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China / Politics

How a museum masterpiece's life-size replica sparked rare US-China collaboration

Beijing team's results based on 14th century Yuan dynasty mural hailed for 'profound historical and practical significance'

Xinlu Liang in Beijing

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Illustration: Lau Ka-kuen

For anyone who has visited the Chinese galleries at the Metropolitan Museum of Art in New York, there is one work that stops them in their tracks.

Stepping into Gallery 206, home to Chinese Buddhist art, visitors are met by a monumental wall – over 15 metres wide and 7.5 metres tall (nearly 50 feet by 25 feet) – covered in a Buddhist assembly so vast and majestic that it momentarily erases the Manhattan bustle outside.

Here stands the [Medicine Buddha](#), a 14th century Yuan dynasty (1279-1368) mural originally from Guangsheng Temple in central China's Shanxi province, glowing with mineral pigments and filled with serene deities.

The work left a lasting impression on Zhang Jian, director of the Meticulous Painting Institute at the Chinese National Academy of Arts, who visited the Met three times before 2023.



Zhang Jian (second from right) explains how his team worked on the mural replica project. Photo: Xinlu Liang

“The moment you step into the hall, you are overwhelmed by its awe-inspiring energy and ancient brilliance,” Zhang said.

“But back then, I never connected it to my own work. It was only when I later stood inside the dilapidated main hall of Guangsheng Temple in Shanxi that the two spaces clicked in my mind.”

The revelation sparked a groundbreaking journey.

Over the next three years, Zhang led a team of Chinese artists and scholars in working just inches away from the masterpiece, painstakingly recreating every crack, faded line and historical scar to render a life-size replica.

Most surprisingly, they even uncovered mistakes the Met’s own restorers never saw.

The 700-year-old treasure left China in 1928, was cut into sections and sold by impoverished monks for 1,600 silver coins to repair a collapsing temple roof.

More than 10 million Chinese cultural artefacts have been [lost overseas](#) since the opium wars of the mid-19th century, mostly through wartime looting and illegal trafficking.

After changing hands through international dealers, *Medicine Buddha* was officially donated to the Met in 1965 by Dr Arthur M Sackler.

While the physical repatriation of lost relics remains an arduous task, Zhang proposed an ingenious alternative: a visual homecoming through forensic, research-based copying – an exacting art form that replicates not just lines but hundreds of years of decay and restoration.

At a time when [US-China relations](#) face headwinds across trade, technology and geopolitics, cultural collaboration has carried on without fanfare.

On September 24, the first day of Chinese President [Xi Jinping’s state visit to the US](#), the fruits of this cross-continental effort were unveiled in an exhibition at the China National Arts and Crafts Museum in Beijing.

Featuring a life-size replica of the mural among a collection of traditional Chinese and Buddhist paintings, the exhibition is scheduled to run until November 15.



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“This systematic research-based copying is both an academic challenge and a cultural responsibility,” Zhang said at the opening ceremony.

“We are exploring a wall painting protection methodology with distinct Chinese academic characteristics, allowing ancient murals to re-enter contemporary cultural life,” he added.

Jason Sun, the Met’s curator of Chinese art, described the results achieved by the team in Beijing as having “profound historical and practical significance”.

“They offer deep insights and guidance for the future restoration and resplicing of ancient wall paintings at the Met,” Sun said. “We look forward to continued friendly cooperation.”

The project is the culmination of an initiative launched by the Chinese National Academy of Arts.

In line with Beijing’s broader strategy to [elevate cultural heritage preservation](#) as a pillar of national rejuvenation, the institute launched its mural initiative in 2016.

The effort was backed in 2017 by the China National Arts Fund, a state-endowed philanthropic fund established in 2013 and approved by the [State Council](#), China’s cabinet.

For 13 years, central fiscal allocations have poured billions of yuan into hundreds of thousands of projects preserving national treasures and nurturing conservators.

This momentum was reaffirmed in September, when Beijing issued its 15th five-year plan for cultural heritage protection and preservation.

The sweeping joint directive explicitly prioritises the systematic conservation of ancient murals and ancient architecture, urging the leveraging of national funds and cross-border partnerships to build autonomous knowledge systems and talent pipelines.

The document also emphasises intensifying research into Chinese artefacts held overseas, tracing their provenances and deepening international cooperation in restitution and museum exchanges.

Over the past decade, the institute has surveyed and copied classic murals across more than 40 cave temples, monasteries and tombs along the ancient Silk Road in Shanxi, as well as Gansu province, the [Tibet autonomous region](#) and the [Xinjiang Uygur autonomous region](#).



Han Maoyuan, an artist on the project, says the team overcame multiple technical challenges. Photo: Xinlu Liang

By 2023, with help from the US embassy and consulates across China, academic links were established with the Met.

In 2024, the partnership was formalised, with the Met granting full authorisation and sharing ultra-high-resolution digital images.

Zhang's team travelled to New York five times, spending seven to 10 days during each trip inside the Chinese gallery. The Met granted them unprecedented access – “the only such conditions in the world”, as Zhang put it – allowing them to set up isolated work zones and use specialised hydraulic lifts to examine high sections up close.

“The Met staff actively coordinated with visitors for us,” said Meng Ying, an artist on the team. “Though our lifts and lighting equipment occasionally blocked sightlines, visitors were remarkably understanding.”

“Many Chinese and foreign tourists came up to greet us warmly when they realised we were recreating this masterpiece for audiences back home,” Meng added.

While most mural reproductions are painted on smooth paper or silk, Zhang's team insisted on the ancient technique of painting directly on a mud-and-straw plaster base. To ensure absolute authenticity, they sourced raw soil from the immediate vicinity of the original temple.

Most clay-based copies only reach about 80 per cent accuracy, but the team pushed for 95 per cent.

Matching colours under dim museum lighting was a challenge. On every trip to New York, the artists carried dozens of handmade mud test tiles and giant prints to lay on the gallery floor, comparing them directly against the original.

“It wasn't just about picking a colour,” explained Han Maoyuan, another artist on the team. “Lighting, digital cameras and printing all change how a colour looks. We had to tweak our paints over and over again on site.”

Rather than painting on a smooth modern wall, the team layered their mud base in two stages to copy both the original texture and the scars left by past restorers.

“Real accuracy means respecting every chapter of the painting's history, including its scars,” Han said.

According to Wei-Cheng Lin, an associate professor of Art History at the University of Chicago and faculty director of the Dispersed Chinese Art Digitisation Project (DCADP), such physical marks bear unique historical weight.

Fragmentation was the “necessary evil” that allowed these fragile images to be separated from crumbling walls and kept alive in art museums today, Lin said.

“The indelible cuts witnessed a tumultuous period of the early 20th century, when the cultural significance of ancient Chinese artefacts was still in limbo,” he added. “That fragmentation transformed the mural painting from a religious image into an artwork.”



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The most surprising finding came when the team discovered that the Met’s earlier restorers had made several errors when reassembling the fragments.

In one case, the restorers decades ago misread the neck lines and misaligned the Medicine Buddha’s head by 5cm (about 2 inches).

“Western restorers are masters of chemistry and material conservation, but they were less familiar with the compositional logic of traditional Chinese brushwork and central-axis symmetry,” Meng said. “In Buddhist iconography, the central Buddha must project a dignified, perfectly aligned presence.”

When Zhang presented digital reconstructions to Met curators, initial surprise gave way to realisation. Curators accompanied the Chinese artists back into the gallery to inspect the mural at close range.

“They were astonished and admitted the tilt was real,” Meng recalled with a smile. “When we returned to New York for our next trip, a Met expert joked: ‘Ever since you pointed out that the Buddha’s head was shifted, the more I look at it every day, the more crooked it seems.’”

Far from causing friction, the discovery strengthened mutual respect.

“They truly appreciated our academic rigour and our willingness to point out and correct errors,” Meng said. “After all, this is what true academic exchange is all about. Meaningful academic exchange thrives precisely on asking questions and raising doubts.”

The team’s traditional craftsmanship has also been amplified by 21st century technology. They used high-precision cameras and MacBooks for data capture and iPads on lifts for colour matching.

The [blend of ancient heritage and modern tech](#) caught international attention when Apple executive chairman Tim Cook visited the team’s project workshop during his trip to Beijing for the China Development Forum in March.

Cook observed how artificial intelligence ([AI](#)) and digital tools were being applied to cultural preservation, from colour correction to virtual image reconstruction, according to Chinese media reports.

“I see AI as an amplification of the human, not as a replacement of humans,” Cook was quoted as saying after observing the workflow.

“You saw today some things that were being done to make life much easier in terms of recreation ... whether it’s colour correction and some of the things that you saw posted here, all of those things can be driven by AI. I would advise, ‘Don’t fear it, embrace it.’”



Tim Cook, Apple's executive chairman (centre), listens as US President Donald Trump (not pictured) toasts visiting Chinese leader Xi Jinping (right) at the White House in Washington on September 24. Photo: EPA

Cook later shared his thoughts on social media, saying: "A new generation of art researchers is bringing China's cultural treasures back to life."

Digital projects aimed to "re-envision our cultural heritage in a virtual world that transcends spatial and temporal limits", added Lin, whose team at the University of Chicago has extensively digitised other dispersed Guangsheng Temple murals across American institutions.

"At this level of understanding, collaboration on a global scale becomes necessary, and the digital paradigm we try to build could be extended to other cultures as well," he said.

DCADP seeks to digitally restore scattered Chinese relics to their original heritage sites. It has collaborated with multiple Chinese institutions, including the Taiyuan University of Technology, the Tianlong Mountain Grottoes Museum, Tsinghua University and Xian Jiaotong University.

Across the United States, the Beijing team's work has triggered a ripple effect. They helped the Cincinnati Art Museum in Ohio and the Nelson-Atkins Museum of Art in Missouri reidentify the exact original positions of their own Guangsheng Temple mural fragments.

Inspired by the Met project, both institutions are now actively negotiating with the Chinese National Academy of Arts to initiate similar research-based copying projects for their collections, according to Han.

Later in October, the Met is to co-host an international symposium in Beijing about Chinese murals with the academy, marking the first time the New York institution has jointly held a major academic conference in China with a national research body.

The debut of the exhibition at the China National Arts and Crafts Museum also took place against a broader diplomatic backdrop.

On September 24, the first ladies of China and the US toured Chinese artworks and a gallery dedicated to Asian design at the Smithsonian's National Museum of Asian Art. Peng Liyuan praised the US for returning lost Chinese artefacts in recent years and urged both sides to forge deeper cooperation on cultural heritage.

Cultural heritage preservation has emerged as a fruitful front in Sino-American cooperation.

Since signing their intergovernmental memorandum of understanding to prevent the illegal import of Chinese cultural artefacts in 2009, the US has facilitated the return of more than 700 lost artefacts to China.

And just days before the exhibition in Beijing opened, US Homeland Security Investigations handed over 58 cultural relics and fossils at a ceremony at the Chinese embassy in Washington.

