



# GIS OPENING UP LOCAL GOVERNMENT

NEIL MCLEOD DESCRIBES HOW CADCORP SIS SOFTWARE HELPS STREAMLINE LOCAL GOVERNMENT BUSINESS PROCESSES

Charnwood Borough Council's iMAP system uses Cadcorp SIS desktop and web-based digital mapping/GIS software to help streamline the council's business processes and to make information available to citizens on demand.

Charnwood Borough Council takes its name from the Charnwood Forest, an upland, hard rock area in the UK's East Midlands noted for its Mountsorrel granite and Swithland slate from which many of the local villages and towns are built. The borough also contains Bradgate Park, the former home of Lady Jane Grey, who was the great-niece of Henry VIII and who briefly reigned as queen of England in 1553.

Sitting centrally in the triangle formed by Nottingham, Leicester and Derby, Charnwood Borough Council is responsible for providing public services to some 155,000 people, of which just over a third live in the thriving university town of Loughborough. Of the remaining two thirds, many live in the villages and small towns in the mainly rural areas of the Soar and Wreake river valleys and on the edge of Leicester.

Although the area is steeped in history, nobody can accuse Charnwood Borough Council of being slow to adopt new technologies. As long ago as 1993 the council recognised the potential benefits to be gained from the use of GIS technology and invested in a system to capture its planning plotting sheets – a paper-based record of all planning application boundaries – which had become badly dilapidated.

Over time and to help meet the increasing demands placed on the council by central government and the general public, additional systems were implemented for applications such as planning, building control and land charges. However, as is often the case, these systems



Locating and displaying high resolution aerial photos of the area

were essentially 'standalone' systems for these three associated but distinct processes. Further, they were not sufficiently open for the council's changing needs. They were also Unix-based and reliant on proprietary technology, making them both costly to maintain and to integrate with other, modern PC-based systems.

### Moving forward

Recognising these limitations, as well as the need for a corporate rather than a departmental approach to its GIS requirements, Charnwood Borough Council made the decision to replace its existing systems with an open, web-enabled solution that could be extended to other departments and activities within the council – and to the general public. The software selected for this was the Cadcorp SIS – Spatial Information System family of Windows-based desktop, web and developer products.

"From the council management team's point of view, the Cadcorp SIS product family ticked all the boxes for a corporate GIS," says Tony Gilbert, GIS team leader, Information and Communication Services, Charnwood B.C. "The desktop product can be used for development and by power users; the ActiveX option means it can be embedded in other, back-office systems; and it can be web-enabled for dynamic Internet and intranet applications using GeognoSIS."

As Gilbert notes, while the desktop products and the software developer kit (SDK) have been used to develop various applications, Cadcorp's GeognoSIS web-based product forms the heart of the council's new corporate GIS, certainly as far as end users are concerned.

GeognoSIS extends the Cadcorp SIS

family for use over the Internet or a company-wide intranet. Rather than simply publishing data, GeognoSIS is a dynamic, web-based GIS server that can access all of the advanced functionality of Cadcorp SIS to deliver everything from simple data access applications right up to complex, desktop-like GIS analysis capabilities.

### Council-wide access

By virtue of having used GIS technology for several years, Charnwood Borough Council had already captured all of its spatial information as digital datasets, of which there are currently over 200. The largest of these are the Basic Land and Property Units (BLPU) dataset

for the corporate address gazetteer, and the planning applications dataset, which together comprise over 180,000 polygons.

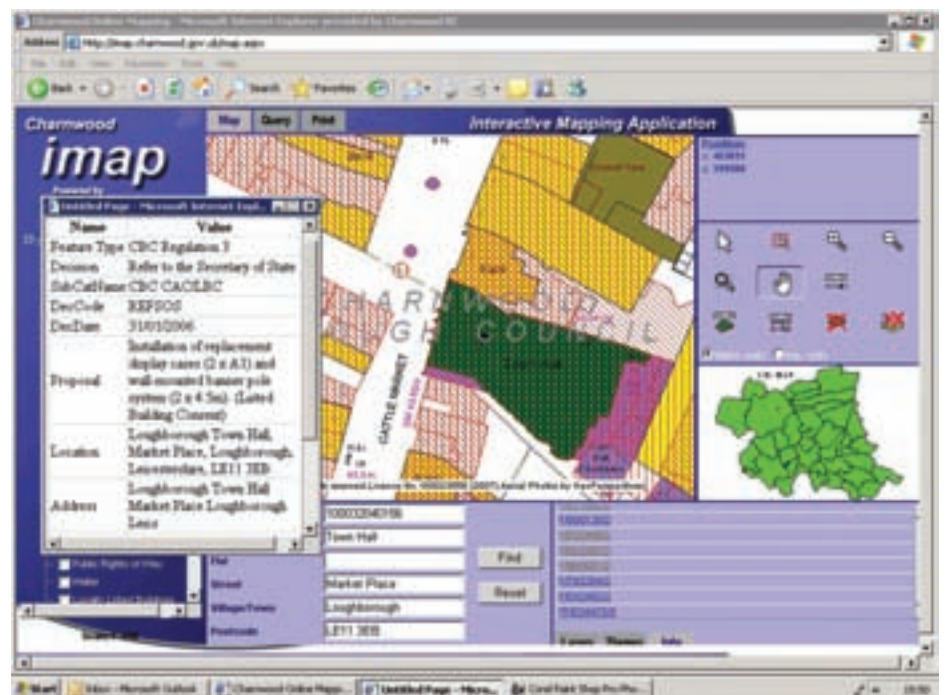
Now, with its new web-based GIS, known as iMAP, this information is available to staff in all departments within Charnwood Borough Council via the corporate intranet and to the public via the Internet. iMAP uses Cadcorp GeognoSIS to search for data currently stored in either an Oracle 10g spatial database or in Oracle 9i and to deliver the requested information back to a user's browser.

In addition to having spatial data made readily available this way, departments such as Land Charges and Planning have the digital mapping/GIS facilities provided by the Cadcorp SIS product suite embedded into their back office systems. This was achieved using Cadcorp's ActiveX tools and enables staff in these departments to capture and maintain their own spatial data, without leaving their normal back office systems environments. The data is then made available over the Internet/intranet using iMAP.

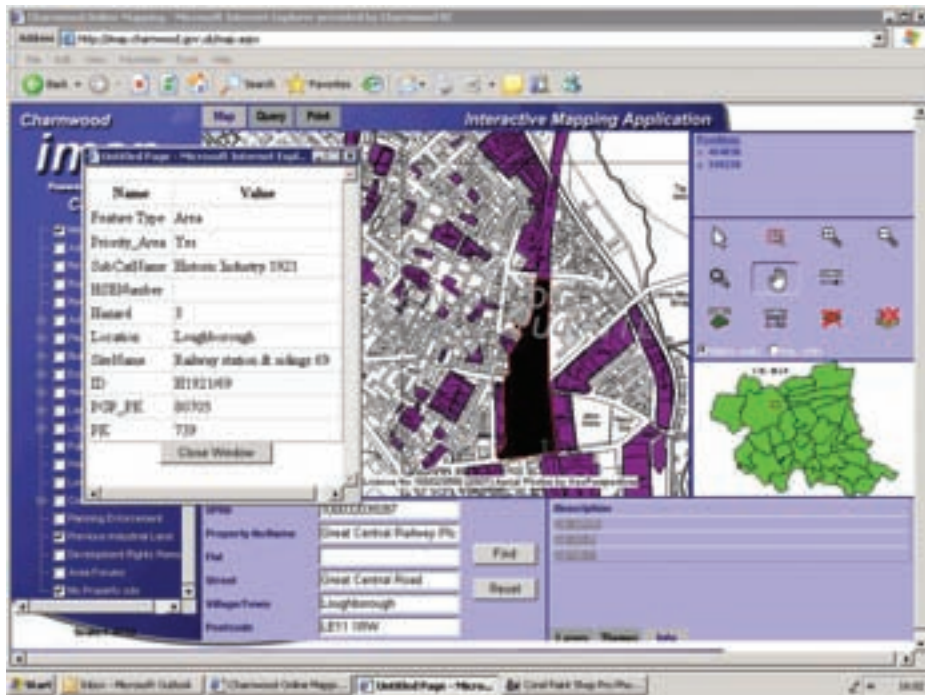
Other departments, such as Asset Management and Environmental Health, which until now have used bespoke, Cadcorp-developed links from their back office systems to the Cadcorp SIS digital mapping/GIS facilities, are now beginning to migrate to .NET variants of their systems. This will then enable them to use the GeognoSIS-based facilities of iMAP.

### Public access

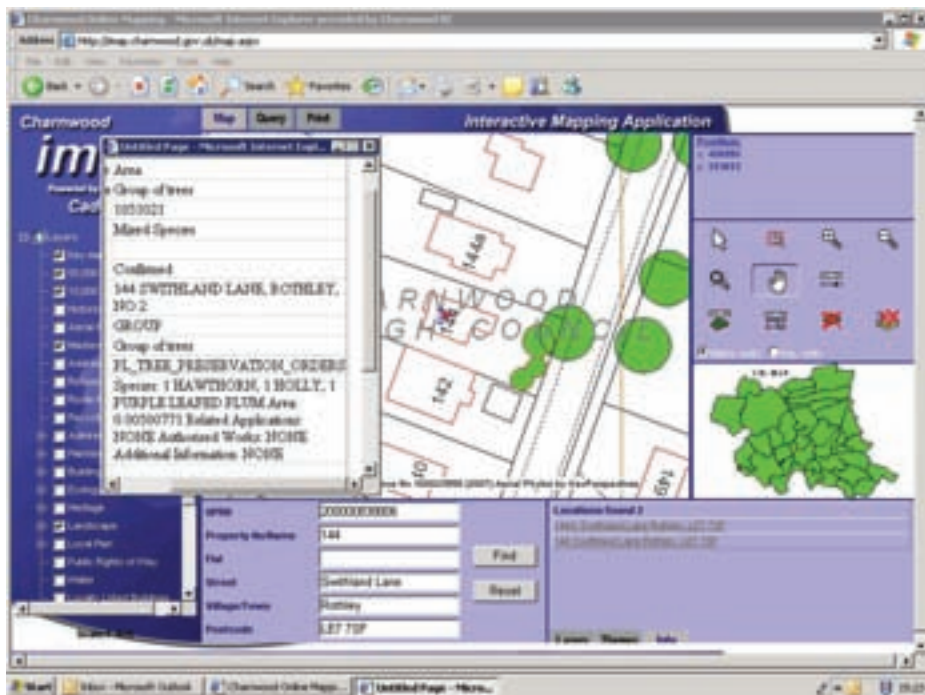
The citizens of Charnwood Borough Council are also able to use iMAP's interactive mapping facilities, via the council's web site, in order to access information relating to various



iMAP Query screen for planning and building regulations



Locating and viewing potentially contaminated land



Locating and viewing tree preservation orders

council activities. This meets the Planning and Regulatory Services Online (PARSOL) requirements, giving citizens the tools to access vital information, wherever they may be.

The usual public access route is to query the corporate gazetteer for the required address. The appropriate Ordnance Survey maps, which are threshold controlled for convenience and clarity, are then available, along with 10cm resolution colour aerial photography of the whole borough.

In addition, all of the most popular datasets are available for interrogation, including planning applications, building regulations, potential flooding information,

potentially contaminated land, local plan designation, refuse collection, recycling and many more. For example, a recently added dataset, called 'My Property', enables quick property interrogation for ten of the most commonly queried datasets by using the ability of Cadcorp SIS to pre-process information. This dataset is also used by the council's new web-site utility, 'My Charnwood', which provides rapid access to individual property-based information using the corporate BS7666 gazetteer and centralised GIS data.

The popularity of this public access capability can best be measured by the steady growth in its use by the public. In the

period between February, 2007, when the council started keeping records, and October 2007, iMAP 'hits' via the web site grew from 1,764 to 10,674 – a 600% increase in just eight months.

### The benefits

While the underlying benefit to Charnwood Borough Council of its new corporate, web-based GIS is the ability to make accurate information readily available to all those who need it, both inside and outside the council, more specific benefits flow from this capability and from the fact that information is now stored electronically rather than on paper.

In the past, information was stored and maintained on a departmental basis, making it difficult to share. Today, it is stored and maintained corporately. This has resulted in major savings in time and therefore in improved efficiency by avoiding repetition and duplication of effort. This is particularly apparent with address maintenance and the creation and use of the Local Land and Property Gazetteer (LLPG). The currency of data has also improved because it is now possible – and practical – for corporate standards to be applied to the process of data capture.

Elsewhere, examples of the benefits of iMAP that accrue to the public can be seen within the National Land Information Service (NLIS). Land charge searches that are necessary in the house buying process are now performed electronically, using the spatial search capabilities of iMAP on the council's data to arrive at the desired result in seconds. Searches that used to take 10 to 12 days are now routinely turned round in 2 to 3 days.

Although it is evident that its new web-based GIS has already brought Charnwood Borough Council many very real benefits, in terms of efficiency and the availability and currency of information, there is still great potential in the development of the system.

In the coming months and years, it will be further developed to provide links to other business systems within the council and to provide additional services to council members and the public. The council's GIS team is also looking at the advantages to be gained from moving to a unified spatial data warehouse approach to data storage, maintenance and access.

In whichever ways the system develops though, one thing is certain: it will continue to provide the staff, members and the citizens of Charnwood Borough Council with e-government facilities designed to improve their everyday lives.

*Neil McLeod is an independent marketing communications consultant and practitioner specialising in the field of spatial information processing technology, including CAD/CAM/CAE and digital mapping/GIS.*