Case Study – Westonbirt, The National Arboretum

AIT Spatial's solution puts Westonbirt Arboretum on the map

When a Chinese Bean Tree at the Westonbirt Arboretum, Gloucestershire produced its best flowers for years last summer, tree enthusiasts and specialists took to social networking sites to alert the public. The tree itself is unusual enough, but as the foxglove-like flowers very rarely bloom in such profusion – and last only for around a week – the occasion was significant enough to attract visitors to the arboretum from far and wide.

Those caught up in the excitement were able to follow links on Twitter and other sites to an interactive map to find the exact location of the tree within the arboretum, together with details such as the date it was planted. The map was created for the arboretum by AIT Spatial and it is based not on a niche tree or gardens-based application, but on a mainstream software solution – Autodesk MapGuide.

Westonbirt Arboretum in Gloucestershire, managed by the Forestry Commission, is known globally for its outstanding collection of trees and shrubs. Created in the Victorian era, its 16,000 trees (including 2,500 different species) attract over 350,000 visitors a year who come to see specimens from the UK, China, North America, Japan and Chile, spring rhododendrons and azaleas or the stunning turning leaf colours in autumn.

These visitors range from families on a day out to academics who have travelled miles to investigate a particular tree or species. However, with over 17 miles of pathways within the arboretum, it was difficult for any of them, whatever their purpose, to pinpoint certain trees or plan an individual route.

As Sally Day database manager at Westonbirt explains, the arboretum has its own internal database of trees and did have a digital system for visitors but it was outdated. "We needed a simple interface that anyone could access. Also, the old system was difficult to update which meant we were wasting a lot of time trying to revise data as changes occurred," she says.

Sally Day met Mark Spence of AIT Spatial, a KnowledgePoint partner, at a seminar. One of AIT Spatial's key areas of expertise is customising CAD and mapping systems for tree, land, estates, housing and asset management. Consequently, it soon became clear that it could offer Westonbirt something more suitable than some of the more specialised database systems on the market.

"When Mark suggested a solution based on MapGuide, one of the deciding factors was that the map could be shared through a web browser," she says. "This meant that anyone could access an accurate map online and plan their visit beforehand or research the collection from their own homes."

"Also it was evident that Autodesk MapGuide offered great out-of-the-box functionality as a base to the solution. I don't think the off the shelf functionality of any other solution came close. It offered flexible technology in connecting the different datasets, it promised to be quick to implement, it also had the capacity for future demand, plus it would be easy to update."

Spence and the team at AIT Spatial worked closely with the arboretum's head of trees, education team and Sally Day herself to ensure that the map was simple for everyone to use and it went live in the spring of 2011.

The new interactive map (www.thewestonbirtmap.org.uk) has a quick search wizard and top tips section to help new users find what they are looking for by using common names for trees. However, those with more specialist interest can search by botanical names. The results can then be viewed on a map of the arboretum, with a zoom facility to see more details. Users can also print out location maps showing an overview of the whole site and close-ups to help navigation.

If there is some doubt over the exact name of a tree, the map also allows part name searches or regular visitors can browse by section and number or by A to Z. Clicking on the tree number on the map gives the tree's botanical name, height and country of origin. On-site visitors can also view the map on a computer in the Great Oak Hall foyer at the arboretum.

"The map is now very flexible and we can easily upload new information ourselves which is a great benefit as it saves our time and ensures all information is completely current," says Sally Day.

Mark Spence reports that feedback from the 'tree community' was swift and fulsome with particular praise for the fact that visits could now be planned to maximise time available. The general public too has liked the map which now records hundreds of visits a day.

He reports that the arboretum may choose to add photographs of the trees at a later date – and even develop a phone app to enable access to the map while mobile.

Going back to the Chinese Bean Tree, the map really came into its own when this flowered, enabling more visitors to enjoy this rare sight. "It's becoming a great way to enhance the experience of visiting the arboretum – and putting us on the map in more ways than one," concludes Sally Day.

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