

ONLINE: WEB DEVELOPMENTS AT THE ROYAL COMMISSION ON THE ANCIENT AND HISTORICAL MONUMENTS OF SCOTLAND AND THE DEVELOPMENT OF A SHARED HERITAGE PORTAL WITH HISTORIC SCOTLAND

MARK GILLICK

RCAHMS JOHN SINCLAIR HOUSE, 16 BERNARD TERRACE,
EDINBURGH, SCOTLAND, UNITED KINGDOM

PETER MCKEAGUE

RCAHMS JOHN SINCLAIR HOUSE, 16 BERNARD TERRACE,
EDINBURGH, SCOTLAND, UNITED KINGDOM

RICHARD STRACHAN

HISTORIC SCOTLAND, LONGMORE HOUSE, SALISBURY PLACE,
EDINBURGH, SCOTLAND, UNITED KINGDOM

ABSTRACT

In 1998 the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) launched CANMORE: the on-line version of the National Monuments Record of Scotland database. CANMORE enables the public to search a database of over 200,000 site-based records spanning Scotland's rich heritage from prehistory through to 21st century architectural and engineering achievements. Users can access detailed accounts of many of the monuments, browse through bibliographic references, or see what collections material (drawings, manuscripts or photographs) is held in our archives. With the launch of CANMAP (<http://www.rcahms.gov.uk/canmore/login.show>), a web-based GIS, in June 2002, complimenting the database search engine, users now have the option to execute simple geographic searches against a map-background.

In 2003 the service will be enhanced (and re-branded) to include statutory information managed by Historic Scotland. The same software engine has also been adapted to present information about our extensive holdings of vertical aerial photography through

INTRODUCTION

The Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) records and interprets the sites, monuments and buildings of Scotland's past and promotes a greater appreciation of their value through the National Monuments Record of Scotland (NMRS). CANMORE, the database of the NMRS, has been online since 1998 and in July 2002, search facilities were enhanced through the addition of a user-friendly web-GIS interface - CANMAP. Historic Scotland acts on behalf of the Scottish Ministers to safeguard the nation's built heritage and promote its understanding and enjoyment. Historic Scotland and RCAHMS are now collaborating on a shared web-GIS, or 'heritage portal', to provide a 'one stop' point of access to the information each organisation maintains.

THE NATIONAL MONUMENTS RECORD OF SCOTLAND

The RCAHMS holds information on over 220,000 archaeological and architectural sites in Scotland. These records range from prehistoric through to Roman, medieval and later archaeological monuments and landscapes as well as architectural, including vernacular architecture, industrial archaeology and maritime records. Site information is supported by a related archive of over 700,000 items, including 241,000 prints or drawings, 469,000 photographs, including oblique aerial photography, and 21,000 manuscripts. The resource is dynamic with new material catalogued daily.

Before looking at presenting this tremendous wealth of information and knowledge over the Internet in more detail, it is worth pausing to remember that the NMRS database is not a

homogeneous resource compiled for the specific purpose of disseminating information to remote users. Until 1983, when the function was transferred to the RCAHMS, the Ordnance Survey Archaeology Division maintained a separate card index, which included summary descriptions of individual sites, for the primary purpose of selecting antiquity information for cartographic representation on their maps. Incidental to that purpose, the card index also formed the backbone of the NMRS database when the record cards were optically scanned in the late 1980's. The Royal Commission's own survey and recording programme, of which detailed accounts were published through the County Inventory Series and successor reports focusing on more specific study areas, also contributes to the database. Themed projects, such as the First Edition Settlement Project have also added over 20,000 new records to the database. Information is also regularly added through bibliographic searches through the literature. Under agreement with the Council for Scottish Archaeology, the annual summary accounts of current archaeological work, which are reported in *Discovery and Excavation in Scotland*, are routinely added to the database verbatim. The archives are also steadily growing through the deposition of primary records from archaeological projects. Computerisation of the NMRS architectural records collections indexes and Heritage Lottery Funded projects, such as the Scottish Architects Papers Preservation Project, has also seen the database grow considerably in recent years. So information, whether gathered to aid selection of antiquities for depiction on the maps, from the RCAHMS survey programme, the annual summary reporting of archaeological fieldwork in Scotland, or from cataloguing the wealth of architectural archives, is presented seamlessly in an Oracle database.



Figure 1 (left) CANMORE, results screen for a search on the place name 'Westerwood'. Figure 6 The collection browser

Figure 2 CANMORE, sample site details for the Roman Fort at Westerwood (NS77NE 8.00)

WWW.RCAHMS.GOV.UK AND CANMORE

In 1998 the RCAHMS launched its website (<http://www.rcahms.gov.uk>). As well as containing information about the role of the organisation, current projects and a showcase of recent survey results, the website offers users the opportunity to search the database of the National Monuments Record of Scotland through CANMORE. The acronym stands for Computer Application for National MONuments Record Enquiries but Canmore also means 'Great head' or 'Chief' the Gaelic name given to Malcolm III who was crowned king of Scots in 1058. On completing a simple registration form, the user is given free access to the entire computerised database of the NMRS through the search screen, although the number of records returned is restricted to 500. The user may search either singly, or through a combination, on building or site name, type of building or site, administrative area such as current Council authorities, the former Regional boundaries or by parish, Ordnance Survey (OS) 1:10,000 quarter sheet and NMRS site number or by keyword. In addition, searches may be filtered to return all records or, through radio buttons, archaeological, architectural or maritime records or any combination of those groups. In the illustrated example (Figs.1 and 2) the user is searching for information on the Roman fort and frontier work, the Antonine Wall at Westerwood, North Lanarkshire. A search on the name 'Westerwood' will return eight possible matches (Fig.1). The results table comprises six fields: the unique number for each site in the NMRS database, the name, including any alternative names or spellings, by which a site is recorded in the database, the type of site, the current administrative area it lies in, any statutory protection (if the site is a Scheduled Ancient Monument or a Listed Building) and a summary of the collections holdings by category with hyperlinks to further indexes.

On selecting the hyperlink in the NMRS number field, the user may view more detailed records about a particular site. In the illustrated example (Fig.2), the user has retrieved the site details for the Roman fort and a stretch of the Antonine Wall at Westerwood (NMRS NS77NE 8.00). The screen returns further locational details, including the National Grid Reference (NGR) for the

particular site. In a feature, added in 2002, clicking on the 'site map' button opens a scalable location map in a separate window. The screen reports any archaeological or architectural notes associated with the record as well as selected bibliographic references and a repetition, from the results table, of the summary totals for the types of collections held. By following the hyperlink set up in either the site details report or in the results table, a separate screen delivers an index to that particular aspect of the collection. A further hyperlink, embedded in the collections archive, will return the detailed catalogue entry for any given record. Although the collections indexes include digital images associated with a particular record, the images themselves are currently not available on the Internet, though this is anticipated within the next two years.

CANMAP

In June 2002, a map enabled query system, CANMAP, was launched to compliment CANMORE. Accessed through the CANMORE login screen, CANMAP is a map enabled query system for CANMORE using a web-GIS, ArcIMS 3.1 (HTML Viewer), Apache 1.3.19 and Jakarta-Tomcat 3.2.3 on Windows 2000 Server. CANMAP enables users to zoom into any part of Scotland through a click and drag tool and view the NMRS records against an appropriate scale of Ordnance Survey raster map determined by pre-set scale thresholds. Above 1:250,000 scale, the NMRS records are displayed as a series of blue dots, with the level of accuracy for the NGR of an individual record expressed through the intensity of the shading. Lightly coloured dots reflect poorly located sites where the quoted NGR may only be accurate to the nearest 10Km or 1Km. Progressively darker shades reflect the increasing confidence in the accuracy of the site location may be expressed to the nearest 100m, 10m or 1m. The underlying data is a shape file created daily from the NMRS Oracle database and information is therefore rarely more than 24 hours out of date.



Figure 3 (left) CANMAP, distribution of NMRS records in the vicinity of Westerwood Roman Fort (NS77NE 8.00), displayed against OS 1:10,000 raster map, site selection and summary table of results

Figure 4 (middle) CANMAP, sample site details for the Roman Fort at Westerwood

Figure 5 (right) shared web-GIS 'beta version', a combination of Scheduled Ancient Monument area extents and Listed Building locational data provided by Historic Scotland and NMRS data from the RCAHMS may be displayed and searched together. The map extracts shows Scheduled Ancient Monument area extents and NMRS data for the Roman Fort and Antonine Wall at Westerwood

Users may either query NMRS records by selecting an individual blue dot or, through an area search (Fig.3), select and generate a report on one or more NMRS sites. Once selected, the user can view the associated site records which are drawn

Internet Applications

from CANMORE (Fig.4).
TOWARDS A HERITAGE PORTAL

Historic Scotland (<http://www.historic-scotland.gov.uk>) is responsible for discharging the functions of the Scottish Ministers in relation to the protection and presentation of Scotland's built heritage, and advises them on built heritage policy. It gives statutory protection to ancient monuments of national importance ("scheduled ancient monuments") and to historic buildings of special architectural or historic interest ("listed buildings") and seeks to ensure that no avoidable damage is done to them.

There are currently over 7,500 Scheduled Ancient Monuments in Scotland. These include an extraordinary range of types of monument, from prehistoric chambered tombs, stone circles, Roman forts and ruined castles, to the first ironworks of the Industrial Revolution and the remnants of the German Grand Fleet scuttled in Scapa Flow in 1919. Others are not decorative or impressive but are still important, from ancient rubbish tips through to medieval cultivation ridges and deserted crofting settlements. Many can only be seen from the air.

Scotland has around 46,000 Listed Buildings. A 'building' can be defined as any man-made structure, and the coverage of lists includes telephone kiosks to tenement blocks and water pumps to cathedrals. They are divided into three categories based on their importance: national or international importance (Category A), regional importance, or major examples of a particular period, style or type (Category B); and local importance (Category C(S)). The lists are compiled and maintained by Historic Scotland on behalf of Scottish Ministers, and are organised in council areas, burghs, parishes and city wards.

All of the information relating to the Scheduled Ancient Monuments and Listed Buildings is held within an Oracle database. In 2001 Historic Scotland digitised the boundaries of all of its Scheduled Ancient Monuments, and more recently a programme of capturing the locations of Listed Building information digitally (as point data) has been underway. As GIS compatible digital datasets, these have become a valuable resource both within the agency and outwith, where the datasets are provided free of charge under a licensing system, to council archaeology services, public sector bodies and utility companies.

Since the launch of CANMAP in 2002, the development of a portal has been underway, to provide a 'one-stop-shop' for heritage information in Scotland. After login, the user will be able to search the whole of Scotland for Scheduled Ancient Monuments and Listed Buildings, as well as the NMRS records from the RCAHMS, using the same functionality as CANMAP. Listed Buildings are displayed as purple stars (with a 1m and 10m accuracy distinguished by depth of colour). Scheduled Ancient Monuments are displayed as red dots at scales of less than 1:50,000 and as red polygons (boundary) at scales of greater than 1:50,000 (Fig.5). Users are made aware from on-screen dialogues that both datasets are digital representations of statutory designations and are seen as indicative and for information purposes only. Further guidance is made available in a 'Help' section and there are links to discovery level metadata as well as meta-information documenting field definitions and sample values. The user may query on individual sites or a report generating function allows the user to make an area selection on either one, two or all three of the datasets and run a report. The report will extract information on the selected records and list them in a separate window, under the heading of the respective originator (Historic Scotland or RCAHMS). The report window also includes any notes, disclaimers and contact details for further information.

The launch of a heritage portal for Scotland forms a platform for users to openly access information on statutory designations and heritage data within a single environment. It represents a major advance in the e-delivery of heritage information in Scotland to both the general public, researcher and commercial contractor. It is anticipated that additional datasets may be added in due course, enhancing the functionality further.

ACKNOWLEDGEMENTS

The authors would like to thank Diana Murray and Rebecca Jones at the RCAHMS and Gordon Barclay, David Breeze and Nick Haynes at Historic Scotland for their comments on this paper. In addition the authors are grateful to Stephen Thomson at the RCAHMS for enhancing the screenshots to publication standard. Development of the CANMORE system was undertaken by John McLeod, CANMAP and the shared web-GIS by Mark Gillick.