



FACTVM
FOVNDATION
FOR DIGITAL TECHNOLOGY
IN CONSERVATION

**Factum Foundation teams with Autodesk
to convert photos/scans into high-definition 3D images/meshes**

The Factum Foundation for Digital Technology in Conservation is excited to announce it will be working with Autodesk, using Memento software (*soon to be released commercially under the name 'Autodesk® ReMake'*) to implement and improve the application of high-resolution photogrammetry in the digitisation of objects of our cultural heritage.

Autodesk Memento is an end-to-end solution for converting captured reality input (photos or scans) into high-definition 3D meshes that can be cleaned, fixed and optimized for further reverse engineering, digital workflows or CNC fabrication/3D printing, for viewing on the Web. The unique aspect of the software lies in its use of the 'cloud', making the processing of truly vast amounts of data accessible, affordable and fast.

Factum Foundation has just completed the recording of the C13th BC alabaster sarcophagus of Pharaoh Seti I in Sir John Soane's Museum, London. Over 4,500 high-resolution images were recorded using a Canon 5DSR and a specially designed rig. These images will be processed using Memento, and then assembled as a single high-resolution file containing 3D and colour data.

The recording of the whole tomb of Seti I in the Valley of the Kings, Luxor will begin in April, as part of the Theban Necropolis Preservation Initiative. The aim of the Initiative is to produce 3D and colour files of all the painted relief surfaces in the Tomb of Seti I, where objective accuracy allows for forensic study and research. These files will be used to make an exact facsimile of the tomb!

Factum Foundation's work will benefit from the capabilities of Memento software, focusing on increasing the quality of the data and the speed of processing. The goal is to make the use of high-resolution photogrammetry universal in the documentation of cultural heritage to record the shape, colour and surface of vulnerable objects and sites. The data must be at the highest-resolution technology can achieve making it meaningful for academic research, conservation reports, condition monitoring and independent study – high-resolution data can always be compressed, but low-resolution data can never be amplified to contain information that was not recorded at the time of capture. Pushing technology to the limit and developing elegant software applications is at the heart of this agreement between Factum Foundation and Autodesk.

The work conducted by Factum Foundation demonstrates the urgent need to apply technology to the preservation of the past. It leads to a deeper understanding of thoughts and skills of previous generations if we can accurately record the physical evidence of the past and use this information to question and understand the mediations and transformations it contains. This approach will, we believe, lead to a new understanding of the protection and



FACTVM
FOVNDATION
FOR DIGITAL TECHNOLOGY
IN CONSERVATION

preservation of cultural heritage. The potential discovery of the tomb of Nefertiti inside the tomb of Tutankhamun is based on Factum Foundation's high-resolution scans from 2009. The work that Factum Foundation is now doing with Autodesk Memento may even lead to even greater discoveries!

Composite photography can record high-resolution images from which 3D data can be extracted accurate to less than a tenth of a millimeter!

Technology is being put to work in a benign and positive way!

Non-contact recording is assisting in the preservation of the subtle evidence from the past is informing our knowledge in the present and shaping our future!