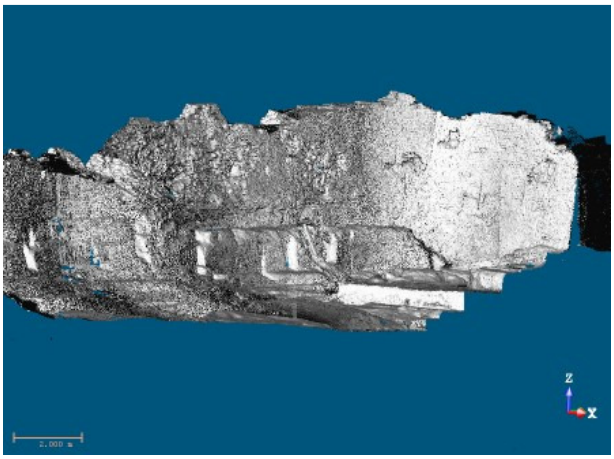
3D LASER SCANNING
IT'S USE IN MODERN ARCHAEOLOGICAL RECORDING

The massive redevelopment of Liverpool, England, over five years, prior to the City of Culture 2008 event, has led to a wealth of archaeological material being identified and excavated along the historic waterfront.

Liverpool in England has one of the most recognisable waterfronts in the world and has been recognised by UNESCO as a World Heritage Site, since it's inscription in 2004. A host of listed buildings and famous dock structures grace the edge of the River Mersey, with many structures representing individuality, ingenuity and uniqueness in design and function. Most significantly, Liverpool is home to the "Old Dock", the world's first commercial wet dock, constructed in 1710 and still surviving beneath the city streets today.

Due to the rich tapestry of the historic built environment surrounding the inner city re-developments, archaeologists were required to put in place a precise and detailed system of monitoring and recording.



The Old Dock, Liverpool, Built 1710
3D Pointcloud

The nature of the excavations, working in tandem with clients and contractors, meant that there was a limited time scale for all aspects of the work to be completed. **The 3D laser scanner played a key role in allowing the completion of strict deadlines by speeding up the recording process**.

Normally structures would be drawn to scale by a field archaeologist; if a large structure like a dock wall is involved this could potentially take several days. However the application of 3D laser scan technology meant that a wall was 100% recorded in three dimensions in a matter of hours.

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3D Laser scanning was chosen as part of this detailed recording methodology. The current 3D laser scanning technology at our disposal generates over 2000 3D survey points per second with millimeter level resolution.

Since many dock walls and buildings were removed or partially removed in order to accommodate various levels of development, the **3D laser scanner was the perfect tool** with which to produce a complete three dimensional(3D) record of the archaeology.

The high level of archaeological recording included single context recording, survey, detailed photographic and written records and this information is complimented by the high quality, high resolution images produced by the 3D laser scanner.

Finally, having excavated a massive proportion of the Liverpool Waterfront, the 3D laser scan images allow the use of GIS and other mapping technology to create a three dimensional model of the waterfront through the ages. This is advantageous as it represents a renewable resource with applications in interpreting the data as well as archiving, publication and potentially also in the “e-learning” forum.

3D Laser scanning is an approachable, affordable and practical technology which is not only time saving, but cost effective and is a benchmark step in showing that archaeology is not stuck in the past as far as recording is concerned.

KIWI SURVEYS provided a prompt and reliable 3D laser scanning service throughout the projects over an 18 month period with short notice periods of often less than 2 days for over 40 call outs to site.

The director of SURVEY SOLUTIONS, Allan Hosking, was the founding director of KIWI SURVEYS in England. Many thanks go to Caroline Raynor, project officer and archeologist, for her valuable contribution and input into preparing this article from an archaeologists perspective.

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