

miniCAD7 QuickStart Tutorial

Stage: 1

Enter Survey Plan Information

Aim: To give the user a brief overview of miniCAD7. In *Stage 1* you will enter survey plan information and perform an area calculation.

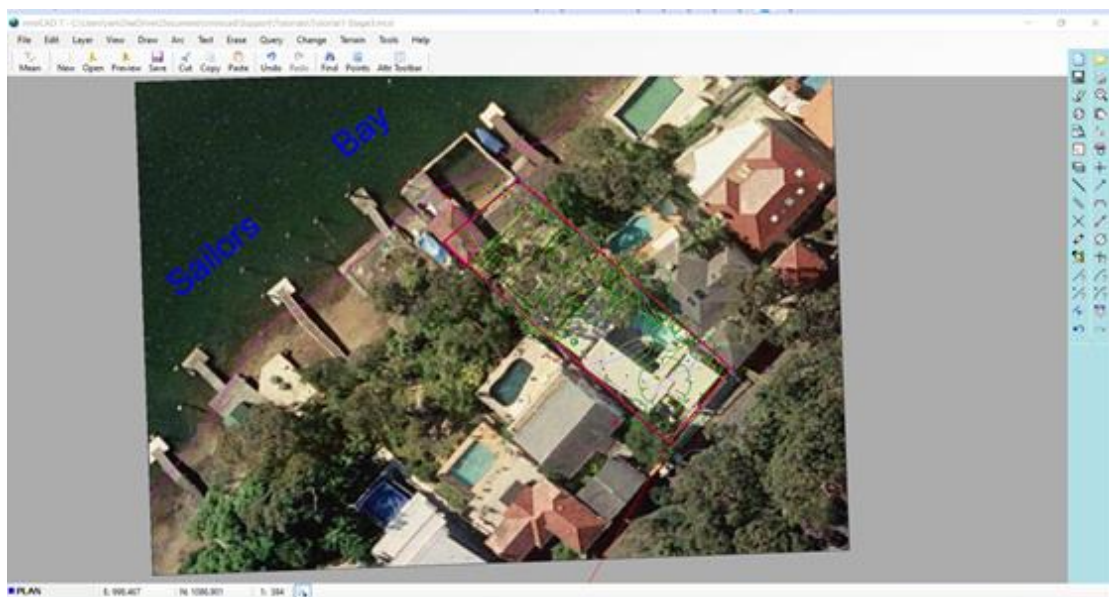


Figure 1 - The finished tutorial

Preliminary: There are a few required steps to complete before you can complete these tutorials. They are:

Download, install and register the software (this may already be completed)

1. Visit the website <https://minicad.mapsoft.com.au/Home/Products#download> and download the latest version of miniCAD7 Professional.
2. Run the downloaded file, **minicad_setup_V7_X64.exe** which can be found in your **Downloads** folder. Ignore any messages from Microsoft's User Account Control suggesting the software is unsafe!
3. Click on the miniCAD7 icon on your desktop to start miniCAD7. Answer a few questions.
4. Select Help>>Register from the menu, fill out required information and hit the Register button.

Download the tutorials

1. Visit the website <https://minicad.mapsoft.com.au/Home/Support> and download the **Contour and Detail Survey (# 01)** found under the Tutorial Resources section.

2. Extract the files in the Zip to the folder \documents\minicad\Tutorial 1.

Configure miniCAD

1. Start miniCAD7. Select Tools>>Options from the menu and select the Open & Save TAB at the top left.
2. Configure as per the diagram below:
 - a. 15-minute automatic saves
 - b. Create a backup
 - c. Set the Data file path to \documents\minicad\Tutorial 1
 - d. Set the Support file Search to \documents\minicad\Tutorial 1
 - e. Set the File Dialogue Memory to Data file path
 - f. Check the Edit Job Summary on New File (Preferences TAB)

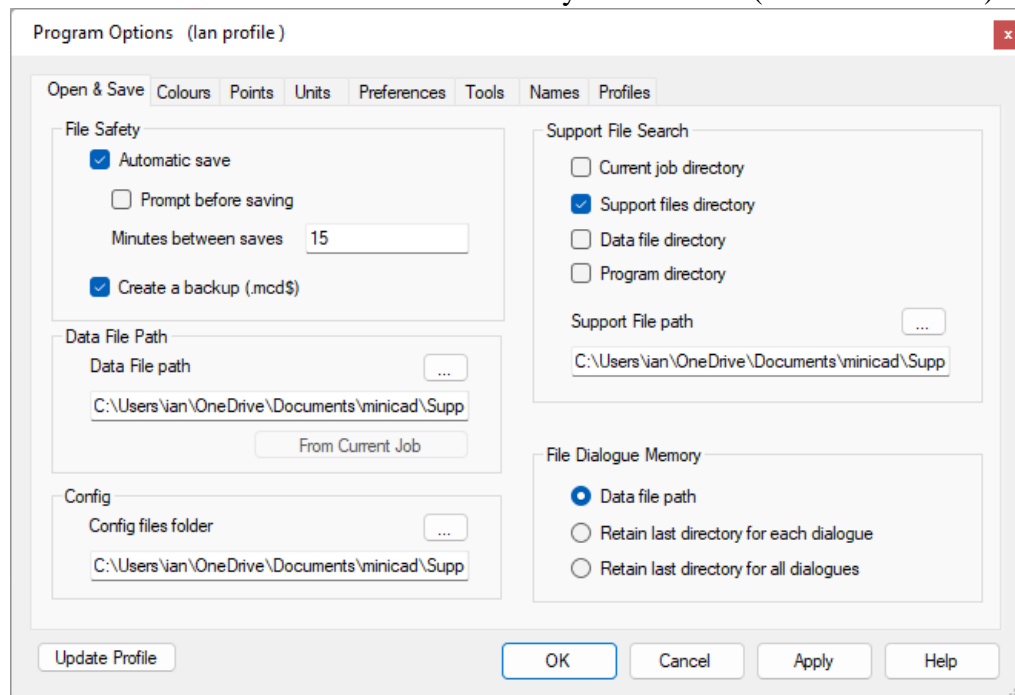


Figure 1 – Options – Open and Save

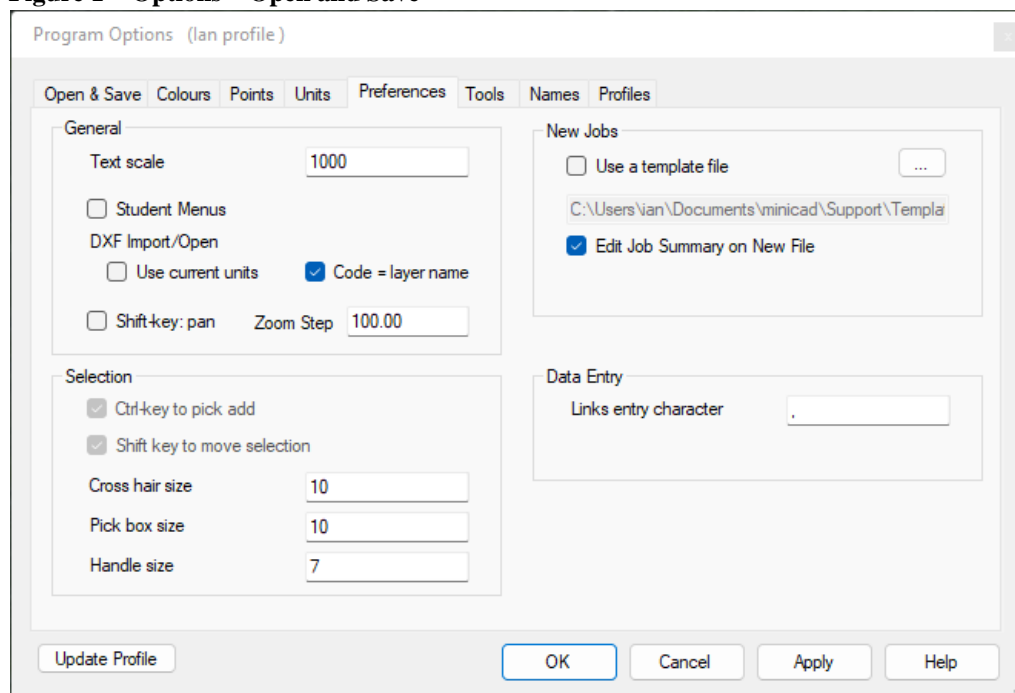
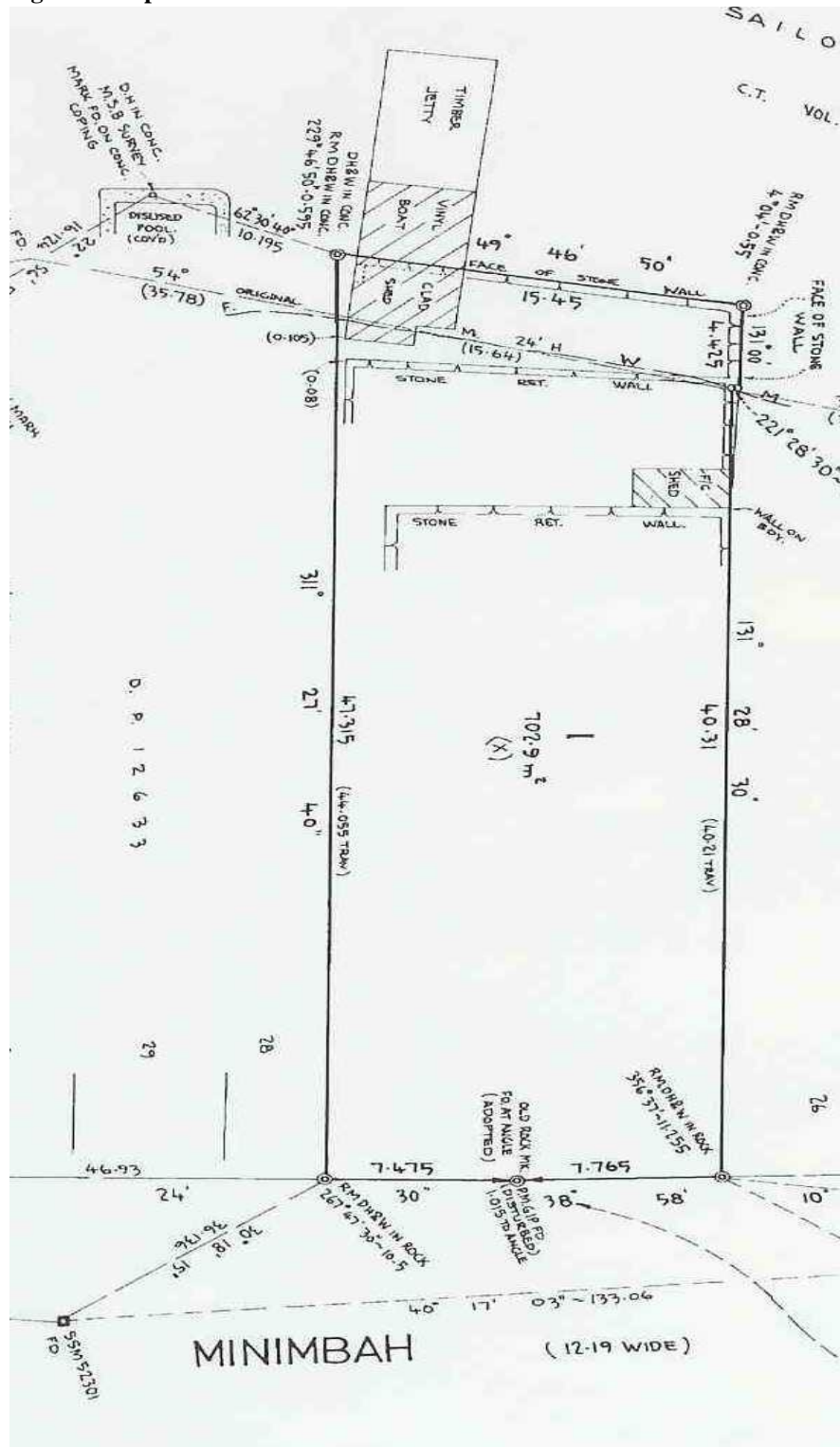


Figure 2 – Options – Preferences



Picture 1 - Survey Plan of site

Start miniCAD and create a new job.


Enter the details in the Job Summary as follows and keep hitting Next>:

1. Job Details (see below)

Current Job Summary

Step 1 - Job Details

Enter any relevant job information.



Job Name: Tutorial 1
Ref No.: 0001
Description: Work Experience Tutorial

Client Name: Joe Bloggs
Contact Details: 0412 345 678

Address: 53 Minimbah Road
Northbridge NSW 2063

C:\USERS\IAN\ONEDRIVE\DOCUMENTS\SURVEY JOBS\VIC COCHRANE
\Untitled00.mcd

Start < Back Next > Cancel Help


Figure 3 – Job Details

2 Company Details (see below)

Current Job Summary

Step 2 - Company Details

Review your company details.



Surveyed by: Little Old Me
Date Surveyed: 28th February 2023

Company: Work Experience Surveyors
Address: 1 Work Experience Way
Wollongong NSW 2999

Open this Summary when 'File New' is selected.

Start < Back Next > Cancel Help

Figure 4 – Company Details

3 Plotting (see below – select Scale, Titleblock and North)

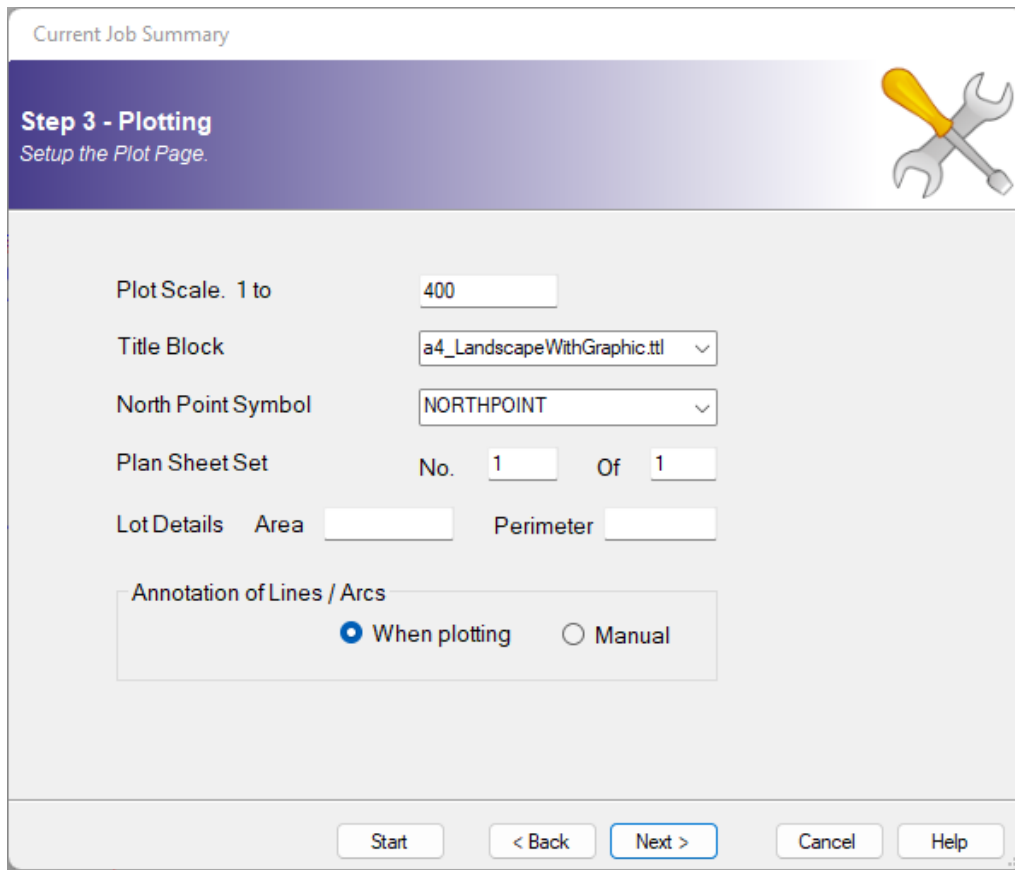


Figure 5 – Plot Details

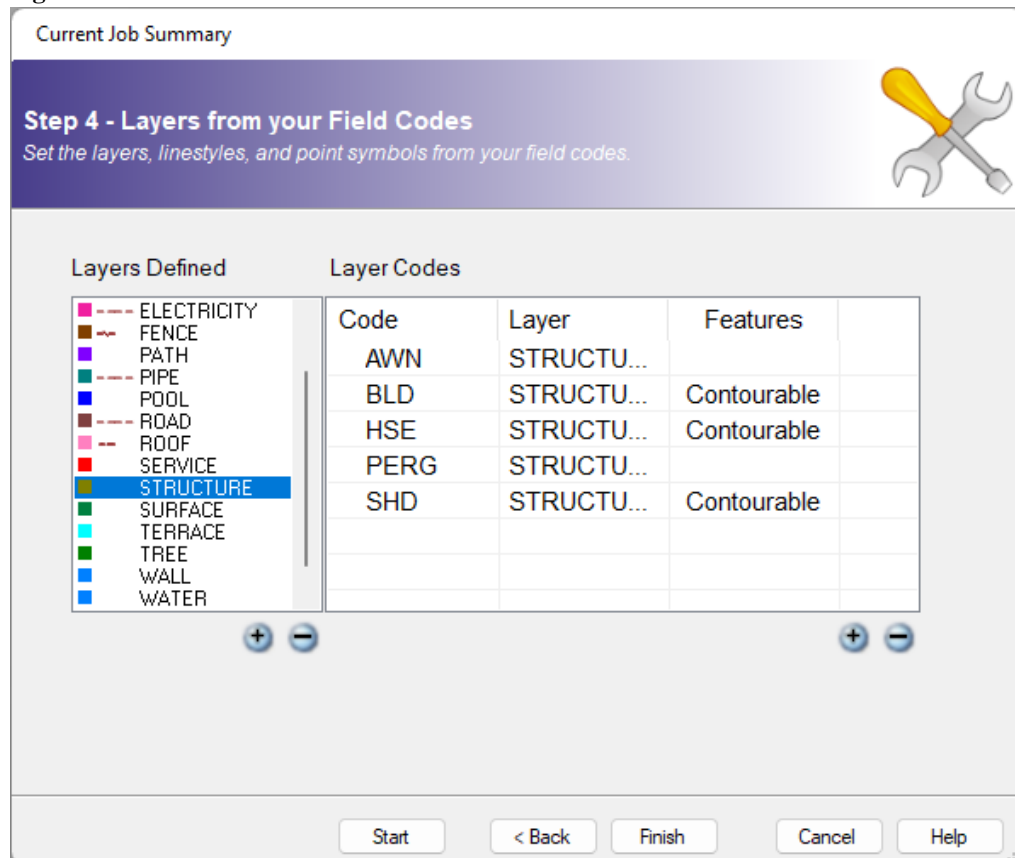


Figure 6 – Layers and Codes

Layers and Codes – Survey CAD software uses codes the surveyor uses in the field to identify features such as creeks and buildings and places them in predetermined layers.

In this tutorial we will add one code that was missed. It is the GAR code, which is short for GARAGE. It needs to be added to the STRUCTURE layer.

Select the + button at the bottom right of the Layer Codes. Add the GAR code as shown below and hit the Add New button.

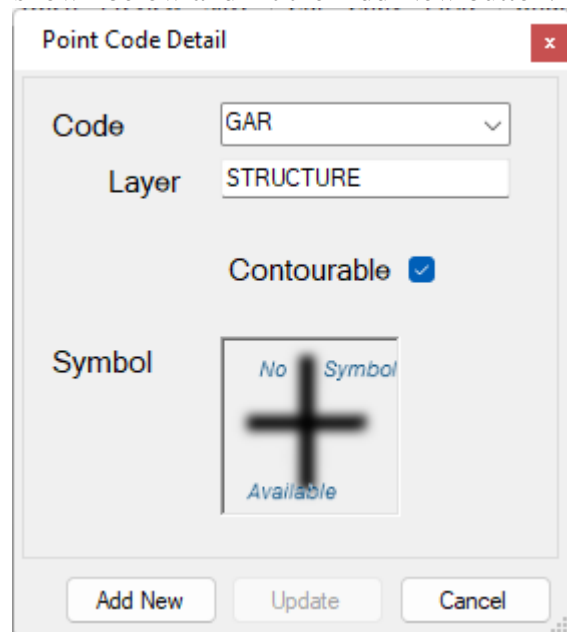


Figure 7 – Code Entry

Have a look at the TR code contained in the TREE layer to see an example of a symbol. User symbols can be created from within miniCAD7. This is outside the scope of this tutorial.

Hit the Finish button. When prompted save the file as Tutorial-1a, select Cancel.

Should you need to view the user defined codes and the layers they are associated with again, select Tools>>Layers and Codes from the menu.

About coding and the minicad.cod file:

When miniCAD processes field data it parses each entry against a code file called *minicad.cod*. This file determines the layer codes are stored in, the layer attributes, such as colour and line-type. The Symbol name is the same as the code. More information about these coding files is contained on the Help menu for the Utility Software.

Finally, you are able to start drawing! To do so, Select Draw>>Point.

Enter the information shown in Figure 1 below. Use <TAB> to move between fields and press the STORE button (the <ENTER> key will also store for you).

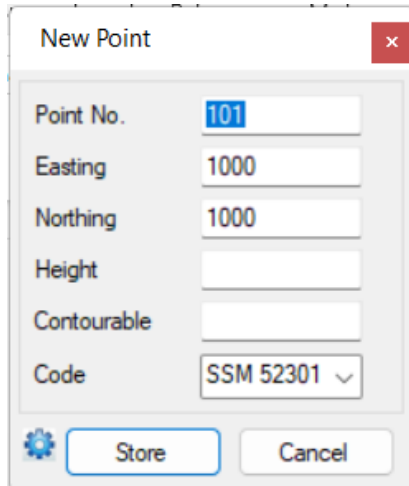


Figure 8 - Starting point for the job

Select View>>All

The point should appear in the centre of the screen.

Note: It is advisable to use the same point numbering as shown in these tutorial stages as they will be referred to later.

About Getting Help

Press Shift and the F1 key simultaneously to get help on the dialogue with focus. In an edit field press the F1 key to display specific help pertaining to that field. Experiment while you have the New Point Dialogue open. This will work for most dialogue boxes.

More on dialogue boxes:

Most dialogue boxes open at the size and position when they were last used. In addition most dialogues open with the same data in edit fields. To clear all edit fields press F5. To highlight an edit field press F2. Pressing F2 again removes highlighting and places the cursor at the end of the text. (The same as Microsoft Excel !)

- Close the Dialogue. (X in top corner OR press Esc key)

The survey plan information defining the boundaries of Lot 1 and the associated reference marks are to be entered into miniCAD. Our start point is at SSM 52301 at the bottom left of Picture 1 above.

Save the Current Job

- Select File>>Save (or Save-As) and name the job Tutorial-1a.

About the Data File Path

The data file path is where miniCAD expects to find the current job and related files. (Think of it as a project folder containing many related jobs.) As an example you may have downloaded the tutorial 1 resources into a new folder on your hard. Make this folder your current Data File Path.

About the Support File Path

This folder (or folders) is where miniCAD expects to find support files such as the code library, symbol and line type files and title blocks. Review the help to learn more.

Using Draw Traverse

- Select Draw>>Traverse.
- Snap to point 101 by left clicking near it.
- Enter a bearing of 30°18'15" • Enter a Distance of 36.136 metres.
- Press the Store button.

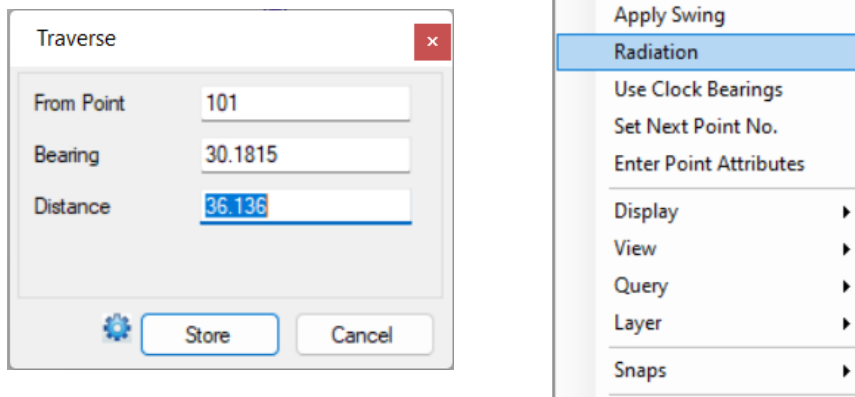


Figure 9 - Traverse Entry and the Right Click Menu.

About Right Click Menus

Right clicking the mouse in the work area (drawing screen) will display a menu with 2 areas:

- Upper Area: Functions customised to suit the current tool. (i.e. Apply Swing)
- Lower Area: Standard functions (i.e. such as Display, View, Query, etc..).

These 'Context Menus' are available for most tools in miniCAD. Alternatively, you can choose to only display the Upper Area by left clicking on the Blue Cog to the left of the Store button. Give it a try!

The next step is to enter a radiation. Right click and select Radiation from the pop-up menu.

- Enter the radiation to the reference mark of 267°47'30" for 10.5 metres.

The bearings for all reference marks in the survey plan are shown from the reference mark to the corner. See the figure below. Note that because we are going from the corner to the reference mark, a negative distance is entered. Also note that there is no need to enter trailing zeros in the case of the bearing.

Figure 10 – Radiation entry

About Navigation around the screen – Zooming and panning is easy with a wheel mouse. Simply roll the wheel toward you to zoom out and away from you to zoom in. To pan, hold the wheel down whilst dragging the mouse.

If you use a laptop or net-book you can configure the shift key to pan and keys F7, F8 and F9 to zoom. (zoom out, zoom in and zoom window respectively). F7 and F8 work relative to the mouse cursor position.

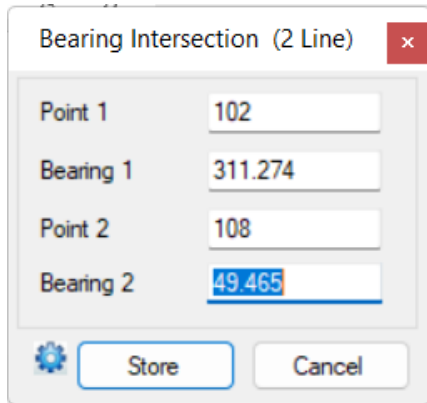
Right click and select Radiation again (to switch it off) and return to bearings mode.

- Enter the following traverse legs:

41°24'30"	7.475	
38°58'10"	7.765	
311°28'30"	40.31	
41°28'30"	0.08	
311°00'00"	4.425	
4°04'00"	0.55	(Radiation – remember to reverse bearing)

About Display Settings – To see the point numbers use the Display>>Settings menu. It is available as a right click or from the View menu.

- Select Draw>>2 Line Intersection.
- Snap to point 102 and enter 311°27'40" in Bearing 1 edit field.
- Snap to point 108 and enter 49°46'50" in Bearing 2 edit field.
- Press the STORE button to create the intersection point.



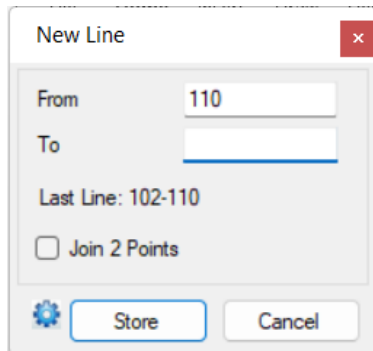
The dialog box titled "Bearing Intersection (2 Line)" contains the following fields and controls:

Point 1	102
Bearing 1	311.274
Point 2	108
Bearing 2	49.465

At the bottom, there is a gear icon, a "Store" button, and a "Cancel" button.

Figure 11 - Bearing Intersection

- Select Draw>>Line.
- Join points 102 – 110 – 108 with 2 lines.



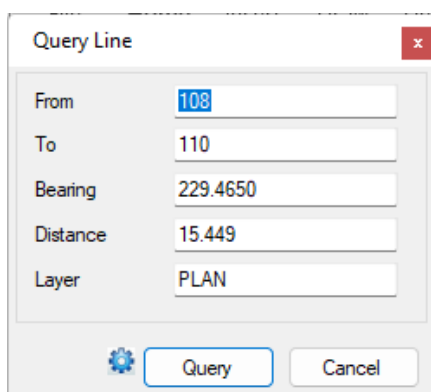
The dialog box titled "New Line" contains the following fields and controls:

From	110
To	
Last Line: 102-110	
<input type="checkbox"/> Join 2 Points	

At the bottom, there is a gear icon, a "Store" button, and a "Cancel" button.

Figure 12 - Line entry

- Right click and select Query>>Line.
- Snap to line 108 – 110. Confirm that the distance is 15.449 which is very close to the 15.45 shown on the survey plan. See figure 7 below.
- Similarly, you can snap to line 110 – 102 to confirm the distance of 47.315. This command also allows you to click to two points, which is useful if there is no line joining the two points.



The dialog box titled "Query Line" contains the following fields and controls:

From	108
To	110
Bearing	229.4650
Distance	15.449
Layer	PLAN

At the bottom, there is a gear icon, a "Query" button, and a "Cancel" button.

Figure 13 - Line query

About Undo and Redo – If you make a mistake, there are undo and redo buttons which perform multiple undo and redo's. To undo, select Edit>>Undo (Ctrl-Z) and redo Edit>>Redo (Ctrl – Y). What has just been undone or redone is listed in the message area on the status bar. Try undoing a number of your last commands and then restore your job to normal by redoing each command again.

Layer upon layer upon layer - to date, we have been drawing in the one layer. We wish to split the job into 2 layers, PLAN and REFERENCE. The current layer is displayed in the status bar at the bottom left of the screen. By default, a new miniCAD job creates a layer called BASE. Let's edit our layers:

- Left click in the current layer field to open the layer dialogue.
- Right click on the name BASE in the layer name list on the left and select **RENAME**. Type PLAN and hit <ENTER>.
- Change the colour of layer PLAN to 3 – Blue.
- Select the **NEW LAYER** button and enter the layer REFERENCE. Set its colour to 4 – Red. See figure 8 below.

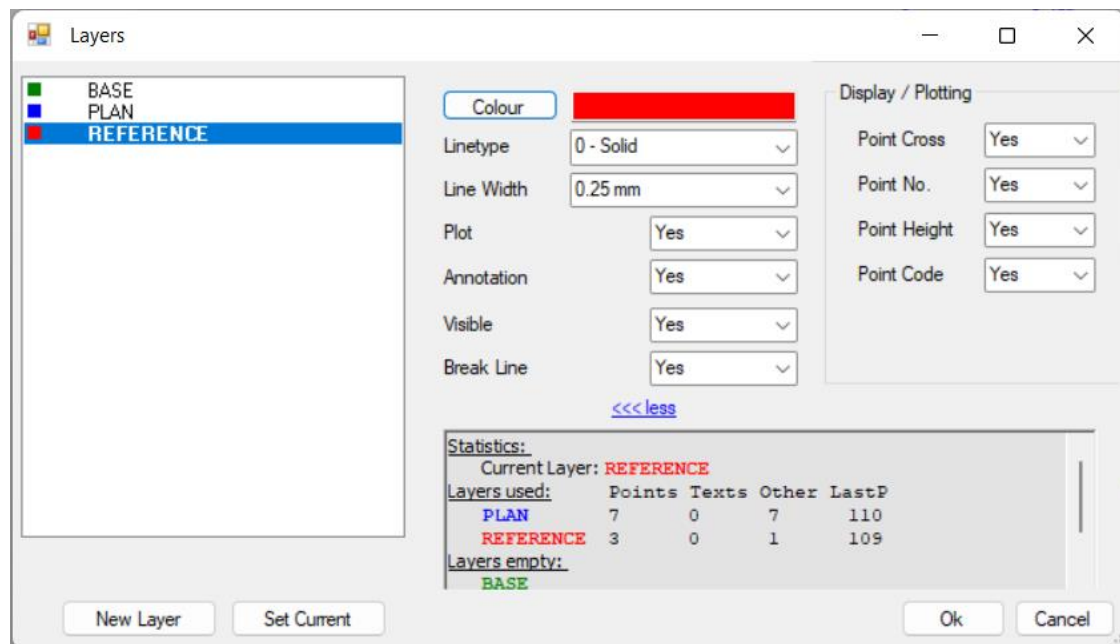


Figure 14 - Layer dialogue

Select OK to close the Layer dialogue box.

About Mouse Selection of Points, Lines and Arcs – When a drawing tool is active (i.e. has focus) it controls the mouse. Most tools don't allow the general selection of entities. The white arrow button on the status bar indicates when general selection is possible.

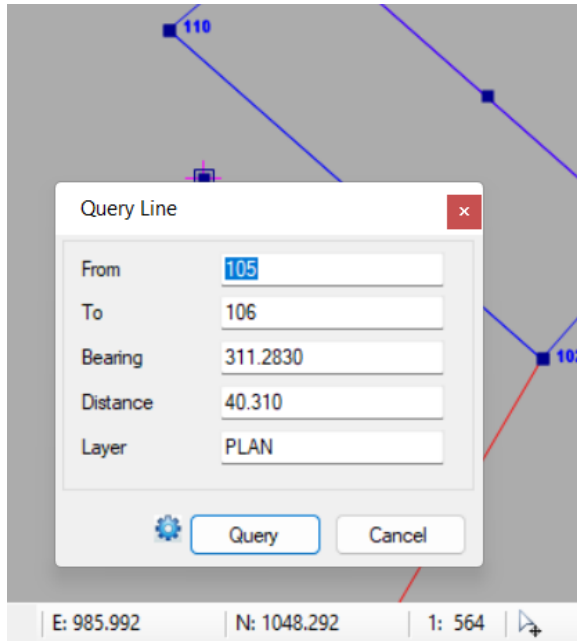


Figure 15A – Traverse Tool has focus and has set the cursor. (a cross over a line.)

If you press the arrow on the status bar the current tool will lose focus and you will be able to make a general selection. See the figure below.

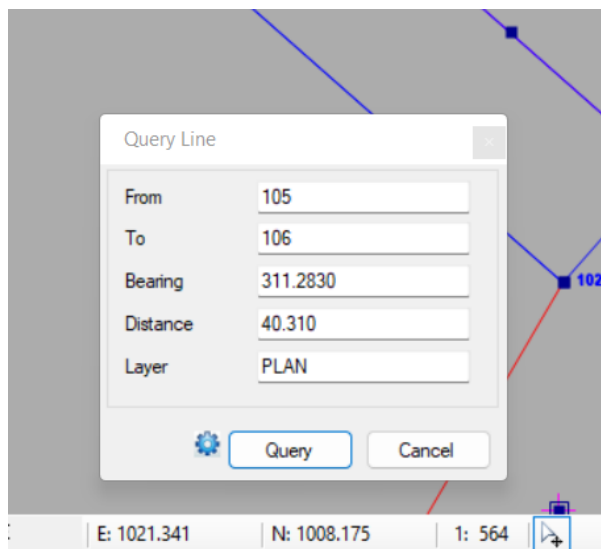


Figure 15B – Tool has lost focus. Cursor is a pointer. General Selection is possible.

Changing the Layer of an Existing Entity

- Select point 101 with the mouse. (Click the status bar white arrow first if needed)
- Hold down the <CTRL> key and select the line 101 – 102.
- Hold down the <CTRL> key and select point 103.
- Use the wheel mouse to zoom in on point 109. Hold down the <CTRL> key and select point 109.

- Right click and select Layer>>Change Layer to open the Change Layer dialogue. Make sure REFERENCE is highlighted and press the STORE button. See Figure 9 below.

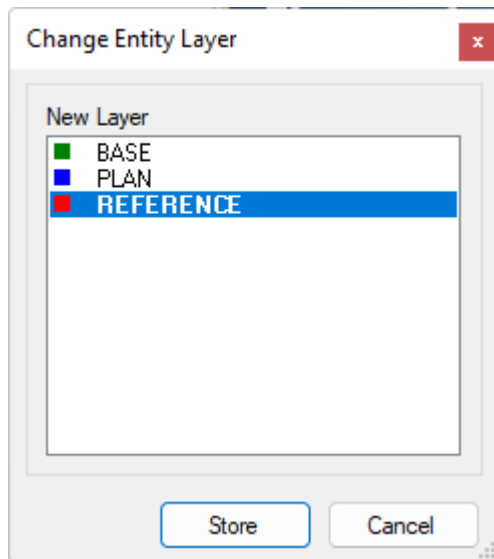


Figure 16 - Change Layer

To Calculate the Lot Area.

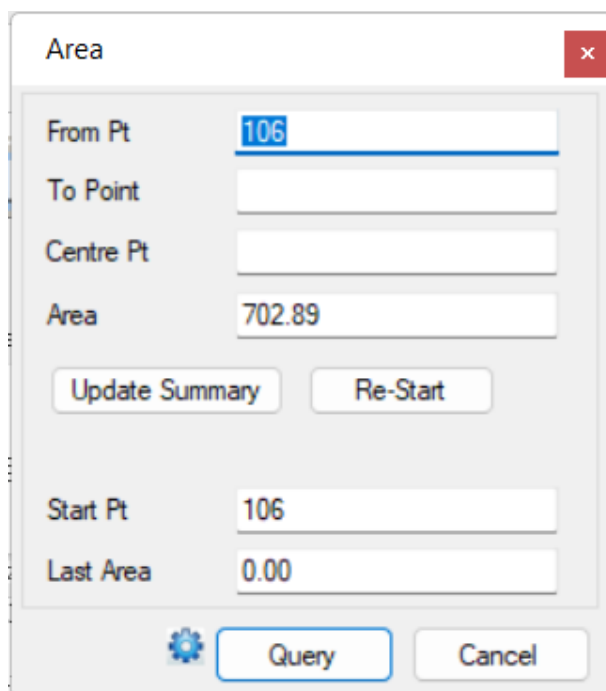
- Select Query>>Area.
- Click in the middle of the lot.

OR YOU CAN:

- Snap to the lines around the lot, being careful to snap to the correct ends of the lines. For instance, to travel clockwise around the lot starting from point 102, snap on line 102 – 110 closest to point 102. Next snap on line 110 – 108 closest to point 110. Continue around the lot in this fashion. You will need to zoom in on line 106 – 107 as it is very short.

Press F5 to restart the area calculation at any time.

As you move around the lot the distance travelled is also listed in the message area on the status line. When the start point number is returned to, the area is displayed, in this case 702.89 square metres. The perimeter of the lot is 122.819 metres.



The screenshot shows a dialog box titled "Area" with a close button (X) in the top right corner. The dialog box contains the following fields and buttons:

- From Pt:** 106
- To Point:** (empty)
- Centre Pt:** (empty)
- Area:** 702.89
- Buttons:** Update Summary, Re-Start
- Start Pt:** 106
- Last Area:** 0.00
- Bottom Buttons:** Query, Cancel

Figure 17 - Area calculation

About selecting open and closed strings : Quicker techniques exist to select a closed string (polygon). Simply click inside the enclosed area. This method may require layers other than the one containing the polygon to be turned off.

To select a string by segments always start with a point and then each adjacent line or arc. A collection of points may also be selected, one by one. (i.e. The desired figure must not contain arcs.)

The creation of strings is discussed in the following tutorials.

Select File>>Save to complete your job.

Congratulations on reaching the end of this tutorial. By now you can see how easy miniCAD7 is to use. You are encouraged to explore the extensive help files associated with the program and found online. There is also a Support section on the website listed below, which includes videos and similar tutorials to this one. Should you have further queries, don't hesitate to contact us directly.

Mapsoft endeavours to take on board as many user suggestions as possible. Please don't hesitate to contact us using the email address below. Enjoy the next tutorial!

Email: info@mapsoft.com.au

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