

Meeting urgent demand for new homes in the UK

Land Use Consultants

The Challenge

- Improve the efficiency and robustness of the development land evaluation process

The Benefits

- Site evaluation process reduced from 35 to 2 working days for five iterations
- The agility to consider alternative options and balance different priorities
- Consistent, auditable evidence to support decision making



LUC, a multi-disciplinary consultancy, is using Esri's ArcGIS platform to help local authorities respond more effectively to the critical shortage of housing in the UK. The consultancy's use of advanced geospatial analysis enables councils to identify suitable development land for new houses far more quickly and meet Government targets for new homes.

The Challenge

In the UK, there is currently a significant shortage of homes, contributing to rising house prices, high rental costs and even, in rare cases, homelessness. In response, the Government has committed to a range of reforms to increase the supply of new housing. As it points out in its February 2017 white paper 'Fixing our broken housing market', there is an urgent need to plan for "the right homes, in the right places" and, critically, "build homes faster."

Local planning authorities have a pivotal role to play in driving the success of this Government policy. They are required to produce a Local Plan that sets a vision and framework for the future development of the area, including identifying areas suitable for housing developments and making sufficient land available to meet ambitious targets for new homes. In what is a highly complex process, they have to evaluate thousands of parcels of land throughout their administrative areas, taking into account dozens of factors ranging from flood risk and agricultural value to environmental protection and local services such as schools and transport. They also need to consider data from neighbouring local authorities and partners, as part of a fully auditable process that can produce consistent evidence for decision making.

The Solution

LUC recognised that it could help local authorities to identify and assess potential development land more effectively, by creating a new automated tool to analyse housing growth options. The company has been using Geographic Information System (GIS) solutions from Esri's ArcGIS platform for 20 years, so instinctively turned to ArcGIS to design, build and deliver a brand new service for its local government customers.

Using Esri's ModelBuilder, LUC created an advanced geospatial analysis system that can systematically and automatically analyse parcels of land against hundreds of data sets and categorise them according to their relative levels of suitability for new housing. The solution automatically assesses factors such as flood risk, proximity to historic monuments and existing local services, drawing on data from local authorities and government advisory bodies, such as the Environment Agency and Natural England.

A key advantage of the approach is that analyses can be repeated easily, on demand, allowing LUC to test different weightings for certain planning constraints and explore a number of different options, without having to start again from scratch. Free from human error, the analysis results will always be consistent, so if LUC undertakes projects for neighbouring councils, the outputs will be directly comparable.

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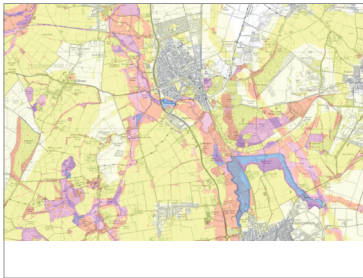
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“A considerable percentage of local planning authorities find it hard to undertake a detailed study of their potential development land, primarily because of the enormous spatial complexity of the task. Our standardised, ArcGIS-driven approach now makes it both fast and easy for councils to make consistent well-informed decisions about the best locations for new housing.”

Edith Lendak, Principal GIS Consultant, LUC

The Benefits

LUC used its geospatial analysis system to help Central Bedfordshire Council identify and assess realistic options for the development of up to 20,000 new homes and related infrastructure by 2035. The benefits that the ArcGIS-based solution delivered include:



LUC uses geospatial analysis to categorise planning constraints

Substantial time savings

LUC's approach, using ArcGIS to analyse the council's area against three assessment strands (primary constraints, secondary constraints and access to services), using more than 150 datasets, ensured tight project deadlines were met. This complex evaluation process would have taken around 35 working days of manual GIS work for five iterations, whereas it took just two days for five iterations using the prepared automated models.

Improved implementation and monitoring of projects

ArcGIS also plays a key role during the implementation of habitat restoration programmes and in monitoring the success of the trust's interventions. For instance, in the large tracts of degraded Blanket Bog and Upland Heathlands in the Peak District, the National Trust is using ArcGIS at the desktop and in the field to locate and block damaging drainage channels and conduct vegetation surveys. This is a particularly significant project because the organisation is responsible for 28% of England's entire priority habitats in the uplands, and the bog mosses that decompose to make the carbon sink that is peat, are beginning to recover as a direct result.

Greater understanding of long-term threats to biodiversity

By using ArcGIS to perform detailed habitats analysis, the National Trust is gaining a far greater understanding of factors like land-use and climate change that may pose a serious, long-term risk for threatened species. For instance, the National Trust has modelled the impact of higher sea levels on its 775 miles of coastline using ArcGIS. It is now applying the intelligence it has gained to identify high-nature coastal habitats that may become changed, understand the implications for species and assess opportunities for coastal habitats to move inland.

New ways to encourage support and communicate success

In the future, the National Trust plans to make use of Esri's ArcGIS Online to create engaging Story Maps to help it educate the general public about the threats to biodiversity and the vital importance of its conservation activities. Davies says, "Should we need to set up an appeal to help fund a scheme to protect a particular habitat type or wildlife area, we will be able to use the power of ArcGIS Online and Story Maps to do that. We will also be able to create Story Maps to demonstrate the success of our current initiatives and publicise the great work that the National Trust is doing to improve the fate of the UK's amazing nature."

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