Southend-on-Sea Borough Council dramatically enhances accessibility and capability of GIS through Autodesk MapGuide

Striving to improve efficiency

Everyone knows of Southend-on-Sea as a busy tourist destination with a world famous pier. As well as seven miles of sea and foreshore, this town in the English county of Essex has a full range of associated leisure facilities and attractions, excellent shopping facilities and numerous restaurants, wine bars and pubs. However, in recent years the town has developed into a significant business and residential centre in its own right. It is the responsibility of Southend-on-Sea Borough Council to service and support a population of over 160,000 and over 5 million day visitors a year. To do this more effectively, the Council is striving to improve the efficiency with which it responds to the whole range of information requests it receives from its own departments, external agencies and local residents. Where previously, each department would own and manage its own data sets, resulting in duplication of data and applications, Southend-on-Sea Borough Council now saves money and increases quality and consistency by storing and managing information centrally, and by sharing it across departments. That is why Southend is using Autodesk Map, Autodesk MapGuide and a suite of applications developed in conjunction with Allied Integrated Technologies Ltd and Atkins Management Consultants.

Impressive suite of Local Authority applications

Southend-on-Sea Borough Council (Southend) had been AutoCAD users for many years. Prior to becoming a unitary authority in 1998, it also acquired a number of seats of Autodesk Map as a means of integrating spatial data sets that included parking restrictions, traffic signals and pedestrian crossings. Paul Mathieson looks after capital projects and revenue activities relating to highways and transportation and is responsible for the manipulation and creation of data associated with highways and their maintenance. Paul is also the Ordnance Survey Liaison Officer with the responsibility of managing the Council’s mapping assets and making it more easily available to interested parties. Paul recalls, “Some years ago we realised we really needed something that could enhance the GIS capability of our 18-seat Autodesk Map system and at the same time make the data easily available to many more users. So when Autodesk announced its web-based strategy and launched MapGuide, we moved over to it.” Paul adds, “That was over four years ago. We have now reached a point where we have an impressive suite of applications that meet our needs and may well suit other local authorities, too.”

Three-way joint venture

Philip Madeley of Allied Integrated Technologies Ltd (ait) explains how this has been achieved. He says, “The overall solution is the result of a three-way joint venture between Southend, Atkins and ourselves. Southend originate the requirements. We and Atkins then devise the best way of getting the results. A lot of thought goes into deciding how best to implement a requirement, and how much functionality or customisation is needed to satisfy it. We all agree that this is better than trying to sell an off-the-shelf application that may not do exactly what the users want.” ait continues to supply the authority with Autodesk Map and MapGuide software as well as consultancy, application development and implementation and training.

Low cost, fully functional and very efficient

Why take this particular route? Paul says, “We already had a significant commitment to AutoCAD and Autodesk Map. We investigated MapInfo but it was not compatible with our mainly AutoCAD-based data within technical services.” Paul continues, “We also considered other options such as ArcInfo from ESRI, but there was nothing available at that time that could do what MapGuide could do.” Paul notes, “We felt that back in 1998, the cost of developing a solution on other platforms would have been much higher than on an Autodesk platform.” Paul continues, “The Autodesk view is that for every person creating the data there are a thousand people who will just want to view it. So why go to all the expense of a desktop application, with all the training that it involves, when all users need to do is access the database and print a map?” Paul confirms, “Our PC and intranet-based system is very low cost, and yet fully functional by comparison with desktop GIS.” In Paul’s experience, “MapGuide is a very efficient platform. The tools are very robust, well designed and easy to use within a development environment.” He continues, “Applications previously delivered in either Autodesk Map or Autodesk World can be replicated and implemented quickly using MapGuide Author without having to rely on external consultancy.” Paul adds, “Most users do not know they are using MapGuide. They access the intranet using Internet Explorer, click on the appropriate button and access their chosen application.” These applications are centrally administered through what is effectively a single-server system based almost exclusively on Autodesk technology.
Southend-on-Sea Borough Council

Highway Record Management and Land Charges

When the council became a unitary authority, it acquired responsibility from Essex County Council for the management of highway records for the Southend area. To fulfil this responsibility, Southend needed its own highways records system and Atkins Management Consultants (Atkins) was engaged to develop an appropriate solution. Any solution would have to read relevant data from the County Council's existing ARC/INFO and Oracle highways management system. The solution also had to cope with the ongoing management of this data using Southend's existing Autodesk GIS system. The resultant Hinet 2 Highways Records Management System has been designed primarily to maintain the centre-line based attributes, such as road classification and speed limits. A key function is the maintenance of the local street gazetteer. However, other features such as road signs and highways schemes can be stored alongside the centre-line data to deliver a comprehensive highways records management system. Mapping and highways related spatial features are maintained and delivered to the desktop and through an intranet using MapGuide. Atkins, working in partnership with the Council’s Technical Services Division, has also developed a web-based Land Charges module for Hinet 2, for use within Southend’s Land Charges section. Prior to the July 2002 introduction of the new form of enquiries for Local Land Charges, search answers to solicitors' enquiries about, for example, Building Regulations and Traffic proposals were optional. Now they would be mandatory. A way had to be found of speeding up the handling of over 8,000 manual local search applications each year. Aleksander Mazalon, Southend's Local Land Charges Group Manager comments, "The module allows my team to look up any address in Southend and undertake a search within a matter of minutes. Previously, such an enquiry took five days to complete. We had to fill in a paper form, send it over to a land registry and await a response. There is no doubt that the introduction of the electronic Land Charges module has helped us improve our response times to our customers." The system has recently been expanded to advise of public rights of way and also to provide a status gazetteer, which has helped the team to provide a more accurate response to its customers, has simultaneously reduced Southend’s exposure to incorrect responses. According to John Stoner, GIS Applications Manager at Atkins Management Consultants, "MapGuide has proven to be a robust and flexible development environment and has been a pleasure to work with."

Ideal for non-technical staff

Keith Holden is the Support Services Manager for the Chief Executive and Town Clerk's Department and is responsible for electoral registration matters. He says, "We have a vast database which contains records of electors and their allocated wards. We have to be sure that electors are properly allocated to the correct wards, otherwise they may lose the right to vote when they go to the polling booths. We knew the data contained errors but needed to trap as many as possible before the situation became critical." In response to this requirement, ait developed a map-based system that allowed Keith’s team to plot the location of electors on the ward maps and compare them with the locations held in the database to check for conflicts. Philip Madeley of ait explains, "It didn't take much effort to develop the Eye-WARDS solution. We used MapGuide to relate the database to a series of ward maps. From that simple but effective application, we developed others for plotting and viewing. From this small but significant start, the department saw the enormous benefits of digital mapping and out of that came Eye-EMERGENCY, the emergency planner; Routed to Station system now in use in the Town Clerks Department." Keith resumes the story, "I now have assistants who are using Eye-WARDS to answer ward queries that would have taken up to three weeks to answer previously. He adds, "I'd been a draftsman for over 20 years and I knew a little bit about mapping. I knew how the technology could help with electoral registration and emergency planning but prior to our investment in Autodesk technology, we didn't have the tools. Ultimately, we needed systems that could be used by non-technical staff. We now have those systems."

Could’n’t be more simple

Since then, ait’s suite of MapGuide-based applications has grown and is now in extensive use across the Council. Eye-MAPS provides all users with transparent and controlled access to appropriate MapGuide datasets. The recently-acquired high-resolution aerial photography has been easily combined with the OS map data and shared throughout the council. Other applications such as Eye-CREATE allows Technical Services to manages the council’s development schemes, whilst Eye-PRINT allows the Planning and Building Control Department to print A4 plans for use by the public. Paul says, "Accessing our suite of applications through MapGuide using an intranet, my team could have an answer they couldn’t be simpler. The system has the look and feel of the familiar and almost universal Internet interface that everybody understands and expects. Once shown how to use and interrogation the system, new staff members use it like they would use a spreadsheet or a word processing document." Paul says, "I have been very encouraged with the precision with which you can create the mapping data using Autodesk Map and the ability to take it into MapGuide. That accuracy and attention to detail doesn’t get lost taking it into MapGuide. It seems to us that no other solution can match that.” Paul continues, "If you need to use Ordnance Survey mapping with other background data such as aerial photography and local design data, then use Autodesk Map instead of ordinary AutoCAD. It can do everything that AutoCAD can do and it is much more efficient. ait have also supplied us with KeyGIS AutoZoom Pro and Gazetteer to make us even more efficient: we can locate a road in seconds and load the underlying data automatically without reference to a key plan." Paul adds, "We are now working to provide a contact centre for customer-focused services: one point of delivery, one place where people can ask questions about any council function, and get an answer ready."

Driven by business need

Paul offers this advice to others looking to follow Southend’s example, "Be aware of your corporate objectives but don’t necessarily be too bound to the corporate approach. Be driven by the business need, not by the choice of a corporate GIS. Be brave enough to ask for an application that suits the business need and use an open-ended system like MapGuide that will integrate with other systems. We have always maintained our independence from our ICT department, yet worked with them to develop our own particular applications.”

Escape from paper

Paul Mathers sums up the situation thus, "People have become used to information on-tap from the Internet and usage within the council has gone off the scale. Why should you have to wait weeks for an answer when it can now be provided more-or-less straight away through a system like MapGuide?” Paul continues, "Currently there are about 150 unique users of MapGuide over a monthly period, a figure that is growing at about 10% a month. The users think it is wonderful." Paul concludes "There is a growing expectation that local authorities will have the systems in place to deliver information quickly and electronically to central government, the Land Registry, Ordnance Survey or any other appropriate bodies. If you want to take up the world of paper based systems and paper maps you would not be able to comply with e-government and Improvement & Development Agency (iDeA) initiatives. Thanks to MapGuide, Atkins and ait, this is not a problem for us.”

links

www.autodesk.co.uk/mapguide
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www.a-it.co.uk
www.atkinsglobal.com

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