

Chapter 2

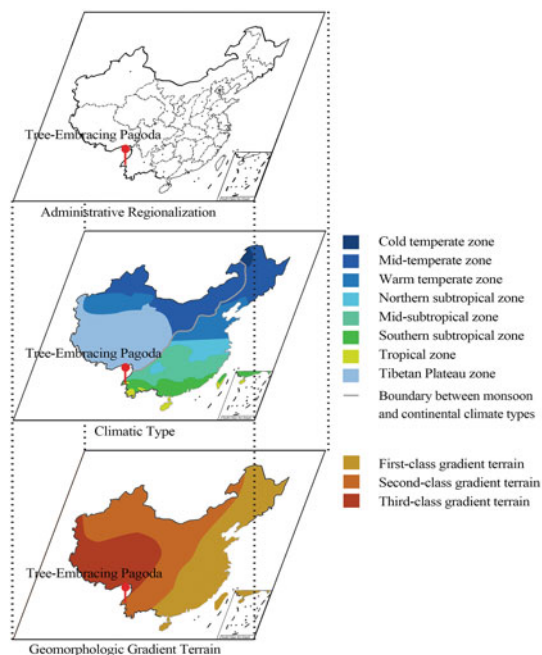
“Embedments” Cases

2.1 Tree-Embracing Pagoda: Hundred-Year-Old Roots Embracing a Tower

Location: Mainly in the Southwest area of Yunnan Province

Key Geographical Concept: Integration of architecture and nature in Buddhist culture

The particular environmental features of the area include warm and rainy weather, enabling the bodhi tree to grow into the stone tower. The Theravada Buddhism culture of the Dai people provided the motivation for the origination of the tree-embracing pagoda.



Note The base maps in the location map are from the websites of the National Administration of Surveying, Mapping and Geoinformation. (see <http://unn.people.com.cn/mediafile/200607/14/F200607141610331489926345.jpg>, <http://unn.people.com.cn/mediafile/200607/14/F200607141540432633643981.jpg>). The same base maps are also used in the following location maps for other cases.

Geomorphologic Features

From a geomorphologic perspective, the topography of Yunnan Province mainly consists of mountains and plateaus; Western Yunnan constitutes in large part of the Hengduan Mountains, whose basic topographical characteristics are high and steep landforms in the northeast, with low and wide landforms in the southwest; additionally, mountains and canyons are arranged parallel to one another. The folds and faults in the territory are mature, and the mountains, rivers and basins have evolved along the original folds and faults (Editorial Committee on the Xishuangbanna Autonomous Prefecture of Dai Nationality Records 2002: 168). Many mountains have flat surfaces on their tops, with the mountain geomorphology cut by plateaus. Because the Lancang River and its tributaries cut through the area, the mountain has become fractured (Editorial Committee on the Xishuangbanna Autonomous Prefecture of Dai Nationality Records 2002: 168).

Climatic Features

Southwest Yunnan Province is primarily subtropical forest. The annual temperature range is narrow, whereas the diurnal temperature range is slightly broader, resulting in only a mildly distinctive seasonal difference. Rainfall in the region is abundant,

but its distribution is uneven; there are two significantly wet and dry seasons (Editorial Committee on the Dehong Autonomous Prefecture of Dai and Jingpo Nationalities Records 1994: 110). Moreover, the complex landform causes variations in the microclimate (Editorial Committee on the Lincang City Records 2004: 102). Large elevation differences lead to significant variability in vertical climate zones and coexisting temperature inversions (Editorial Committee on the Xishuangbanna Autonomous Prefecture of Dai Nationality Records 2002: 178). Without doubt, the scenery is exquisite; there is ample light combined with a mild and spring-like climate all year round. The land is fecund, natural resources are rich and production is abundant.

Vegetation Features

The tree-embracing pagoda was originally a normal brick tower that earned its name after a bodhi tree became entwined with—and gradually covered—the tower. The bodhi tree is common in Yunnan Province and is typically raised on the plain at altitudes of 400–630 m or near Buddhist monasteries in villages. In its early stages, the bodhi tree grows as an epiphyte among other types of vegetation; thus, the bodhi tree growing in the tree-embracing pagoda might be transplanted from an area surrounding the nearby Buddhist monasteries (Fig. 2.1).

Cultural Features

The ethnic Dai practice Theravada Buddhism. Thus, almost every Dai village has a Syuentzang Temple and pagodas. There are also bodhi trees near pagodas. According to legend, Sakyamuni became the Buddha under a bodhi tree and the bodhi tree thus became one of the three worshiped elements in Buddhism, together

Fig. 2.1 A tree-embracing pagoda in Ganlanba, Xishuangbanna. Sturdy branches grow upwards, as the pagoda and the trunk are entwined, which creates the particular tree-embracing pagoda scenery. *Source* Photograph by Jinfeng Chang, provided by Yiwen Xu



with Sarira and the Buddha statue. Thus, the bodhi tree became sacred and is believed to grow wherever there are temples and pagodas.

Tree-embracing pagodas have spread to Dehong, Jinggu, Jinghong and other regions in Yunnan Province. Among these pagodas, the one in Mangshi City, the capital of Dehong Dai Autonomous Prefecture, is the most famous. The local ethnic Dai call it “the tower of the iron city” (Zhang 2000a). The brick used in the tower can be traced back to the Qing Dynasty (1644–1911), and it is believed that the pagoda was built during Yongzheng (1723–1735) and Qianlong (1736–1795) periods. This pagoda was originally a normal brick tower; however, the power of life, the care of culture and precipitation of time combined to make the world’s most astonishing marriage between a tree and a pagoda (Fig. 2.2). The pagoda enfolds the tree from three sides, leaving only one facade to show from one side. Wherever there is space, the strong roots penetrate the brick and delve further into the ground. Although external pressure has caused the tower body to crack and the niche to distort, the spontaneous external bondage makes the tower extremely strong and firm. The bodhi tree provides the tower an umbrella function, causing the body of the tower to resemble a giant tree.



Fig. 2.2 The tree-embracing pagoda in Mangshi City, Dehong. The original tower is a small Buddhist brick tower, consisting of the main tower and four smallertowers. The main tower is 11.6 m in height with a pyramid body and an octagonal-shaped sumeru stage. There are niches and embossments, such as animal, flower and human patterns on all sides. In 1985, to restore the site, the local government allocated funds to construct four small towers (3.97 m tall) and four cement animals, which stand on the edge of the foundation and are painted with gold-powder (Luo 1995). In the Dai language, the big tree embracing pagoda is called “Dunhai”, which references a type of bodhi tree (Wang 1982). *Source* Photograph by Xingdong Liu, provided by Xiaolan Yang

The particular natural conditions and local Buddhist culture together created the marvel of the tree-embracing pagoda. In Yunnan Province, there is abundant rainfall and sufficient sunlight; the warm winters and long rainy summers provide excellent conditions for plant growth. Additionally, the large number of birds inhabiting the area help the plants spread out over wide areas. As a common local species, the bodhi tree is strong and vital, capable of growing on other plants. The seeds of the bodhi tree are spread by wind and/or birds. After its construction, the pagoda was not maintained properly, and absorbing the necessary nutrients from its environment, the tree spawned additional small trees; its roots instinctively extend along the outer edge of the tower, reaching into the ground. The fibrous roots used the generous earth to become thick, while tightly clutching the middle of the tower. Some of the roots pressed into the tower and continued growing inside of it. As time passed by, the body of the tower became intertwined with the thick roots, while the top of the tower transformed into lush foliage; the mottled bricks became interlaced with the vigorous roots to give the impression that nature itself had constructed the site (Fig. 2.3).

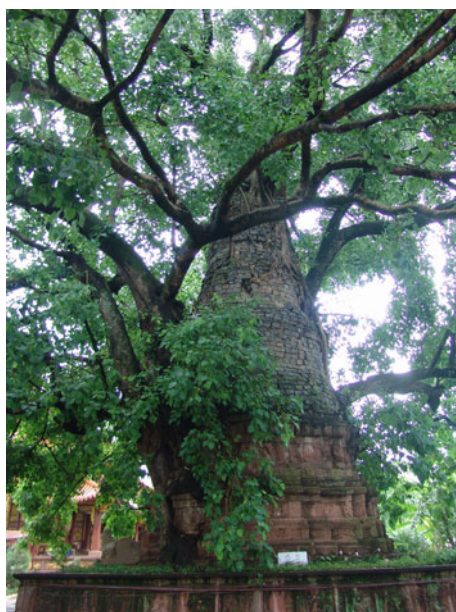


Fig. 2.3 The tree-embracing pagoda and tower-embracing tree in Jinggu County, Puer City. These sites are located in front of the main hall of the Buddhist Mengwo Monastery, located in the south of China. The 25-m-tall bodhi tree has taken over the left tower (10.7 m tall) in its entirety and was thus called the “tree-embracing pagoda” by the local Dai people. The right tower is 7.2 m in height with a 20-m-high tree on the top. This tree’s crown is smaller, and the roots have not yet stretched out from the tower. The local people call it “tower-embracing tree” (Li 2009). Because of its strength and vitality, the bodhi tree was able to create the two Pagoda Forest wonders of the tree-embracing pagoda and the tower-embracing tree (Liu and Guo 1998). *Source* Photograph by Jiansheng Fu, provided by Xiaolan Yang

It is common to regularly weed plants; however, the sacred natures of both the bodhi tree and the pagoda made people hesitant to remove the plant, and they instead left it growing. The Dai believe that monks are students of Buddha and that pagodas are sacred places. They believe the tower is human-like and that gold lies in its heart (Wu 2007). As the bodhi tree is sacred to Buddhists, no one is allowed to harm it. A bodhi tree growing from the heart of a pagoda doesn't affect its sacredness and instead leads people to believe that the tree's growth is a miracle from Buddha that will protect all the believers in their lives.

Extended Reading: The Bodhi Tree as the Sacred Tree of Buddhism

The bodhi tree originated in eastern India. Before Sakyamuni achieved “the ultimate wisdom” under a bodhi tree, this type of tree was not well-known in the world. The event led the bodhi tree to be considered a tree of “wisdom” and “arousal” (Fig. 2.4). The Buddha said that there are three things that must be worshipped—the Sarira, the Buddha statue and the bodhi tree. Worshipping a bodhi tree is the same as worshipping the Buddha, as it helped him to achieve wisdom, and the bodhi tree thus became sacred (Jiao and Zhang 2000). Its meaning derives from “wisdom and arousal” and references sudden understanding of truth, which allows the practitioner to reach the highest possible level of his or her soul.

In the first Tianjin year (502) of the Liang State of King Wudi, Master Zhihuiertzang brought a bodhi tree from India to the Wangyuan Temple in Guangzhou. Currently, this type of tree grows commonly in Yunnan, Guangdong, Hainan, and Guangxi Provinces. The bodhi tree is as commonly worshiped as the Buddha statue (Bai 2007). Hoping for Buddha's protection, every temple has planted a bodhi tree. Therefore, as the Dai ethnic people are Theravada Buddhists, they planted bodhi trees by pagodas.

Fig. 2.4 The bodhi tree is slinky and has gorgeous leaves. It grows slowly and lives a long time. The crown of the tree is *ball-shaped*, the flower hides at the axil, and its purple-black fruit has a *flat sphere shape* that matures in winter. Source Bai (2007: 71)



Fig. 2.5 A tree-embracing pagoda in Jinghong, Xishuangbanna. Part of the bodhi tree's root is exposed to the outside, while most of the tree remains inside the body of the tower. Part of the tower shows outside of the tree and another part is hiding in the tree. *Source* Photograph by Fan Yin



Buddhist monasteries and pagodas in Dai villages represent the essence of the Dai culture with respect to architectural techniques, aesthetics and art. Various places are home to the phenomenon of a tree-embracing pagoda (Fig. 2.5). As the local oldest pagodas, their meaning embodies not only the human-nature symbiosis but also represents the marriage of the spiritual and secular, the fusion of natural and artificial within an ethnic culture.

Geographical Interpretation

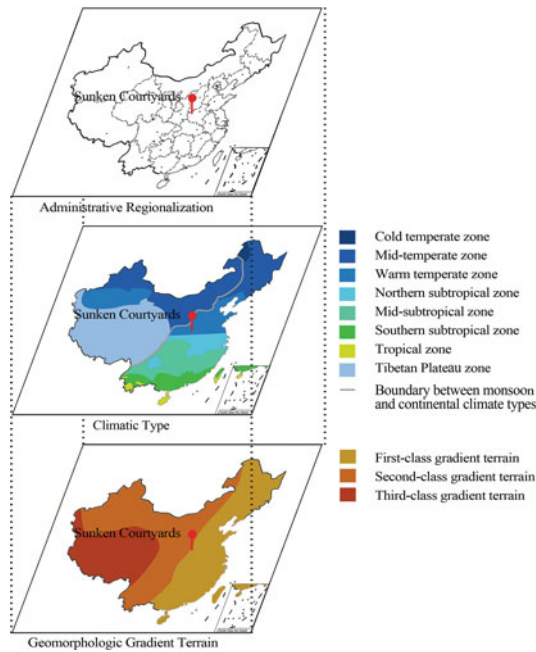
The combination of a good climate and fertile culture in Yunnan Province made the marriage of bodhi tree and tower possible. During the past 200 years, the tree-embracing pagoda has not disappeared but has instead become more consolidated over time, thus forming a superb scene involving tree and tower. The fusion of natural environment and an artificial construction is the best representation of architecture shaped by time, the environment and human activity.

2.2 Sunken Courtyards: Audible but Invisible¹

Location: Sanmenxia, Henan Province

Key Geographical Concept: Architectural response to loess landforms

The Loess Plateau region is the cradle of Chinese civilization. Because of the thickness of the loess soil layer and its properties of easy excavation and low risk of collapse, the Sanmenxia area has become the best location for the sunken courtyard architectural form.



Geomorphologic Features

The sunken courtyards in the Sanmenxia area are mainly located on the southern margin of the Loess Plateau, on the loess tableland at the back edge of the valley terrace by the south bank of the Yellow River. The top of the loess tableland is flat and the slope shallow; notably, the cave dwellings excavated on the surface of the tableland consist mainly of sunken courtyards (Figs. 2.6 and 2.7). There are currently more than 100 villages underground and nearly 10,000 sunken courtyard buildings preserved well in the Sanmenxia area of Henan Province. This piece of

¹The original manuscript for this case was published in *Community Design*, 2009 (4): 98–101, (in Chinese). Its content has been improved for this book.

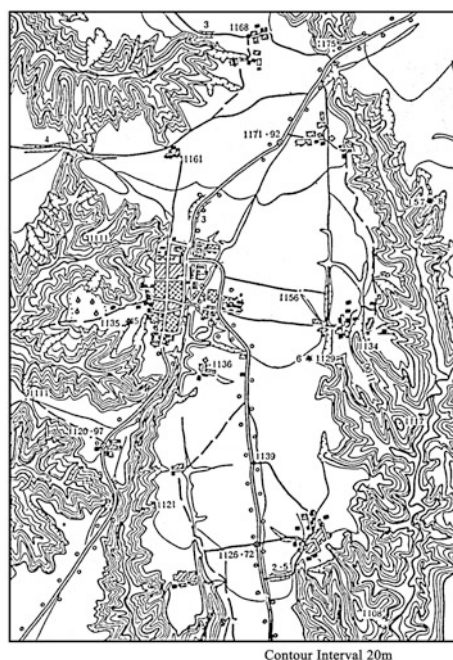


Fig. 2.6 Contour schematic diagram of the loess tableland. The loess tableland is plateau ground formed by loess accumulation on the flat ancient ground. Due to a long period of erosion by water flow, large and complete tablelands are rarely found at the present. *Source* Li and Fang (1983: 164)

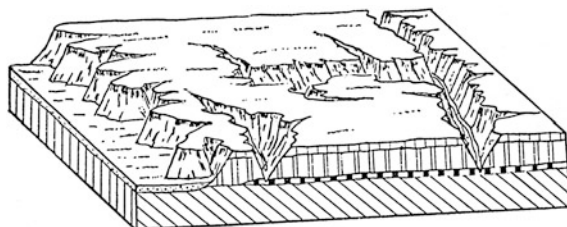


Fig. 2.7 Schematic diagram of the loess tableland landform. The terrain of the loess tableland is extremely flat and surrounded by ravines. The head of the ravines constantly erode the tableland at different rates, causing the edge of the tableland to appear jagged and petal-shaped. *Source* Departments of Geography in Peking University, Nanjing University, Shanghai University, Lanzhou University, Hangzhou University, Northwest University and Sun Yat-sen University (1978: 173)

loess tableland is 480–750 m above sea level, with flat surfaces at slopes of only 1–2°. The loess layer is deep with thicknesses ranging from 50 to 150 m and has strong fertilizer-conserving capacities.

Climatic Features

The loess tableland (Mandarin: *yuan*) in the Sanmenxia area includes the Chengcun, Yangdian, Jiaocun, and Sucun tablelands of Lingbao County, the Zhangcun, Zhangbian, and Dongfan tablelands of Shanxian County, etc. The area falls within the warm temperate zone with a monsoon climate and four distinct seasons: short springs and autumns accompanied by long summers and winters. Spring is dry and windy, summer is hot and rainy, autumn is mild and humid, winter is cold and with less rain. Daylight is adequate, although the amount of daylight and rainfall is concentrated and distributed unevenly throughout the seasons, making the area suitable for growing crops but also prone to droughts (Editorial Committee on the Sanmenxia Municipal Records 1997: 73).

Vegetation Features

The Sanmenxia area is located at the juncture of the warm temperate zone and the subtropical zone, and also at the border dividing the northern and southern classifications of flora in China. The flora of this region is diverse, with rich resources and high yields. The sunken courtyards are distributed mainly in farming areas, in which the wild vegetation is mostly shrubbery that is short of arbor. This natural environment—a combination of flat ground, scarce woods, and a deep loess layer—gave rise to the architectural form of the sunken courtyard (Fig. 2.8).

Cultural Features

Due to its deep soil and strong fertilizer-conserving capacity, the soft loess is easy to cultivate. The Loess Plateau, located within the coverage area of the Yellow River and its tributaries, is one of the central areas in which China’s dry farming originated and is also the cradle of Chinese civilization. In this farming-based area, the farming culture of advocating morality and etiquette has always dominated the ideology of its inhabitants.

Loess deposits, deep-sea sediment, and polar ice are three of the most typical cases that show the history of natural, climatic and biological changes on the earth. Of those, loess landforms predominate in China: the distribution area, thickness, and stratigraphic integrity of the Chinese loess landforms are unique in the world.

Fig. 2.8 Millet, the main crop of the Loess Plateau region. The agricultural civilization of the Loess Plateau is based on dry farming, with millet as its representative crop. *Source* Photograph by Duowen Mo



A variety of loess landforms (Fig. 2.9) have developed, inheriting from paleo-geomorphologies and subject to river erosion in the process of loess deposition, such as the loess tablelands (Mandarin: *yuan*) (Fig. 2.10); loess ridges (Mandarin: *liang*) (Fig. 2.11); loess hills (Mandarin: *mao*) (Fig. 2.12), as well as loess gullies located among all of the foregoing landforms (Fig. 2.13).

Fig. 2.9 The loess landform types: (a) loess tableland (Mandarin: *yuan*); (b) loess ridge (Mandarin: *liang*); and (c) loess hill (Mandarin: *mao*). Source Yang and Li (2001: 134)

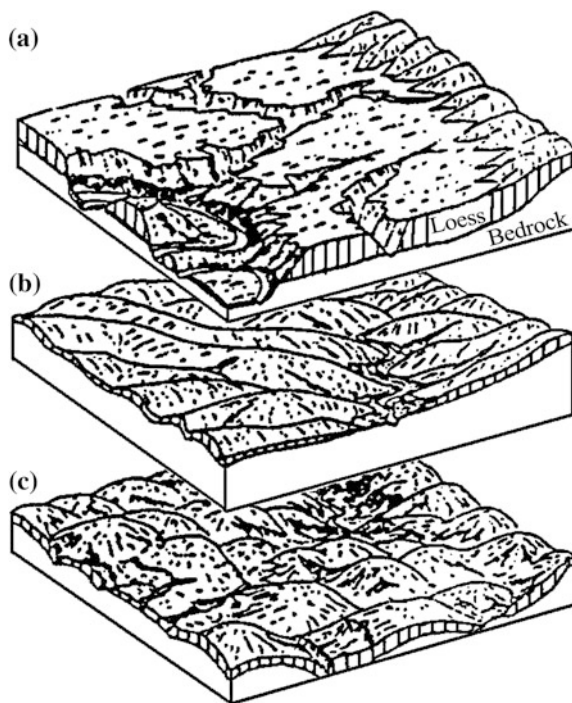


Fig. 2.10 The loess tableland (Mandarin: *yuan*) is the unbroken part of the Loess Plateau, formed by slight erosion of the loess platform. The tableland has a shallow slope, but the ravines that run along its sides are deep. Because the loess layer is flat, broad and thick, the tablelands are suitable for farming. Source Yang and Li (2001: 130–131)





Fig. 2.11 Loess ridge (Mandarin: *liang*) is strip-shaped and oriented along its long side. The length of each ridge reaches hundreds to thousands of meters. Viewed from the perspective of normal people, it is a narrow and long plain. The sentence “mountains dance as silver snakes” in Mao Tse-tung’s poem *Qin Yuan Chun: Xue* accurately depicts the snow-covered loess tableland in winter time. This poem of *xue* (lit. snow) was improvised in 1936 to describe the snow-covered landscape of the Loess Plateau in western China. *Source* Photograph by Wenmin Liu, the original one from *Principles of Geomorphology*, 2001: 130–131. *Note* *Qin Yuan Chun: Changsha*, a *ci* (a type of lyric poetry), literally *Qinyuan Garden Spring: Changsha*, was written in 1925 by Mao Tse-tung (1893–1976), a great Chinese Communist revolutionary leader of the People’s Republic of China



Fig. 2.12 A series of loess hills (Mandarin: *mao*) in Jingbian County, Shaanxi. A loess hill is a type of raised loess hilly terrain that may be shaped like domes or may appear as elliptical and in other forms. In his poem, Mao described the snow-covered loess mounds with the line, “like the white elephants are running freely”. The loess hills depicted in this photograph look like the round hips of elephants. *Source* Photograph by Duowen Mo



Fig. 2.13 Loess gully in Baode County, Shanxi. The nearly vertical slope of the gully on both sides stands in sharp contrast to the flat top surface. The photograph reveals the transition from the upper Quaternary period loess layer to the lower Tertiary period laterite layer. *Source* Photograph by Duowen Mo

Extended Reading: Loess Civilization

The Loess Civilization is a cultural pattern that was conceived and developed in the special natural and social environment of China's Loess Plateau. The plateau is the world's largest loess sedimentary region and lies in the north-central part of China, encompassing the areas west of the Taihang Mountains, east of Qinghai Province, north of the Qin Mountains, and south of the Great Wall, which includes Shanxi, Shaanxi, Gansu, Qinghai, Ningxia, and Henan provinces. The entire area is approximately 400,000 km² and measures over 1,000 km from west to east and about 700 km from south to north (Li 2003). The Loess Plateau is the birthplace of the Chinese nationality and the cradle of Chinese civilization. Since the era of the Yan² and Yellow³ Emperors (approximately 4,000 years ago), the region has developed farming, medicine, music and a writing system, from which emerged the rudiments of a social system that led to ancient Chinese civilization. The Loess Civilization has maintained relative independence in politics, developing agriculture, nomadic herding and hunting economies simultaneously, while maintaining relatively original religious belief systems and folk customs, with unique forms and styles of folk literature and art. In short, the Loess Civilization is a diverse and synthetic culture formed as the result of the integration of animal husbandry, farming and hunting.

²**Yan Emperor** (Mandarin: *yan di*), one of legendary Chinese tribal leaders about 4,000 years ago, is regarded as one of the initiators of Chinese civilization.

³**Yellow Emperor** (Mandarin: *huang di*) is one of the ancient Chinese emperors and heroes about 4,000 years ago who is regarded as one of the initiators of Chinese civilization.



Fig. 2.14 The snow scene of sunken courtyards in Miaoshang Village, Shanxian County, Sanmenxia City, from a bird's eye view. Each of the sunken courtyards is a square pit excavated downward from the flat plateau surface; then, people dig into the four walls of the pits to form living spaces. *Source* Photograph by Jiangbo Yuan, provided by Xiaoli Pan

The sunken courtyard is mainly distributed on the flat loess tableland, distinct from the cave dwellings found in the loess ridges and loess hills, which are built into the cliffs.⁴ This layout is advantageous in many aspects: it can be located near arable land, with easy access to the fields without having to cross ravines or climb slopes; the sunken courtyard is thus suitable for the flat loess tableland.

The sunken courtyard is a square pit excavated downward from the flat plateau surface, generally about six meters in depth, with vertical walls that form a patio; several cave dwellings are then excavated on the four sides of the pit to form living spaces (Fig. 2.14). Tunnels are generally used to access the sunken courtyard from the plateau surface; a straight entry tunnel is used when there is more space, whereas the zigzag tunnel is used for tighter spaces (Fig. 2.15). A sunken courtyard is generally occupied by one family, but there are also cases in which several families with the same surname share one silo-cave; in these instances, family spaces are appropriately divided with fences to form a compound sunken courtyard (Lu 2003) (Figs. 2.16, 2.17 and 2.18).

Since the sunken courtyard is located underground, rain proofing and drainage are vital. To protect the sunken courtyard from rain, eaves are built by laying grey bricks and tiles all around the roof of the courtyard for rainwater drainage. A wall that is 30–50 cm in height is built around the eaves and above the tunnel leading to the bottom of the caves, which prevents the rainwater on the ground from pouring into the courtyard and also ensures the safety of pedestrians on the ground level. In addition, the wall plays a decorative role for the sunken courtyard, articulating the

⁴See the case in Volume 3 “5.2 Qikou Hillside Cave Dwelling: Comfort Home at Loess Hill”.

Fig. 2.15 Schematic diagram of the sunken courtyard entrance. There can be a variety of entry modes according based on the terrain conditions and the amount of space. The straight entry tunnel is adopted when there is more space, whereas the zigzag entry tunnel is more suitable for tighter spaces. *Source* Pan (2001: 99)

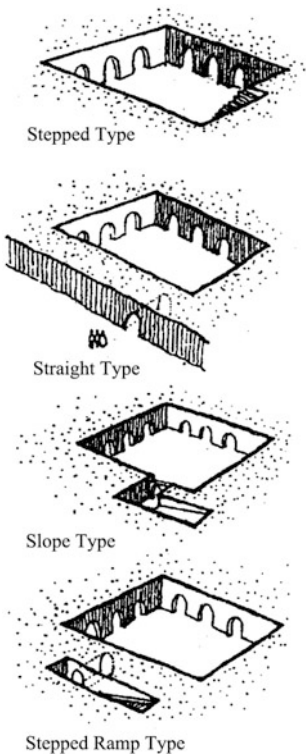


Fig. 2.16 The schematic diagram of a sunken courtyard. In the sunken courtyard, the *tangwu* room (lit. central room) and bedrooms are located on the north side such that they are oriented southward, whereas toilets are located in the southwest; the overall layout reflects the rules of *fengshui*. *Source* Pan (2001: 99). *Note Fengshui* (lit. wind and water) is also known as geomantic omen, and is a Chinese philosophy that seeks ways to harmonize humans with the surrounding environment.

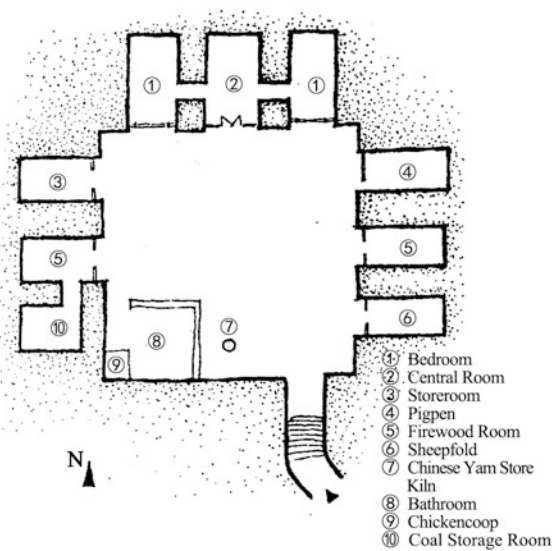




Fig. 2.17 The interior of the sunken courtyard, from ground-level. A sunken courtyard features a rectangular or square courtyard with sides of variable length ($9\text{ m} \times 9\text{ m}$, $12\text{ m} \times 12\text{ m}$, etc.), and is generally approximately six meters in depth. *Source* Photograph by Kefeng Tang, provided by Jun Hu



Fig. 2.18 Cave dwellings in a sunken courtyard. These cave dwellings receive daylight mainly through the windows of the doors, and the north cave dwelling serves as the *tangwu* room (lit. central room) to exploit its southward orientation. *Source* Photograph by Fang Wang

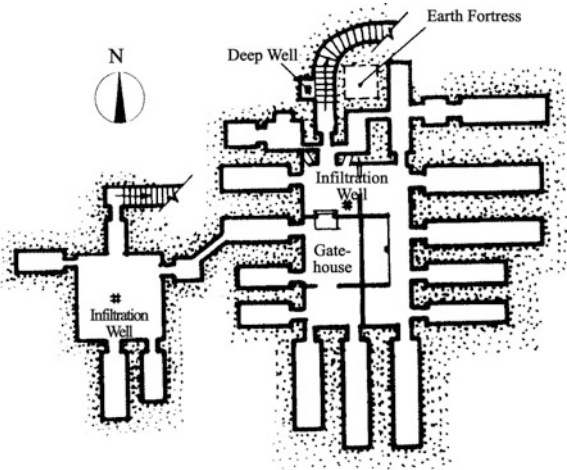
architectural features of the simple sunken courtyard (Fig. 2.19). To thoroughly drain the rainwater that falls into the sunken courtyard, each courtyard has an infiltration well with four to five meters depth, located in the center of the courtyard. In addition, a deep well is located adjacent to the tunnel, providing drinking water for both humans and livestock (Fig. 2.20).

Each cave dwelling in the sunken courtyard has a specific use, such as the main (host) cave, the guest cave, the kitchen cave, the livestock cave

Fig. 2.19 Schematic diagram of the zigzag tunnel of a sunken courtyard. There is a short wall that is 30–50 cm in height surrounding the sunken courtyard and the zigzag tunnel to prevent rainwater from flowing inward. *Source* Photograph by Fang Wang



Fig. 2.20 Plan of a sunken courtyard with a zigzag tunnel. An infiltration well is frequently located in the courtyard's center for collecting rainwater that falls into the sunken courtyard. In addition, a deep well is located adjacent to the tunnel, providing drinking water for both humans and livestock. *Source* Lu (2003: 300)



and the toilet cave, and some have a doorway cave. Based on the position of the host cave, different sunken courtyards are termed *dongzhen* house,⁵

⁵*Dongzhen* house, one of the four types of sunken courtyard, is named based on the direction of the main room and is arranged by the *bagua*. It has a rectangle plan, a main room in the east and a kitchen in the southeast.

Fig. 2.21 A pear tree in bloom in a sunken courtyard. The pear tree is an auspicious symbol and also brings a strong flavor of life into the courtyard. The sunken courtyard is windproof due its underground features, which forms a favorable microenvironment. *Source* Photograph by Kefeng Tang, provided by Jun Hu



xidui house,⁶ *nanli* house,⁷ and *beikan* house⁸ (*dong*, *xi*, *nan* and *bei* are the meanings of east, west, south, and north in Mandarin, respectively, whereas *zhen*, *dui*, *li* and *kan* represents the same four directions in the *I Ching*.⁹ This positioning demonstrates the important effect of *fengshui* culture on the architecture in the *Zhongyuan*¹⁰ region (Fig. 2.21).

Geographical Interpretation

On the flat tableland area in the Loess Plateau, there are no natural conditions in which cave dwellings can be built into the cliffs; people therefore adopt the form of the sunken courtyard, although the amount of earth excavated is much larger than a typical cave dwelling in a cliff. The sunken courtyard makes full use of the physical and chemical properties of the soil, and its construction process greatly reduces dependence on local wood, which is in short supply; it is thus an architectural form suited to the loess tableland area.

⁶**Xidui house**, one of the four types of sunken courtyard, is named based on the direction of the main room and is arranged by the *bagua*. It has a square plan, a main room in the west and a kitchen in the southwest.

⁷**Nanli house**, one of the four types of sunken courtyard, is named based on the direction of the main room and is arranged by the *bagua*. It has a rectangle plan, a main room in the south and a kitchen in the southeast.

⁸**Beikan house**, one of the four types of sunken courtyard, is named based on the direction of the main room and is arranged by the *bagua*. It has a rectangle plan, a main room in the north and a kitchen in the east.

⁹**I Ching** (Mandarin: *yi jing*), also known as *Book of Changes*, is an ancient Chinese classical philosophical work.

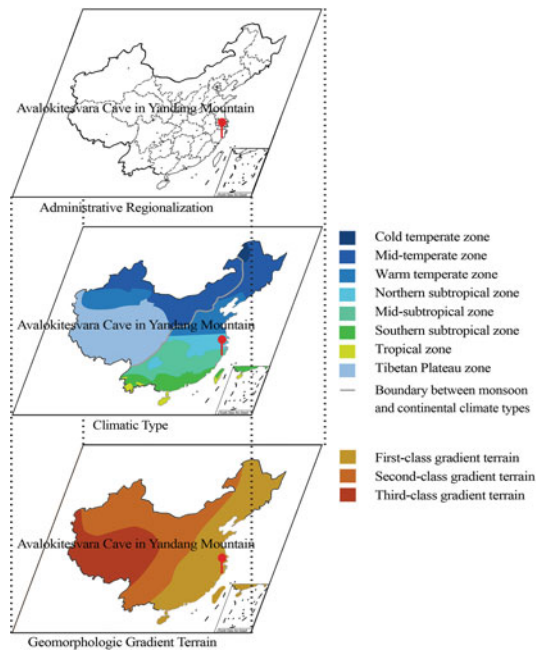
¹⁰**Zhongyuan** is referred to the central plain region in China, where dynasties were usually led by the Han people in the ancient China.

2.3 Avalokitesvara Cave in Yandang Mountain: Peaks Embracing Temple Inside

Location: Yueqing, Zhejiang Province

Key Geographical Concept: Intriguing architectural site selection

The Avalokitesvara Cave is embedded in the natural Hezhang Peak (lit. the figure of the Peaks like the pair of palms combined), utilizing its concealed form to create a secluded atmosphere honored by Buddhism and featuring a hierarchical arrangement of gradually rising spaces to imply the sacred.



Geomorphologic Features

Yandang Mountain lies in the southeast part of southeast Zhejiang's fold system,¹¹ which belongs to the Southern China fold system. This area has developed faults and volcanic structures, and Yandang Mountain's magmatic activities are strong. Its scenic area mainly comprises volcanic structures, with its major geomorphology being Yandang Mountain Caldera, which is mainly composed of quartz syenite porphyry and formed with columnar jointing (Editorial Committee on the Yueqing

¹¹**Fold system**, a large-scale first-order tectonic unit in the Earth's crust, consists of several fold belts and intermediate massifs.

Fig. 2.22 Although Yandang Mountain is not considered high, it is regarded as one of the famous Buddhist Mountains in China. The unique volcanic landform and various perilous peaks bring Yandang to life. *Source* Provided by Binghui Chen and Dan Zhang of Wenzhou Tourism Bureau



County Records 2000); these characteristics constitute the magnificent natural landscape of Yandang Mountain, which has been famous for its peaks, caves, waterfalls and rocks since ancient times (Fig. 2.22).

Climatic Features

Yueqing County belongs to the mid-subtropical maritime monsoon climate with four distinct seasons, mild temperatures and abundant rainfall. Quartz syenite porphyry easily forms caves from erosion by water flow, creating the famous landscape of the “Yandang Forty-Six Caves” in Yandang Mountain scenic area. The Avalokitesvara Cave is listed in the “Yandang Forty-Six Caves” and renowned for being the tallest. Its height is due to springs passing through the cave in the Hezhang Peaks, which accelerates the rate of erosion. The cave can prevent the temple’s architecture embedded in it from being eroded by wind and rain.

Cultural Features

Yandang Mountain is mainly located within Yueqing County of Wenzhou City, with portions in Yongjia County of Wenzhou City and Wenling County of Taizhou City in Zhejiang Province. The mountain received its name *Yandang* (lit. geese-pond), from the geese that stopped in the mountaintop lake full of reeds during their migration. Shen Kuo (1031–1095), a prominent scientist from the Northern Song Dynasty (960–1127), formulated his theory of how water erosion affects the terrain after his tour of Yandang Mountain. Modern geology research reveals that Yandang Mountain is a typical cretaceous rhyolitic ancient volcano - caldera.

According to records, the Avalokitesvara Cave was built in the year 1106, with the original name of the Lingfeng Cave and later the Arhat Cave. The present name has been used since the Qing Dynasty (1644–1911). The Hezhang Peaks consist of two erected rocky summits, the landmark of Yandang Mountain (Fig. 2.23). The Peaks resemble palms with fingers bending and knuckles towering. The space between the

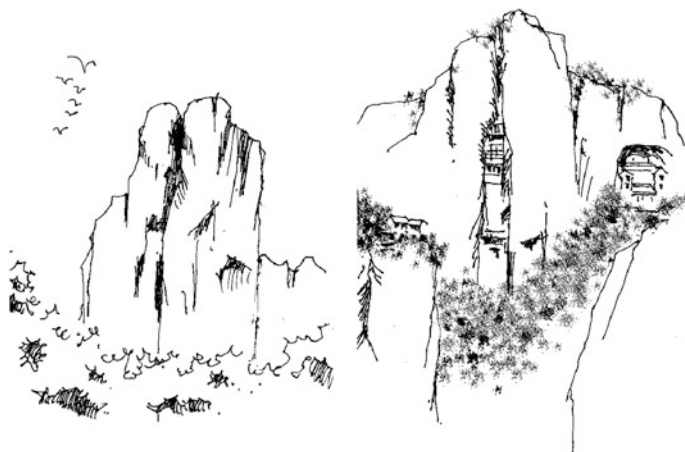


Fig. 2.23 (left) The Hezhang Peaks are famous for their pair of overlapping peaks, fantastic rocks, and odd chambers; (right) The Avalokitesvara Cave is an embedded, fantastic cave. *Source* Drawing by Feng Song

Fig. 2.24 The Hezhang Peaks consists of two erected rocky summits at a height of 270 m. Surrounded by many other peaks, it stands straight, pointing to the sky. *Source* Photograph by Jintao Ye, provided by Wenzhou Tourism Administration



“palms” forms the capacious Avalokitesvara Cave (Lü and Jiang 1997) (Fig. 2.24). There is an Avalokitesvara Statue carved into the wall inside of the cave. The temple, following the terrain, was built at the entrance to the cave, between the precipices. The entire Avalokitesvara Cave, along with the architectural complex,

Fig. 2.25 On a sunny day, the Avalokitesvara Cave inside the Hezhang Peaks could be seen but only vaguely. *Source* Provided by Binghui Chen and Dan Zhang of Wenzhou Tourism Bureau



is hidden among the peaks. You can hardly see it unless you look up from the front of the peaks (Fig. 2.25).

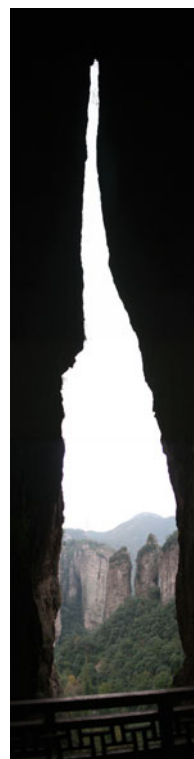
The temple is hidden in the cave, using the natural cave to build an ideal *hutian* (lit. wonderland), letting people feel the quiet and mysterious atmosphere. The cave generally has a limited view; the deep and quiet cave makes one feel mysterious. Seen from a distance, the Avalokitesvara Cave seems as if it is only a natural cave, but upon approaching it, one would find the temple inside (Fig. 2.26). The purple-yellow wall patterns and the color of the temple form a unified entity,

Fig. 2.26 This is the view as one walks up the stairs from the entrance to the cave, passing the hall of heavenly kings and then looking up to the second layer. There lie the kitchen, the bedrooms, the Buddhist sanctuary and the hall. Other parts of the temple are hidden in the darkness of the cave. *Source* Photograph by Fang Wang



making people wonder if they really did enter a wonderland and become immortal (Li 2001). Starting from the inside of the cave, there is a long and narrow gap between the overlapping peaks, approximately one *chi*¹² in width and three to four *zhang*¹³ in height, giving the cave only a gleam of light. The monks of the temple live here all year round, observing the affairs of human life and defending the pure land in their hearts (Fig. 2.27).

Fig. 2.27 The beautiful view seen from inside; merely a gleam of sky is left at the top of the Avalokitesvara Cave. Everyday, the sunlight coming through the hole that shines directly on the main hall only remains for a few minutes. *Source* Photograph by Bihu Wu



¹²*Chi*, *cun* and *zhang* are traditional Ancient Chinese units of length. 1 m $\approx$ 3 *chi*, 1 m $\approx$ 0.3 *zhang*, 3.33 cm $\approx$ 1 *cun*.

¹³*Zhang*, *chi* and *cun* are traditional Ancient Chinese units of length. 1 m $\approx$ 3 *chi*, 1 m $\approx$ 0.3 *zhang*, 3.33 cm $\approx$ 1 *cun*.

Extended Reading: Hutian

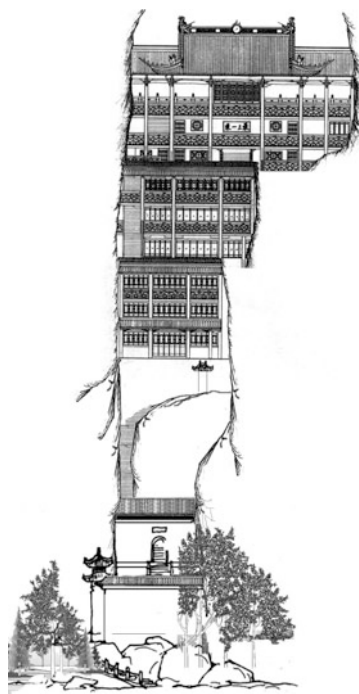
What is called *hutian* (lit. wonderland) dates from the literary quotation recorded in *the Book of the Later Han*,¹⁴ or *the Book of Eastern Han Dynasty*. It was said that an old man selling herbal medicine was holding a pot at the market, and when the market time was over, he jumped into the pot and no one could see him. There was a magnificent world inside the pot with delicious food and wine. From then on, this story has been quoted in the book *Shen Xian Zhuan*,¹⁵ and “*hutian*” became the alternative name for the Taoists’ fairyland. Many literati of later generations give the *hutian* new meanings, regarding it as an ideal place where people can escape reality (Shang 2006); thus, *hutian* was their lifetime tidemark. Literati were trying to project *hutian* into objects and space. One can feel it from the elegant serene gardens and the plants to the mountains and the countryside. We can say the genuine natural *hutian* space is their utmost goal. Since the Tang Dynasty (618–907), the Avalokitesvara Cave has attracted many tourists and gained a good reputation. This has something to do with the pursuit of the wonderland by the literati of the Tang Dynasty. As China’s unique landscape mode, *hutian*, it is isolated but retains some connection to the outside, and it emphasizes an enclosed structure with a narrow passageway connecting in and out (Yu 1998), according to the Chinese preference for secluded structures. The Avalokitesvara Cave together with its buildings is the best representative of *hutian*.

The Avalokitesvara Cave also ingeniously made use of the terrain conditions. By means of strengthening space sequences’ rise and fall, it added the far-reaching effect and sense of hierarchy. The whole Avalokitesvara Cave is 14 m in width, 76 m in depth, and 130 m in height with temple architectures layer upon layer. The building group has 11 layers, with footsteps at the entrance guiding one to enter the mountain gate, and after several turns, one can reach the cave (Li 2010). There is the Hall of Heavenly Kings at the cave entrance. The Four Heavenly Guardians are inside the hall. Behind the hall, there are 377 stone steps. Walking through the 11 layers, one can admire the beautiful scene of the steep peaks at both sides. The Avalokitesvara Temple lies in the highest level, as if it were floating in midair (Fig. 2.28). By making use of the cave’s inner undulating space, people move upward while walking inward, and the slope becomes steeper. This process could intensify the Avalokitesvara Temple’s sacredness.

¹⁴*Book of the Later Han* (Mandarin: *hou han shu*), an official Chinese historical text from 25 to 220 AD on the period of the Han Dynasty, was mainly compiled by Fan Ye during the Liu Song Dynasty (420–479).

¹⁵*Shen Xian Zhuan*, literally *Biographies of Divine Transcendent*, partially attributed to the Taoist scholar Ge Hong in the Eastern Jin Dynasty (317–420), is a biographical collection of fairy tales which are important to our understanding of the formation of the Taoist religion.

Fig. 2.28 Sequential spaces in the Avalokitesvara Cave consist of 11 layers. The bottom layer is the Hall of Heavenly Kings, whereas the middle ones are the monks' bedrooms and kitchens. The Avalokitesvara Temple, the largest building, is located on the top. *Source* Drawing by Feng Song



Viewed from both outside and inside, the Avalokitesvara Cave and the architectural complex in the Hezhang Peaks are a unified entity. People have regarded the place as sacred and thus utilized the unmodified site to build a perfectly fitting building group. Rocks, water and lighting conditions enhance the sacred site.

Geographical Interpretation

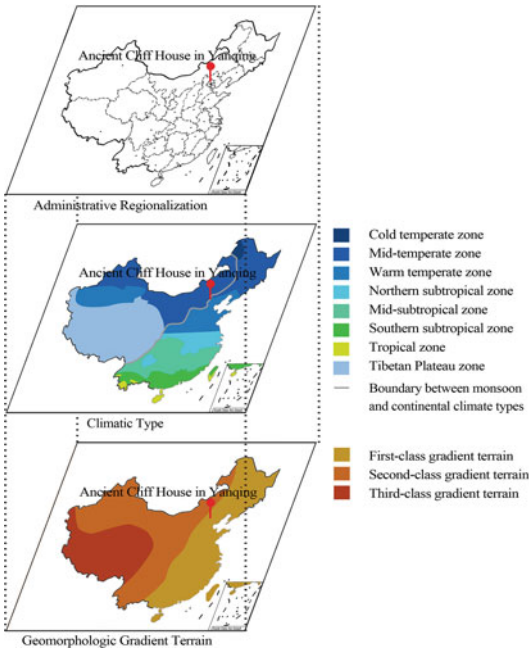
Among Yandang Mountain, the Avalokitesvara Cave was built on an extraordinary site inside the Hezhang Peaks; it seems to create a different reality in which Buddhist monasteries are built among cliffs and hidden from the outside world, implying the Buddhist ideal of pursuing the *hutian* spiritual realm.

2.4 Ancient Cliff House in Yanqing: Amazing Caves as Shelter

Location: Yanqing, Beijing

Key Geographical Concept: Natural dwellings with defense function

The builders of the ancient Cliff House moved their homes to the mountains, converting the inconveniently undulating hills into advantageous defense structures during wars and made a model that perfectly combines human needs with nature.



Geomorphologic Features

The ancient Cliff House is situated on the eastern slope of Donggou Grottoes, Dongmenying Village in Yanqing County and is surrounded by mountains in three directions. It is located in the northwest of Beijing and appears as groups of caves excavated in the granite cliff (Fig. 2.29). The coarse granite stones are easily excavated, which is why the site was chosen; in addition to this, the broad open view overlooking from the eastern slope of North Donggou Mountain justifies the particular location of the site, which also benefits from the rich water resources in the valley, making the location even more suitable for life.

Climatic Features

Yanqing County is located in a warm temperate zone with a sub-humid warm temperate continental monsoon climate, characterized by abundant light, four



Fig. 2.29 The ancient Cliff House was excavated in the sandy granite cliff. The rock is made of condensed sand, which is created by the weathering of granite, and its texture is crisp and easy to weather. The granite consists of layers of densely packed sediment, allowing low escarpments to form along the jointing and thus providing a highly suitable texture for creating manmade caves. *Source* Photograph by Bin Huang

distinct seasons and a significant range of temperatures. The summer is cooler than in other parts of Beijing, making it a famous summer resort.

Cultural Features

Yanqing County is located in the transitional area of agriculture and animal husbandry and has been the historical mixing area of the Northern people living on livestock and farming in the *Zhongyuan* region. It is also a place of strategic military importance. The ancient Cliff House here has given rise to many assumptions, and its unique lifestyle has inspired research. The hypotheses of its origin include an assembling army seeking shelter and serving as settlement of the Xi tribe. The Cliff House is the largest cliff house found in North China. It is also the largest ancient cave settlement that has been found in Beijing region.

The ancient Cliff House is located in a mountainous area (Fig. 2.30), unlike other normal villages, which often sit in the valleys or on plains. It is very rare that the builders went out of their way to face the difficulties of founding their settlements in the cliffs near water and plains (Wang 1998). The caves are distributed on the cliff with the area of more than 100,000 m², and the rooms are built following the slopes and shapes of the mountain body (Zhang 2000b) (Figs. 2.31 and 2.32). The caves could be divided into three parts. The front one is relatively low in density and is the entrance to the village. The middle part, the center of the village, is build row upon a row reminiscent to a honeycomb. The back part is build straight up on the eastern cliff with more than 90 caves divided into seven levels at a spectacular height.



Fig. 2.30 Schematic diagram of the geographic location of the ancient Cliff House It is located in the valley northwest of Yanqing County in Beijing and cut inside a gravel granite cliff. *Source* Picture redrawn by Jian Liu



Fig. 2.31 The Cliff House is located on the escarpment from three directions. It conforms to the mountain slope to be harmonious with the site in a well-organized order. *Source* Photograph by Bin Huang



Fig. 2.32 The artificially carved stone rooms are different in layout and structure; some are *square*-like figures, whereas others are *rectangles*. The larger ones are approximately 20 m², whereas the smaller ones are only 3 to 4 m². Amongst the various types, the most common structure combines a set of three rooms with one room exposed to light and two others hiding inside the cliff. The stone rooms are distributed across different levels, which are joined by trestle roads and stone steps. *Source* Photograph by Yongjie Xu, provided by Ming Jiang

The levels are joined together with trestle roads and stone steps, forming all of the structures into one whole (Zhang 2000b).

The ancient Cliff House in Yanqing with its strong defense layout is reminiscent of a mountain fortress that is easy to hold but hard to attack (Fig. 2.33) because it is hidden deep in the valley. The valley and the mountain serve as obstacles from which the Cliff House's location benefitted because they constituted the primary defense mechanism. Along the sides of the mountain paths are cave dwellings in which the guardians once lived. The gate of the entire military camp can be seen approximately 100 m from the entrance, where the road suddenly becomes narrow and two huge stones are on either side. Immediately on the left side of the gate is a

Fig. 2.33 The ancient Cliff House hidden in the valley is surrounded by higher peaks, forming a natural obstacle. *Source* Photograph by Bin Huang



Fig. 2.34 The steps leading to the Cliff House are very steep. The most common way is to climb into the rooms by holes on the rock. The remains of the holes can clearly be seen on the cliff.
Source Photograph by Yongjie Xu, provided by Ming Jiang



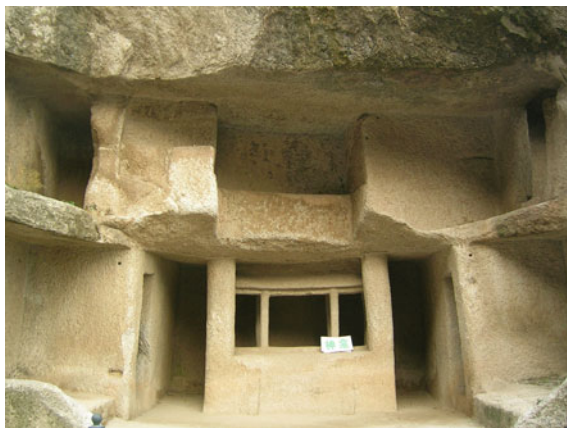
small cave considered to be the house of the guardian. There is also a gate for entering the backside of the village, making the whole camp easy to hold but difficult to attack from both sides (Wang 1998). Additionally, on the small road leading to the valley, there is also a path constructed by ladders between the peaks, constituting an emergency exit leading to the bottom of the mountain. Moreover, the ancient Cliff House was built on three hills separately; the entrance does not face the south according to the general principle in China but in different directions. These were all based on the consideration of being able to mobilize the different parts of the village to coordinate defensive action (Wang 1998).

Vertical transportation is an important characteristic of the Ancient Cliff (Fig. 2.34). The pavement of the outdoor entrance leading into the rooms is built as a steep slope with narrow steps. Without extra stairs, moving around is dependent only on the holes in the cliff, enabling the people to climb into their houses (Wang 1998). Although there is only one exit, the rooms connect different levels to one another inside. When people get around inside the rooms, they rely on steps and climbing through the holes and wooden ladders, all of which resulted in a very steep slope (Wang 1998). Sometimes, the path was merely a hole in which one would have to climb up by pushing oneself by hand.

The room is well organized by function, with complete living facilities: stove, kitchen, closet, manger, all of which are delicately carved from stone. To make full use of the heat, some stoves had W-shaped tubes built inside for to direct smoke (Zhang 2000b). The rooms were once equipped with doors and windows; some were of double-layered to keep the warmth inside. There are shelters above her-ringbone grooves on the smoke vents, which were used to prevent rain from leaking through (Zhang 2000b).

In the middle of the hill lies a set of palace-like caves, which are said to be the Mansion of the Xi Tribe for the chief. The caves are the representatives of stone rooms built here (Fig. 2.35). The whole house faces west, enjoying great sunshine in the afternoon (Cheng 2003). Although located halfway up the mountain and

Fig. 2.35 The Mansion of the Xi Tribe in ancient Cliff House demonstrates the characteristics of northern China residential architecture with its symmetrical structure and beautiful form and also reflects the idea of hierarchy. *Source* Photograph by Bin Huang



overlooking the entire village with a wide view, the only access to the Mansion is the path from the top of the mountain. The Mansion is built with well-organized inner structure and two connected levels. The main hall is 11 m *kaijian*¹⁶ in width, 9 m *jinshen*¹⁷ in depth and 3.6 m in height, held by 6 exquisitely carved stone columns. Directly in the middle of the hall is a sacrifice platform, and on both sides are stone beds for sitting. On the south and north sides of the hall, the walls are divided into sectors, forming shelters to protect the inside from wind and rain. All the facilities in the hall are aligned in symmetry and harmony with the environment (Cheng 2003). These types of caves are said to have been the place for the leaders of the tribe to gather for meetings and sacrifices. From the layout, the space is structured typically according to the northern traditional Chinese residential architecture (Wang 1998).

Extended Reading: Cliff House Culture

Cliff houses are caves and rooms that the ancients excavated into cliffs. It is a particular way of life for residential architecture of a certain place, adapting to the local context geographically, historically, culturally, politically and climate-wise, either in a manmade or natural cave (Ouyang 2005). Cliff houses are found in many locations in China, especially in southern China, including the cave houses beside Shennong Creek in Hubei Province, the Ziyunzhong Cave in Guizhou Province, and Xiagan Village in Guangxi Province. There are also terms such as “Dong Man” (lit. barbarians in the cave) referring to people living in a cave in the southern region (Tong 2010).

¹⁶*Kaijian*, also known as *miankuo*, is a unit to measure the width of the building, which refers to the distance between two columns in the frontage of the traditional Chinese wooden architecture.

¹⁷*Jinshen*, a unit to measure the depth of the building, refers to the distance between two columns in the gable of the traditional Chinese wooden architecture.

The ancient cliff houses in different places differ in layout but are all built defensively from the location planning to the space design. Therefore, the function of the cliff houses could have been to provide either shelter from disasters, an assembly place for the army or storage for goods. The hypotheses concerning the history of the Yanqing ancient Cliff House include assembling the army and providing a base for the Xi tribes (Fig. 2.36).



Fig. 2.36 Regardless of having survived vicissitudes, evidence of human settlement could be found in the ancient Cliff House. The unidentified points in history left here make it even more mysterious. *Source* Photograph by Yongjie Xu, provided by Ming Jiang

Geographical Interpretation

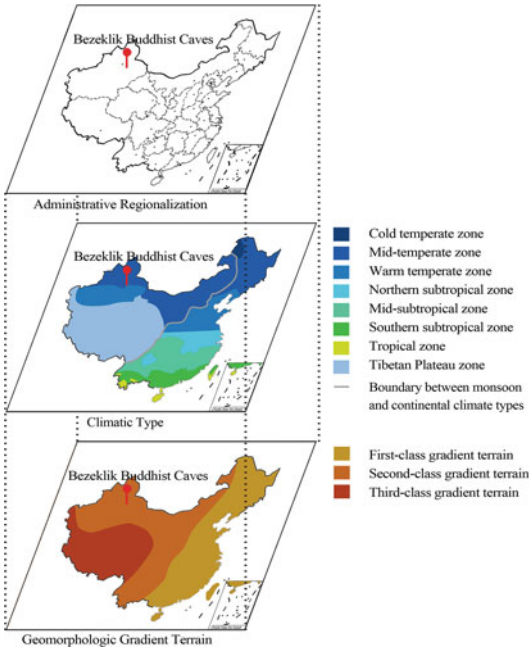
The ancient Cliff House in Yanqing is built following the landform of the mountain, hiding in the steep cliff, giving it a perfect defense function. All parts of the Cliff House are made of rocks from the mountain, which is excavated into stone stoves, chimneys, furniture and all types of living spaces to accommodate daily life. The construction demonstrates the wisdom and viability of humankind.

2.5 Bezeklik Buddhist Caves: One Thousand Buddhas Halfway up the Mountain

Location: Turpan, Sinkiang Uygur Autonomous Region

Key Geographical Concept: Grottoes generated by the natural environment and through religious dissemination

As Buddhism spread from Serindia¹⁸ to the *Zhongyuan* region, Serindia became an important avenue for Buddhist dissemination, as reflected in the earliest collection of grottoes situated along the Silk Road in Qiuci (now Kuche, Sinkiang) and Gaochang (now Turpan, Sinkiang). The Bezeklik Buddhist Caves are the best preserved of all of the Gaochang grottoes.



Geomorphologic Features

The Bezeklik Buddhist Caves are located in the Mutougou Valley, which forms the central region of the Flaming Mountains located 40 km northeast of the Turpan urban area. The caves are scattered on a cliff on the west bank of the valley, each

¹⁸**Serindia** or the Western region (Mandarin: *xi yu*), refers to the regions to the west of the Yangguan and Yumenguan Passes in Dunhuang, including what is now Sinkiang and parts of Central Asia, although it is sometimes used more generally to refer to other regions to the west of China as well, such as the Indian subcontinent.

covering an area of less than one kilometer. The Flaming Mountains extend east and west along the Turpan Basin. In the dry climate, red rocks and bedrocks of the Cenozoic era in this area periodically explode, giving the mountain a flame-like appearance from far distances (Editorial Committee on the Turpan Municipal Records 2002: 105).

Climatic Features

The Bezeklik Buddhist Caves are located in Turpan, China’s driest region with the least precipitation. The local climate is characterized by high levels of solar energy with long periods of sunshine; minimal rainfall; high rates of evaporation; and strong, dry, and hot winds. Although the caves here are protected from water damage, they are seriously threatened by strong winds and sandstorms.

Vegetation Features

The Mutougou Valley, where the Bezeklik Buddhist Caves are located, is relatively high in altitude, and water tends to gather in the low-lying land, creating an environment suitable for plants. Tall arbors flourish in the river valleys, though no plants grow on the cliffs near the Buddhist Caves (Figs. 2.37 and 2.38).

Fig. 2.37 The Bezeklik Buddhist Caves are built along the cliffs of the western bank of the Mutougou Valley. The water quality of the adjacent river is good, contributing to dense plant growth in the gully, and the cliff is red and dry. *Source* Photograph by Bin Huang



Fig. 2.38 At the foot of the Flaming Mountains, the bright red cliffs stand in sharp contrast with the blue sky and green vegetation. *Source* Photograph by Changsong Wang



Cultural Features

The Bezeklik Buddhist Caves are a Buddhist center of the Gaochang region, which has long enjoyed a reputation as a center for Buddhist monasteries in Sinkiang Uygur Autonomous Region. The caves were excavated under the Gaochang Kingdom (499–640) rule by the Qu Family. During the ninth century, the caves first served as the royal Buddhist temple of the Uyghur Gaochang Kingdom. In the late 13th century, the royal family moved east to Yongchang, Gansu Province, and in turn, the Bezeklik Buddhist Caves declined in status, becoming a primarily folk temple. By the mid-15th century, with the dissemination of Islam, the Bezeklik Buddhist Caves became increasingly more dilapidated (Editorial Committee on the Turpan Municipal Records 2002: 938–939). The stone caves are well preserved and are plentiful in the Gaochang region (Chang 1996) (Fig. 2.39).

The Bezeklik Buddhist Caves were built with the introduction of Buddhism to China from India, where it developed during roughly the fifth century BC. In 245 BC, Buddhism began to spread out of India to locations such as Kashmir and

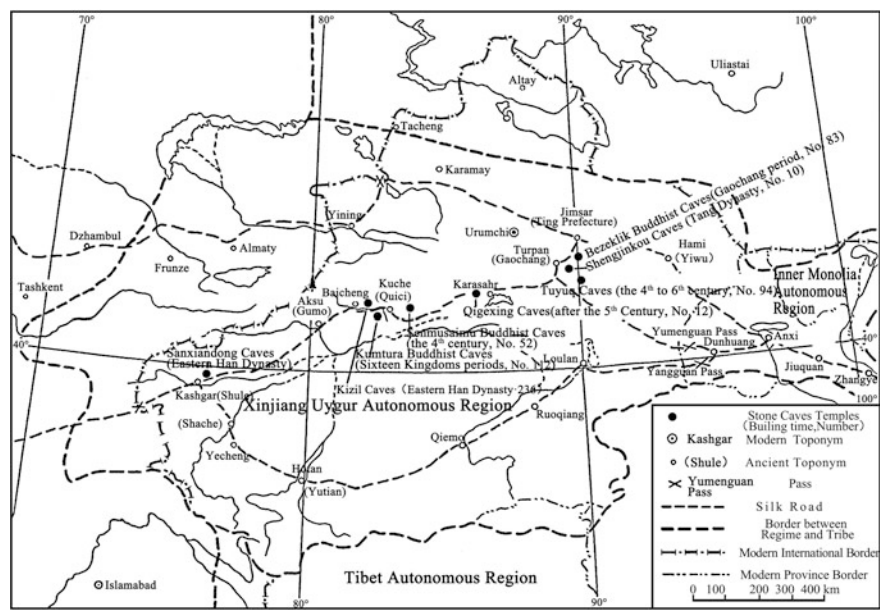


Fig. 2.39 Distribution diagram of significant grotto groups in Serindia along the Silk Road. The Turpan region, the location of the Bezeklik Buddhist Caves, is a center of Buddhism in Gaochang. Source Jie (2008: 113)

Gandhara (Geng 1978). By approximately 80 BC, Buddhism had spread to Sinkiang along the Silk Road to Hetian, Shanshan, Gaochang, Yanqi, Qiuci, Shache, Zhuojujia and so on. Buddhism became more prevalent in Gaochang in the fourth century. By the time the Gaochang Kingdom was founded in the fifth century, Buddhist beliefs had become increasingly popularity, reaching a peak during the rule of the Qu Kingdom (Li 1983). In 983, the Uyghur people of Gaochang officially converted from Manicheism to Buddhism (Chen 1995).

Arabia occupied Central Asia at the beginning of the eighth century and during that time brought Islamism to Sinkiang. It was between the 10th and 12th centuries that Islamism was widely disseminated throughout western Sinkiang. Meanwhile, however, Buddhism was still the main religion in Gaochang of eastern Sinkiang, resulting in an eventual confrontation between Islamism and Buddhism. From the 14th to 16th centuries, as a result of the Mongolian expeditions, the Turpan economy and society approached collapse, and Islamism in turn extended to larger regions; by contrast, Buddhism began to decline, and many Buddhist monasteries in the eastern region were destroyed (Li 1983). At this historic moment, the Bezeklik Buddhist Caves entered a period of decline.

Extended Reading: Grottoes along the Silk Road

The Bezeklik Buddhist Caves are positioned on a cliff and continue for roughly 500 m (Fig. 2.40). Above the grottoes lies the flat plateau of the Gobi desert, where an ancient temple once stood but is now almost fully destroyed. While the ancient temple may once have served as an important Buddhist location (Chang 1996), all that remains are the 77 grottoes below. There are more than 40 grottoes with frescos, which cover an area of approximately



Fig. 2.40 The Bezeklik Buddhist Caves, the largest stone caves preserved in Gaochang, stretch for 500 m. *Source* Photograph by Changsong Wang

1,200 m². However, over the four or five decades before the founding of the People's Republic of China in 1949, several frescos and Buddhist texts were stolen by foreign explorers, and most were destroyed. Nevertheless, the brightly colored preserved frescos with numerous ancient Chinese and Uyghur characters that remain are still of high artistic and research value. They mark a peak in the popularity of Buddhism in the daily lives of the Uyghur people and serve as treasures of the history and culture of the Gaochang Uyghur.

Geographical Interpretation

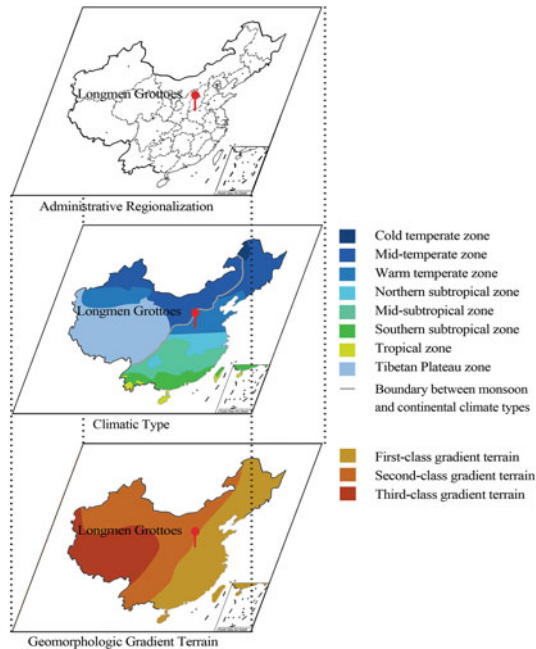
Thousands of years have passed since the decline of Buddhism and its replacement with Islamism in the region where the Bezeklik Buddhist Caves are found. Still, these caves, located at the base of the Flaming Mountains and along the Silk Road, area treasure, displaying the most representative Buddhist art of the Gaochang Uyghur from thousands of years ago.

2.6 Longmen Grottoes: Limestone Cliffs Containing Giant Buddhas

Location: Luoyang, Henan Province

Key Geographical Concept: Buddhist grotto art

As one of the major Buddhist architectural forms, grottoes require special geomorphic terrain as well as adaptability to a particular landform. Grotto art is one main vehicle for the Buddhist culture, and the Longmen Grottoes reflect the inheritance of Han Buddhism.



Geomorphologic Features

The Longmen Grottoes are located in the Longmen and Xiangshan Mountains, which consist of limestone cliff carved by the path of the Yihe River in the Luoyang area. Because limestone is relatively soft, it is easy to carve but is also very vulnerable to erosion.

Climatic Features

Luoyang is in a transition zone from the southern edge of the warm temperate to the north subtropical zones. The climate in this region is quite agreeable, with four distinct seasons and an average annual rainfall of 600–700 mm (Editorial Committee on the Luoyang Municipal Records 2000: 161). Water erosion is a major threat to the Longmen Grottoes, and the Buddha statues in the shade or unsheltered by the eaves suffer from the most serious erosion.

Vegetation Features

The dense vegetation on the Longmen and Xiangshan Mountains, where the Longmen Grottoes are located, provides some stability for the limestone mountain, thus to some extent protecting the grottoes, but with the loss of mountain water, these plants rely on the thin soil on the limestone mountain as a source of moisture, causing cracks in the rocks and threatening the preservation of the caves.

Cultural Features

The Longmen Grottoes were first carved around the date when the Northern Wei Emperor Xiaowen (reign 471–499) moved the dynastic capital to Luoyang in 494. The Northern Wei government attached great importance to Buddhism, and other groups of grottoes were created at the same time as the Longmen Grottoes. Luoyang had been a center of Buddhist activities for a many years. Carving caves and building statues were popular at that time, so that more than 10 grottoes still survive at present (Fig. 2.41). Among these, the Longmen Grottoes are located to

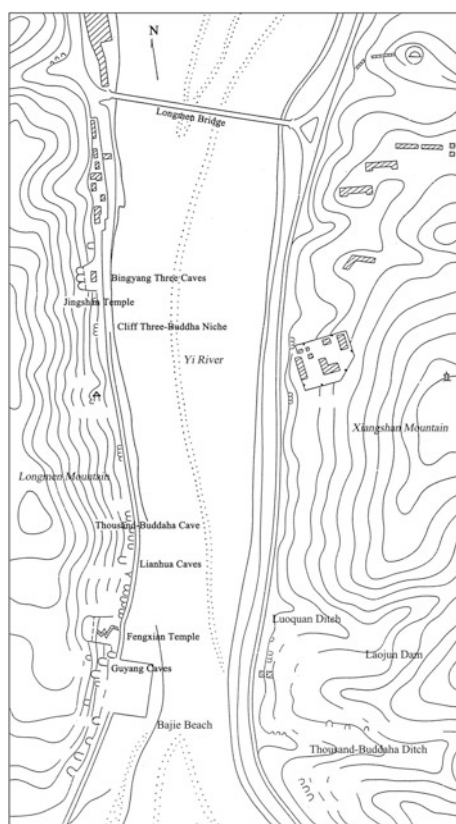


Fig. 2.41 The Longmen Grottoes were begun during the Northern Wei Dynasty (386–534), then continued on through the Eastern Wei (534–550), Western Wei (535–557), Northern Qi (550–577), Northern Zhou (557–581), Sui (581–618), and Tang (618–907) Dynasties, the Five Dynasties (907–960) and the Northern Song Dynasty (960–1127), over hundreds of years. *Source* Luoyang municipal records (volume XIV): cultural relic records, 2000: 180



Fig. 2.42 Most of the grottoes are carved on Longmen Mountain along the west bank of the Yishui River, stretching thousands of kilometers from north to south. These honeycomb-like caves have reserved their sculpture art for hundreds of years. *Source* Photograph provided by Luoyang Municipal Government

the southeast of Luoyang City, scattered in the cliffs on both sides of the Yihe River and covering a length of 1 km from south to north (Fig. 2.42). Cut through the wall, the elegant statues are enveloped in rocks, unobtrusive but magnificent. Because of the valley’s protection, the exquisite Buddha statues have been able to avoid thousand years of wind and rain, allowing people today to witness the delicate carving art of Chinese ancestors.

Carved on both sides of the Yishui River, the Longmen Grottoes are closely related to the characteristics of the local mountains. First, they are located in the Longmen and Xiangshan Mountains, which lie approximately 12 km south of the urban district of Luoyang. Comparing the distance between Luoyang City and other nearby mountains, Longmen Mountain is relatively appropriate and accessible to the urban area, and its thin but firm limestone is well suited for carving. During the Northern Wei, the strategic military position of this mountain also contributed to its selection as a carving site. A natural gate between the two mountains that confront each other is formed at the entrance of the Yishui River and marks the entrance to and exit from Luoyang. Thus, cave carving here has a remarkable significance for this geographic location (Fig. 2.43). Second, in terms of geomantic considerations, the cave site is in line with the traditional *fengshui* principle of “avoiding wind and accessing water.” The Yishui River flows between Longmen Mountain in the west and Xiangshan Mountain in the east, turning the mountain pass into a natural doorway to the valley (Fig. 2.44) and an optimal site for accumulating water. The landscape embodies the basic principles of site selection: “negative (*Yin*) and positive (*Yang*)¹⁹”, and “with a

¹⁹**Negative (*Yin*) and positive (*Yang*)** (lit. backing to the dark and confronting with the bright) is a traditional site selection discipline in ancient China that was believed to better harmonize the living and natural environments.



Fig. 2.43 The entrance of the Yishui River. Longmen Mountain in the west and Xiangshan Mountain in the east confront each other. The west cliff contains the majority of the Longmen Grottoes, with a range of carving from the Northern Wei Dynasty to the Song Dynasty (960–1279), whereas the east cliff has fewer caves, most of which were carved during the Tang Dynasty (618–907). *Source* Photograph provided by Luoyang Municipal Government



Fig. 2.44 Mount Song coming in from the south is interrupted by the Yishui River and forms a 300 m-long gorge between Longmen and Xiangshan Mountains. *Source* Photograph by Fang Wang

mountain to the rear, river to the fore” (Shen 2008). Moreover, the highest concentration of statues is mostly centered in Longmen Mountain in the west, where it is easy to not only “access water” but also “control the wind”.

The development of Buddhism in China peaked during the Northern Wei Dynasty (386–534), and the Luoyang period was the palm days of its development. When the Northern Wei Emperor Xiaowen moved his capital to Luoyang in the 17th Taihe year (493), this was a direct factor in the initiation of the construction of the Longmen Grottoes, and then Luoyang became a prime location for grotto construction in the *Zhongyuan* region. The Longmen Grottoes are also considered the main body of grottoes, although many other small grottoes are scattered in the area around Luoyang (Editorial Committee on the Luoyang Municipal Records 1995: 192). It took 24 years and more than 800,000 workmen to construct the Longmen Grottoes, which demonstrates its vast scale and great significance. Luoyang City also played the role of the national Buddhist heartland over the course of multiple centuries; as a result, the Longmen Grottoes were under continuous construction during the subsequent 400 years. The Binyang Three Caves, for example, were built from the Northern Wei Dynasty to the early period of the Tang Dynasty (Figs. 2.45 and 2.46). The construction heyday was the Tang

Dynasty, a golden age when ten thousand statues were carved within a single rock cave (Fig. 2.47) and more than 60 % of the total number of carvings were produced. The prosperity of local Buddhist culture contributed to the huge scale of architectural achievement represented in the Longmen Grottoes.

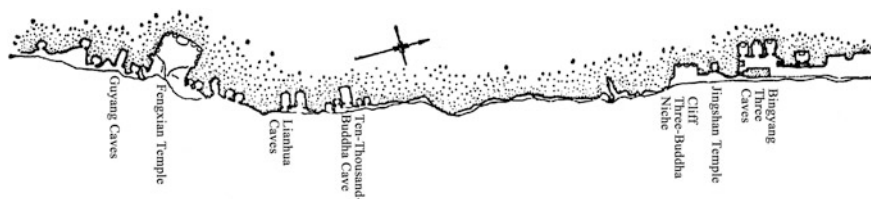


Fig. 2.45 The grottoes in Longmen Mountain vary greatly in size and scale. The Binyang, Lianhua and Guyang Caves were three statue-making centers during the middle and late Northern Wei Dynasty, whereas the Cliff Three-Buddha Niche represented a center during the Wu Zhou period (690–705) of the Tang Dynasty. The Thousand-Buddha Cave and Jingshan Temple area are important representatives of the early periods of the Tang Dynasty, and last but not least, the scale of the Fengxian Temple, from the Wu Zhou period (690–705) of the Tang Dynasty, exceeds that of all of the other caves in the Longmen Grottoes. *Source* Pan (2001: 87). *Note* **Cliff Three-Buddha Niche**, craved during the Wu Zhou period (690–705) of the Tang Dynasty (618–907), is located in Luoyang, Henan Province. It consists of seven statues, three of them seated Buddhas and the other four standing Buddhas. The works of the seated Buddha separately represent the past, present, and future.

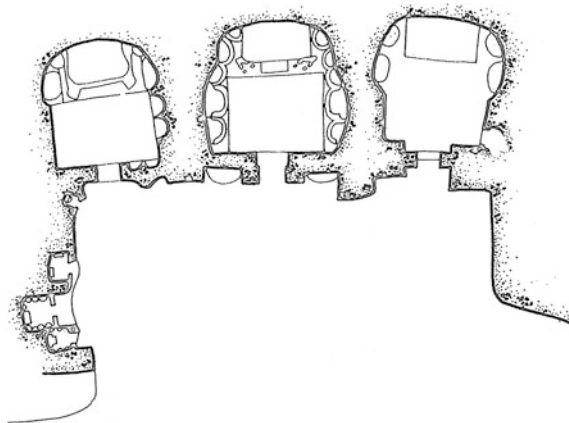


Fig. 2.46 Plan drawing of the Binyang Three Caves in the Longmen Grottoes. The three caves were built during the time of Emperor Xiaowen (reign 471–499), Empress Dowager Wenzhao (469–497) and Emperor Xuanwu (reign 499–515) in the Northern Wei Dynasty. The largest cave is the middle of the three, at approximately 11 meters in width and depth, including a total of 11 large statues. *Source* Institute on the History of Nature Science, Chinese Academy of Sciences, 1985: 222

Fig. 2.47 The Ten-Thousand-Buddha Cave, carved during Yonglong period (680–681) of the Tang Dynasty. It was named after the 15,000 small seated Buddhas in the north and south walls of the cave. *Source* Photograph by Hongjie Zhao



The carving and layout of the grottoes demonstrate the ancient artists' care in conforming to the nature and making use of natural caves by taking advantage of the mountain's fluctuations. The carving was all completed in accordance with the jointing of the mountain and was arranged in an orderly manner (Fig. 2.48), and finally it formed the uneven, patchwork layout over time (Shen 2008) (Fig. 2.49). Among these, the Guyang Caves were the first grotto, a natural limestone cave with a height of 11.2 m, a width of 7.27 m and a depth of 11.83 m that contains the greatest abundance of statues by royal desire of the Northern Wei Dynasty. The Fengxian Temple is the largest cave, which also takes advantage of the mountain's natural depressions. The carving sites for each hole avoid the natural flaws in the cliff, and the choice of solid rock strata between each carving slope grain has ensured the long-term preservation of the grottoes (Fig. 2.50).



Fig. 2.48 The natural graben on both sides of the mountains is the single anticline. There are three layers of karst caves in the eastern and western mountains, and three terraces on both banks of the Yihe River. Natural geological processes have had a magnificent impact on the Longmen Grottoes' formation and the statues' layout. The fact that the eastern mountain experienced less carving than did the western mountain can be attributed to the differences in geological conditions. *Source* Institute on the History of Nature Science, Chinese Academy of Sciences, 1985: 221

Fig. 2.49 The east side of Longmen Mountain on the west of the Yihe River has largely been used for grotto carving. The grottoes on the cliff lie row upon row: the Buddha statues in larger caves reach up to 10 m and the small niches are densely distributed. *Source* Photograph by Haoyang Dou, provided by Ming Jiang



Fig. 2.50 The site selection of most caves (carved perpendicular to the rock wall) was originally based on the natural rock characteristics, avoiding rocks with crumbling, unstable textures. *Source* Photograph by Fang Wang



Extended Reading: Buddhist Grotto Art

As one of the three main Buddhist architectural forms—temples, pagodas and grottoes—the Buddhist grotto originated in India, where it was known as the “grotto temple” and usually carved along mountain ridges by the river (Na 1996). Early caves were mainly inhabited by monks and were at first built without statues. Over time, they matured as a true Buddhist architectural form, and later, with the eastward transmission of Buddhism, caves appeared in China. The earliest Buddhist grotto in China was carved by Monk Lezun in Singing-Sand Mountain in the second Jianyuan year (366) of the Former Qin Kingdom. The Chinese began carving their own caves in approximately the third century, reaching their zenith in the Tang Dynasty and continuing through the Qing Dynasty (1636–1911). Sinicized grottoes became an art form, an organic unity that combined architecture, sculpture and murals and proved eventually to be the most common method of Buddhist artistic communication. To further spread the teachings of Buddhism, Buddhists brought cave art along the ancient Chinese Silk Road from west to east and eventually throughout the whole country. Thus, broadly speaking, the

characteristics of the geographic distribution of caves in China show a similar pattern to that of the route of Buddhism to China, from Sinkiang to the *Zhongyuan* region, north to south, mainly scattered in the provinces of Sinkiang, Gansu, Ningxia, Shaanxi, Henan, Hebei, Shandong, Liaoning, Jiangsu, Zhejiang, Sichuan, Guangxi, Yunnan and so on. There are nearly 100 Buddhist cave regions across the country, most of which are concentrated in the *Zhongyuan* region (Wang 2001). The Longmen Grottoes in Luoyang, the Mogao Grottoes in Dunhuang, the Yungang Grottoes in Datong and the Maijishan Grottoes in Tianshui comprise China's four main grotto groups.

So far, the Longmen Grottoes represent more than 2,300 caves of different sizes and over 100,000 statues of various shapes. Due to the long time span of carving, the development of Buddhism from the Northern Wei Dynasty to the Song Dynasty is well reflected in the statues and decorative arts. During the Northern Wei Dynasty, people regarded slender figures as beautiful, so most faces and statues were thin and elegant; architectural styles altered from those in the Yungang Grottoes, which emphasized strength and power, to amiability and benignity, as represented in the Guyang Caves. Later, by the Tang Dynasty, the favored style reflected serenity and peace in calm, plump faces and drooping ears (Fig. 2.51), embodied in the Buddha statues of the Fengxian Temple (Fig. 2.52). This temple



Fig. 2.51 The statue of Avalokitesvara outside the Thousand-Buddha Cave approaches one meter in height, including the typical high-tied bun, long neck and thin waist, holding a bottle in one hand and a duster with a deer tail feather, a tool used to drive away insects and brush off dust, in the other hand. This is one of many Avalokitesvara statues in the Longmen Grottoes. *Source* Photograph by Hongjie Zhao



Fig. 2.52 The Fengxian Temple is the largest group of cliff sculptures in the Longmen Grottoes. Nine statues form a straight line along the cliff, namely, one Buddha, two disciples, two Bodhisattvas, two Heavenly Kings and two Hercules. The middle-seated Vairocana Buddha is known as the largest Buddha statue in the grottoes, with a height of 17.14 m, a well-rounded figure and distinguished flowing drapery. *Source* Provided by Luoyang Municipal Government

Fig. 2.53 A detail of one of the Fengxian Temple statues, including the elegant Buddha with a calm face, the bold Heavenly King holding a pagoda and an aggressive Hercules. Each individual statue is lifelike, reflecting typical characteristics of the Tang Dynasty Buddha statues. *Source* Photograph by Hongjie Zhao



incorporates a carving style based on the *Avatamsaka Sutra*,²⁰ taking the hillside and the canyon as its natural terrain. Centered on the great Lushena Buddha, the temple displays a series of highly emotional images and statues, embodying the artistic achievements of the Tang Dynasty (Fig. 2.53).

Derived from India's grotto art following the style of the Yungang Grottoes but blended with the advanced Han culture of the Wei (220–265), Jin²¹ (265–420), Southern (420–589) and Northern (386–581) Dynasties, the Longmen Grottoes are

²⁰*Avatamsaka Sutra* (Mandarin: *hua yan jing*), translated into Chinese in the third century, is one of the richest texts of Buddhism, recording as it does the Buddha's highest teachings.

²¹**Jin Dynasty** (265–420), Chinese dynasty, including the Western and Eastern Jin periods, is different from the Jin Kingdom (1115–1234) by Jurchen in northern China.

compatible with both traditional Chinese and foreign culture. The Sinicization of the clothing styles and the transition of grottoes from arch-ring type to the architectural ornament style reflect the integration of Buddhist art and display its localization and secularization.

Over 1,500 years of history, the Longmen Grottoes inevitably suffered from natural damage, and thus conservation and restoration work have also become part of its long history. Although the Cambrian and Ordovician limestone of Longmen was once an ideal stone for carving, it is also extremely vulnerable to external damage. The Longmen stratum is extremely abundant in fissures, so karst caves, groundwater and plant clusters all can cause multiple fractures, leading to large-scale collapses (Gong 2002). Weathering and water seepage are other sources of serious natural destruction. Along the south of the western mountain, the caves and statues are evidently weathered by the wind and rain. In the Fengxian Temple, different directional orientations give rise to varied preservation conditions in the north and south walls. The north of the niche is dry because of its sunny position, whereas the statues of the south have largely collapsed due to fragmented rock (Fig. 2.54).



Fig. 2.54 A comparison of the south (*left*) and north (*right*) walls of the Fengxian Temple. The south wall of statues suffers from a higher degree of weathering; large pieces of rock have even peeled off, and cracks in the wall are visible, whereas the north wall has remained in a significantly better state of preservation: the statues still look clear and lifelike. *Source* Photographs by Fang Wang

Fig. 2.55 The original zigzag curved stone steps leading to the large niche of the Fengxian Temple are still faintly visible in the north part of the newly built replacement steps for tourists. However, the horizontal lines of the newly built ladders and passageways, which are convenient for visitors to climb, weaken the integral momentum of the niche portrait group. *Source* Photograph by Fang Wang



To avoid the permeation and wash, the Fengxian Temple originally incorporated a protective herringbone drainage ditch, which still plays an important role today after being discovered and repaired. In addition, to avoid damage caused by falling rock, new fences, iron railings, ladders and passageways have been built around the caves (Fig. 2.55).

Geographical Interpretation

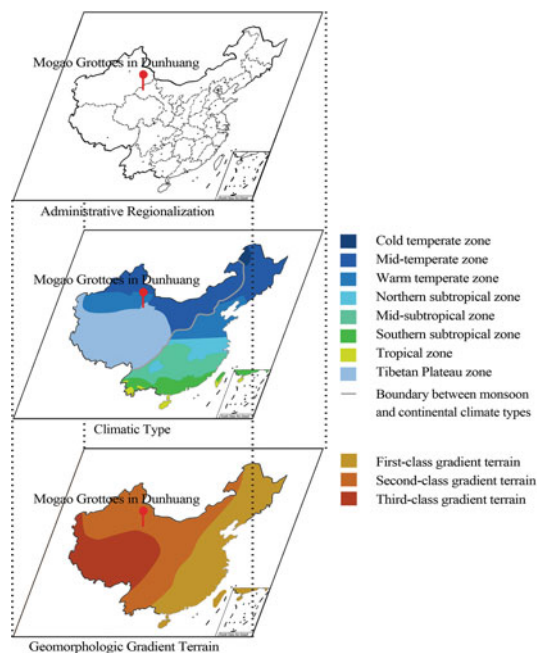
By the sides of the Yishui River and between the eastern and western mountains, thousands of grottoes are distributed row upon row, following the contours of the mountain's features. Thousands of years of Buddhist cultural history are compressed into the cave dwellings, and here are also Western art mixed with Chinese culture, blending royal pomp with folk wisdom and representing a unique historical record.

2.7 Mogao Grottoes in Dunhuang: The Legend of Caves at the Foot of the Gobi Desert Mountain

Location: Dunhuang, Gansu Province

Key Geographical Concept: Evolution of Buddhist culture over time

The grotto is an important relic of Buddhist culture. As one of the largest groups of grottoes in China, the Mogao Grottoes reflect the thousands years of history of Han Buddhism and its cultural changes.



Geomorphologic Features

The Mogao Grottoes are located in the south of the Dunhuang area, the edge of the Dunhuang Basin on the eastern foot of Singing-Sand Mountain. The mountain is composed of Jiuquan gravel deposit layers that date back to the beginning of the Quaternary period. The eastern foot of the mountain is a cliff formed by a river that is also from that period. The Jiuquan gravel can be divided in two layers. All of the Mogao caves are built in the basic layer's cliff, which is gray and mainly made of limestone and granite; there are also a few parts of quartz and scraps of other rock types. Most of the gravel could easily be used for cementing; the effect is seamless and solid (Editorial Committee on the Dunhuang Municipal Records 1994: 77), fit for carving the grottos (Fig. 2.56). However, due to the thinness of the topmost layer, the surface of the weathered rock is loose. This is different from the well-known Yungang and Longmen Grottoes in the *Zhongyuan* region. The Mogao Grottoes use frescos and painted statues (Xiao 2003), and their outer cliff surface is covered with a cob to prevent the efflorescing process.



Fig. 2.56 Partial view of the Mogao Grottoes. The Mogao Grottoes were built on a cliff: gray and mainly made of limestone as the first layer and granite as the second layer. *Source* Photograph by Fang Wang

Climatic Features

The Dunhuang area is located in the inland of China and is bounded by Gobi desert. The continentality is 69.2 %, indicative of a typical continental desert climate, which features strong sun radiation, abundant sunlight, little rain, a high evaporation rate and strong winds (Editorial Committee on the Dunhuang Municipal Records 1994: 82). Currently, the greatest threat to the Mogao Grottoes is sand blowing from Singing-Sand Mountain. The Mogao is located in a cliff at the west bank of the Daquan River. On the top of the grottoes is a sand hill, the eastern side of Singing-Sand Mountain. The mountain's relative height is 170 m, indicating that it is a combination of a sand hill upon bedrock. Therefore, the Mogao Grottoes were being severely harmed by the sand and wind; the earliest threat dates back to the Five Dynasties period (907–960). By the 1940s, a large part of the basement of the Mogao Grottoes had been buried entirely in sand (Qu et al. 1996).

Vegetation Features

Due to the draught, intense sunlight and heavy winds, the Singing-Sand Mountain area is a semi-desert environment. The vegetation is mainly made up of sparsely distributed conqueror, *Haloxylon*, *Calligonum*, and *Ephedra* and some *Compositae*. The vegetation in the area lacks variation and is sparse and short (Editorial Committee on the Dunhuang Municipal Records 1994: 99). Nevertheless, the Daquan River meanders through the eastern foot of Singing-Sand Mountain, which is the Mogao Grottoes area, in this way creating multiple small oases. Thus, this is the only place among the vast sea of sands that has green areas. The area is also good for excavating grottoes and practicing Chan.

Cultural Features

The Hexi Corridor²² was an important transit connection between the *Zhongyuan* and Serindia regions and also an important stop on the Silk Road. Buddhism was

²²**Hexi Corridor** is a historical route in northwest China that lies to the west of the Yellow River. It was the main access point from ancient *Zhongyuan* (lit. the Central Plain region in China) to Central Asia and West Asia for trade and military.

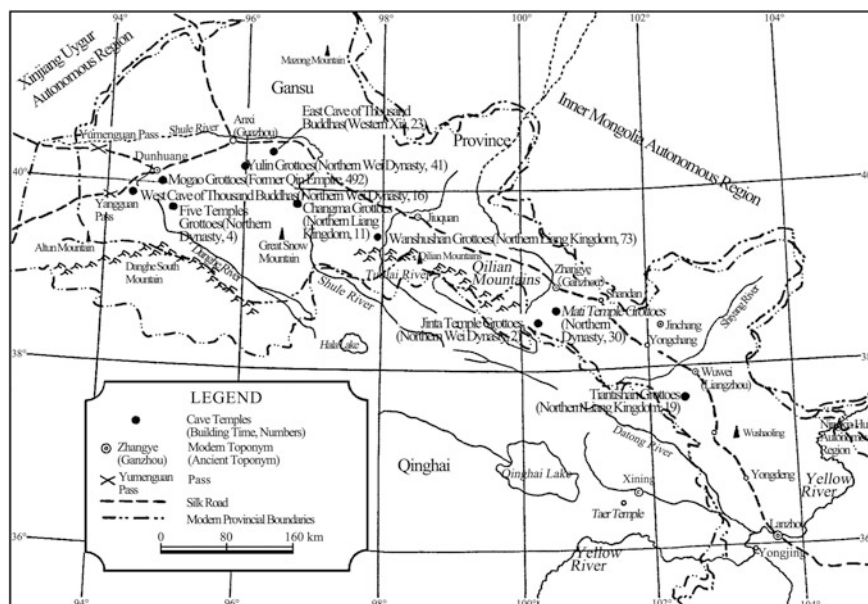


Fig. 2.57 Schematic diagram of grottoes in the Hexi Corridor, in northwestern Gansu Province to the west of the Yellow River. The Hexi Corridor was an important transit connection between the *Zhongyuan* and *Serindia* regions, and it was also an important stop on the Silk Road. Buddhism was widespread here, and the area has the most number of grottoes in China. *Source* Jie (2008: 115)

widespread here, and the area has the most number of grottoes in China (Fig. 2.57). As part of the representative grottoes, the Mogao Grottoes are also one of the largest groups of grottoes in China. It includes Northern Buddhism as well as Taoism, Tantrism and Tibetan Buddhism. In addition to the Buddhist lection, the Grotto also has the Taoist one. The Dunhuang's fresco—"Flying Apsaras"—can be seen in the Taoist concept of "*fei sheng*" (lit. "fly up to heaven"). The fresco also contains Fuxi (a legendary Chinese ruler from the great antiquity), Nvwa (a legendary Chinese goddess who created human beings and patched the holes in the sky with stone blocks), Dongwanggong (a mythological Chinese figure who is the king of the Eastern Paradise) and Xiwangmu (a Chinese mythological figure who is the queen of the Western Paradise). All of these are characters from the Taoist tradition. Therefore, the Buddhist culture of the Mogao Grottoes was deeply influenced by Chinese Taoism, whereas some of the references are directly from Taoism (Hu 1988). The Tubo Kingdom ruled Dunhuang in the transition from the eighth to the ninth centuries, and the rulers at the time practiced Buddhism because Tantra Buddhism had spread from India and become prevalent in Tubo. Dunhuang was strongly affected by the Tubo; not only did a number of Tantrism lections in Chinese and ancient Tibetan texts remain in the Dunhuang caves, but in the grottoes, there are also many other Tantrism relics (Zhao 2007). By the time of the Western Xia and Mongolia Yuan Dynasties (from the 11th century to

Fig. 2.58 The riverbed of the Daquan River in front of the Mogao Grottoes. Because of the Daquan River’s irrigation, there is a little piece of oasis near the Mogao Grottoes, making it a good place for excavating caves and for monks to practice their religion. *Source* Photograph by Fang Wang



approximately the 14th century), Tibetan Buddhism was also introduced from Tibet; until now, the Mogao Grottoes remain the earliest Chinese Tibetan Buddhism frescos.

The Hexi Corridor refers to the narrow mountain valley between Qilian Mountain in the north edge of the Tibetan Plateau and Mazong Mountain in the Mongolian Plateau. The melted ice and snow on Qilian Mountain flow down from the foot of the mountain to nourish a string of desert oases (Fig. 2.58), becoming an important transit corridor and means of cultural communication. The Hexi Corridor thus cultivated the largest-scale Chinese grotto groups (Jie 2008). Dunhuang is in the west in the oasis of the Hexi Corridor. Farther west is the entry to the Taklimakan Desert, an important frontier and trading town in the Serindia region. In the late third century, Dunhuang had temples and specified translators for Buddhist lectures. Many people also went to Serindia and India to study and to bring lectures to China. Therefore, Dunhuang became the center of Han Buddhism (Wang 2000).

Extended Reading: Dunhuang and the Silk Road

The Silk Road was a connection road that accommodated international trade in ancient China. It began at Chang’an (now Xi’an City, Shaanxi Province) and passed through the Hexi Corridor, Sinkiang, Central Asia, West Asia, as well as through nations around the Mediterranean Sea. The most famous road was the one built by the Western Han Dynasty (202 BC–8 AD) diplomat Zhang Qian, who attempted to reach Serindia. This road began at Chang’an City and is called “the Northwestern Silk Road” (different from the

Southwestern Silk Road and the Maritime Silk Road). Because, at the time, silk was the most important freight traded on the road, people named the path “the Silk Road” (Luo 2000). The major road sections were chosen in the Han Dynasty (202 BC–220 AD), including the south line, middle line and the north line, as well as the east, central and western sections. The east section had three different routes from the Chang’an that converged in Gansu, passing through the Zhangye, Jiuquan and Guazhou to Dunhuang. The middle section had north and south lines, from the Dunhuang to the Congling Mountain ranges (now Pamir) or to Talas (now Dzhambul in Kazakhstan). The western section extends from the Congling Mountain range (or Talas) to Rome. Therefore, Dunhuang became the intersection of the north and south lines in the east and middle sections.

There are a number of special geographic conditions that allowed Dunhuang to become the Chinese intersection of the Silk Road. To its north are the Mazong Mountain range and the Mongolian Gobi Desert. These are nomadic areas that lack water and herbage; this region is generally impassable for businessmen and tourists, and only large camel caravans can travel between Juyanhai Lake and Hami. The south is high and frigid due to its location at the Qilian Mountains and the Altyn Mountains. Farther south is the windy and cold north corner of the Qaidam Basin. Except for nomads, the average trader is not able to trespass the area. Therefore, only the Dunhuang’s oasis area has not only the Shule and Dang Rivers but also water springs in Nanshan Mountain. Surrounded by the endless desert, the field is crisscrossed by paths, located amongst lush trees and thus called “the Peach Blossom Land²³”. Dunhuang also became an internationally renowned city on the Silk Road, connecting the East and the West (Xian 1980). The Dunhuang Grottoes, which contain the Mogao Grottoes, the Yulin Grottoes and the West Thousand Buddhist Caves, proof of the Eastern and Western economic and cultural exchange via the Silk Road.

The Mogao Grottoes have five floors (Fig. 2.59), and they are built on one side of the 30–40-m-high cliff (Figs. 2.60 and 2.61), which is 1,600 m in length (Fig. 2.62). The grottoes were founded in the second Jianyuan year (366) of the former Qin Kingdom during the Sixteen States period (304–589). The earliest cave

²³**Peach Blossom Land** (Mandarin: *shi wai tao yuan*), a fictitious land of peace off the beaten path, first appeared in a well-known ancient Chinese essay, *Peach-Blossom Spring*, written by Tao Yuanming (approximately 365–427) during the Eastern Jin Dynasty (317–420). The name is often used to describe an unspoiled wilderness of great beauty away from the turmoil of the world.

Fig. 2.59 The Mogao Grottoes have five floors.
Source Photograph by Fang Wang



Fig. 2.60 Standing on the second floor of the corridor, one can clearly feel the vertical inclination of the cliff.
Source Photograph by Fang Wang



Fig. 2.61 Looking at the Mogao Grottoes from the side, one can see how the grottoes were built dependent on the cliff and how the main building—the Nine-story Building—was made to fit with the steep cliff. *Source* Photograph by Fang Wang



Fig. 2.62 The length of the Mogao Grottoes is approximately 1,600 m. *Source* Photograph by Fang Wang



was built in the Northern Wei Dynasty (386–534), and others were built in the time span of one thousand years, including the Western Wei (535–557), the Northern Zhou (557–581), the Sui (581–618), the Tang (618–907), the Five Dynasties (907–960), the Northern Song (960–1127), the Western Xia (1038–1227) and the Yuan (1271–1368) Dynasties. Currently, there are a total of 492 caves in the Mogao Grottoes that feature frescos and color statues (Figs. [2.63](#), [2.64](#) and [2.65](#)).

Fig. 2.63 The representative building of the Mogao Grottoes is the Nine-story Building, which is 45 m in height, depends on the cliff and sits on the middle of the Upper Temple grotto groups. *Source* Photograph by Fang Wang



Fig. 2.64 A side view of the Nine-story Building. In this building, there is a clay statue of the Maitreya Buddha sitting cross-legged. The statue was built in the Tang Dynasty. The Nine-story Building has been reconstructed a number of times. Initially, the building was only built to two floors, but it was later reconstructed in nine floors. In 1986, the Dunhuang Academy consolidated the building. *Source* Photograph by Fang Wang



Fig. 2.65 The side view of the nine-story building under the setting sun. *Source* Photograph by Fang Wang



The discovery and excavation of the Mogao Grottoes took a thousand years (Figs. 2.66 and 2.67); thus, the artistic expression of the frescos and Buddha statues has changed along with the different historical periods. From the splendid and

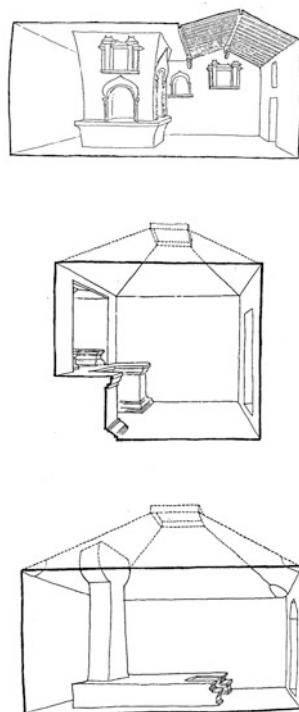
Fig. 2.66 A narrow staircase used in the construction shows the strenuous nature of the work. *Source* Photograph by Fang Wang



Fig. 2.67 Surface of the Jiuquan gravel cliff and its pasted cob in the Mogao Grottoes. Because the Jiuquan gravel is not sufficiently dense to make a stone for a Buddha, there are only murals and clay statues and past cob to prevent erosion of the wall surface. *Source* Photograph by Fang Wang



Fig. 2.68 (From *top to bottom*) Three grotto types are common in the Mogao Grottoes: the central pillar type, the inverted-bucket type and the back-screen type. Some of these belong to the Northern Dynasties, the Sui Dynasty, the Tang Dynasty, the Five Dynasties or the Song Dynasty. *Source* Xiao (2003: 297)



spectacular style in the Tang Dynasty to the simple expression in the Western Xia Kingdom and the prevalence of Tibetan Buddhism in the Yuan Dynasty, all reflected the historical changes in the Dunhuang's Buddhism. The layout of the Mogao Grottoes including the remained caves' eave patterns and the contents of the frescos also represent the different building features of every period. The grotto's main hall used central pillars in the Northern Dynasties period (386–581), and it became an inverted-bucket type during the Sui and Tang Dynasties, finally changing into the back-screen type during the Five Dynasties (907–960) and the Song Dynasty (960–1279) (Fig. 2.68). In the murals of the Dunhuang Grottoes, many different types of building constructions before the Tang and Song Dynasties that no longer exist today were depicted; the grottoes' eaves are also very similar to the buildings depicted in the murals (Xiao 2003). These frescos are very helpful for the study of Chinese architectural history.

Geographical Interpretation

Through a thousand years of washing out and erosion, the Dunhuang Mogao Grottoes demonstrate the historical changes from its prosperous era as a center along the Silk Road to the coexistence of Buddhism and Taoism against Islamism and, finally, to the period of artistic climax brought by Tibetan Buddhism. A thousand years of history have been recorded in the murals and caves of the Mogao Grottoes, where they tell us the story today.

References

- Bai, W. (2007). The trees and flowers in buddhism. *Relics and Museology*, (4), 70–73. (in Chinese).
- Chang, S. H. (1996). *Grotto arts in Sinkiang*. Beijing: China's Communist Party School Publishing house. (in Chinese).
- Chen, G. G. (1995). Religious culture in Sinkiang. *Sinkiang Sociality and Economy*, (3), 17–23. (in Chinese).
- Cheng, M. H. (2003). Random thoughts on the ancient Cliff House. *A Vast View on Publishing*, (1), 65–66. (in Chinese).
- Departments of Geography in Peking University, Nanjing University, Shanghai University, Lanzhou University, Hangzhou University, Northwest University and Sun Yat-sen University. (1978). *Geomorphology*. Beijing: People's Education Press. (in Chinese).
- Editorial Committee on the Dehong Autonomous Prefecture of Dai and Jingpo Nationalities Records. (1994). *Dehong autonomous prefecture of Dai and Jingpo Nationalities records* (comprehensive volume). Dehong: Dehong People's Publishing House. (in Chinese).
- Editorial Committee on the Dunhuang Municipal Records. (1994). *Dunhuang municipal records*. Beijing: Xinhua Publishing House. (in Chinese).
- Editorial Committee on the Lincang City Records. (2004). *Lincang city records (Vol. I): Politics*. Beijing: Beijing Yanshan Press. (in Chinese).
- Editorial Committee on the Luoyang Municipal Records. (1995). *Luoyang municipal records (Vol. XIV): Cultural relic records*. Zhengzhou: Zhongzhou Ancient Books Publishing House. (in Chinese).
- Editorial Committee on the Luoyang Municipal Records. (2000). *Luoyang municipal records (Vol. II): Administrative region division, natural environment and population records*. Zhengzhou: Zhongzhou Ancient Books Publishing House. (in Chinese).
- Editorial Committee on the Sanmenxia Municipal Records. (1997). *Sanmenxia municipal records (Vol. I)*. Zhengzhou: Zhongzhou Ancient Books Publishing House. (in Chinese).
- Editorial Committee on the Turpan Municipal Records. (2002). *Turpan municipal records*. Urumqi: Sinkiang People's Publishing House. (in Chinese).
- Editorial Committee on the Vegetation Maps, Chinese Academy of Sciences. (2007a). *Vegetation map of China and its geographic pattern: Illustration of the vegetation map of the People's Republic of China (1: 1,000,000)* (Vol. I). Beijing: Geological Publishing House. (in Chinese).
- Editorial Committee on the Vegetation Maps, Chinese Academy of Sciences. (2007b). *Vegetation map of China and its geographic pattern: Illustration of the vegetation map of the People's Republic of China (1: 1,000,000)* (Vol. II). Beijing: Geological Publishing House. (in Chinese).
- Editorial Committee on the Vegetation Maps, Chinese Academy of Sciences. (2007c). *Vegetation map of the People's Republic of China (1: 1,000,000)*. Beijing: Geological Publishing House. (in Chinese).
- Editorial Committee on the Xishuangbanna Autonomous Prefecture of Dai Nationality Records. (2002). *Xishuangbanna autonomous prefecture of Dai Nationality records* (Vol. I). Beijing: Xinhua Publishing House. (in Chinese).
- Editorial Committee on the Yanqing County Records. (2006). *Yanqing county records*. Beijing: Beijing Press. (in Chinese).
- Editorial Committee on the Yueqing Municipal Records. (2000). *Yueqing county records*. Beijing: Zhonghua Book Company. (in Chinese).
- Editorial Committee on the Yunnan Province Records. (1998). *Yunnan Province records (Vol. I): Geography records*. Kunming: Yunnan People's Publishing House. (in Chinese).
- Editorial Committee on the Yunnan Vegetation. (1987). *Yunnan vegetation*. Beijing: Science Press. (in Chinese).
- Editorial Committee Yunnan Province Records. (1995). *Yunnan Province records (Vol. II): Astronomy and climate records*. Kunming: Yunnan People's Publishing House. (in Chinese).

- Geng, S. M. (1978). The spread of Buddhism among ancient Sinkiang inhabitants, Turks and Uyghurs. *Journal of Sinkiang University (Philosophy, Humanities and Social Sciences Edition)*, (2), 69–76, 25. (in Chinese).
- Gong, D. Z. (2002). *The arts of Longmen Grottoes*. Beijing: People’s Fine Arts Publishing House. (in Chinese).
- Hu, E. H. (1988). Investigation on Taoism historical sites at the Mogao Grottoes in Dunhuang. *Religious Studies*, (1), 29–34. (in Chinese).
- Jiao, Y. L., & Zhang, Y. J. (2000). Plants and Buddhism. *Plants*, (2), 25–26. (in Chinese).
- Jie, Y. Q. (2008). *Historical and cultural geography study on Buddhism in Northwest China*. Beijing: People’s Publishing House. (in Chinese).
- Kunming Institute of Botany, Chinese academy of sciences. (1995). *Flora of Yunnan* (Vol. VI): *Spermatophyta*. Beijing: Science Press. (in Chinese).
- Li, T. Y. (1983). The historical origin of Buddhism’s decline and Islam’s rise in Sinkiang. *Social Sciences in Sinkiang*, (1), 105–117. (in Chinese).
- Li, F. (2010). Landscape design method of Yingzao transition space by constructing another cave and Sky in Classical Chinese Gardens. *Huazhong Architecture*, (4), 136–139. (in Chinese).
- Li, X. M. (2001). The Chinese ideal landscape model and landscape of temple. *Human Geography*, (1), 35–39. (in Chinese).
- Li, W. H. (2003). The past and future of the Loess civilization. *Tracing Ancestry (xun gen)*, (1), 4–9. (in Chinese).
- Li, X. W. (2009). Buddhist architecture of Dai people in Pu’er and its culture protection function. *Journal of Simao Teacher’s College*, 25(4), 65–67. (in Chinese).
- Li, W. N., & Fang, X. Q. (1983). *Geomorphology*. Beijing: Surveying and Mapping Press. (in Chinese).
- Liu, Y. (2006). *Ten lectures on classic ancient Chinese architecture*. Beijing: China Three Gorges Publishing House. (in Chinese).
- Liu, D. Y., & Guo, S. Q. (1998). Tree-embracing pagoda and agoda-embracing tree. *Yunnan Forestry*, 19(1), 24. (in Chinese).
- Lu, Y. D. (2003). *Chinese vernacular dwellings* (Vol. I). Guangzhou: South China University of Technology Press. (in Chinese).
- Lü, X. B., & Jiang, Z. Y. (1997). Research on tourism aesthetics characteristic of Yandang Mountain and its development. *Tourism Tribune*, (5), 52–54. (in Chinese).
- Luo, Y. S. (1995). The miraculous tree-embracing pagoda in Yunnan. *Hebei Forestry (Hebei lin ye)*, (4), 32. (in Chinese).
- Luo, E. H. (2000). The southwestern silk road in the Han and Jin dynasties. *Journal of Sichuan University (Humanities and Social Sciences Edition)*, (1), 84–105. (in Chinese).
- Na, G. S. (1996). The arts of Chinese Buddhist grottoes. *China Religion*, (3), 33–35.
- Ouyang, H. (2005). The exploration of cave-living culture in the mountain’s cliff along Hanjiang River. *Journal of Yunyang Teachers College*, 25(2), 16–18. (in Chinese).
- Pan, G. X. (2001). *History of Chinese architecture* (4th ed.). Beijing: China Architecture & Building Press. (in Chinese).
- Qu, J. J., Zhang, W. M., Peng, Q. L., Ling, Y. Q., Li, Y. H., & Wang, W. F. (1996). Discussion on some windy and dusty problems at Mogao Grottoes in Dunhuang. *Acta geographica Sinica*, 51 (5), 419–425. (in Chinese).
- Shang, Y. L. (2006). The notion of wonderland and the custom change of government officials in middle and late Tang Dynasty. *Journal of Southeast University (Philosophy and Social Science Edition)*, (3), 82–90. (in Chinese).
- Shen, L. (2008). On the Longmen Grottoes and the environment. *Sculpture*, (1), 52–54. (in Chinese).
- Tong, S. (2010). An archaeological exploration on the humanity of “Cave Man” settlement in South China. *Relics from South*, (2), 81–102. (in Chinese).
- Wang, Q. H. (1982). The wonderful view of tree-embracing pagoda in Western Yunnan. *Outlook Weekly*, (7), 41. (in Chinese).

- Wang, C. Y. (1998). A first visit to the Best Maze in China: The ancient Cliff House in Yanqing. *The Paper Collection of the 11th Symposium of Traditional Chinese Garden Committee of Architectural Heritage Society* (pp. 1–7). (in Chinese).
- Wang, S. Z. (1999). *Chinese vernacular architecture* (Vol. V). Nanjing: Jiangsu Science and Technology Press. (in Chinese).
- Wang, Y. (2000). Religious cultural geography of Dunhuang. *Journal of Arid Land Resources and Environment*, 14(2), 92–95. (in Chinese).
- Wang, J. S. (2001). The origin and development of the Grotto art of Buddhism. *World of Antiquity*, (5), 37–39. (in Chinese).
- Wu, Z. Q. (2007). *Dai nationality civilization on pattra leaves: Study on theravāda Buddhism society in Dehong, Yunnan*. Chengdu: Bashu Publishing House. (in Chinese).
- Xian, X. W. (1980). The silk road in the territory of Gansu Province. *Journal of Lanzhou University*, (2), 14–21. (in Chinese).
- Xiao, M. (2003). *Research on architecture in Dunhuang*. Beijing: China Machine Press. (in Chinese).
- Xin, K. J. (2004). Grotto architectural arts on the Silk Road. *Huazhong Architecture*, (2), 143–144. (in Chinese).
- Yang, J. C., & Li, Y. L. (2001). *Principles of geomorphology*. Beijing: Peking University Press. (in Chinese).
- Yu, K. J. (1998). *Landscape: Culture, ecology and perception*. Beijing: Science Press. (in Chinese).
- Zeng, X. H. (2003). *Longmen Grottoes in Luoyang*. Guangzhou: Guangdong Travel and Tourism Press. (in Chinese).
- Zhang, F. Y. (2000a). *Scenes and customs records in Dehong*. Kunming: Yunnan People's Publishing House. (in Chinese).
- Zhang, S. Q. (2000b). The 1000-year-old village: The ancient Cliff House. *Development of Small Cities and Towns*, (11), 74–75. (in Chinese).
- Zhang, N. Z. (2006). *Longmen Grottoes and Serindia civilization*. Zhengzhou: Zhongzhou Ancient Books Publishing House. (in Chinese).
- Zhang, Y. H. (2007). *Lecture on Chinese Buddhist temple architecture*. Beijing: Contemporary China Publishing House. (in Chinese).
- Zhao, X. X. (2007). *A study on Guhya-yana in Dunhuang during the Tubo occupation: (Dissertation for Master)*. Lanzhou: Lanzhou University. (in Chinese).

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