

How we built a GIS system to evaluate potential sites for renewable power generation

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The Challenge

- Build a GIS system to evaluate potential sites for renewable power generation
- Create efficient GIS-led processes to enable the delivery of 1GW of clean energy by 2030

The Benefits

- Optimum sites identified for renewable power
- Accelerated planning and development processes
- Improved community relations
- Close collaboration in geographically dispersed teams
- Sustainable working practices

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The Solution

OSNI began to make aerial photography, taken since 2003, available to government bodies digitally as part of the Northern Ireland Mapping Agreement, but employees in Lands Branch could not access it easily. DfI's Digital Services Branch stepped forward to help, creating a web app called the Time-enabled Orthophotography Viewing Application (TOVA).

TOVA was configured entirely in-house by staff within the Digital Services Branch using the Department's existing ArcGIS license. "ArcGIS is so powerful in terms of what it can do," says Thomas Neeson, Head of GIS in the Digital Services Branch. "From our initial discussion with the Lands Branch team to the release of the solution, the creation of the ArcGIS app took less than six weeks."

Hosted on ArcGIS Enterprise, the app streams orthophotography directly from OSNI, allowing users to see which areas of Northern Ireland have been photographed by year. Users can then find all available aerial images relating to specific locations, across the whole of Northern Ireland, taken at three-year intervals. A time-slider function within TOVA allows users to easily compare two images, taken in different years, to more easily spot changes in land use over time.

TOVA was primarily developed for 35-40 staff in the Lands Branch but is actually available to all 2,000 employees within DfI and could be used even more widely in the future. "There has been a lot of interest in this app from people throughout the Northern Ireland Civil Service," says Neeson. Rightly proud of his team's innovation, he adds, "This is the first time that Northern Ireland orthophotography has been time-enabled in an app, and it could be used in a wide variety of ways."

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Thomas Neeson, Head of GIS, Digital Services Branch, Department for Infrastructure

“ The ArcGIS app allows the Department for Infrastructure to ascertain whether claims are valid and can save the Department thousands if not millions of pounds. ”

Lois Allister, Lands Branch, Department for Infrastructure

The Benefits

£3.1 million in value to the Department

The ArcGIS web app is now used routinely by around ten people to examine up to 40 potential cases of land encroachment per working day. Although it is difficult to quantify, as each case is different, considering the time saved, decisions made and reduction in aerial images requested, DfI estimates that the ArcGIS web app delivers £3.1 million in value to the Department each year.

Cost savings from fewer court cases

The evidence collected using TOVA enables the Lands Branch to have constructive conversations with people who have encroached on public land and helps to avoid unnecessary and costly court cases. As Lois Allister, Lands Branch, explains, “We always hope that cases won’t reach court and we will be able to come to an agreed settlement. If we do reach agreement, it will be in a large part because of the aerial views, which will then save the Department thousands of pounds in legal costs. When we do go to court, our case will often rest on the aerial views. I worked in litigation for 10 years and know from experience that a photo speaks a thousand words to a judge and everyone involved.”

Cost savings from faster decision making

Having immediate access to aerial imagery allows DfI to carry out more thorough investigations and make decisions more quickly. Consequently, DfI makes a considerable saving in staff costs and can process more land sales, bringing in much needed revenue. “The number of cases that the Department for Infrastructure can investigate has at least doubled,” Neeson estimates.

Cost savings from efficient claims process

TOVA is now being used not only for land encroachment but also for assessing compensation claims from landowners when DfI acquires land for road schemes. “The ArcGIS app allows the Department for Infrastructure to ascertain whether claims are valid and can save the Department thousands if not millions of pounds,” explains Allister. “The more efficient use of staff time enables the Department to increase revenue and reduce expenditure.”

Improved understanding of land assets

Having easy access to orthophotography, on demand, has given everyone in the Lands Branch improved understanding of publicly-owned land and potential revenue opportunities. “It helps to provide a full picture of what we are dealing with, such as identifying if there could be potential purchasers,” Allister says. “ArcGIS allows us to build up a better picture of the land and property we are dealing with over time.”

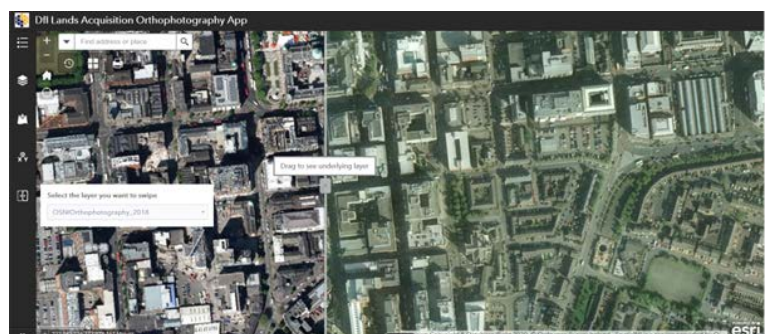
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