**Early walls :**

The Chinese were already familiar with the techniques of [wall-building](https://en.wikipedia.org/wiki/Wall) by the time of the [Spring and Autumn period](https://en.wikipedia.org/wiki/Spring_and_Autumn_period) between the 8th and 5th centuries BC.[[20]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-20) During this time and the subsequent [Warring States period](https://en.wikipedia.org/wiki/Warring_States_period), the states of [Qin](https://en.wikipedia.org/wiki/Qin_(state)), [Wei](https://en.wikipedia.org/wiki/Wei_(state)), [Zhao](https://en.wikipedia.org/wiki/Zhao_(state)), [Qi](https://en.wikipedia.org/wiki/Qi_(state)), [Han](https://en.wikipedia.org/wiki/Han_(state)), [Yan](https://en.wikipedia.org/wiki/Yan_(state)), and [Zhongshan](https://en.wikipedia.org/wiki/Zhongshan_(state))[[21]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-21)[[22]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-22) all constructed extensive fortifications to defend their own borders. Built to withstand the attack of small arms such as swords and spears, these walls were made mostly by stone or stamping earth and gravel between board frames.

King Zheng of [Qin](https://en.wikipedia.org/wiki/Qin_(state)) conquered the last of his opponents and unified China as the [First Emperor](https://en.wikipedia.org/wiki/First_Emperor) of the [Qin dynasty](https://en.wikipedia.org/wiki/Qin_dynasty) ("Qin Shi Huang") in 221 BC. Intending to impose centralized rule and prevent the resurgence of feudal lords, he ordered the destruction of the sections of the walls that divided his empire among the former states. To position the empire against the [Xiongnu](https://en.wikipedia.org/wiki/Xiongnu" \o "Xiongnu) people from the north, however, he ordered the building of new walls to connect the remaining fortifications along the empire's northern frontier. "Build and move on" was a central guiding principle in constructing the wall, implying that the Chinese were not erecting a permanently fixed border.[[23]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-23) Transporting the large quantity of materials required for construction was difficult, so builders always tried to use local resources. Stones from the mountains were used over mountain ranges, while [rammed earth](https://en.wikipedia.org/wiki/Rammed_earth) was used for construction in the plains. There are no surviving historical records indicating the exact length and course of the Qin walls. Most of the ancient walls have eroded away over the centuries, and very few sections remain today. The human cost of the construction is unknown, but it has been estimated by some authors that hundreds of thousands,[[24]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTESlavicekMitchellMatray200535-24) if not up to a million, workers died building the Qin wall.[[25]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEEvans20063-25)[[26]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-26)Later, the [Han](https://en.wikipedia.org/wiki/Han_Dynasty),[[27]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-mongolia-27) the [Northern Dynasties](https://en.wikipedia.org/wiki/Northern_Dynasties) and the [Sui](https://en.wikipedia.org/wiki/Sui_Dynasty) all repaired, rebuilt, or expanded sections of the Great Wall at great cost to defend themselves against northern invaders.[[28]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1983653-28) The [Tang](https://en.wikipedia.org/wiki/Tang_Dynasty) and [Song](https://en.wikipedia.org/wiki/Song_Dynasty) dynasties did not undertake any significant effort in the region.[[28]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1983653-28) Non-Han dynasties also built their border walls: the [Xianbei](https://en.wikipedia.org/wiki/Xianbei" \o "Xianbei)-ruled [Northern Wei](https://en.wikipedia.org/wiki/Northern_Wei), the [Khitan](https://en.wikipedia.org/wiki/Khitan_people" \o "Khitan people)-ruled [Liao](https://en.wikipedia.org/wiki/Liao_dynasty), [Jurchen](https://en.wikipedia.org/wiki/Jurchen_people) [Jin](https://en.wikipedia.org/wiki/Jin_dynasty_(1115%E2%80%931234)" \o "Jin dynasty (1115–1234)) and the [Tangut](https://en.wikipedia.org/wiki/Tangut_people)-established [Western Xia](https://en.wikipedia.org/wiki/Western_Xia), who ruled vast territories over Northern China throughout centuries, all constructed defensive walls but those were located much to the north of the other Great Walls as we know it, within China's province of [Inner Mongolia](https://en.wikipedia.org/wiki/Inner_Mongolia) and in [Mongolia](https://en.wikipedia.org/wiki/Mongolia) itself.[[29]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1983654Haw200652%E2%80%9354-29)

**Ming era**

*Main article:*[*Ming Great Wall*](https://en.wikipedia.org/wiki/Ming_Great_Wall) *:*

The Great Wall concept was revived again under the [Ming](https://en.wikipedia.org/wiki/Ming_Dynasty) in the 14th century,[[30]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEKarnow2008192-30) and following the Ming army's defeat by the [Oirats](https://en.wikipedia.org/wiki/Oirats" \o "Oirats) in the [Battle of Tumu](https://en.wikipedia.org/wiki/Battle_of_Tumu). The Ming had failed to gain a clear upper hand over the [Mongolian](https://en.wikipedia.org/wiki/Mongol) tribes after successive battles, and the long-drawn conflict was taking a toll on the empire. The Ming adopted a new strategy to keep the nomadic tribes out by constructing walls along the northern border of China. Acknowledging the Mongol control established in the [Ordos Desert](https://en.wikipedia.org/wiki/Ordos_Desert), the wall followed the desert's southern edge instead of incorporating the bend of the [Yellow River](https://en.wikipedia.org/wiki/Yellow_River).

Unlike the earlier fortifications, the Ming construction was stronger and more elaborate due to the use of bricks and stone instead of rammed earth. Up to 25,000 watchtowers are estimated to have been constructed on the wall.[[31]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTESzab%C3%B3D%C3%A1vidLoczy2010220-31) As [Mongol raids](https://en.wikipedia.org/wiki/Mongol_invasions) continued periodically over the years, the Ming devoted considerable resources to repair and reinforce the walls. Sections near the Ming capital of Beijing were especially strong.[[32]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEEvans2006177-32) [Qi Jiguang](https://en.wikipedia.org/wiki/Qi_Jiguang) between 1567 and 1570 also repaired and reinforced the wall, faced sections of the ram-earth wall with bricks and constructed 1,200 watchtowers from Shanhaiguan Pass to Changping to warn of approaching Mongol raiders.[[33]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-33) During the 1440s–1460s, the Ming also built a so-called "Liaodong Wall". Similar in function to the Great Wall (whose extension, in a sense, it was), but more basic in construction, the Liaodong Wall enclosed the agricultural heartland of the [Liaodong](https://en.wikipedia.org/wiki/Liaodong) province, protecting it against potential incursions by Jurched-Mongol Oriyanghan from the northwest and the [Jianzhou Jurchens](https://en.wikipedia.org/wiki/Jianzhou_Jurchens" \o "Jianzhou Jurchens) from the north. While stones and tiles were used in some parts of the Liaodong Wall, most of it was in fact simply an earth dike with moats on both sides.[[34]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEEdmonds198538%E2%80%9340-34)

Towards the end of the Ming, the Great Wall helped defend the empire against the [Manchu](https://en.wikipedia.org/wiki/Manchu) invasions that began around 1600. Even after the loss of all of [Liaodong](https://en.wikipedia.org/wiki/Liaoning), the Ming army held the heavily fortified [Shanhai Pass](https://en.wikipedia.org/wiki/Shanhai_Pass" \o "Shanhai Pass), preventing the Manchus from conquering the Chinese heartland. The Manchus were finally able to cross the Great Wall in 1644, after Beijing had already fallen to [Li Zicheng](https://en.wikipedia.org/wiki/Li_Zicheng)'s rebels. Before this time, the Manchus had crossed the Great Wall multiple times to raid, but this time it was for conquest. The gates at Shanhai Pass were opened on May 25 by the commanding Ming general, [Wu Sangui](https://en.wikipedia.org/wiki/Wu_Sangui), who formed an alliance with the Manchus, hoping to use the Manchus to expel the rebels from Beijing.[[35]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTELovell2006254-35) The Manchus quickly seized Beijing, and eventually defeated both the rebel-founded [Shun dynasty](https://en.wikipedia.org/wiki/Shun_dynasty)and the [remaining Ming resistance](https://en.wikipedia.org/wiki/Southern_Ming_dynasty), establishing the [Qing dynasty](https://en.wikipedia.org/wiki/Qing_dynasty) rule over all of China.[[36]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEElliott20011%E2%80%932-36)

Under Qing rule, China's borders extended beyond the walls and [Mongolia was annexed](https://en.wikipedia.org/wiki/Dzungar%E2%80%93Qing_Wars) into the empire, so constructions on the Great Wall were discontinued. On the other hand, the so-called [Willow Palisade](https://en.wikipedia.org/wiki/Willow_Palisade), following a line similar to that of the Ming Liaodong Wall, was constructed by the Qing rulers in Manchuria. Its purpose, however, was not defense but rather to prevent Han Chinese migration into Manchuria.[[37]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-37)

**Foreign accounts :**

None of the [Europeans](https://en.wikipedia.org/wiki/Europeans_in_Medieval_China) who visited [Yuan](https://en.wikipedia.org/wiki/Yuan_dynasty) China or Mongolia, such as [Marco Polo](https://en.wikipedia.org/wiki/Marco_Polo), [Giovanni da Pian del Carpine](https://en.wikipedia.org/wiki/Giovanni_da_Pian_del_Carpine), [William of Rubruck](https://en.wikipedia.org/wiki/William_of_Rubruck), [Giovanni de' Marignolli](https://en.wikipedia.org/wiki/Giovanni_de%27_Marignolli) and [Odoric of Pordenone](https://en.wikipedia.org/wiki/Odoric_of_Pordenone" \o "Odoric of Pordenone), mentioned the Great Wall.[[39]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-39)[[40]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEHaw200653%E2%80%9354-40)

The North African traveler [Ibn Battuta](https://en.wikipedia.org/wiki/Ibn_Battuta), who also visited China during the [Yuan dynasty](https://en.wikipedia.org/wiki/Yuan_dynasty) c. 1346, had heard about China's Great Wall, possibly before he had arrived in China.[[41]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEHaw200654%E2%80%9355-41) He wrote that the wall is "sixty days' travel" from Zeitun (modern [Quanzhou](https://en.wikipedia.org/wiki/Quanzhou)) in his travelogue [*Gift to Those Who Contemplate the Wonders of Cities and the Marvels of Travelling*](https://en.wikipedia.org/wiki/Rihla). He associated it with the [legend of the wall](https://en.wikipedia.org/wiki/Gates_of_Alexander) mentioned in the [Qur'an](https://en.wikipedia.org/wiki/Qur%27an),[[42]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-42) which [Dhul-Qarnayn](https://en.wikipedia.org/wiki/Dhul-Qarnayn) (commonly associated with [Alexander the Great](https://en.wikipedia.org/wiki/Alexander_the_Great)) was said to have erected to protect people near the land of the rising sun from the savages of [Gog and Magog](https://en.wikipedia.org/wiki/Gog_and_Magog). However, Ibn Battuta could find no one who had either seen it or knew of anyone who had seen it, suggesting that although there were remnants of the wall at that time, they were not significant.[[43]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEHaw200653%E2%80%9355-43)

Soon after Europeans reached Ming China by ship in the early 16th century, accounts of the Great Wall started to circulate in Europe, even though no European was to see it for another century. Possibly one of the earliest European descriptions of the wall and of its significance for the defense of the country against the "[Tartars](https://en.wikipedia.org/wiki/Tartars)" (i.e. Mongols) may be the one contained in [João de Barros](https://en.wikipedia.org/wiki/Jo%C3%A3o_de_Barros)'s 1563 *Asia*.[[44]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-44) Other early accounts in Western sources include those of [Gaspar da Cruz](https://en.wikipedia.org/wiki/Gaspar_da_Cruz), [Bento de Goes](https://en.wikipedia.org/wiki/Bento_de_Goes), [Matteo Ricci](https://en.wikipedia.org/wiki/Matteo_Ricci), and Bishop [Juan González de Mendoza](https://en.wikipedia.org/wiki/Juan_Gonz%C3%A1lez_de_Mendoza).[[45]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1990204%E2%80%9305-45) In 1559, in his work "A Treatise of China and the Adjoyning Regions", Gaspar da Cruz offers an early discussion of the Great Wall.[[45]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1990204%E2%80%9305-45) Perhaps the first recorded instance of a European actually entering China via the Great Wall came in 1605, when the Portuguese Jesuit brother [Bento de Góis](https://en.wikipedia.org/wiki/Bento_de_G%C3%B3is) reached the northwestern [Jiayu Pass](https://en.wikipedia.org/wiki/Jiayu_Pass" \o "Jiayu Pass) from India.[[46]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEYule1866579-46) Early European accounts were mostly modest and empirical, closely mirroring contemporary Chinese understanding of the Wall,[[47]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron19902%E2%80%934-47) although later they slid into hyperbole,[[48]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1990206-48) including the erroneous but ubiquitous claim that the Ming Walls were the same ones that were built by the First Emperor in the 3rd century BC.[[48]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1990206-48)

When China opened its borders to foreign merchants and visitors after its defeat in the [First](https://en.wikipedia.org/wiki/First_Opium_War) and [Second Opium Wars](https://en.wikipedia.org/wiki/Second_Opium_War), the Great Wall became a main attraction for tourists. The [travelogues](https://en.wikipedia.org/wiki/Travelogue_(literature)) of the later 19th century further enhanced the reputation and the mythology of the Great Wall.[[49]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEWaldron1990209-49)

Course :

A formal definition of what constitutes a "Great Wall" has not been agreed upon, making the full course of the Great Wall difficult to describe in its entirety.[[50]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEHessler200760-50) The defensive lines contain multiple stretches of ramparts, trenches and ditches, as well as individual fortresses.

**Han Great Wall**

Han fortifications starts from [Yumen Pass](https://en.wikipedia.org/wiki/Yumen_Pass" \o "Yumen Pass) and [Yang Pass](https://en.wikipedia.org/wiki/Yang_Pass), southwest of Dunhuang, in [Gansu](https://en.wikipedia.org/wiki/Gansu) province. Ruins of the remotest Han border posts are found in Mamitu ("Horse lose its way") near Yumen Pass.

**Ming Great Wall**

The [Jiayu Pass](https://en.wikipedia.org/wiki/Jiayuguan_(pass)" \o "Jiayuguan (pass)), located in Gansu province, is the western terminus of the Ming Great Wall. From Jiayu Pass the wall travels discontinuously down the [Hexi Corridor](https://en.wikipedia.org/wiki/Hexi_Corridor)and into the deserts of [Ningxia](https://en.wikipedia.org/wiki/Ningxia), where it enters the western edge of the Yellow River loop at [Yinchuan](https://en.wikipedia.org/wiki/Yinchuan). Here the first major walls erected during the Ming dynasty cut through the [Ordos Desert](https://en.wikipedia.org/wiki/Ordos_Desert) to the eastern edge of the Yellow River loop. There at Piantou Pass ([t](https://en.wikipedia.org/wiki/Traditional_characters) [偏](https://en.wiktionary.org/wiki/%E5%81%8F)[頭](https://en.wiktionary.org/wiki/%E9%A0%AD)[關](https://en.wiktionary.org/wiki/%E9%97%9C), [s](https://en.wikipedia.org/wiki/Simplified_characters) [偏](https://en.wiktionary.org/wiki/%E5%81%8F)[头](https://en.wiktionary.org/wiki/%E5%A4%B4)[关](https://en.wiktionary.org/wiki/%E5%85%B3), *Piāntóuguān*) in [Xinzhou](https://en.wikipedia.org/wiki/Xinzhou" \o "Xinzhou), [Shanxi](https://en.wikipedia.org/wiki/Shanxi) province, the Great Wall splits in two with the "Outer Great Wall" ([t](https://en.wikipedia.org/wiki/Traditional_characters) [外](https://en.wiktionary.org/wiki/%E5%A4%96)[長城](https://en.wiktionary.org/wiki/%E9%95%B7%E5%9F%8E), [s](https://en.wikipedia.org/wiki/Simplified_characters) [外](https://en.wiktionary.org/wiki/%E5%A4%96)[长城](https://en.wiktionary.org/wiki/%E9%95%BF%E5%9F%8E), *Wài Chǎngchéng*) extending along the Inner Mongolia border with Shanxi into [Hebei](https://en.wikipedia.org/wiki/Hebei) province, and the "inner Great Wall" ([t](https://en.wikipedia.org/wiki/Traditional_characters) [內](https://en.wiktionary.org/wiki/%E5%85%A7)[長城](https://en.wiktionary.org/wiki/%E9%95%B7%E5%9F%8E), [s](https://en.wikipedia.org/wiki/Simplified_characters) [內](https://en.wiktionary.org/wiki/%E5%85%A7)[长城](https://en.wiktionary.org/wiki/%E9%95%BF%E5%9F%8E), *Nèi Chǎngchéng*) running southeast from Piantou Pass for some 400 km (250 mi), passing through important passes like the [Pingxing Pass](https://en.wikipedia.org/wiki/Pingxing_Pass" \o "Pingxing Pass) and [Yanmen Pass](https://en.wikipedia.org/wiki/Yanmen_Pass" \o "Yanmen Pass) before joining the Outer Great Wall at Sihaiye (四海冶, *Sìhǎiyě*), in Beijing's [Yanqing County](https://en.wikipedia.org/wiki/Yanqing_County).

The sections of the Great Wall around Beijing municipality are especially famous: they were frequently renovated and are regularly visited by tourists today. The [Badaling](https://en.wikipedia.org/wiki/Badaling) Great Wall near [Zhangjiakou](https://en.wikipedia.org/wiki/Zhangjiakou) is the most famous stretch of the Wall, for this is the first section to be opened to the public in the People's Republic of China, as well as the showpiece stretch for foreign dignitaries.[[51]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTERojas2010140-51) South of Badaling is the [Juyong Pass](https://en.wikipedia.org/wiki/Juyong_Pass" \o "Juyong Pass); when used by the Chinese to protect their land, this section of the wall had many guards to defend China's capital Beijing. Made of stone and bricks from the hills, this portion of the Great Wall is 7.8 m (25 ft 7 in) high and 5 m (16 ft 5 in) wide.

One of the most striking sections of the Ming Great Wall is where it climbs extremely steep slopes in [Jinshanling](https://en.wikipedia.org/wiki/Jinshanling" \o "Jinshanling). There it runs 11 km (7 mi) long, ranges from 5 to 8 m (16 ft 5 in to 26 ft 3 in) in height, and 6 m (19 ft 8 in) across the bottom, narrowing up to 5 m (16 ft 5 in) across the top. Wangjinglou ([t](https://en.wikipedia.org/wiki/Traditional_characters) [望](https://en.wiktionary.org/wiki/%E6%9C%9B)[京](https://en.wiktionary.org/wiki/%E4%BA%AC)[樓](https://en.wiktionary.org/wiki/%E6%A8%93), [s](https://en.wikipedia.org/wiki/Simplified_characters) [望](https://en.wiktionary.org/wiki/%E6%9C%9B)[京](https://en.wiktionary.org/wiki/%E4%BA%AC)[楼](https://en.wiktionary.org/wiki/%E6%A5%BC), *Wàngjīng Lóu*) is one of Jinshanling's 67 [watchtowers](https://en.wikipedia.org/wiki/Watchtowers), 980 m (3,220 ft) above sea level. Southeast of Jinshanling is the [Mutianyu](https://en.wikipedia.org/wiki/Mutianyu" \o "Mutianyu) Great Wall which winds along lofty, cragged mountains from the southeast to the northwest for 2.25 km (1.40 mi). It is connected with Juyongguan Pass to the west and Gubeikou to the east. This section was one of the first to be renovated following the turmoil of the [Cultural Revolution](https://en.wikipedia.org/wiki/Cultural_Revolution).[[52]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTELindesay2008212-52)

At the edge of the Bohai Gulf is Shanhai Pass, considered the traditional end of the Great Wall and the "First Pass [Under Heaven](https://en.wikipedia.org/wiki/Tianxia)". The part of the wall inside Shanhai Pass that meets the sea is named the "Old Dragon Head". 3 km (2 mi) north of Shanhai Pass is Jiaoshan Great Wall (焦山長城), the site of the first mountain of the Great Wall.[[53]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-53) 15 km (9 mi) northeast from Shanhaiguan is Jiumenkou ([t](https://en.wikipedia.org/wiki/Traditional_characters) [九](https://en.wiktionary.org/wiki/%E4%B9%9D)[門口](https://en.wiktionary.org/wiki/%E9%96%80%E5%8F%A3), [s](https://en.wikipedia.org/wiki/Simplified_characters) [九](https://en.wiktionary.org/wiki/%E4%B9%9D)[门口](https://en.wiktionary.org/wiki/%E9%97%A8%E5%8F%A3), *Jiǔménkǒu*), which is the only portion of the wall that was built as a bridge.

Beyond Jiumenkou, an offshoot known as the Liaodong Wall continues through [Liaoning](https://en.wikipedia.org/wiki/Liaoning) province. This wall reportedly terminates at the [Hushan Great Wall](https://en.wikipedia.org/wiki/Hushan_Great_Wall" \o "Hushan Great Wall), in the city of [Dandong](https://en.wikipedia.org/wiki/Dandong) near the [North Korean border](https://en.wikipedia.org/wiki/China%E2%80%93North_Korea_border).[[54]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-54) However this is contested by Korean academia.

In 2009, 180 km of previously unknown sections of the Ming wall concealed by hills, trenches and rivers were discovered with the help of infrared range finders and [GPS](https://en.wikipedia.org/wiki/GPS) devices.[[55]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-55) In March and April 2015, nine sections with a total length of more than 10 km (6 mi), believed to be part of the Great Wall, were discovered along the border of [Ningxia](https://en.wikipedia.org/wiki/Ningxia) autonomous region and Gansu province.[[56]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-56)

Characteristics :

Before the use of bricks, the Great Wall was mainly built from rammed earth, stones, and wood. During the Ming, however, bricks were heavily used in many areas of the wall, as were materials such as tiles, [lime](https://en.wikipedia.org/wiki/Lime_(mineral)), and stone. The size and weight of the bricks made them easier to work with than earth and stone, so construction quickened. Additionally, bricks could bear more weight and endure better than rammed earth. Stone can hold under its own weight better than brick, but is more difficult to use. Consequently, stones cut in rectangular shapes were used for the foundation, inner and outer [brims](https://en.wiktionary.org/wiki/brim), and gateways of the wall. [Battlements](https://en.wikipedia.org/wiki/Battlement) line the uppermost portion of the vast majority of the wall, with defensive gaps a little over 30 cm (12 in) tall, and about 23 cm (9.1 in) wide. From the parapets, guards could survey the surrounding land.[[57]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTETurnbull200729-57) Communication between the army units along the length of the Great Wall, including the ability to call reinforcements and warn [garrisons](https://en.wikipedia.org/wiki/Garrisons) of enemy movements, was of high importance. Signal towers were built upon hill tops or other high points along the wall for their visibility. Wooden gates could be used as a trap against those going through. Barracks, stables, and armories were built near the wall's inner surface.[[57]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTETurnbull200729-57)

Condition :

While portions north of Beijing and near tourist centers have been preserved and even extensively renovated, in many other locations the Wall is in disrepair. The wall sometimes provided a source of stones to build houses and roads.[[58]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-58) Sections of the Wall are also prone to [graffiti](https://en.wikipedia.org/wiki/Graffiti) and [vandalism](https://en.wikipedia.org/wiki/Vandalism), while inscribed bricks were pilfered and sold on the market for up to 50 [renminbi](https://en.wikipedia.org/wiki/Renminbi).[[59]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-30percent-59) Parts have been destroyed to make way of construction or mining.[[60]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-60) A 2012 report by the [National Cultural Heritage Administration](https://en.wikipedia.org/wiki/National_Cultural_Heritage_Administration) states that 22% of the Ming Great Wall has disappeared, while 1,961 km (1,219 mi) of wall have vanished.[[59]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-30percent-59) More than 60 km (37 mi) of the wall in [Gansu](https://en.wikipedia.org/wiki/Gansu) province may disappear in the next 20 years, due to erosion from [sandstorms](https://en.wikipedia.org/wiki/Dust_storm). In some places, the height of the wall has been reduced from more than 5 m (16 ft 5 in) to less than 2 m (6 ft 7 in). Various square lookout towers that characterize the most famous images of the wall have disappeared. Many western sections of the wall are [constructed from mud](https://en.wikipedia.org/wiki/Mudbrick), rather than brick and stone, and thus are more susceptible to erosion.[[61]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-61) In 2014 a portion of the wall near the border of Liaoning and Hebei province was repaired with concrete. The work has been much criticized.[[62]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-62)

Visibility from space

**From the Moon**

One of the earliest known references to the myth that the Great Wall can be seen from the [moon](https://en.wikipedia.org/wiki/Moon) appears in a letter written in 1754 by the English antiquary [William Stukeley](https://en.wikipedia.org/wiki/William_Stukeley). Stukeley wrote that, "This mighty wall [[Hadrian's wall](https://en.wikipedia.org/wiki/Hadrian%27s_wall)] of four score miles [130 km] in length is only exceeded by the Chinese Wall, which makes a considerable figure upon the [terrestrial globe](https://en.wikipedia.org/wiki/Terrestrial_globe), and may be discerned at the Moon."[[63]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-63) The claim was also mentioned by [Henry Norman](https://en.wikipedia.org/wiki/Sir_Henry_Norman,_1st_Baronet) in 1895 where he states "besides its age it enjoys the reputation of being the only work of human hands on the globe visible from the Moon."[[64]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-64) The issue of ["canals" on Mars](https://en.wikipedia.org/wiki/Martian_canal) was prominent in the late 19th century and may have led to the belief that long, thin objects were visible from space. The claim that the Great Wall is visible from the moon also appears in 1932's [*Ripley's Believe It or Not!*](https://en.wikipedia.org/wiki/Ripley%27s_Believe_It_or_Not!) strip.[[65]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-Ripley-65)

The claim that the Great Wall is visible from the moon has been debunked many times[[66]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-Debunked-66) (The apparent width of the Great Wall from the Moon would be the same as that of a human hair viewed from 3 km (2 mi) away[[67]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-FOOTNOTEL%C3%B3pez-Gil20083%E2%80%934-67)), but is still ingrained in popular culture.[[68]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-Times-68)

**From low Earth orbit :**

A more controversial question is whether the Wall is visible from [low Earth orbit](https://en.wikipedia.org/wiki/Low_Earth_orbit) (an altitude of as little as 160 km (100 mi)). [NASA](https://en.wikipedia.org/wiki/NASA) claims that it is barely visible, and only under nearly perfect conditions; it is no more conspicuous than many other man-made objects.[[69]](https://en.wikipedia.org/wiki/Great_Wall_of_China#cite_note-nasa-69)

Veteran U.S. astronaut [Gene Cernan](https://en.wikipedia.org/wiki/Eugene_Cernan) has stated: "At Earth orbit of 100 to 200 miles [160 to 320 km] high, the Great Wall of China is, indeed, visible to the naked eye." [Ed Lu](https://en.wikipedia.org/wiki/Ed_Lu), [Expedition 7](https://en.wikipedia.org/wiki/Expedition_7) Science Officer aboard the [International Space Station](https://en.wikipedia.org/wiki/International_Space_Station), adds that, "it's less visible than a lot of other objects. And you have to know where to look."

In October 2003, Chinese astronaut [Yang Liwei](https://en.wikipedia.org/wiki/Yang_Liwei) stated that he had not been able to see the Great Wall of China. In response, the [European Space Agency](https://en.wikipedia.org/wiki/European_Space_Agency) (ESA) issued a press release reporting that from an orbit between 160 and 320 km (100 and 200 mi), the Great Wall is visible to the naked eye.

[Leroy Chiao](https://en.wikipedia.org/wiki/Leroy_Chiao), a Chinese-American astronaut, took a photograph from the [International Space Station](https://en.wikipedia.org/wiki/International_Space_Station) that shows the wall. It was so indistinct that the photographer was not certain he had actually captured it. Based on the photograph, the [*China Daily*](https://en.wikipedia.org/wiki/China_Daily) later reported that the Great Wall can be seen from 'space' with the naked eye, under favorable viewing conditions, if one knows exactly where to look.