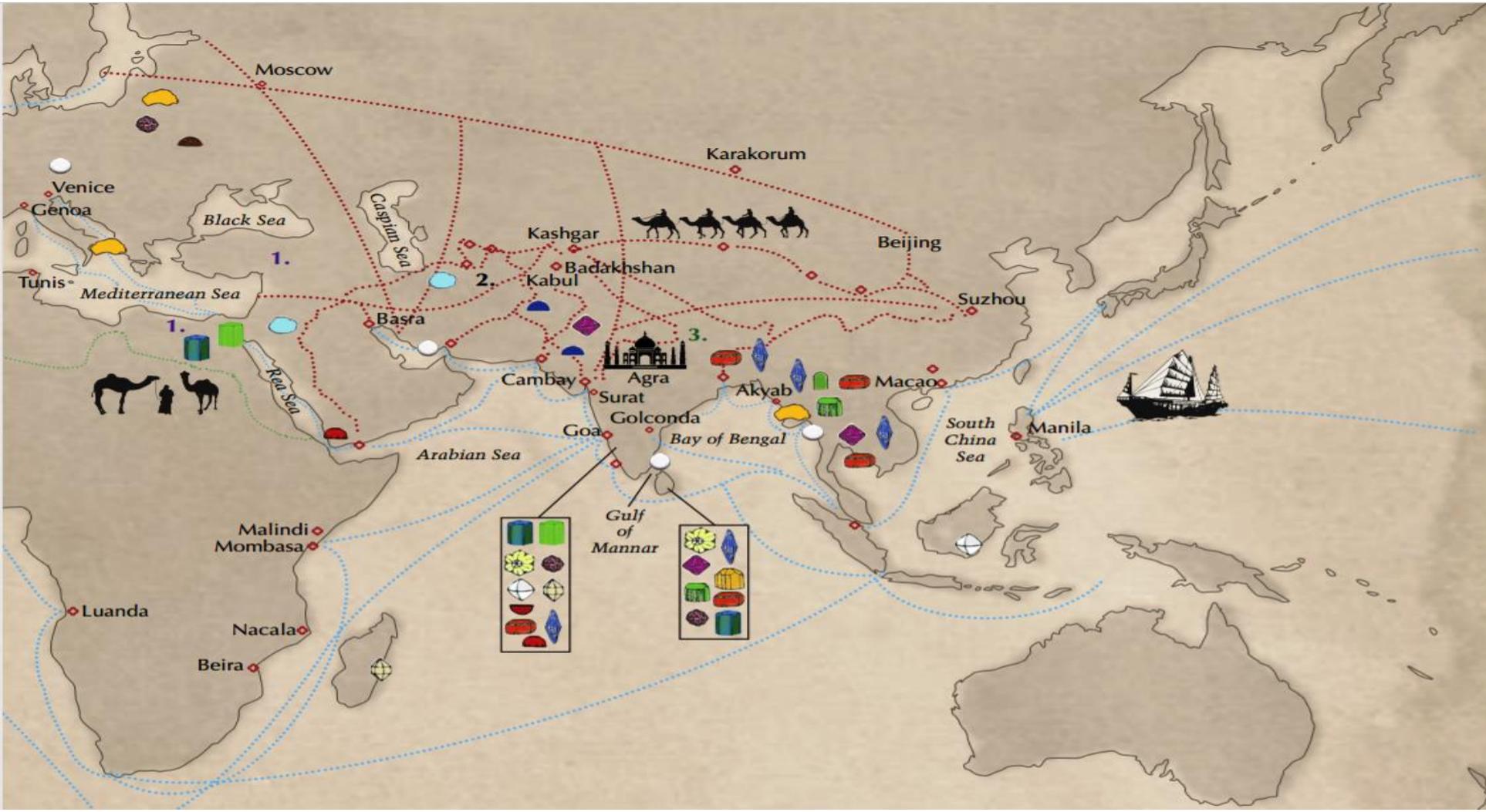


# Taj Mahal

An immense mausoleum of white marble, built in Agra between 1631 and 1648 by order of the Mughal emperor Shah Jahan in memory of his favourite wife, the Taj Mahal is the jewel of Muslim art in India and one of the universally admired masterpieces of the world's heritage.



**Agra**, an old heritage city on the bank of the river Yamuna, finds mention in the Epic Mahabharata as Agravan. Ptolemy, the famous 2nd Century Geographer, marked it as Agra on the World map. It is generally accepted that Sultan Sikandra Lodi, the Ruler of Delhi Sultanate founded it in the year 1504 AD but the golden age of the city began with Mughal rulers after 1526 AD. It was then known as Akbarabad and remained the capital of the Mughal Empire under Emperor Akbar, Jahangir and Shah Jahan, Agra's significance as a political center ended with the transfer of the capital to Delhi by Emperor Shah Jahan, but its architectural wealth has secured its place on the International map.



**Uttar Pradesh, Agra District**

**N27 10 27.012 E78 2 31.992**

**Date of Inscription: 1983**

**Criteria: (i)**

**Ref: 252**

Criterion (i): Taj Mahal represents the finest architectural and artistic achievement through perfect harmony and excellent craftsmanship in a whole range of Indo-Islamic sepulchral architecture. It is a masterpiece of architectural style in conception, treatment and execution and has unique aesthetic qualities in balance, symmetry and harmonious blending of various elements.

## **Brief synthesis**

The Taj Mahal is located on the right bank of the Yamuna River in a vast Mughal garden that encompasses nearly 17 hectares, in the Agra District in Uttar Pradesh. It was built by Mughal Emperor Shah Jahan in memory of his wife Mumtaz Mahal with construction starting in 1632 AD and completed in 1648 AD, with the mosque, the guest house and the main gateway on the south, the outer courtyard and its cloisters were added subsequently and completed in 1653 AD. The existence of several historical and Quaranic inscriptions in Arabic script have facilitated setting the chronology of Taj Mahal. For its construction, masons, stone-cutters, inlayers, carvers, painters, calligraphers, dome builders and other artisans were requisitioned from the whole of the empire and also from the Central Asia and Iran. Ustad-Ahmad Lahori was the main architect of the Taj Mahal.

The Taj Mahal is considered to be the greatest architectural achievement in the whole range of Indo-Islamic architecture. Its recognised architectonic beauty has a rhythmic combination of solids and voids, concave and convex and light shadow; such as arches and domes further increases the aesthetic aspect. The colour combination of lush green scape reddish pathway and blue sky over it show cases the monument in ever changing tints and moods. The relief work in marble and inlay with precious and semi precious stones make it a monument apart.

The uniqueness of Taj Mahal lies in some truly remarkable innovations carried out by the horticulture planners and architects of Shah Jahan. One such genius planning is the placing of tomb at one end of the quadripartite garden rather than in the exact centre, which added rich depth and perspective to the distant view of the monument. It is also, one of the best examples of raised tomb variety. The tomb is further raised on a square platform with the four sides of the octagonal base of the minarets extended beyond the square at the corners. The top of the platform is reached through a lateral flight of steps provided in the centre of the southern side. The ground plan of the Taj Mahal is in perfect balance of composition, the octagonal tomb chamber in the centre, encompassed by the portal halls and the four corner rooms. The plan is repeated on the upper floor. The exterior of the tomb is square in plan, with chamfered corners.

The large double storied domed chamber, which houses the cenotaphs of Mumtaz Mahal and Shah Jahan, is a perfect octagon in plan. The exquisite octagonal marble lattice screen encircling both cenotaphs is a piece of superb workmanship. It is highly polished and richly decorated with inlay work. The borders of the frames are inlaid with precious stones representing flowers executed with wonderful perfection. The hues and the shades of the stones used to make the leaves and the flowers appear almost real. The cenotaph of Mumtaz Mahal is in perfect centre of the tomb chamber, placed on a rectangular platform decorated with inlaid flower plant motifs. The cenotaph of Shah Jahan is greater than Mumtaz Mahal and installed more than thirty years later by the side of the latter on its west. The upper cenotaphs are only illusory and the real graves are in the lower tomb chamber (crypt), a practice adopted in the imperial Mughal tombs.

The four free-standing minarets at the corners of the platform added a hitherto unknown dimension to the Mughal architecture. The four minarets provide not only a kind of spatial reference to the monument but also give a three dimensional effect to the edifice.

The most impressive in the Taj Mahal complex next to the tomb, is the main gate which stands majestically in the centre of the southern wall of the forecourt. The gate is flanked on the north front by double arcade galleries. The garden in front of the galleries is subdivided into four quarters by two main walk-ways and each quarters in turn subdivided by the narrower cross-axial walkways, on the Timurid-Persian scheme of the walled in garden. The enclosure walls on the east and west have a pavilion at the centre.

The Taj Mahal is a perfect symmetrical planned building, with an emphasis of bilateral symmetry along a central axis on which the main features are placed. The building material used is brick-in-lime mortar veneered with red sandstone and marble and inlay work of precious/semi precious stones. The mosque and the guest house in the Taj Mahal complex are built of red sandstone in contrast to the marble tomb in the centre. Both the buildings have a large platform over the terrace at their front. Both the mosque and the guest house are the identical structures. They have an oblong massive prayer hall consist of three vaulted bays arranged in a row with central dominant portal. The frame of the portal arches and the spandrels are veneered in white marble. The spandrels are filled with flowery arabesques of stone intarsia and the arches bordered with rope molding.

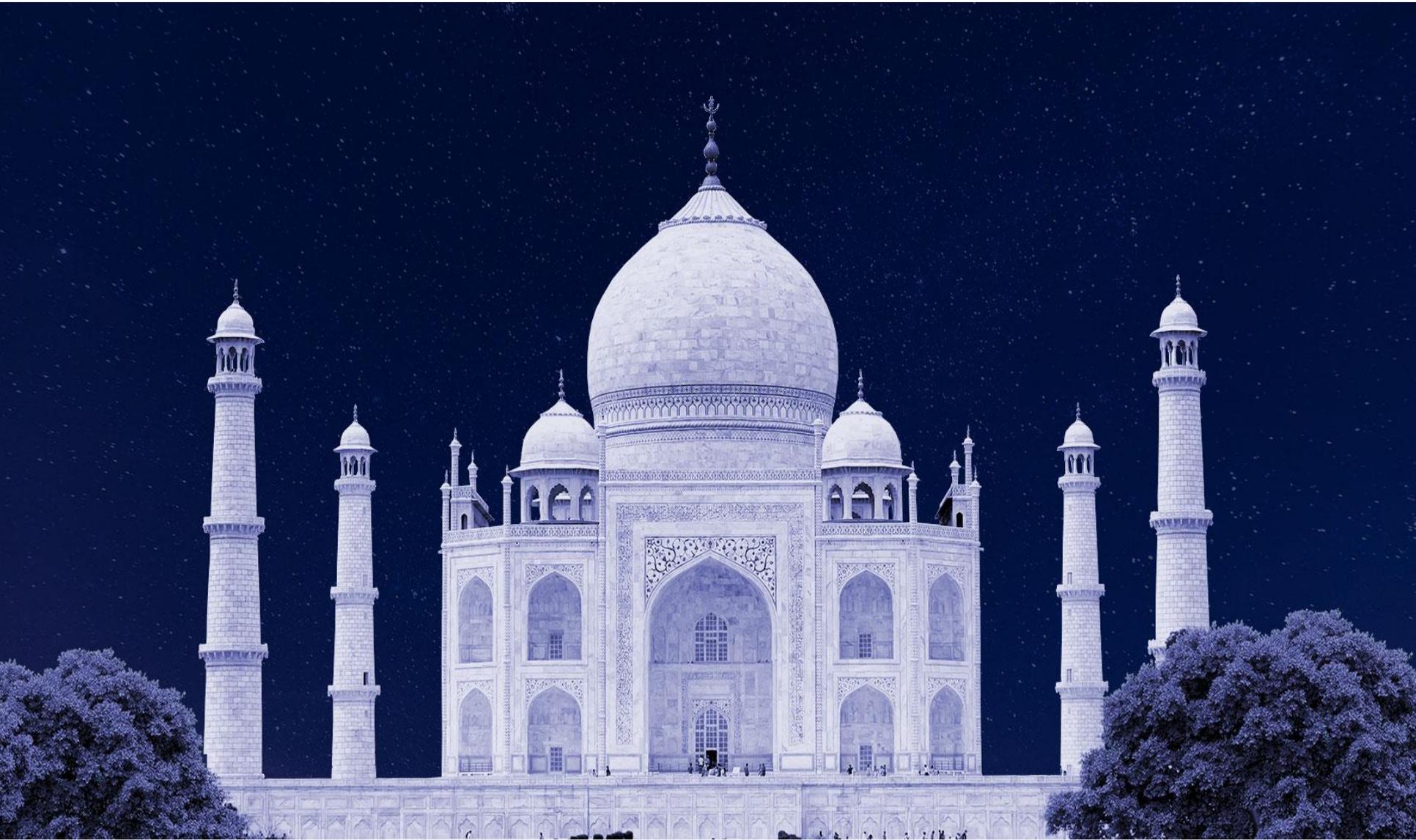
## **Integrity**

Integrity is maintained in the intactness of tomb, mosque, guest house, main gate and the whole Taj Mahal complex. The physical fabric is in good condition and structural stability, nature of foundation, verticality of the minarets and other constructional aspects of Taj Mahal have been studied and continue to be monitored. To control the impact of deterioration due for atmospheric pollutants, an air control monitoring station is installed to constantly monitor air quality and control decay factors as they arise. To ensure the protection of the setting, the adequate management and enforcement of regulations in the extended buffer zone is needed. In addition, future development for tourist facilities will need to ensure that the functional and visual integrity of the property is maintained, particularly in the relationship with the Agra Fort.

## **Authenticity**

The tomb, mosque, guest house, main gate and the overall Taj Mahal complex have maintained the conditions of authenticity at the time of inscription. Although an important amount of repairs and conservation works have been carried out right from the British period in India these have not compromised to the original qualities of the buildings. Future conservation work will need to follow guidelines that ensure that qualities such as form and design continue to be preserved.

# Lines by Gurudev Sri Rabindranath Tagore.....





DWTK



# William Hodge - The Taj Mahal



کشورستانی ظل سبحانی خلیفۃ الدعویۃ

اور پٹی نواب آصف خان وزیر کی اور پٹی

نواب اعتماد الدولہ کی اور احوال سکندریہ

اور صوفی حضرت پیر کبریا و ماورچھوری

اور نام کارگیران اور نام سنگھائی طرح طرح

اور قضا و مشاہیرہ کارگیران صنف منومہ

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

احوال خلاصہ منہ بانو بیگم مخاطب بہ ممتاز محل

عرف تاج بی بی امیہ شاہجہان بادشاہ غازی

کشور

آورده اند که شاه جهان باو شاه غاز

چهار <sup>۱</sup>پسروا <sup>۱</sup>شدند یکی و اراشکوه <sup>۲</sup>دوم

شاه شجاع <sup>۳</sup>سوم اوزنگ زری عالمگیر

<sup>۴</sup>چهارم مراد بخش و دیگر چهار ختران بودند <sup>۱</sup>یکی

انجمن آرای بیگم <sup>۲</sup>دوم گیتی آرای بیگم <sup>۳</sup>سوم

جهان آرای بیگم <sup>۴</sup>چهارم و صر آرای بیگم میگویند

ک

که قبل از تولد و بر آرای بیگم اندرون شکم

ممتاز محل نامیده بود و بجز او استماع نالیدن آن

بیگم صاحب از حیات نمود مایوس گشته

شاهنشاه را نزد خود خوانده در همین عالم

گریه و زاری میفرمودند <sup>۱</sup>بای در روز و <sup>۲</sup>الم

ایام و طبع و اقر آفت اعراب و <sup>۳</sup>پند

باورد و سراق اتفاق است امروزه

ای دیده جمال بایر و دیدگی بچند

خوبسار که لذت فراق است امروزه

مشهور است که چون فرزند در شکر نالد

والده اش زنده می نماند اکنون که نصیب

باشد از جفا فغانی به نرسد نگاه جادو

رعلت

رعلت می نمایم شاه گفت و شنیده

مارا عفو فرمایند و هر خطای که مرز شده باش

بخشش نماید عنقریب مسافر هستیم

چون شاه جهان باو شاه سمنهائی

اق با هم و کلامهای پر غم شنیدند

ناگهان به تعاضا بکس محبت و المغت از حد

# एक शहेनशहाने बनवाके हसी ताजमहल...

## सकाळ विशेष

दिनेश दीक्षित : सकाळ वृत्तसेवा

जळगाव ता. ६ : 'एक शहेनशहा ने बनवाके हसी ताजमहल, सारी दुनियाको मुहब्बत की निशानी दी है' जगाला प्रेमाचा संदेश देणारा ताजमहल आजही दिमाखात उभा आहे. जागतिक आश्चर्यात ज्याचा समावेश झालेला आहे, अशा ताजमहलबद्दल अजूनही तितकीच उत्सुकता जगभरात पाहायला मिळते.



ऐतिहासिक ताजमहल तयार करताना काय घडले, तो कसा तयार झाला, तेथे कोणी किती वेळ काम केले याबाबतचे तपशील या दुर्मिळ

ग्रंथातून समोर आले आहेत. सम्राज्ञी मुमताज (अरजमन्द बानू बेगम) महजलच्या मृत्यूनंतर अवघ्या साठ वर्षात

## मुमताज स्मृतिदिन

लिहून पूर्ण झालेला ग्रंथ आहे. 'ताज-ए-तारीख' नावाचा हा ग्रंथ इ.स.पूर्व १६९९ मध्ये लिहिला गेला आहे. मूळ फारसी भाषेत असलेला हा ग्रंथ असून त्यातील काही भागाचे भाषांतर उत्तर महाराष्ट्र विद्यापीठाच्या इतिहास विभागातील भुजंग बोबडे यांनी केले आहे.

७ जून १६३१ मध्ये बुधवारी रात्री साडेआठच्या सुमारास मुमताजचा मृत्यू झाला. बादशहा शहाजहानने मुमताजला दिलेल्या

वचनानुसार ताज-महल तयार करण्याची तयारी सुरू केली. देशभरातील कलावंतांकडून नमुने मागविण्यात आले. एका स्थानिक कलावंताने तयार केलेला नमुना बादशहाला पसंत पडला. सुरवातीला लाकडी स्वरूपात मकबरा तयार करण्यात आला. सम्राज्ञी मुमताजचा मृत्यू बऱ्हाणपूर येथे झाला. तिचा मृतदेह तापी नदीच्या काठावर असलेल्या जीनाबादच्या उद्यानात ठेवण्यात आला. सहा महिन्यांनंतर तो मृतदेह आग्याला पाठवण्यात आला.

पान २ वर ▶



ब-हाणपूर ते आग्रा या दरम्यान मृतदेह नेत असताना मोठ्या प्रमाणात दान करण्यात आले. आम्नात मिर्झाराजे जयसिंह यांच्या उद्यानात हा मृतदेह ठेवण्यात आला. तेथेच भारत, तुर्कस्तान, इराण येथील कुशल कारागिरांच्या मदतीने अद्वितीय ताजमहलचे निर्माण होऊ लागले.

या ठिकाणी ज्यांनी वेतन घेऊन काम केले, त्यांची नावे, केलेले काम आणि मासिक वेतन असे. मोहम्मद ईसा अफनदी (तुर्कस्तान-नकाशा-१०००), सत्तारखी (तुर्कस्तान-सुंदर अक्षर-१०००), मोहम्मद शरीफ (समरकन्द-चित्र काढणारा-१०००), मोहम्मद हनीफ (अकबराबाद-निरीक्षक-१०००), अमानत खान (शिराज-तुर्लिखक-१०००), चिरंजीलाल (दिल्ली-जोडकार्य करणारा-८००), बलदेवदास (मुल्तान-फूल तयार करणारा-६६०), मन्तूलाल (लाहोर-नक्षीकाम-६८०), अब्दुल गफ्फार (मुल्तान-शब्द कोरणारा-६००), आमीर अली (मुल्तान- फुलांची पाने तयार करणारा - ६००) या सारखे जवळपास ३७ प्रमुख कुशल कारागीर वेगवेगळ्या जबाबदाऱ्या घेऊन काम करत होते.

### मुमताबादची निर्मिती

१८ वर्ष सहा महिने दररोज २० हजार मजुरांनी येथे काम केले, मजूर जेथे राहत होते, तेथे तेव्हा छोटे शहरच विकसित झाले होते. त्या शहराला मुमताजाबाद असे नावच देण्यात आले होते, आता ते ताजगंज नावाने ओळखले जाते. या शहरात मुख्य कारागिरांच्या नावाने गल्ल्या देखील प्रसिद्ध झालेल्या आजही पहावयास मिळतात.

### बहुमूल्य वस्तूंचा नजराणा

ताजमहालच्या निर्माणासाठी देशभरातील राजांनी सोने-चांदी, हिरे माणिक, मोती अशी बहुमूल्य देणगी पाठवली होती. याशिवाय वेगवेगळ्या पद्धतीचे पाषाण, लाकूड आणि बहुमूल्य वस्तू देश-विदेशातून मागविण्यात आली होती. त्यात प्रामुख्याने पुढील गोष्टींचा समावेश आहे. वस्तूचे नाव-ठिकाण आणि संख्या या क्रमाने. टकीक (बगदाद-५४०), फिरोजा (तिब्बत - ६७०), लाजवर्द (लंका २४२), मुंसा (सुरत १०७५), पत्रा (ग्वालियर-५२), टबी (रुस ४२७), संगमरवर (जयपूर ६२), मणी (बदख्शान १४२), शंख (समुद्र ४४), मोती (५०), पुखराज (६७) आदी वस्तू आणण्यात आल्या.

### मोठा खर्च

शाही खजिन्यात संपत्ती भरपूर असताना देखील बादशहाने ३० गावांहून मिळणारे वार्षिक ३० लाख रुपये या खर्चासाठी नेमून दिले. शाही खजिन्यातून एक पैसा देखील घेतला नाही. ताजमहालच्या जवळच भवन आणि उद्यानाच्या निर्मितीसाठी जवळपास तीन कोटी रुपये खर्च झाले. मकबऱ्यासाठी १ कोटी, ८४ लाख ६५ हजार १६६ रुपये खर्च झाले, त्यात ८६ लाख, ९ हजार ७६० रुपये शहाजहानच्या व्यक्तिगत कोशातून खर्च झाले होते.

### चांदीच्या खिडक्या, सोन्याचा पडदा

ताजमहालचा दक्षिण दरवाजा ताजगंजच्या दिशेने तयार करण्यात आला. २११ फूट लांब आणि ८६ फूट रुंद आहे. या दरवाजावर १ लाख २७ हजार खर्च करून चांदीच्या खिडक्या बसवण्यात आल्या. ज्यात ११०० खिळे लावण्यात आले होते. त्या खिळ्यांच्या अग्रभागावर चांदीचे नाणे लावण्यात आले होते. नंतरच्या कालखंडात झालेल्या आक्रमणात हे दरवाजे काढण्यात आले. इंग्रजांच्या कालखंडात मिश्र धातूचा वापर करून साडेदहा फूट रुंद दरवाजे तयार करण्यात आले.

मुमताजच्या कबरीवर जाळीदार 'ताजपदी' बनविण्यात आला होता. त्यात सोन्याबरोबर मौल्यवान खड्यांचा वापर करण्यात आला होता. त्यासाठी जवळपास ६ लाख रुपये खर्च करण्यात आले होते. आता त्या जागेवर संगमरवरचा जाळीदार दरवाजा लावण्यात आला. सुंदर नक्षी आणि फुलांच्या जाळीने हा दरवाजा आकर्षित करण्यात आला आहे.

### मुख्य कबर

ताजमहालच्या मुमताज आणि शहाजहानच्या कबरी आहेत. त्यांच्या बरोबर खाली तळघरात मुख्य कबरी तयार करण्यात आल्या आहेत. साधारणता ६२ बाय २३ फूट या आकारात हे तळघर आहे. मुमताजच्या कबरीवर कोरले आहे, 'प्रत्येक मानव को एक न एक दिन मृत्यू का स्वाद लेना है, और जो कर्म तुम कर रहे हो, उसका पुरा बदला तुमसे मरने के दिन लिया जायेगा, संसार का जीवन तो अपघात की पुंजी है'. संगमर शहाजहाच्या कबरीवर कोरले आहे, 'परमेश्वर की कृपाओ को मत भूलो, वह समस्त पापी को क्षमा करत देता है'. पूर्वी मुख्य कबरीवर हिरे-मोती जडलेले होते, आता ते राहिलेले नाहीत. पूर्वी वर्षातून एकाच वेळी हे स्थान उघडले जात होते.

# Taj Mahal, Agra



# The Main Gateway (darwaza) to the Taj Mahal



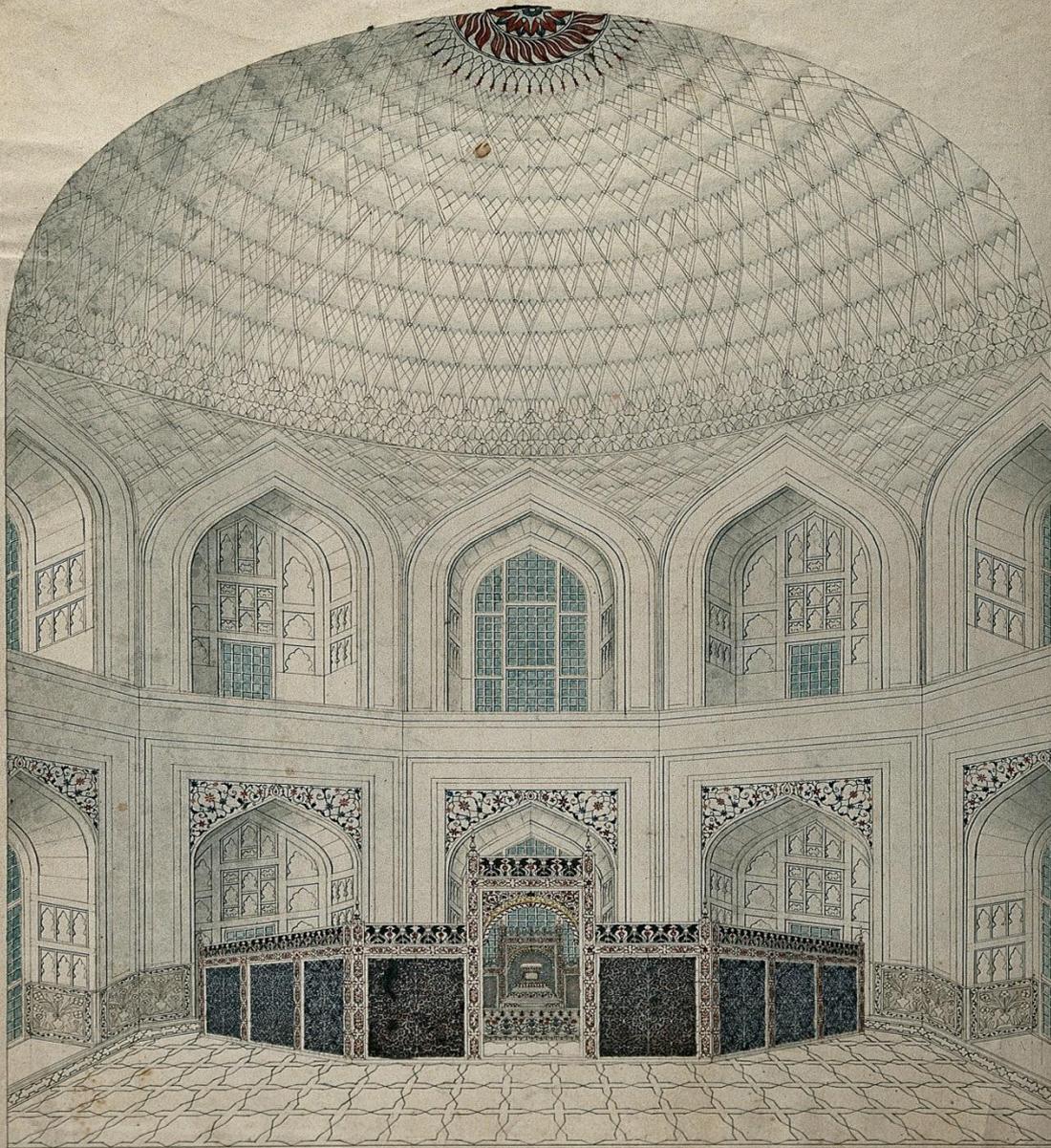
# Taj Mahal at sunrise from Main Entrance



दुनिया की सभसे  
सुन्दर इमारतें

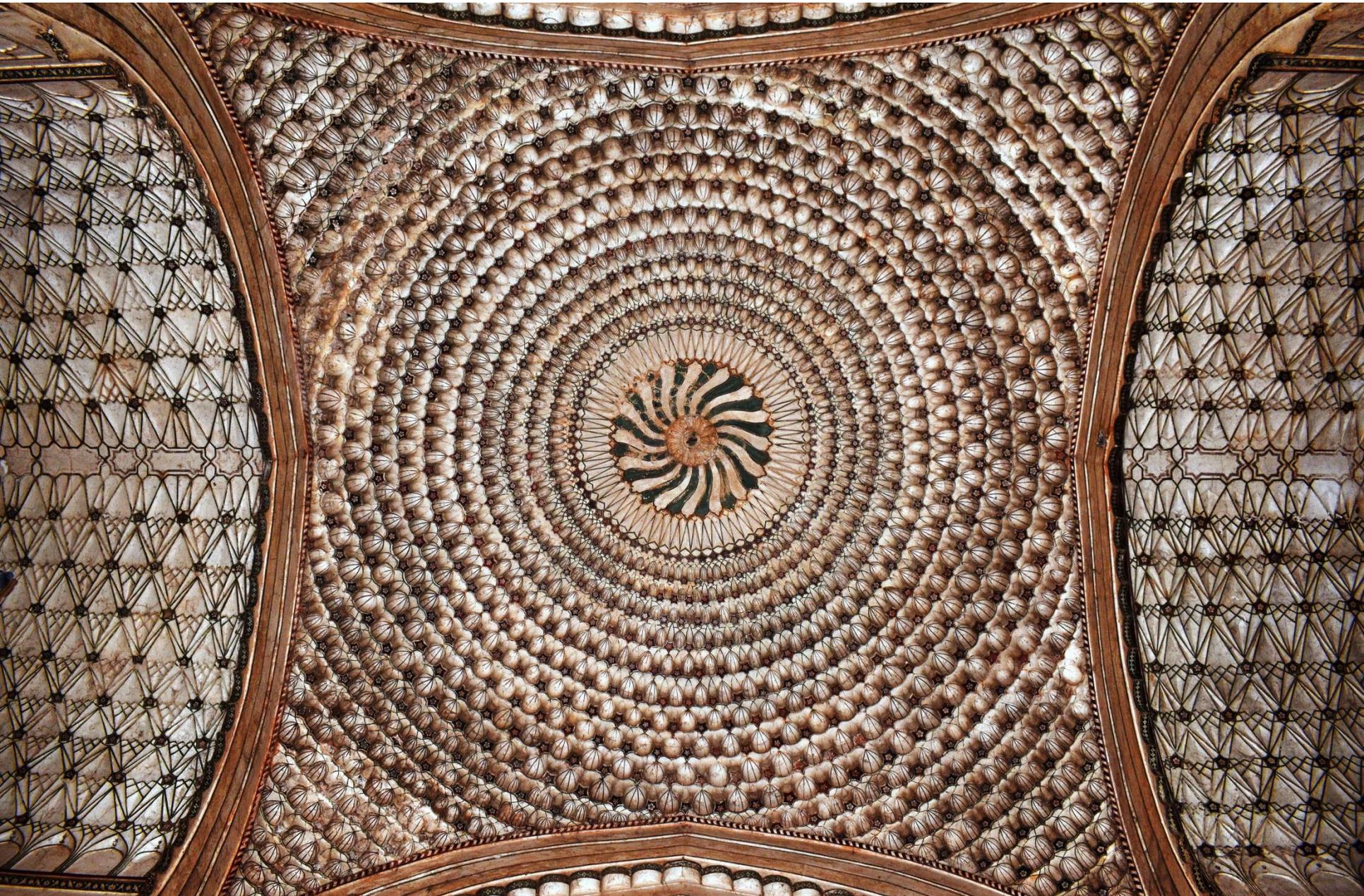
**Main marble dome, smaller domes, and decorative spires that extend from the edges of the base walls**



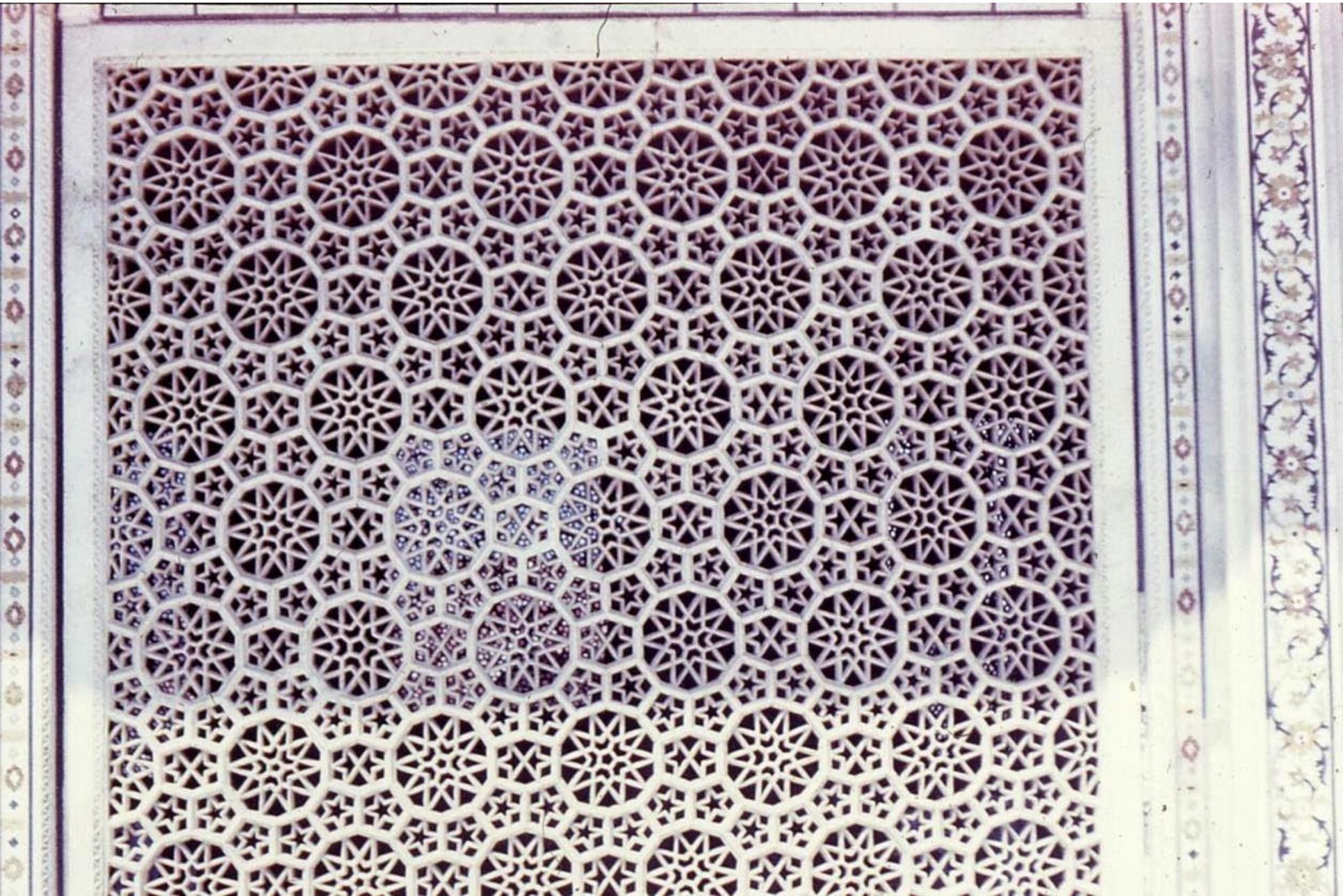


**Interior view of  
the vaulted  
dome over the  
tombs of  
Shah Jahan and  
Mumtaz**

# Designs on the interior of the dome



# Marble jali lattice

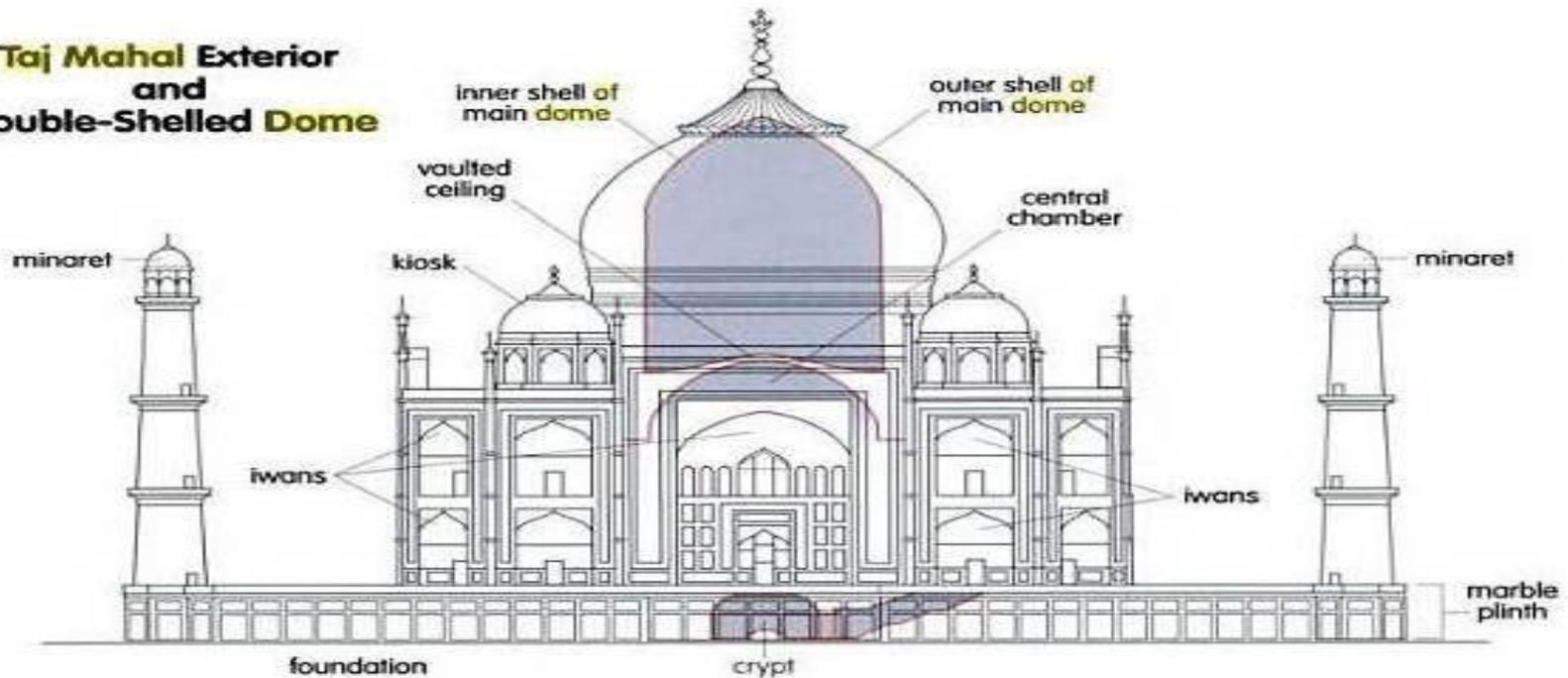




## Designs on the interior of the dome



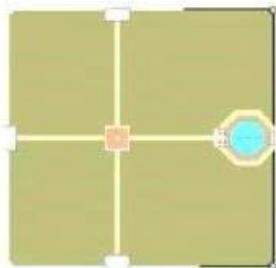
## Taj Mahal Exterior and Double-Shelled Dome



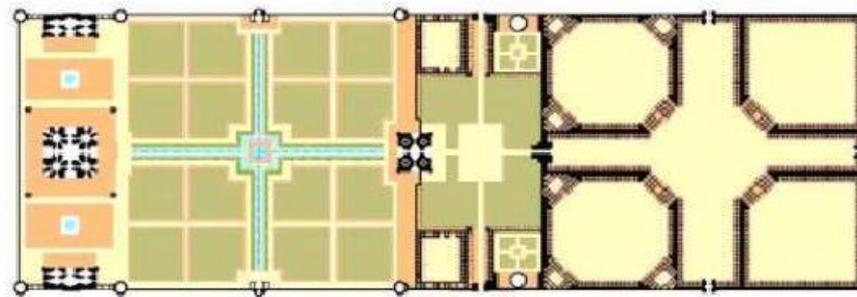
## Floor Plan of the Taj Mahal



Above, This diagram shows the architectural elements visible on the **Taj Mahal**. The interior spaces of the double-shelled dome, the ceiling of the central chamber, and the crypt holding the actual bodies of Mumtaz and Shah Jahan are depicted in grey. **Left**, The floor plan of one of the levels of the tomb building shows the symmetry of the building. The cenotaph (monument tomb) lies in the central room.



**Moonlight Garden  
north River Yamuna**



**Tomb, Mosque  
and Jawab**

**Charbagh  
(gardens)**

**Gateway**

**Taj Ganji  
(bazaar)**

**Figure 1** – The Taj Mahal complex. It is aligned in the North-South cardinal direction. Courtesy: Google Earth and Wikipedia.

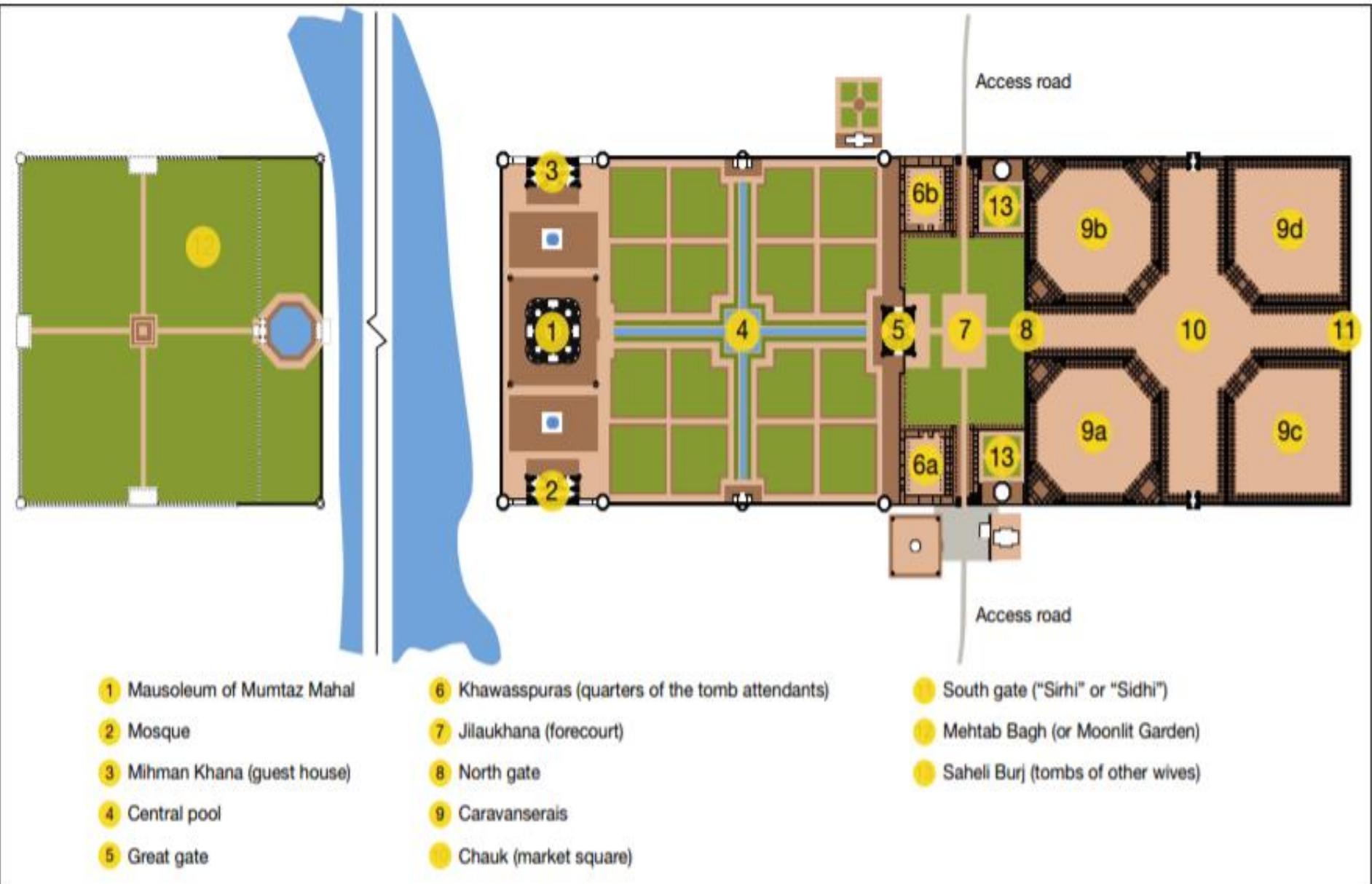
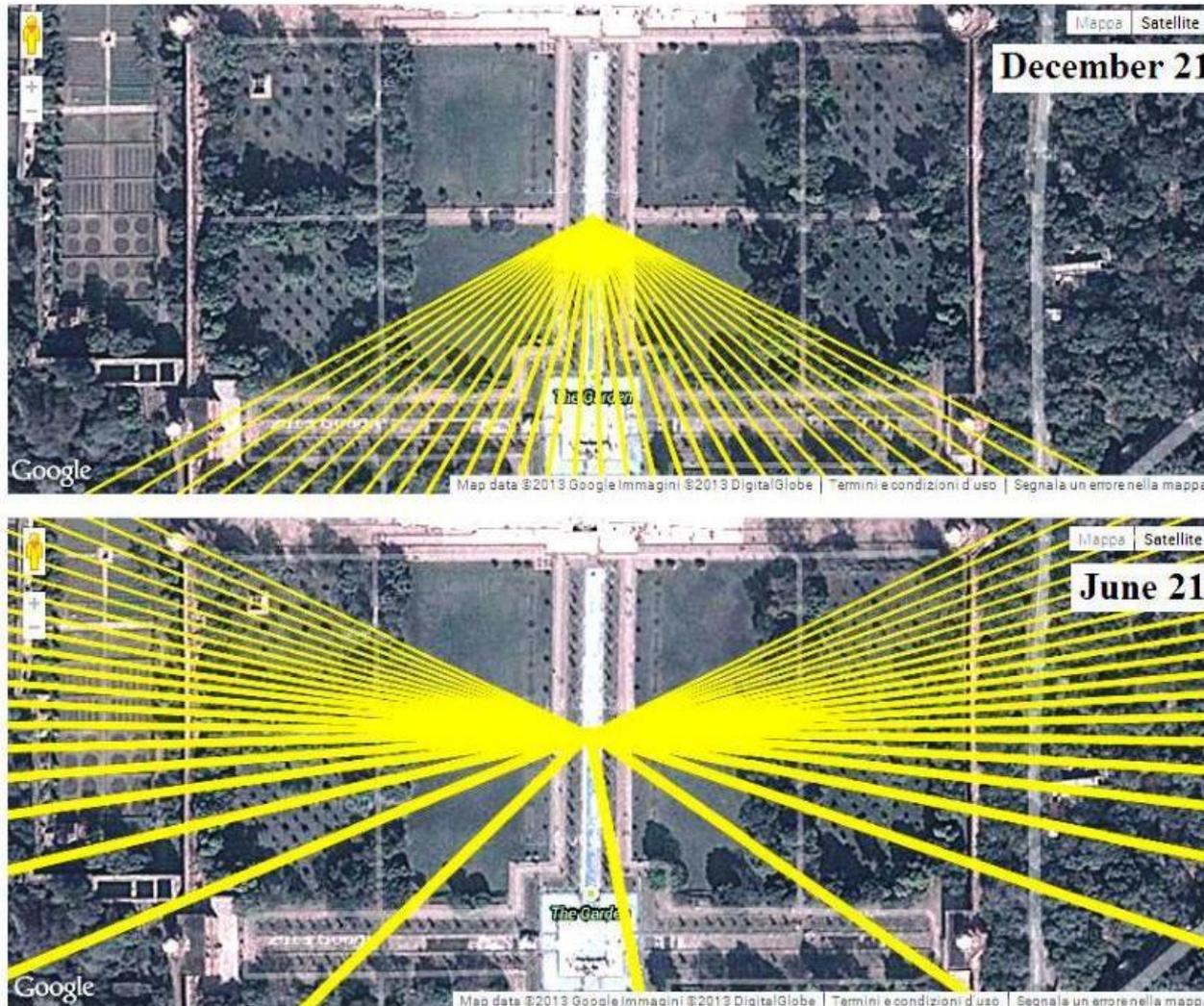


Figure 13. This diagram shows the symmetry of the architecture, reflecting pools, and gardens of the Taj Mahal. Courtesy of I. Mcginnly, Wikipedia Commons.



**Figure 2** – The Taj Mahal Gardens. Note that the image is rotated: the mausoleum, gardens and gateway are aligned in the North-South cardinal direction.



**Figure 3** – The northern part of the garden of Taj Mahal. We can see the direction of the sun during the winter and summer solstices, given by Sollumis.com (<http://www.sollumis.com/>). This site provides a polar diagram, overlaying a satellite map, showing the directions of the sun for any day of the year. The lines on the drawing show the direction and height (altitude) of the sun. Thicker lines mean the sun is higher in the sky. Longer and thinner lines mean the sun is closer to the horizon.

## **The Mughals' Support for the Arts**

With the ascension to the throne of Jahangir, Shah Jahan's father, the Mughals' patronage of artisans began to flourish, especially when he married a supporter of the arts, Nur Jahan (Latif, 1982). Jahangir was known to wear gemstones and pearls with extravagance. In 1619, Flemish diamond dealer and noted chronicler Jacques de Coultre described the emperor as "looking like an idol on account of the quantities of jewels he wore, with many precious stones around his neck as well as spinels, emeralds and pearls on his arms, and diamonds hanging from his turban" (Jaffer, 2013). This is confirmed by later portraits of the emperor that show him draped in pearls, gemstones, and rings. Early in the Mughal era, jewels were used as gifts on rare occasions, but only for the most special of royal guests. They were bestowed at feasts and celebrations. But starting with Jahangir and following with Shah Jahan, gift giving became an important political and cultural practice, layered with many intricacies. These two leaders also embraced European and Asian craftsmen, which is evident in the types of gems and jewelry they collected and later in the style of the architectural gem inlay work they adopted. In 1615, at the "Feast of the Water Aspersion," an array of gemstones and jeweled utensils was offered (Melikian-Chirvani, 2004). Gifts were also given to commemorate the transfer of power, as when Shah Jahan became governor of Bengal and received a jeweled sword belt. A jeweled dagger belt was given to the great grandson of the founder of the Safavid dynasty (Shah Ismail I of Iran) by the governor of Zamindawar on a similar occasion in 1593. During the rule of Shah Jahan, gold decanters enameled and encrusted with gems were given at the annual Rosewater Celebration (Melikian-Chirvani, 2004).

According to Sharma (2004), “the style during [the Mughal] period, and used by Hindus as well, was to decorate the frontal side of the ornaments on an enameled background with precious gems while the reverse was adorned with enameled patterns.... This effortless blending of Muslim and Hindu decorative art in the realm of jewellery made these pieces stylistically unique.” The back was often as beautiful or more beautiful than the front. The style of Mughal-era enameling, most likely adapted from the South Indian Deccan enamellers, shares common themes **with the decor of the Taj Mahal**, which features red poppies and floral patterns on a white background. This style is a hallmark of Jaipuri enamelwork. Jaipur was the center of Indian enameling during the eighteenth and nineteenth centuries. The advancement of Jaipur as an important enameling capital was a result of close ties with the Rajasthani Rajputs and the Mughals (Sharma, 2004). It was under Shah Jahan’s reign that enameling began to flourish. Jahan was truly a connoisseur of all things artistic. Through enameling he could combine his appreciation for gemstones, art, and architecture. He used enameling to embellish some of the finest thrones, such as the Peacock Throne, as well as magnificent decorative objects and weaponry (Sharma, 2004). **With the Taj Mahal**, Shah Jahan displayed the enameling of the Mughal period most consummately and passionately. While the **Taj Mahal** was still under construction, he had a golden screen created. It contained enameled inscriptions and cupolas that were to be placed around Mumtaz Mahal’s tomb on the second anniversary of her death (Bala Krishan, 2001).



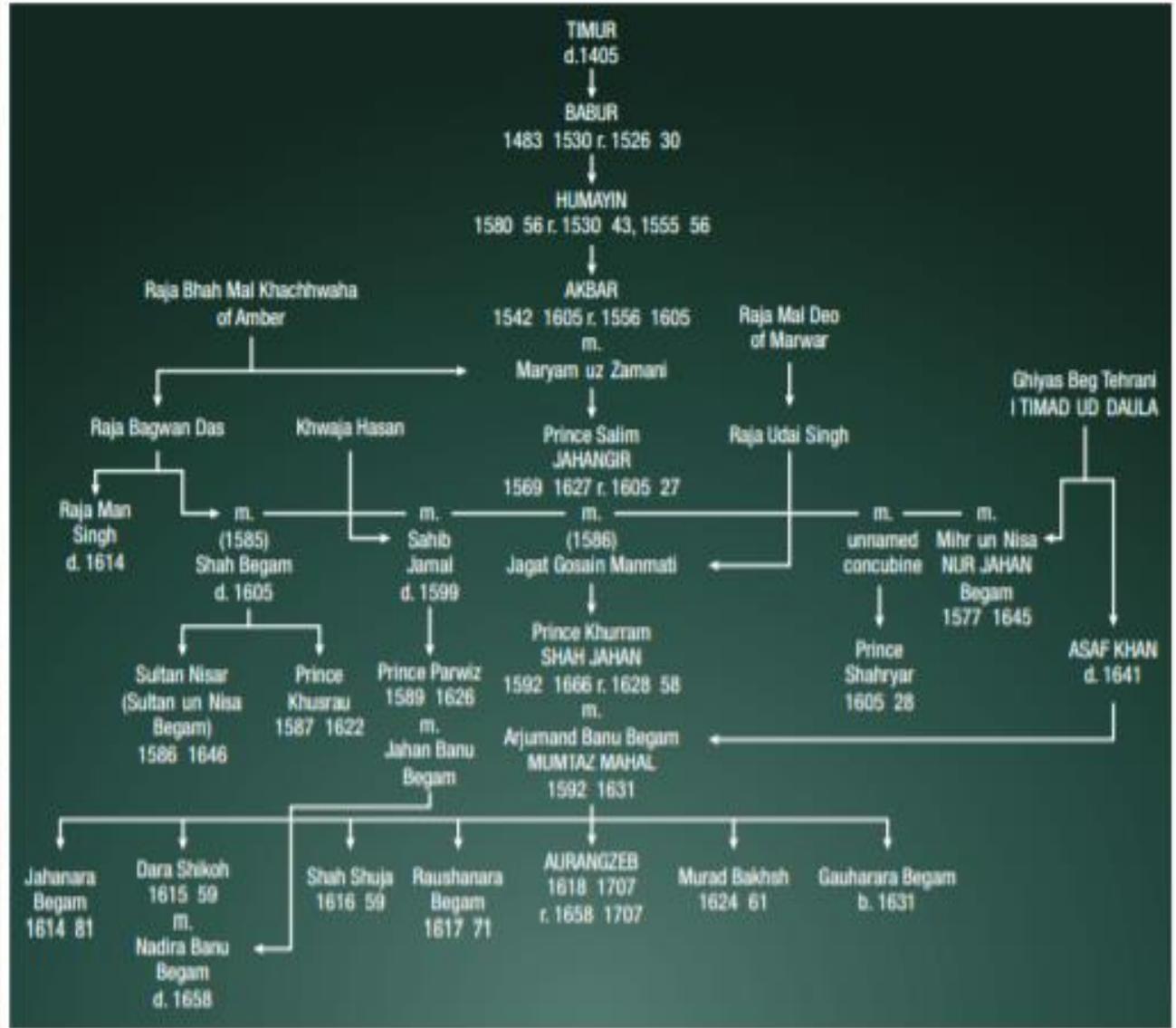


Figure 5. Left: This seventeenth-century ceremonial knife from Hyderabad contains emerald, ruby (including some recently replaced treated ruby), and Damascus steel with a 23K engraved gold handle. Photo by Robert Weldon/GIA. Right: Genealogy of the Mughal dynasty, reproduced with permission of Ebba Koch.



Figure 6. This portrait by Chitarman, his earliest dated painting, shows Shah Jahan exquisitely dressed and richly adorned with jewels. His imperial halo and the hovering angels are borrowed from European art. Courtesy of the Metropolitan Museum of Art public domain.

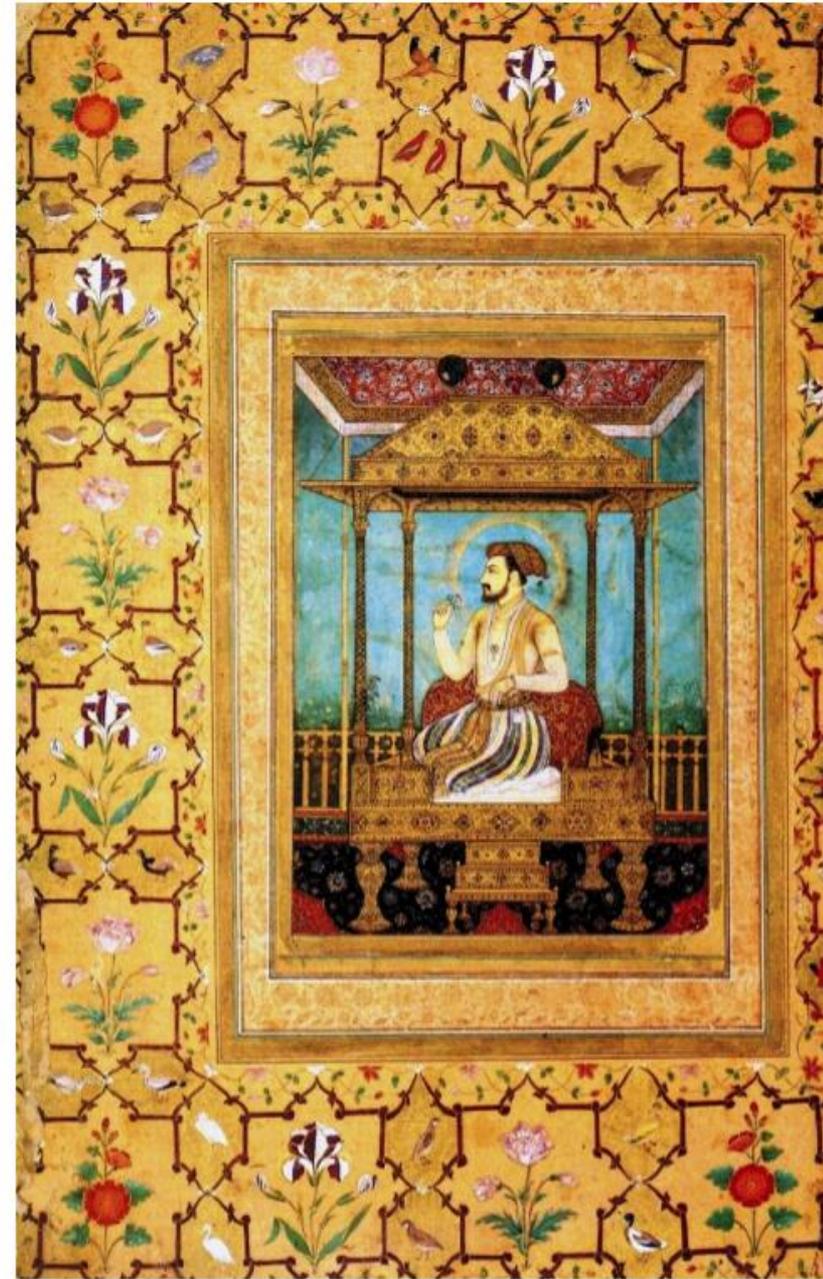


Figure 8. A painting of Shah Jahan on the Peacock Throne. The painting is attributed to the noted Mughal painter Govardhan, circa 1635.

# Significance of the Gems Used in Taj Mahal

Gems were chosen not only for their color but also for the spiritual properties attributed to them at that time. Of the **many different types of gems used in the parchin kari of the Taj Mahal, the most significant in Islamic culture is carnelian.** The Prophet Muhammad is said to have worn a silver ring set with carnelian on the little finger of his right hand, using it as a seal. Jafar, one of the most well-known of the imams, proclaimed that any man who wore carnelian would have his desires fulfilled (Kunz, 1938). Jade and chlorite were likely used because green was the Prophet Muhammad's favorite color (Brill, 1993). Some ancient cultures also believed that jade was a healing stone, particularly for the kidneys (Tagore, 1881). Lapis lazuli is another gem that was chosen; the Sumerians believed that anyone who carried an amulet made of this material was in the company of a god (Budge, 2011). It was cherished through out the ancient worlds of India, Mesopotamia, and Iran, as well as Egypt, where it was used in talismans, particularly of the eye and heart (Thomas and Pavitt, 1993). In Mesopotamian culture, jasper was associated with the heavens (Horowitz, 1998), as well as driving away evil spirits (Kunz, 1938). Agate and jasper (both chalcedonies) were used as protection against the evil eye (Budge, 1968). Chalcedony was believed to render enemies terror-stricken while also having the power to promote peacefulness (Budge, 1968) and happiness (Tagore, 1881) and dispel sadness (Jones, 1968). Bloodstone was said to have the power to bring rain, a benefit to Shah Jahan's beautiful gardens (Kunz, 1938). It might have been for protection against enchantments and spells that sard was used in the parchin kari. Sard was also believed to bring happiness (Kunz, 1938). Other materials used that might have been chosen for purely aesthetic reasons include green plasma jasper, yellow limestone, variegated limestone, yellow marble, striped marble, and clay slate (Koch, 2006).

## **Expertise of the Craftsmen**

The craftsmen working with minerals and gem materials on the Taj Mahal fell into several groups. First there were the bricklayers and stonecutters, called *raj* and *sangtarash*, respectively. According to Ebba Koch, an architectural historian and author of a seminal work on the Taj Mahal, the stonecutters were paid for each linear yard of stone they cut. They left symbols and sometimes Hindu or Arabic names on the bricks. Next came the stone carvers or *munabbatkar*, who carved the moldings in the rooms and created the exquisite renderings of plants and flowers in sandstone and marble. At the time, Indian artisans were often guided by European experts. Balasubramaniam (2009) writes: While the supervision and superintendence may have been of people of foreign origin, the current study proves that the actual engineering of the complex was the accomplishment of the genius of local Indian talent... [This proves] that the ultimate realization of the wonderfully engineered construction of Taj was possible due to the engineering abilities and skill of native architects and artisans, as confirmed by their adherence to the traditional measurement units of the subcontinent. Such traditions have continued to the present day. Koch (2006) illustrates one man, Hajji Nizamuddin Naqshbandi, who did stone restoration at the Taj Mahal for more than 40 years until his death in 2005. He was a follower of the Naqshbandi Sufis and continued the long tradition of Sufi craftsmanship in the building arts. Next came the craftsmen who did the stone inlay. This simple form of intarsia has been used for decorative objects and decor for centuries. It is based on inlaying colorful minerals into a recess to create a mosaic-like pattern. In India the term *parchin kari* is used both for the simple form of inlay as well as the intricate examples found throughout the Taj Mahal.

## **Symbolic Significance of the Designs**

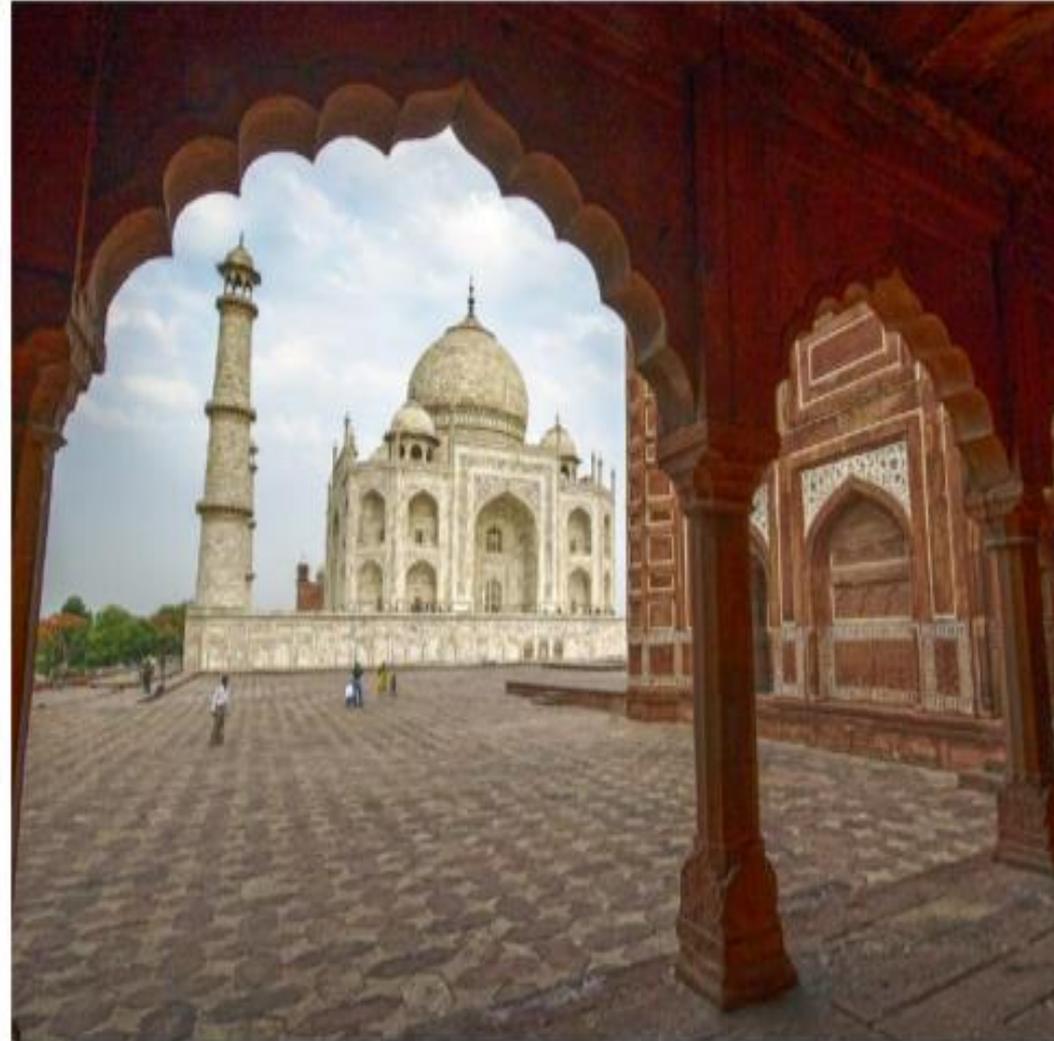
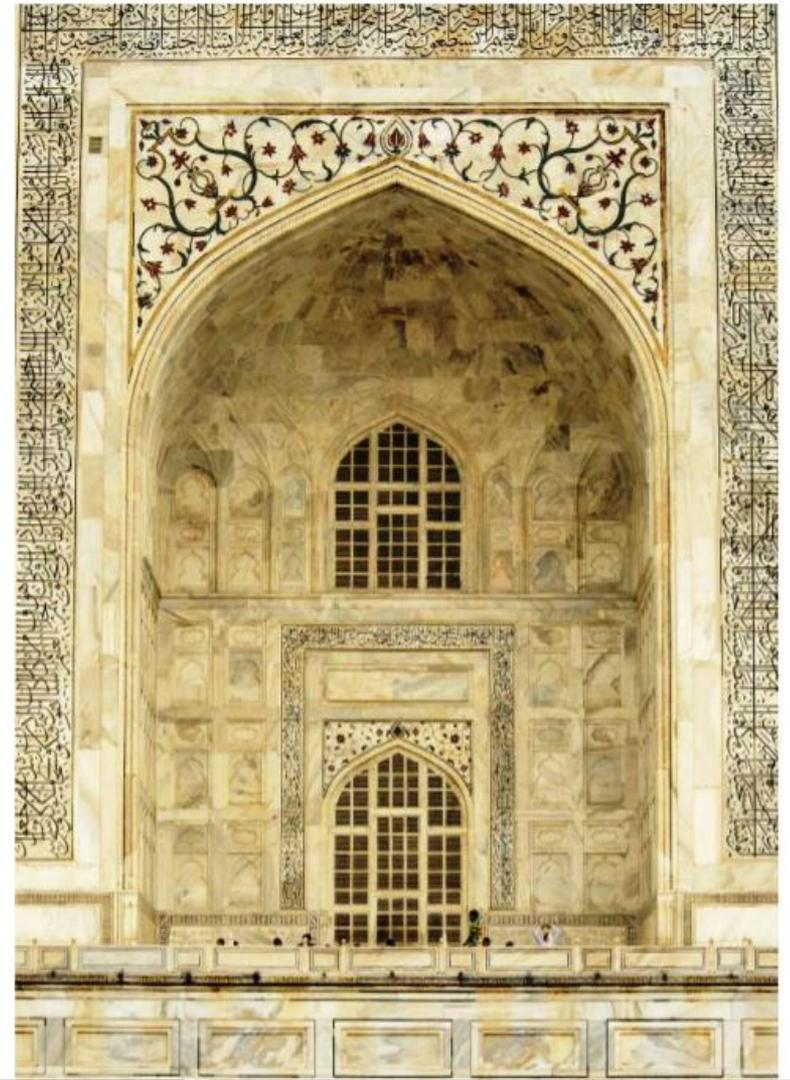
The floral pattern inlaid in the marble throughout the Taj Mahal is not random. Persian culture strongly influenced the Mughals. Floral imagery abounds in Persian poetry (Wescoat et al., 1996), which describes flowers as “springing forth from the waters of Paradise” (Janin, 2004), and this symbolism was no doubt the intention for Mumtaz’s final resting place (“Taj Mahal,” 2007). In the case of the Taj Mahal’s floral motif, the choice of red and yellow as prevailing colors was most likely deliberate. Red blossoms represent death and blood in Persian poetry, while yellow denotes rebirth and dispels grief. Although some of the flowers of the Taj Mahal are creations sprung from the minds of the craftsmen, others are depictions of real flowers such as lilies (similar to martagon lilies), tulips, poppy blossoms, buds, and calyxes (Koch, 2006) (figure 21).

The red flowers are a symbol of sorrow, anguish, and death—poppies specifically are associated with the dead in Islamic thought (Koch, 2006). The Persian poet Hafiz claimed in the fourteenth century that tulips are tokens of great love (Hafiz, 1905; Connolly, 2004). Poppies and red flowers similar to lilies embellish the upper cenotaphs of Mumtaz Mahal and Shah Jahan. Their graceful leaves and blooms rain down in sorrow, and the blood red stands in contrast against the stark white of the marble. Both cenotaphs feature inscriptions of black onyx inlay. The Arabic inscription that runs around the sides and along the top of Mumtaz Mahal's cenotaph are verses from the Koran, meant to put her soul at ease. The cenotaph of Shah Jahan features an ornate epitaph in Nasta'liq calligraphy (containing a pronounced rounded script) that reads: This is the sacred grave of His Most Exalted Majesty, Dweller in Paradise, Second Lord of the Auspicious Conjunction, Shah Jahan, Padshah; may it ever be fragrant! The year 1076 [AD 1666] (Koch, 2006). While the cenotaphs on the main level are meant for public view, and are aligned to the north, the actual tombs of Shah Jahan and Mumtaz lie in a chamber just below, facing west, toward Mecca. In keeping with Islamic tradition, these actual tombs are much simpler in design.

## **Inscriptions heritage at Taj**

Words from the Koran are similarly inlaid throughout the complex using black onyx. The inscription process itself was ambitious, as more than two dozen Koranic quotations are displayed on the Great Gate, mausoleum, and mosque. In a sense, this work is even more intricate because the onyx had to be carved to fit the script of the letters. The passage from the Koran on the Great Gate calls the charitable and the faithful to enter Paradise name was allowed on the Taj Mahal for posterity. This further demonstrated Shah Jahan's high regard for the inscriptions and the artist. As Al-Haqq Shirazi had designed the inscriptions for the tomb of Akbar, Shah Jahan's grandfather, he was the logical choice (Begley, 1978/1979). One of the three dated epigraphs inscribed at the Taj Mahal reads "Finished with His help" and was written by Amanat Khan al-Sjorazo in the year corresponding to the twelfth year of Shah Jahan's reign, somewhere between October 1638 and April 1639. The larger words are in Arabic and the smaller ones in Persian (Begley, 1978/1979).

*Figure 22. The eastern facade of the Taj Mahal is framed by parchin kari and an inscription from the Koran. Photo by Robert Weldon/GIA.*



*Figure 14. Left: A view of the Taj Mahal from the Mihman Khana, or guest pavilion. Right: A view of the inscribed entryway, called a pishtaq, with floral embellishment on the spandrels. Photos by Robert Weldon/GIA.*



عَشْرًا مِمَّنْ لَا يَصْرِفُ عَلَيْهِمْ كَثْرَةُ تَسْلِيمِهِمْ وَلَا تَنَادِيهِمْ أَصْوَابُ السَّمَاءِ وَالَّذِينَ تَتَذَكَّرُ بِهِ نَبَاتُ الْأَرْضِ نَوَاكِبُ أُولَئِكَ الَّذِينَ يَصْرِفُونَ أَمْوَالَهُمْ بِالْحَقِّ وَلَا يُفْسِدُونَ فِي الْأَرْضِ



وَالَّذِينَ يَصْرِفُونَ أَمْوَالَهُمْ بِالْحَقِّ وَلَا يُفْسِدُونَ فِي الْأَرْضِ

وَالَّذِينَ يَصْرِفُونَ أَمْوَالَهُمْ بِالْحَقِّ وَلَا يُفْسِدُونَ فِي الْأَرْضِ



*Figure 16. A close-up of the parchin kari consisting of multicolor chalcedony and other materials set in marble showing a typical floral pattern that decorates the interior and exterior of the Taj Mahal. Photo by Robert Weldon/GIA.*









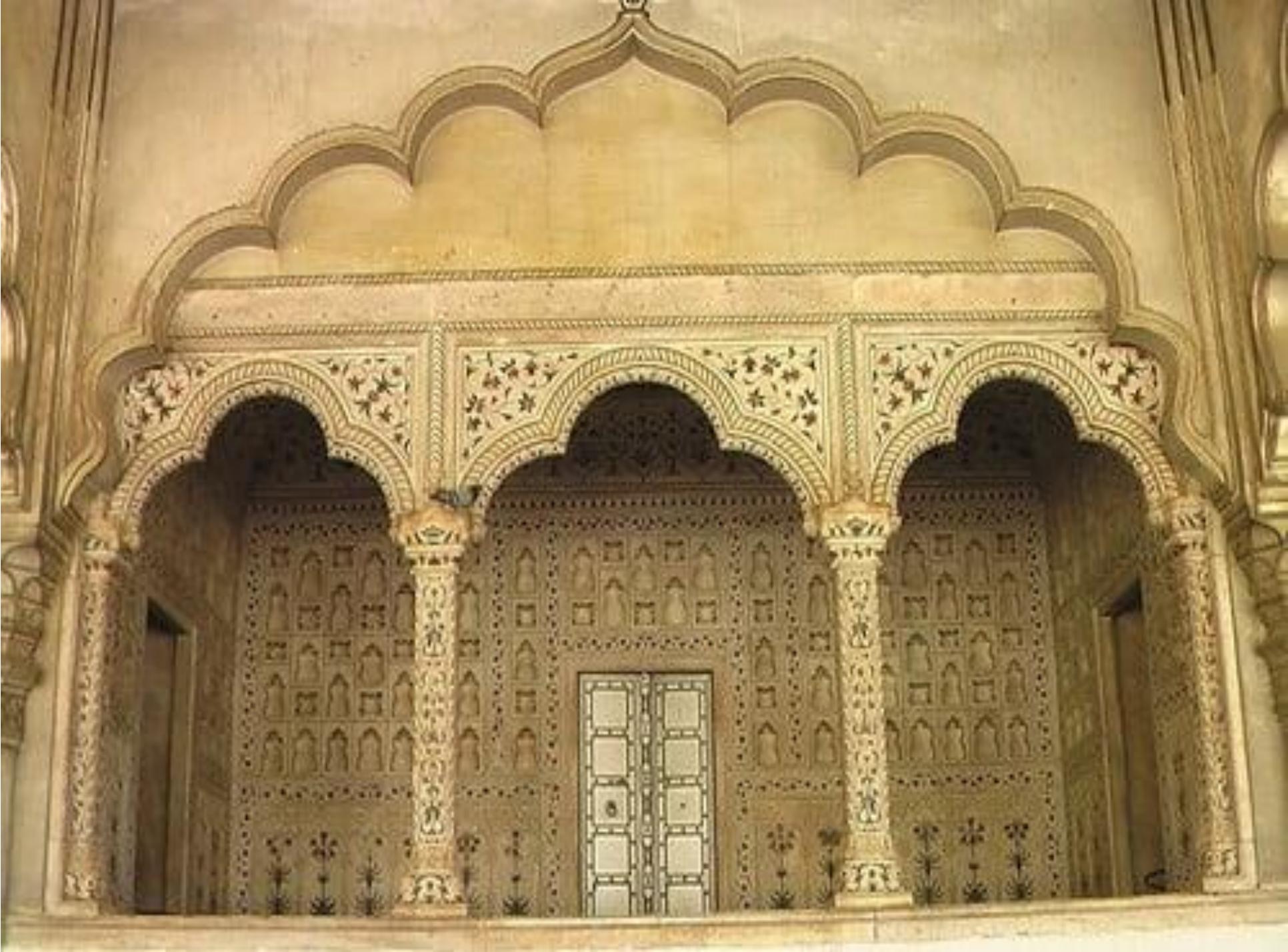
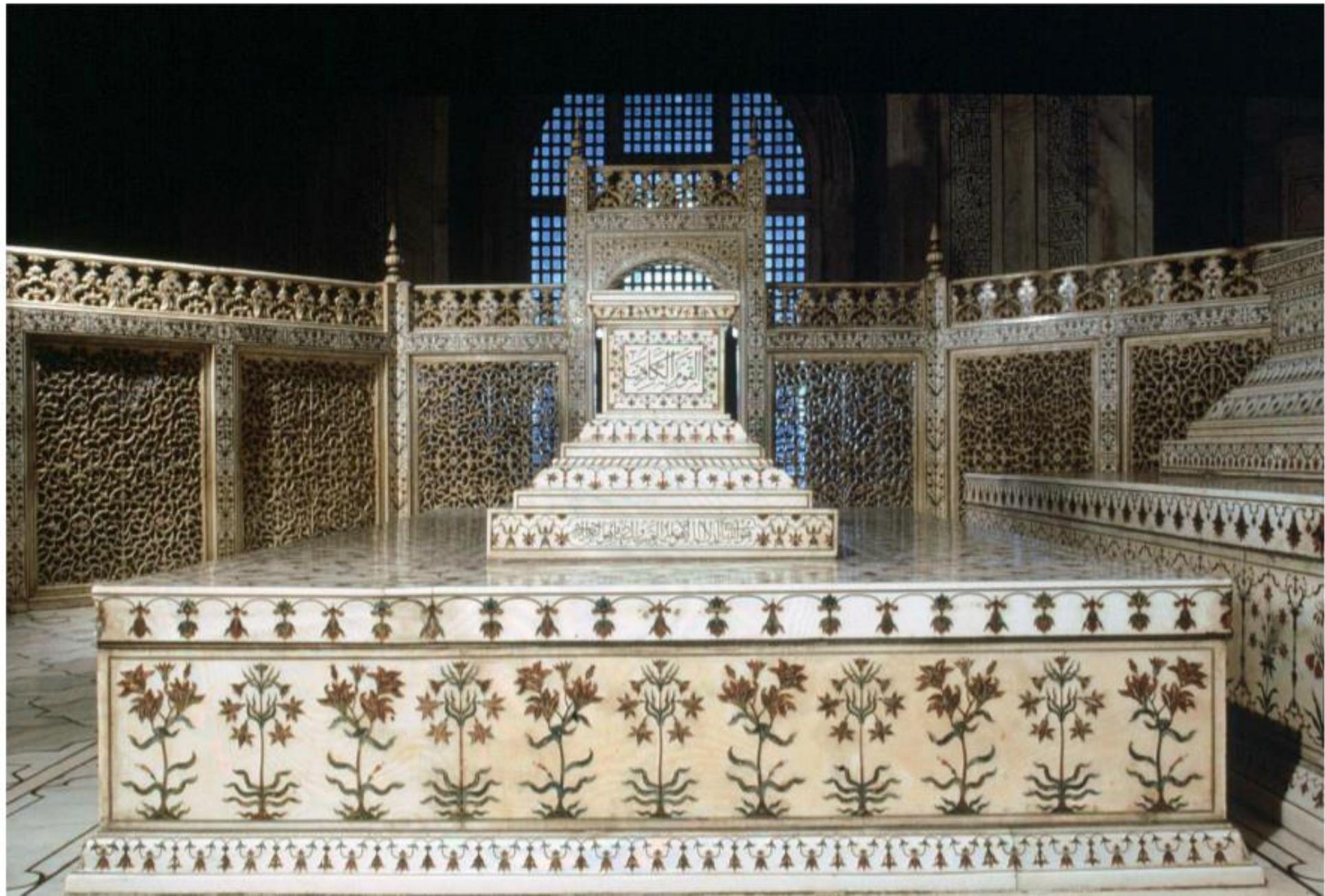


Figure 24. The finest parchin kari work was reserved for Mumtaz's cenotaph, in the interior of the mausoleum. Photo by Jean-Louis Nou, courtesy of AKG Images.



# The actual tombs of Mumtaz Mahal and Shah Jahan in the lower level



**TABLE 1.** Types of gem materials used in the Taj Mahal.

Farsi	English	Hindi	Early name(s) of the source(s)
Yaqut-e-Gulabi	Rose or pink sapphire	Gulabi	Ceylon
Hajr-ul-Dum	Bloodstone	Pitunia	India
Rukham	Alabaster	Sangmarmar	Makrana, India
Yaqoot	Amethyst	Kathela	Moldova, India
Nilgoo'n billor	Aquamarine	Beruj	Bihar, India and Ceylon
Marmar-e-Seeya	Black marble	Kala sangmarmar	Jhari
Aqiq-e-Jegari	Carnelian	Aqiq	Baghdad or Yemen
Sang-e-Yemani	Chalcedony	—	India
Zaituni Zabarjad	Chrysolite	Laksunia	Nile River
Sadaf Halazoni	Conch shell	Sankh	Persian Gulf and Gulf of Mannar
Marjan-e-Sorkh	Coral, red	Moonga	Indian Ocean
Boloor	Crystal quartz	Billoor	Hyderabad, India
Almas	Diamond	Hira	Colconda region
Zomorrod	Emerald	Panna	South America and Egypt
La'l	Garnet	Tamra	Ganges River
Sang-e-Talai	Golden stone	Sunela	Unknown
Daarchini yaqoot	Hessonite garnet	Gomed	Ceylon
Yashm	Jasper	Margaj	Cambay, India
Lajvard	Lapis lazuli	Lajward	Afghanistan
Ahan Roba	Lodestone	Maqnatis	Gwalior, India
Malaqeeet	Malachite	Dhana-i-farang	Russia
Marmar	Marble	Sangmarmar	Jaipur
Sadaf Morvaridi	Mother-of-pearl	Sip	Persian Gulf and Gulf of Mannar
Nafreit	Nephrite	Yashav	Chinese Turkestan
Aqiq Suleimani	Onyx	Suleimani	Deccan Plateau, India
Morvarid/Dor	Pearl	Mukta/Moti	Persian Gulf and Gulf of Mannar
Sang-e-Sorkh	Redstone	Surkh	Gwalior, India
Yaqut	Ruby	Manak	Pegu (Myanmar) and Badakhshan (Afghanistan)
Sang-e-Maaseh	Sandstone	Bansi	India
Yaqut-e-Kabud	Sapphire	Neelam	Pegu (Myanmar) and Ceylon
Aqiq-e-Qermez	Sard	Gomedak	India
Sang-e-Looh	Slate	Siliyat	Monghir and the ruins of Gaur
—	Sodalite	Sodaliti	Afghanistan
Laal	Spinel	Naram	Badakhshan, Afghanistan
Chasm-e-Babri	Tiger's-eye	Dariyai lahsunia	India
Zebarjad-e-Hendi	Topaz	Pukhraj	Ceylon
Firoozeh	Turquoise	Firoza	Persia and Tibet



*Figure 20. Minarets at the Taj Mahal frame its four corners. At sunset, sunlight peeks through the minarets, adding to their mystical enchantment. From this view, the superb inlay and craftsmanship of the mausoleum are visible. Photo by Robert Weldon/GIA.*

# Calligraphy of Persian poems



## **Protection and management requirements**

The management of Taj Mahal complex is carried out by the Archaeological Survey of India and the legal protection of the monument and the control over the regulated area around the monument is through the various legislative and regulatory frameworks that have been established, including the Ancient Monument and Archaeological Sites and Remains Act 1958 and Rules 1959 Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation); which is adequate to the overall administration of the property and buffer areas. Additional supplementary laws ensure the protection of the property in terms of development in the surroundings.

An area of 10,400 sq km around the Taj Mahal is defined to protect the monument from pollution. The Supreme Court of India in December, 1996, delivered a ruling banning use of coal/coke in industries located in the Taj Trapezium Zone (TTZ) and switching over to natural gas or relocating them outside the TTZ. The TTZ comprises of 40 protected monuments including three World Heritage Sites - Taj Mahal, Agra Fort and Fatehpur Sikri.

The fund provided by the federal government is adequate for the buffer areas. The fund provided by the federal government is adequate for the overall conservation, preservation and maintenance of the complex to supervise activities at the site under the guidance of the Superintending Archaeologist of the Agra Circle. The implementation of an Integrated Management plan is necessary to ensure that the property maintains the existing conditions, particularly in the light of significant pressures derived from visitation that will need to be adequately managed. The Management plan should also prescribe adequate guidelines for proposed infrastructure development and establish a comprehensive Public Use plan.

### **Factors affecting the property**

Development project negatively impacting the World Heritage value of the properties of Taj Mahal and Agra Fort ('Taj Heritage Corridor Project') (project suspended by the Indian authorities in 2004)

Tourist access road

## **The Taj Mahal Today and Its Conservation**

On April 11, 2018, severe storm winds caused two minarets at the Taj Mahal to collapse. Fortunately, the taller ones remained standing. While one of the destroyed minarets was located at the southern gate, the other was at the royal gate, where one gets a first glimpse of the Taj Mahal. This world wonder also faces deterioration from exposure to air pollution and wear from its eight million visitors every year. The result is a general yellowing of the buildings. As the custodians of this monument, the Archaeological Survey of India reported in January 2018 that the Taj Mahal was in danger of losing its attractive marble gloss due to air pollution in Agra (“India Taj Mahal minarets damaged...,” 2018).

For a time up until the restoration by British Viceroy Lord Curzon was completed in 1908, security was not stringent, so some of the stones in the pietra dura as well as other decor were stolen (“Theft in Taj Mahal myth,” n.d.). The Archaeological Survey of India stated that it would take until 2018 to clean the buildings, replace the missing stones, and take protective measures to minimize further damage by visitors (Devi, 2015). Most of the work has been accomplished, though some questions remain as to the safest method of cleaning the Taj Mahal’s main dome, which was scheduled for late 2019.

To remove the yellow stains, a clay pack known as multani mitti (or fuller's earth), known since the late 1800s, was applied for decades with positive results on the building exteriors. This facial treatment consisting of lime, cereal, soil, and milk was slathered onto the buildings, left to sit for 24 hours, and then washed with warm water.

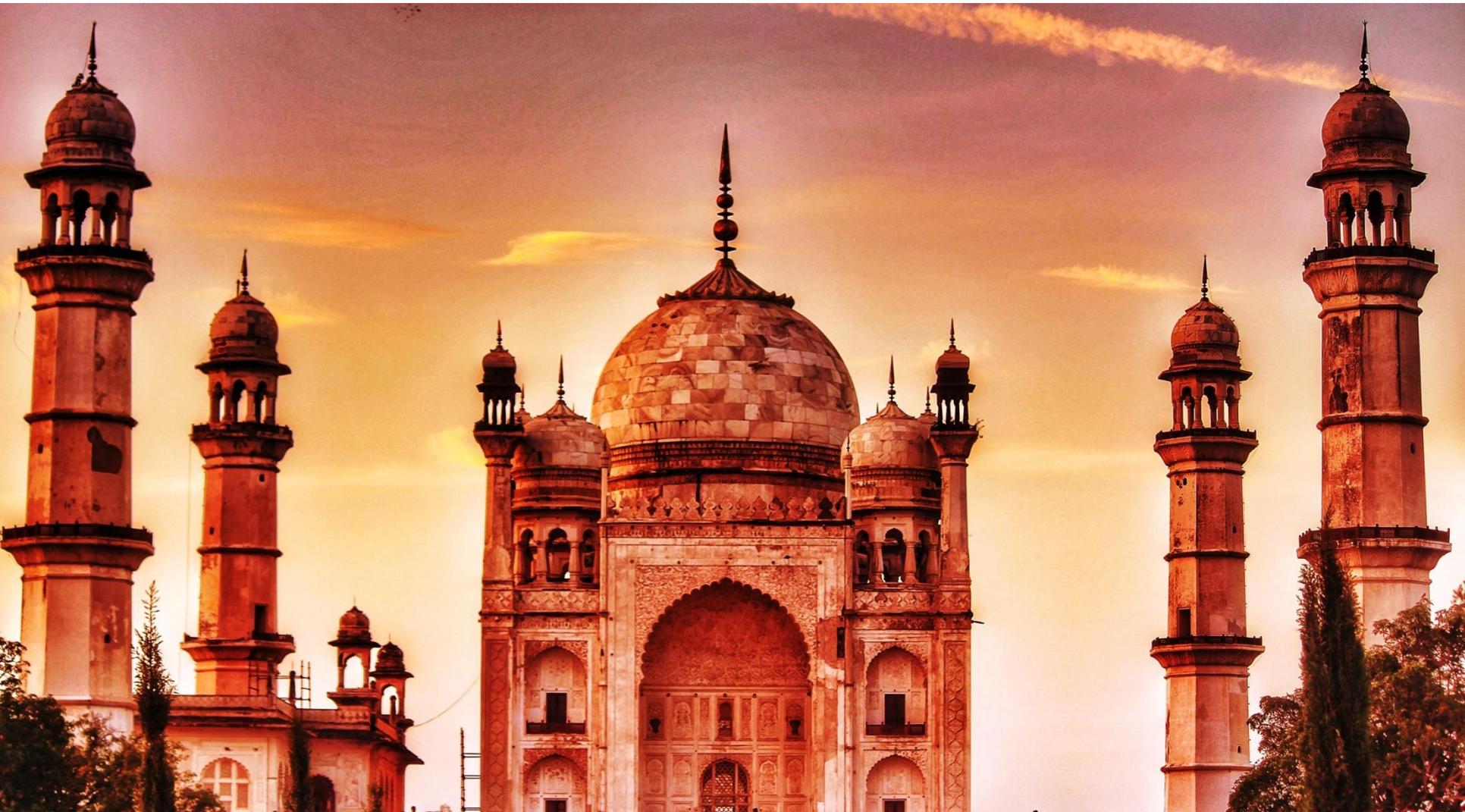
Governmental protection began in 1996, when the Supreme Court of India enacted the Taj Trapezium Zone, a 10,400 square km area surrounding the Taj Mahal complex. This trapezoid-shaped zone meant to protect the Taj from environmental pollution damage, bans the burning of coal within the area. It also requires some industries to switch to natural gas or even relocate outside of the zone ("Why is the Taj...", 2008). Another measure to control pollution has been to ban the burning of cow dung, used for kindling in wood fires, within Agra ("Fuel guzzling vehicles...", 2015).

Fuel-powered vehicles are banned within 500 meters of the Taj Mahal (Lusted, 2013). Visitors arrive by foot or electric shuttle. Upon arrival, they can either go barefoot or wear covers over their shoes. Most recently, it was reported that the Archaeological Survey of India was considering the use of spectrography to measure incremental differences in the Taj Mahal's exterior color. The first step was cleaning the surface of the marble using multani mitti, as discussed earlier. From now on, the changes will be recorded over time and reported to the Supreme Court of India (Qureshi, 2019). Some of the restoration planning and execution is culturally fraught. But despite cultural differences and debate over financial allocations, the Supreme Court instructed the Indian government to take immediate action: "Even if you have the expertise, you are not utilizing it. Or perhaps you don't care. We need to save it," the court urged (Meixler, 2018).

**The western building, a mosque, faces the tomb**

**Bibi Ka Maqbara is a tomb in Aurangabad, Maharashtra, which was built by Aurangzeb's son Azam Shah in the memory of his mother**





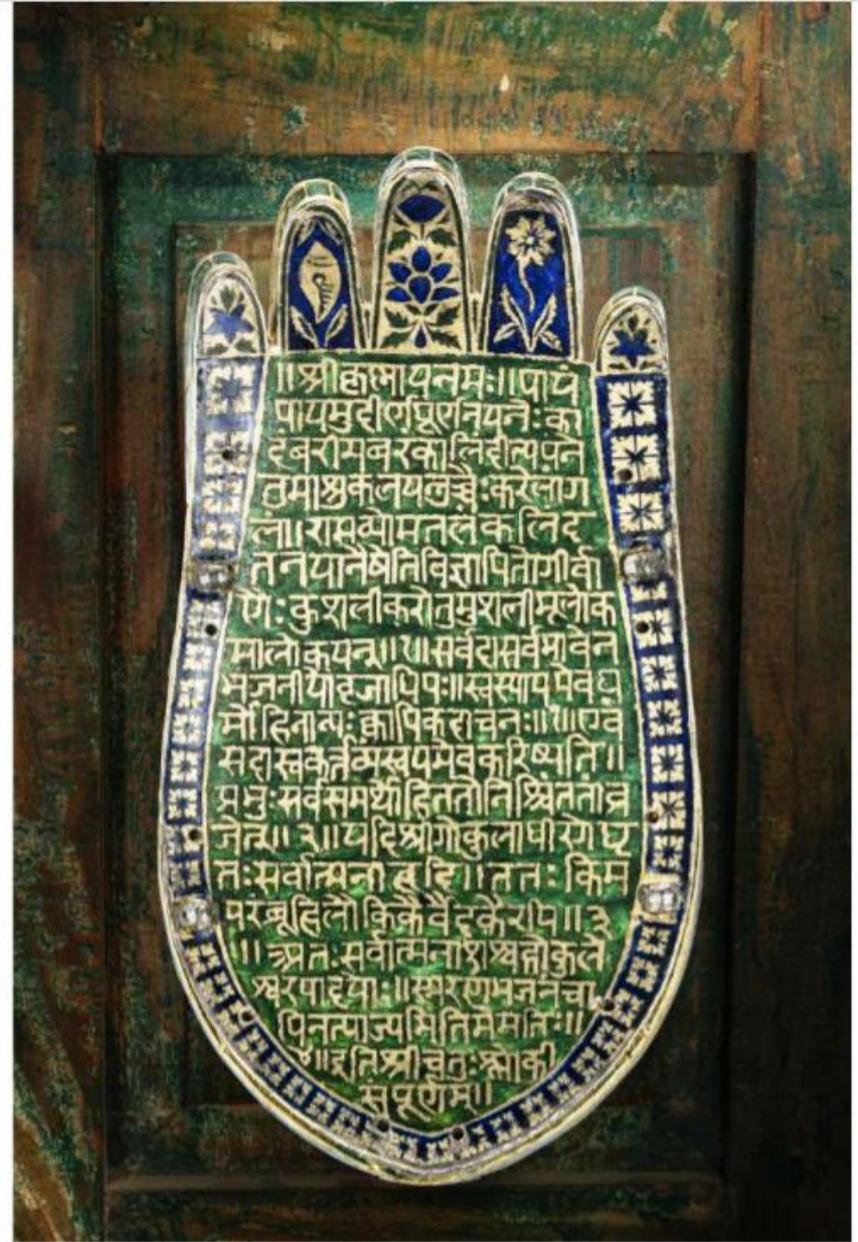


Figure 9. This seventeenth-century hand of Vishnu with exquisite enameling from Maharashtra contains Colombian emeralds and Indian diamonds set in 22K enameled gold, illustrating a popular enameling style. The hand measures 14 × 8 × 1.5 cm. The inscription on the back, in Sanskrit, quotes devotional verses from the Bhagavad Gita. Photos by Robert Weldon/GIA. Courtesy of private collectors.



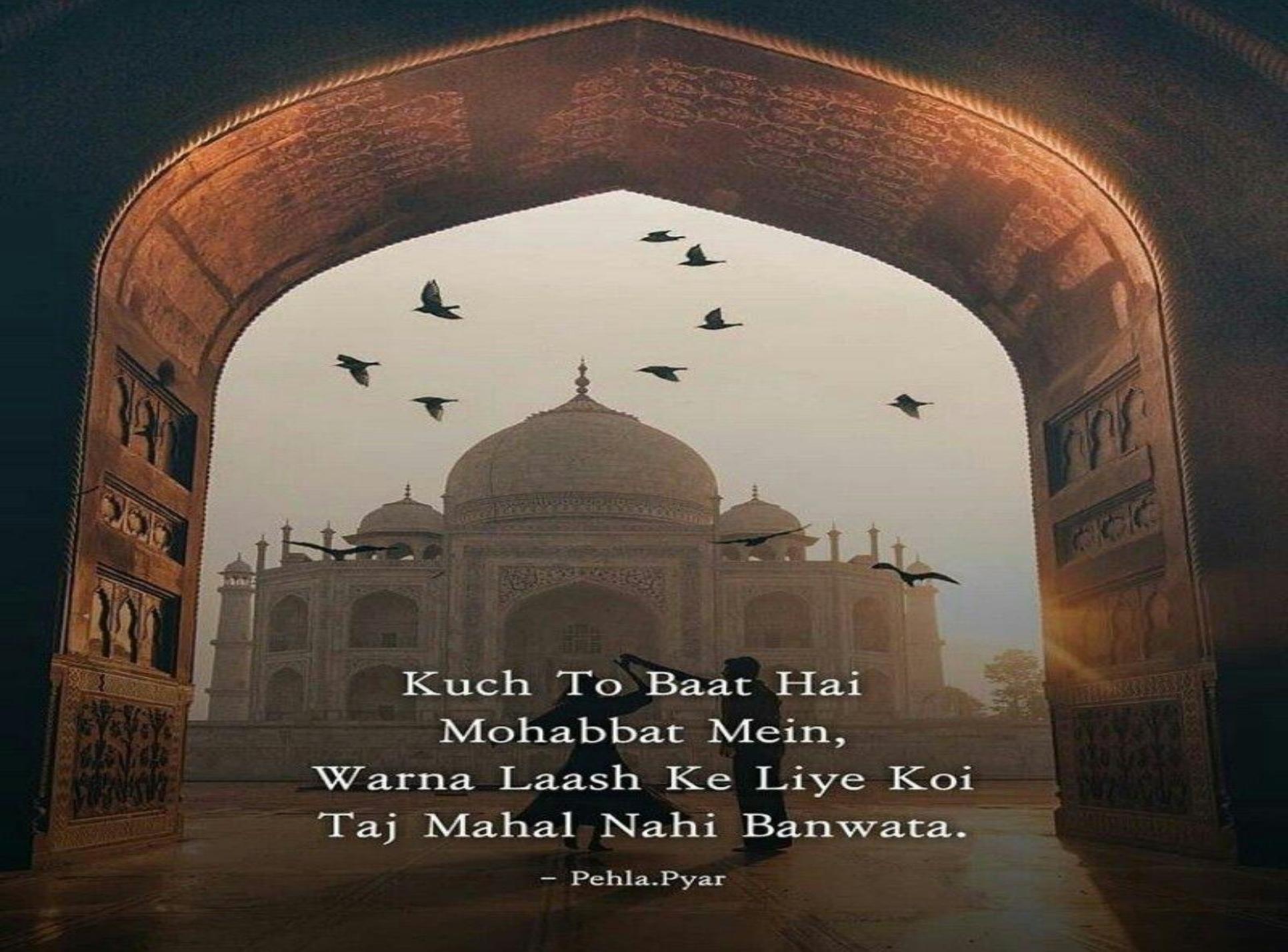
*Figure 25. The Taj Mahal is visible in the distance from Agra Fort, where Shah Jahan was imprisoned by his son Aurangzeb in 1658. He would have had a futile daily view of the Taj Mahal at sunrise, positioned on the bank of the glimmering Yamuna River. Photo by Robert Weldon/GIA.*

Kisi Ka Khubsurat Hona, Rango Ka Mohtaj  
Nahi Hota....!!!

.  
.  
.  
Baadshah  
.  
.  
.

Jo Rang Bhar Deta Shahjahan, Phir Taj, Taj  
Nahi Hota....!!!





Kuch To Baat Hai  
Mohabbat Mein,  
Warna Laash Ke Liye Koi  
Taj Mahal Nahi Banwata.

- Pehla.Pyar



**Thanks a lot to All of You**  
**We can still enjoy beauty of the era through the artistry of the**  
**Taj Mahal**

