

Project
Ledsham Garden Village

Location
Capenhurst, Cheshire

Powers involvement
Topographical and underground utilities survey

Project completion
October 2023

Ledsham Garden Village in Cheshire is a development by Redrow, a leading premium housebuilder. For 50 years, the company has been creating high-quality homes and communities for its customers, whilst building over 120,000 new homes nationwide. Outline planning was submitted in 2016/17, to determine the size of the permitted future development. In 2023, the Powers team was engaged by Redrow to carry out surveys at the Two Mills junction and Hooton crossroads junction, to help inform the junction's improvement work required by Planning.

# Powers provides Topographical and Underground Utilities surveys for prestigious Redrow residential development



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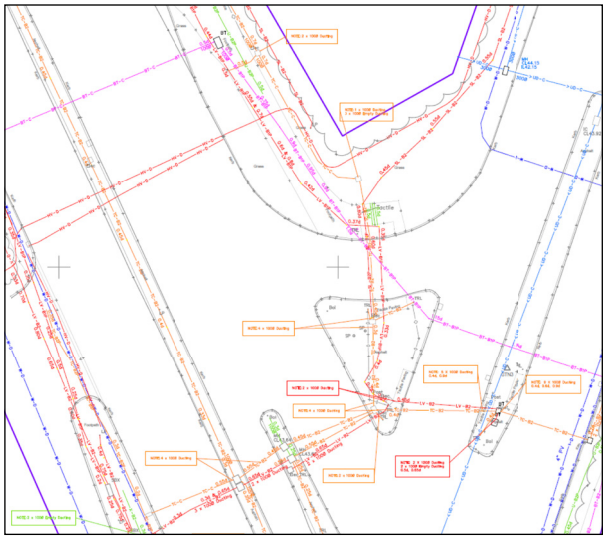

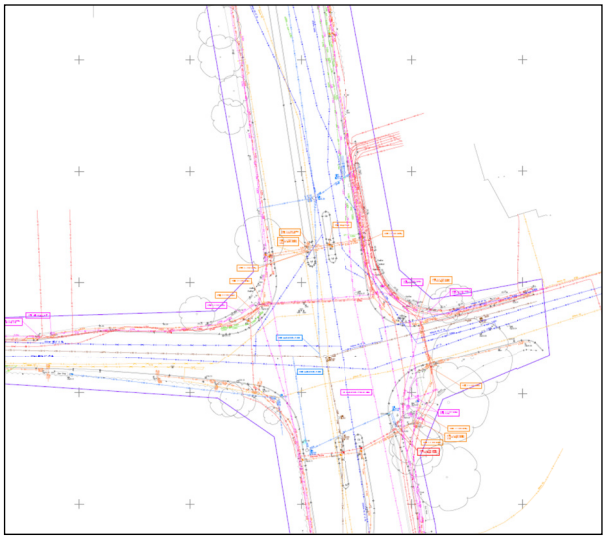

## ABOUT THE PROJECT

Ledsham Garden Village is a Redrow residential housing development near Capenhurst in West Cheshire. Ledsham is the epitome of Redrow's garden village concept, creating a vibrant new community in a sought-after location, within easy reach of the cities of Liverpool and Chester. This development is designed for life, boasting a wide range of village facilities amongst its tree-lined boulevards, with open spaces and accessible woodlands. The development is a broad mixture of properties, from starter homes and apartments to four and five-bedroom executive residences.

## OUR INVOLVEMENT

The Powers team was commissioned to produce a full topographical survey and underground utilities survey, also called a Ground Penetrating Radar (GPR) Survey of the junctions at Two Mills and Hooton Crossroads.

The focus of the surveys was to capture the current layouts, which would then inform designs to increase road capacity, considering the increased projected vehicles in the area associated with development. These junctions are key junctions on National Highways' network near to Ledsham Garden Village. Redrow has a solid working relationship with National Highways and Cheshire West and Chester Council (CWAC) Highways and was able to coordinate access for the surveys on this busy intersection.

The topographical surveys took place end of August 2023, with the more complex GPR survey taking place over three nightshifts in September 2023, with traffic management in place to enable the team to lift the manholes along the carriageway. The carriageway underground utility survey was carried out with a vehicle-towed GPR system, which limits the amount of traffic management required and can be carried out during a normal working day.

## THE CHALLENGES

The main challenges were carrying out surveying work on a busy junction. The topographical survey was reasonably straightforward, with only the busyness and volume of traffic to contend with.



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A Leica RTC360 Laser Scanner was used to carry out the topographical survey from the safety of the footpath and it was positioned using a Leica GS07 GNSS to Ordnance Survey grid and datum.

The underground survey was more complex, as the level of access required, and the time spent carrying the work out was more extended. Radar equipment was used to plot the underground features such as cabling, services and other obstacles, and total stations and laser levels to capture overground data. A Mala Core GPR & Mala Mira system were used for both the footpaths and carriageway to reduce the need for traffic management. Traffic management was required to lift manhole covers in the carriageway, but the time needed to close lanes was dramatically reduced, making it more cost efficient for the client.

Powers carried out the work in a professional and timely manner, with both speed and attention to detail complying with the designer's scope, to prepare a comprehensive report on the crossroads and its environs.

## THE OUTCOME

There will be 11 construction phases in total at Ledsham Garden Village. In total, there will be approximately 1500 homes in the Garden Village when complete. Powers' involvement allowed the designers to configure the junctions to accommodate the volume of traffic that would eventually be using the Two Mills and Hooton crossroads and ensure the vehicular impacts of the development are manageable.

> Powers was the ideal partner for us on this project. With their local knowledge and expertise, they delivered the surveys with their customary professionalism. With our good working relationship with National Highways and CWAC council, we were able to facilitate whatever access the surveyors required to carry out their work. Overall, we're delighted with the work Powers carried out and made use of its data and reports in our design Consultant's scoping brief.

Simon Downing
Design Manager at Redrow