3H Consulting Ltd

Site Recorder 4 Exercise Book

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1   Introduction

1.1   About this Exercise Book

This is the exercise book for Site Recorder 4, the digital information management system for maritime and intertidal archaeology.

The book contains a series of exercises that allow you to get familiar with all the features in the program. The exercises should be completed in the order given as later exercises use knowledge gained in previous work or use Site files created in earlier exercises. Earlier chapters cover features that are most commonly used leaving the later chapters to cover more advanced features.

The book is provided in electronic form as a PDF document as this allows easy navigation between topics as well as the use of a powerful search capability. The manual can be printed by going to the print option in the File menu.
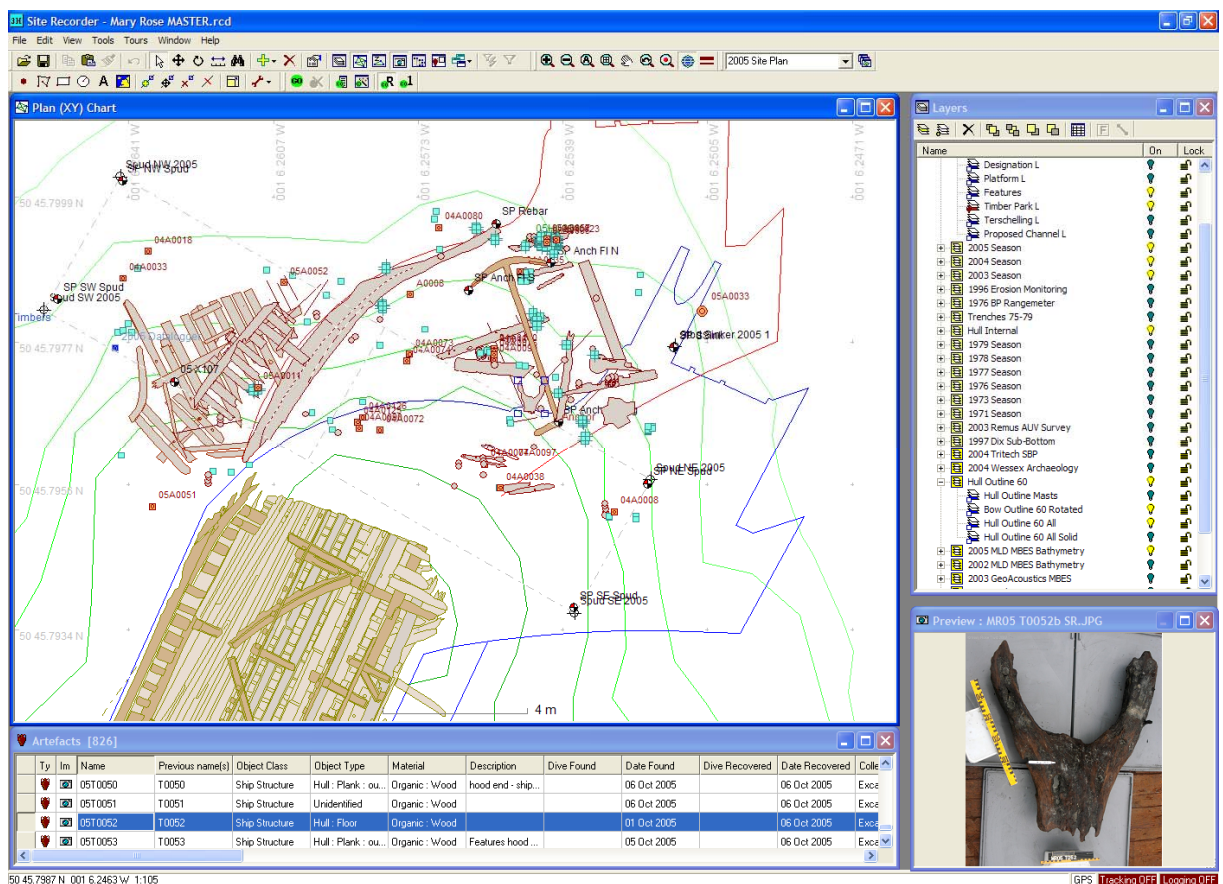
Names of kinds of objects that can be added to Site Recorder or their properties are shown starting with a capital letter, such as 'Survey Point' and 'Artefact'. The names of the objects themselves are shown in *italics*. Technical and Site program specific words are described in the separate Glossary document.

In the text some actions are summarised in a shorthand form as hints, for example (**File | Save Site**) means select the **Save Site** option in the **File** menu.

1.2   About Site Recorder 4

Site Recorder 4 is a fully-featured and versatile Geographic Information System (GIS) and data management system specifically designed for use in maritime and intertidal archaeology. Site Recorder is powerful yet easy to learn and has been designed by archaeologists for archaeologists.

With Site Recorder you can collect together all of the information about an underwater or inter-tidal site in one place. Separate pieces of information can then be associated with one another allowing easy location, analysis and interpretation of the information. Unlike most other GIS programs, Site Recorder is designed for collecting information not just displaying it. Site Recorder has been designed to replace the separate surveying, drawing, finds handing and reporting programs usually used on site with one single program. All data can be geo-referenced and time-stamped allowing true 4 dimensional analysis.

Typical applications for Site Recorder 4 include:

- Excavation planning and recording

- Site survey planning and recording

- Geophysical survey post-processing

- Resource evaluation and management

- Site publication and reporting

- Archiving site data

With all of the information about a site captured in a Site file it can be used as a basis for creating reports or exported for further processing in other programs. Complete sites and associated image and source files can be published on DVD along with a free reader program called Site Reader. With the entire Site information in one place and linked together this also forms an ideal method for archiving site data.

Site Recorder 4 is protected with a software key or 'dongle', however the program can be used without a software key in a demonstration (Demo) mode which has limited capability. This feature has been added so the program can easily be used for training and evaluation without the need for a software key to be provided. In Demo mode the number of some objects that can be added is restricted, the program only loads and saves special Site Recorder Demo (.rdd) files and a few tools locked and cannot be used.

If the program is started without a dongle being attached to the computer then it will revert to Demo mode. To switch to full operating capability the program must be stopped, the software key connected to the computer and the program restarted.

The Software Key

Site Recorder 4 is protected by a software key or dongle that plugs in to a USB port on your PC and it is this that allows the program to be used. If the program is started without the key being plugged in to the computer then the program will start up in Demonstration (Demo) mode which has limited capability (see below). The dongle contains the license for the program so must be kept secure and you are responsible for its safety. If the software key is lost then a new license for the program has to be purchased. If the dongle is damaged then a replacement may be provided by 3H Consulting Ltd. at the company's discretion.

1.3 Demonstration (Demo) Mode

Site Recorder 4 is protected with a software key or 'dongle', however the program can be used without a software key in a demonstration (Demo) mode which has limited capability. This feature has been added so the program can easily be used for training and evaluation without the need for a software key to be provided. In Demo mode the number of some objects that can be added is

restricted, the program only loads and saves special Site Recorder Demo (.rdd) files and a few tools locked and cannot be used.

If the program is started without a dongle being attached to the computer then it will revert to Demo mode. To switch to full operating capability the program must be stopped, the software key connected to the computer and the program restarted.

The limitations on the number of objects that can be added in Demo mode are:

Object	Number
Projects	3
Layers	6
Points	10
Polylines	10
Circles	10
Text	10
Artefacts	10
Features	10
Sectors	10
Samples	10
Wrecks	10
Targets	10
Images	10
Drawing Frames	1
Image Basemaps	1
Search Areas	1
Survey Points	Unlimited
Measurements	Unlimited
Contacts	Unlimited
Sources	Unlimited
Events	Unlimited
Dive Logs	Unlimited

In Demo mode the other limitations include:

- Reads and writes SR4 Demo files but cannot read or write standard Site Recorder files (SR4 Demo files have the file name extension '.rdd')
- The Image Processing tool is not available
- The Add Multiple tool is not available
- The Add Observations tool is not available
- Site file sharing is not available
- Tours are not available
- The Navigation bar is not available

2   Getting further assistance

Online Help

Any of the Help buttons in Site Recorder show the document you are currently reading. To show this document, select **Help Topics** from the **Help** menu.

More information and example Site files can be found on the 3H Consulting web site found at:

http://www.3HConsulting.com

Training

It is recommended that all new users familiarise themselves with the program by completing the exercises set out in this Exercise Book. Training courses can be provided for new users just starting with the program or experienced users wishing to develop their skills. Please contact 3H Consulting for more information.

Assistance with Problems

Problems and bugs should be reported to 3H Consulting Ltd by email, describing the nature of the problem and if possible the steps taken to reproduce it.

In some instances it is helpful to know the configuration of the computer showing the reported problems. The full configuration can be found using the System Information tool found on the **About** dialog available from the **Help** menu.

Support can be obtained directly from 3H Consulting Ltd. by sending an email to:

sales@3HConsulting.com

3   Starting Site Recorder

3.1   Exercise – Add an Object

In this exercise we will create a new Site, add a single Survey Point to it then show the point in a List Display.

Create a new Site:

1.   From the **File** menu select **New Site**

2.   If prompted, save the old Site file if required

3.   In the **New Site Wizard**, use the default settings and click **Close**

Set the Survey layer as the current layer:

4.   On the **Layers** display, click on the Layer called *2010 Control* in the Project called *2010 Season* (See note below)

5.   Click the **Set current** button 🗐 or right click and select **Set Current** from the context menu. Check that the *2010 Control* label is now in bold font, showing that it is now the current Layer.

Note: The name of the Layer and Project made by the program includes the year so if the year is 2011 then the name of the Layer will be *2011 Control*.

Add a Survey Point:

1.   Click anywhere on the chart display to select it

2.   Click the **Add** button ➕▾ on the **Main** toolbar and select **Survey Point**

3.   Click a point on the chart where you want the Survey Point to be placed

4.   The property page for the Survey Point will now be shown, for now just click **OK**

5.   Click the **Select** button ⍺ on the **Main Toolbar** or press the **ESC** key to stop adding Survey Points
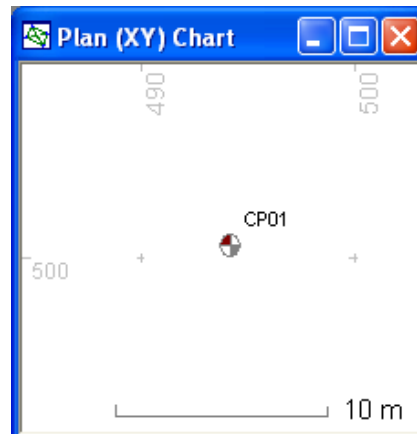
The Survey Point will be shown on the chart as a small shape with the name *CP01*.

Show the Survey Point in the List Display

1.   On the Main toolbar, click the **Add New Display** button 🗗▾ and select **Survey Points**

	Ty	St	Name	Layer	Visible	Easting (m)	Northing (m)	Latitude	Longitude	Depth (m)	Major (m)
	🧭	☒	CP01	2008 Control	Y	494.180	500.630	00 0.2709 N	007 29.0590 W	0.000	10.000

2.   In the List Display, double click anywhere on the row for Survey Point *CP01* to show its properties pages.

3. Click on the right hand column of the Name property (where it says *CP01*) and type in the new name *TEST*.

4. In the properties pages, click **OK**

5. Check that the new name has been set in both the List Display and the Chart.

6. Close the List Display by clicking the red cross in the top-right corner ☒ of its window.
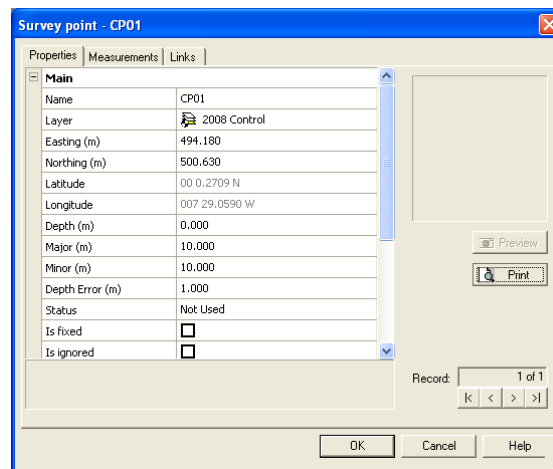
Save the new Site file

1. Select **Save Site** from the **File** menu

2. If prompted, type in the new name for the file as *Exercise* and click **OK**

Now go to the next exercise below in the section **Working with Projects and Layers**.

4   Working with Projects and Layers

4.1   Exercise – Projects and Layers

In this exercise we will modify the default Project and set up the Layers on it. We will show how Layers can be shown and hidden on the chart, how the Layer can be changed for any object and how Layers can be locked and unlocked.

Modify the Project:

1. Ensure that the Site file *Exercise* created in the previous exercise is loaded or follow the instructions described above

2. Show the **Layers** display by clicking the **Show Layers** button on the **Main Toolbar**

3. Double click the **Project** called *2010 Season* and show its property page

4. In the Project's properties page type in the name *2007 Season* and an optional Description of 'Data collected during the 2007 excavation'. Click **OK**.

Modify the Layers:

The Project '2007 Season' contains default Layers, these need to be modified.

1. If not shown already, show the Layers in the new Project by clicking on the tree in the **Layers** display

2. Select the Layer *2010 General*, show its properties and change its name to *2007 Sketch*

3. Select the Layer *2010 Control*, show its properties and change its name to *2007 Control*

4. Select the Layer *2010 Detail* and click the Delete button on the Layers toolbar to delete it. Click **Yes** at the prompt

5. Select the Layer *2010 Artefacts*, show its properties and change its name to *2007 Guns*

6. Save the Site file (**File | Save Site**)

The Layers display should now look like this:
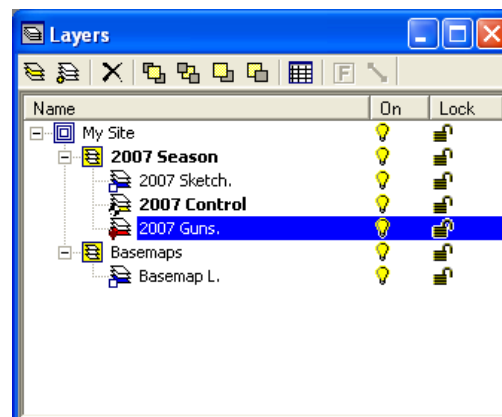
Showing and Hiding Layers on the Chart

Each layer can be shown or hidden individually.

1. Click on the lightbulb icon for the Layer called *2007 Control* to hide it

2. Check that the lightbulb icon changes and the Survey Point called *TEST* disappears from the chart

3. Click on the same icon and check that the Survey Point now reappears

Setting the Layer for an Object

The Layer that an object is on can be changed. In this exercise we change the Layer for an object then show and hide that Layer to prove the Survey Point has moved from one Layer to another.

1. On the Layers Display, click the **Add** toolbar button

2. In the **Add New** dialog, select Survey Layer then click **OK**

3. The Survey Layer properties page is shown, set the Name property to *2010 Control* then click **OK**. Check that the new Layer is shown in the Layers Display.

4. On the Chart, double click the Survey Point called *TEST* added in the previous exercise. The properties page for the Survey Point will be shown

5. Click on the Layer property and a list of Survey Layers will be shown:
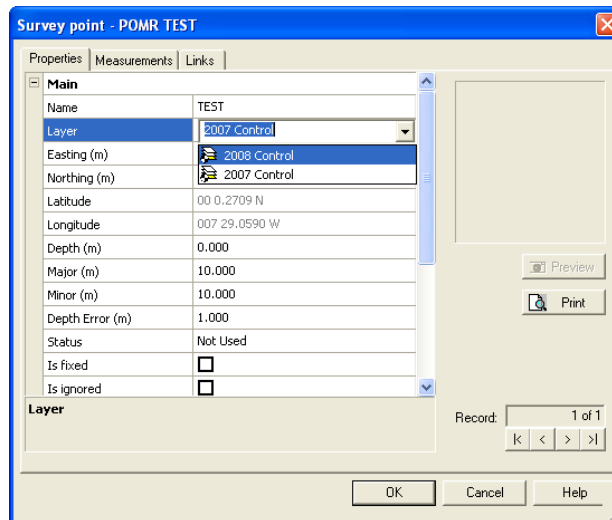
6. Click on the Layer called *2010 Control* and check that this name is now shown in the Layer property

7. In the Survey Point property page click **OK**

8. In the Layers display, hide the Layer called *2010 Control* (using the lightbulb icon) and check that the Survey Point called *TEST* disappears to show that the point is now on a different Layer

9. Show the Layer called *2010 Control* and check that *TEST* reappears

Locking Layers

Layers can be locked so they cannot then be modified, this can protect against accidental changes. Locked Layers can then be unlocked if modifications are required.

1. In the Layers Display, click the open padlock icon ⬚ next to the Layer called *2010 Control* to lock the Layer

2. On the chart, double click the Survey Point called *TEST* to show its properties

3. Check that all of the properties are disabled and cannot be changed

4. Check that the word 'LOCKED' appears in the blue title bar of the properties pages
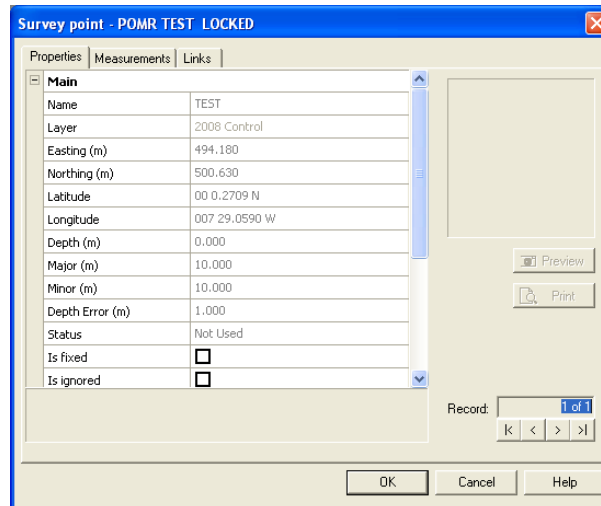
5. In the properties pages, click **OK**

6. On the chart, check that the four square grips surrounding the Survey Point are now shown in grey, indicating that this object is locked.

7. In the Layers Display, click the closed padlock icon 🔒 next to the Layer called *2010 Control* to unlock the Layer

8. Show the properties for the Survey Point called *TEST* and check that they can now be changed

Now go to the next exercise below in the section **Setting up the Site**.

5   Setting up the Site

5.1   Exercise – Setting up the Site

In this exercise we will set the properties for the Site itself.

Modify the Site:

1. From the **Tools** menu, select **Site Properties** to open the properties pages for the Site

2. In the **Properties** page, click the Name property and set this to *Mary Rose*.

3. Type in a Description, Site Code and any other properties you like

4. Click **OK** to close the properties pages for the Site
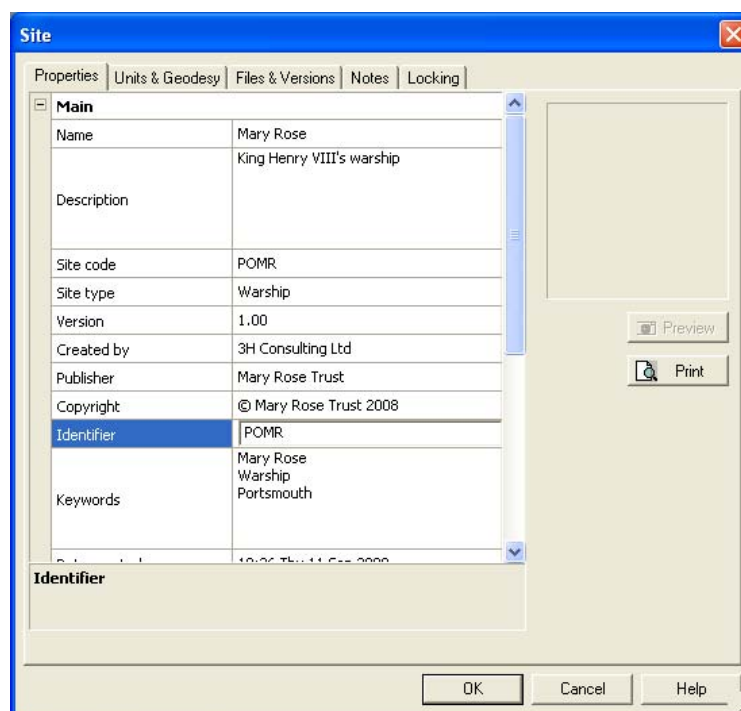
6   The Find Tool

6.1   Exercise – Using the Find Tool

Where large amounts of data are stored in a Site file finding particular objects can be time consuming. A quick way to find an object or to find objects with similar names is to use the Find Tool.   This exercise demonstrates the use of the Find Tool.
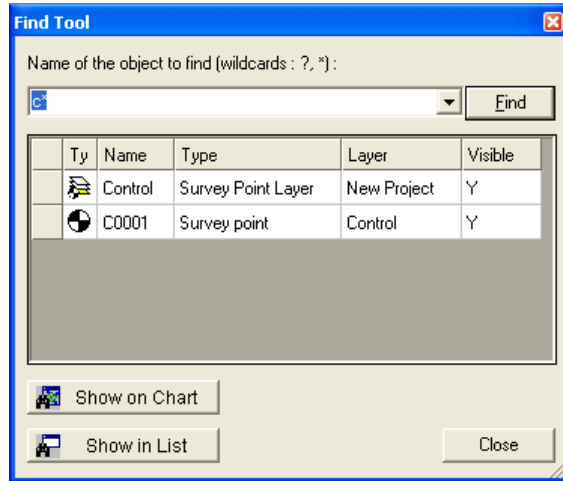
To open the example Site file:

1.   From the **File** menu, click **Open Site**

2.   In the **Open Site File** dialog click the **Open** button

3.   Navigate to the folder C:*Site Files\Sample Files* (see image below)

4.   Open the Site file *Exercise Adjust Test.rdd*
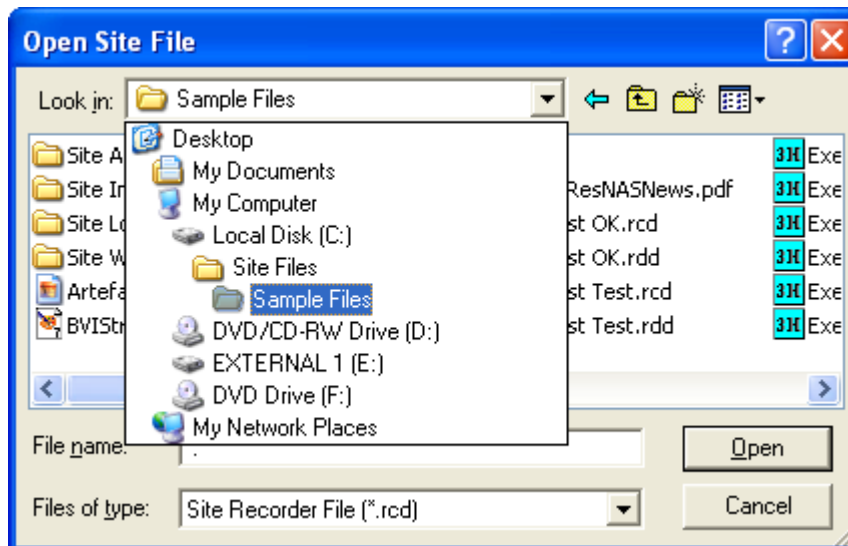
To use the Find Tool:

1. Select **Find** Tool from the **Tools** Menu or click CTRL-F

2. Type in the name of the object *CP04*

3. Press the **Find** button on the Find Tool and the object that matches the name is shown

4. Double click on the Artefact *CP04* in the list to show its properties

5. Click the **Show on Chart** button to show the chart centred around the selected object(s)

6. Click the **Show in List** button to show the object in the Artefact List Display

7. In the Find Tool, type in the name *CP** and click the **Find** button

8. The list now shows seven objects with names that match as * is a wildcard and can represent any letter or number
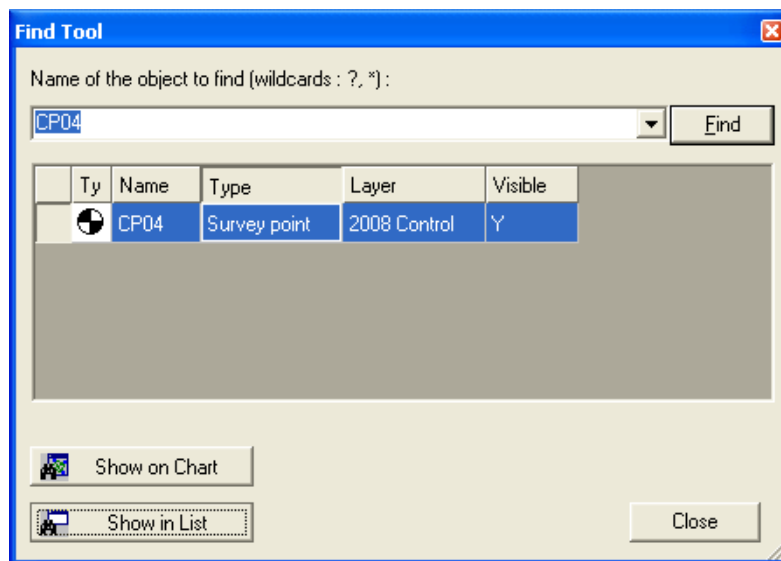
7   Adding a Preliminary Sketch

7.1   Exercise 1 - Points

In this exercise we will add, modify and delete a drawing Point.

Create a new Site:

1. From the **File** menu select **New Site**
2. If prompted, save the old Site file if required
3. On the **New Site Wizard**, set the site name to *Drawing Point* then click **Close**

Add and modify a Point:

1. In the **Layers Display**, select the Layer called *2010 General* and click the **Set Current** button
2. On the **Drawing** Toolbar, click **Add Point**
3. Click anywhere in the middle of the Chart and a new Point will be added
4. On the Point properties page, type in a name for the point (optional) then click **OK**

We can move the Point somewhere else:

1. Select the **Move** tool from the **Main** toolbar
2. On the Chart, click on the new Point or its blue grips and drag the Point to a new location

We can change the Layer the Point is on:

1. In the **Layers** display click the **Add** button on the toolbar, select **General Layer** and click **OK**
2. In the new Layer's properties type in a Name of *Drawing 3* and click **OK**
3. Show the properties for the Point by double clicking it on the chart and set the **Layer** property to *Drawing 3*. Click **OK** to close the property pages.

We can change how the Point is drawn using the Layer:

1. In the **Layers** display, double-click the Layer *Drawing 3* to show its properties.
2. Set the **Point Style** property to Square and click **OK**, the Point is now drawn with a square symbol

We can finally delete the Point:

1. Select the point and click the **Delete** button on the **Main** toolbar
2. At the prompt click **Yes**

7.2   Exercise 2 – Polyline Editing

In this exercise we will add, move, rotate and modify a Polyline.

Create a new Site:

3.   From the **File** menu select **New Site**

4.   If prompted, save the old Site file if required

5.   On the **New Site Wizard**, set the site name to *Drawing Polyline* then click **Close**

Add and modify a Polyline:

6.   In the **Layers Display**, select the Layer called *2010 General* and click the **Set Current** button

7.   On the **Drawing Toolbar**, click the **Add Polyline** button

8.   Left-click with the mouse on the Chart where you want to start the line, move the cursor and left-click to draw the next vertex

9.   Repeat the left-clicks until three or four vertices have been drawn then right-click with the mouse to stop drawing the Polyline

We can move the Polyline somewhere else:

1.   Select the **Move** tool from the **Main toolbar**

2.   Click on one of the lines or grips and drag the whole Polyline to a new location

We can rotate the Polyline about its centre:

1.   Select the **Rotate** tool from the **Main toolbar**

2.   Click on one of the lines or grips and drag the whole Polyline to rotate it

We can move just one of the vertices:

1.   Select the **Move Vertex** tool from the **Drawing Toolbar**

2.   Click on a vertex (place where two lines join) on the Polyline and drag the vertex to a new location

We can make the Polyline a closed shape by moving the last point on top of the first:

1.   Ensure the **Move Vertex** tool is still selected on the **Drawing Toolbar**

2.   Click on the blue grip on either end of the Polyline and move it on top of the grip on the other end

We can add an extra vertex on the Polyline:

1.   On the **Drawing** toolbar, click **Add vertex**

2.   Click anywhere on one of the Polyline's lines to add a new vertex

3.   Try moving the new vertex using the **Move Vertex** tool

We can delete a vertex from the Polyline:

1. On the **Drawing** toolbar, select **Delete Vertex**
2. Click on the vertex to be deleted

We can open our closed Polyline:

1. Click on the Polyline to select it
2. Right click anywhere on one of the Polyline's lines and select **Open/Close Polyline**

7.3   Exercise 3 – Polyline Style

In this exercise we will change the colours and style for Polylines using the default values for a Layer and locally set properties in a Polyline.

Create a new Site:
1. From the **File** menu select **New Site**
2. If prompted, save the old Site file if required
3. On the **New Site Wizard**, set the site name to *Drawing Polyline* then click **Close**

Add two Polylines:
1. In the **Layers Display**, select the Layer called *2010 General* and click the **Set Current** button
2. On the **Drawing Toolbar**, click the **Add Polyline** button
3. Left-click with the mouse on the Chart where you want to start the line, move the cursor and left-click to draw the next vertex
4. Repeat the left-clicks until four or five vertices have been drawn then click on the start of the line (the first vertex) to close the Polyline
5. Repeat steps 2-4 above to add a second closed Polyline
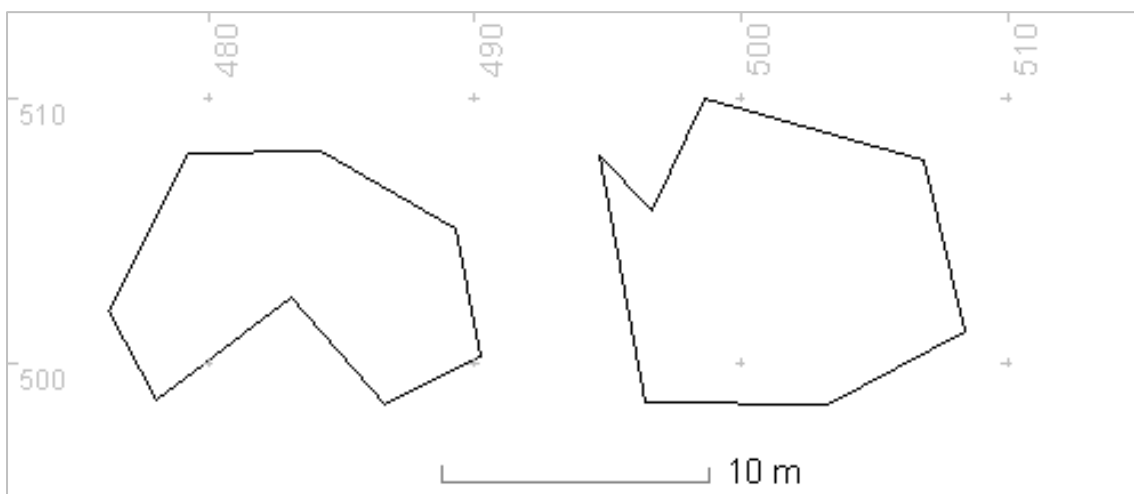
Modify the Layer Colour and Style Properties

We can now change the colour and style for the Polylines. By default any object added to a Layer uses that Layer's style but objects like Polylines can be set to use their own style instead.

1. In the Layers Display, double click the Layer *2010 General* to show its properties

2. For the Pen Colour property, click the coloured square in the right hand column then click the red square in the colour table
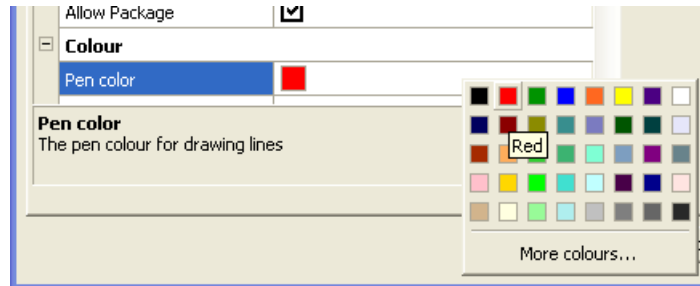
3. In a similar way, set the Fill Colour property to yellow then click **OK**

4. Check that the two polylines are now shown with red outlines and yellow fill
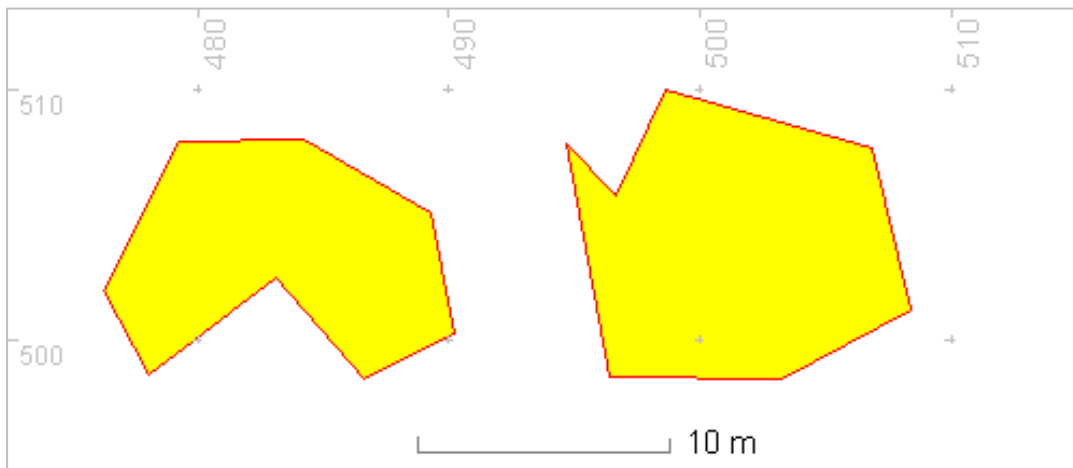
5. On the chart, double click the edge of one of the Polylines to show its properties

6. Set the Pen Colour property to blue, the Line Style to Dash and the Fill Style to Diagonal and click **OK**
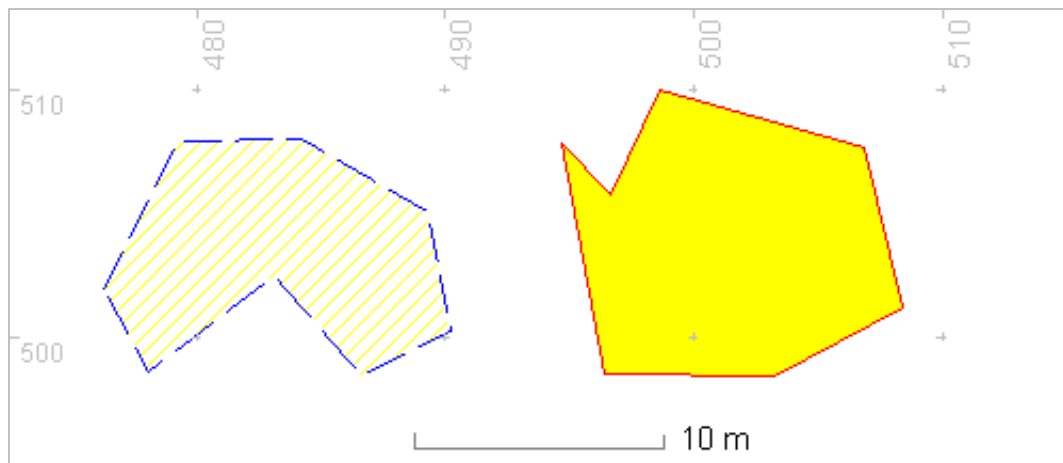
7. Check that the chart now looks similar to the above

8   More about drawing

8.1   Exercise 1 – Polyline Join, Copy and Scale

A common task is to join Polylines together to make a single Polyline. We also need to be able to scale a Polyline to make it larger or smaller in one axis or both axes at the same time.

In this exercise we will join a pair of Polylines by moving the end vertex of one line onto the end vertex of a different Polyline. Next we will break the single, joined Polyline into two parts then join them again by adding a line between them. We will then copy and paste the Polyline before making one of them a different size using the Scale tool.

Join a pair of Polyline objects by Moving a Vertex

1.   Open the Site file Exercise Polyline Join.rdd

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2.   Select the **Move Vertex** tool from the **Drawing Toolbar**

3.   Click on the end of one of the Polylines and move it to the end of the other Polyline, this joins the two Polylines together

Break a Polyline into Two Parts

1.   Select the **Break Polyline** tool from the **Drawing Toolbar**

2.   Click the Polyline somewhere near the middle

3.   Select the **Move** tool from the **Main Toolbar**

4.   Move one Polyline away from the other

**Join the Polylines by Adding a Line**

1.   Click the **Add Polyline** tool on the **Drawing Toolbar**

2.   Click on the end of one Polyline

3.   Click on one end of the other Polyline to join the two together

Copy and Paste the Polyline

1.   From the **Main Toolbar**, click the **Copy** button then the **Paste** button

2.   Use the **Move** tool to move the new Polyline away from the original one

Scale the Polyline in both X and Y axes

1.   From the **Drawing Toolbar**, select the **Scale** tool

2.   Click and hold the mouse on a Polyline then move the mouse right to increase the size of the Polyline or move the mouse to the left to make it smaller. Note that the line is scaled in both axes.

Scale the Polyline in only one axis

1.   Click the **Tools** button on the **Drawing Toolbar** then select **Ortho Mode**

2. From the **Drawing Toolbar**, select the **Scale** tool

3. Click and hold the mouse on a Polyline then move the mouse to the right to increase the size. Note that the line is scaled in just one axis.

4. Click the **Tools** button on the **Drawing Toolbar** then click **Ortho Mode** again to switch ortho mode off

8.2   Exercise 2 – Joining Multiple Polylines

As well as being able to join pairs of Polylines together we often want to join many Polylines and turn them into a single line.

In this exercise we will join multiple Polylines to form a closed shape representing the coastline of the United Kingdom and Ireland.

Join multiple Polylines

1. Open the Site file *Exercise UK.rdd*

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Select all of the Polylines on the chart by clicking CTRL and 'A' on the keyboard or dragging a selection rectangle around all of the Polylines

3. Click the **Tools** button on the **Drawing Toolbar** then select **Join Polylines Tool**

4. In the **Join Polylines Tool** dialog, set the **Tolerance** to 0.05m and click **OK**

5. The chart will now show the coastline of the UK as a single, closed Polyline

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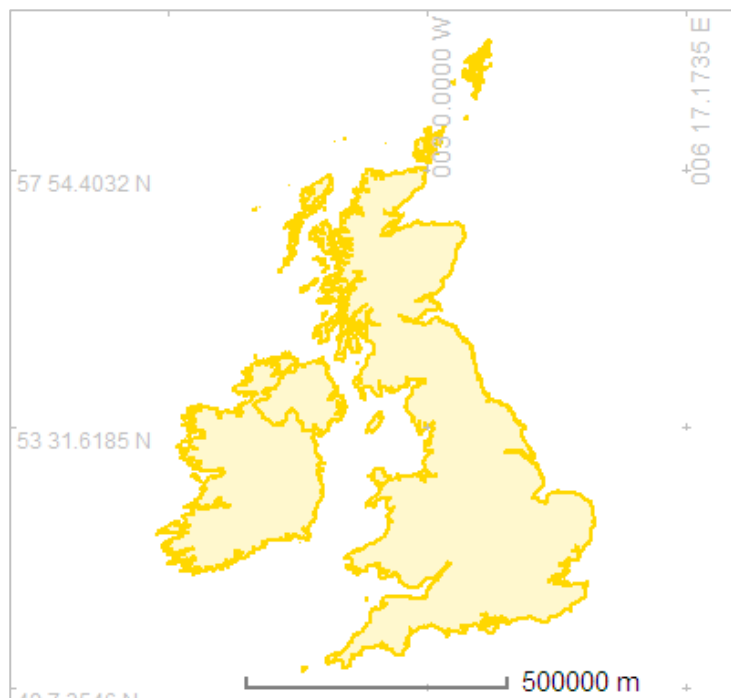
8.3   Exercise 3 – Grouping Objects

When you group drawing objects together you combine them so that you can work with them as if they were a single object.

In this exercise we will compare the effects of moving and rotating individual and grouped objects.

Group a set of drawing objects

1. Open the Site file *Exercise Group.rdd*

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Select the **Rotate** tool from the **Main toolbar**

3. Click on one of the lines or grips of the blue rectangle and drag to rotate it. Note how the single rectangle moves.

4. Select all four objects by dragging a rectangle over them all with the mouse

5. From the **Drawing** Toolbar, select **Tools** then **Group** . Note that the blue selection grips now surround all four objects.
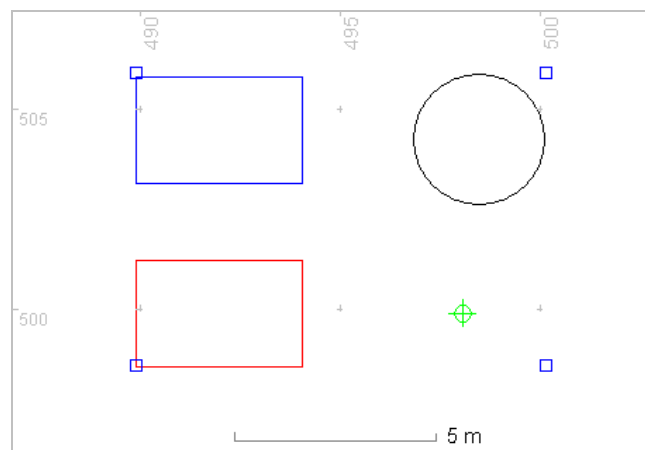
The selected objects will now behave like a single object so can be moved, rotated, scaled and flipped accordingly.

6. Select the **Move** tool from the **Main toolbar**

7. Click on one of the lines or grips and drag the whole group to a new location

8. Select the **Rotate** tool from the **Main toolbar**

9. Click on one of the lines or grips of the blue rectangle and drag to rotate it. Note how the entire group of objects now moves

Ungroup the objects

1. Click on the grouped objects to select them

2. From the **Drawing** Toolbar, select **Tools** then **Ungroup**

3. Repeat the rotate test on the blue rectangle and note how it moves on its own again

8.4   Exercise 4 – Display Stacking

Objects automatically stack up in individual layers as you add them to the Chart. You can see the stacking order when filled objects overlap as the top object covers a portion of objects beneath it.

You can move individual objects or groups of objects in a stack. For example, you can move objects up or down within a stack one step at a time or you can move them to the top or bottom of a stack in one move.

There is a hierarchy of stacking in Site programs. Objects are drawn in the order defined by the Projects, the Layers within each Project and the object order within each Layer. The objects on the bottom of the stack are drawn first; these are in the lowest layer in the lowest Project shown in the Layers display. Each object in subsequent layers is drawn next so filled objects in upper layers may hide objects lower down.

In this exercise we will see the effects of display stacking on objects on the same Layer and objects on different Layers.

To bring an object to the front in its own Layer

1.   Open the Site file Exercise Stacking.rdd (**File | Open**)

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2.   Ensure that the Layer called *Circles* is visible and the Layers called *Rectangles* and *Black Rectangle* are hidden (**Layer Display**)

3.   Click on the edge of the green circle to select it

4.   From the **Drawing** Toolbar, select **Tools** then **Bring to Front**

This will move the green circle to the front or top so it partially hides the others underneath.

5.   From the **Drawing** Toolbar, select **Tools** then **Send to Back**

This will move the green circle to the back so it is partially hidden by the others underneath.

6.   From the **Drawing** Toolbar, select **Tools** then **Bring Forward**

This will move the green circle in front of the red circle but under the blue circle

Change a Layer's stacking order

1.   In the **Layers** display, make the layer *Rectangles* visible. Note that the rectangles are drawn under the circles

2.   In the Layers Display, click on the Layer called *Rectangles* then in the **Layers** Toolbar, select **Bring to Front** .

Note that the Layer *Rectangles* is shown higher than the Layer called *Circles* in the Layers display and that the rectangles are now drawn on top of the circles on the chart

Changing a Project's stacking order

1.   In the **Layers** display, make the Layer called *Black Rectangle* visible, this is in the Project called *Project 2*

2.   Select the Project called *Project 2* by clicking on it

3.   From the **Layers** Toolbar, click **Bring to Front**

Note that the black rectangle is now drawn on top of the other rectangles and circles and the Project called *Project 2* is shown above *Project 1* in the Layers Display.

9   Adding Images to the Chart - Image Basemaps

9.1   Exercise 1 – Scaling Image Basemaps

Scaled images can be added to the chart to show such things as site sketches, sidescan sonar images, multibeam sonar images and aerial photographs. For some Image Basemaps the scale or a fixed distance is known, a scanned site plan with a scale for example. Once imported the image itself can easily be scaled so the distance is correct using the Scale Basemap tool.

In this exercise we will add an Image Basemap then use the Scale Basemap tool to set its size correctly on the chart

Add an Image Basemap:

1. Create a new Site file (**File | New Site**)

2. Show the **Drawing Toolbar** if not shown already. From the **View Menu** select **Toolbars** then **Drawing Toolbar**

3. Select the Layer '2010 General' as the current Layer in the **Layer Display**. Click on the Layer in the list then click the **Set Current** button

4. Click anywhere on the chart to set it as the active display

5. On the **Drawing Toolbar** click the **Add Image Basemap** button

6. Click on the chart where you want to put the bottom left corner of the picture. The properties pages for the Image Basemap will be shown.

7. In the **Property Pages**, set a new **Name** or use the default

8. Click the blank **File** property and an **Open** dialog will be displayed

9. Navigate to the document file *BVIStructure.tif,* select it and click **Open**

The test file can be found in *C:\Site Files\Sample Files\ Site Images*

10. A preview of the image will now be shown in the **Property Pages**

11. Click **OK**

Set the Scale of the Image

1. Pan and zoom the chart so the scale bar in the Image Basemap picture is visible

2. Select the Image Basemap on the chart by clicking the border line around the outside or click the Image label text

3. From the **Tools** menu, select **Basemaps** then **Scale BaseMap**

4. Click on one end of the scale bar in the picture, hold the left mouse button down then drag the mouse to the other end of the scale bar and let go.

5. The Scale Basemap Tool dialog is shown, type in a distance of 2.0 and click **OK**

6. The selected image will then be scaled, use the Measure Tool to confirm the scaling is correct
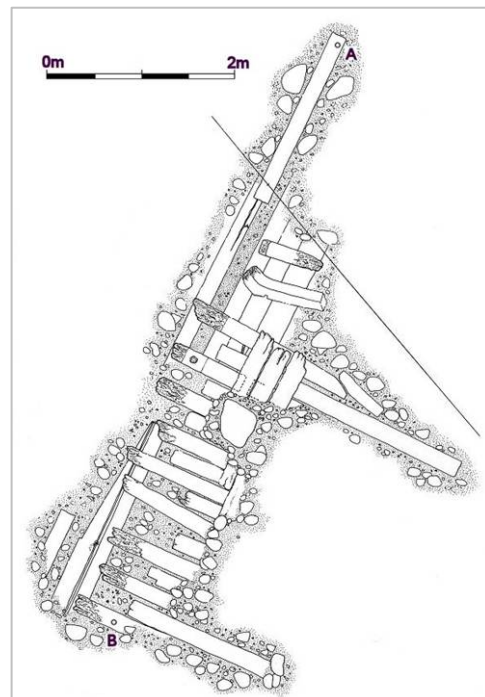
9.2   Exercise 2 – Aligning Image Basemaps

Where two points on the image should line up with two known points on the chart, the Align Basemap tool can be used to quickly and accurately put the image into position. Two points are selected on the image and two corresponding points (ground control points) selected on the chart.

In this exercise we will scale, rotate and position an Image Basemap using the Basemap Align Tool.

Align a Basemap:

1. Load the Site file *Exercise Digitise Align.rdd*

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Ensure that the Layers called *2008 Control* and *Basemap L* are visible and the layers *2008 Rocks*, *2008 Timber* and *2008 Outline* are hidden

3. On the chart, select the Image Basemap *Image BM* by clicking on it

4. From the **Tools** menu, select **Basemaps** then **Align Basemap**. The **Align Basemap Tool** will be displayed.

5. Move the **Align Basemap Tool** off to one side of the chart so the chart can be seen

6. Use the chart zoom and pan tools to help ensure that the point labelled CP1 on the Image Basemap is visible.

7. In the tool, click the **Source Point 1** button then click the Image Basemap in the middle of the reference point labelled CP1.

8. In the tool, click the **Destination Point 1** button and click the chart In the middle of Survey Point *CP1*. A red 'X' will be shown at the destination point selected with label 'D1'.

9. Repeat for **Source Point 2** and **Destination Point 2**, lining up CP2 on the Image and the Survey Point *CP2* on the chart.

10. When the four points points are correctly placed, click the **Align** button on the Tool.

The Image will be scaled, rotated and moved so the Source points on the image line up with the corresponding Destination points on the chart.

9.3   Exercise 3 – Digitising a Site Plan

The imported, scaled, rotated and positioned Image Basemap can now be digitised to turn it into an electronic site plan.

In this exercise we will digitise part of a scanned paper site plan, separating timbers, rocks and excavated extents onto separate Layers.

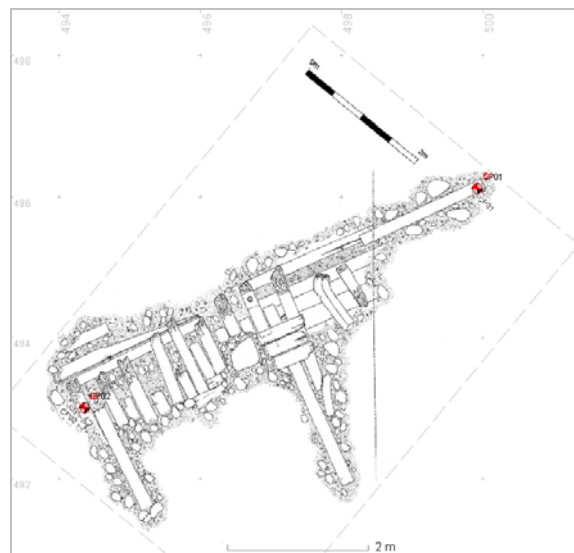**Digitise the Image Basemap Timbers**

1. Load the Site file *Exercise Digitise.rdd*

The file can be found in *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Ensure the Layer *Basemap L* is visible (found in the Project called *Basemaps*)

3. Switch on the Layer called *2008 Timber* (**Layer display**)

4. Set this to be the current Layer (**Layer Toolbar | Set Current**)

5. Add a Polyline (**Drawing menu**) and start tracing the outline of one of the timbers shown on the Image Basemap

6. Join the ends of the Polyline to close it so it is shown filled with colour

7. Repeat for some other timbers

8. Set the *2008 Timber* Layer Fill Style to None (**Layer properties**)

9. Add detail lines to the timber drawings to represent areas of eroded timber

10. Set the *2008 Timber* Layer Fill Style to Solid (**Layer properties**)

11. Note that the detail lines are drawn on top of the filled areas

Digitise the Image Basemap Rocks

12. Switch off the Layer *2008 Timbers* (**Layers Display**)

13. Switch on the Layer *2008 Rocks*

14. Set this to be the current Layer

15. Add a Polyline and trace the outline of a rock, ensure the ends of the Polyline are joined

16. Repeat for a number of other rocks

Showing the Digitised Plan

17. Switch off the Layer *Basemap L* (found in the Project called *Basemaps*)

18. Switch on the Layers *2008 Timber*, *2008 Rocks*, *2008 Outline*, *2008 Control*

10 Survey Points and Measurements

10.1 Exercise – Adding Survey Points and Measurements

In this exercise we will create a new Site then add Survey Points and measurements to it. We will simplify this exercise by using the default layer called *2010 Control* found in any newly created Site file.

Create a new Site:

1. From the **File** menu select **New Site**

2. If prompted, save the old Site file if required

3. On the **New Site Wizard**, set the name for the site to be *Measurements* then click **Close**

4. In the Layers Display, select the Layer called *2010 Control* and click the **Set Current** button

Add four Survey Points:

1. Click anywhere on the chart to select it

2. Click the **Add** button on the **Main** toolbar and select **Survey Point**

3. Click on the Chart in the top-left corner. Properties for a Survey Point will be shown with the default name *CP01*.

4. Set the **Depth** property to be 1.0

5. Click **OK** and the point will be created

6. Repeat for three other points *CP2*, *CP3* and *CP4* in the other corners of the Chart.

Your Chart should now look like the picture.

Notes:

By setting the depth value a depth measurement has automatically been added to each point
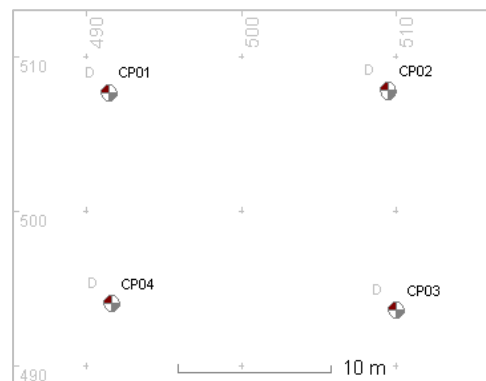
Add six Distance Measurements:

1. Click the **Add** button on the **Main** toolbar and select **Distance**

2. Left click and hold on the centre of Survey Point *CP01*, then drag the line to the centre of *CP02* then release the mouse button.

The properties for the Distance measurement are shown with a default Value property equal to the distance between the points on the Chart.

3. Click **OK** and the Distance measurement will be shown on the Chart

4. Repeat for Distances between *CP01-CP03*, *CP01 – CP04*, *CP02 – CP03*, *CP02 – CP04* and *CP03 – CP04*.

5. Save the file

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Your Chart should now look like the picture.

The sample Site file associated with this exercise is 'Exercise Adjust OK.rdd'.
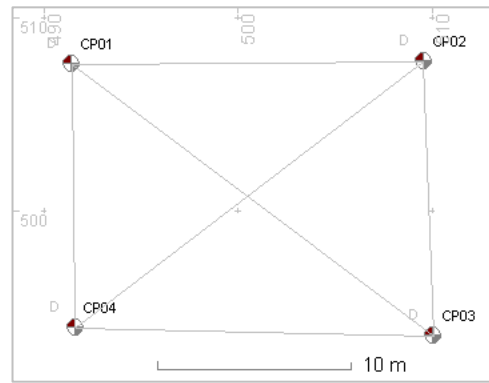
11 3D Survey Processing

11.1 Exercise 1 – Basic Adjustment

In this exercise we will adjust the positions of the points added in the previous exercise and use the measurements to define the positions of the points.

In the previous exercise we added a set of four Survey Points and added measurements between them. All of the measurements added were perfect, they were correct for the positions of each point on the Chart. If we use the measurements to adjust the positions of the points then the points should not move as the current point positions and the measurements agree. Of we then move one of the points and re-adjust the network of points will return to its original shape.

If this Site file from the previous exercise is not already open:

Open the Site file:

1. From the File menu select **Open Site**

2. If prompted, save the old Site file if required

3. Open the Site file from the previous exercise *Measurements* or use the file *Exercise Adjust OK*

4. In the **Layers Display**, select the Layer *2008 Control* then click the **Set Current** button on the **Layers Toolbar**

5. Show the Adjust Toolbar. From the View Menu select Toolbars then Adjust Toolbar

Adjust the positions of the Survey Points:

1. On the **Adjust** toolbar, click the **Adjust** button . The message 'Adjustment completed OK' will be shown followed by the **Statistics** display. Note the shape of the network of Survey Points.

2. Using the **Move** tool on the **Main** toolbar, move the position of any one of the Survey Points. Note that the measurements go grey.

3. Click the **Adjust** button again and the network of points should go back to the previous shape (but it may move and rotate slightly) and the measurements are again shown in green

The sample Site file associated with this exercise is *Exercise Adjust OK.rdd*.

The test file can be found in *C:\Site Files\Sample Files*

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11.2 Exercise 2 – Finding Mistakes

In this exercise we will use the Auto Rejection tool to find measurements that do not fit in a set of Survey Points and Measurements.

Open the Site file:

1. From the **File** menu select **Open Site**

2. If prompted, save the old Site file if required

3. Open the Site file *Exercise Adjust Test.rdd*

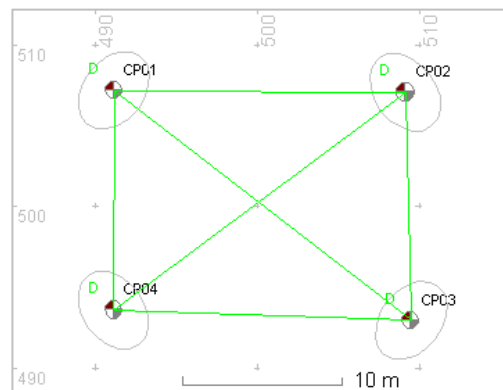The test file can be found in *C:\Site Files\Sample Files*, see section 6.1 Exercise – Using the Find Tool
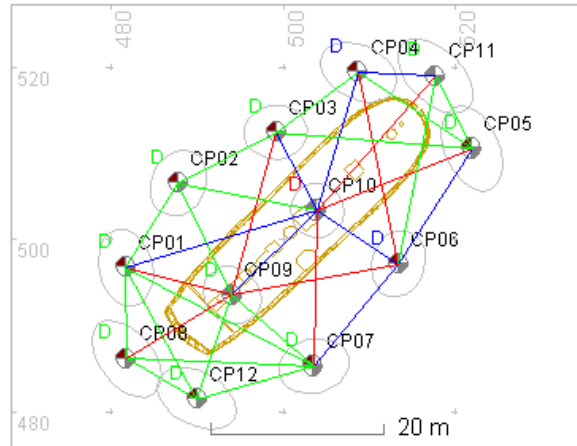
Adjust the positions of the Survey Points:

1. On the **Adjust** toolbar, click the **Adjust** button. The message 'Adjustment completed OK' will be shown.

Note the colour of some of the distance measurements are blue or red indicating that one or more of the measurements is wrong. The quality metric RMS of Residuals is also too high at 0.101m, this is the Root-Mean-Square of the residuals and is similar to an average value.

2. Click the **Auto Rejection** button on the **Adjust** toolbar. This activates the auto rejection tool allowing the adjustment to identify and reject measurements.

3. Click the **Adjust** button again and the measurements will all go green apart from three that are shown as magenta: *CP06 – CP10*, *CP10 – CP11*, *CP02 – CP03*

The RMS Residuals quality figure is now an acceptable 15mm indicating that these measurements fit together well.
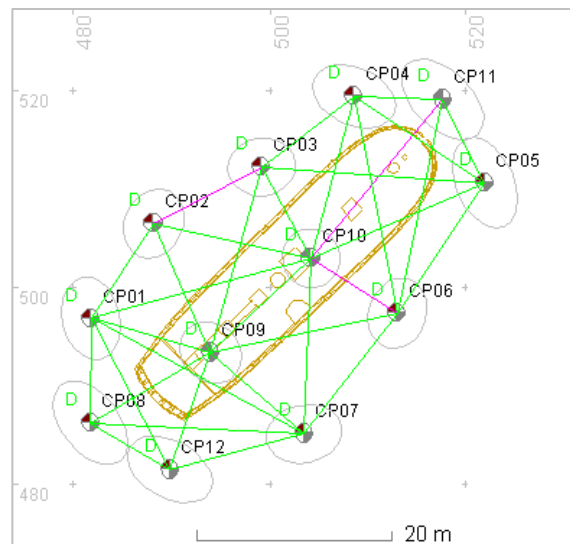
12 A Quick Assessment Survey using Radial Measurements

12.1 Exercise – Radial Measurements

In this exercise we will add and modify Radial measurements.

Create a new Site:
1. From the **File** menu select **New Site**
2. If prompted, save the old Site file if required
3. In the **New Site Wizard,** set the name of the site to be *Radial* then click **Close**
4. In the **Layers Display**, select the Layer *2010 Control* then click the **Set Current** button on the **Layers Toolbar**

Add a Survey Point:
1. Click on the Chart to select it
2. On the main menu click **Add** and select **Survey Point**, then click on the Chart in the centre. Properties for a Survey Point will be shown with the default name *CP01*.
3. Set the **Depth** property to 1.0
4. Click **OK** and the point and a depth measurement will be created

Add Radial Measurements:
1. On the **Main Toolbar** click the **Add** button and select **Radial** then click on the centre of Survey Point *CP01*. The property pages for the Radial measurement are shown.
2. Set the distance **Value** property to 10m and **Fwd Bearing** property to 30.0 degrees then click **OK**
3. Add another radial measurement to *CP01* with a **Value** of 7m and a **Fwd Bearing** of 270 degrees
4. Add another radial measurement to *CP01* with a **Value** of 8m and a **Fwd Bearing** of 160 degrees
5. Add a radial measurement to *CP02* this time with a **Value** of 10m and a **Fwd Bearing** of 280 degrees
6. Double click the radial measurement from *CP02* to *CP05* and set the **Fwd Bearing** of 260 degrees and a **Value** of 12m. Click **OK**.

Your Chart should now look like this picture >

The sample Site file associated with this exercise is *Exercise Radial.rdd*.

The test file can be found in *C:\Site Files\Sample Files*
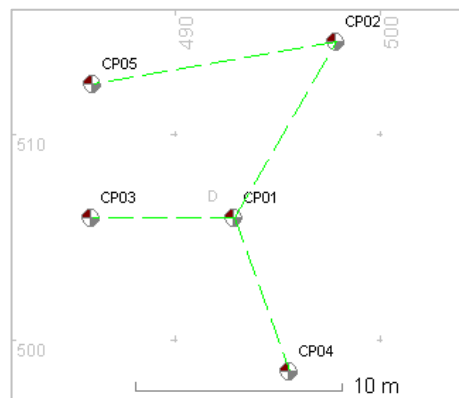
# 13 Adding Detail with Offsets and Ties

13.1 Exercise – Offsets and Ties

In this exercise we will create a new Site, add Survey Points and a Baseline then attach offsets and ties measurements to it.

Create a new Site:

1. From the **File** menu select **New Site**

2. If prompted, save the old Site file if required

3. In the **New Site Wizard**, set the name of the site to be *Offset Ties* then click **Close**

4. In the **Layers Display**, select the Layer called *2010 Control* and click the **Set Current** button

Add two Survey Points:

1. Click on the chart to select it

2. On the **Main menu** click **Add** and select **Survey Point.** Click on the chart in the lower-left corner. Properties for a Survey Point will be shown with the default name *CP01*.

3. Set the **Depth** property to 1.0

4. Click **OK** and the Survey Point and a Depth measurement will be created

5. Add a second Survey Point in the top-right corner, at least 20m from point *CP01*.

Add a Distance Measurement:

1. On the main menu click **Add** and select **Distance**

2. Left click and hold on the centre of Survey Point *CP01*, then drag the line to the centre of *CP02* then release the mouse button.

The properties for the Distance measurement are shown with a default **Value** property equal to the distance between the points on the chart.

3. Click **OK** and the Distance measurement will be shown on the chart

Add an Offset:

1. On the main menu click **Add** and select **Offset.** Click anywhere on the new Baseline and the properties pages for the offset will be shown

2. Set the **Along** value to be 7m and the **Offset** value to 7m

3. Ensure the **Is Right Side** check box is set then click **OK**.

This will add an offset to the right side of the baseline, as shown in the picture >
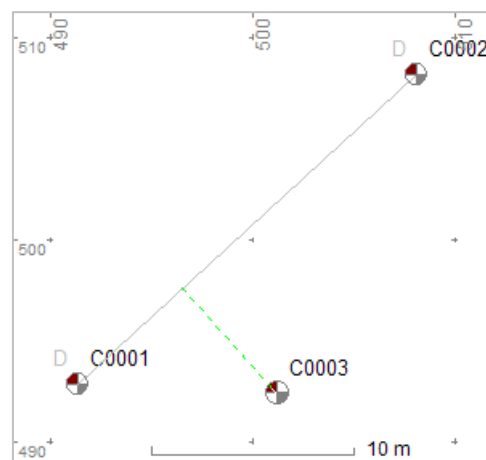
Add a Tie:

1. On the main menu click **Add** and select **Ties.** Click anywhere on the baseline and the properties pages for the ties will be shown.

2. Set the **Along 1** property to 12 m and set the **Tie 1** property to 5 m

3. Set the **Along 2** property to 18m and the **Tie 2** property to be 4m.

4. Set the **Along check** property to be 15.5m and the **Tie check** property to 3.4m

5. Unset the **Is Right Side** check box and click **OK**

The optional check measurement gives a residual of 0.083m

Your chart should now look like this picture >

The sample Site file associated with this exercise is *Exercise Offset Ties.rdd*.

The test file can be found in *C:\Site Files\Sample Files*

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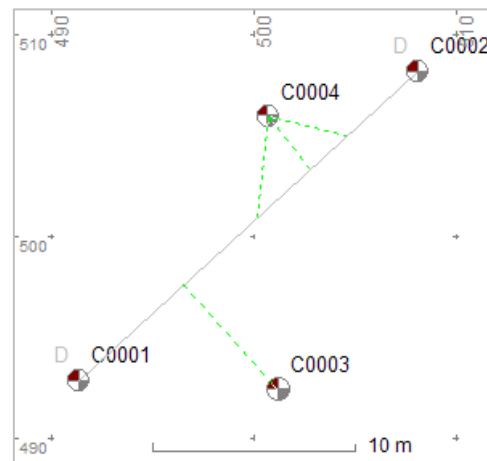
14 Artefacts

14.1 Exercise 1 – Artefact Shapes

In this exercise we will add a drawing shape to an Artefact by importing an existing drawing from a file. Next we will associate two Survey Points with the Artefact and use the points to position the shape on the chart.

Create a new Site:

1. From the **File** menu select **New Site**

2. If prompted, save the old Site file if required

3. In the **New Site Wizard**, set the name of the site to be *Artefact Shape* then click **Close**

4. In the **Layers Display**, select the Layer called *2010 Artefacts* and click the **Set Current** button

Add an Artefact and its shape:

1. On the **Main Menu** click **Add** and select **Artefact**

2. Click on the centre of the chart where you want the Artefact to be placed and the properties pages for the Artefact will be shown

3. Select the **Position** tab and click the **Shape Editor** button

4. In the **Shape Editor**, click the **Import** button in the lower-left corner

5. Select the file *Cannon.dxf* from the Sample Files folder.

The test file can be found in the folder *C:\Site Files\Sample Files*

6. On the **Import Wizard File Page** click **Next**

7. On the **Coordinates Page** click **Next**

8. On the **Report Page** click the **Start** button. When complete click **Finish**

9. Click the **Move** button on the **Shape Editor toolbar** and drag the red reference point 1 to the middle of the base ring on the cannon

10. Move Reference point 2 to the middle of the muzzle

Your Shape Editor drawing should now look like this picture >

11. Click the **Close** button on the **Shape Editor**
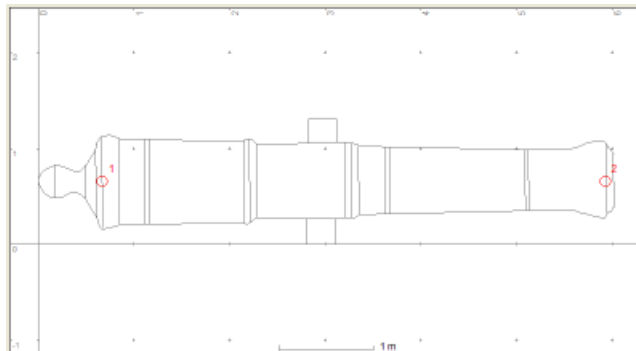
Add two Survey Points:
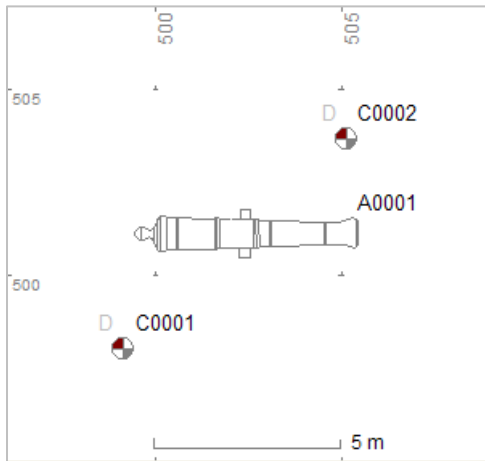
1. On the Layers display set *2010 Control* to be the current Layer

2. Select the chart so the **Main** Toolbar buttons become enabled

3. On the main menu click **Add** and select **Survey Point.** Click on the chart in the lower-left corner. Properties for a Survey Point will be shown with the default name *CP01*.

4. Repeat for a second Survey Point *CP02* in the top-right corner

< Your chart should now look like this picture

Associate the Survey Points with the Artefact:

1. Double-click the Artefact on the chart to show its properties.

2. Select the **Positioning** tab

3. Click the **Fixed by points** radio button

4. Select **Point 1** to be *CP01* and **Point 2** to be *CP02*. Click **OK**.

To move the Artefact shape:

- Using the **Move** tool on the **Main toolbar**, move either of the Survey Points and the Artefact shape will follow.

The Shape will move so its primary reference point is on top of Survey Point *CP01* and the secondary reference point lies as close as possible to the second Survey Point *CP02*.

Your chart should now look like this picture >
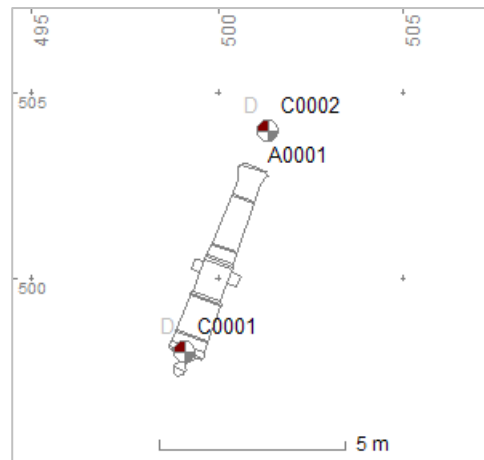
The sample Site file associated with this exercise is *Exercise Artefact Shape.rdd*.

The test file can be found in *C:\Site Files\Sample Files*

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14.2 Exercise 2 – Property Options and Wordlists

The list of options available for any enumerated property in a property page is controlled by a wordlist. The contents of the wordlist can be altered, changing the options offered for each property in the property page.

In this exercise we will modify the wordlists used to provide options for one of the Artefact's properties.

To Modify the Property Options

1. Double-click the Artefact Shape (or label) to show the Artefact's properties page

2. Set the **Material** property to 'Composite' and note that the option 'Plastic' is not available

3. Click **OK** to close the Artefact property pages

4. From the **Tools Menu**, select **Word Lists**

5. Double click **Arch Material** from the table in the **Wordlists** dialog

6. In the **Arch Material** table click the **Add Word** button, type in the new material 'Plastic'

7. Click on the material 'Stone' then click the button **Delete Word**

8. Click **OK** to close the dialog

9. In the **Wordlists** dialog click **Close**

10. Double-click the Artefact Shape (or label) to again show the Artefact's properties page

11. Set the **Material** property to the newly available option 'Plastic'. Note that the option 'Stone' is no longer available.

12. Click **OK** to close the property pages
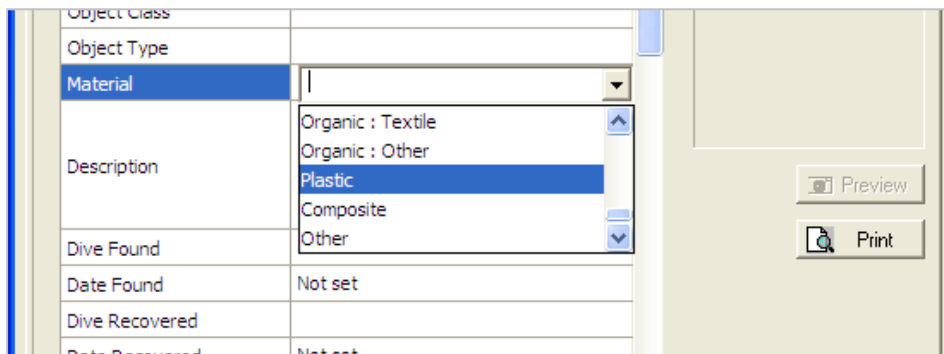
15 Using Drawing Frames

15.1 Exercise – Adding a Drawing Frame

In this exercise we will create a new Site, add Survey Points and a Baseline then attach a Drawing Frame to the Baseline.

Create a new Site:

1. From the **File** menu select **New Site**

2. If prompted, save the old Site file if required

3. On the **New Site Wizard**, set the name of the site to be *Drawing Frame* then click **Close**

4. In the **Layers Display**, select the Layer called *2010 Control* and click the **Set Current** button

Add two Survey Points:

1. Click on the chart to select it

2. On the **Main** menu click **Add** and select **Survey Point.** Click on the chart in the lower-left corner. Properties for a Survey Point will be shown with the default name *CP01*.

3. Set the **Depth** property to be 1.0

4. Click **OK** and the Survey Point and a Depth measurement will be created

5. Add a second Survey Point in the top-right corner, at least 10m from point *CP01*.

Add a Distance Measurement:

1. On the main menu click **Add** and select **Distance**

2. Left click and hold on the centre of Survey Point *CP01*, then drag the line to the centre of *CP02* then release the mouse button.

The properties for the new Distance measurement line on the chart are shown with a default distance Value property equal to the actual distance between the points on the chart.

3. Click **OK** and the Distance measurement will be shown on the chart

Add a Drawing Frame

1. On the main menu click **Add** and select **Drawing Frame.** Click anywhere on the chart

2. Select the **Position** tab and click **the Fixed by baseline** button

3. Select the baseline *ObsCP01:02* and set the **Along** value to 6m. Click **OK** to close the property page.

Your chart should now look like this picture >
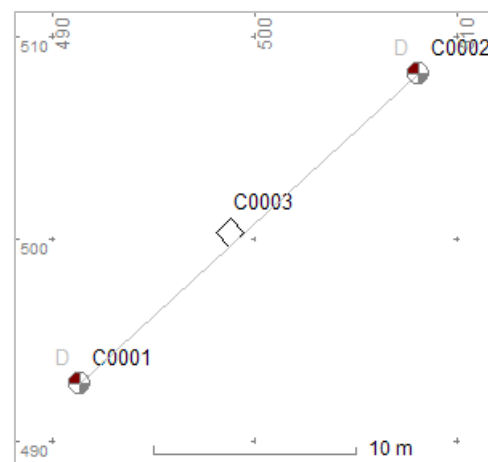
To move the Drawing Frame:

- Using the **Move** tool on the **Main toolbar**, move either of the Points and the Frame will follow.

To set the alignment of the Drawing Frame on the Baseline:

1. Select the **Position** tab and click the **Shape Editor** button

2. Click the **Move** button on the **Shape Editor** toolbar and drag the red reference point 1 to coordinates 0.0, 0.1

3. Move Reference point 2 to coordinates 1.0, 0.2

To add a scanned drawing image:

1. In the Shape Editor, click the Image button

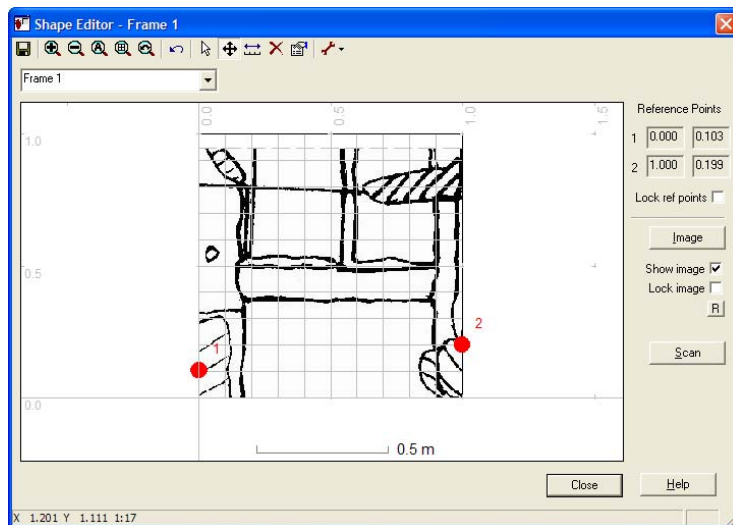2. Select the image file Test Drawing.gif and click Open.

This image will automatically scale to fit the drawing frame.

Your Shape Editor drawing should now look like this picture >

3. Click the **Close** button, at the prompt to show the image on the main chart click **Yes**.

4. Click **OK** on the properties page
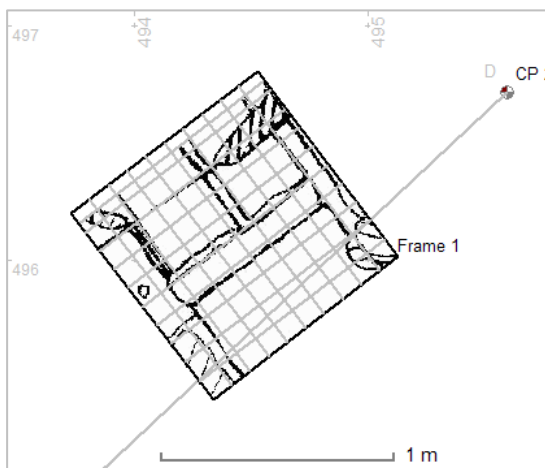
< Your chart should now look like this picture

The Frame now lies so that the both Reference points lie on the Baseline itself.

If the image is not shown in the frame then double click the edge of the frame to show its properties and check that the Show Image property is checked.

The sample Site file associated with this exercise is *Exercise Drawing Frame.rdd.*

The test file can be found in the folder *C:\Site Files\Sample Files*

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16 Features and Sectors

16.1 Exercise – Associating Objects

In this exercise we will create new Artefacts, Features and Sectors and associate them together using a realistic example:

- A wreck site had an excavation trench defined by the bulkheads of the carpenter's cabin

- In the trench was found the lid of a box

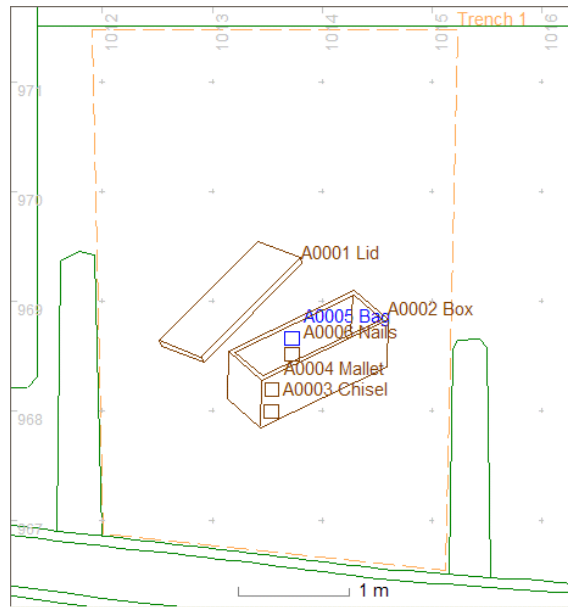- Below the lid was found a box, the lid found earlier was the correct size to fit the box

- Found inside the box were a chisel and a mallet

- Also inside the box was the 'ghost' of a cloth bag, no cloth remained just a different colour sediment

- Inside the 'bag' were found 10 identical copper nails

The illustration (right) is from the real example; in this exercise we will not create this drawing but something much simpler.

Add Artefacts, Feature and Sector

1. Ensure the Artefact Layer on which you want to add the new object is selected as the current Layer

2. On the **Main** Menu click **Add** and select **Artefact**

3. Click somewhere on the chart where the Artefact is to be placed. The properties pages will be shown.

4. Set the Name to be *A0001 Lid* then click **OK**

5. Repeat for other new Artefacts *A0002 Box*, *A0003 Chisel, A0004 Mallet and A0006 Nails*

6. On the **Main** Menu, click **Add** and select **Feature**

7. Click somewhere on the chart where the Feature is to be placed. The properties page for the Feature will be shown.

8. Set the Name to be *A0005 Bag* then click **OK**

9. On the **Main** menu click **Add** and select **Sector**

10. Click anywhere on the chart where the object is to be placed. The properties page for the Sector will be shown.

11. Set the Name to be *Trench 1* then click **OK**.

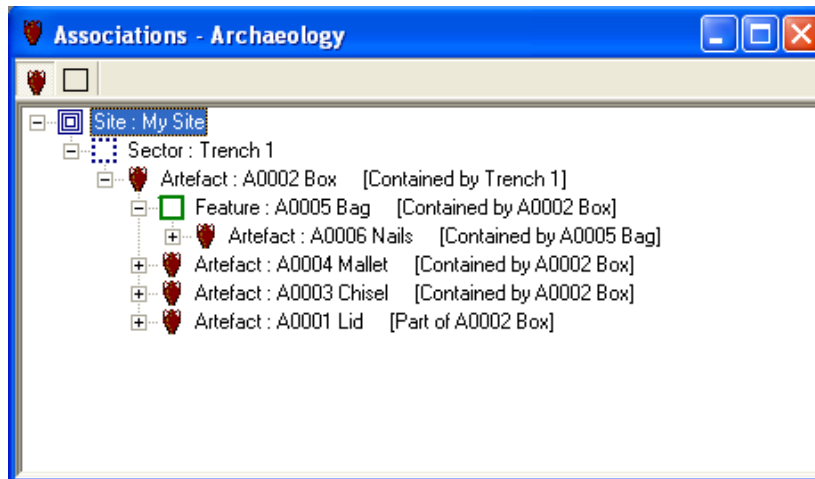**To associate Artefacts, Features and Sectors**

1. Open the properties for the Artefact *A0006 Nails* and open the **Recording** page

2. Set the Association property to Contained By and Associated With to *A0005 Bag*

3. Open the properties for the Artefact *A0005 Bag* and open the **Recording** page

4. Set the Association property to Contained By and Associated With to *A0002 Box*

5. Repeat for *A0003 Chisel* and *A0004 Mallet*

6. Open the properties for the Artefact *A0001 Lid* and open the **Recording** page

7. Set the Association property to Part Of and Associated With to *A0002 Box*

8. Open the properties for the Artefact *A0002 Box* and open the **Recording** page

9. Set the Association property to Contained By and Associated With to *Trench 1*

Show the Associations

1. On the **Main** toolbar, click the **Show Associations** button

2. In the Associations Display, click the + icon for the Site to show its associated objects

3. Click the + icon for each associated object to open the tree and show the branches

These relationships can be shown using the Associations display in the figure above. This display shows the relationships between all archaeological objects in a hierarchy with the Site at the top followed by Sectors, Features and Artefacts. Objects are then shown related to other objects with the type of relationship shown in square brackets [ ].

At the top of the 'tree' is the Site itself and below this is a Sector that represents *Trench 1*, contained by *Trench 1* is the Box shown as *A0002 Box*.

Below the Box is the Lid, *A0001 Lid*. The Lid is shown below the Box as it is related by being 'Part of' the Box. Also below the Box are the Chisel and the Mallet represented by Artefacts *A0003 Chisel* and *A0004 Mallet*.

Feature *A0005 Bag* represents the remains of the Bag, also 'Contained by' the Box. Contained by the Bag Feature are the 10 Copper nails represented by Artefact *A0006 Nails*.

The sample Site file associated with this exercise is *Exercise Associations.rdd*.

The test file can be found in the folder *C:\Site Files\Sample Files*

17 Contacts and Dive Logs

17.1 Exercise – Linking Contacts and Dive Logs

In this exercise we will add some Contacts and link them to a Dive Log, then link the Dive Log to a Survey Point. The Links property page for the Survey point will then be used to show which objects are linked to it.

Create new Contacts:

1. On the **Main** toolbar, click the **Add New Display** button and select **Contact**. This will show the List Display for Contacts

    Click the **Add** button on the **Main** toolbar and select **Contact**, set the Name to be *Bill* set the other properties if desired then click **OK**

2. Repeat for two more new Contacts called *Fred* and *Jim*

Create a Dive Log

1. On the **Main** toolbar, click the **Add New Display** button and select **Dive Logs**. This will show the List Display for Contacts

    Click the **Add** button on the **Main** toolbar and select **Dive Log**, the Dive Log properties will be shown with the default name for the Dive Log as *DIV08-001*

2. Set Diver 1 to be *Jim*, Diver 2 to be *Fred* and the Supervisor to be *Bill*

3. Click on the Time In property and set a date and time

4. Click on the Time Out property and set a time after the Time In

5. Click the Duration property and check that the correct time interval is shown

6. Click **OK** to close the properties

Add a Survey Point:

1. On the **Layers** display, click on the Layer called *2010 Control* in the Project called *2010 Season*

2. Click the **Set current** button or right click and select **Set Current** from the context menu. Check that the *2010 Control* label is now in bold font, showing that it is now the current Layer.

3. Click anywhere on the chart display to select it

4. Click the **Add** button on the **Main** toolbar and select **Survey Point**

5. Click a point on the chart where you want the Survey Point to be placed. The property page for the Survey Point will now be shown

6. Use the default name for the Survey Point but set the Dive Reference property to DIV08-0001 and click OK.

7. Click the **Select** button on the **Main Toolbar** or press the **ESC** key to stop adding Survey Points

Checking Links

1. Double click the survey point on the chart to show its properties

2. Click the **Links** tab

3. Click the **+** in the links tree to show the Dive Log linked to this Survey Point

4. Click the **+** in the links tree for the Dive Log to show the Contacts (Divers) linked to it

5. Double click any item in the links tree to show that object's properties.

6. Close the properties page
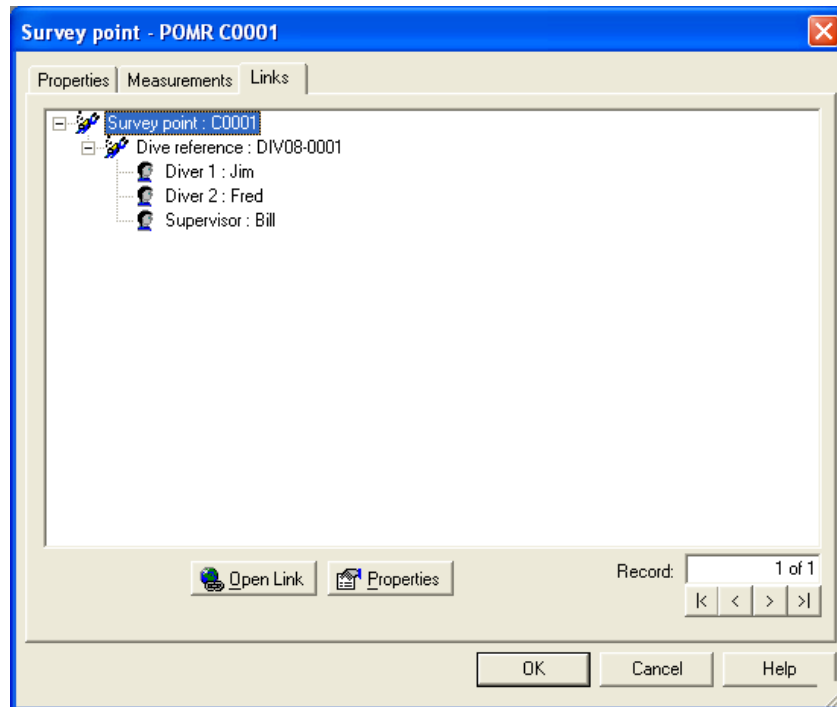
The Links page shows the objects that are linked to this object and allows you to navigate between them.

18 Images

18.1 Exercise – Linking Images

Pictures and video clips can be added to the Site as Image objects and these images can be linked to other objects. In this exercise we will add a Target object, add an Image object and link the Image to the Target then show the image in an editing program and in the Image Preview display.

Link a Single Image

1. Create a new Site file (**File | New Site**)

2. Ensure that a General Layer is selected as the current Layer (**Layers Display | Set Current**)

3. Add a Target object to the Chart (**Main Menu | Add | Target**)

4. Open the property pages for the Target (**Double click**)

   Click on the **Image** tab then click the **Add** button to show the **Select Images** dialog

   In the **Select Images** dialog click the **Add New** button. A new Image object is created and its property pages are displayed.

   In the **Image** property page, set the name of the Image (or use the default) then click on the **File** property. The **Open** dialog is shown.

   In the **Open** dialog, navigate to the image file *Target.jpg* then click the **Open** button

If the file was opened then it is shown in the preview pane on the Image properties page

The test file can be found in the folder *C:\Site Files\Sample Files\Site Images*

   Set the other Image properties if desired then click **OK**

   In the **Select Images** dialog, click on the image to add (if it is not selected already) then click **OK**

   The Image is now shown in the list on the Images property page

Open the Linked Image in an Editing Program

1. In the Image tab in the objects Properties Pages, click the linked Image to edit then click **Open Link**

2. Close the editing program and return to Site Recorder

3. Close the Target properties page by clicking **OK**

To show the Image Preview Display:

1. On the Main Toolbar, click the Image Preview button

2. Click on the Target and the image recently linked to it will be shown

3. Click the maximise button on the Image Preview display To show a larger image

4. Click the restore button to return it to the original size.
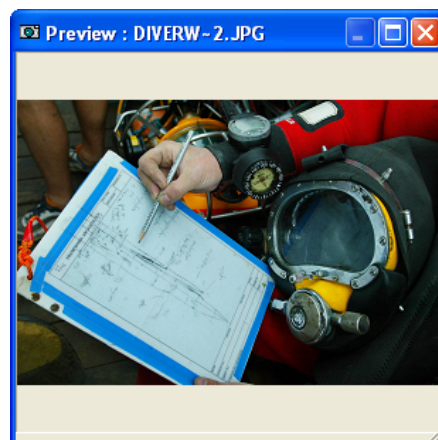
19 Sources

19.1 Exercise – Linking Documents and Sources

Documents, reports, letters, web pages and other sources can be recorded using Source objects. As with Images, Source objects record information about the document but also provide a link to the document or web page if available on the computer or network. The link provides a way to display or edit the document from within Site Recorder.

In this exercise we will create a Source and link a PDF file to it, open the PDF file from the Source List Display then link the Source to a Target.

Add a Source and link a document file to it:

1. Create a new Site file (**File | New Site**)

2. From the **Main Menu**, click the **Add** button ➕▾ and select **Source**

3. Set the Name property or use the default

4. Click the right-hand column of the File property and an **Open** dialog is displayed

5. Navigate to the document file *CattewaterHiResNASNews.pdf*, select it and click **Open**

The test file can be found in the folder *C:\Site Files\Sample Files*

6. Click OK and the Sources List Display will be shown

7. Click on the new Source in the list to select it

8. From the **Tools** menu, select **Open Linked File** and the linked document will now be shown. Close the linked document.

Link the Source to a Target

1. Ensure that a General Layer is selected as the current Layer (**Layers Display | Set Current**)

2. Add a Target object to the Chart (**Main Menu | Add | Target**)

3. Open the property pages for the Target (**Double click**)

4. Click on the **Sources** tab

5. Click the **Add** button

6. In the **Select Sources** dialog, click on the Source just added then click **OK**

7. The linked Source should now be shown in the list in the Target's **Sources** tab

8. Click on the Source in the list to select it

9. Click the **Open Link** button on the Sources tab to show the document file linked to the Source. Close the linked document.

10. Click the **Properties** button on the Sources tab to show the properties pages for the linked Source. Close the Source properties pages by clicking **OK** or **Cancel.**

11. Close the Target properties pages

20 Wrecks

20.1 Exercise – Linking Site Files to Wrecks

Wreck objects can be linked to other Site files so the linked file can be opened from within another Site file. This allows the creation of 'master' site files that cover a wide area but contain only basic information about sites linked to many smaller Site files that each contains detailed information about a specific site.

In this exercise we will create a Wreck object, link another Site file to it then open the linked Site file.

Add a Wreck:

1. Create a new Site file (**File | New Site**)

2. In the **Layers Display**, Set a General Layer to be the current Layer (**Layers Display**).

3. On the **Main Toolbar**, click the **Add** button then select **Wreck** from the menu

4. Click on the **Chart** where the Wreck is to be added

5. The property pages for the Wreck are shown, set the **Name** and fill in any other available information then click **OK**

Link a Site File with the Wreck

1. Double click the Wreck on the chart or list to show its Property Pages

2. Click the **Site File** property and a file **Open** dialog is shown

3. In the **Open** dialog, navigate to the Site file to link to and click **Open**

4. Check that the **Site File** property now shows the correct path and file name for the selected Site file

Open a Linked Site File

1. Right click on the Wreck symbol on the chart and select **Open Linked Site File** from the menu. The linked file will now open in a new Site Recorder program

2. Close the new Site Recorder program
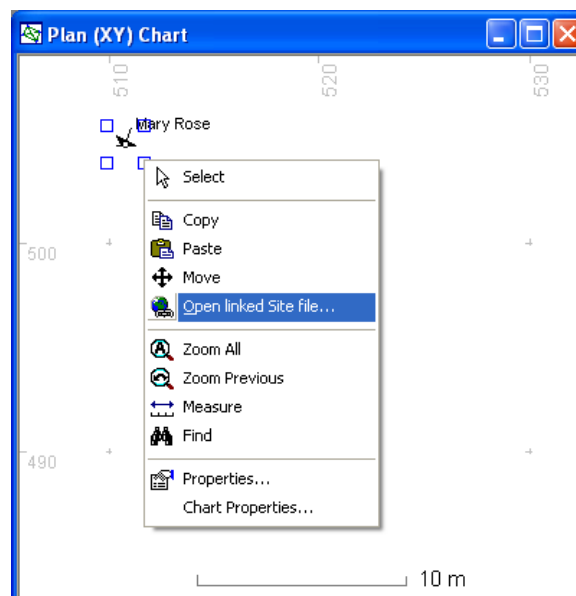
21 Named Views

21.1 Exercise – Named Views

If you find that you often want to show the same area of the site plan with the same set of Layers visible then you can use 'Named Views' to be able to set this up quickly.

Add a named view:

1. Load the Site file *Exercise Digitise.rdd*

The file can be found in the folder *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Switch off all Layers apart from *Basemap L* (found in the Project called *Basemaps*)

3. Set the chart to show the whole of the site plan using the chart zoom and pan tools

4. In the small **Named Views** toolbar, click the **Named Views** button

5. In the **Named Views Dialog**, click **New View**

6. Type in the name for this view as *All View* then click **OK**.

7. In the **Named Views Dialog** click **Close**

8. Zoom and pan the chart so it just shows the area around CP01 on the image

9. Add another Named view (4 to 7 above) but call this *CP1 View*

Select an existing named view:

1. In the **Named Views** toolbar, select the Named View called *All View* using the list control

2. Note how the chart scale and centre changes so the first view is shown

3. Select the Named View called *CP1 View*

4. Note how the chart scale and centre changes so the second view is shown
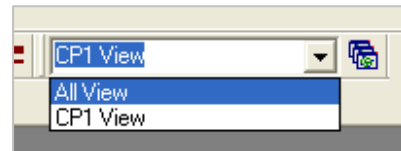
22 Importing, Converting and Merging Information

22.1 Exercise 1 - Importing

In this exercise we are going to import a sample drawing from a Drawing eXchange (DXF) file.

Import the drawing:

1. Create a new Site file (**File | New Site**)

2. From the **File** menu, select **Import Wizard**

3. In the **Open Import File** dialog, select the file *Import Test.DXF* and click **Open**

The test file can be found in the folder *C:\Site Files\Sample Files.*

4. In the **File Page** click **Next**

5. In the **Layer Page**, set the **Project** to be *2010 Season* and click **Next**

6. In the **Coordinates Page** just click **Next**

7. In the **Select Page**, click the empty box to the left of **Site: 'My Site'**. Red tick marks will appear in all of the empty boxes. Click **Next**.

8. In the **Report Page** click **Start**. Click **Finish** when the file has been imported.

9. On the **Chart Toolbar**, click the **Zoom All** button to show the imported drawing
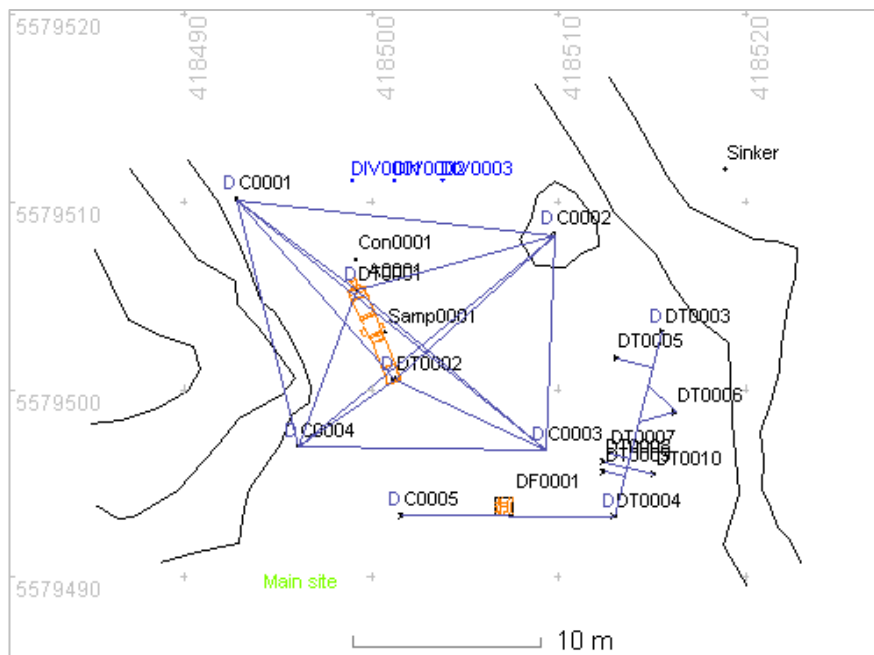
22.2 Exercise 2 - Converting

In this exercise we will open a Site file containing Points and convert them to Artefacts.

To convert the points:

1. From the **File** menu select **Open Site**

2. Select the file *Exercise Convert* and click **Open**

The test file can be found in the folder *C:\Site Files \Sample Files.*   For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

3. Select all of the Points on the Chart by dragging a select rectangle around them with the mouse

4. From the **Tools** menu select **Convert Tool**

5. Select **Artefact** as the object type to convert to

6. Select *2008 Artefacts* as the Layer to move the new objects to

7. Ensure that **Delete the original objects** is checked

8. Click **OK** and all the Points will be converted to Artefact objects

9. Show the properties for one of the new Artefacts to check that it has been converted
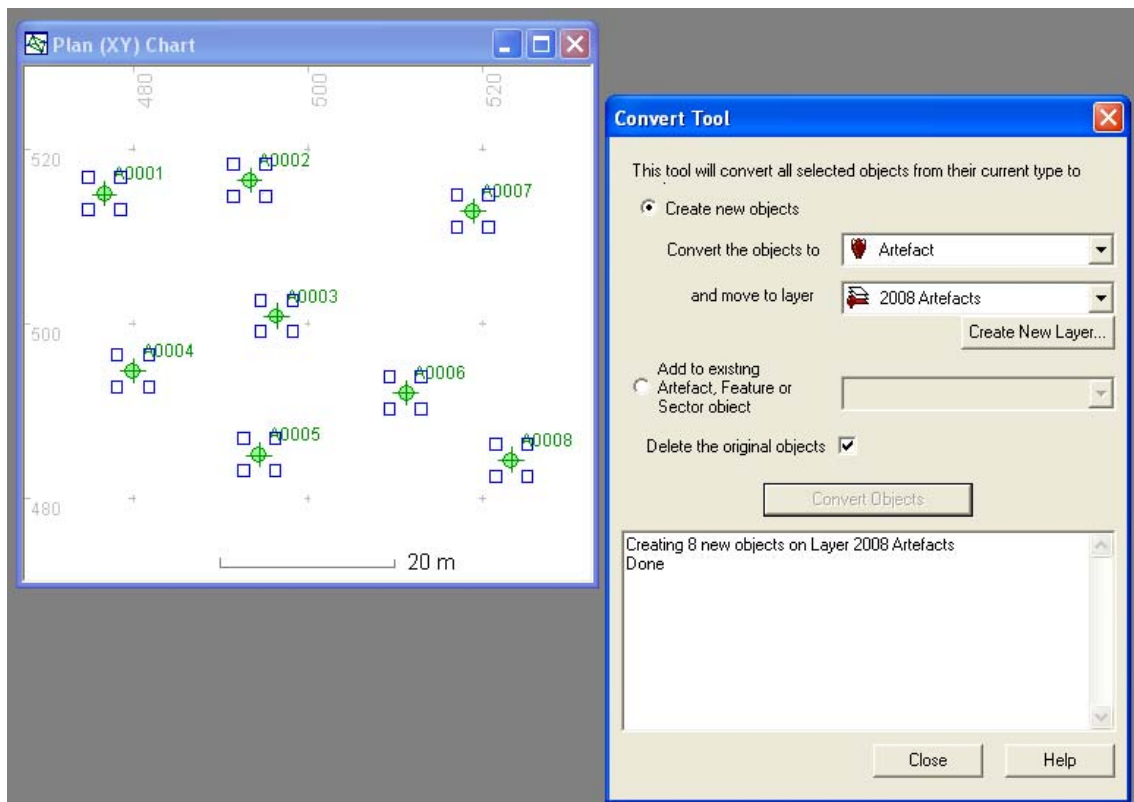
22.3 Exercise 3 - Merging

Objects from existing Site files can easily be added by using the Merge Wizard. The Wizard allows you to select a Site file to merge from then select particular Layers within that file to include in your existing Site.

In this exercise we will copy a gun Artefact from one Site file to another.

Merge objects from other files:

1. Create a new Site file (**File | New Site**)

2. Select **Merge Wizard** from the **File** Menu on the **Main** toolbar

3. Select the Site file *SAMPLE Reader Test.rdd* and click **Open**

The file can be found in the folder *C:\Site Files\Sample Files.* For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

4. On the **Select** page, select the Layer *2010 Artefacts* to import objects from by clicking the small grey box to the left of the Layer name. When selected a red tick will be shown in the grey box.

5. Click **Next**

6. On the Report page, click the **Start** button and the objects will be imported.

7. Click the **Finish** button on the Merge Wizard

8. Click **Zoom All** on the **Chart Toolbar** to show the imported Artefact object

9. Show the Artefact properties by double clicking the drawing outline or the name label

10. Note that the imported object includes the objects drawing and properties.
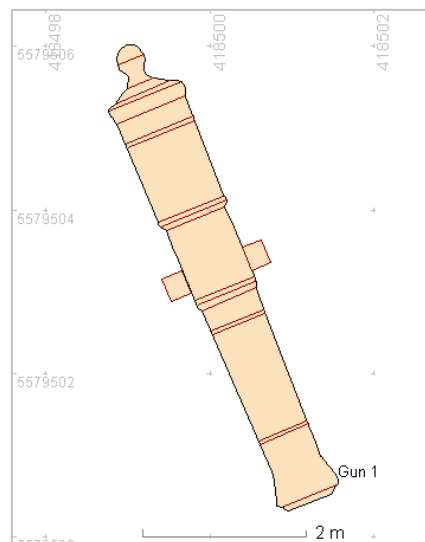
23 Publishing

23.1 Exercise 1 – Getting Ready to Publish

In this exercise we will add a copyright notice to the chart and choose to leave out a Layer from the packaged file.

Add a Copyright Notice to the Chart:

1. Open the Site file *Exercise Publish.rdd*

The file can be found in the folder *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. From the **Tools** menu select **Chart Properties**

3. Click the **Show Copyright Text** option

4. Set the **Copyright Text** to 'Copyright 3H Consulting Ltd'

5. Click **Close** and the copyright text will be shown on the chart.

Omit a Layer from a Packaged File

1. On the Layer Display, double click the Layer *2008 Outline*

2. Uncheck the Allow Package property then click **OK**

23.2 Exercise 2 - Publishing

In this exercise we will package up the Site file so it can be shared or published. This will take copies of any linked image files and put them in a folder called *\Site Images* under the folder used for the packaged Site file. Links to these image files in the packaged Site file will be updated to use the copied files instead.

Package the Site file for sharing:

1. Ensure that Exercise 1 above has been completed

2. Select **Package for CD/Web** from the **File** Menu on the **Main** toolbar. The **Package Wizard File Page** is shown.

3. Select the packaging option **Sharing the Site file**.

4. Use the default file name and folders and click **Next**
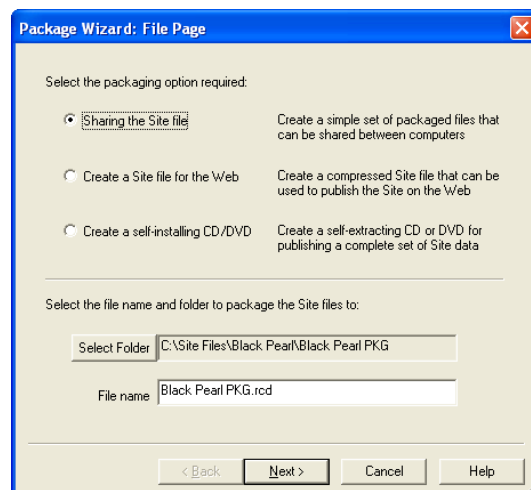
5. In the **Security Page**, click Next.

6. In the **Options Page**, click **Next**.

7. On the **Report Page**, click on the **Start** button to create the packaged file.

8. Open the packaged file

9. Open the properties for the Image Basemap *Image BM* and check that the File property has been changed to the relative filepath *\Site Images\BVIStructure.tif*

10. In the Layer Dialog, check that the Layer *2008 Outline* is missing, as selected above

11. On the chart, check that the copyright notice is visible, as selected above

24 Exporting Information

24.1 Exercise - Exporting

In this exercise we will export information about Survey Points to a comma separated (CSV) file

Export information to a file:

1. Open the Site file *Exercise Adjust OK.rdd*

The file can be found in the folder *C:\Site Files\Sample Files*. For instructions on opening a Site file see section 6.1 Exercise – Using the Find Tool

2. Select **Export Wizard** from the **File** menu

3. Select the **File Type** to be exported as **Comma Separated Variable (CSV)** and click **Next**

4. Select **Export objects by type**, select **Survey Point** and press **Next**

5. On the **Co-ordinates Page** click **Next**

6. In the **Export File** dialog, set the file name to be *Survey Points Export.csv* and click **Next**

7. In the **File Page**, click **Next**

8. In the **Report Page**, click the **Start** button to export the file then click the **Finish** button

9. In a spreadsheet program such as MS Excel, open the file *Survey Points Export.csv* and check that the four survey points and their properties have been exported correctly

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