *wall contour* layer transmitted from the drawing window of *myHouse*. The wall-contour layer is also shown in light blue on the screen. When you save a roofplan in a **name.DEF** file format these contour layers will also be saved. By starting a new roof plan, the contour layers will not be cleared from the screen. You can clear them by calling the **Roof Contour.../Clear import** function. However, please note that the *clear import* function will not be executed, if you called the *Roof Designer* program directly from *myHouse*. In this case, the wall contour layer is not clearable and the program leaves it on the screen when you start a new roof plan.

Create Ctrl K

The **Create** function serves to create a *roofedge-contour* layer. In this case, there must be an enclosed polygon on the X-Y plane. After selecting that polygon, the **Create** function converts it to a *roofedge-contour* layer. The creation of a new polygon on the X-Y top-view plane is done by creating dots and lines. Example: create a dot on the X-Y plane at the crosshair or small arrow location by pressing the **Insert** key or by choosing the **Create dot here** from the menu which appears by pressing the right mouse button. (See **Creating dots**.) You may connect the dots with lines (see **Creating lines**), which are available by pressing the **C** key or choosing the **Connect**

menu item from the menu which appears by pressing the right mouse button after selecting dots. Two dots can be connected with an arc. Between the two selected dots, you can create an arc by choosing the **Create Arc** (see **Creating arc**) menu item from the right mouse button menu. To create a *roofedge-contour*, the connecting lines between the dots have to form an enclosed polygon. This polygon created on the X-Y plane can be modified by the contour **Create** function. This polygon is shown in light blue on the screen. The *roofedge-contour* layer also may play a role in the design as an guide element. You can define a series of (rising) sloping roof



membranes by calling the *auto roof-generator* and in this way – if it is possible to construct – you can generate a whole roof in one step with its help. There are numbers beside the lines which identify the definition of the sloping *roofedge-contour*. You can assign numbers to the lines in the autogenerate roof menu. (See **Autogenerate roof**.) The roof is built up of equal gradient planes using the sides of lines marked with equal numbers.

Remove Ctrl D

With the help of **Remove** function, you can break the *roofedge-contour* layer into dots and lines. The *roofedge-contour* layer is shown in light blue on the screen. To create them, you have to create dots and lines on the X-Y top-view plane. The lines form an enclosed polygon. You will see numbers beside the lines which identify the definition of the sloping *roofedge-contour*. By the sides of lines marked with equal numbers, the roof is built up of equal gradient planes. During this process, the blue line on the screen turns to black and the dots become visible and then, you can move or delete them, or you can add more dots to the polygon, etc.

1.3 View command

With the **View** command, you can change the content of the view in the active window. For example, we can switch the content of Top view (X-Y) window to the Right view (X-Y) image. The effect of the process is shown in the *Figure 11*.

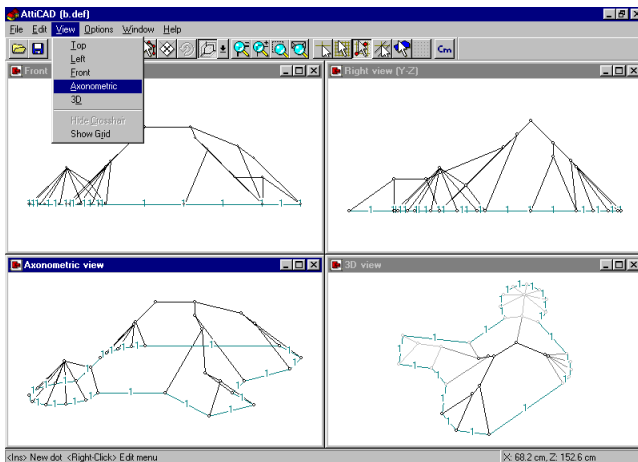







Figure 11. Example of re-setting the view of active window

We mention here that you can enlarge the active window to the full screen by clicking on (the second) icon in the upper-right corner of the window. As in other Windows programs, switching back to a divided windows mode is available by clicking on the replaced icon -- also the second small icon. The first corner icon is used to temporarily close the program window, while the third one (X) is used for final closing. You can set the **View** by clicking on the upper icon and choosing the right icon from the pull-down menu      . (See Figure 12).

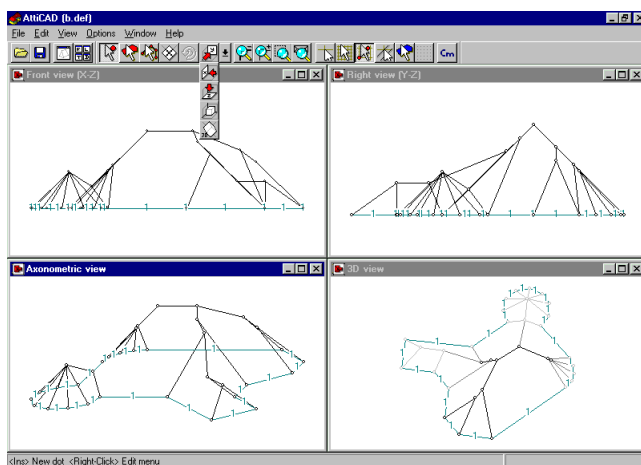


Figure 12. Setting of the View

1.4 Options command

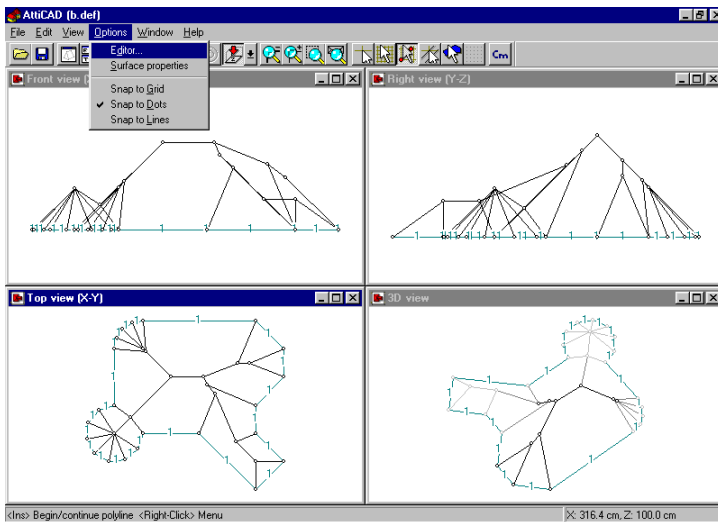


Figure13. Setting properties

Using the **Options** command, you can set the editor properties and the definition of surface's texture. The editor properties will be saved, and when restarting the program, will load its last settings. The surface properties are available for the whole roof.

1.4.1 Editor... Setting editor properties

Using the **Editor...** function, there are four properties you can set. These are as follows:

View	Setting editor properties
Directory	Setting the plane-directory
Limits	Setting the limits of the editor properties
Colors	You can customize the drawing colors of the elements of the editor. The roof and the stair editor uses the same color settings.

1.4.1.1 View

To call this function, you choose the **Editor...** and the subcommands and the following menu will appear (*Figure 14.*).

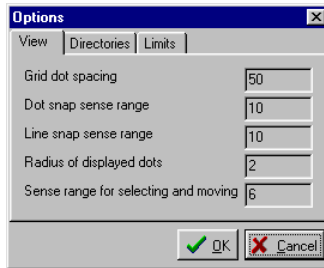







Figure 14. The dialog box for entering the view options

The following properties are shown in the **View** menu:

Grid dot spacing. You can display grid dots on the screen. In this field, you may give the distance between grid dots in a chosen measuring unit. You may have grid dots display or not display by turning on/off the  icon in the upper iconline. During the editing, you may also ask the program to snap to grid dots by also clicking on the icon  in the upper iconline. You may shift the grid using the **F5** function key. To shift the grid to a desired dot location, follow these steps: move the cross-hairs to the dot or position where you would like to place a grid dot and push the **F5** function key or select the **Place Grid Here** function from the menu which appears by pressing the right mouse button. The program will then redraw the whole grid up/down left/right from this new origin using the grid space setting.

Dot Snap Sense Range: You can also set the sense range from your cursor to snapping dots. You can choose from different snapping methods by clicking on the appropriate icon    in the upper iconline.



With this icon, you turn *on/off* snapping to grid dots mode.





With this icon, you turn *on/off* snapping to existing dots mode.



With this icon, you turn *on/off* snapping to lines mode.

In changing the **Dot Snap Sense Range** (the maximum distance from cursor to dot to snap to), the measurement must be given in screen pixels, and actual measured distance will be dependent on your zoomed view. This setting affects the dot snap mode.

Line Snap Sense Range: This setting affects the sensing range from cursor to your snapping line. The measure must be given in pixels, so again, the actual measured distance in cms or inches depends on your zooming plane. By clicking on the  icon, you can turn *on/off* the line snap mode, and set the line snap sense range. With the help of the **line snap**  icon, you can move or create dots on an existing line. The line snap mode in the active view always refers to the view of the line projected to the plane and not to the three-dimensional view. So if you wish the dot to definitely be on a 3D line, you need to snap to the line in two views.

Radius of displayed dots: The dots created on the screen are represented by small circles. You may enter here the radius of those circles. Be careful that your radius is not too large as it can complicate your editing.

Sense range for selecting and moving dots: You can select a dot or dots by framing an area, while holding down the left mouse button. With this “plus range” setting, the dot selection may also contain dots outside of that frame within the range of the given pixel number. You can move selected dots by dragging them with the mouse, holding down the left mouse button. This value also represents the distance (in pixels) in which you can catch the dots to select them for moving.

1.4.1.2 Directory

The next item of the **Options** menu, **Directory**, allows you to enter the directory name (or folder) where you want your files to be saved.

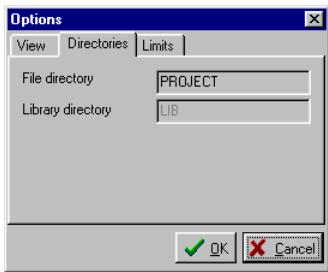


Figure 15. The dialog box for entering the directory name.

1.4.1.3 Limits

The next item of the **Options** menu is **Limits**, where you may enter maximum and minimum values for your roof. This setting is dependent on the memory size and the roof detail. They must be in accordance with each other, in order to be able to fit the full roof definition values in your available memory.

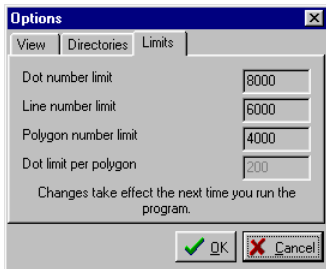


Figure 16. Dialog box for entering the limits

You can enter the following limits:

Dot number limit: In this field, you may enter a maximum number of dots for the plan. The roof is now limited by this number of dots. You may add to this number if needed by your roof detail, but the maximum is limited by your available memory.

Line number limit: In this field, you may enter a maximum number of lines for the plan. The roof is now limited by this number of lines. You may add to this number if needed by your roof detail, but the maximum is limited by your available memory.

Polygon number limit: In this field, you may enter a maximum number of polygons for the plan. The roof is now limited by this number of polygons. You may add to this number if needed by your roof detail, but the maximum is limited by your available memory.

Dot limit per polygon: The maximum number of dots per polygon is 64. You cannot change this limit.

Note that all changes to the above limites will take place *after* restarting the *Roof Designer* program.

1.4.2 Surface properties

Using **Surface properties**, you can assign a characteristic texture to your roof plane. When visualizing the 3D rendering, your roof would be covered with the pattern of this surface property. To define a texture, adjust the settings per below in the dialog box which will appear.

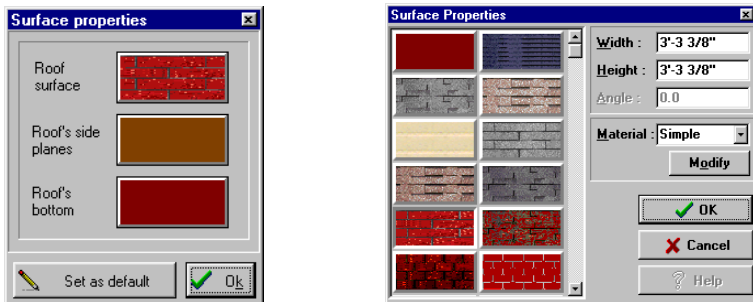


Figure 16a. Assigning a texture to the roof-surface

The settings of the dialog box are as follows:

Color button : press this to assign a homogenous color to the roof surface;

Textures: Textures are stored in **BMP** format files that may augment with additional textures. To do so, place the new **BMP** file in the **LIB** directory and then note the new file name in the **Roof** information section of the **Texture.ini** text file;

Width/Length: These parameters set the size to which you wish to stretch the pattern shown on the display swatch before it repeats;

Rotation: adjusts the rotational angle of the pattern displayed on your roof plane;

Material : You can change the material used for photorealistic rendering (ray-tracing). These surface properties apply to the whole roof.

1.5 Window command

In the **Window** command, you can modify the size and location of the windows shown on the screen. There are several arrangement options in the menu as follows:

Cascade arrangement

Tile arrangement

Arrange Icons

Close All

Show New

Show All Views

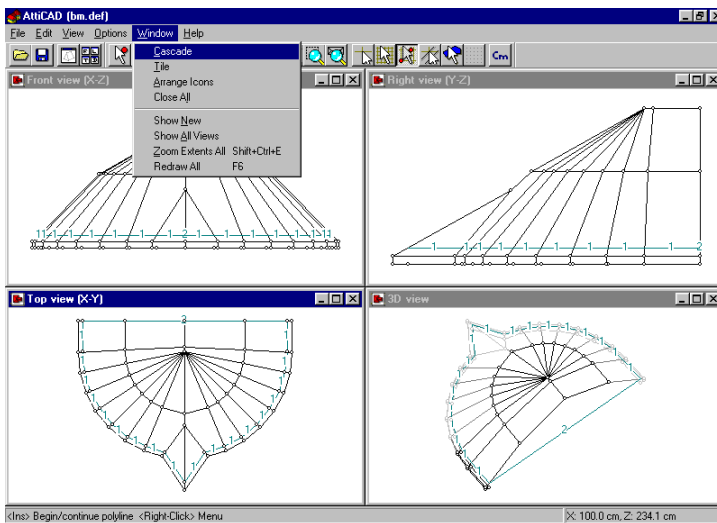


Figure 17. The menu of the Window command

1.5.1 Cascade arrangement

In the **Cascade** arrangement, the program displays windows stacked and cascading from the top left to the bottom right of the screen as you can see in *Figure 18*.

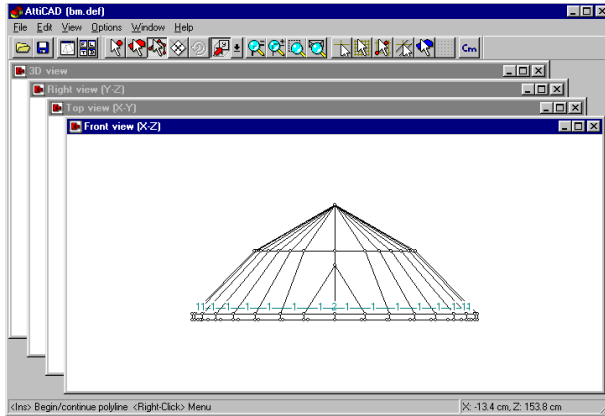


Figure 18. Cascade arrangement

1.5.2 Tile arrangement

In the **Tile** arrangement, the program displays windows edge to edge as you can see in *Figure 19*.

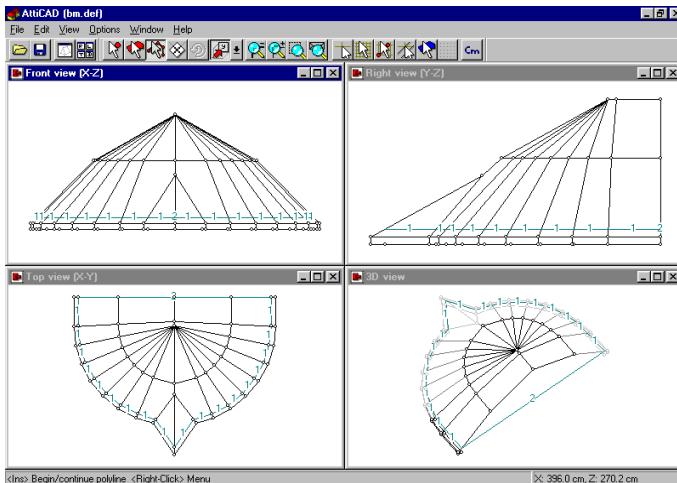


Figure 19. Tile arrangement

1.5.3 Arrange Icons

This function arranges the minimized windows within the main window. You may also minimize a window by clicking on the first icon in the upper right corner.

1.5.4 Close All

The selection closes every opened window.

1.5.5 Show New

With this command you can open a new window. The new window will appear in top view mode.

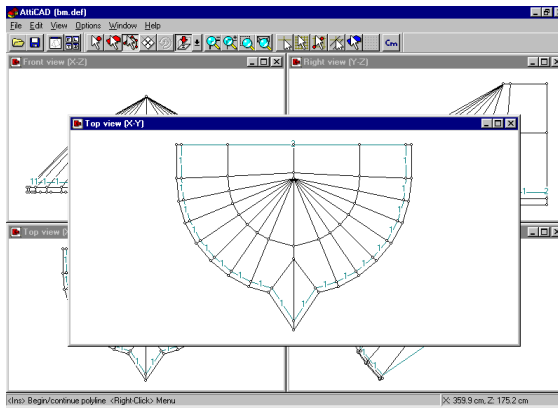


Figure 20. Show new window

1.5.6 Show All Views

Use this command to display every view.

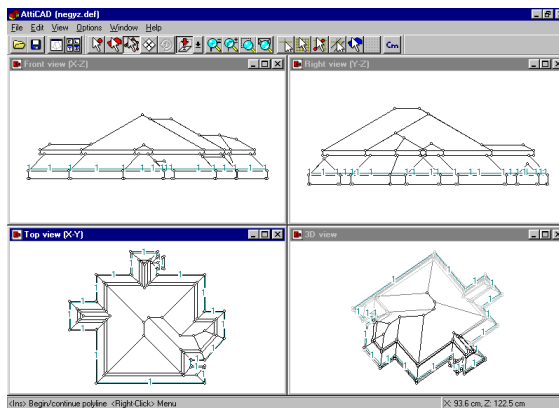


Figure 21. Show all views

1.6 Help command

Subcommands:

Contents

About

1.6.1 Contents command

Using this command, you can ask for help at any time during the operation of the program.

1.6.2 About command

Using this command, displays main information on the program itself, including its version number.

2 Commands of the upper iconline


The following icons are shown in the upper iconline:

The first two icons – as in other programs – serve to quickly execute the **Open** and **Save** commands.


The following icons:



2.1 Open a new window

Here you can open a new window. By clicking on the  icon, a new top view window appears.

2.2 Visualization of views





You can display the four views by clicking on the  icon. The editor windows are as follows:

Top view X-Y,



Front view X-Z,

Side view Y-Z

and 3D-view, axonometric window.

Each of the four windows is an editing window, so it doesn't matter which window you use to work out the different steps of your editing. There are two ways of selecting a window: a) simply click on the window you wish to select, or b) you can assign any view from the     pull-down menu from the upper iconline to be the active window. In the upper iconline, the active view window's icon is always


shown. You can also create two 3D-view windows.

1. The  axonometric view window shows you the front-view axonometrical illustration of the roof. Its role in the editing is limited to selecting dots.
2. In the 3D  axonometric view window you can also rotate the roof shown in the window. Its role in the editing is limited to selecting dots.

2.3 Creating, selecting and moving dots

If this icon is selected, you can create new dots or select and modify existing dots.
Note that you cannot create new dots or modify existing dots in the 3D axonometric view window.

2.3.1 Creating new dots

If this  icon is selected, you can create new dots at your cursor locaton. There are five ways of creating a new dot:

1. By clicking on the **Create dot here** in the right mouse button click pop-up menu;
 2. By clicking on the **Create...** menu item;
 3. By pressing the **Ins** key;
 4. By creating an arc;
 5. By continuously creating a dot, a line or a polygon;
 6. By auto editing.
-

2.3.1.1 Create dot here

If you click the right mouse button, a pop-up menulist appears (*see Figure 22.*). By then clicking on a menu item, the command gets executed.

Create Dot Here	Ins
Create...	▶
Delete	Del
Connect	C
Connect as polygon side	Shift+C
Disconnect	D
Create Arc...	
Polygons...	▶
Change Move Direction	Tab
Move...	▶
Lock Selected Dots	
Unlock Dots	
Coordinate Reset	F4
Place Grid Here	F5
Redraw All	F6

Figure 22. The pop-up menulist when clicking the right mouse button

By choosing the **Create dot here** menu item, a new dot appears at your cross-hairs (or cursor) location.

2.3.1.2 Create...

If you click the right mouse button, a pop-up menulist appears (*see Figure 22.*). By then clicking on a menu item, the command is executed. If you choose the **Create...** menu item, a new window pop-up appears where you can adjust the offset values of the new dot from your cross-hairs.

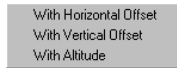


Figure 23. Specifying the offset values for a new dot

To specify the **Horizontal/Vertical offset values** a new menu window appears where you can enter the offset values. The new dot will then be created offset with those values from the cross-hairs' position.

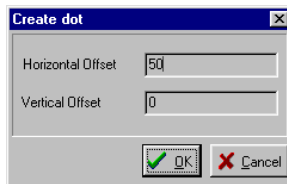


Figure 24. Entering the offset values

You can also enter altitude offset values of a dot, if you create the dot in the **X-Y view** window. Choose the **With Altitude** menu item shown in *Figure 23.* then enter the value in the display window. The new dot created in the active window will be offset above the X-Y plane with the entered altitude value.

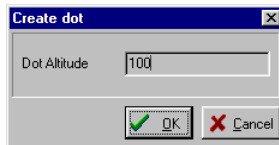


Figure 25. Entering the altitude value of a dot

2.3.1.3 By pressing the **Ins** key

This is the fastest and most comfortable way of creating a dot. Just move the cross-hairs and/or the small arrow to the desired position and press down the **Ins** key. The dot is created immediately.

2.3.1.4 Creating a dot by creating arc

You can create a dot by creating arc. To create an arc, you must select two dots. Then click the right mouse button and choose the **Create Arc...** menu item in the pop-up menu (see Figure 22.). One of the following two dialog boxes will appear depending on the position of the two dots.

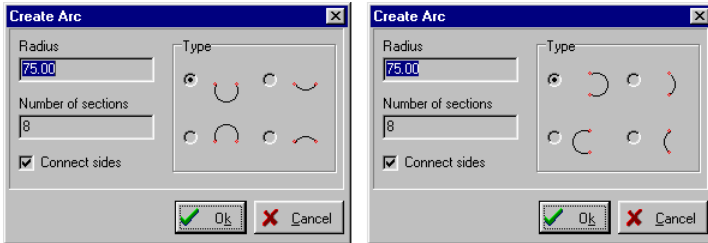


Figure 26. The necessary dialog boxes to define the direction of the arc

You must enter the following values in the dialog box:

Radius: The radius of the arc (in your chosen measure unit)

The Arc value is a semi-circle's radius

Number of sections: The number of straight lines that connect the arc.

Please pay attention to the number of sections in order to avoid both the creation of too many dots and un-smooth curves.

Connect Side: Select to connect the dots immediately.

Type: To define the direction of the arc.


By selecting your dots in a consistent manner by relative position, this setting will help you get predictable results.


2.3.1.5 Continuously creating a dot, a line or a polygon


You can also create a dot by pressing down **Ins** key when the cross-hairs and the small arrow are at the desired position. This is the fastest way of creating a dot and is comfortable to use. The created dots are connected with lines. You can stop the dot creation by clicking the right mouse button and you can close the polyline and make a polygon by choosing from the right mouse click pop-up menu.

Snapping algorithms

During dot creation, you can use snapping algorithms. To choose the snapping option, click on the corresponding   icon.

 With this icon you turn *on/off*, the snap to grid dots mode.


 With this icon you turn *on/off*, the snap to existing dots mode.

 With this icon you turn *on/off*, the snap to lines mode.

If you turn on a snap mode by clicking on its icon, then creating a new dot or You

moving an existing dot will take the snapping mode into consideration. With the help of snap modes, you can, for example, *place a dot in line with other dots* without paying particular attention to the coordinates. Using snap modes, you can edit quickly and more accurately. But of course in certain cases, there is no need to use snap modes. To adjust the sensitivity of the snapping, call up the **Options/Editor...** command (see 1.4 Options command).

2.3.2 Selecting a dot

If the  icon is picked, you can select a dot or dots. It is very simple to select dots. Click on the dot – represented by a small circle on the screen – which you wish to select. To indicate your selection, the color of the dot will change to red. If there are dots one above the other in the active view, then you can *alternate dot selection* by hitting the **Space** bar. In other views, you can easily follow the selection of the proper dot. You may select more dots one after another. To select both dots one above the other select the dot twice. The selected dot or dots are red-colored. To cancel the selection of a dot, you must reselect it.

You can select a dot or dots by framing an area. In this case, every dot, line and plane in the frame will be selected. This selection is also indicated by changing the color to red.

2.3.2.1 Moving dots

If you now wish to move the selected dots together on the screen, just pick one dot and move it to the desired position and they will all move together. For moving the dots you wish to switch to another window or view.

To improve the accuracy of your move, you have additional possibilities such as:

1. **Changing move direction /Tab/;**
2. **Moving with offset according to selected dot or dots;**
3. **Moving to cross-hairs.**

Changing move direction /Tab/ :

If you want to move the dots only horizontally or vertically, you may set a move direction. You have two ways to do this. While pressing the left mouse button, hit the **Tab** key and move the dots to the desired direction indicated on the screen, or simply click the right mouse button and choose the **Change move direction** menu item in the pop-up menu (see Figure 22). While moving dots, the appearing mouse arrows show the selected move direction.

Moving with offset according to the selected dot or dots

With Horizontal Offset	
With Vertical Offset	
To Cursor	0

Figure 27. Entering offset values for

may move the dots with a measured offset from their existing position. Enter the offset values in the dialog box shown in *Figure 28*.

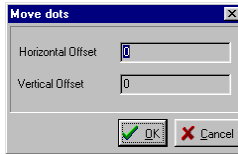


Figure 28. Entering offset values for moving dots

Moving to the cross-hairs

You can also move a dot or dots to your cross-hairs.

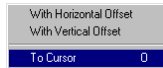


Figure 29. Moving a dot to the cursor

Choose the **Move.../To cursor** menu item or then press the **O** (letter O) key. *In this process, the connecting lines and the planes will be shifted as well.* If the planes would deflect due to this move, the program will suspend the move with an error indication, and you can decide whether you want to continue or not.

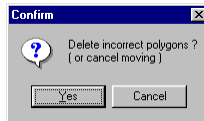


Figure 30. Error indication due to dot moving

If you answer **Yes**, the dots will be moved to their new position in such a way that the deformed roof planes will be deleted from the roof. You may verify this by visualizing the planes (**S key**). The planes defined by the polygons will be shaded red, the roof contour polygon will get shaded green.

2.3.3 Deleting dots

To delete the selected dots, use the **Del** /Delete/ key or choose the **Delete** menu item from the right mouse click pop-up menu. *By deleting a dot or dots, the lines and planes will also disappear from the roof.* Before deleting the dots, you will receive a warning asking if you really wish to delete the selected dots.

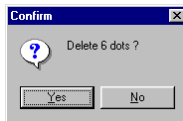



Figure 31. Confirming the deletion

If you deleted the selected dots in error, you may replace the dots by using the **Undo** function.


2.3.4 Selecting a polygon

After pressing the icon, you may select polygons in the active window. *The tilt angle of the polygon appears on the selected polygon.* This function serves to provide you with information only. If there are polygons one above the other, you may alternate their selection plane by plane by hitting the **Space** bar and you will see the tilt angle of each plane. The tilt angle of a created polygon which is defined as a plane is shown in black, while for a polygon which is not defined as plane it is shown in red. (See Chapter 3.8 Creating polygons)

2.3.5 Moving the plan in the active window

After selecting this icon, you can move the whole plan in the active window. While holding the left mouse button down, you can dynamically position the whole roof together with its contour lines. You may also position the plan by using one of the  icons or **Ctrl+I**, **Ctrl-I** or **Ctrl Shift E** hot keys. This movement does not really move the plan, only the visible area changes.

2.3.6 Rotating the 3D-view

To rotate the roof, click on the  icon and *while pressing down the left or right mouse button* (depending on your desired rotation direction) simply move the mouse.

2.3.7 Changing views

You may choose any view from the  pull-down menu placed in the upper iconline. (See Figure 32.)

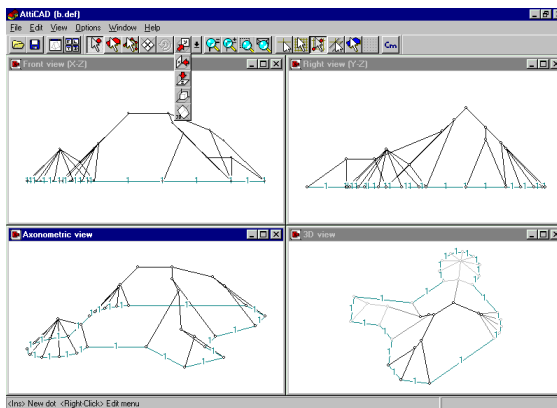


Figure 32. Changing views.

With the help of **View** icon, you can change the content of the view image in the active window. For example, let's replace the content of the active **Top view X-Y** window with the **Right view Y-Z** image. See the changes in *Figure 33*.

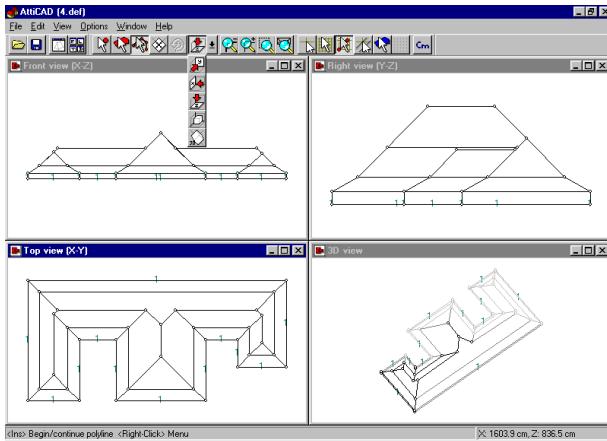








Figure 33. Example for selecting the right view in the actual window


We mention here that you can enlarge the active window to the full screen by clicking on (the second) icon in the upper-right corner of the window. As in other Windows programs, switching back to a divided windows mode is available by clicking on the replaced icon -- also the second small icon. The first corner icon is used to temporarily close the program window, while the third one (X) is used for final closing.


2.3.8 Zooming

You can adjust the size of your plan by using one of the     icons or the equivalent **Ctrl** and a character hot-key combination. Let's see the effects of the icons and the hot-keys.

 **Ctrl -** Zoom in on the image in the active window. If the image becomes too small to zoom in again, then further execution of the function will be suspended.


 **Ctrl +** Zoom out the image in the active window. If the image becomes too large to zoom out again, then further execution of the function will be suspended.

 **Ctrl W** Zoom out to an area defined by frame. You select an area with a frame which you want to zoom out to fit to window.





 **Ctrl E** Zoom to plan size. You may zoom the whole plan extents to fit to the active window.

Ctrl Shift E Zoom all to plan size. You may zoom the whole plan to fit to window in every view.

2.3.9 Using the cross-hairs

With the help of this icon, you can display cross-hairs beside the small arrow. Often times when you edit, it is necessary to see how an element is placed on the screen relative to other plan elements. For this purpose, you may use cross-hairs that run along the arrow horizontally and vertically in the window. You can turn *on/off* this function with the  icon. The cross-hairs appear when the icon is picked. *This function is also activated by the snapping icons.*

2.3.10 Using snap modes

For easier and more accurate editing, you can turn *on/off* snapping modes. To turn on/off snap modes, use the icons. If the icon is picked, the actual snap mode is toggled active or deactivated. Snapping means snap to already existing dots. You can choose from more snap modes by clicking on its     icon in the upper iconline.



With this icon you turn *on/off*, the snap to grid dots mode.



With this icon you turn *on/off*, the snap to existing dots mode.






With this icon you turn *on/off*, the snap to lines mode.



With this icon you turn *on/off*, the snap to planes mode.


If you turn on a snap mode by clicking on its icon, then creating a new dot or moving an existing dot will take the snapping mode into consideration. With the help of snap modes, you can, for example, *place a dot in line with other dots* without paying particular attention to the coordinates. Using snap modes, you can edit quickly and more accurately. But of course in certain cases, there is no need to use snap modes. The snapping icons also activate the cross-hairs.

2.3.10.1 Grid snapping



To turn *on/off* the **Grid snap** mode, click on the  icon. You can display grid dots on the screen. You may set the distance between grid dots in a given unit of measure unit in the **Options/Editor... View/Grid dot spacing** field. To make the grid dots visible, click on the  icon in the upper iconline. If you would like to use the grid snap mode, you have to click on the  icon in the upper iconline. The grid snap mode works with the process of dot creation. If you activate this snap mode by clicking on its icon, then you can create dots only on the snap grid dots. The cross-hairs appear when activating the grid snap mode. You may shift the grid using the **F5** function key. To shift the grid to a desired dot location, follow these steps: move the cross-hairs to the dot or position where you would like to place a grid dot and push the **F5** function key or select the **Place Grid Here** function from the menu

which appears by pressing the right mouse button. The program will then redraw the whole grid up/down left/right from this new origin using the grid space setting.



2.3.10.2 Dot snapping

Clicking on the  icon you turn *on/off* the snap to existing dots mode. You can also specify a “sense range” to the snap dots. You may adjust the sensitivity of snapping in the **Options/Editor... View/Dot snap sense range** field, but note that the range is defined in pixels here. This snap mode also activates the cross-hairs.

2.3.10.3 Line snapping



Clicking on the  icon, you turn *on/off* the **snap to lines** mode. You may adjust the sensitivity of snapping in the **Options/Editor... View/Line snap sense range** field, but note that the range is defined in pixels here. With the help of the **line snap**  icon, you can move or create dots on an existing line. The line snap mode in the active view always refers to the view of the line projected to the plane and not to the three-dimensional view. So if you wish the dot to definitely be on a 3D line, you need to snap to the line in two views. This snap mode also activates the cross-hairs.

2.3.10.4 Snapping to planes

 This icon switches on/off fitting to planes. Before using this feature, you have to select at least three dots which lie in the common plane. Using automatic polygon search (press  and click on a roof plane) is an easy way to select the plane which you want to work on. After switching on the plane fitting, every dot creation apart from automatic roof generation will produce dots lying in the chosen plane. For example, if you create a dot using the Insert key, the third coordinate which is perpendicular to the view of the active edit window, will be calculated. Plane fitting is also working when moving selected dots.

Important: don't forget to switch off the function when it's not necessary anymore. Deleting the dots which specified the fitting plane will have no effect on the plane fitting feature.


2.4 Using the grid


It is possible to use a grid on the screen. You may set the distance in the given measure unit between grid dots in the **Options/Editor... View/Grid dot spacing** field. To show or hide the grid click on the  icon in the upper iconline. The program gives you a possibility to use a grid snap method. To obtain this click on the  icon in the upper iconline. This snap mode means snapping to dots. After

clicking on this icon you can only create a dot on a grid dot. You may shift the grid by using the **F5** function key. If you wish to shift the grid to a dot located by you follow these steps: move the cross-hairs to the dot or position where you would like to place a grid dot and push down the **F5** function key. After that the program redraws the whole grid up/down left/right from your position by taking the given grid dot spacing into consideration.

2.5 Changing the measure unit

You may select the unit of measure that you wish to use.

 Select if you wish to design in *centimeters*.

 Select if you wish to design in *inches* (inch, feet).

To move the cross-hairs, the small arrow or the selected dots on the screen, use the mouse or the arrow keys.

2.5.1 Designing in centimeters

The mouse moves “independently” on the screen if no snapping mode is activated. You may follow the relative coordinate position values of the mouse in the lower data field. If you use arrow keys for moving, you may reset its increment steps using the **F3** function key. By using **F3**, you can toggle switch the value of displacement from 1 cm to 0.1 cm and vice versa. The default value is 1 cm until you switch to 0.1 cm by using the **F3** function key. To switch back to 1 cm, use the **F3** function key again. If you want to add to the increment step (to 100 times larger, e.g. to 10 or 100 cm) use the **Shift** together with **arrow keys**. The direction of the arrow key defines the direction of the displacement from the actual position and in accordance with it, the X-Y coordinates change. The coordinate of the actual position is shown in the lower data field. You may reset the lower data field by using the **F4** function key. With this function, you locate a new origin at the cross-hairs’ and small arrow’s position. You may displace the origin from the actual cursor position with a value entered with the **X** and **Y** keys in the dialog box which appears on the screen. For entering the horizontal/vertical offset values, a dialog box appears. The new dot will be created offset from the actual cursor position with the entered parameters.

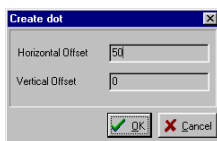


Figure 34. Entering the offset values




For moving dots, you can also enter offset values. Click the right mouse button and choose one of the **Move.../With Horizontal or Vertical Offset** menu items in the

pop-up menu, and then enter the offset values. The **Move dots** window is equivalent to the window shown in *Figure 34*.

2.5.2 Designing in inches

Using inch-based designing coordinates are shown in feet and inches. Cursor keys move the cross-hairs by one inch or 1/16 inch depending on the state altered by pressing F3. Shift+Cursor keys cause one foot or 3/4 inch movement. See 2.5.1. for more details about designing.

2.6 Returning to the drawing window of myHouse

Using the  icon, you may return to the drawing window of *myHouse* . When you return to the myHouse program, your designed roof will be available to apply to your floorplan. In the myHouse program, if you select a roof, and call the *Roof Designer* program, the selected roof will be transmitted to the *Roof Designer* program, so you can modify its elements and when you finish the modifications, the roof will be re-transmitted by returning to the myHouse program. Thus, there is a two-way data communication between the two modules. For calling them, use the   icons.

3 The right mouse button click pop-up menu

You find main functions in the right mouse button click pop-up menu. You will often execute these useful functions and the same commands can be found in other menus as well.

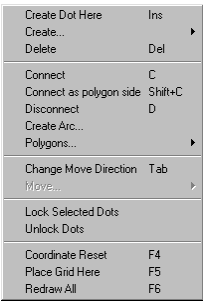


Figure 35. The content of the pop-up menu

Let’s review the menu items one after the other.

3.1 Create dot here Ins Creating a new dot

By picking the **Create dot here** menu item, a new dot will appears at your cross-hairs/ Creating a dot with **Ins** key: you can also create a dot by pressing down the **Ins** key

when the cross-hairs and the small arrow are at the desired position. This is often the fastest and easiest way of creating a dot.

3.2 Create...

If you choose the **Create...** menu item, a new window rolls down where you can adjust the offset values of the new dot according to the position of the cross-hairs.

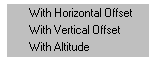


Figure 36. Specifying the offset values for a new dot

To specify the horizontal/vertical offset values, a new menu window appears where you can enter the desired offset values. The new dot will then be created offset from the cross-hairs the specified amount.

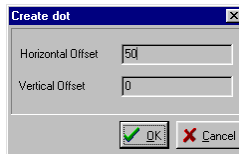


Figure 37. Entering the offset values

You can also enter *altitude* values for a dot, if you create the dot in the **X-Y view** window. To use this function, choose the **With Altitude** menu item, and then enter the value in the window that appears. The new dot is created in the active window offset to the entered altitude in **Z** plane.

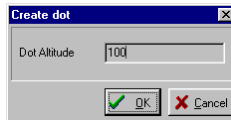


Figure 38. Entering the altitude value of a dot

3.3 Delete **Del** Deleting dots

Choosing this menu item, you may delete selected dot or dots. You may also delete them by using the **Del** key. By deleting a dot or dots, the lines and planes will also disappear from the roof. Before deleting the dots, you will receive a warning:

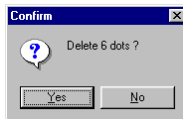


Figure 39. Warning before deleting dots

Confirming by answering **Yes** to the question, the deletion takes place.

3.4 **Connect** **C** **Connecting dots**

You may connect the selected dots with a line. You may select three dots at the same time and make a triangle by connecting them. These created lines become a part of the roof and thus are visible lines in the 3D view.

3.5 **Connect as help lines** **Shift C** **Connecting dots**

Choosing the **Connect as help lines** menu item, you may connect the selected dots with a line. You may select three dots at the same time and make a triangle by connecting them. These created lines are light-colored. Their aim is to help editing (they are useful when fitting to lines is turned on), or to create edges to close polygons, so that these polygon edges won't be visible in 3D rendering.

3.6 **Disconnect** **D** **Disconnecting dots**

Choosing the **Disconnect** menu item, you erase the lines that connect the selected dots. The dots will now be independent from each other.

3.7 **Creating Arc...** **Creating a dot by creating arc**

You can create a dot by creating arc. To create an arc, you must select two dots. Then click the right mouse button and choose the **Create Arc...** menu item in the pop-up menu (see Figure 35.). From the following two dialog boxes which dialog box will appear that depends on the position of the two dots.

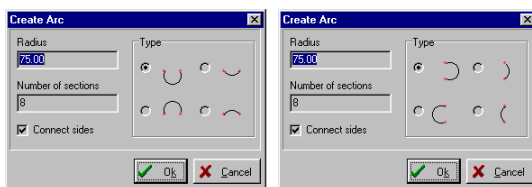


Figure 40. The necessary dialog boxes to define the direction of the arc

You must enter the following values in the dialog box:

Radius: The radius of the arc (in your chosen measure unit)

The Arc value is a semi-circle's radius

Number of sections: The number of straight lines that connect the arc.

Please pay attention to the number of sections in order to avoid both the creation of too many dots and un-smooth curves.

Connect Side: Select to connect the dots immediately.

Type: To define the direction of the arc.

By selecting your dots in a consistent manner by relative position, this setting will help you get predictable results.

3.8 Polygons... Making polygons (planes)

Selecting this menu item, a submenu appears which has the following functions:

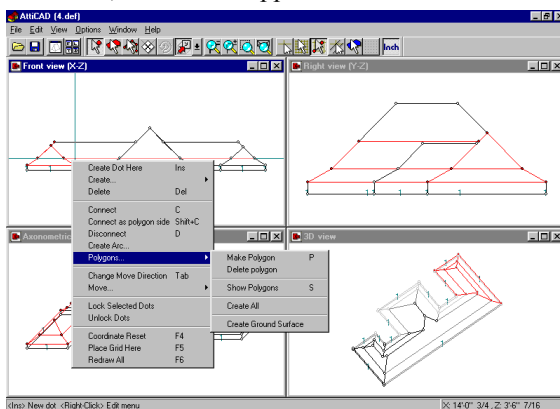


Figure 41. Menu for polygon operations

3.8.1 Make polygon P

You may construct planes onto the selected polygons. To make a polygon from the selected dots, use the **P** key or choose the first menu item. If the dots do not lay on one plane together, then you will receive a warning message. The two possible warning messages are shown in Figure 42.

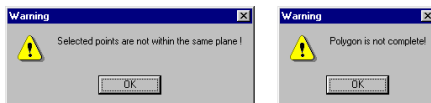


Figure 42-43. Warning messages during making polygons

First you must fix the fault and after that you may make a polygon from the selected dots. *To verify the polygon's existence press down the **S** key. This time you will see the polygons red shaded.*

Use the Select polygons mode (by clicking on its icon) is an easy way to make polygons. In this mode, if you click at any location, the program will search for an enclosed plane figure nearby and change its color to red. If there are more than one plane figure overlapped, you may then alternately select plane by plane by hitting the **Space** bar. Using the **P** key, you can make polygons from this set of dots .

3.8.2 Delete polygon

Selecting this menu item, you can strip the polygon from the selected dots. To verify the polygon's existence, press down the **S** key. After deletion, the plane will no longer be shaded red.

3.8.3

Show polygons S polygons

Showing the existent

To verify a polygon's existence, press down the **S** key. Now you will see all the polygons shaded red. The roof contour polygon will get shaded green.

3.8.4 Create All

Auto generating polygons

You may ask to auto-generate polygons from your created set of dots and lines. After calling the function, the first found polygon will be drawn in red. Press Space to cycle through all the found polygons. You can create a polygon from the currently selected set of dots by pressing **P** or using the right-click popup menu. Use the **P** key or choose the **Polygon/Make Polygon** menu item from the right mouse button click pop-up menu to make polygons from this set of dots.



3.8.5 Create ground surface

Auto generating surfaces


By the help of the *Roof Designer* program you have the opportunity to create ground surfaces as well by indicating certain dots. Later, you may use the surface for a roof or terrain. *See the details in Chapter 5.*


3.9 Changing move direction (Tab):

When you want to move dots only horizontally or vertically, you may set a move direction. You have two ways to do this. While pressing down the left mouse button, hit the **Tab** key and move the dots in the desired direction indicated on the screen, or simply click the right mouse button and choose the **Change move direction** menu item in the pull-down menu (*see Figure 35*). When moving a dot or dots, a two-directional arrow appears on the screen to show the move direction.



3.10 Moving elements

To sh  the elements shown on the screen, you must select them first.

If the  icon is selected, you can select a dot or dots. It is very simple to select dots.

- Click on the dot – which is represented by a small circle on the screen – you wish to select with the left button of the mouse.
- You can also select a dot or dots by framing an area (hold and drag left mouse button).

To indicate your selection, the color of dots will change to red. If there are dots one above the other in the active view, then you can alternately select dot by dot by hitting the **Space** bar. In other views, you can easily check the selection of the proper dot. You may select more dots one after another. To select dots one above the other at the same place, you have to select the dot twice. The selected dot or dots are

red-colored. To delete the selection of a dot, you must re-select it.

You can select a dot or dots by framing an area. In this case, every dot, line and plane in the frame will be selected. This selection is also indicated by color change to red.

You may move the selected dots. There are several ways of moving dots:

- With cursor on a dot, you can move the selected dot or dots by clicking the left mouse button and watching the X-Y coordinates shown in the lower data field as you move the mouse. For further details on changing move directions and using snapping modes that may help you, see Chapter 3.9.
- When using arrow keys or Shift and arrow keys for moving, you step by centimeters or meters (in case of inch measure units, you step by inches or feet).
- Clicking the right mouse button and picking the **Move...** menu item in the pop-up menu list, the following window appears where you can choose the right function for you.

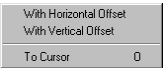


Figure 44. Entering offset values for moving dots

3.10.1 With Horizontal Offset

3.10.2 With Vertical Offset

You may move the dots with an offset from their current position horizontally or vertically. Enter the offset values in the dialog box shown in *Figure 45*. You may also move in both directions at the same time.

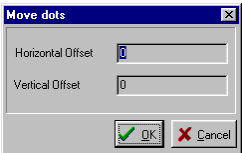


Figure 45. Entering offset values for moving dots

3.10.3 Moving to cursor

You can also move a dot or dots to the cross-hairs.

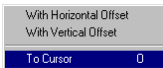


Figure 46. Moving a dot to the cursor

Choose the **Move.../To cursor** menu item or then press the **O** (letter O) key.

In this process, the connecting lines and the planes will be shifted as well. If the

planes would deflect due to this move, the program will suspend the move with an error indication, and you can decide whether you want to continue or not.

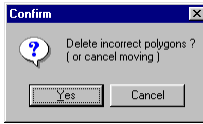


Figure 47. Error indication due to dot moving

If you answer **Yes**, the dots will be moved to their new position in such a way that the deformed roof planes will be deleted from the roof. You may verify this by visualizing the planes (**S key**). The planes defined by the polygons will be shaded red, while the empty polygons will get shaded green.

3.11 Locking selected dots

You may assign a special attribute to the dots so that later you may select the dots but cannot move them. Clicking on this menu item, you lock the selected dots. The dots will stay at their position and you cannot displace them unless you unlock them first. Of course you may use these dots for other functions (like connecting them with lines, defining planes, etc.).

3.12 Unlock dots

To release the locked dots, use this menu item to allow you to subsequently move them.

3.13 Coordinate reset F4

You may reset the coordinate-system origin to the cross-hairs' current position so thereafter the X,Y values will appear relative to this new position in the lower data field.

3.14 Place grid here F5

You use thus command to shift the grid to a dot of your choosing. The program will then redraw the whole grid up/down left/right from this new origin.

3.15 Redraw all F6

Sometimes you may find "ghost marks" on the screen that you may clear in refreshing the screen by choosing this menu item or by using the **F6** function key.

4 Automatic roof-designing

This program gives you an automatic roof-designing option. For this you need to draw a *roofedge-contour* in the **X-Y Top view** when the automatic roof-designing

dialog box appears by clicking the right mouse button on one of the lines. Here you give a definition for the rising slope ledges and the roof becomes generalizable. Steps for automatic roof-designing:

1. **Creating dots to the roofedge-contour;**
2. **Connecting dots with lines, forming an enclosed polygon;**
3. **Defining a contour line with an enclosed polygon;**
4. **Calling the automatic roof-designing dialog box by selecting the contour line;**
5. **Inputting the definition of the sloping roof egdes by the side of contour lines and generating the roof in the automatic roof-designing dialog box;**
6. **Checking the roof and substituting for faulty roof planes**
7. **Saving the roof or transmitting to the floor plan program**

4.1 Creating dots to the roofedge-contour

The *Roof Designer* program can be called directly from the drawing window of *myHouse*. In this case, the wall-contour from the drawing window of *myHouse* will appear in the *Roof Designer*'s windows. The color of the floor plan in the **X-Y Top view** is light blue, while in the **Side view** you can see the floor plan as a single line. In this case, you see that the wall contour is flat without any vertical (z dimension) height. (Figure 48.)

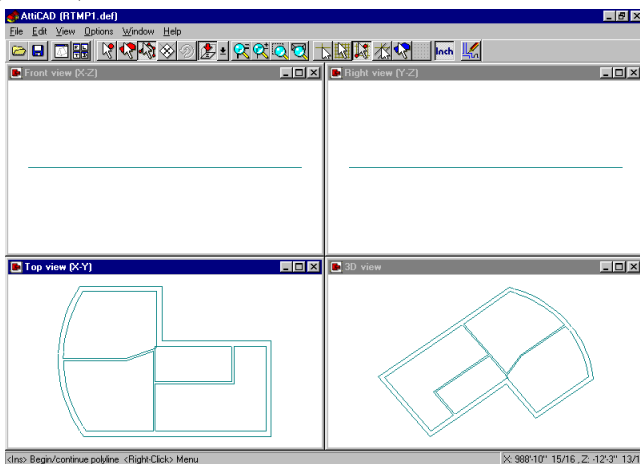



Figure 48. Wall-contours from the drawing window of *myHouse*

Let's create dots to draw the roof edge in the **X-Y Top view**.

It is most practical in this case to create dots and turning on the dot snap function by clicking on the  icon and then pressing the **Insert** key or choosing the **Create**

dot here function from the right mouse button click pop-up menu. (See Figure 49 below.)

* You can create dots by continuously creating dots, lines and polygons. After clicking on the icon, you may create dots by pressing down the **Ins** key. This method's chief advantage is that the necessary lines and polygons will be created at the same time. You can suspend the dot creation by clicking the right mouse button and at the same time closing the polyline and making a polygon by again choosing the right menu item from the pop-up menu.

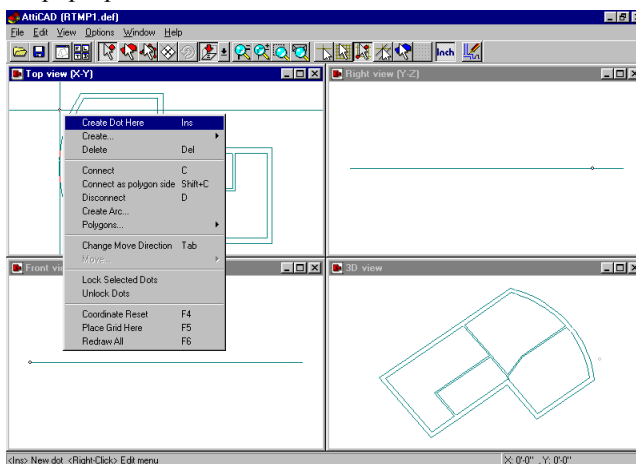


Figure 49. Creating new dots

4.2 Connecting dots with lines, forming an enclosed polygon

After selecting two dots, you can execute the connection between the two selected dots by pressing the **C** key or choosing the **Connect** function from the right mouse button click pop-up menu. After selecting two dots, you may make arcs by choosing the **Create Arc...** (Figure 50) command from the above mentioned menu and entering the radius of the arc.

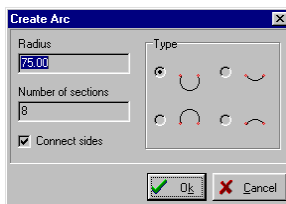



Figure 50. The dialog box of Create arc.

Please note that by drawing a polyline  you don't have to connect each dot pairs, it's done automatically.

4.3 Defining a contour line with an enclosed polygon

You can get a defining contour line with an enclosed polygon from the **Edit/Roof contour.../Build** path or by pressing the **Ctrl-K** hot-key (*Figure 51*). First of all, you need to select the dots that you wish to form as a polygon by framing them – or pressing **Ctrl-A** (Select all) to select all the dots. You define a contour line with the selected dots by the above mentioned process or pressing down the **Ctrl-K** hot-key.

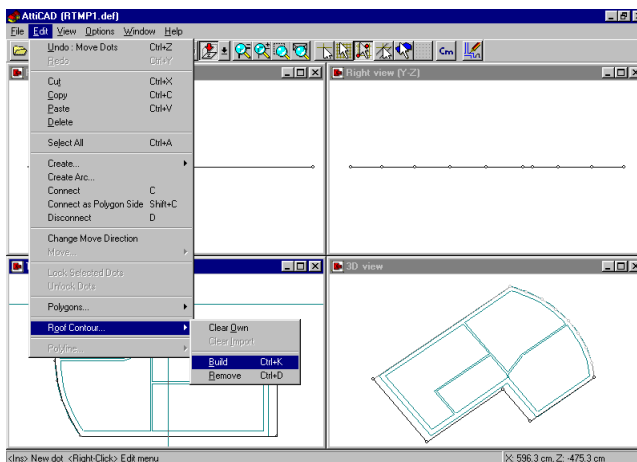


Figure 51. Transform the selected lines into roofedge-contour line

After the definition, the small circles that indicate the dots disappear from the junctions of the polygon and thus you have created a special series of roofedge-contour lines that form an enclosed polygon.

Please note that you also have a possibility to – if you wish – revert the contour line to its previous polygon by calling the **Edit/Roof contour.../Remove** function or pressing down the **Ctrl-D** hot-key.

And the **Edit/Roof contour.../Clear own** function helps you to delete it if necessary.

4.4 Calling the automatic *roof-designing* dialog box by selecting the contour line

Position your cursor to the contour line and select it by clicking the left mouse button. In the dialog box which appears, you can then enter the definition of the roof plane for the automatic *Roof Designer*.

4.5 Inputting the definition of the sloping roof edges by the side of contour lines and generating the roof in the automatic *roof-designing* dialog box

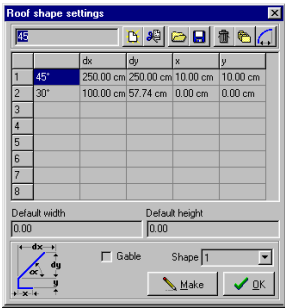


Figure 52. The dialog box of automatic *roof-generator*

In the above dialog box, you can assign the roof planes to the selected ledge. Here you can define the ledge and surfaces you wish to generate by selecting the contour line of the slope. Technically this contour line is the section cut of the roof on the plane square to the roof.

Contents of the dialog box:

- functional icon
- definition field
- the field that gives default width and default height
- roof plane number field
- pediment assigner field



informational icon and

OK and Make executional buttons

Let’s review the meanings of these icons and field elements one by one.

4.5.1 Functional iconline



You can define a **New roof plane**. By clicking on the icon, the program assigns a new number to the roofedge-definitions. This number is shown in the **Shape** field. You identify the roof edges with these numbers. These light blue-colored numbers will be shown in the plan view of the *roofedge-contours*.



Using this icon, it is possible to **Delete existing roof plane-definitions (shape)**. The current definition can be deleted from the assignment to the roof by clicking on

the icon. *The roofedge-definition will be deleted from all of the contourlines* which contain this numbered definition, so you will have to assign another definition to them.



You can **Load a saved roofedge-definition (shape)**. The file extension of the roofedge-definition is **SHP**. In the displayed **Open** dialog box, you can choose a file name, which will be assigned to the number shown in the **Shape** field.



You can **Save the existing roofedge-definition (shape)**. The file extension of the roofedge-definition is **SHP**. In the displayed **Save** dialog box, you can assign a file name to the shape to be saved. It is well worth saving typical definitions so you do not have to define the same data (shapes) again and again.



You can **Clear a selected definition**. The function clears the definition field and assigns a new definition to the number shown in the **Shape** field.



Using this icon, you may set the roofedge-definition shown in the definition field and numbered in the shape field to all the roofedge-contours.



A roofedge-definition can be formed as an arc. You can make it by calling the arc generator. After clicking on the icon the following dialog box appears where you can enter the arc values:

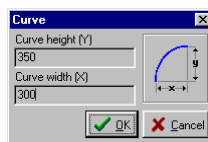


Figure 53. Entering the rising arcs of the curved roof.


Curve Height (Y): The height of the arc

Curve Width (X): The width of the arc.

With the help of these two values, the program divides the arc into 8 parts, and you can see these values in the definition field after clicking on the **OK** button. The value of **X Y** is the sum of the values in the **dx, dy fields** generated and shown in the definition field. You can make further modifications on the contents of the definition field after the arc is generated.


4.5.2 The definition field

In the definition field, the program defines a series of sections in one line as shown

in the  icon.


The data definitions are as follows:

X	horizontal overhang
Y	vertical elevation
Alpha	degree of the sloping ledge
dx	length of the sloping ledge in the x direction
dy	length of the sloping ledge in the y direction

In one line you can see a definition of a series of sections shown in the  icon.

The roof can be built up by the side of these ledges as intersections of planes. To all the roofedge-contours, a definition must be assigned, which can be the same or different per pages. The definition is identified by its number. A ledge's plane-definition can be formed of 8 definitions and the rising roof edge can be composed of eight successive sections as shown in the icon. In each line, the X, Y values can be entered or omitted. The degree, the value of dx, dy are interdependent on each other. When entering values, you can choose which two values of the three you know and wish to enter, and the program will calculate the required third value. If you wish the program to calculate that required value, then you need to fill in the other two and after entering the third field, clear that and hit the **Enter** key. The program will calculate the new value and write it in the field.

Comment: When you use this calculating method, some rounding inaccuracy may take place. The elemental values are the **dx**, **dy** values. The value of **alpha** helps you to fill in the definition field and is only used for reference value.

A roofedge-definition can be assigned to all the planes with the help of the  icon.

4.5.3 The field that gives the default width and the default height

The field that gives the default width: The roofedge-contour starts further out from the wall perimeter by the value entered here. Using this function, you can get a larger eave overhangs.

The field that gives the default height: The roofedge-contour starts higher by the value entered here. In order to be exact, the roof contour is considered 0 base level and the value you enter is offset vertically from this 0 base. You can vary the values for the roof starting height.

4.5.4 Roof plane-field number

This is a number in the field, which identifies the roof edge definition shown in the definition field.

4.5.5 Pediment assigner field

A pediment may belong to an eave. In this case, you do not need to fill in the definition field, you just have to indicate that there will be a pediment on the eave

adhering to the plane number. The *Roof Designer* program does not generate a plane to this eave. The walls located on the floor plan will be automatically built in, and the other planes of the roof may cut them down. Default width is the only numerical parameter that has effect when a pediment roof shape is selected.

4.5.6



Information icon

This icon explains the meanings of the values shown in the definition field.

The data definitions are follows:

x	Horizontal overhang;
y	Vertical elevation;
alpha	Degree of the sloping ledge;
dx	Length of the sloping ledge in the x direction
dy	Length of the sloping ledge in the y direction

4.5.7 OK and Make executional buttons

OK Using this button, you can assign the definition to the selected ledges.

Make Using this button, the program generates the roof with the help of the definitions.

4.5.8 Example for automatic roof generating

Let's review an example for making a roof shape. Move the small arrow to the roofedge-contourline and select a ledge on the floor plan by clicking the left mouse button. The Roof plane setting dialog box appears to define the automatic roof generation.

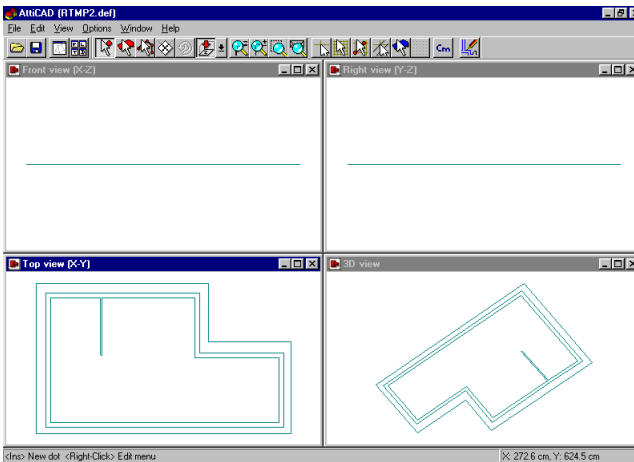




Figure 54. Roofedge-contour above the floorplan.

The definition asks the program for two types of roofplane-generation (See Figure 55.a,b). You may enter the value of the roofedge in the definition field. In the type 1. plane you enter a definition with two-tilt angle to the definition of the roofedge. After entering the type 1. definition, you assign it to every plane by clicking on the  icon and then you quit the dialog box with the help of the icon (See Figure 55.a). In this way, you re-selected the type 2. edge contour definition on the floor plan and you created a **New** plane by clicking on the  icon in the displayed Roofplane setting dialog box, and so you indicated that this is a pediment (see Figure 55.b). You may then generate the roof plane shape by clicking on the **Make** button. The generated roof is shown in Figure 56.

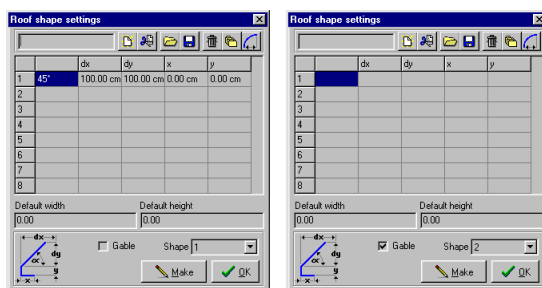


Figure 55. The two types of roof definitions.

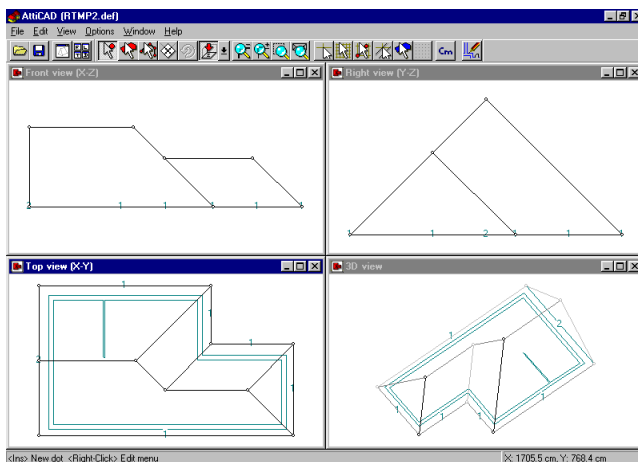


Figure 56. The automatically generated roof

Let's take another example, where you can see that the tilt angle of the generated plane could be negative (Figure 57.).

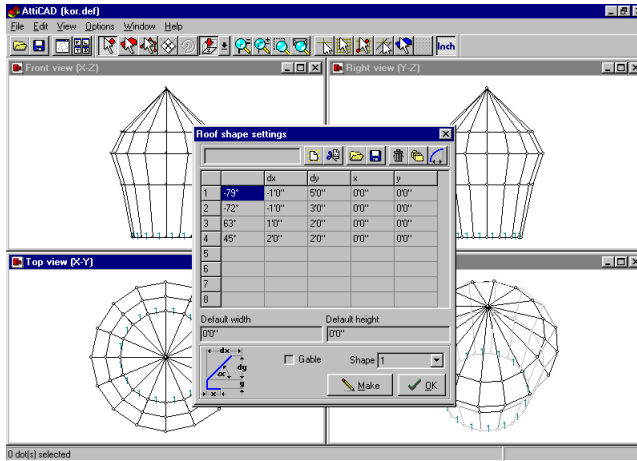


Figure 57. The result of a roofdefinition has a negative tilt angle

4.6 Checking the roof and creating substitute planes for faulty roof-planes

As you survey the result of the roof generation, you can see that in this example, the whole roof generated is successfully done, so you do not need to fix any incomplete roof planes. If it was not successful, the program would warn you with a message shown in Figure 58. You can then fix the missing planes by creating new planes.

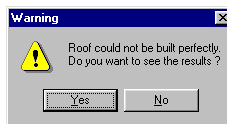



Figure 58. Error-message during the automatic generating

4.7 Saving the roof or transmitting to the floor plan program

You can save the roof to a file. If you called the Roof Designer from the drawing window of *myHouse*, then by clicking on the  icon, you can transmit the roof back to *myHouse* and place it on the floor plan.

5 Generating surface

You can also use this program to generate a surface by creating special dots that you may use later for either a roof or surface terrain. You need to define the external contours of the terrain and typical ground elevation dots of the surface. There is no

need for the dots of the top view polygon – the polygon that marks the terrain – to be in the same plane. They can be manipulated arbitrarily. For example, create four new dots and connect them with lines and raise two other dots to the same height and a third one in the middle to a lower height. These dots can also be created by **Create.../With altitude** function where you can define the altitude value of a dot in the dialog box shown in the *Figure 59*.

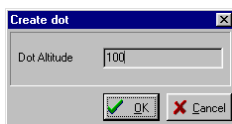


Figure 59. Setting the altitude of a dot

Connect those dots to other dots which define the surface perimeter. The result is shown in the *Figure 60*. Note that one dot of the contour has not been raised!

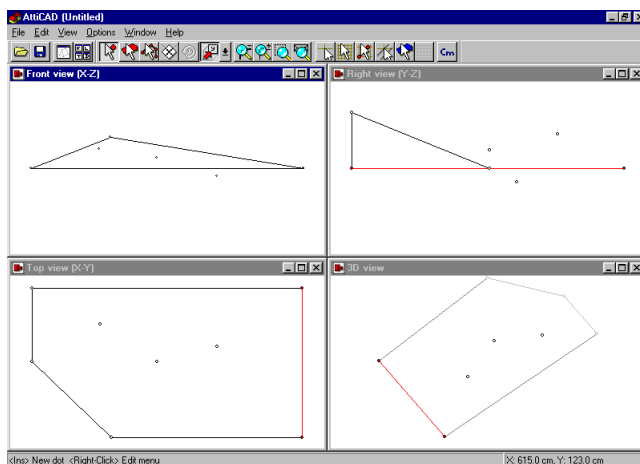


Figure 60. Dots for generating surface

To generate the surface, you need to select one dot on the contour of the surface. Clicking the right mouse button, you call the surface generator from the **Polygon.../Create ground surface**.

Important: If the generated surface is not satisfying and you want to change its base dots or contour, use **Undo** (Alt-BackSpace) to erase the generated surface. Before returning to the floorplan editor you may want to save the surface contour (not the generated surface) as another file (Save as... function), because it's not possible to regenerate the surface in such an easy way like automatic roof generation can create roofs.

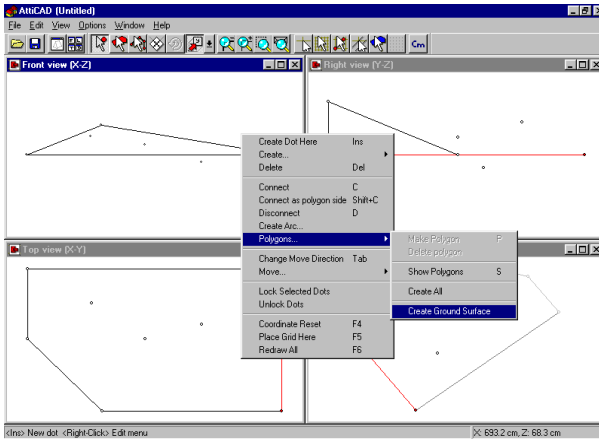


Figure 61. Calling the ground surface generator

You need to define the grid density for generating the surface. In the example, the value used is 50 cms in the both directions.

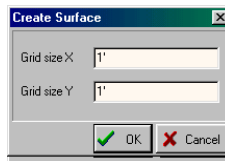


Figure 62. Enter necessary values for the surface-generating

The generated surface is shown in the *Figure 63*.

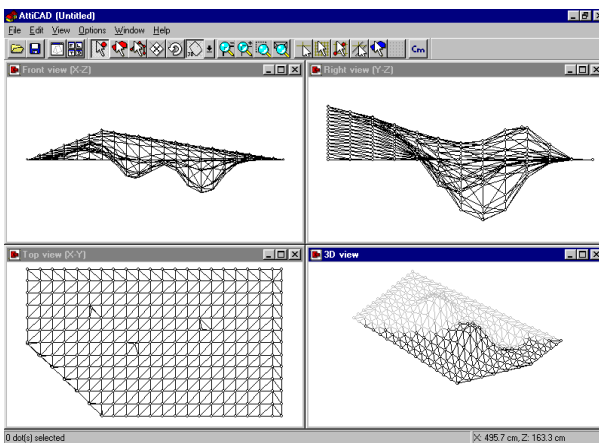




Figure 63. Generated ground surface

Comment: If you wish to make the generated ground surface smoother, you need to create more basic equally spaced dots in the top view image, and the surface will snap to these dots. You may also generate a “hole” in the ground surface by using reverse slopes.

6 Quick roof editor

You can start this function by clicking the  icon in the floorplan editor. If you start making a new roof, after pressing the icon you have to define a roof contour in the floorplan editor. You can do this by using the mouse. To close the contour either double-click or click to the first point of the contour. You can edit an existing roof by selecting it, and clicking to the  icon.

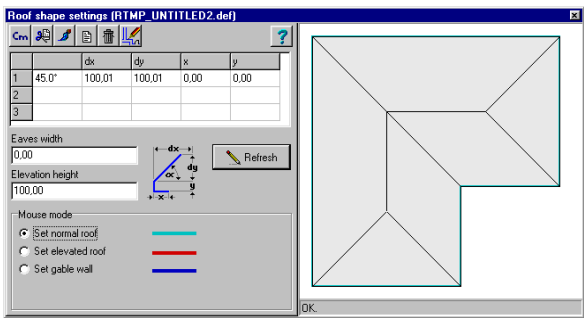



Figure 64. Quick roof editor dialog

Contents of the dialog box:

functional icon

definition field



field for entering default width and elevation height


informational icon 

button for refreshing the picture of the roof,


buttons for selecting the function of the mouse,

statusline for messages about the roof creation process.

  Switch between cm and inch measure units.

 The function **clears** the definition field and the roof parameters.

 You can set the **surface properties** of the roof.

 Quit editing, **erase the roof and return** to the floorplan editor.



Save the roof and return to the floorplan editor.

In the definition field, the program defines a series of sections in one line as shown in the icon. The icon shows a cross-section of the roof as if we looked at it parallel with the wall.



The data definitions are as follows:

X horizontal overhang

Y vertical elevation

Alpha degree of the sloping ledge

dx length of the sloping ledge in the x direction

dy length of the sloping ledge in the y direction

In one line you can see a definition of a series of sections shown in the icon. The roof can be built up by the side of these ledges as intersections of planes. To all the roofedge-contours, a definition must be assigned, which can be

- normal roof setting
- elevated roof or
- gable end.

A rising roof edge can be composed of three successive sections as shown in the icon. In each line, the X, Y values can be entered or omitted. The degree, the value of dx, dy are interdependent on each other. When entering values, you can choose which two values of the three you know and wish to enter, and the program will calculate the required third value. If you wish the program to calculate that required value, then you need to fill in the other two and after entering the third field, clear that (use Delete or Backspace keys) and hit the **Enter** key. The program will calculate the new value and write it in the field.

Comment: When you use this calculating method, some rounding inaccuracy may take place. The elemental values are the **dx**, **dy** values. The value of **alpha** helps you to fill in the definition field and is only used for reference value.

The field for entering elevation height: The roofedge-contour starts higher by the value entered here. In order to be exact, the roof contour is considered 0 base level and the value you enter is offset vertically from this 0 base. This value is used for those roof contour sides which are set elevated roof (see later).

The field for entering default width: The roofedge-contour starts further out from the wall perimeter by the value entered here. Using this function, you can get a larger eave overhangs.

The **Refresh** button updates the top-view picture of the roof. However, pressing the button is not always necessary because pressing the **Enter** key after entering any roof parameters has the same effect.

You can customize the roof by using the three different roof defining types:

- normal roof ,
- elevated roof or
- gable end.

For each side of the roof contour, one of these types are assigned. To assign a type to a roof contour side choose the type with the buttons and click on a roof contour side on the top view picture of the roof.

Use **Normal roof** setting for the sides on which the roof is not elevated. Using **elevated roof** will shift up the roof planes by the value entered at **Elevation height**. Choosing **Gable wall** setting will result in a vertical cutting of the roof at the specified sides. The three types are shown with different colours on the top view roof contour.

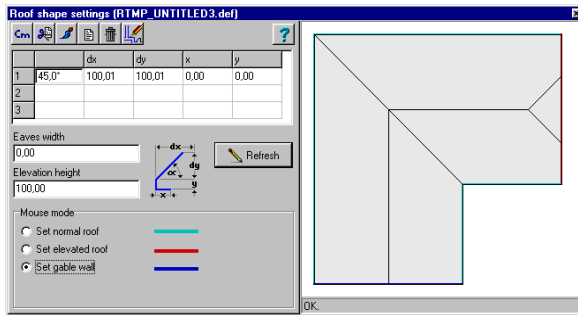


Figure 65. Using different type assignment to the roof contour

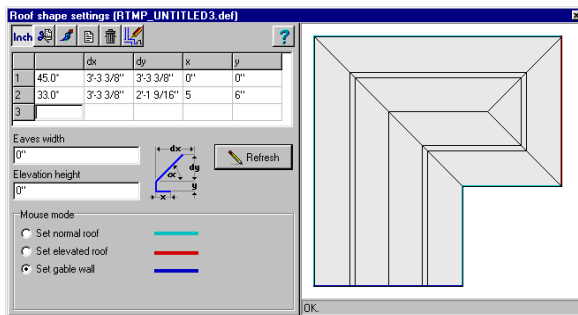


Figure 66. Defining multi-section roof shapes

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