

## Egypt unveils exact replica of Tutankhamun's tomb made with a 3D printer





The most famous of all Egyptian burial sites, Tutankhamun's tomb, has been replicated with a 3D exact facsimile in a project led by a British artist in order to protect the original site from the ravages of mass tourism.

> Adam Lowe's company Factum Arte used digital photography, 3D laser scanning and printers to precisely recreate the murals on the walls of the burial chamber, depicting scenes from the young pharaoh's journey to the afterlife.

The replica tomb was so accurate that some Tutankhamun experts among the Egyptologists and dignitaries burst into tears while attending the opening in Luxor today.

"We are not talking virtual reality, it is a physical reality," Mr Lowe told *The Independent* from Egypt. "To have an emotional response to something you know to be a copy is an extraordinary

## moment."

Mr Lowe said the replica was of crucial importance to the preservation of the original 3,245-year-old burial chamber, which receives up to 1,000 visitors a day in a space 60m square. Factum Arte is working on similar projects to replicate the tombs of Queen Nefertari, regarded as the most beautiful Egyptian burial chamber, and Seti I, which is seen by archaeologists as the most important. Both sites are already closed to tourists. These tombs, said Mr Lowe, "were built to last for eternity but they weren't built to be visited".

The Tutankhamun replica is situated outside the entrance of the Valley of the Kings alongside the house of British explorer Howard Carter, who discovered the tomb in 1922. Factum Arte, which is based in Madrid, has worked with the Egyptian architect Tarek Waly to build the limestone replica, using high-resolution digital recording to reproduce the famous murals.

The remarkable five-year project has been filmed for a special documentary for a BBC Travel Show called A New Tomb for Tutankhamun.



The replica tomb was created off site, with every little detail matched to the original (BBC)

The tomb paintings, which contain various scenes including the teenage Pharaoh in the form of Osiris and being greeted by the Goddess Nut ahead of his boat journey into the afterlife, are recreated not as they were at the time of burial but in the timeravaged form when they were photographed in 2009.

The documentary's producer Joanne Whalley said the facsimile replicated the cracks and undulations that have emerged during the passage of more than 3,000 years. "The tomb walls of

the original are very cracked and undulating so the 3D [process] captured the cracks and dips of the surface," she said.

The quality of work at the tomb is "astonishing", said the show's presenter, Rajan Datar. "When they recorded the information from the original tomb they recorded 100 million points of information per square metre with a laser scanner. That is state-of-the-art stuff."

He said that the project had a very serious purpose. "This is the future of cultural tourism," he said. "During the past hundred years many antiquities have been exposed to too much human presence and unless that is restricted they are going to collapse completely. The mindset has to change amongst tourists."

He predicted that tight restrictions would be introduced on visits to the original Tutankhamun's tomb.

There are fears in the Egyptian tourist industry that such measures could damage a sector that has suffered from the country's recent political instability.

"There's nervousness in the short term because tourism to Luxor and the whole of Egypt is massively down. They want a slowly introduced policy," said Datar. "Local guides were worried about [potential] copies in Japan and America, and whether people would come to Egypt at all. But this has to happen."

Mr Lowe said the facsimile tomb was a much needed "good news story" for Egypt. But he said tourism would return and visitor numbers to Luxor are expected to double in five years. "The Valley of the Kings is really at its limit," he said.

Unlike the original chamber, the replica contains detailed information for visitors on the "biography" of the site. "The real tomb is a sacred place and does not allow museum activities," said Lowe.

Factum Arte's techniques were previously used to create a facsimile of Veronese's *The Wedding at Cana*, plundered from Italy by Napoleon's troops in 1797 and hanging in the Louvre. The replica in Venice has had rave reviews.

"A New Tomb for Tutankhamun: A Travel Show Special" will be shown on BBC2 on Friday on 7.20am and across the BBC News Channel this weekend.

