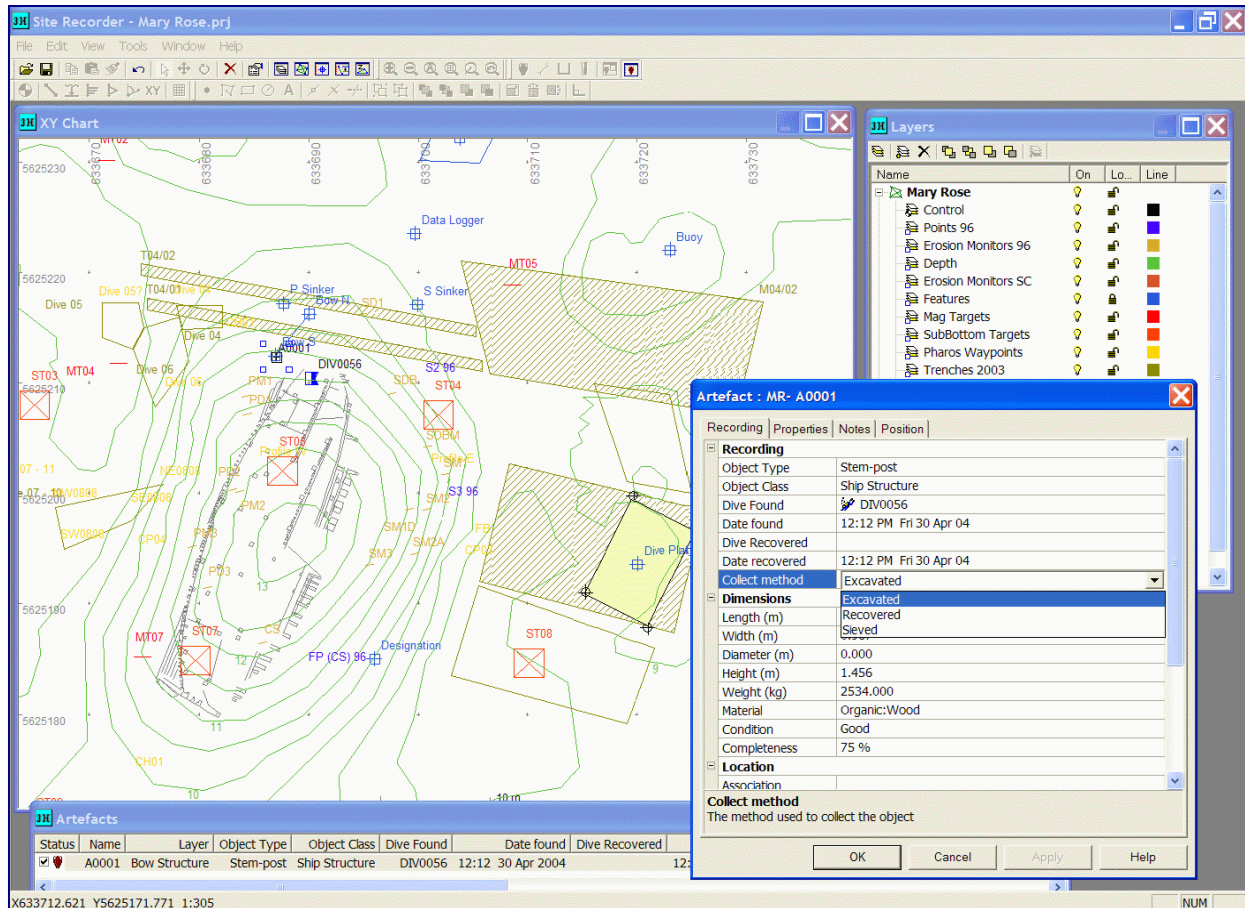# Site Recorder 4

The GIS for Maritime Archaeology

Site Recorder 4 is a versatile, Geographic Information System (GIS) designed for use in maritime, freshwater and intertidal archaeology. Site Recorder 4 is powerful, practical and easy to use. The program has been designed by archaeologists for archaeologists so you don't need to be a GIS expert to use it.

Unlike most other GIS programs, Site Recorder is designed for collecting information not simply displaying it. The program has been designed for collecting data during fieldwork and creating site plans.

Site Recorder can manage thousands of finds, photographs, survey data, dive logs, samples and documents – all the information relating to an underwater or intertidal site. Items can be associated with one another allowing quick and easy retrieval for analysis and interpretation.

Site Recorder has been designed to replace the many separate surveying, drawing, finds handing and reporting programs usually used on site with one fully-featured GIS. You can draw 'live' site plans that connect the positions of finds drawn on the plan with the positions of survey points, so the plans adapt and improve as more survey and recording data is added.

from 3H Consulting Ltd.

Applications

Site Recorder can be used for all phases of an archaeological project. Different features in the program are used at different stages in the project but all seamlessly fit together into one dedicated GIS.

- Excavation recording

- Site assessment and monitoring

- Survey planning and recording

- Publication and reporting

- Reprocessing existing site data

- Resource management

- Archiving

- Tracking boats, divers and ROVs

Excavation recording

Using Site Recorder you can now visualise survey and excavation work as it happens – capturing and 'digitising' the site as work progresses. During excavation **Site Recorder 4** becomes a finds handling and mapping program as it can take in information about artefacts (finds), features and samples. Detailed information about each artefact can be recorded in the program as well as being shown in position on the site plan. Much of the information about each find stored in the program is selected from wordlists allowing more simple and standardised recording.
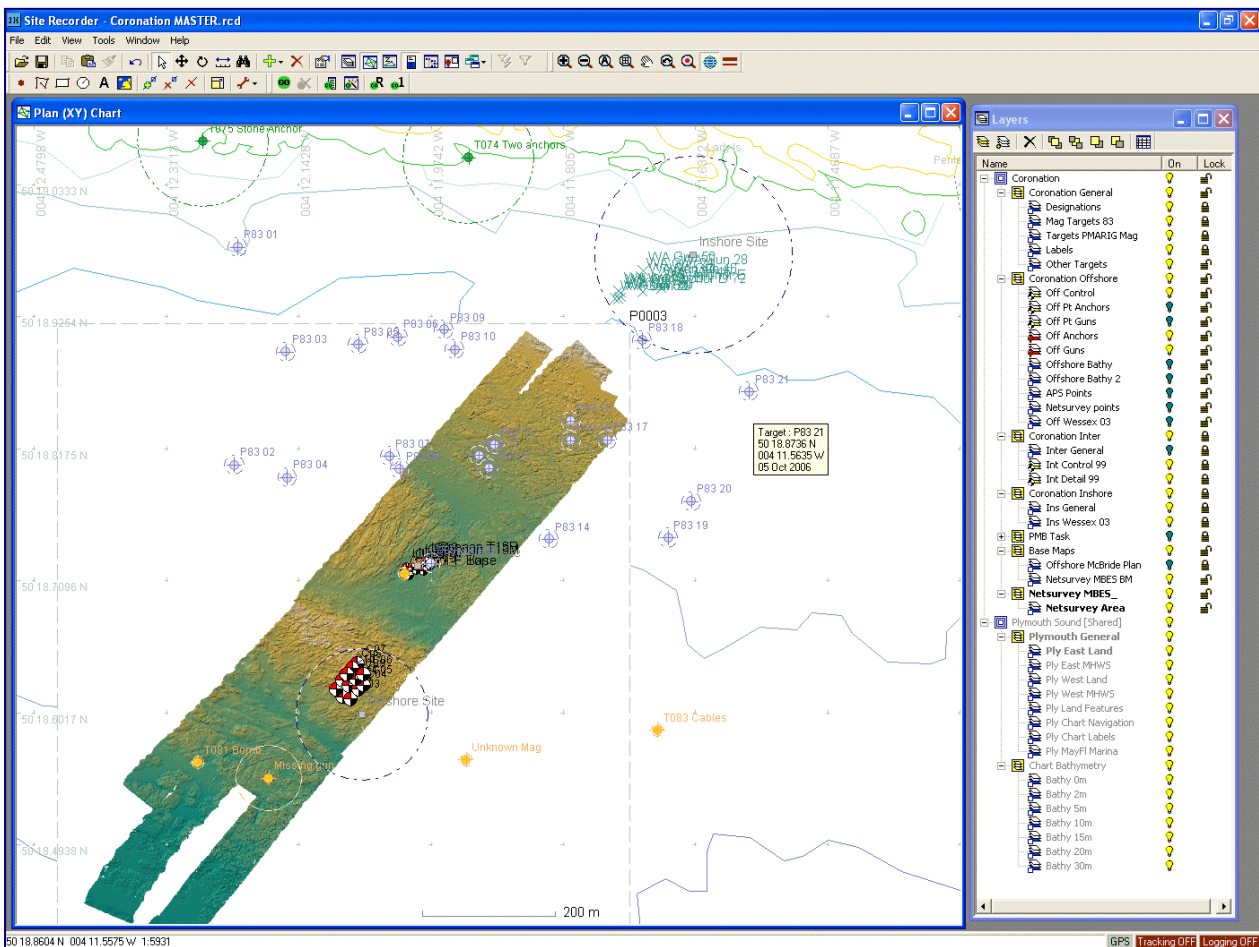
You can draw 'live' site plans that connect the positions of finds drawn on the plan with the positions of survey points, so the plans adapt as more survey and recording data is added.
One of the more significant new features in version 4 is the ability to associate or link objects with one another. Artefacts can be associated with other artefacts, features and sectors used to represent trenches or other areas on site. Image objects and document objects can be associated with each artefact, sample, dive log, wreck and target object. The associations between objects can be seen in their property pages or in a new Association display window.

Site assessment and monitoring

Site Recorder can be used during assessment work on a site by collecting and processing basic survey and recording information. Control and detail survey points can be added to the existing site plan, each positioned using simple offset, ties and radial measurements. Site Recorder includes similar drawing tools found in Computer Aided Design (CAD) computer programs, so a detailed sketch can be quickly drawn up showing the important features of the site.

Information from each site visit can be grouped into separate projects allowing all or selected parts of the information to be displayed. By comparing measurements and drawings from different site visits it is possible to determine if any significant changes have occurred on the site.
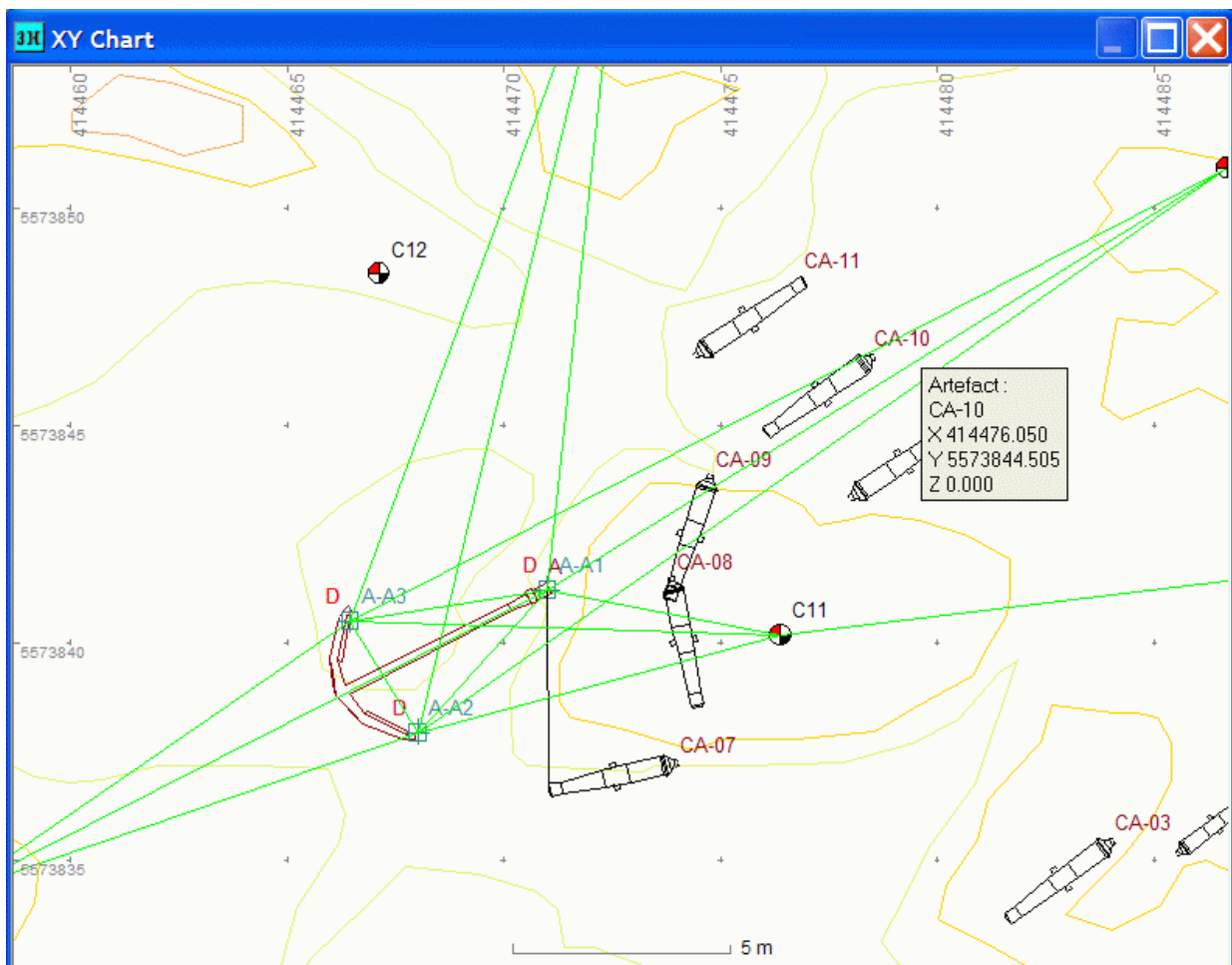
Survey planning and recording

More accurate survey techniques can be used where more precise recording is required. **Site Recorder 4** supports full 3D survey data collection and processing using distance, depth and position measurements. The program uses a survey-quality least-squares adjustment to compute the optimum position of the survey points and hence the finds positioned relative to them. 3D recording can be complicated so a special 'Analyser' Tool is included in **Site Recorder 4** to help solve survey problems.

Drawing or planning frames are often used for detail recording but tying together the separate drawings is often difficult. To help with this problem the frame drawings can be imported into **Site Recorder 4** and be positioned on the site plan relative to survey points and measurements.

Unlike other GIS programs the survey points can be used as a framework for the drawing. You can draw 'live' site plans that connect the positions of finds drawn on the plan with the positions of survey points so the plans adapt as more survey and recording data is added.

Publication and reporting

Another powerful feature only available in Site Recorder 4 is the ability to quickly and easily share your work. Using **Site Recorder 4** it is possible to publish all of your site data in a form that is secure, portable and at no additional cost.

Site Recorder 4 files can be copied to CD or DVD then shared and published using a free viewer program called Site Reader. The published files cannot be modified or edited using Site Reader but options exist to selectively allow printing and data export. For further security Site files can now be locked, so the information contained cannot be copied or extracted making it safe for publication using **Site Reader**. Publication via the Internet is also possible as Site files can be added to your web site along with a link to allow others to download Site Reader.

The ability to associate and link objects such as picture and text files has meant that publishing and archiving becomes more complicated. This process has been simplified using the Package tool as this tool can wrap up a Site file and all of its associated files in a way that is easy to archive and publish.

Site plans can be printed using any standard Windows printer or plotter and has tools to help produce publication quality plans or plans for presentations that look good even when shown through a video projector. **Site Recorder 4** also includes tools to allow export of data in many standard formats for incorporation into other databases and GIS programs.

Reprocessing existing site data

One of the more common tasks is to migrate or reprocess existing information about a site into **Site Recorder 4,** so the program includes tools and features that assist with this task. You can easily import finds lists, samples lists, dive logs, drawings, survey points and measurements as well as other types of information. Existing digital site plans can be imported using standard file formats while paper plans can be digitised then imported. Once inside **Site Recorder 4** the drawing objects from the original site plan can be converted to artefacts, features, trenches and other objects using a tool included with the program.

Tools are provided to convert drawings and data in different co-ordinate frames and formats into the format to be used for your site. Information recorded in a local co-ordinate frame or in geographical formats can be converted to real-world grid co-ordinates so it can be shown on imported charts and maps.

The task of importing data has been made simpler by adding a new Import Wizard. This Wizard helps you through the steps involved in importing data from each file type and offers options for different data formats. The Wizard includes support for CSV, DXF, Web, XML, TXT, GPX, MapGen, XYZ and PTS files along with extended CSV format options.

Information from other Site files can be merged into your file using the Merge Wizard. The Wizard allows you to import single layers or whole Projects with ease.

Resource evaluation and management

Site Recorder 4 can be used during the planning phase of a project by helping to collect together and display all the information about a site. Magnetometer, sidescan sonar and multibeam sonar targets can be imported and plotted on a georeferenced site plan along with information about each target. Vector charts of the search area can be imported and displayed placing target points in context allowing easier interpretation.

The information is stored in a hierarchy of levels used to represent set phases of work on the site. A season's work can be gathered together in a project and this may contain many layers containing different types of related information. Information collected during surveys or site visits can also be grouped in this way.

For sites that share common information such as charts and base maps it is now possible to reuse that information in a shared Site file. The information common to both Sites is put in a separate Site file that can be linked to other Site files. Objects and drawings in the shared file appear in the Sites that share it but are locked and cannot be modified. Updating the information in the shared file updates it in all the other Site files that use it.

Archiving

Archiving site information is easy using **Site Recorder 4** as all of the information is in a digital form and it is contained in one program rather than many separate ones. Information contained in Site programs can be exported in a number of standard file formats allowing them to be archived in a form that can be read by a number of different programs. However, most formats are not capable of supporting all of the types of objects and data contained in a Site file so the Site files themselves can be archived along with a copy of the free viewer program, **Site Reader**.

Tracking boats, divers and ROVs

Site Recorder 4 can take in live position data from Global Positioning Systems (GPS) or underwater Acoustic Positioning Systems (APS) and use it to show a boat, ROV or diver moving around the site plan. Position fixes can be recorded at any time and be used as to position finds and survey points. Search areas can be added that can be used to guide the boat or ROV along search lanes (runlines) ensuring full and complete coverage during a search.

Features

Finds recording

- Can record:
  - Artefacts and samples
  - Features, trenches, areas and sectors
  - Wrecks and geophysical targets
  - Dive logs, ROV logs and events
  - People and contacts
  - Images as BMP, JPEG, GIF, PNG, TIFF, MNG, ICO, PCX, TGA, WMF, JBG
  - Documents in any format
  - Base maps for multibeam images, sonar traces and scanned images
  - Tasks and logbooks
  - Supports associations between artefacts, features and sectors
  - Can link objects with each other for easy location and retrieval
  - Artefacts and features can be positioned using survey points

Survey

- Add control and detail survey points for 2D and 3D survey work
- Add measurements
  - Distance
  - Depth
  - Position
  - Offsets
  - Ties
  - Radial
- Add drawing frames positioned by survey points or baselines
- Includes a survey-quality 3D adjustment
- Includes expert system survey analysis tool

Drawing

- Supports 2D charts showing plan and elevation views
- Can create site plans from new or import and edit them
- Draw points, lines, circles, rectangles and text
- User defined colour, line style, thickness, fill style and fill colour
- Move, rotate, stretch, copy and paste individual or groups of objects
- Text fonts selected by layer or individually for text objects
- Includes full editing capability along with copy and paste

Data Management

- Supports large projects containing thousands of objects
- Data objects can be grouped on an unlimited number of layers
- Layers are grouped together in Projects and Sites
- Layer visibility can be set and layers can be locked against accidental editing
- All data is georeferenced and timestamped for 4D analysis
- Includes sorting and filtering of object lists

Share, Publish and Archive

- Import and export data in many standard file formats
- Re-use or share objects and complete layers from other Site files
- Package and publish complete data sets using the free Site Reader viewer program
- Archive complete data sets in standard file formats or Recorder file format
- Print site plans on any standard Windows printer or plotter
- Print finds lists, dive logs, survey reports and other lists

Import and Convert

- Import finds lists, dive logs, site plans and other data using a powerful Wizard
- Migrate and reprocess site plans and data from previous projects
- Convert imported drawing objects to survey points, artefacts, samples and features
- Convert positions between different survey co-ordinate frames

Tracking

- Allows real time boat, diver and ROV positioning
- Take position fixes and use them to position finds and structure
- Supports search areas and runline guidance

Technical

Requirements

Site Recorder 4 runs on a laptop or desktop computer under Windows XP, Windows NT, Windows 2000 or Windows 98 operating systems although we strongly recommend the use of Windows XP. A screen resolution of 1280 x 1024 or greater is recommended.

Site Recorder 4 is protected using a software key that plugs into your computer using a USB or parallel port. The software can be installed on as many computers as you like but will only run if the software key is fitted to that computer. Administrator rights are required to install Site Recorder under Windows XP.

Support

Site Recorder 4 includes a comprehensive manual so this should be used first to help solve problems but further information can be obtained from the 3H Consulting web site. In the event of further problems technical support can be obtained from 3H Consulting at the address below.

email   sales@3HConsulting.com

web   www.3HConsulting.com

phone   +44 (0)1752 401102   or   +44 (0) 7813 018588

mail   3H Consulting Ltd., 6 Honcray, Oreston, Plymouth, Devon, PL9 7RP, UK

The 'Site' family of programs

Site Recorder	Designed for use during all types of survey and recording work including excavations
Site Searcher	Taking input from magnetometer, depth sounder and positioning system, this program can be used for collecting and processing geophysical survey data
Site Recorder SE (Student Edition)	A free survey program intended for training and small survey projects
Site Reader	A free program that can be used to view Site Recorder and Site Searcher files

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