



Pointools Software Gives New Life to Old Caves Hidden Under Nottingham

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Nottingham's architectural heritage is enjoying a new lease of life thanks to a University project to survey almost 450 caves located below the City. The survey project is being led by Trent and Peak Archaeology from the University of Nottingham and is the first part of the Caves of Nottingham Regeneration Project (CoNoRP) designed to assess the archaeological importance of the caves and to encourage the city and its visitors to appreciate the caves as a unique historical resource.

Using 3D laser scanners from Leica to measure millions of points inside the caves, and point cloud software from Pointools to create photorealistic 3D models, the project team has produced a number of high-definition movies which have already been viewed more than 100,000 times on YouTube (<http://www.youtube.com/user/NottinghamCaves?feature=mhum>) to simultaneously raise the profile of Nottingham's hidden heritage and 3D laser scanning at large.

"So far we have documented about 10% of the caves using our laser scanner." commented Dr David Walker, Project Officer for Trent and Peak Archaeology. "The interest generated by the Pointools videos on YouTube and on our own website has been amazing."

According to Dr Walker the project team can survey a small cave system with just six or seven scans to measure around 50 million points. Whereas Peel Street – the largest cave measured thus far – involved 99 scans and generated more than a billion points. Walker continued, "Using Pointools



software to convert, process, and reuse the point cloud model, we can move from raw scan data to finished website with high-definition movies in about four working days.”

Joe Croser, VP of Products at Pointools added, “This streamlined workflow saves the project team time and money when compared to traditional surveying workflows. Better still, it produces higher quality 3D models which can then be used to cut dimensionally accurate cross sections and elevations at any point with the press of a button.”

Trent and Peak archaeology and the University of Nottingham (www.nottinghamcavessurvey.org.uk) join a long line of distinguished teams that have used Pointools software for heritage work. Other users include English Heritage (www.english-heritage.org.uk), The National Trust (www.nationaltrust.org.uk), CyARK (www.cyark.org), and Channel 4’s globally acclaimed “Time Team” (www.channel4.com/timeteam) who first featured Pointools software recreating the World War I tunnels at Ypres in France.

“We selected Pointools software for its ease of use, its performance when working with the very largest point cloud models, and of course price,” continued Walker. “However, most compelling was the high quality visualisation, excellent animation, and photo-realistic lighting options which place Pointools far ahead of any other solutions on the market.”

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Note to editors:

The **Pointools** suite of software leverages the high-performance Pointools POD format for working with the largest point cloud models inside the broadest range of applications. Used by architects, engineers, contractors and surveyors to work with 3D laser scan data, Pointools software supports multiple workflows including Art & Entertainment, Forensics, GIS & Mapping, Infrastructure, Manufacturing, and Security & Defence.

Pointools offerings include stand-alone applications, CAD software plug-ins, and a third-party development platform for point cloud processing and visualisation; uniquely enabling point cloud



model reuse across Bentley, Autodesk, Safe Software, Rhino, and SketchUp applications without time-consuming translation.

Nottingham Caves Survey is the first part of the Caves of Nottingham Regeneration Project (CoNoRP) a two and half year project funded by the Greater Nottingham Partnership, East Midlands Development Agency, English Heritage, the University of Nottingham and Nottingham City Council. The project intends to take a fresh look at Nottingham's caves and encourage the city and its visitors to appreciate the caves for the unique historical resource they are.

The English city of Nottingham has a unique architectural heritage - beneath the city there are nearly 500 man-made caves cut into the natural sandstone. Some date back to the medieval period and possibly even earlier. These caves "constitute a feature of the City that is unique in the national context" (Nottingham Local Plan, 2005: 79).

Over the years the caves have been used for a vast array of purposes, including dungeons, beer cellars, cess-pits, tanneries, malt-kilns, houses, wine cellars, tunnels, summer-houses, air-raid shelters, sand mines, follies, dovecotes and even a bowling alley. Some of these caves are currently utilised for commercial purposes and visitor attractions, some are occasionally publicly accessible by means of organised tours, however most are not publicly accessible and are poorly known.

The experience of visiting these domestic caves is far removed from the clean regularity of modern urban living and offers a tangible link to medieval Nottingham. This is particularly significant in a city with such a strong past personality but so few medieval structures still standing above ground. The caves thus represent a unique and important part of Nottingham's built environment and a vastly under-exploited tourism and heritage resource.