

Optimising the use of GIS in engineering projects

DBFL Consulting Engineers

The Challenge

- Demand for greater access to geospatial data and GIS capabilities

The Benefits

- Improved insight in complex engineering projects
- More effective communication with clients
- Cost efficient delivery of client projects
- Successful acquisition of new business

One of Ireland's leading consultancies for civil, structural and transportation engineering is expanding its use of ArcGIS and making GIS capabilities available to more of its transportation and civil engineers. The move is already helping the firm to communicate clearly with clients, work more efficiently and win new business.

The Challenge

After five years of using ArcGIS, DBFL was convinced of its value. Esri's geographic information system (GIS) software was, however, only available to a small number of users on the transportation engineering team who shared a single desktop license. Only one person could access ArcGIS at a time via a remote desktop, and this was a pinch-point for the company's ability to use, re-use and share geospatially referenced data and maps.

Engineers within the business wanted to be able to make greater use of geo-referenced data from government bodies including Central Statistics Office (CSO), Ordnance Survey Ireland (OSi) and the National Transport Authority (NTA) to enhance their understanding of complex assessments. At the same time, more and more of DBFL's existing and prospective customers were beginning to demand geospatial data and analysis as part of new project specifications. DBFL therefore needed to be able to view, interrogate, analyse, and share geospatial data and maps more extensively, not just in transportation engineering, but also in civil engineering projects.

The Solution

In response to these internal and external pressures, DBFL has begun to expand the range of ArcGIS solutions available to its engineers, as well as make ArcGIS capabilities accessible to more people. Soon, the company anticipates that as many as 80 engineers, working on both transportation and civil engineering projects across the business, will be using the technology as part of their day-to-day work.

Esri's latest desktop software, ArcGIS Pro, is now the primary tool used for geospatial analysis and geoprocessing within the company. For example, DBFL uses ArcGIS Pro to help it analyse catchment areas and evaluate walking times to bus stops and train stations from properties in nearby communities. ArcGIS Pro enables the company to easily identify barriers to public transport use and propose new access routes for pedestrians and cyclists.

In addition, DBFL now uses ArcGIS Survey123 for conducting route, transport, and site audits in the field. In one recent project, a Survey123 app was built to audit a proposed new cycle route in Dublin. Engineers could upload images and collect data on their mobile devices while walking the route. All the information gathered was uploaded directly to ArcGIS Online, where it could be easily viewed by all team members, analysed, and shared with the client.

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Elena Cuena, Transportation Engineer, DBFL

“ Now that ArcGIS is accessible to more engineers at DBFL, we can use it to add value to a larger number of projects, both in transportation and civil engineering. ”

Enrique Jimenez, Transportation Engineer, DBFL



ArcGIS analysis showing the accessibility of the Railway Station in Tullamore

The Benefits

Improved insight in complex engineering projects

Already, DBFL is making more extensive use of ArcGIS across a wide range of projects to gain insight into key issues such as sustainable transport. The technology has, for example, been used to visualise the proportion of people using private transport, public transport, and active transport for work trips by macrozone in the vicinity of Arklow in County Wicklow. “Now that ArcGIS is accessible to more engineers at DBFL, we can use it to add value to a larger number of projects, both in transportation and civil engineering,” says Enrique Jimenez, a transportation engineer at DBFL.

More effective communication with clients

DBFL is increasingly using ArcGIS Online as a platform for communicating information to its clients. This approach enables the company to show the results of its work in a dynamic format for the first time. “ArcGIS Online is particularly effective for presenting our results to non-technical people, as it enables them to easily visualise a situation and see information in a format that they can interrogate,” explains Elena Cuena, another transportation engineer at DBFL. “A 20-page report is much harder to understand,” she says.

Cost efficient delivery of client projects

Employees at DBFL can now work more efficiently, as they no longer have to share access to a single GIS license. They can also share shape files and geospatial data internally and with clients more easily, which prevents the duplication of effort and accelerates projects. Most notably, DBFL is saving money by producing fewer written reports and giving clients access to ArcGIS Online interactive maps instead. “We are really pleased with the direction we are heading in with GIS now,” Cuena says. “We are passionate about what we do and are happy that we can now make more use of ArcGIS to make cities safer and create a more sustainable world.”

Successful acquisition of new business

Now that DBFL is able to offer more GIS services, it has been able to tender for projects that were previously out of its reach. It can offer a full range of GIS analysis and map creation services, which is improving the success of its new business acquisition and helping to grow the business. “There is high demand for GIS analysis and digital mapping now,” Cuena says. “Since expanding our use of ArcGIS, we have begun to attract more private and public sector clients that want GIS analysis and reports.”

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