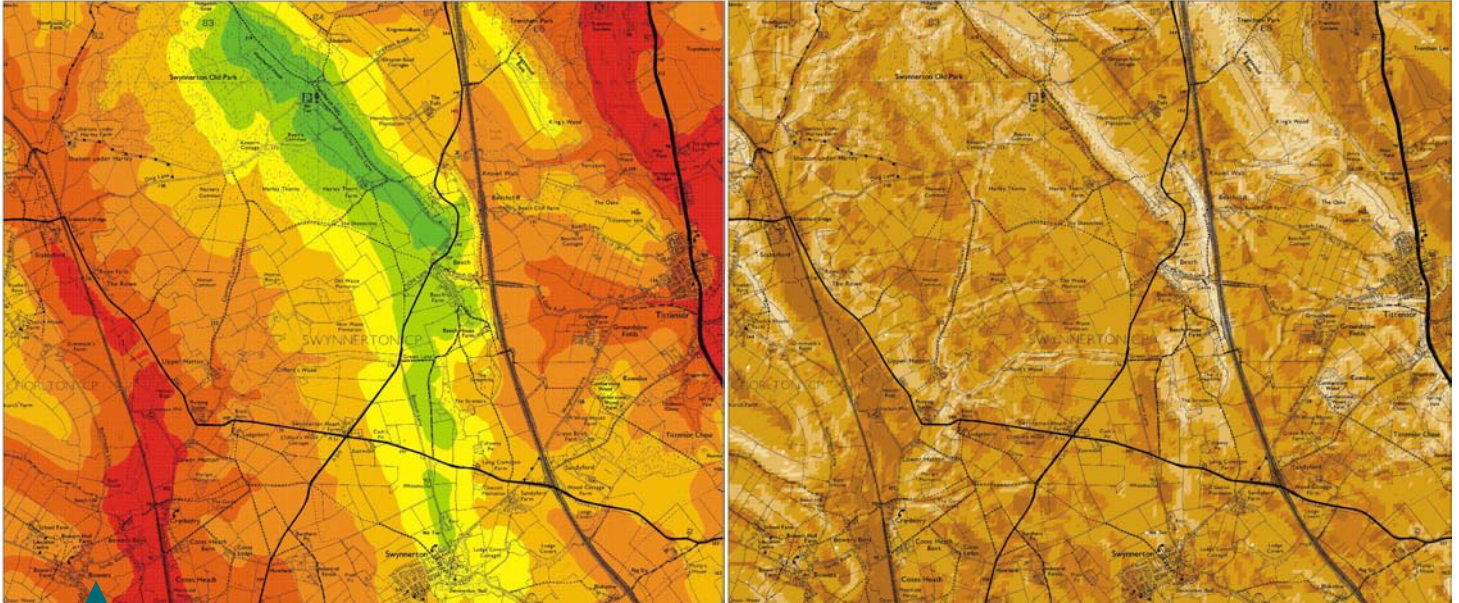


Interpreting the geographic context // Integrating development into the landscape



Elevation plan and slope gradient analysis plan for equivalent area relating to quarry project site in Staffordshire

Understanding and interpreting the landscape and demonstrating how development will successfully integrate with its character are vital parts of Crestwood Environmental Ltd's work.

The West Midlands-based environmental consultancy provides high quality reports and designs for waste management, coal, mineral, renewable energy and other small to large-scale development projects.

As well as landscape assessment, the company interprets environmental monitoring results and produces planning applications, Environmental Impact Assessments, risk assessments and ecology surveys.

Crestwood Environmental uses 3D Digital Terrain Modelling (DTM) data as an integral part of its work, for example to calculate material volumes and to allow accurate setting out of designs by surveyors on site. DTMs also help to establish lines of sight and Zones of Visual Impact (ZVIs).

The data is used to produce photomontages and visualisations which can be presented as still images, animated fly and walk-throughs and videomontages, either on the internet or in DVDs, leaflets, posters and PowerPoint presentations.

Site developers and operators rely on the analysis work by Crestwood Environmental to guide internal decision making, help with public consultations and support detailed planning applications with accompanying Environmental Statements – so the quality must be to standards expected by local planning authorities and planning inspectors.

The Challenge

Given the range of applications for its reports and the often tight deadlines imposed by project requirements, Crestwood Environmental needs flexible access to a wide range of readily available data, including downloadable topographic, boundary, historical and geological mapping as well as detailed 3D elevation and height data and orthorectified aerial photography.

Karl Jones, Director and Principal Landscape Architect, says: "If we are involved in progressing a quarry project, for example, we will often need to overlay a wide range of datasets to understand what is happening in and around the site and across the surrounding landscape. Datasets such as OS Land-Form Profile and Nextmap help us to create DTMs for the production of 3D contours, slope gradient analysis plans, elevation and isopach maps and theoretical ZVIs. Once we have done the initial site assessment we will use this information to produce detailed landscape mitigation design solutions and for final landscape restoration proposals."



Case study // Interpreting the geographic landscape

The geographic context is built up by combining different kinds of data, such as overlaying terrain, geological and hydro-geological data with aerial photography. This is how proposals are developed into an acceptable design for planning and the EIA process.

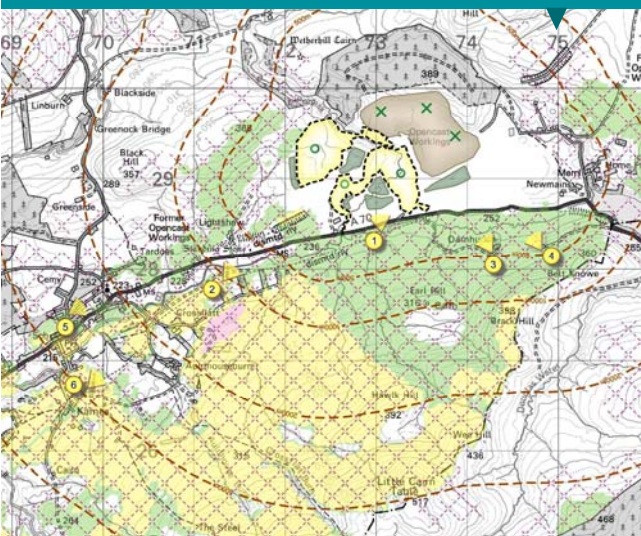
Mr Jones says: "It is vital to have immediate online access to mapping and other kinds of spatial data that can operate easily in a CAD environment and be universally understood and replicated by clients and planning authorities. We have a seven-strong consultancy team whose output is often CAD orientated so we either need data that is designed for use in CAD systems or can be easily converted to it. Also, we must be able to demonstrate that we have compiled and written our reports in a transparent way. Local planning authorities and consultants need to understand the techniques used in the analyses undertaken and the limitations of the data used. The fact that we can quote we produced a given report using a particular type of data with a given level of accuracy to specified standards provides confidence in the results and allows replication of the analysis by a third party."

The Solution

Crestwood Environmental began using downloadable data from emapsite in early 2008.

"We needed a data solution that was flexible because of the many different types and sizes of projects we work on," says Mr Jones. "emapsite provides site-specific map extracts in the CAD formats we can use and we simply download direct from their website. We can either use the data almost immediately after ordering, without conversion, or if required, we convert it within CAD software such as AutoCAD and associated ground modelling and graphics packages. It's a simple process for us."

The zone of visual influence (ZVI) around an open cast coal site in Ayrshire.



The restoration plan for the Ayrshire site shown through mapping overlaid onto aerial photography

The Outcome

Since 2008, emapsite has helped Crestwood Environmental provide data for reports on development projects including large-scale quarries, surface coal mines and a variety of waste management facilities.

Mr Jones has identified three main benefits of using emapsite. He says: "Firstly, it is easy to find out interactively, in real time, how much the data is going to cost. There is information on the website that helps you to quickly assess the balance between price and the benefit you will receive for a given project. Secondly, there is very little time involved in researching the data. Thirdly, you don't need to spend precious time researching the correct copyright information to put on your drawings. emapsite simplifies the whole licensing process and makes it a lot quicker."

Looking to the future, Crestwood Environmental is developing its 3D visualisation capabilities by incorporating building height data for urban areas into ZVI analyses.

emapsite has an ideal data portfolio for urban applications based on Lidar, height data and oblique aerial imagery sourced from a variety of suppliers.

"Without this data it would be more expensive and time consuming to get the message across to the level of detail we provide in our reports," says Mr Jones. "We would not be able to demonstrate the effects of our designs and proposals as accurately as we do. Without solutions provided by emapsite, sourcing and obtaining data would be much more difficult."

emapsite is a Premier partner of Ordnance Survey. For more information visit www.emapsite.com.



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