



Case Study

Sigma Seven puts ScottishPower Energy Networks at the Forefront of Utility Vegetation Management

“Sigma Seven designed and built a solution from a very complicated and challenging set of requirements. Their flexibility, commitment and professionalism delivered a unique product that will shape our Vegetation Management strategy for the future”

Kevin Bannon, ScottishPower Energy Networks

The Challenge

ScottishPower Energy Networks (SPEN) has a legal requirement and duty of care to operate its network in a safe and reliable manner. With over 40,000km of overhead power lines in Southern Scotland, England and North Wales this is no small task.

When trees and other types of vegetation come into close proximity to high voltage power lines, there is a potential danger to members of the public and possible impact on the reliability of the electricity supply. For this very reason SPEN operates a comprehensive vegetation management programme employing over 200 contracting staff.



Snow, ice and high winds can bring nearby trees down on to power lines, disrupting supply

Prior to the introduction of the new field-based vegetation management system, the work process involved printing thousands of paper maps every year to allow survey and customer consent tasks to be carried out. After the surveys were complete, paper-based work packages were compiled and manually checked for environmental constraints prior to being sent to arborists to carry out the works

It was essential that SPEN began to take advantage of the vast amount of data gathered during this process to influence their vegetation management strategies. A solution had to be found that could deliver on four main fronts.

- Assess and manage the risk at sites where trees are in close proximity to overhead power lines
- Reduce the impact trees have on reliability of supply in adverse weather conditions
- Streamline the current paper-intensive process
- Provide information on environmentally sensitive sites to surveyors in the field



Arborists clear foliage around lines

The Sigma Seven Solution

“Despite a challenging specification, Sigma Seven delivered an innovative and flexible product on time and to budget that exceeded the expectations of the business.”

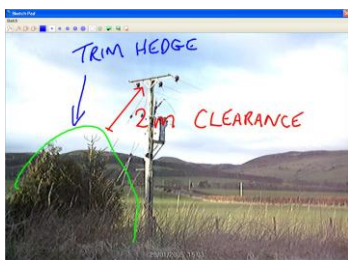
ScottishPower were already benefiting from the use of Sigma Seven’s GeoField mobile mapping solution in other areas of the business for map viewing, field inspection and field quotation activities. The labour-intensive paper-based nature of the existing vegetation management process made it an ideal candidate for process re-engineering to take advantage of the capabilities of GeoField Workflow.

A series of workshops were held with key staff from SPEN’s maintenance business to design a new vegetation management process, with the aim of eliminating existing paper-based activities, and producing a more efficient, automated process centred around the use of GeoField.

SPEN decided that they would equip their contract surveyors with Tablet PC devices installed with GeoField, providing map-based access to all asset and environmental data required to perform an efficient inspection of the overhead line network. GeoField Workflow leads the user through the vegetation survey process enabling cutting instructions and landowner details to be captured at the point of action, greatly improving the accuracy and quality of the data being collected.

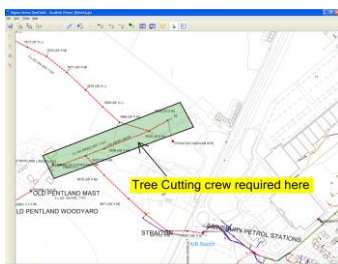
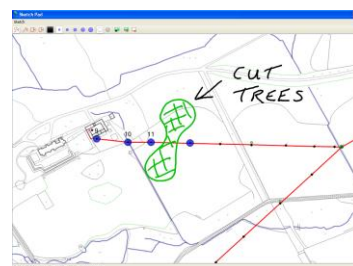


A completed site survey form with landowner’s signature



The surveyor can use GeoField Redline facilities to capture digital camera images and sketches to supplement the textual survey data, removing any uncertainty around what work is required, and where.

Details of the proposed work can be presented and agreed with the landowner during the site survey, and landowner consent can be obtained via a digital signature. Captured information is synchronised with SPEN’s Vegetation Management Database when the contractor docks their Tablet PC at their office location at the end of the working day.

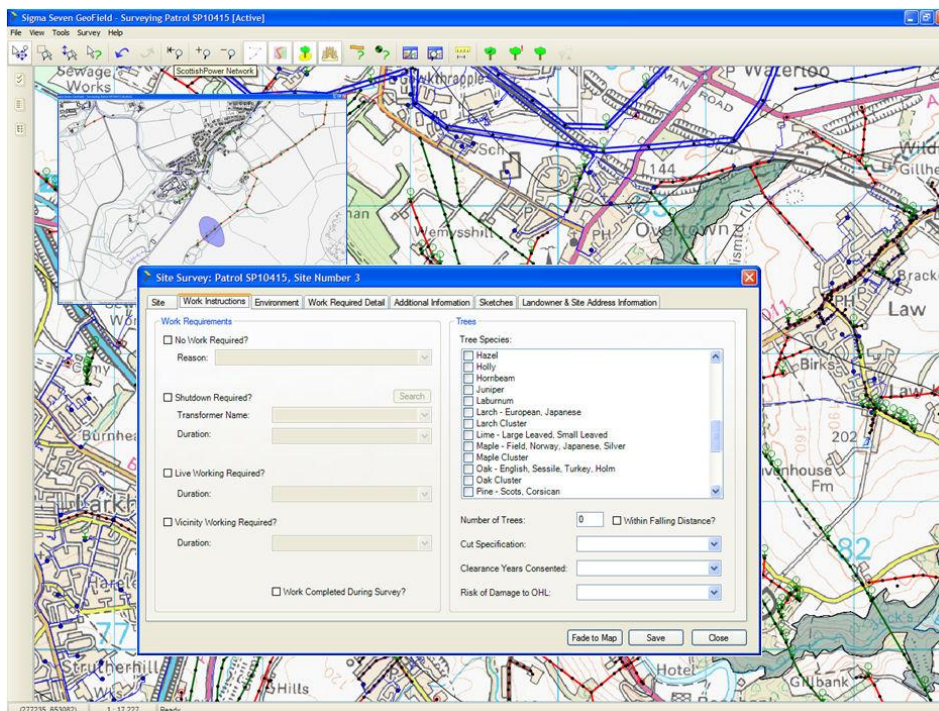


The GeoField solution is integrated with SPEN’s enterprise GIS and an extranet-based work management system, enabling both ScottishPower maintenance staff and the contract surveyors to manage and report on the progress of allocated vegetation survey and cutting works. The system has recently been extended to support the vegetation management auditing process, helping SPEN to ensure the quality and consistency of the contracted work.



Benefits to the Business

“The Tree Site Survey application has put SPEN at the forefront of Utility Vegetation Management, its design caters for all aspects of our business, from survey in the field through to site management and business reporting”



Sample screen shot showing map detail and tree classification tool

Since going live, the system has harmonised the business practices between SPEN and its vegetation management contractors. They now share a common web-based portal for all aspects of work issue and data return.

The timeline from requesting work through to actual cutting being carried out has shortened drastically. Contracting surveyors using Tablet PCs in the field now survey and gain consent to cut trees from landowners using one application in a single visit, while being able to see on site any environmental constraints that may affect their work.

By holding all of the specific site data in one place, SPEN provide improved customer service in terms of faster and more accurate data collection by having data to hand very quickly.

From a safety and network perspective, the process is more responsive and the work more precise and more efficient. The data collected allows detailed analysis to be carried out, shaping future decisions. Crucial data is now collected in the following areas:

- Tree species and type
- Tree growth rates
- High risk and diseased trees
- Clearances to overhead lines
- Landowner details
- Specialised site requirements
- Site clearance requirements





About Sigma Seven

Sigma Seven provides powerful, mobile Spatial Information and Map Management solutions to organisations with complex and geographically diverse assets. Our technology works with organisations' own Geographical Information Systems (GIS) and enables their field and office staff to work together more efficiently, deliver significantly improved customer service and enhance the quality and effectiveness of their corporate data.

Our innovative technology helps organisations understand, manage and analyse their geographically mapped assets. When used by field workforces, it can streamline workflows, improve productivity, help meet legal and legislative requirements and cut down waste. Our mobile mapping systems are adaptable, reliable and have a proven track record which is endorsed by an enthusiastic user base of satisfied clients.

Sigma Seven was formed in 2000 by a group of mapping, data management and GIS professionals from leading IT Service and Utilities companies. Recognising the growing demand for flexible and affordable mobile map-based solutions in all organisations with field workers, the company has developed the GeoField product line. Sigma Seven has helped some of the largest utility companies in the UK to take mapping out of the office and into the front line.

With over one hundred and twenty man years experience in the Utility and Network Asset Management industries, we have unrivalled in-depth knowledge and experience of Work and Asset Management systems. Our expertise has been recognised by a number of the UK's largest utility companies which have adopted our cutting-edge products.