

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 ability 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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“ 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:

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.

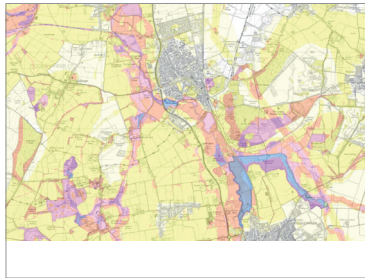
Repeatable, modular and flexible processes

As LUC's geospatial analysis process is both fast and repeatable, specialist planners at LUC and Central Bedfordshire Council were able to explore different options for site assessment. They could easily make changes to their land selection criteria, change the weighting of constraint factors and re-run the analysis to model different scenarios in just a few hours. This enabled the planners to evaluate issues more thoroughly and find the right balance between meeting the needs of a growing population and protecting the environment.

Robust and defensible evidence base

The integrity and accuracy of the new GIS-based approach created an auditable process that enabled Central Bedfordshire Council to justify the selected land parcels in preparation of its Spatial Strategy, which will form part of its emerging Local Development Plan. As Lendak says, "ArcGIS generates a robust evidence base which underpins Growth Options Assessments and enables decisions to be made with greater confidence." Rather than having multiple reports and data sources to study, planners could see at a glance, on colour-coded maps, which parcels of land may be most appropriate for sustainable development and drill down to understand why.

LUC's GIS team is currently extending the capabilities of the Growth Options Tool, to provide even greater flexibility and speed when testing different scenarios for housing site selection. The solution forms part of a suite of tools aimed at identifying sustainable development opportunities for renewable energy and housing and will be used on projects for councils across the UK.



LUC uses geospatial analysis to categorise planning constraints