

# Innovative Archaeological Laser Scanning Project



Laser scanning technology has been used to create a permanent and lasting record of post-mediaeval underground mines under the city of Bath, UK. The project by Oxford Archaeology employed laser scanning specialists APR Services to capture accurate measurements of the abandoned limestone workings at Combe Down. The laser-scanned measurements were used to create a permanent record of the internationally recognised heritage, wildlife and environmental site and inform stabilisation works to remove the very real threat to life and property posed by the unstable mine.

Ianto Wain, head of Heritage Management at Oxford Archaeology, explained that laser scanning was the only way to capture the vital information needed to conserve the area for future generations while protecting the current population. APR completed a pilot study before the full survey was commissioned and the results more than exceeded their expectations.

A showcase for the best in British Archaeology, the 2012 British Archaeological Awards commendation for innovation recognised the contribution of the Combe Down Stone Mines Stabilisation Project to archaeological practice. The nomination was given as a reward for excellence in project design, experimental technique, imaginative investigation, innovative solution and resourcefulness.

Tony Rogers, managing director of APR Services, added that the mines were so unstable that no access was allowed beyond the constructed roads and walkways and there was limited light and very cramped conditions. The surveyors therefore had to keep the scan process as simple as possible while protecting themselves and their equipment yet capturing as much detail as possible as quickly as possible.

APR Services used a FARO Photon laser scanner to record millions of highly accurate measurements. This scanner was selected as it was light to carry, offered a fast rate of data capture with high accuracy over relatively short distances. APR Service processed the data using FARO Scene and Pointools to create point-cloud models and a fully rendered fly-through animation of routes in the mine resulting in a full 25 minutes of animation which has been used at public events and will form the centrepiece of the archaeological galleries at the new Stone Mine museum.

