



EXACT ROOFING TUTORIAL MANUAL



Tutorial Two: Advanced

Step-By-Step Instructions To Create A Two Storied Roof

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Overview

This tutorial gives the step-by-step instructions to draw and quote for the following roof plan shown below in Figure 1 and Figure 2.

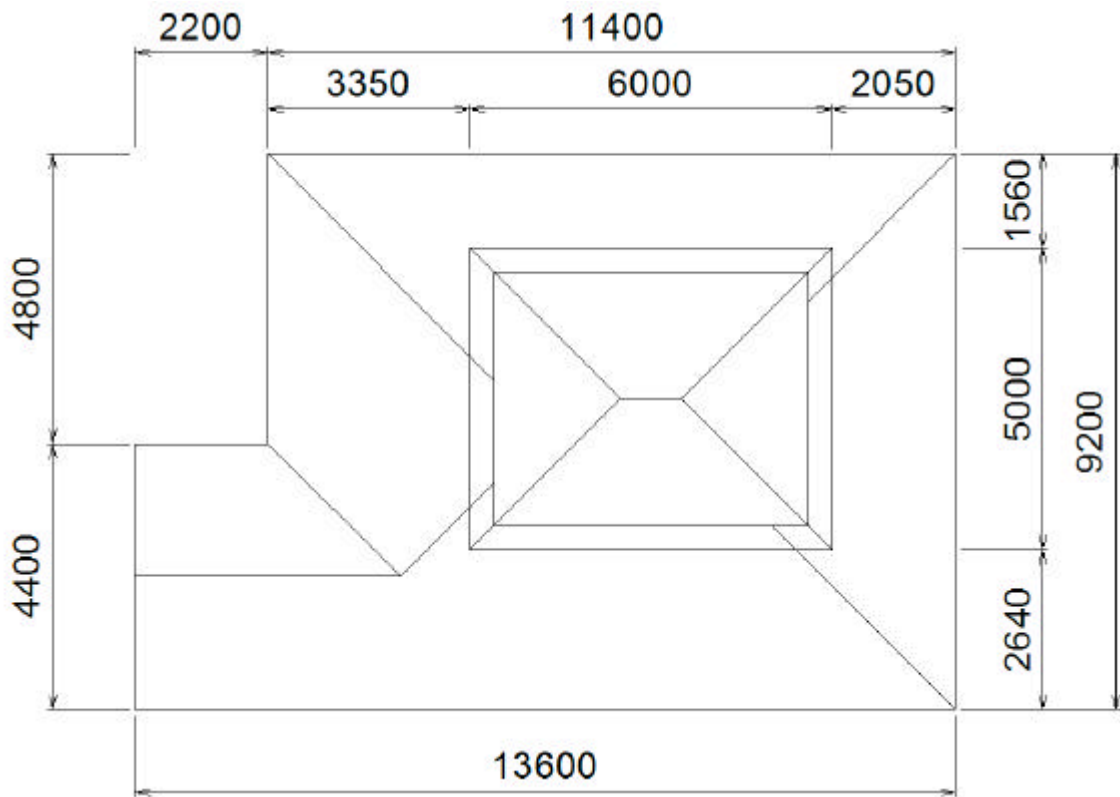


Figure 1

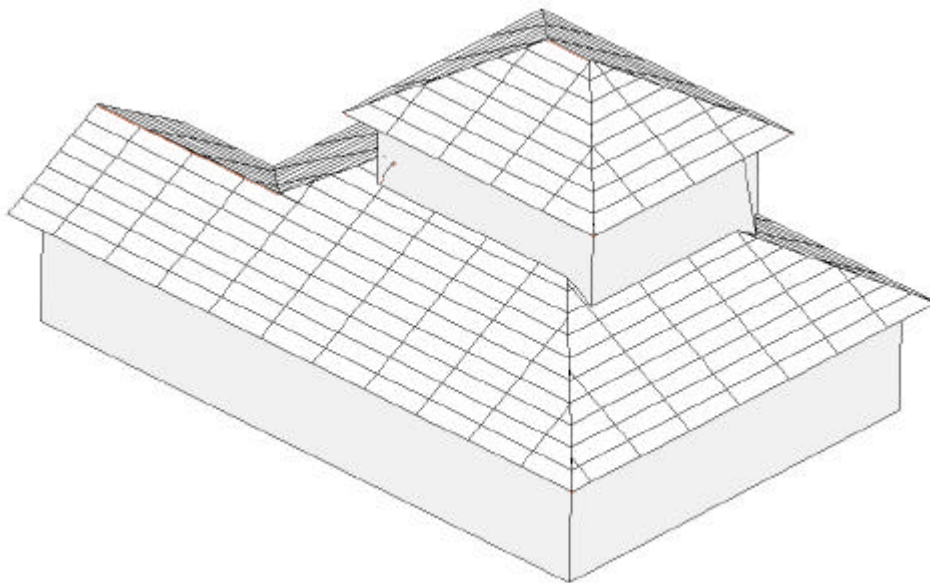
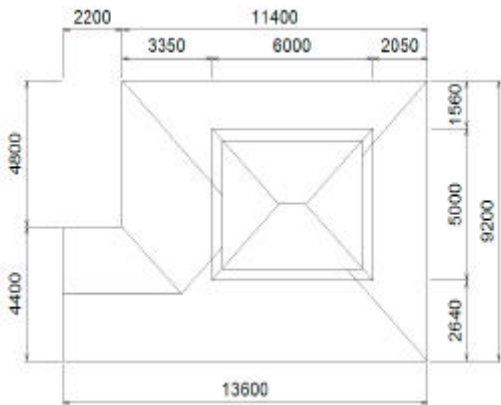


Figure 2

Step 1: Draw the Upper Story



Begin by drawing the outline of the upper storied roof only. Enter from the pull down menu **Plan->Construct->Outline** and draw a 6000mm x 5000mm box as shown below.

Note the letters A, B, C etc... on the following plans are not part of the drawing; they are for describing actions the user should take. Also note that the drawings may not appear the same relative size to the page as seen by the user. That is because the drawings in the examples below may be zoomed in or out. The user

may zoom in and out using the magnifying glass icon with the plus sign to zoom in, and the negative sign to zoom out.

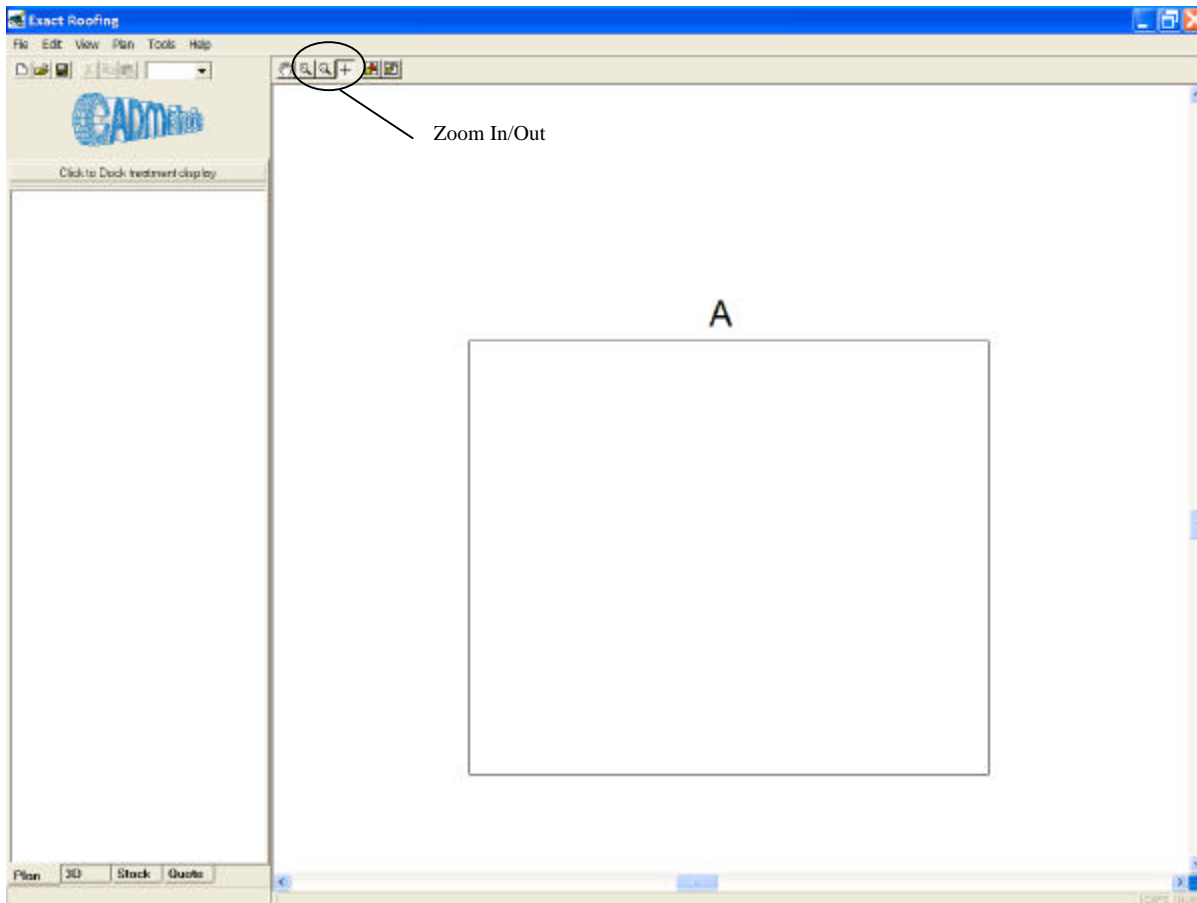


Figure 3

There are three methods which can be used to construct the upper story:

- 1) The upper story can be constructed using the Hip commands and then joining the apex of the two hips to form a ridge similar to how the roof was constructed in the first tutorial.
- 2) Or constructed using the Roof Skeleton Command from the pull down menu Plan->Construct->Roof Skeleton.
- 3) Or if the roof is a simple symmetrical hip roof then the roof can be constructed in one step as follows.

Enter from the pull down menu **Plan->New->Roof Area** or alternatively type the letter “N” for New Roof Area. Move the mouse represented by a cross (crosshair) to the line marked “A” in Figure 3 and click the left mouse button. The screen shown in Figure 4 will appear. In the *Define Roof Outline* window change the Style to *Hip*, change the *height above grade* to 5400, and the walls to *All Edges*, and click the *Next* button.

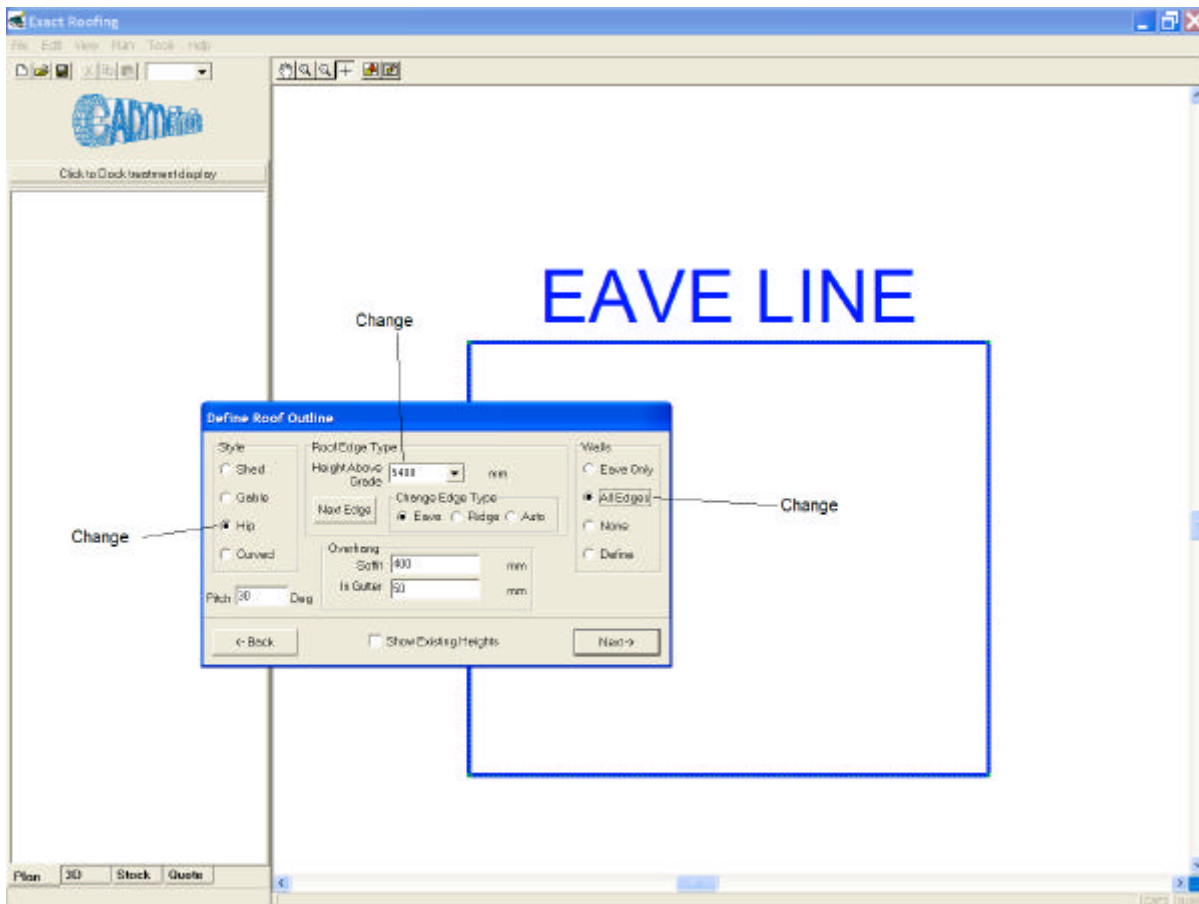


Figure 4

Now specify the products for Ridge, Hip and Eave from the menus and the original outline will be adjusted to the drawing shown in Figure 5.

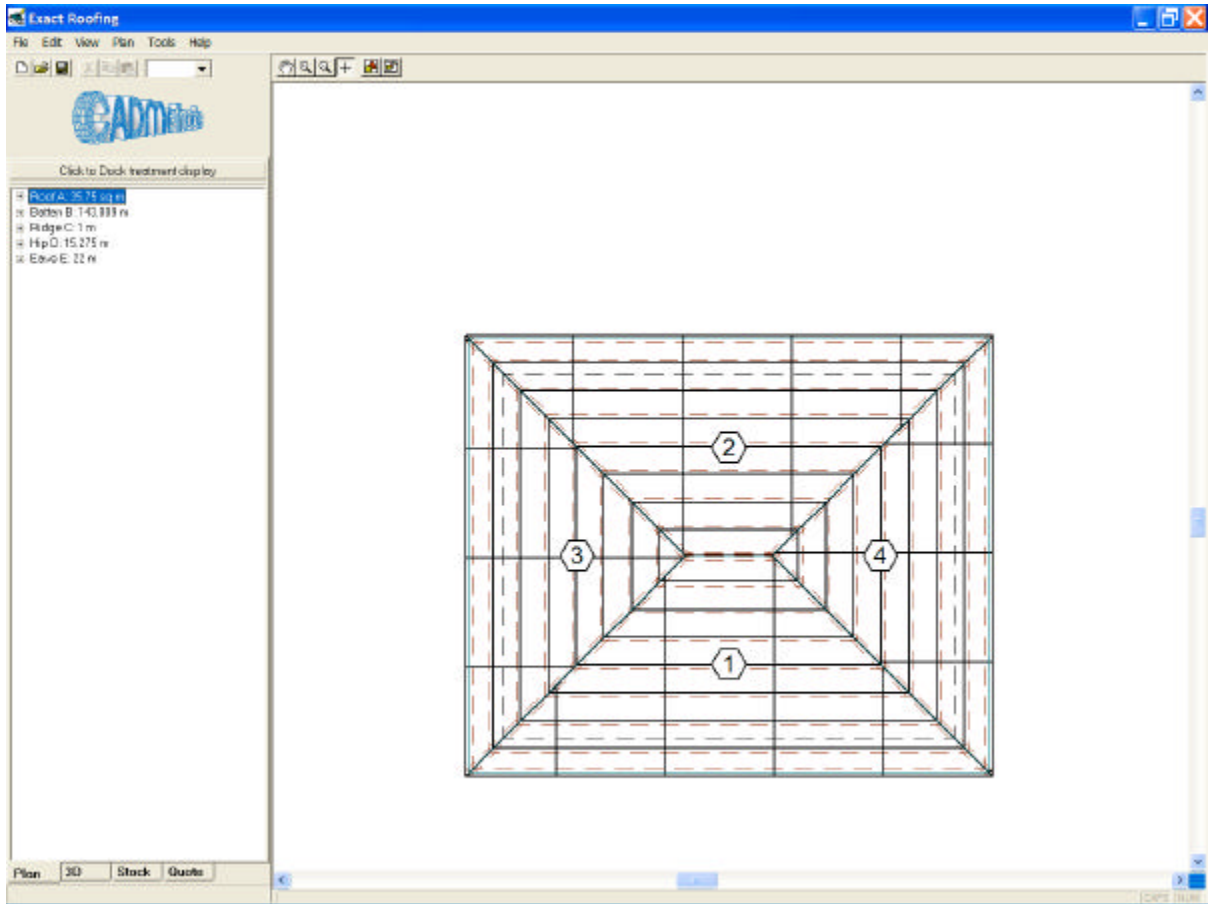


Figure 5

Step 2: Draw the Lower Story

The upper story roof outline and walls (drawn in Step 1) are required to draw the lower story. However, the roofing material and roofing timber shown in the adjusted top story (Figure 5) will throw confusion into the drawing. It is possible to hide roofing material so that only the outline of the roof can be seen. It is not necessary, but it may also be desirable, to draw the lower story outline in a different layer from the upper story.

Select from the pull down menu **Tools->Layers/Graphics**, a window will appear as shown in Figure 6. Turn off the Roofing and Timber layers by clicking on the icons. Note that the icon is a toggle, meaning the layer can be clicked on or off at any time. Now click on the *Drawing Layer Options* button to create a new layer as shown in Figure 6. All lines from now on will be drawn in the second layer. A pencil image is shown in the Outline layer that is active next to the eye toggle.

Note the window can be moved around the page by clicking on the shaded area at the top of the window, and while holding the left button down move the pointer. The layer window can be moved to any position or de-activated by clicking in the "x" box at the top right hand corner. If it is de-activated it can be re-activated at any time from the pull down menu.

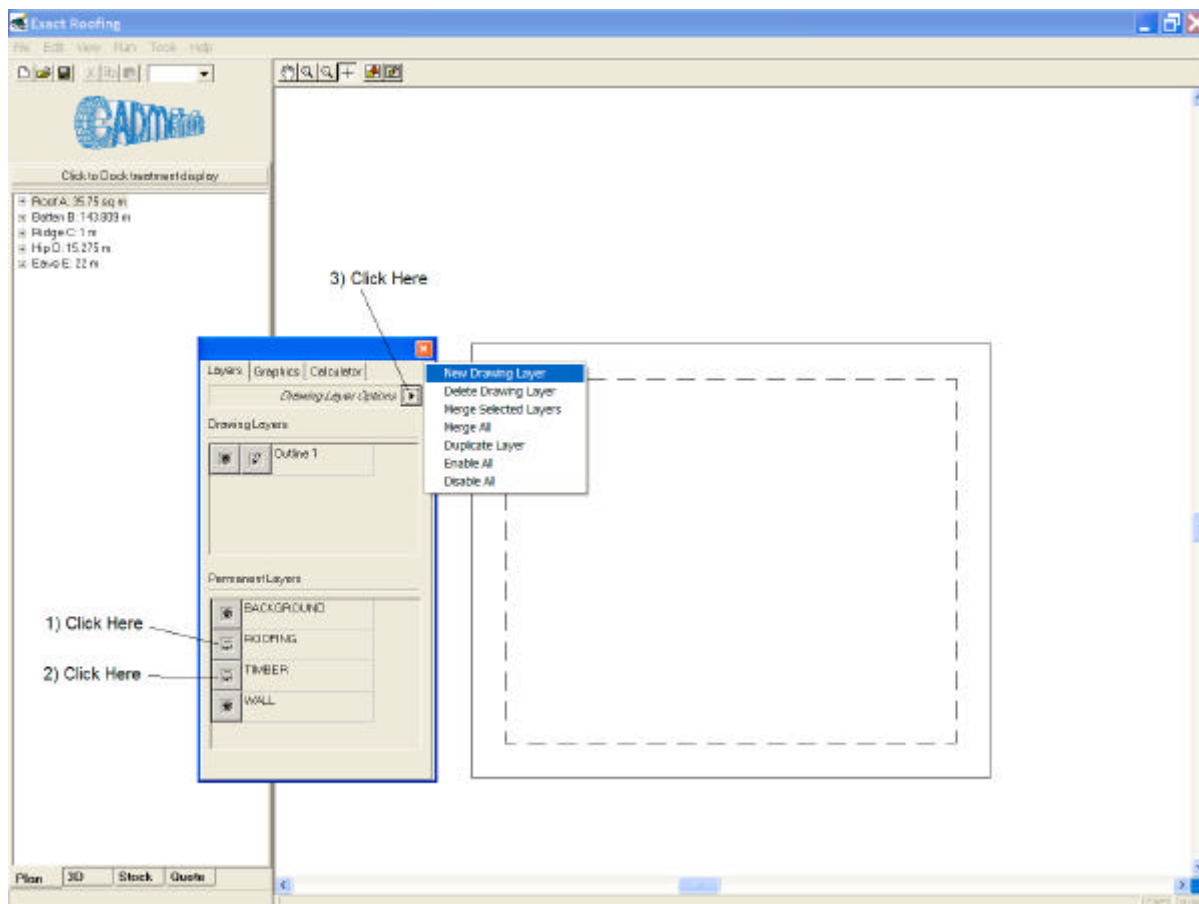
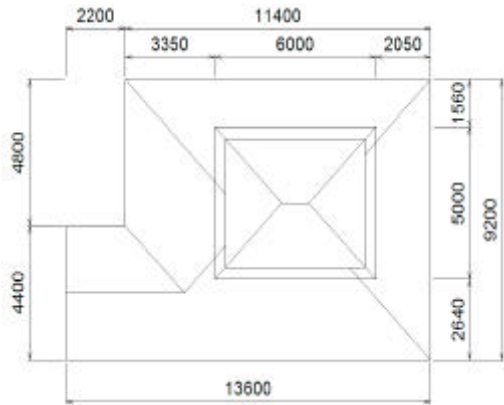


Figure 6

Prior to drawing the lower story outline it may be more convenient to zoom out using the magnifying glass with the negative sign. Select the pull down menu **Plan->Construct->Outline** and move to the top left corner of the previous upper story. Now move the pointer in the general direction of the top left hand corner of the lower story and click the left mouse button.



The direct distance and angle to the corner is not known but we do know the horizontal and vertical offsets from our drawing guide. By changing the *Horizontal offset to -3350* and the *Vertical offset to 1560*; as shown in Figure 7 below the direct distance and angle will be automatically calculated. Now change the Line Command from a *Draw* to a *Move*, as you wish to “move” to the corner rather than “draw” a line to the corner. Click on the next button and you are now in the correct starting point to draw the outline for the lower story.

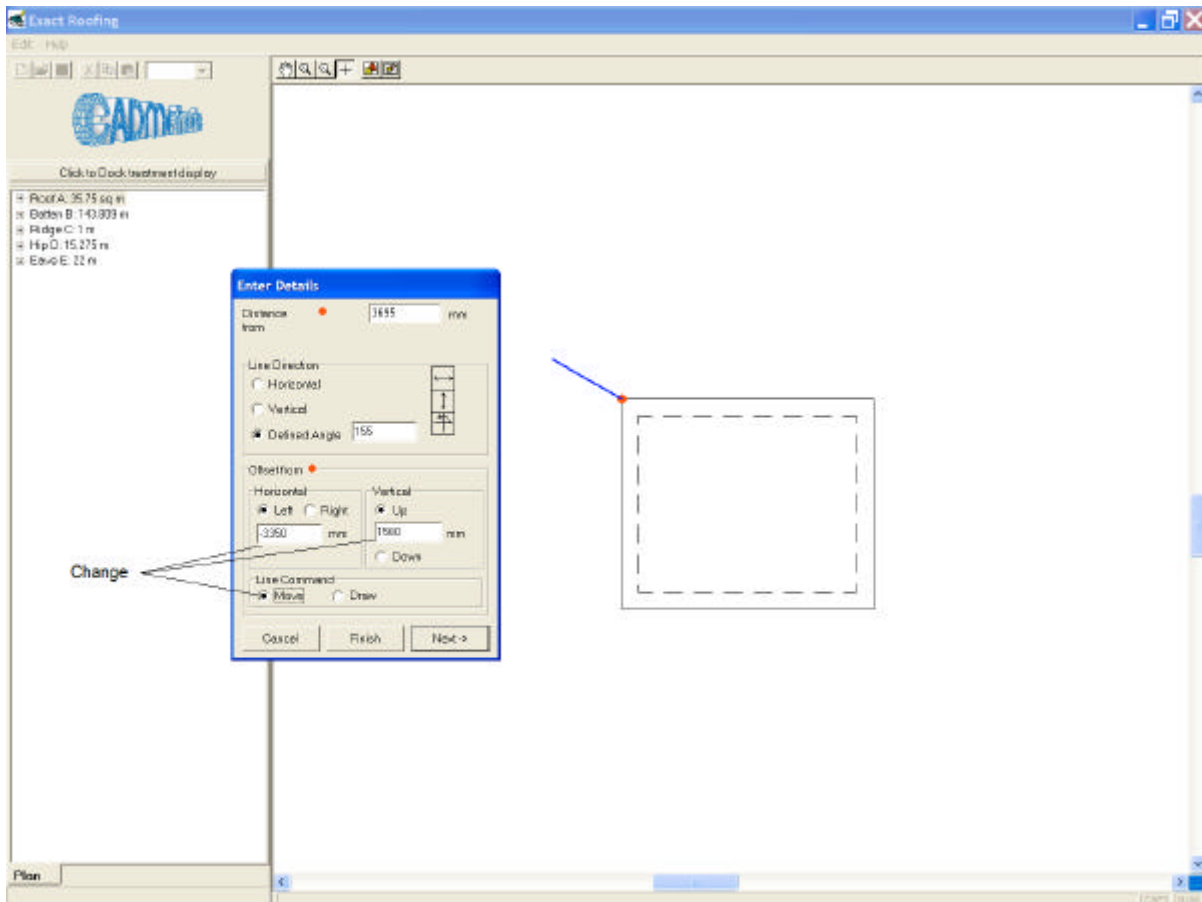


Figure 7

Now construct the lower story outline and create a drawing similar to that shown in Figure 8 below.

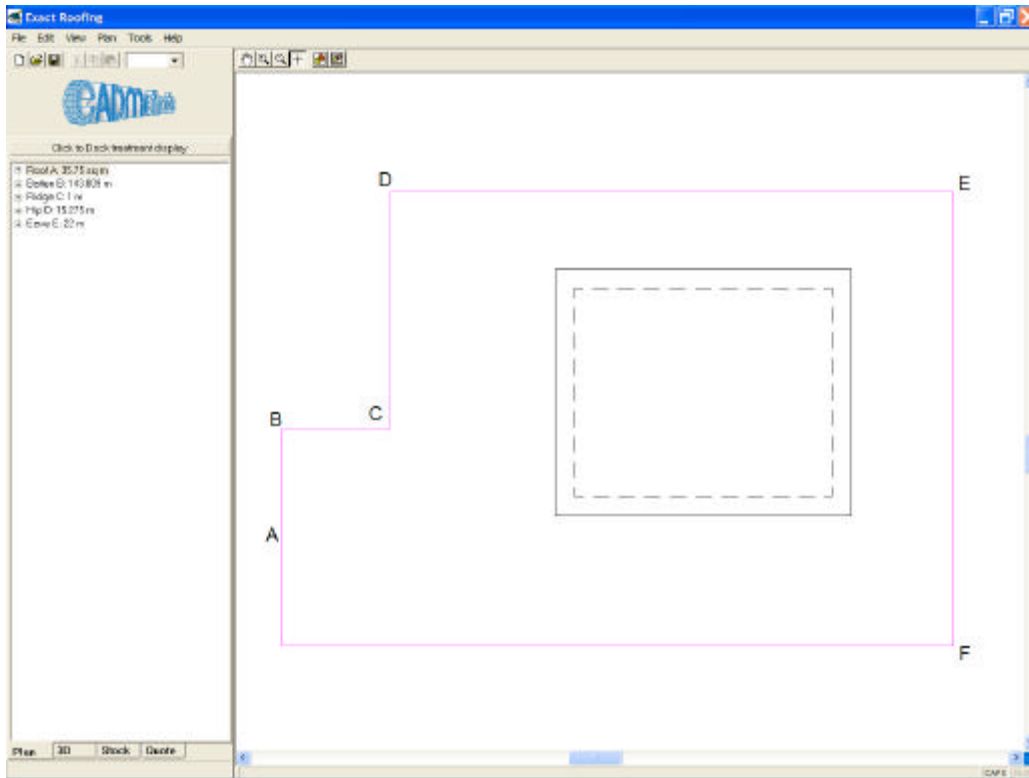


Figure 8

From the pull down menu **Plan->Construct->Bisector** construct the bisectors at points A, B, C, D, E and F. Select "R" on the keyboard to repeat the last command after each bisector. The drawing should look similar to Figure 9 below.

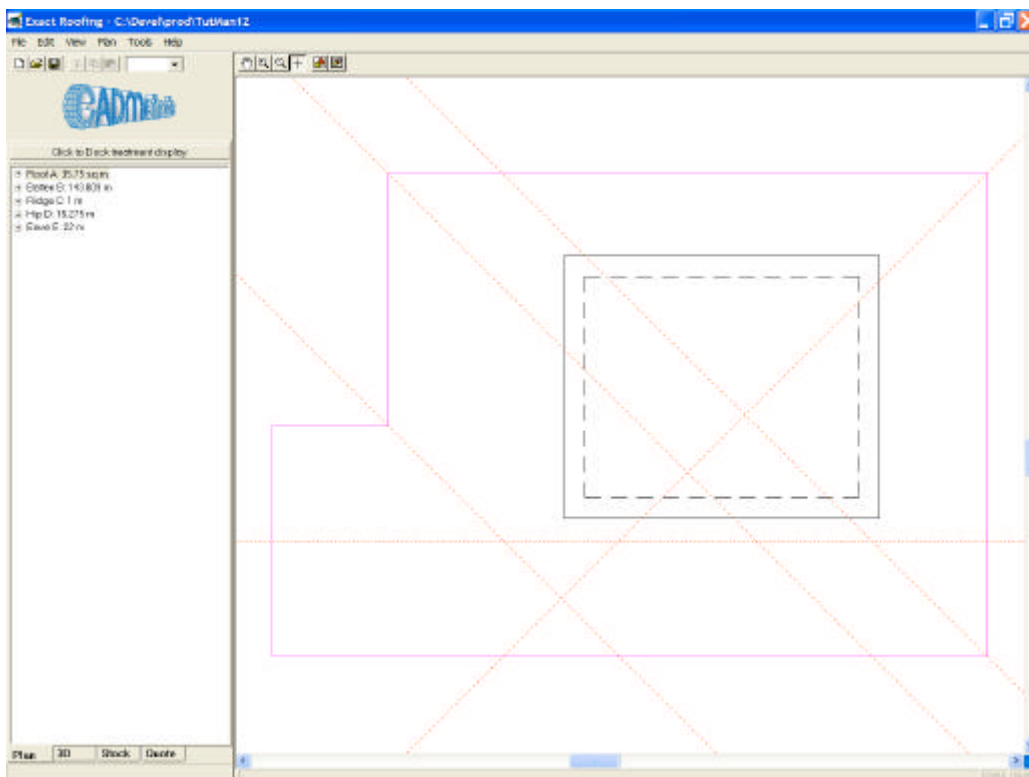


Figure 9

Now using **Plan->Construct->Point of Intersection to Point** join up the points of the ridges, hips and valleys. Again remember to select the command each time or use "R" on the keyboard to the repeat the last command. The drawing should be as shown in Figure 10. Now remove the

bisectors with the **Plan-> Construct->Remove All Bisectors** pull down menu or alternatively use the shortcut "M". Note there is one hip missing, which will be constructed now.

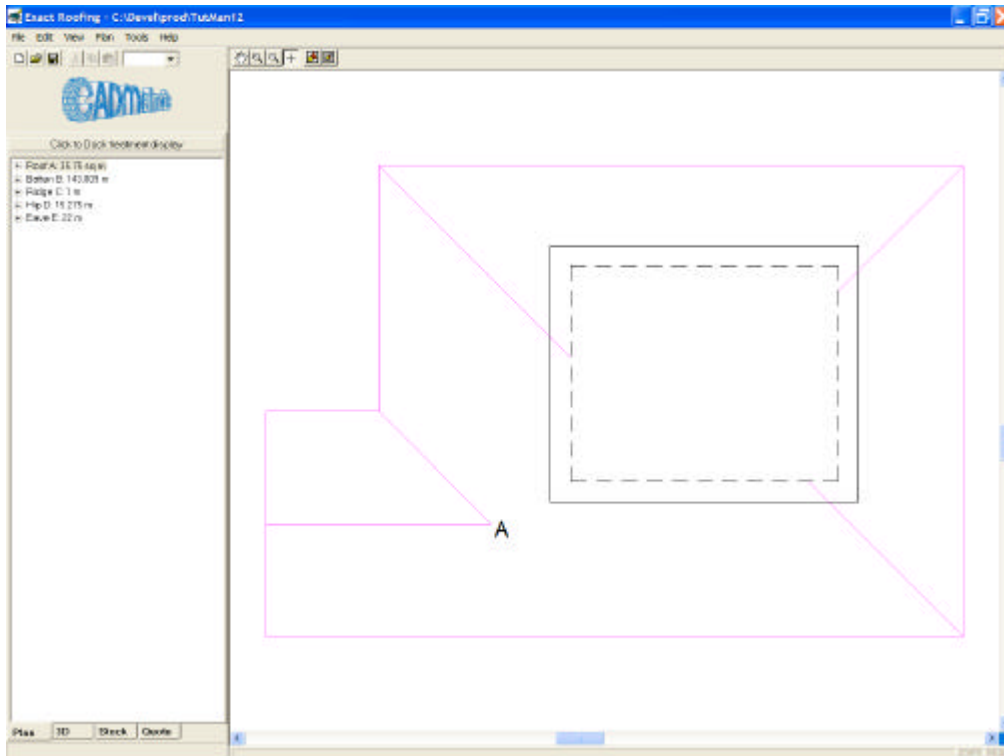


Figure 10

The best method of drawing the missing hip is to draw a construction line (a bisector is just one form of a construction line) at 45 degrees from point "A"; then use the Point of Intersection to Point command to draw the hip.

Select the pull down menu **Plan->Construct->Polyline** and point to the pointed marked "A" in Figure 10. Now move the pointer off at 45 degrees past the wall, as shown in Figure 11 and click the left mouse button.

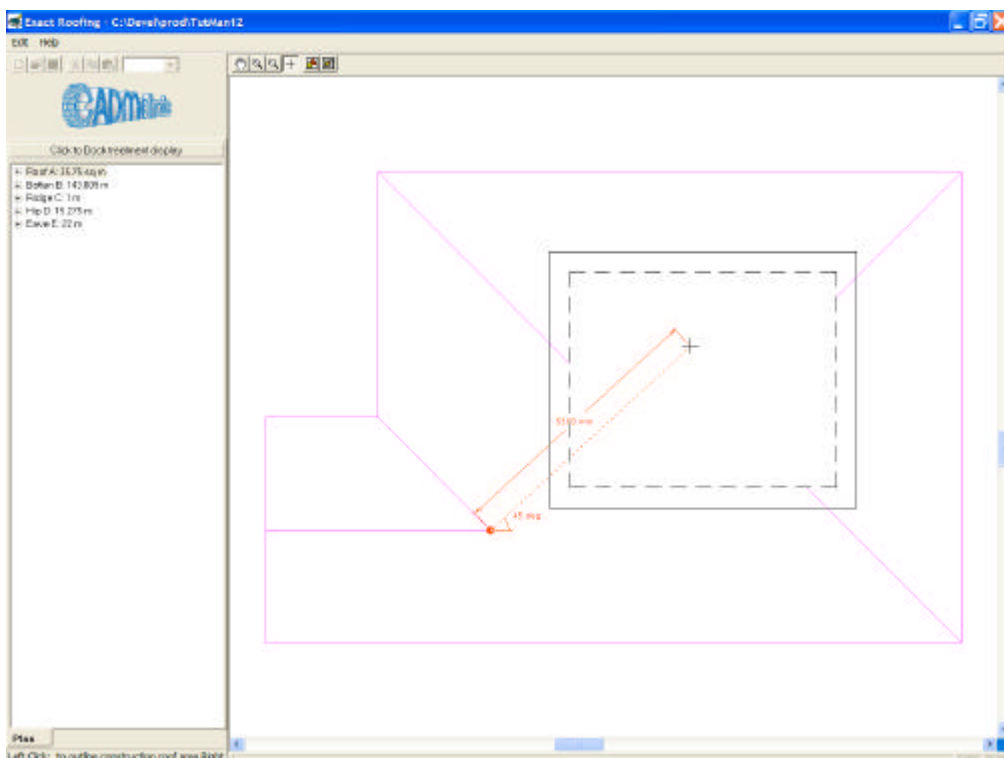


Figure 11

Now a window will appear as shown in Figure 12. Change the Line Command to “Construct” and click the *Next* button. Now, as there are no more polyline commands to do, click the “right” mouse button and select exit. You will now have the required construction line.

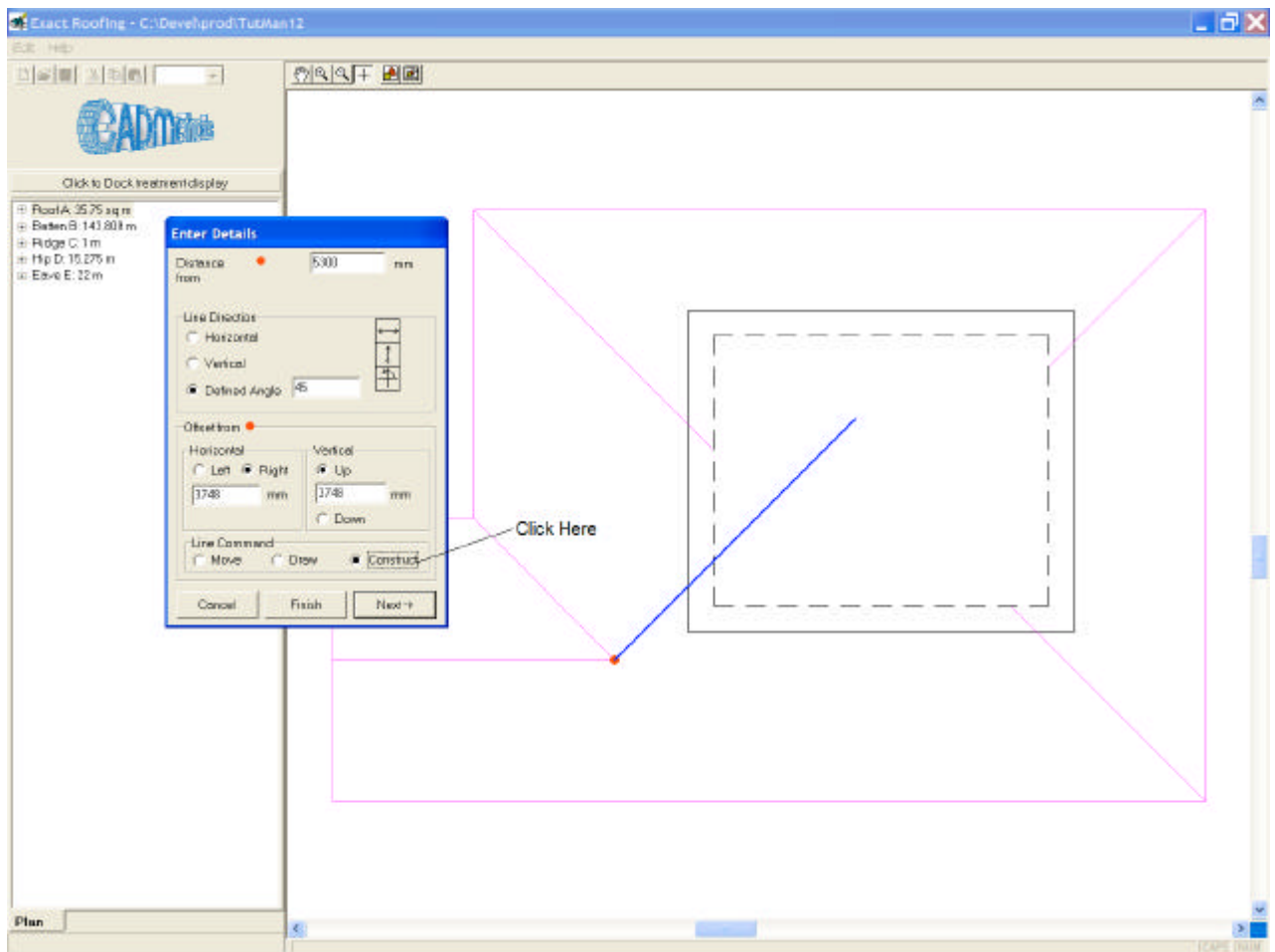


Figure 12

Now using **Plan->Construct-> Point of Intersection to Point** or keyboard shortcut “I” draw a line from point “A” in Figure 10 to the wall of the upper story to draw the last hip. Now remove the bisectors with the **Plan->Construct->Remove All Bisectors** from the pull down menu or keyboard shortcut “M”.

The drawing should now appear as in Figure 13 and the line drawing part is complete.

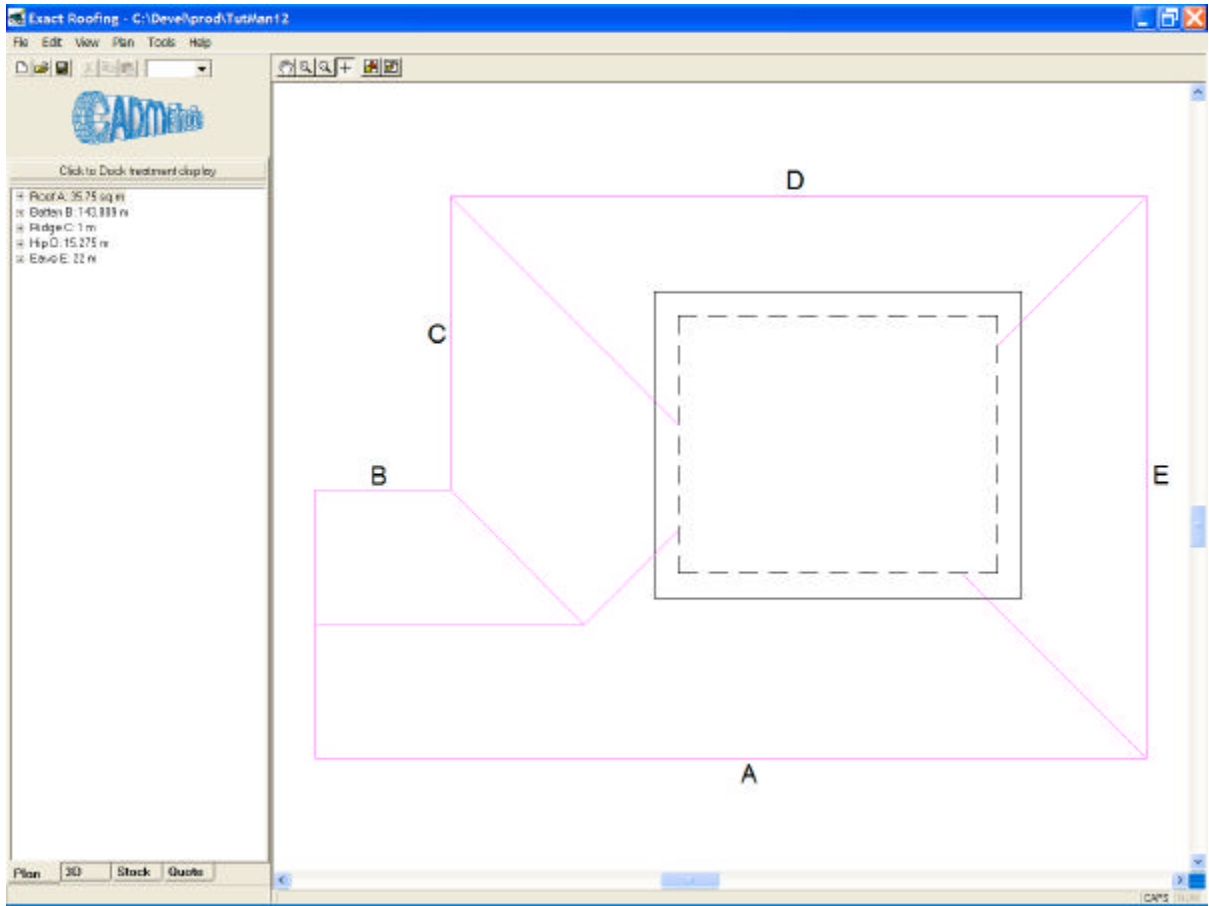


Figure 13

Step 3: Input the Lower Story Roofing Material

Enter from the pull down menu **Plan->New->Roof Area** or alternatively type the letter “N” for New Roof Area. Move the crosshair to the line marked “A” in Figure 13 and click the left mouse button. The screen shown in Figure 4 will appear. In more complex roofs there are several possible solutions for any one roof, so there are several “Search Methods” available to the user. Clearly the first attempt by the program failed to arrive at the desired result, so click on the *back* button and a window will appear as show in Figure 15.

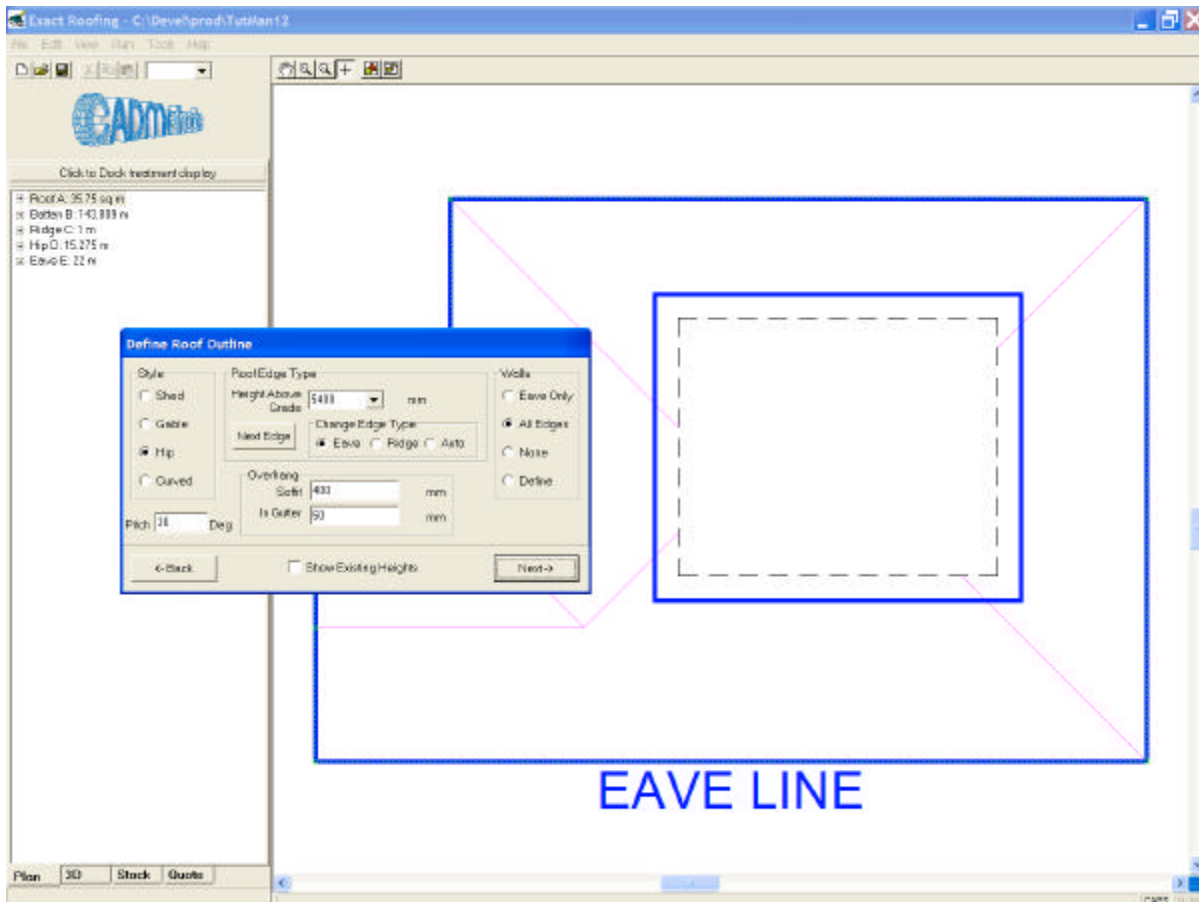


Figure 14

Click on the Yes button to try a different search method.

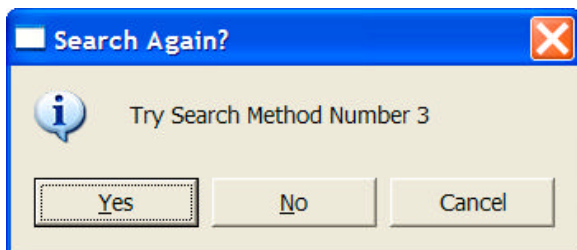


Figure 15

The *Define Roof Outline* window will appear. Change the Style to *Shed*, change the Height above Grade to 2200, change the Walls to *Define*, and click the *Next* button.

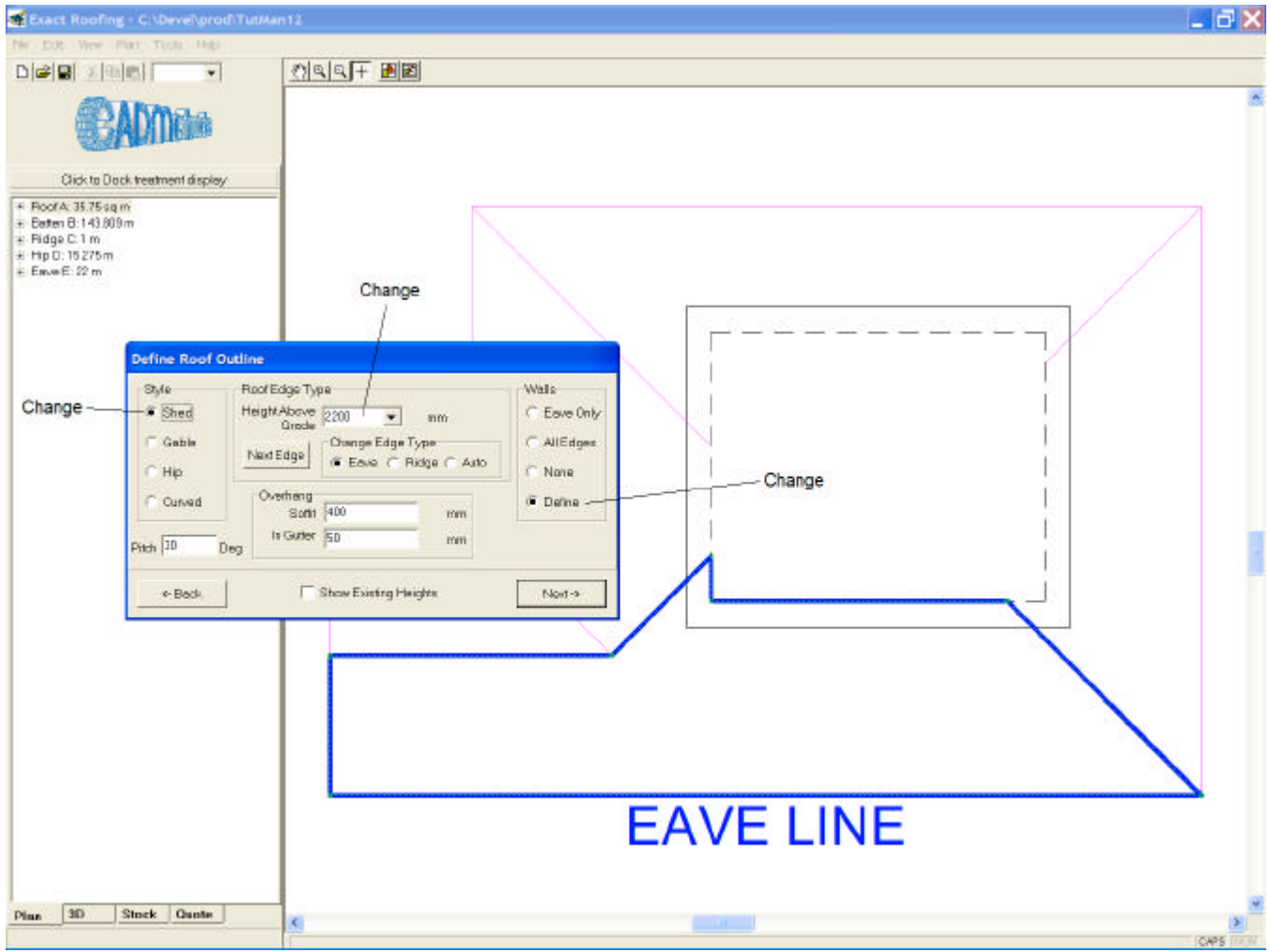


Figure 16

As *Define Walls* was selected you can now define the individual offsets for each wall. Walls 1 and 2 should be offset 400 whereas walls 3 to 7 have no offset. Hence move the mouse pointer down to Wall No 3 to highlight the row and click on the *Set No Offset* button. The highlighted box will automatically move down to Wall No. 4 so click on the *Set No Offset* button again, until Wall No. 7 is reached. The drawing should now look similar to that in Figure 18.

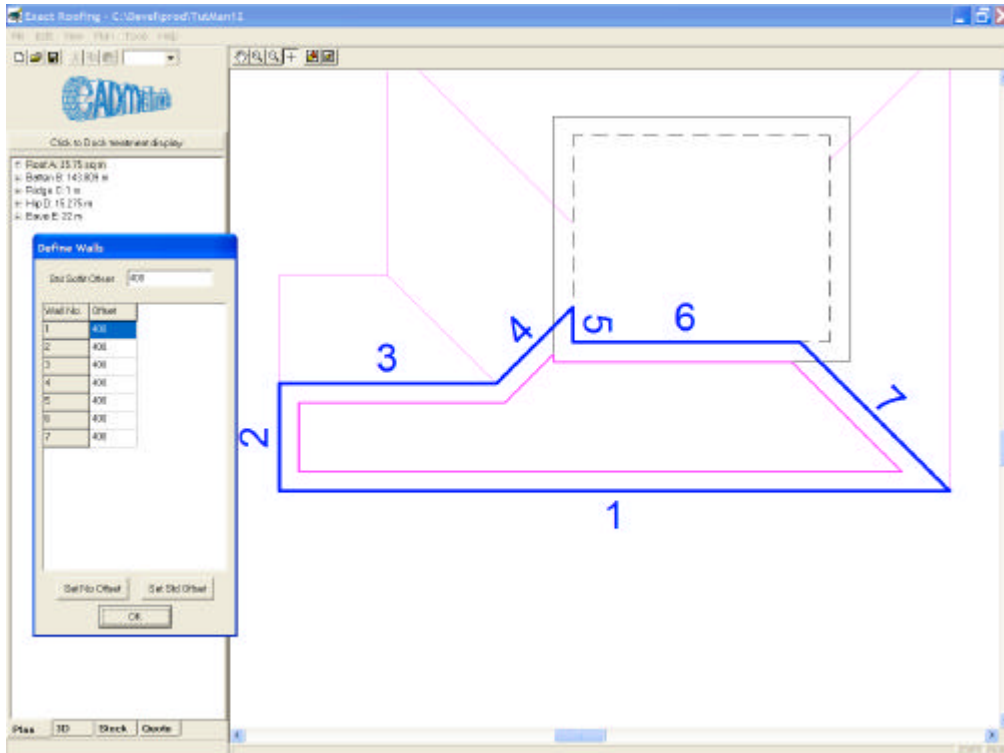


Figure 17

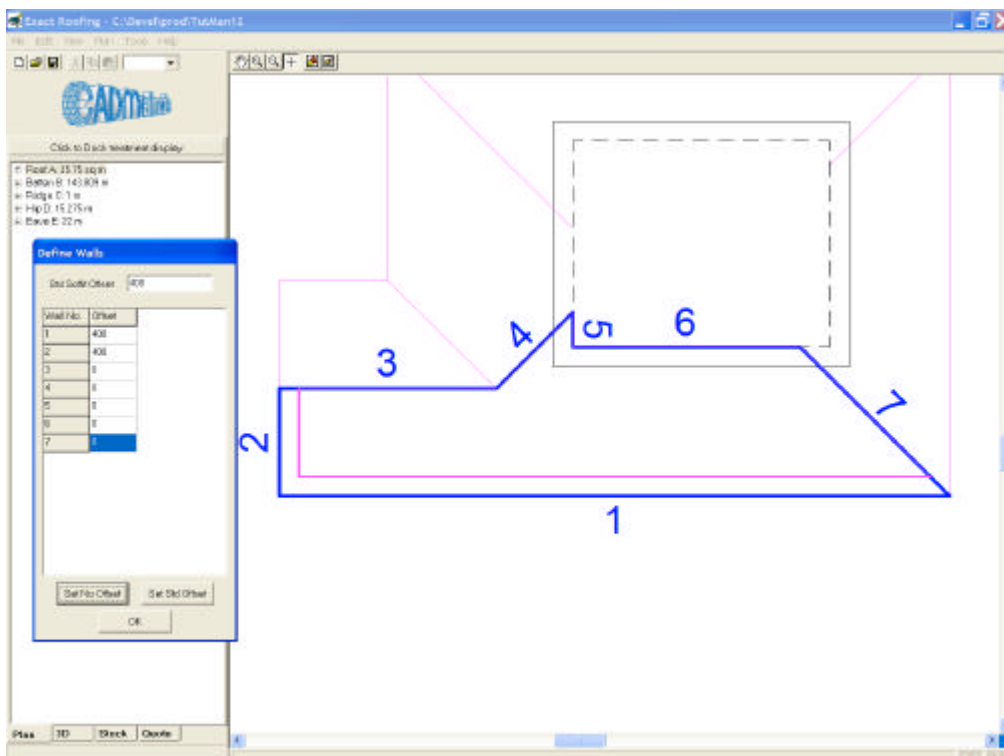


Figure 18

Note that the *Set No Offset* button and the *Set Std Offset* button are convenient ways to set the wall offsets. Individual offsets can be entered into the grid if required.

Now click on the *OK* button to proceed to defining the products.

You will be requested to enter the products for the Barge; and as the program will detect that the roof meets the wall of the upper story, the program will also request products for the Side Ledge and Upper Ledge.

Once the menus are completed the drawing should look similar to that shown in Figure 19 below.

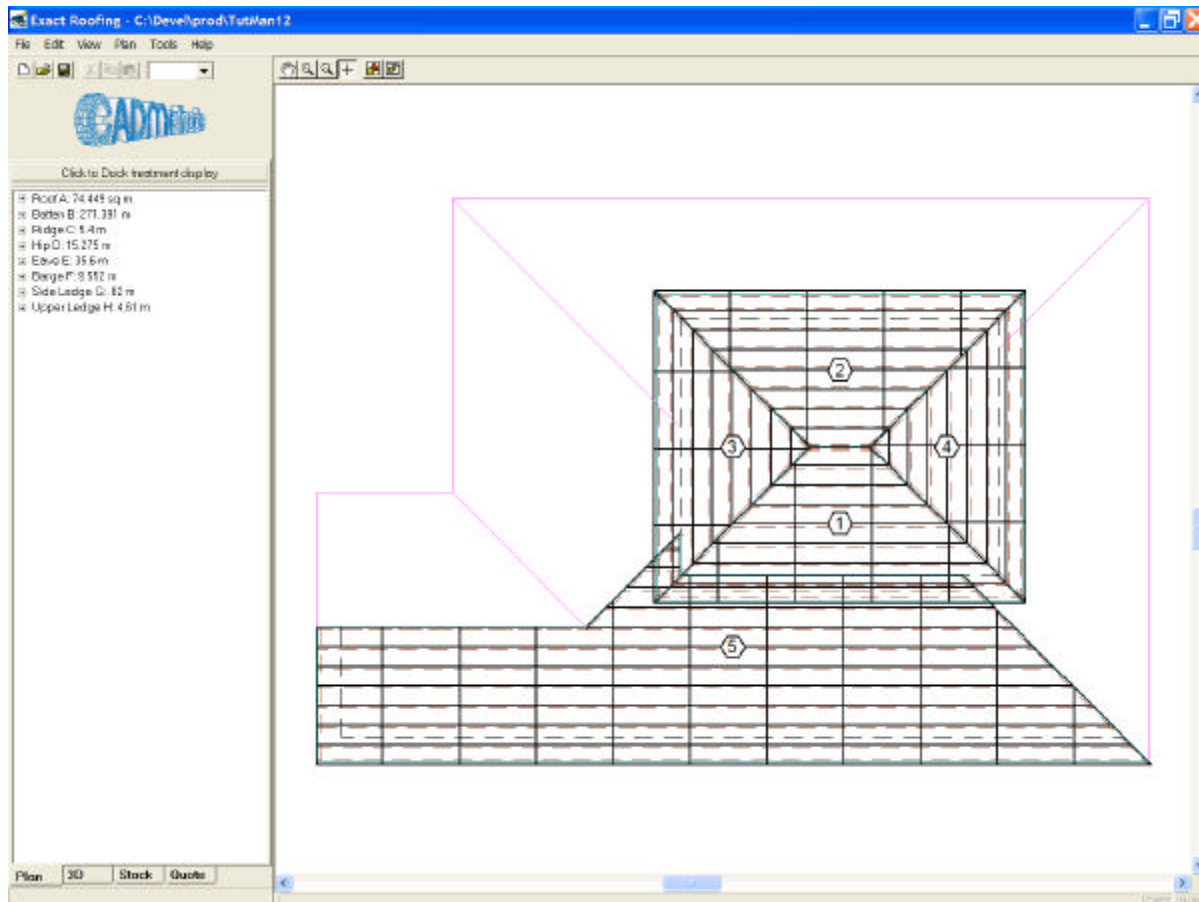


Figure 19

Select the pull down menu **Plan->New->Roof Area** or alternatively type the letter “N” for New Roof Area. Move the crosshair to the line marked “B” in Figure 13 and click the left mouse button. The Walls radio button should remain on from *Define*. This time set the walls numbers 2 and 3 to no offset.

Now select the pull down menu **Plan->New->Roof** or use the keyboard shortcut “N” for New Roof Area or “R” for repeat last command. Move the crosshair to the line marked “C” in Figure 13 and click the left mouse button. The first search method will fail, and after clicking on the *Back* button so will the remainder of search methods. (The search may have been successful depending on exactly how the outline was drawn, however the following method of entering a roof is valid in all circumstances, but it’s main use is for manual entry if the search methods fail).

Select the pull down menu **Plan->New->Roof Trace...** as shown in the Figure 20.

Now trace around the perimeter of the roof section as shown in Figure 21, and when the tracing is completed click on the *Finish* button.

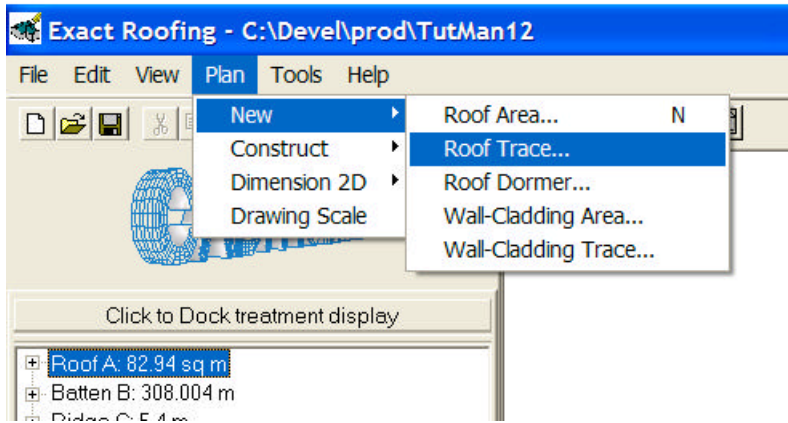


Figure 20

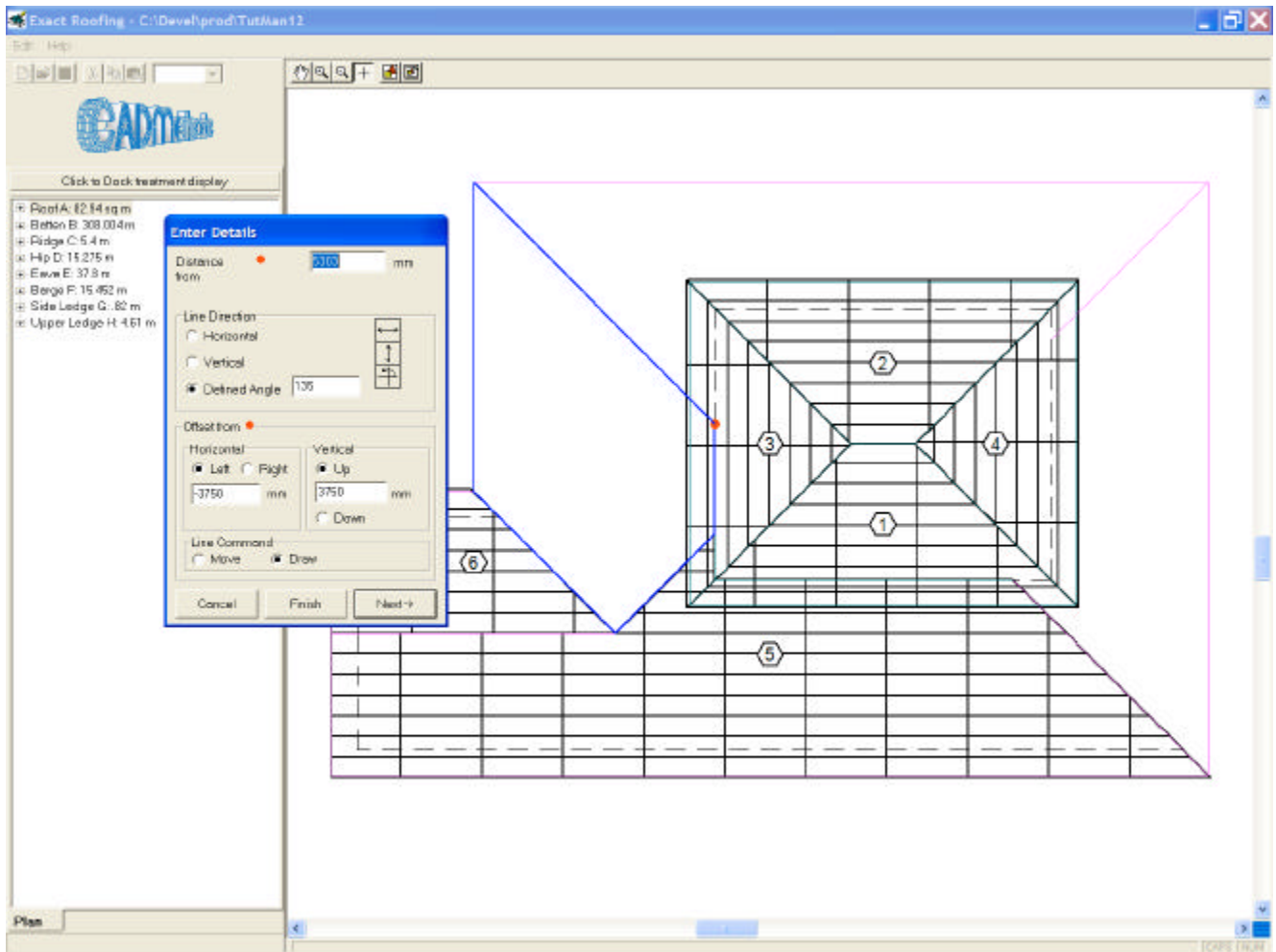


Figure 21

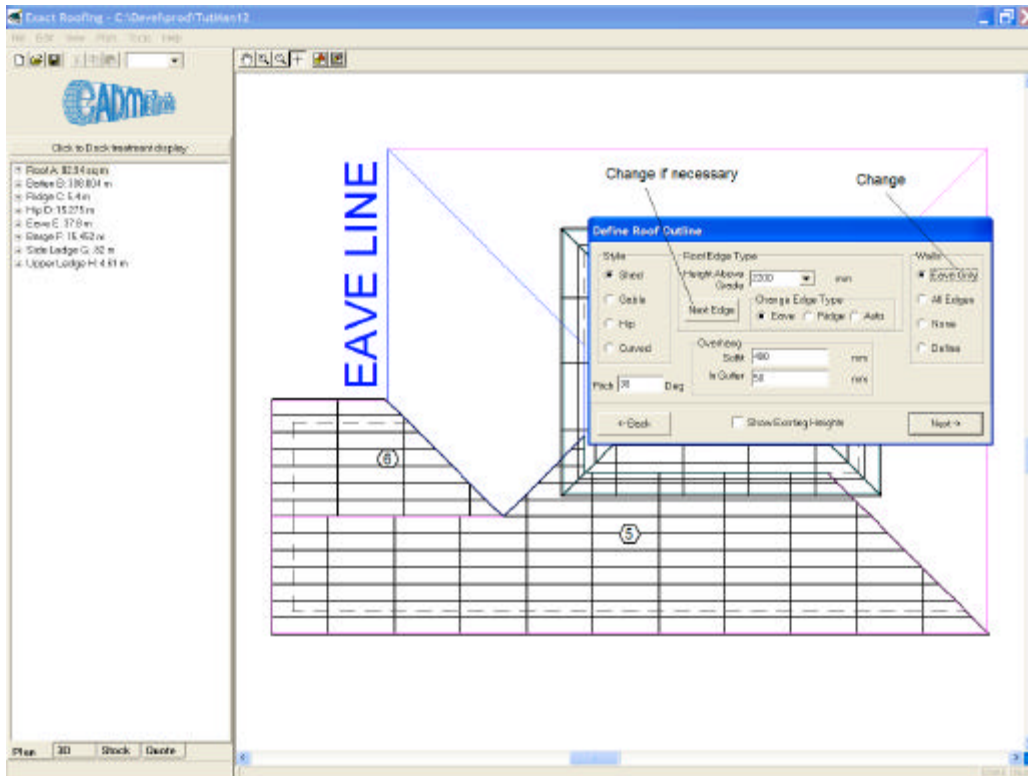
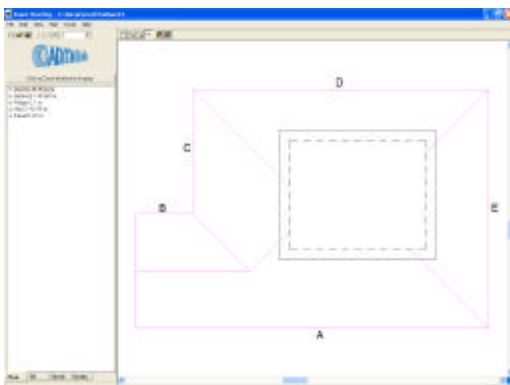


Figure 22

By default the Eave Line will be the first line traced. If the Eave Line is not adjacent to the actual eave, then click on the button *Next Edge* to move the eave line around the perimeter.

Change the Walls from *Define* to *Eave Only*. The *Eave Only* option sets the standard offset for the eave, and no offset for the other walls and is faster than going through the *Define* option. When complete click on the *Next* button. The program will automatically detect a valley will be prompted to enter products for the valley.



Select the pull down menu **Plan->New->Roof Area** or alternatively use the keyboard shortcut "N" or "R". Move the crosshair to the line marked "D" in Figure 13 and click the left mouse button. Do the same for the line marked "E".

The drawing should now be similar to that shown in Figure 24 below. The drawing process is complete.

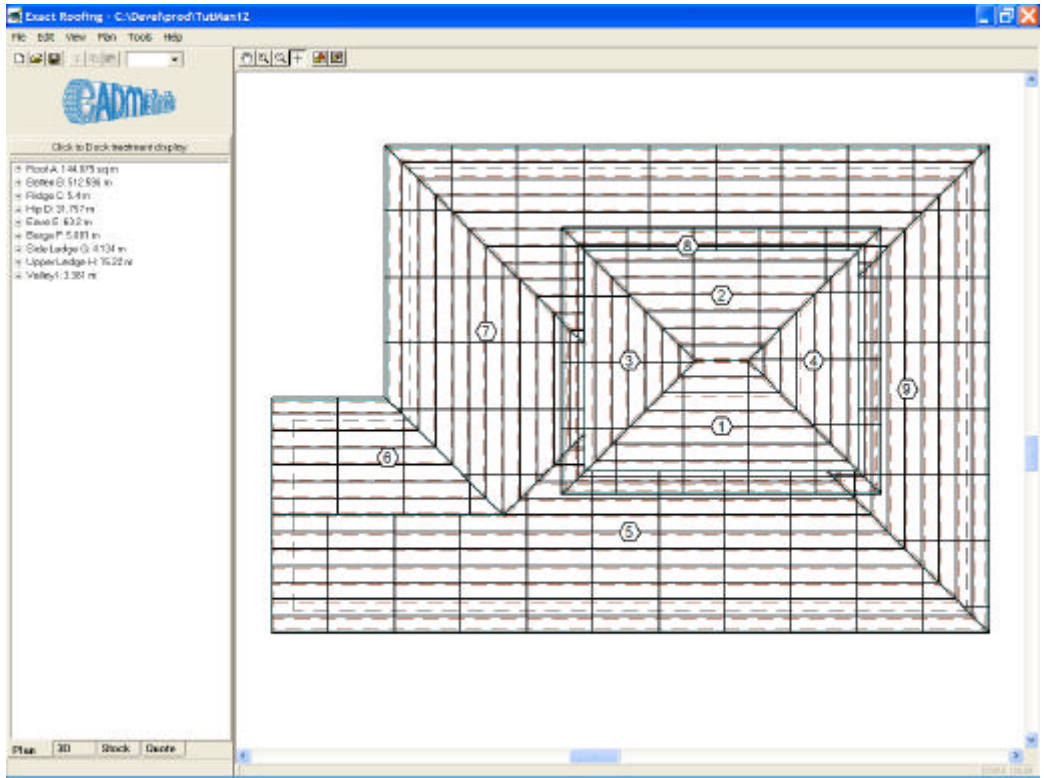


Figure 24

Step 4: 3D View

Select the pull down menu **View->3D** or alternatively click on the *3D* Tab at the bottom left of the main window. The drawing should be similar to that shown in Figure 25 below. Use the button to rotate the house to check that no input errors have been made. If there are errors, return to the Plan view, and click on the Tree diagram to amend the drawing.

The 3D View may be printed as it is often useful for marketing purposes.

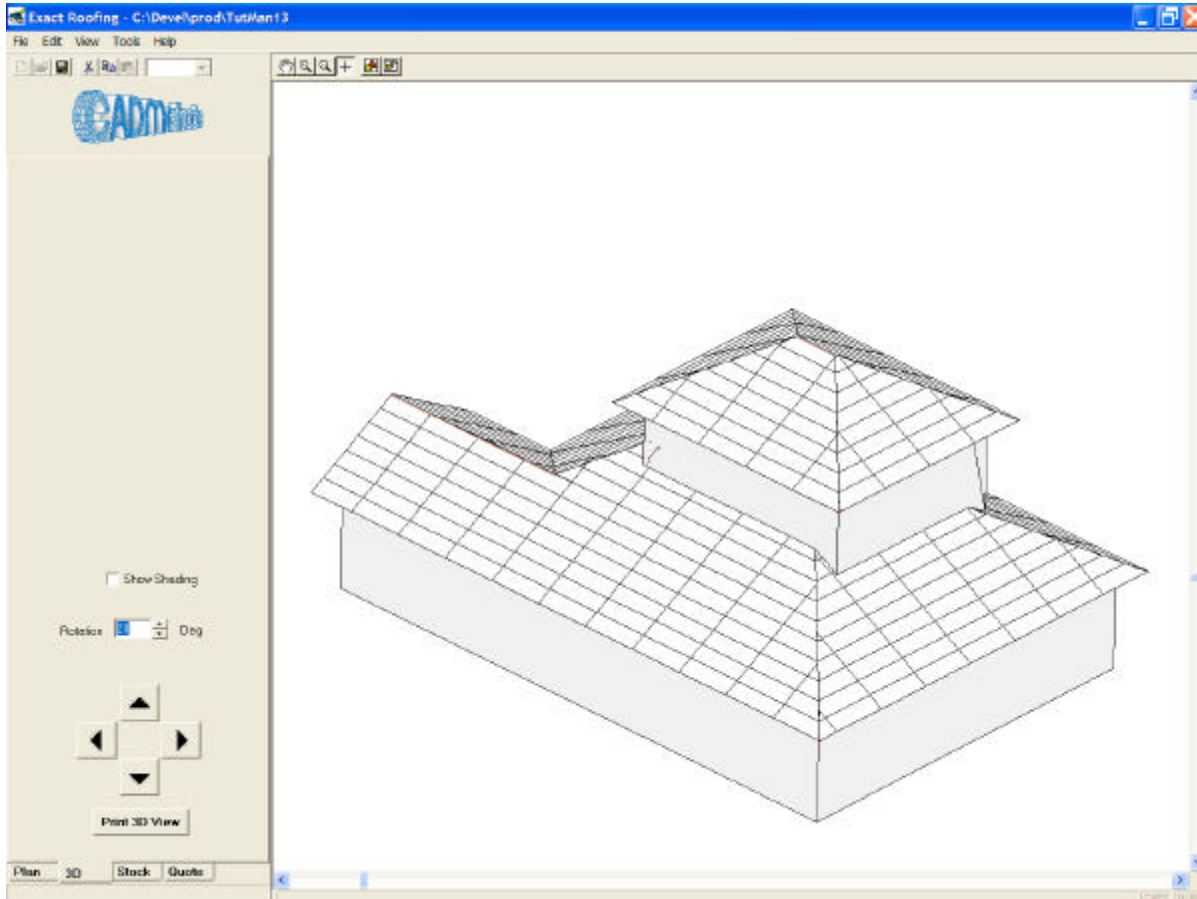


Figure 25

Step 5: Stock View

Select the pull down menu **View->Stock** or alternatively click on the *Stock* Tab at the bottom left of the main window. The drawing should be similar to that shown in Figure 26 below. This drawing shows the individual tiles and is of little value for normal tile drawings. However if long run was selected an optimized layout of the roofing will be displayed.

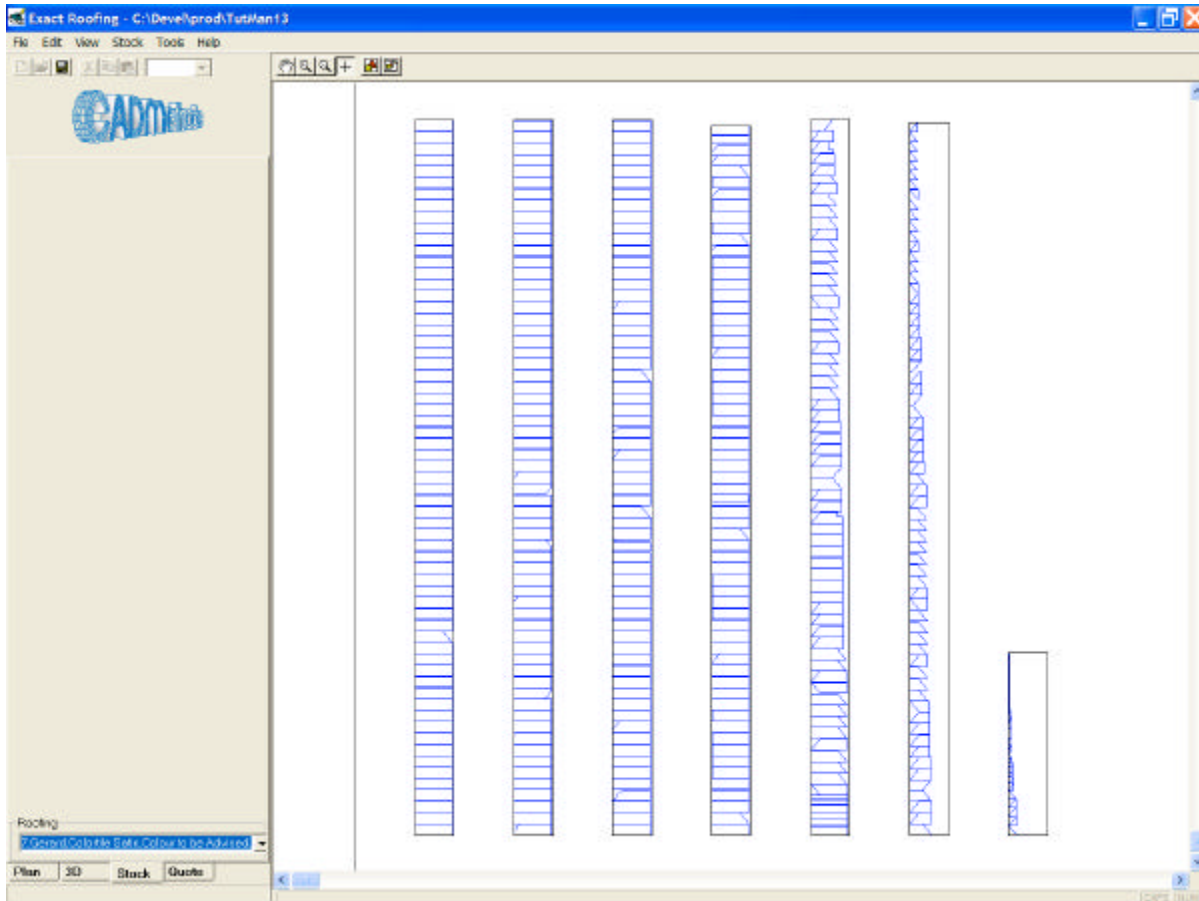


Figure 26

Step 6: General Project Input

Select the pull down menu **View->Quote** or alternatively click on the *Quote* Tab at the bottom left of the main window. The drawing should be similar to that shown in Figure 27 below.

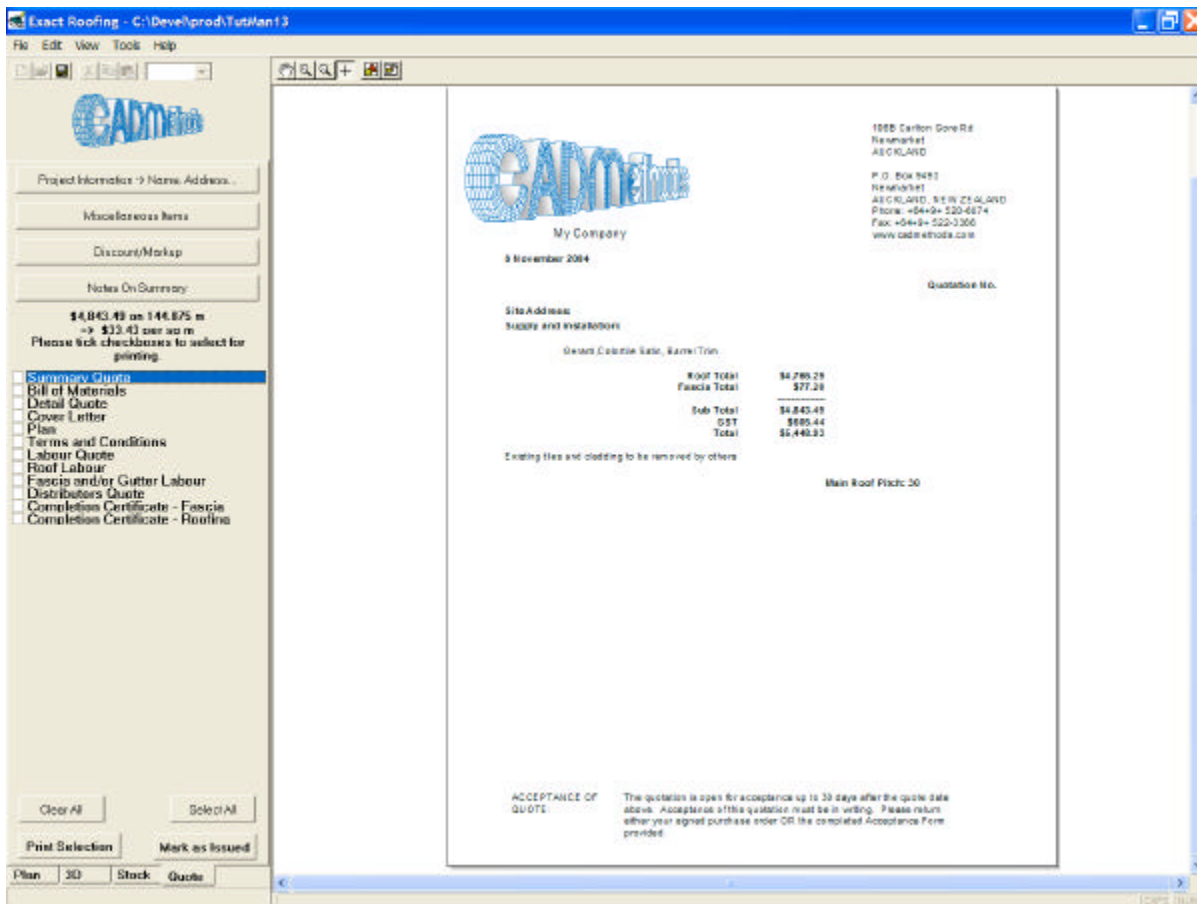


Figure 27

The General Project information should now be input via the buttons of the left hand side of the main window, namely:

Project Information->Name, Address...

Miscellaneous Items

Discount/Markup

Notes On Summary

Project Information->Name, Address....

Select the *Project Information->Name, Address...* button. A window will appear as shown in Figure 28. Enter the information pertaining to the job. This information will appear on the printouts. Note the options in the Summary Footer may change depending on the setup options selected in configuration file. The *SAP info* button allows entry of more information for exporting to an enterprise management system such as SAP.

The screenshot shows a 'Project Information' dialog box with the following fields and options:

- Header:**
 - Date: 8 November 2004
 - Prefix: AN
 - Quotation No.: [Empty] (New... button)
 - Client Name: [Empty]
 - Address 1: [Empty]
 - Address 2: [Empty]
 - City: [Empty]
 - Phone: [Empty]
 - Attention: [Empty]
 - Site Address: [Empty]
 - Contact Name: [Empty]
- Summary Footer:**
 - Main Rafter Spacing [Dropdown]
 - Commencement Date [Dropdown]
 - Deposit [Dropdown] Balance Due [Dropdown]
 - Fall Edge Prot: Length [Dropdown] M Amount [Dropdown]
 - Representative [Dropdown]
- Specifier:** [Button]
- Cover letter tag:** Include tag
- Status:** This quote is subject to: [Text Area]
- Buttons:** Cancel, OK, SAP info

Figure 28

Select the *Miscellaneous Items* button. A window will appear as shown in Figure 29. Enter the miscellaneous items pertaining to the job. The filters at the top can filter the items visible in the product file to assist selection. Note the first colour filter is *Colour TAB and None*. This filter is hard coded and selects all products with a colour of "Colour to be advised" and those with no colour; effectively eliminating all products with colour from the view.

Miscellaneous Items

Edit Miscellaneous Costs											
Colour	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Clear Filters					
Description	Item Qty	Unit	Base Price	Markup Pr	Total of Pr	Item Type	Item Row	Labour Qty	Labour Co		
<input type="checkbox"/> Barrel End Disc Satin, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	518	144.875	\$1.00	S	
<input type="checkbox"/> Barrel End Disc Textured, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	519	144.875	\$1.00	S	
<input type="checkbox"/> Angle Trim End Satin, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	520	144.875	\$1.00	S	
<input type="checkbox"/> Angle Trim End Textured, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	521	144.875	\$1.00	S	
<input type="checkbox"/> Corolla Nails and Washers,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	522	1	\$1.00	E	
<input type="checkbox"/> Touch Up Kit Satin, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	523	1	\$1.00	E	
<input type="checkbox"/> Paper Kit Textured, Colour to be Advised	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	524	1	\$1.00	E	
<input type="checkbox"/> Site Signs - Large,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	525	1	\$1.00	E	
<input type="checkbox"/> Site Sign - Decal,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	526	1	\$1.00	E	
<input type="checkbox"/> Site Denger Sign,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	527	1	\$1.00	E	
<input checked="" type="checkbox"/> Medium 2 Storey Height Allowance,	120	Each	\$1.00	\$1.00	\$120.00	MiscMeter	528	120	\$1.00	E	
<input type="checkbox"/> 3 Storey Height Allowance,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	529	1	\$1.00	E	
<input type="checkbox"/> Oberon & Senator Height Allowance,	1	Each	\$1.00	\$1.00	\$1.00	MiscMeter	530	1	\$1.00	E	

<p>Total Roof Area = 144.87 sq m Total Tile Count = 355</p>	<p>Roof A: 144.875 sq m Batten B: 512.596 m Ridge C: 5.4 m Hip D: 31.757 m Eave E: 63.2 m Barge F: 5.081 m Side Ledge G: 4.134 m Upper Ledge H: 15.22 m Valley I: 3.361 m</p>
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Figure 29

Discount/Markup

—

Select the *Discount/Markup* button and enter the various discounts or markups.

Edit Discounts / Markups

Enter the percentage discount (-ve), or markup (+ve) on the following roof components

Roof cladding	<input type="text" value="0"/>	%
Roof other than cladding	<input type="text" value="0"/>	%
Fascia/gutter	<input type="text" value="0"/>	%
Labour cost	<input type="text" value="0"/>	%
Overall markup/discount	<input type="text" value="0"/>	%

Notes on Summary_

Select the *Notes On Summary* button and a window similar to that shown in Figure 30 below will appear. Use this to add notes to the summary quote.

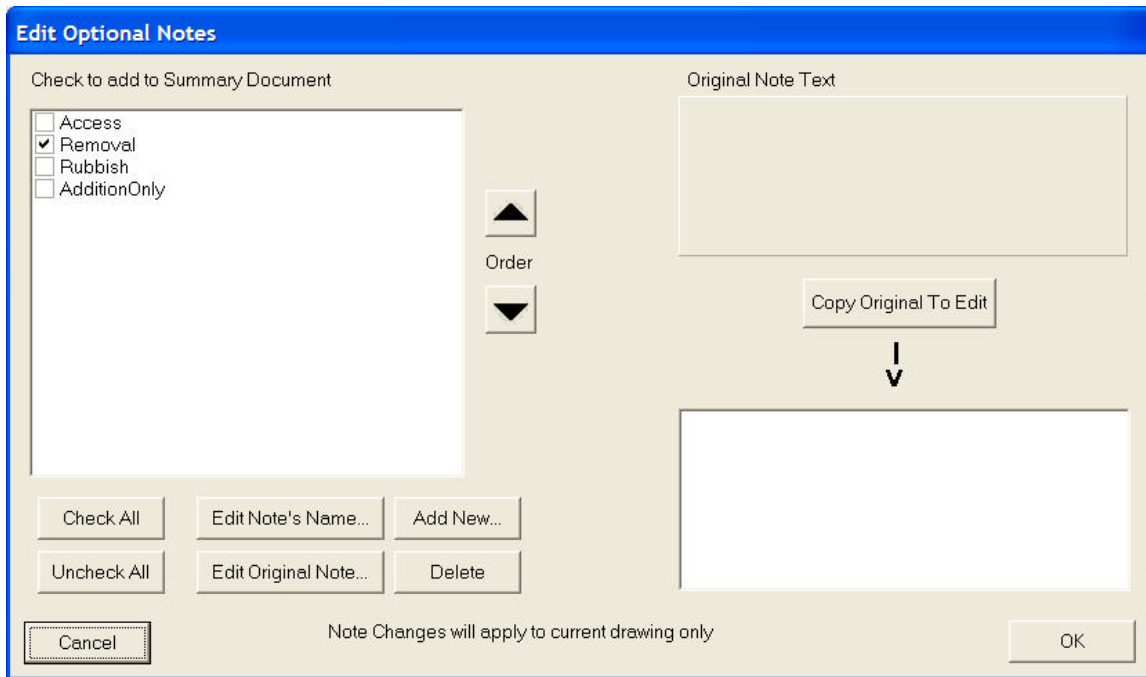


Figure 30

The quote is now complete.

The quote and other printouts may be printed by checking the check box beside the name of the actual printout and selecting the *Print* button.