

World heritage scanning

Maptek™ I-Site™ technology has been used in the Scottish Ten project to scan the remote island of St Kilda.



The remote island of St Kilda lies about 100 miles off the west coast of Scotland in the North Atlantic Ocean. St Kilda is one of only 28 World Heritage Sites around the globe with dual recognition for natural and cultural heritage. The bay and towering sea cliffs of St Kilda are home to nearly one million seabirds. There are many villages abandoned since the 1930s. The island is rarely visited and it can take almost a day to travel there.

The Scottish Ten team captured data on St Kilda island over a 2 week period in June 2011. Using Maptek™ I-Site™ laser scanning technology the team was able to map and digitally record the island's features. Capturing the environmental context and landscape of the island was challenging because of the rugged terrain.

'The versatility, range and portability of the I-Site 4400 scanner was the perfect solution,' said Dr Lyn Wilson, Scottish Ten & CDDV Project Manager.

The long range of the I-Site scanner streamlined scanning of the bay and the hillside behind the village.

In two days, 10 to 15 scans captured the natural and historical features in the Village Bay of St Kilda. The team then had 50 to 100 gigabytes of high-resolution, detailed data to process in Maptek™ I-Site™ Studio software to produce their final digital record. The scanner's inbuilt camera provided simultaneous coloured 3D photographic data with the point cloud data.

The Scottish Ten is a five-year project aiming to produce high quality models of Scotland's five United Nations Educational, Scientific and Cultural Organisation (UNESCO) designated World Heritage Sites, plus another five international heritage sites.

The project, a partnership between Historic Scotland and the Digital Design Studio at Glasgow School of Art, resulted in the creation of the Centre for Digital Documentation and Visualisation LLP (CDDV) in 2010.

The goal is to preserve the historical sites as 3D models which can be used for education, management and research by future generations.



'I-Site Studio is intuitive and quick to learn,' said Wilson. 'We also found the onboard camera feature in the scanner to be a great advantage when working in the software.'

The Scottish Ten team was pleased with the ease of use of the I-Site equipment and its georeferencing capabilities. 'This was helpful when using the point cloud data in some of our software packages,' Wilson explained.

The laser scan models will enable easy virtual access to sites that are too remote or sensitive to frequently visit, like St Kilda. The 3D data helps identify and monitor the challenges to preserving heritage sites, such as decay and erosion. The project will assist future planning for conservation and maintenance.

Thanks to Scottish Ten

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For the St Kilda project, it was important to record the island topography as well as historic buildings.

