

Planning Consent Granted for Bellway Homes

To secure planning permission for a new development, Bellway Homes needed an independent expert to assess hydrogeological conditions and consider potential risks relating to flooding.



The Challenge

Bellway Homes intended to develop a site in West Yorkshire that was originally granted outline planning consent in 2012 but was refused full planning consent in 2015. This was due to a number of concerns raised by objectors, including groundwater flooding.

Part of the issue was that the planning authority had been presented with several investigations by different 'experts', each of which presented different conclusions. Therefore, Bellway Homes commissioned Envireau Water to carry out an independent review to gain understanding of the real issues.



The Envireau Way

What became clear from the previous investigation documents, was a lack of conceptual understanding of the interaction between shallow groundwater and surface water systems at the site. While groundwater was an important aspect, Envireau Water's thorough assessment of site-specific baseline conditions demonstrated the main issue related to inadequate surface water drainage.

A strong evidence base was collected over a 12-month period through the installation of a carefully designed monitoring system to verify the conceptual model. Monitoring data demonstrated that there was not a groundwater flooding issue, but that groundwater levels would need to be managed on some parts of the site where they were close to the surface.





The Envireau Way Continued...

Due to the complex interactions between the groundwater and surface water system, an integrated modelling approach was taken for the assessment of flood risk, combining 1D/2D surface water modelling with groundwater modelling. A detailed design for the drainage scheme was prepared using MicroDrainage. This provided the local planning authority with a high degree of confidence that the scheme would be able to handle both surface water and groundwater inputs, with a large margin of safety.

The scheme was developed to ensure it protected downstream properties from flooding. Additional storm attenuation capacity was incorporated to improve on the pre-development situation.



The Result

The robust nature of the assessment and drainage design allowed Bellway Homes to address objector concerns with certainty and planning consent was successfully obtained in February 2019.

Need our help?

There is an increasing need to provide a very high level of drainage design work to support developments through the planning process. This project highlights the need for good science and an integrated approach to the assessment of flood risk where systems are complex.

Envireau Water are experts in natural water systems and understanding the complex interactions between surface water and groundwater systems. Our drainage team has the expertise to carry out integrated modelling exercises to assess flood risk and provide the information required for detailed drainage design work. Combined with our knowledge of the UK regulatory framework, we are uniquely placed to help you solve, complex, water-related problems.

If you are faced with a similar challenge, call us on **01332 871 882** to find out how we can help.



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