CULTURAL HERITAGE

Bringing history back to life

Imperial mountain resort reclaims former glory as a number of buildings undergo renovation, **Wang Ru** reports in Chengde, Hebei province.



An aerial photo of the Putuo Zongcheng Temple, one of the outlying temples of the Chengde Mountain Resort built to forge connections with other ethnic groups during the Qing Dynasty (1644-1911). PHOTOS BY ZOU HONG / CHINA DAILY





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Clockwise from top: Members of the engineering center at Chengde's cultural heritage bureau work on the 3D printed models of complexes in the resort that no longer exist, as part of the digital restoration project. A pagoda at the Yongyou Temple under restoration. A view of the Chengde Mountain Resort.

It was once common practice for the rulers of China's Central Plains to build defensive walls, many of which later became part of the Great Wall, against nomadic incursions from the north. These structures did not always effectively prevent harassment from the north, but they did draw a line between settled agricultural society and the nomadic way of life, although the mixing between the two never ceased.

Qing Dynasty (1644-1911) Emperor Kangxi and his grandson Emperor Qianlong, who are credited with ushering in a golden age in Chinese history, appeared disinterested in this approach. Instead, they decided to build a new landmark to encourage the forging of bonds.

This was accomplished through the construction of a mountain resort and surrounding temples in what is now Chengde in Hebei province.

The resort offered the imperial family respite from summer heat and was located strategically on a pass between the capital, present-day Beijing, and nomadic groups to the north. Adopting a strategy of governing through exchange, Qing emperors received political leaders and religious figures at the resort. The 12 adjacent temples were designed in Tibetan and Mongolian styles to forge connections with other ethnic groups, and in this way, promote the unification and stability of the dynasty.

The resort, which took 89 years to complete, became the dynasty's second political center and to serve it, Chengde city gradually took shape. In 1994, the mountain resort and its outlying temples were listed as a UNESCO World Heritage Site.

Following the end of the Qing Dynasty, Chengde became the scene of great destruction. Renovation began in the 1970s, the work spanning more than four decades, according to Yu Yang, 39, director of the engineering center at Chengde's cultural heritage bureau.

For the first three decades, restoration was carried out within the resort, to reinstate its historical ambience, save buildings from collapse, and improve the overall environment.

Restoring a royal library

Another major round composed of 105 small projects took place between 2010 and 2020, with an investment of about 600 million yuan ($82.3 million).

Yu says that one of the highlights was the restoration of the Wenjin Ge ("pavilion of a ferry transporting cultural knowledge"), a royal library that once stored giant volumes like the *Siku Quanshu* (Complete Library of the Four Branches of Literature), one of the largest-scale collections of ancient Chinese literature.

In the early 20th century, the pavilion's books, boxes containing the books, and bookshelves were taken to Beijing, and are now stored at the National Library of China. Losing its function, the Wenjin Ge gradually fell into obscurity and was turned into a guesthouse in the 1950s.

In 2013, as part of the second round of restoration, Yu and his team worked on the main hall for storing books, its interior decoration, and bookshelves.

Records show the hall originally had a roof of black-glazed tiles. Yu says that in traditional Chinese culture, black symbolizes water, which can extinguish fire, the biggest threat to a library. But in the late Qing period, the black glazed tiles were exchanged for clay as the government faced financial constraints.

"During renovation, we discovered they only replaced the top layer with clay tiles, and that the under-tiles had not been changed. Since the combination does not comply with building standards, we made all the tiles glazed, helping the building recover its original grandeur," Yu says.

The interiors posed a bigger challenge for restorers. Although some pictures taken by Japanese photographers in the 1930s remained, offering clues about the detailed inner finishes, they were not able to determine the exact sizes of windows, doors or the details of decoration.

"In the restoration of ancient buildings, we have to be especially cautious. I could not ascertain the sizes of windows by myself, so I looked for historical clues," Yu says.

The team discovered traces of paper hangings — patterns pasted on walls and ceilings to protect and decorate them. Since these patterns were not pasted on windows or doors, by identifying where they were not present, they were able to determine the location and size of openings.

The team then restored the bookshelves and the boxes used to contain the books. Yu says that during the Qing Dynasty, the books, boxes and the bookshelves made up a retrieval system. Through classification marks on the shelves, people could locate the boxes containing the books they were looking for, and through the marks on boxes they could find the book they wanted. As a result, when the books were relocated, the boxes and shelves had to be moved with them.

Restorers visited the National Library of China in 2015 and measured the original bookshelves and boxes so they could properly reproduce them. After two major rounds of restoration, the resort's ancient buildings and temples have been secured. In 2021, protection efforts entered a new stage of prevention, and several projects are ongoing, among them a pagoda at the Yongyou Temple, which is having its stone cultural relics and murals restored.

Recent efforts

One highlight of Chengde's efforts to better present its history is the digital restoration of its mountain complexes.

"There are mountain, lake, plain, and palace areas, of which the mountain area occupies about 75 percent, with more than 40 complexes. But for historical reasons, almost none of the wooden structures have been preserved, leaving only their foundations," says Chen Dong, the general engineer of Chengde's cultural heritage bureau.

Since about 2005, Chen has been taking students majoring in architecture at Beijing's Central Academy of Fine Arts to the site to create digital re-creations of these complexes.

They begin with three-dimensional animation of each complex, from which they make 3D printed miniatures and also write academic theses on the restoration.

Guo Feng, a member of the engineering center at Chengde's cultural heritage bureau, says that they usually try to find the bases of pillars to develop a clear idea of the size and shape of buildings and to collect data. Then, they design a 3D model based on the data and print it.

Technology used in the process includes 3D modeling, virtual reality, and digital twinning.

"Although some of what we use have existed for about 20 years, they have not been widely used to study and restore ancient Ming (1368-1644) and Qing buildings," Chen says.

"By applying digital technology, we can re-create the resort's landscapes. This transformation of cultural resources into digital assets not only facilitates preservation of cultural heritage but also promotes development and use of cultural resources," he adds.

The team has digitally restored 17 complexes, some of which have been on exhibition in Chengde since 2022.

Tao Wenying, 39, a guard, has been protecting Falin Temple for over 20 years. She monitors the condition of the buildings and reports any problems she finds to the cultural protection department.

This summer, she found that the prayer flags in the main hall of the temple seemed to be darker on one side. After receiving her report, heritage professionals came to inspect the ceiling and found water leakage, which was repaired.

"Our work may not seem important, but without prompt detection, other efforts to protect cultural heritage are hampered," Tao says. "The resort and the temples are the legacy of our ancestors. I want to fulfill my duty and look after them properly."

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Old Summer Palace findings reveal fresh details of complex planning

By WANG RU

Archaeological studies have shed light on the original facade and features of the imperial library in Beijing's Yuanmingyuan, the royal resort also known as the Old Summer Palace, and suggest a respect for traditional culture.

Efforts since August to study the Wenyuan Ge ("pavilion of the source of ritual and music civilization") complex have revealed a detailed layout, paths linking the buildings, a fire control system, and a preference for rustic appeal, archaeologists from the Beijing Institute of Archaeology said earlier this month.

Situated in the northeastern part of the Yuanmingyuan, the building already existed during the reign of Qing Dynasty (1644-1911) Emperor Yongzheng, but became the Wenyuan Ge in 1775, under the reign of his son, Emperor Qianlong. The Wenyuan Ge was one of four royal libraries in northern China that held copies of the *Siku Quanshu* (Complete Library of the Four Branches of Literature), which was compiled under the auspices of Emperor Qianlong, and the *Gujin Tushu Jicheng* (A Collection of Books of Ancient and Modern Times) which had been compiled on the orders of his grandfather Emperor Kangxi, according to Zhang Zhonghua, deputy director of the Beijing Institute of Archaeology.

In 1860, the complex, most of its books, and the Yuanmingyuan itself, were looted and burned to the ground by the invading Anglo-French forces.

Archaeologists have discovered that the Wenyuan Ge was an independent courtyard with doors on the south and north. Inside the courtyard, they found the foundations of the main hall, two pavilions, and a viewing platform, with stone roads running between them.

"The flagstones used for paving the roads were unprocessed, adding rustic charm to the complex," Zhang says. "Records show it was built to imitate the Ming Dynasty (1368-1644) Tianyi Ge in Ningbo, Zhejiang province, which is one of the earliest surviving private libraries in the world. Based on the flagstones, it seems the Wenyuan Ge tried to reproduce the feel of the gardens of Jiangnan, the region south of the lower reaches of the Yangtze River."





From left: The ruins of Wenyuan Ge, a Qing Dynasty (1644-1911) royal library at Yuanmingyuan in Beijing. Black and green glazed tiles archaeologists found at the site. PHOTOS BY WANG RU / CHINA DAILY

Archaeologists found two ponds, one in the northeastern corner and the other to the south of the main hall, as well as supply and drainage channels linking them with a river outside the complex so that water was available to quickly extinguish fires. They also found that the courtyard was raised slightly higher than the surrounding land, so that surface water would drain outside through a wall drain when it rained heavily.

"Fire and water can both be devastating to books. As a result, people developed a refined system to mitigate the adverse consequences of both," Zhang says, adding that the complex's foundations are the most solid found so far in the excavation of the Yuanmingyuan.

The builders of the complex first dug a foundation trench, then laid wooden stakes on the bottom to prevent the buildings from sinking or shifting. On top of the stakes, they laid stone slabs, and on top of the slabs they built the building bases.

Zhang Lifang, an associate researcher at the Beijing Institute of Archaeology, says the foundations were so well made that they haven't subsided for hundreds of years.

"Although the complex was small in scale, they still made solid foundations," says Zhang Lifang. "This shows the stress on culture. The books the Wenyuan Ge once stored contained the essence of traditional Chinese culture. The care of these books across time has enabled Chinese culture to be passed down to the present day."

Of the four royal libraries in northern China, the Wenyuan Ge is the only one that no longer exists. Although it's unfortunate that the complex was destroyed, through archaeological efforts, details such as the flagstones used and the methods for laying foundations were discovered. "Through archaeology, sites can reveal more historical details," she says.

Ceramics, pottery vessels, as well as pottery and glazed building components have also been unearthed.

Archaeologists say the layout of the complex clearly conforms with sketches made in 1779 and 1898 by the Yangshi Lei — the architectural modeling standards of Lei's family, who presided over royal construction for the Qing Dynasty for generations — which means its layout probably remained unchanged after it became the Wenyuan Ge.