

# Near completion of work at the tomb of King Tutankhamen

March 28 2018, by Alexandria Sivak

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Credit: The J. Paul Getty Trust

The Getty Conservation Institute (GCI) announced today that it has nearly completed its work at the Tomb of Tutankhamen in Egypt, one of the most famous cultural heritage sites in the world. The project—a multiyear collaboration between the GCI and Egypt's Ministry of Antiquities (formerly known as the Supreme Council of Antiquities) focused on conservation and the creation of a sustainable plan for continued conservation and management of the tomb. Work at the legendary site included the conservation of wall paintings, environmental and infrastructure improvements, and training for future care of the site.

"This project greatly expanded our understanding of one of the best known and significant sites from antiquity, and the methodology used can serve as a model for similar sites," says Tim Whalen, John E. and Louise Bryson Director of the Getty Conservation Institute. "The work at Tutankhamen's tomb is representative of the kind of collaborative effort the GCI undertakes with colleagues internationally to advance conservation practice and to protect our [cultural heritage](#)."

The discovery of Tutankhamen's tomb, located in Egypt's Valley of the Kings, is considered one of the most spectacular in the history of archaeology. Built hastily upon the death of the young King Tutankhamen, the tomb was buried by flood debris at its entrance soon after it was sealed, and as a result evaded plunder for over 3,000 years. After discovering the tomb in 1922, Howard Carter carefully documented and stabilized the tomb's contents, some of which have been exhibited around the world. The tomb itself became a "must-see" attraction for visitors to Egypt, which resulted in concerns regarding the site's condition.

The tomb still houses a handful of original objects, including the mummy of Tutankhamen himself (on display in an oxygen-free case), the quartzite sarcophagus with its granite lid on the floor beside it, the gilded wooden outermost coffin, and the wall paintings of the burial chamber. The concerns regarding the tomb included the humidity and carbon dioxide levels, and the dust introduced by visitors.

"Humidity promotes microbiological growth and may also physically stress the wall paintings, while carbon dioxide creates an uncomfortable atmosphere for visitors themselves," says Neville Agnew, the GCI senior principal project specialist who has led the project. "But perhaps even more harmful has been the physical damage to the wall paintings. Careful examination showed an accumulation of scratches and abrasion in areas close to where visitors and film crews have access within the

tomb's tight space."

Another serious problem in the tomb is the dust visitors bring in on their shoes and clothing, which settles on the floor and the uneven surfaces of the walls. Dust on the walls obscures the brightness of the paintings and necessitates cleaning, which increases the risk of additional paint loss.



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In 2009, the Ministry asked the GCI to collaborate on a project to conserve the tomb and its wall paintings. The GCI has had considerable experience working in Egypt, first on the Tomb of Queen Nefertari in the Valley of the Queens (1986–92), and later on the planning for the conservation and management of the Valley of the Queens (beginning in 2006). The team of experts working on the Tutankhamen project included an Egyptologist to conduct background research; environmental engineers to investigate the tomb's microclimatic conditions; microbiologists to study mysterious brown spots on the surface of the wall paintings; documentation specialists, architects, and designers to

upgrade the tomb's infrastructure; scientists to study the original materials of the wall paintings; and conservators to carry out condition recording and treatment and to train local conservators.

The wall paintings were found to be in relatively stable condition, apart from localized flaking and loss of paint. Most of the flaking was likely due to inconsistencies in the materials used and their application, but other losses were attributed to damage caused by visitors. Newly designed barriers now restrict visitor access in these areas so that further losses can be minimized. Stabilization of the paintings addressed paint flaking and plaster instability and also included dust removal and reduction of coatings from previous treatments (past treatments were not always based on thorough understanding of the paintings' conditions and the causes of their deterioration). Condition monitoring protocols were also established to better evaluate future changes.

Also addressed were the mysterious brown spots on the wall paintings. Other [tombs](#) do not show the same phenomenon, and Egyptian authorities wondered if the presence of visitors was causing the spots to grow, so the project conducted research to identify the microorganisms and determine if they posed a continued risk. The brown spots were already present when Carter first entered the tomb, and a comparison of the spots with historic photographs from the mid-1920s showed no new growth. To confirm this finding, DNA and chemical analysis were undertaken and physical samples of the spots were examined under magnification and then mounted in cross section. The investigation confirmed the spots to be microbiological in origin but concluded they were dead and thus no longer a threat. Because the spots have penetrated into the paint layer, they were not removed since this would harm the wall paintings.

In addition to the wall paintings conservation, the GCI also facilitated upgrades to the protection and presentation of the site, including

infrastructure (walkways, viewing platform, and an air filtration and ventilation system to protect against humidity, [carbon dioxide](#), and dust), new bilingual signage and interpretive materials, training of staff, and devising a program for sustainable maintenance and controlled visitation to the tomb. New lighting will be installed in the fall of 2018.

"Because the project allowed for unprecedented study of the tomb and its wall paintings, its findings have provided a deeper understanding of tomb construction and decoration practices from the New Kingdom," says Lori Wong, a project specialist at the GCI and an expert in [wall paintings](#) conservation. "This work has also shed new light on the tomb's condition and the causes of its deterioration, and these findings will be used to protect the tomb for years to come."

In January 2019, a symposium is planned on the conservation and management of sites in Luxor in which the collaborative project for Tutankhamen's tomb will be presented with colleagues from the Ministry of Antiquities. A project monograph will be published, as well as a book for the general public.

Provided by The J. Paul Getty Trust

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