

Customer:
English Heritage

Project:
Historic Flood Management

Solution:
Trimble R8, VRS Now and Trimble
5600 Robotic Total Station

Case Study



depends to a great extent on the interpretative skills of the surveyor. However this level of accuracy also allowed us to produce a 3-D model of the precinct area to help assess the water management issues - where the water can and can't go - using GIS."

English Heritage's Archaeological Survey and Investigation Team has been using Trimble GPS for over 10 years and has a long-standing relationship with its UK distributor, KOREC. Consequently their GPS toolbox is well stocked with compatible systems enabling the team to select the right tool for the job. Andrew continues, "The survey was undertaken by myself as a key element of a year long English Heritage Professional Placement In Conservation with supervision and training provided by Al Oswald (Senior Investigator & Team Leader, York Archaeological Survey & Investigation Team) Marcus Jecock and Graham Brown (Archaeological Investigators). The decision on what strategy to adopt and what survey kit to use is a collective one and based on a number of factors, including vegetation cover and the complexity and extent of the archaeological remains."

Trimble's VRS Now service was used to establish the coordinates for a permanent base on-site so that two R8 Rovers offering full GNSS capability could be used to carry out the survey. Whilst the Trimble R8 Rovers were used for the majority of the survey, in woodland areas around the precinct where the GPS could not achieve

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sufficient satellite coverage, the English Heritage team used a Trimble 5600 Robotic Total Station to map any visible remains. Some of these plots were then touched up by hand to produce a

comprehensive plan showing all the visible archaeological features over an entire valley.

Andrew concludes, "We found the Trimble kit to be excellent, convenient, fast, user friendly and well supported by KOREC -

Continued overleaf ►►

Historic Flood Management

An extensive survey of Yorkshire's Byland Abbey by English Heritage has revealed how monks tackled the particularly topical problem of flood management around one of Yorkshire's great Cistercian Abbeys.

Whilst much of Byland's huge cathedral-sized church survives today, little was known about how the monks affected their landscape. However almost immediately the survey layed to rest a 1920's assumption that the abbey was virtually surrounded by an artificial fish pond.

English Heritage's Andrew Burn explains, "The key elements of our fieldwork were carried out during the early summer using a Trimble R8 survey grade DGPS utilising a base station and two rovers to map in detail the tops and bottoms of all the archaeological earthworks as well as relevant natural features, such as ancient stream channels and limits of boggy ground. Our investigation revealed that large areas of the monastic precinct, previously thought to have been either flooded or boggy unused ground, actually contained buildings and a substantial inner

precinct boundary wall. The alleged fish ponds were simply remnants of the naturally boggy ground that would have existed before the monks arrived and began to drain the land.

We also used our R8 base station and rovers to produce a plot of tops and bottoms of slope of visible earthwork remains, hard detail such as walls and fence lines, and any other relevant detail such as parch marks or flooded areas and stream channels to produce a plan of the survey area. This allowed fast completion of an initial plot that could then be completed by hand to produce a hachured plan. The data collected was to our standard accuracy of <2cms horizontal and <5cms vertical. This was actually more accurate than our usual requirements because archaeological survey is quite subjective in nature and



perfect for investigating 900 years of history. Amongst other things, our archaeological survey of the landscape has revealed evidence that two dams and a diversion of the natural stream channel to the west, acted as drainage and flood prevention. This drained the valley and allowed the precinct walls and church to be built and become known as “one of the three shining lights of the North” in the 12th century, along with Fountains and Rievaulx.”

English Heritage has a wide-ranging role to understand, protect and promote the country's historic environment for the benefit and enjoyment of all. Helping them achieve this is the Archaeological Survey and Investigation Team based in offices in Exeter, Swindon, Cambridge and York. The teams work across all periods, surveying everything of interest from prehistoric monuments thousands of years old to military installations from the Cold War now under threat of destruction.

▲ Andrew Burn using the Trimble R8

Contact us:

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

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