



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

UNIT 1 - EARLY INDO ISLAMIC PERIOD

SAR1301-HISTORY OF ARCHITECTURE III

UNIT 1 EARLY INDO ISLAMIC PERIOD

Advent of Islam in Indian subcontinent, Overview of Development based on political history, Establishment of Delhi Sultanate, Evolution of Architecture under Slave, Khalji, Tughlaq, Sayyed and Lodi dynasties with important examples. Shift of power to the provinces and evolution of Regional Architecture with Examples- Bengal, Gujarat and Malwa, Deccan- Bijapur and Gulbarga with examples.

UNIT 2 INDO ISLAMIC PERIOD

Mughals in India, Evolution of Architecture and Outline of Mughal cities, gardens, shape grammar and fractals, Babur, Humayun, Akbar, Jahangir, Shahjahan, Aurangzeb- Important examples, Decline of Mughal Empire - Cross cultural influences across India and Secular Architecture of the princely states like Oudh and Vijayanagar.

UNIT 3 RENAISSANCE.

The Idea of rebirth and revival of Art, Fractals, Architectural character during Early & High renaissance - Study of the life and contribution of the following Architects in brief - Works of Brunelleschi - 'The Dome' of Florence Cathedral - Works of Alberti - Church of Sant' Andrea- Works of Bramante- St.Peter's Basilica (Vatican city) - Works of Andrea Palladio - Villa Capra (Vicenza) - Works of Inigo Jones - Durham's cathedral.

UNIT 4 RENAISSANCE CLASSICISM

Outline the Renaissance in transition, Works of Michael Angelo - Laurentian Library (St Lorenzo, Florence); St. Peter's, Rome Outline the Architectural character - St. Paul's Cathedral; Chateau De Chambord; The Louvre, Paris-Study of the life and contribution of Sir Christopher Wren - Sheldonian Theatre (Oxford); St. Paul's Cathedral (London)- rococo Architecture - interiors – hotels.

UNIT 1 EARLY INDO ISLAMIC PERIOD

Advent of Islam in Indian subcontinent, Overview of Development based on political history, Establishment of Delhi Sultanate, Evolution of Architecture under Slave, Khalji, Tughlaq, Sayyid and Lodi dynasties with important examples. Shift of power to the provinces and evolution of Regional Architecture with Examples- Bengal, Gujarat and Malwa, Deccan- Bijapur and Gulbarga with examples.

Advent of Islam in Indian subcontinent:

The Indian subcontinent is a land having a rich history, culture and some ancient civilizations as well. During the pre-Mauryan age, Indus valley civilization existed across the banks of the river Indus. This civilization is considered as one of the oldest civilizations of the world. The evidence from Harappa and Mohenjodaro show the level and extent to which these people were developed and civilized, particularly in the areas of town planning and management, arts and crafts etc. This civilization was eventually destroyed as it could not resist the foreign invaders particularly the Aryans who overruled almost all the native communities of Indian sub-continent. These Aryans were the ancestors of the majority of the later Indians. Meanwhile, the birth of Gautama Buddha (B.C. 563-483) and then beginning of Buddhism had some critical impacts on the religious and social set up of the sub-continent. Foreign invasions continued and the most significant invaders included the rulers of the Persian Empire (Darius etc,) and Alexander the Great that resulted as the effects of Persian and Greek civilization and cultures on the local society as well. Various kings and rulers ruled India before Muslims. Most significant was the Mauryan Empire, a great imperial power under Chandragupta Maurya. Ashoka was the greatest ruler of this dynasty. This empire is considered important because for the first time, a greater part of the country was under one king/uniform administration. Mauryans were followed by Kushan, Guptas etc. but the empire very soon split into various smaller states and principalities.

a) Political Conditions

- Lack of centralism/central government
- Division of country into numerous entities
- Frequent change of rulers
- Law and Order problems
- Political discrimination
- Autocrats and monarchs

b) Social Conditions

- Cast system (Brahmans-religious elite, Khushtries-responsible for defense
- and security, Waishes-business and agriculture class, Shooders-the people
- of the lowest rank doing low rank jobs and services)
- Social discrimination on the base of casts and families
- Dogmas and backwardness
- Hindu extremism
- Lack of harmony

- Low status of women

c) Religious Conditions

- Rise of Hinduism
- Idol worshipping/thousands of gods and goddess
- Sectarianism
- Decline of Buddhist movement primarily due to absence of strong support from ruling class

d) Economic Conditions

- Unjust division of wealth (upper classes had lavish living standards, lower class deprived of the basic necessities of life)
- International Trade-spices, textile related material and precious stones were the important exports while gold and other commodities were imported in return
- Agriculture-land was very fertile but a major part of production was paid to the rulers as tax
- Manufacturing, Crafts as a common activity

Advent of Muslims in India:

The Arabs had trade links in sub-continent and that later provided an opportunity for the introduction of Islam in this part of the world. As invaders, the Muslims entered Sindh, India, in 711-712 A.D., the same era they entered Spain. Their entry in India was prompted by an attempt to free the civilian Muslim hostages whose ship was taken by sea pirates in the territory of Raja Dahir, King of Sindh. After diplomatic attempts failed, Hajjaj bin Yousuf, the Umayyad governor in Baghdad, dispatched a 17-year-old commander by the name Muhammad bin Qasim with a small army. Muhammad bin Qasim defeated Raja Dahir at what is now Hyderabad in Pakistan. In pursuing the remnant of Dahir's army and his son, Muhammad bin Qasim fought many battles, reached Multan and captured the city after a short fight. By 713, he established his control in Sindh and parts of Punjab up to the borders of Kashmir. A major part of what is now Pakistan came under Muslim control in 713 C.E. and remained so throughout the centuries until some years after the fall of the Mughal Empire in 1857. Muhammad bin Qasim's treatment of the Indian population was so just that when he was called back to Baghdad, the civilians were greatly disheartened and gave him farewell in tears.

Muslim Rule in India:

The Muslim presence as rulers in India dates from 712. Since then, different Muslim rulers entered India, primarily fought their fellow Muslim rulers, and established their rule under various dynastic names. By the eleventh century, the Muslims had established their capital at Delhi, which remained the principal

seat of power until the last ruler of Mughal Dynasty, Bahadur Shah Zafar, was deposed in 1857 by the British. Major Muslim invaders, rulers and dynasties in India included:

Sultan Mahmud Ghaznavi invaded Peshawar, Somnath and captured a major part of the country in 11th century. Shahab-ud-Din Ghori captured Multan, Punjab and then defeated powerful Prithvi Raj in the 2nd battle of Tarain in 12th century.

- The Slave Dynasty founded by Kutb-ud-Din Aibak as first Sultan of Delhi
- The Khilji Dynasty
- The Tughlaq Dynasty
- The Sayyid Dynasty
- The Lodhi Dynasty
- The Mughals (1526-1857).

Overview of Development based on political history & Establishment of Delhi Sultanate

Influence of Islam/Muslims on sub-continent

a) Political effects

- The Muslims established a central government and unified the entire
- country as a single political entity
- They also established a uniform and centrally-organized administrative
- system
- The Muslims being associated with a vast empire established foreign
- relations with other countries as well
- They introduced innovations in military strategy, tactics and tools.

b) Social Effects

- Uniform systems brought harmony in the society
- Local population adopted various features of Muslim culture in dresses,
- architecture, arts and crafts literature and languages.
- General public used to enjoy peace and prosperity

c) Religious effects

- A large number of local population accepted Islam due to teachings of Islam
- Muslim scholars and Sufis achieved a significant position in society due to
- their character and moral values.

The decline of Muslim rule

The Muslim rulers, with the passage of time, started to lose their grip on state affairs. Various factors can be enlisted in this regard but most significant included overindulgence into lavish livings, intra-clan and inter-clan rivalries, jealousies and conspiracies, exploitation at the hands of some powerful courtiers especially the Hindus who used to play an influential role in decision making particularly during the reign of Akbar who introduced a new set of beliefs known as Deen-e-Elahi. The Deen-e-Elahi functioned as a

personality cult designed by Akbar around his own person. Members of the religion were preferably selected by Akbar according to their devotion to him. Because the emperor styled himself a reformer of Islam, arriving on Earth almost 1,000 years after the Prophet Muhammad, there was some suggestion that he wished to be acknowledged as a prophet also. The ambiguous use of formula prayers such as Allah-u-Akbar, "Allah is great," or perhaps "Allah is Akbar" hinted at a Divine association as well. Akbar removed the tax on Hindus, despite the traditional mandate in Islam to nonbelievers, and invited scores of religious scholars, including Hindus, Jews, and Christians, to debate him personally in his private chambers, often late into the night. Akbar's wives were also of different religious backgrounds - each marriage was thus a strategic union that would allow the adherents of India's many faiths to feel that they too were a part of the royal household.

Evolution of Architecture under Slave, Khalji, Tughlaq, Sayyid and Lodi dynasties with important examples:

DELHI OR IMPERIAL STYLE (SLAVE DYNASTY) A.D. 1200- A.D. 1246

The Slave Dynasty was established by Qutb-ud-Din Aibak, a former slave of Muhammad Ghuri who had been installed as Governor in Delhi and who assumed independence after Ghuri's death. The main building work during this dynasty was done by Qutb-ud-Din Aibak and his son-in-law, Shams-ud-Din Iltutmish.

Main buildings:

- Quwwat-ul-Islam Mosque
- Qutub Minar
- Arhai Din ka Jhompra
- Tomb of Nasir-ud-Din Mohammed (Sultan Ghari)
- Tomb of Shams-ud-Din Iltutmish

QUWWAT-UL-ISLAM MOSQUE

- Built by Qutb-ud-Din Aibak in Qila Rai Pithora, the ancient Hindu citadel.
- Built on the plinth of a Hindu temple which was dismantled.
- The plinth was expanded to cover a rectangle of 150' X 212'.
- This stylobate was then enclosed by a wall with cloisters on all sides.

Cloisters

- Cloisters were three aisles deep.
- Composed of pillars from Hindu temples, placed one above the other to achieve the desired height

Sanctuary

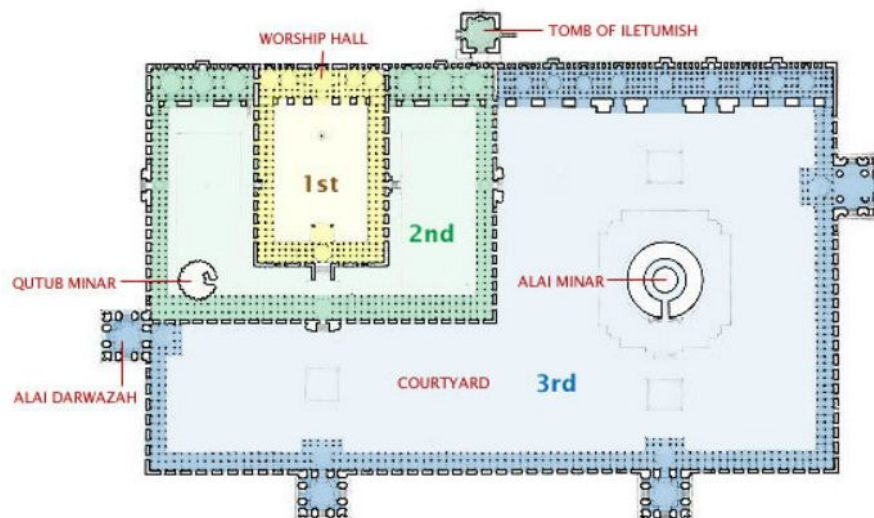
- The western part of the cloister was the sanctuary.
- The arrangement of the pillars was made more spacious and resolved into a series of bays with shallow domed roofs.

Courtyard

- The courtyard is 105' X 141', surrounded by cloisters.
- In the front of the centre of the sanctuary stands the iron pillar with the Garuda motif removed from its pinnacle.

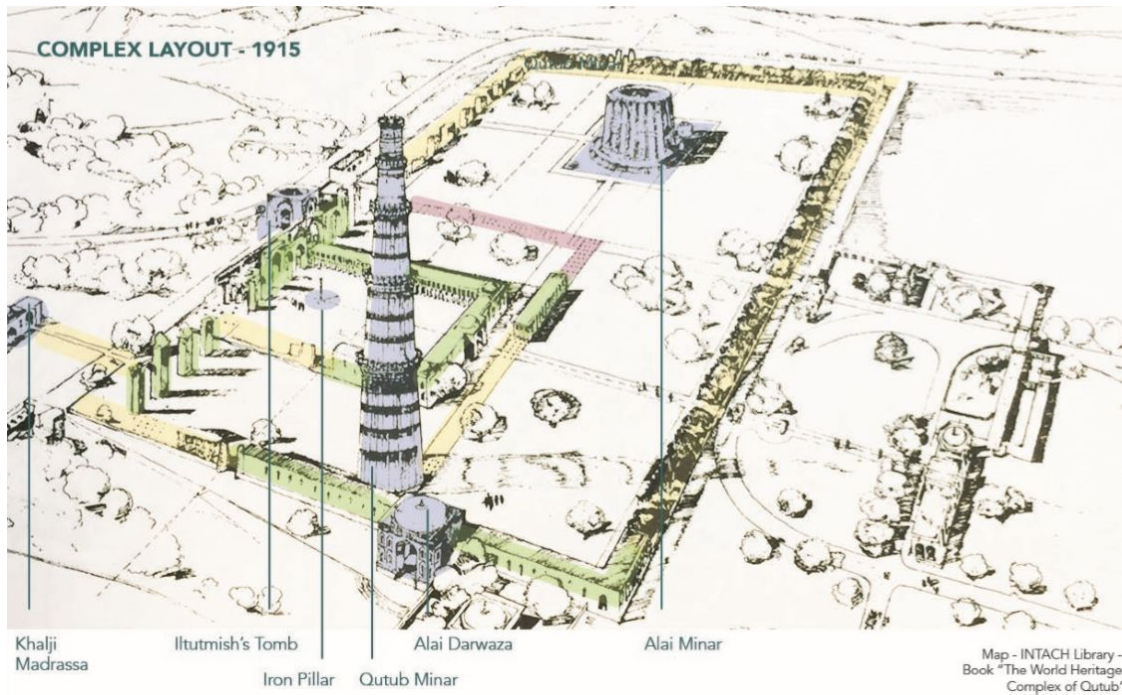
Screen (Maqsura)

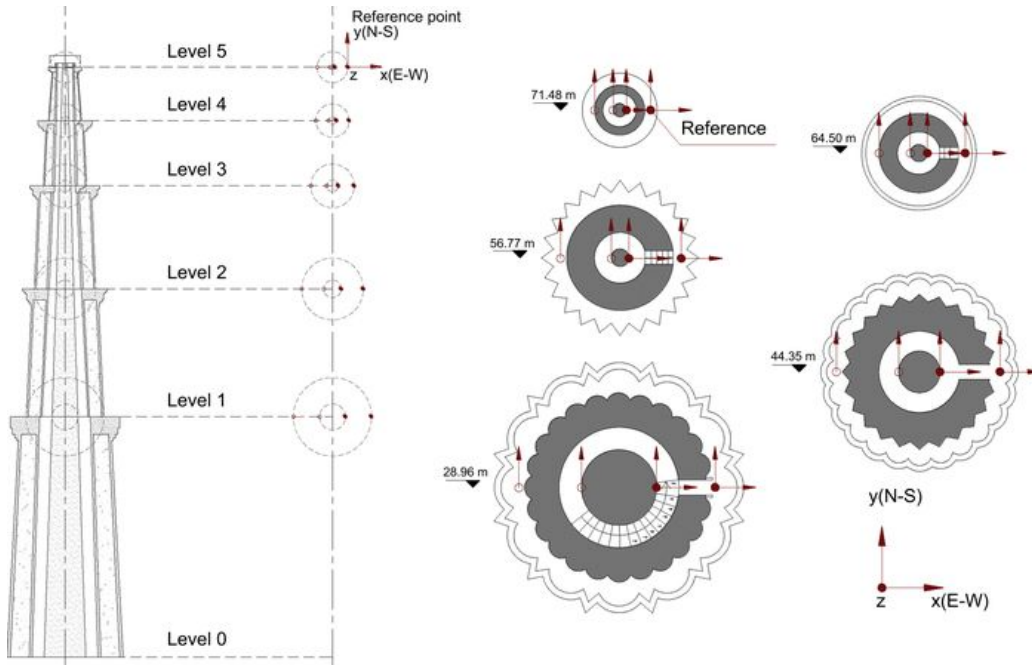
- In 1199, a screen of an arched facade was added across the front of the sanctuary.
- The screen is a wall of masonry 50' high at the centre, 108' wide and 81/2' thick.
- The screen is pierced by 5 arches, the central arch 45' high and 22' in span and two smaller ones on each side, each 25' high.
- Each smaller arch had a clerestory above it, mainly for decorative purposes as it did not serve in any way the sanctuary behind it.
- The facade is embroidered with carvings of floral devices and Quranic verses.
- The arches are not true arches but built by corbelling, hence we know they were built by local workmen acting on verbal instructions from a Muslim clerk of works.
- The ogee shape of the arch may be derived from the Buddhist caves of the Barabar hills of Bihar and the Stupas of Sarnath.





QUTUB MINAR:





- Built near Quwwat-ul-Islam Mosque in 1200 by Qutb-ud-Din Aibak.
- The height of the tower is 238'.
- The tower was originally four storeys high with a domed roof. Renovations have added a storey.
- The tower is entered from the a gateway on the north side which opens out into a spiral staircase.

Storeys

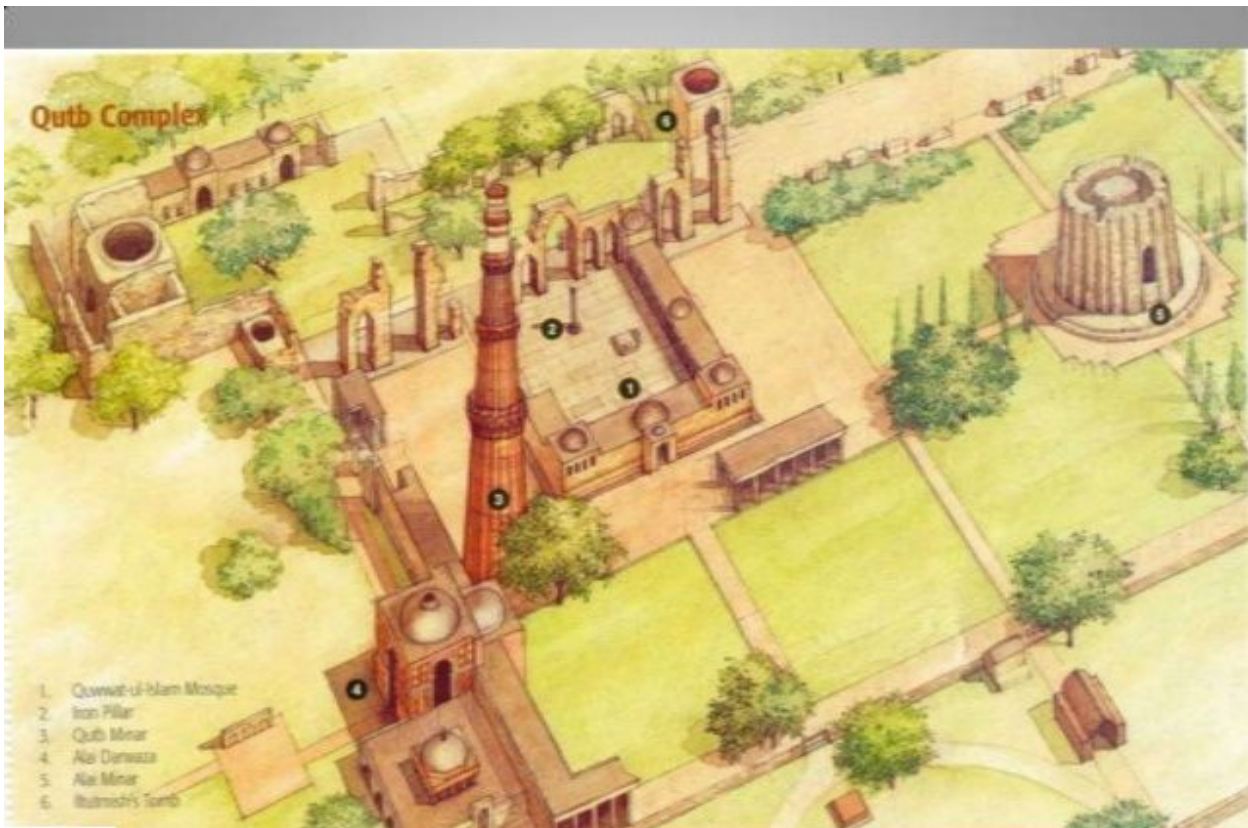
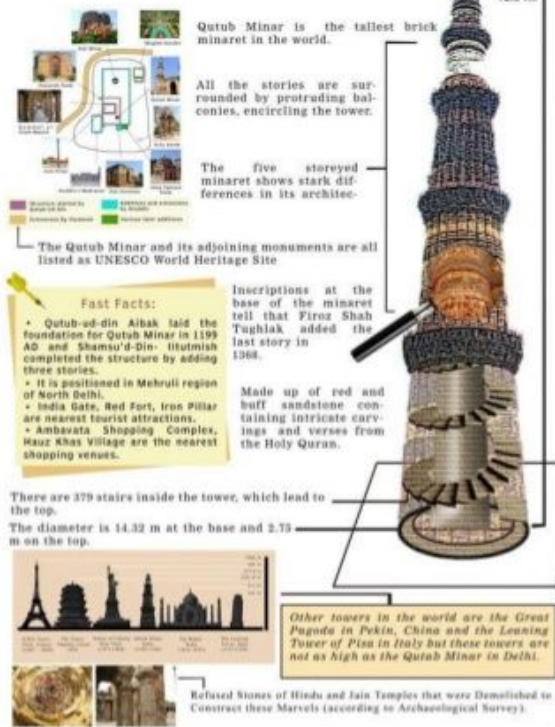
- Each storey has a different pattern in plan.
- First storey- Alternate wedge shaped and round projections
- Second storey- Circular projections
- Third storey- Star shaped
- Fourth storey- Round

Balconies

- Each storey has a balcony around it.
- The balustrade around the balcony originally showed merlons called kanjuras.
- The balconies are supported by stalactite vaulting, represented by clusters of miniature arches with brackets in between, influenced by the tracery of temple ceilings.



Where The Head Is Held High In Proud Qutub Minar

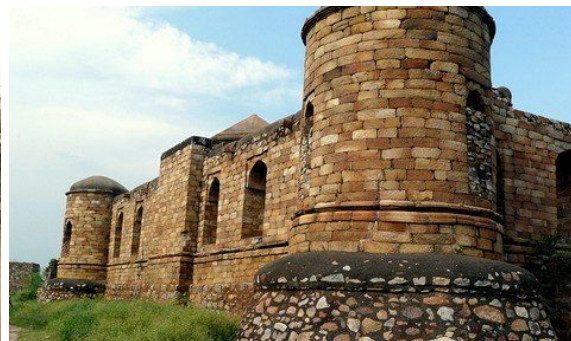


ARHAI DIN KA JHOMPRA:



- Built by Qutb-ud-din Aibak in 1200 A.D. at Ajmer.
- Built on a levelled terrace probably used previously as a fair ground for a fair which lasted 21/2 days, hence the name of the structure.
- Built on the same lines as the Quwwat-ul-Islam mosque, using materials from surrounding temples, but twice the size of the Delhi mosque.
- Three pillars from Hindu temples are placed one above the other to achieve the height of the cloisters which is 20'.
- Tall stairway in four flights reaching up to front portico with a minaret on each side.
- A screen was added across the front of the sanctuary by Iltutmish. Above the main arch over the parapet are two minarets. The arches are of the 4 centered type.
- The smaller arches are of the multi-foil pointed style, inspired by Arab sources.
- The screen is 200' wide, 56' high at the centre and 12' thick.
- The rectangular panel is seen in the spandrel of each arch, a feature seen in ancient Arabian mosques.

NASIR-UD-DIN MOHAMMAD'S TOMB (SULTAN GHARI):



- Built by Shams-ud-Din Iltutmish as a tomb for his son in A.D. 1231 near Delhi.
- First example of a tomb building in India.
- The structure is raised on a high plinth with a massive portal on the east.
- The cenotaph is an underground chamber, giving the structure its name.
- The structure is built in the manner of a walled enclosure.

- The enclosure is contained within a massive masonry arcade.
- The exterior is built of grey granite with circular bastions projecting from each corner of the square.
- Within the enclosure is a courtyard 66' square.
- In the centre of the courtyard is an octagonal platform which forms the roof of the tomb chamber.
- Two pillared arcades in white marble are built on the eastern and western sides. The western arcade resolves into a mosque chamber for private prayers.
- The mosque sanctuary has a central domed nave with a foliated arch as mihrab and aisles on either side. The whole is fronted by a colonnade of marble pillars with bracket capitals. Apart from the mihrabs, the entire composition is of Hindu extraction.

TOMB OF SHAMS-UD-DIN ILTUTMISH:

- Built in A.D. 1235 just outside the Quwwat-ul-Islam mosque.
- A compact square structure of 42' side with entrances at three sides and western wall enclosed to accommodate 3 mihrabs.
- Exterior is relatively plain, but interior is richly decorated. A square hall of 30' side, its walls are relieved with white marble insertions. Quranic verses in Kufri, Tugra and Nashtalik characters with geometrical patterns interspersed.
- Most of the roof has collapsed, but remains show it to have been a shallow dome composed of concentric rings of masonry which collapsed due to excessive span.
- The most interesting feature is the first appearance in India of the 'Squinch'. This consists of projecting a small arch across the upper side of the corners of the square room, turning it into an octagon, then repeating the process to turn it into a 16 sided base in which a dome can rest.
- In this case, the squinch is a half-dome, though built on the corbelling principle. Thus, this is an Indianized version of the squinch.

Tughlaq dynasty:

Type:Fort

Condition:Ruins

Built:14th century

Built by:Delhi Sultanate

Materials:Granite Stones and lime mortar

Ghiyath al-Din Tughluq, Ghiasuddin Tughlaq, or Ghazi Malik (Ghazi means 'fighter for Islam'), (died: 1325) was the founder of the Tughluq dynasty in India, who reigned over the Sultanate of Delhi from 1320 to 1325. He founded the city of Tughlaqabad. His reign was cut short after five years when he died under mysterious circumstances in 1325.

Tughlaqabad Fort is a ruined fort in Delhi, built by Ghiyas-ud-din Tughlaq, the founder of Tughlaq dynasty, of the Delhi Sultanate of India in 1321, as he established the third historic city of Delhi, which was later abandoned in 1327. It lends its name to the nearby Tughlaqabad residential-commercial area as well as the Tughlaqabad Institutional Area. Tughlaq also built Qutub-Badarpur Road, which connected the new city to the Grand Trunk Road. The road is now known as Mehrauli-Badarpur Road.

Surroundings are an important biodiversity area within the Northern Aravalli leopard wildlife corridor stretching from Sariska Tiger Reserve to Delhi. Historical place around sanctuary are Badkhal Lake (6km northeast), 10th century ancient Surajkund reservoir and Anangpur Dam, Damdama Lake, Tughlaqabad Fort and Adilabad ruins (both in Delhi). It is contiguous to the seasonal waterfalls in Pali-Dhuaj-Kot villages of Faridabad, the sacred Mangar Bani and the Asola Bhatti Wildlife Sanctuary. There are several dozen lakes formed in the abandoned open pit mines in the forested hilly area of Delhi Ridge.

Mausoleum of Ghiyas ud-Din Tughlaq:

The 'Mausoleum of Ghiyath al-Din Tughluq' is connected by a causeway to the southern outpost of the fortification. This elevated causeway 600 ft in length, supported by 27 arches, leads across a former artificial lake, however sometime in 20th century portion of causeway was pierced by the Mehrauli-Badarpur road. After passing an old Pipal tree, the complex of Ghiyas ud-din Tughluq's tomb is entered by a high gateway made up of red sandstone with a flight of steps.

The actual mausoleum is made up of a single-domed square tomb (about 8 m x 8 m) with sloping walls crowned by parapets. In contrast to the walls of the fortification made up of granite, the sides of the mausoleum are faced by smooth red sandstone and inlaid with inscribed panels and arch borders from marble. The edifice is topped by an elegant dome resting on an octagonal drum that is covered with white slabs of marble and slate.

Graves inside the Mausoleum

Inside the mausoleum are three graves: The central one belongs to Ghiyas ud-din Tughluq and the other two are believed to be those of his wife and his son and successor Muhammad bin Tughluq. In the north-western bastion of the enclosure wall with its pillared corridors is another octagonal tomb in similar style with a smaller marble dome and inscribed marble and sandstone slabs over its arched doors. According to an inscription over its southern entrance this tomb houses the remains of Zafar Khan. His grave has been at the site prior to the construction of the outpost and was consciously integrated into the design of the mausoleum by Ghiyath al-Din himself.

Architecture:

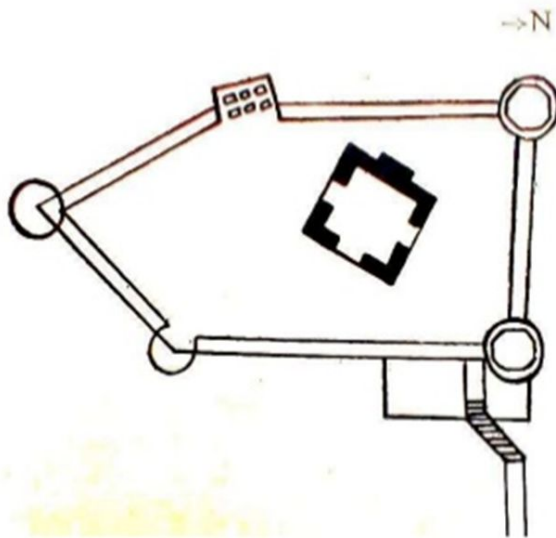
Tughluqabad still consists of remarkable, massive stone fortifications that surround the irregular ground plan of the city. The sloping rubble-filled city walls, a typical feature of

monuments of the Tughluq dynasty, are between 10 and 15 meters high, topped by battlemented parapets and strengthened by circular bastions of up to two stories height. The city is supposed to once have had as many as 52 gates of which only 13 remain today. The fortified city contained seven rainwater tanks.

Tughlaqabad is divided into three parts:

- the wider city area with houses built along a rectangular grid between its gates
- the citadel with a tower at its highest point known as Bijai-Mandal and the remains of several halls and a long underground passage
- the adjacent palace area containing the royal residences. A long underground passage below the tower still remains.

Today most of the city is inaccessible due to dense thorny vegetation. An ever increasing part of the former city area is occupied by modern settlement, especially in the vicinity of its lakes. South of Tughlaqabad was a vast artificial water reservoir within the fortified outpost of Ghiyath al-Din Tughluq's Tomb. This well preserved mausoleum remains connected to the fort by an elevated causeway that still stands today. Well visible in the southeast are the remains of the Fortress of Adilabad, built years later by Ghiyathu'd-Din's successor, Muhammad Tughluq (1325–1351) which shares the main characteristics of construction with Tughlaqabad fort.





Mausoleum of
Ghiyas al-Din Tughluq at Tughluqabad,
also showing a side tomb.



A Well inside Tughluqabad Fort



Entrance of the Mausoleum of
Ghiyath al-Din Tughluq



Meena Bazar in the basement



Tughlaqabad Fort Architecture



Ghiyas Ud Din's Grave inside the Mausoleum



Graves inside the Mausoleum

Feroz Shah Kotla:

Type:Fort

Site information Condition:Ruins

Built:14th century

Built by:Delhi Sultanate

Materials:Granite Stones and lime mortar

The Feroz Shah Kotla or Kotla was a fortress built by Sultan Feroz Shah Tughlaq to house his version of Delhi city called Firozabad.



A pristine polished sandstone Topra Ashokan pillar from the 3rd century BC rises from the palace's crumbling remains, one of many pillars of Ashoka left by the Mauryan emperor; it was moved from Topra Kalan in Pong Ghati of Yamunanagar district in Haryana to Delhi under orders of Firoz Shah Tughlaq of Delhi Sultanate, and re-erected in its present location in 1356. The original inscription on the obelisk is primarily in Brahmi script but language was Prakrit, with some Pali and Sanskrit added later. The inscription was successfully translated in 1837 by James Prinsep. This and other ancient lats (pillars, obelisk) have earned Firoz Shah Tughlaq and Delhi Sultanate fame for its architectural patronage. Other than the Ashokan Pillar, the Fort complex also houses the Jami Masjid (Mosque), a Baoli and a large garden complex.

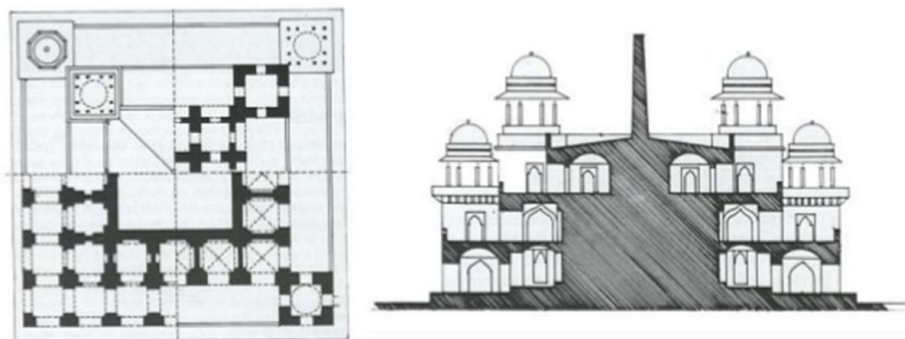


Figure 24: Plan (left) and Section (right) of Hawa Mahal at Firoz Shah Kotla, Delhi

Topra Ashokan Pillar:



The Ashokan Pillar that lies within Feroz Shah Kotla is perfectly placed towards the north of Jama Masjid [Mosque]. The Pillar was first erected by King Ashoka between 273 and 236 BC in Topra Kalan, Yamunanagar district, Haryana. Of note, there is another Ashokan Pillar, that is seen installed near the Hindu Rao Hospital, also erected by King Ashoka in Meerut. This pillar, however, was unfortunately broken into five pieces after it was damaged during an explosion. The pillar was neglected for a century up till 1838 when after the Revolt of 1857 Raja Hindu Rao took charge to transfer the Ashokan Pillar's broken pieces to Kolkata's Asiatic Society. Within a year, the structure was put together and re-established.

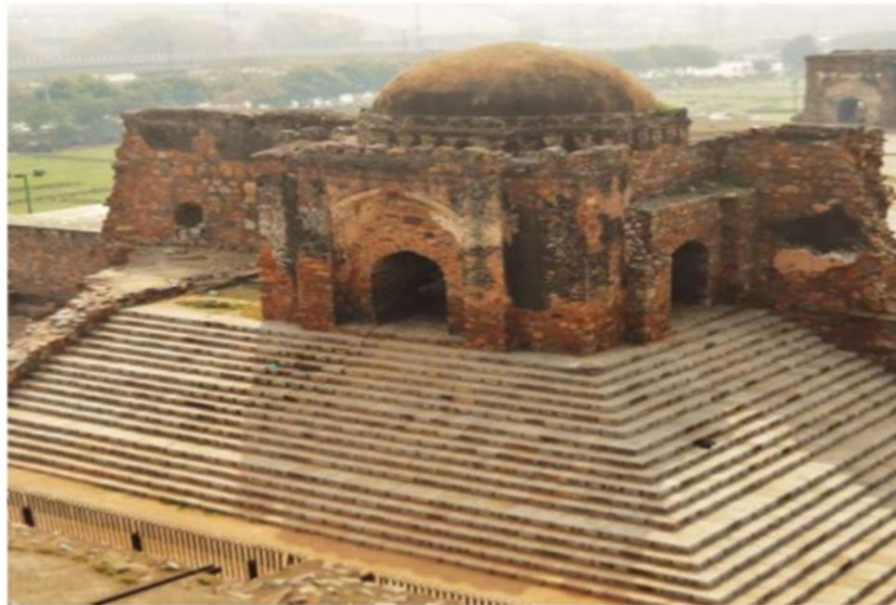
Both the Ashokan Pillars were carefully wrapped with cotton silk and were kept on a bed of reed made of raw silk. These were hence transported on a massive carriage attached with 42 wheels and drawn meticulously by 200 men from their original places to Delhi by Feroz Shah Tughlaq to avoid any damage during the journey. Upon reaching Delhi, they were then transported on huge boats to their final destination, one within Feroz Shah Kotla and the other on the ridge near Delhi University and Bara Hindu Rao Hospital.

Baoli (The Well):

The circular Baoli, which means 'stepwell', lies towards the northwestern side of the Ashokan Pillar. It lies in the heart of a large garden constructed in the form of subterranean apartments and a large underground canal built on its eastern side through which the water runs into the well. This is the only circular Baoli in Delhi, and also one of the 4 Baolis, where the tank is not separated from the well. It once has a roof on it, which collapsed long ago, exposing the tank at the second level. Originally it had an entry from East and West, but now, only the west side is accessible. Due to security reasons, the Baoli is kept locked, but permission to visit can be obtained easily for research purposes from the Delhi circle office of Archaeological Survey of India.



Jami Masjid (Masjid):



Jami Masjid is one of the most ancient and largest surviving mosques and monuments, still in use. Architecturally it was built on a series of underground cells made of quartzite stone, covered with limestone. It is surrounded by a large courtyard with cloisters and a Prayer Hall. The Prayer Hall now in complete ruins was once used by the Royal Ladies. The masjid and its architecture is an example of Tughlaq architecture.

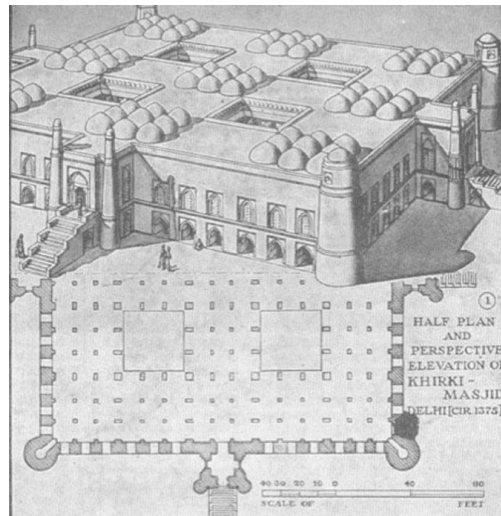
The entrance of Jami Masjid lies on the northern side. It is connected by a causeway to the pyramidal structure of the Ashokan Pillar. This mosque was visited by Sultan Timur in

1398 AD to say his prayers. He was spellbound by its beauty and constructed a mosque in Samarkand in Mawarannahr imitating the design of this Masjid. This mosque is also known to be the place where Imad ul Mulk, a Mughal Prime Minister, got the Emperor Alamgir II murdered in 1759 AD.



Khirki Masjid:

The Khirki Masjid is located in the settlement of Jahanpanah, Delhi, and was commissioned by Khan-i Jahan Junan Shah, vizier to the Tughluq Sultan Firoz Shah (reg. 1351-1388). The Khirki, named for the perforated windows, or khirkis, that decorate the upper floors, has four open courtyards that provide light and ventilation to the internal prayer spaces. Occupying an area of 87 square meters, the mosque is built on a raised platform with arched recessed openings (taikhana) that is 3 meters in height.

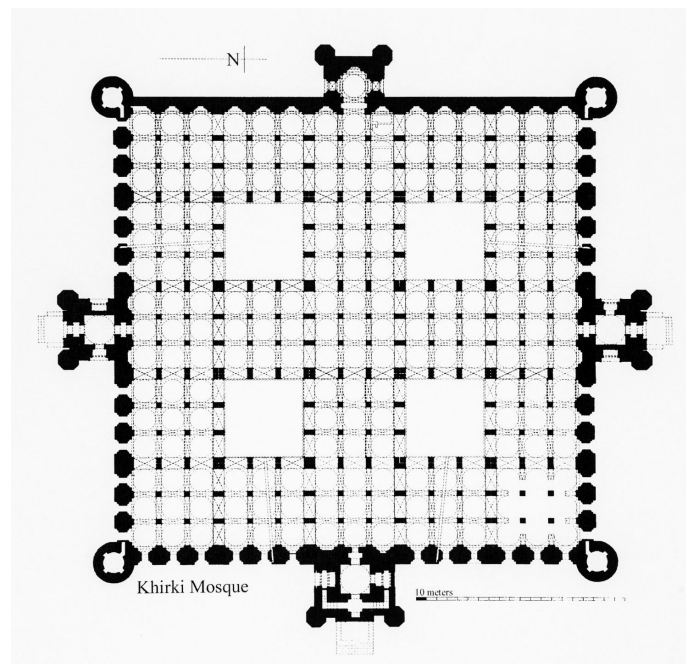


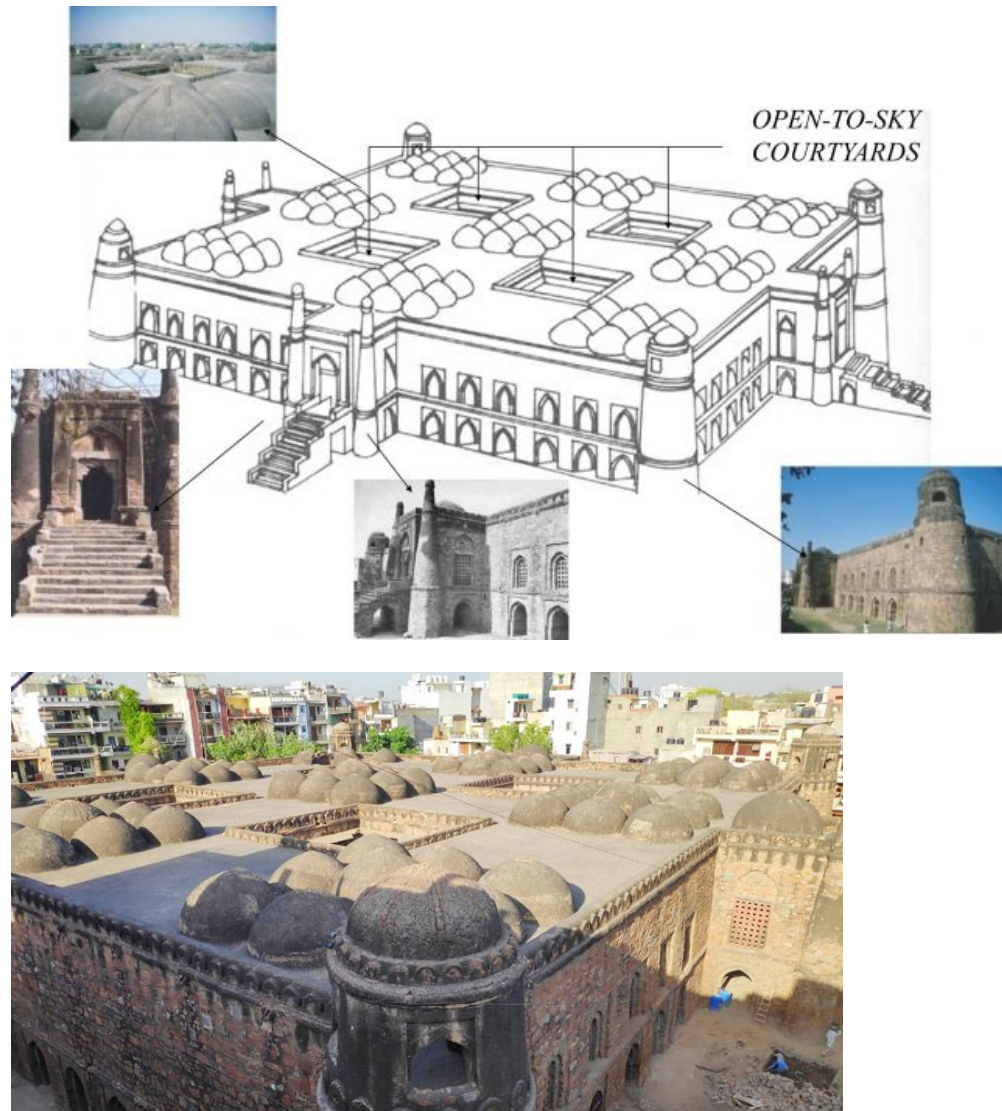
Unlike an open courtyard (hypostyle) congregational mosque, the Khirki Masjid is square in plan, subdivided into quarters; each quarter has its own inner courtyard. Internally, arcades running north-south divide the mosque space into aisles. These arcades are formed by 180 square structural columns and 60 pilasters. The main entrance to the prayer hall is through the southern entrance: one climbs a flight of stairs to a gateway flanked by tapering turrets. This gateway fronts a small vestibule, square in plan, which extends out from the main southern exterior wall. Larger round tapering bastions appear at each of the four corners of the mosque's exterior walls. The southern entrance doorway shows a mixture of arch and trabeated construction: within a decorative rectilinear frame, a blind

Unlike an open courtyard (hypostyle) congregational mosque,

the Khirki Masjid is square in plan, subdivided into quarters; each quarter has its own inner courtyard. Internally, arcades running north-south divide the mosque space into aisles. These arcades are formed by 180 square structural columns and 60 pilasters. The main entrance to the prayer hall is through the southern entrance: one climbs a flight of stairs to a gateway flanked by tapering turrets. This gateway fronts a small vestibule, square in plan, which extends out from the main southern exterior wall. Larger round tapering bastions appear at each of the four corners of the mosque's exterior walls. The southern entrance doorway shows a mixture of arch and trabbeted construction: within a decorative rectilinear frame, a blind ogee arch contains the door opening (itself a lintel frame with a corbel infill). In the interior, bays of arcades signify non-hierarchical space, and an outwardly projecting mihrab is found on the western qibla wall. The square courtyards, which are enclosed by these arcades, measure 9.14 meters on each side.

The roof of the Khirki Masjid is divided into 25 squares equal in size. Group of 9 small domes together alternate with flat roofs (and the four open courts) to cover the roof. The small, plastered domes total 81; the flat roofs, 12. The external surface of the mosque is plaster; its interiors are undecorated save for traditional carved stone screens (jalis) that also admit light. The rubble core construction of the mosque's walls, both exterior and interior, can be seen where the plaster has fallen off.





District: South Delhi

Province: Delhi

Location: New Delhi, India

Territory: Delhi

Architect(s): Malik Ghazi Shahna

Type: Indo-Islamic architecture

Style: Tughlaq period

Completed: 1352 to 1354 A.D.

Length: 14.8 m (48.6 ft)

Height (max): 14.8 m (48.6 ft)

Dome(s):Seven

Dome dia. (outer):8.8 m (28.9 ft) (Main dome)

Materials:Red Sandstone & Marble

Hauz Khas Complex in Hauz Khas, South Delhi houses a water tank, an Islamic seminary, a mosque, a tomb and pavilions built around an urbanized village with medieval history traced to the 13th century of Delhi Sultanate reign. It was part of Siri, the second medieval city of India of the Delhi Sultanate of Alauddin Khalji Dynasty (1296–1316).The etymology of the name Hauz Khas in Farsi is derived from the words 'Hauz': "water tank" (or lake) and 'Khas':"royal"- the "Royal tank". The large water tank or reservoir was first built by Allauddin Khilji (the plaque displayed at the site records this fact) to supply water to the inhabitants of Siri.The tank was de-silted during the reign of Firuz Shah Tughlaq (1351–88). Several buildings (Mosque and madrasa) and tombs were built overlooking the water tank or lake. Firuz Shah's tomb pivots the L-shaped building complex which overlooks the tank.

In the 1980s, Hauz Khas Village, studded with domed tombs of Muslim royalty from the 14th to 16th centuries, was developed as an upper class residential cum commercial area in the metropolis of South Delhi, India. It is now a relatively expensive tourist cum commercial area with numerous art galleries, upscale boutiques and restaurants.

The water tank that was built during [Alauddin Khalji]'s reign (1296–1316) in the second city of Delhi to meet the water supply needs of the newly built fort at Siri, was originally known as Hauz-i-Alai after Khalji.But Firuz Shah Tughlaq (1351–88) of the Tughlaq dynasty re-excavated the silted tank and cleared the clogged inlet channels. The tank was originally of about 50 ha (123.6 acres) area with dimensions of 600 m (1,968.5 ft) width and 700 m (2,296.6 ft) length with 4 m (13.1 ft) depth of water. When built, its storage capacity at the end of each monsoon season was reported to be 0.8 Mcum. Now the tank size has substantially reduced due to encroachment and siltation but is well maintained in its present state (pictured).

Firoz Shah who ruled from his new city called the Firozabad (now known as Feroz Shah Kotla) – the fifth city of Delhi – was an enlightened ruler. He was known for "his keen sense of historical precedent, statements of dynastic legitimacy and the power of monumental architecture". He is credited with construction of new monuments (several mosques and palaces) in innovative architectural styles, irrigation works and renovating/restoring old monuments such as the Qutub Minar, Sultan Ghari and Suraj Kund, and also erecting two inscribed Ashokan Pillars, which he had transported from Ambala and Meerut in Delhi. At Hauz Khas, he raised several monuments on the southern and eastern banks of the reservoir.

The notable structures built by Firuz Shah on the eastern and northern side of the reservoir consisted of the Madrasa (Islamic School of Learning – a theological college), the small Mosque, the Main tomb for himself and six domed pavilions in its precincts, which were all built between 1352 and 1354 A.D.

Madrasa

Established in 1352, the Madrasa was one of the leading institutions of Islamic learning in the Delhi Sultanate. It was also considered the largest and best equipped Islamic

seminary anywhere in the world. There were three main Madrasa's in Delhi during Firuz Shah's time. One of them was the Firuz Shahi madrasa at Hauz Khas. After the sacking of Baghdad, Delhi became the most important place in the world for Islamic education. The village surrounding the Madarsa was also called Tarababad (city of joy) in view of its affluent and culturally rich status, which provided the needed supporting sustenance supply system to the Madrasa.

The madrasa structure has an innovative design. It was built in L-Shape as one contiguous structure on the south and east edges of the reservoir complex. One arm of the L-shape structure runs in the North–South direction measuring 76 m (249.3 ft) and the other arm runs in the East–West direction measuring 138 m (452.8 ft). The two arms are pivoted at the large Tomb of Firuz Shah (pictured). At the northern end there is a small mosque. Between the mosque and the tomb two storied pavilions exist now on the northern side and similar pavilions on the eastern side, overlooking the lake, which were used as madrasa. The two arms are interconnected through small domed gateways passing through the tomb at the center. The North–South arm with balconies overlooking the reservoir is a two storied building with three towers of varying sizes. Ornamental brackets cover the upper storied balconies while the lower stories have corbelled support. Roof overhangs or eaves (chajjas) are seen now only in the upper stories though it is said that they existed on both stories when it was built.

North-South arm of the Madrasa and Mosque overlooking the reservoir

From each floor of the Madrasa, staircases are provided to go down to the lake. Many cenotaphs, in the form of octagonal and square chhatris are also seen, which are reported to be possibly tombs of teachers of the Madrasa.

It is recorded that the first Director of the Madarasa was

one Jalal al-Din Rumi who knew fourteen sciences, could recite the Quran according to the seven known methods of recitation and had complete mastery over the five standard collections of the Traditions of the Prophet

The madrasa was well tended with liberal donations from the Royalty. Timur, the Mongol ruler, who invaded Delhi, defeated Mohammed Shah Tughlaq in 1398 and plundered Delhi, had camped at this venue. Expressed in his own words, his impressions of the tank and buildings around Hauz Khas were vividly described as:

When I reached [the city's] gates, I carefully reconnoitered its towers and walls, and then returned to the side of the Hauz Khas. This is a reservoir, which was constructed by Sultan Feruz Shah, and is faced all round with stone and stucco. Each side of the reservoir is more than a bows–shot long, and there are buildings placed around it. This

tank is filled by rains in the rainy season, and it supports the people of the city with water throughout the year. The tomb of Sultan Firuz Shah stands on its bank

While his description of the place is correct but his ascribing construction of the tank to Firuz Shah was a misconception.

Pavilions

Three pavilions inside the Tomb precincts with a small Chhatri in the foreground

Pavilions adjoining the courtyard

Hauz Khas Complex

The madrasa is flanked by the reservoir in the northern front and by a garden on its southern side at the second floor level. The entry to the garden is from the eastern gate which passes through the Hauz Khas village. The garden houses six impressive pavilions. The pavilions with domes are in different shapes and sizes (rectangular, octagonal and hexagonal) and on the basis of inscriptions are inferred to be graves. A cluster of three hemispherical domes, a large one of 5.5 m (18.0 ft) diameter and two smaller ones of 4.5 m (14.8 ft) diameter, portray exquisite architectural features of foliated motifs on the drums with kalasa motifs on top of the domes. Each pavilion is raised on a plinth of about 0.8 m (2.6 ft) and is supported by square shaped wide columns with entablature which have decorative capitals that support beams with projecting canopies. Ruins of a courtyard with a rectangular plan, are seen to the west of the three pavilions which are built of double columns. The pavilions and the courtyard are conjectured to have been used as part of the madrasa in the past.[6][7] Another striking structure in the garden, opposite to the Feruz Shah's tomb on the southern side, is a small eight pillared Chatri seen in the garden which has large cantilevered beams that supported flat eaves all round the small dome.

Mosque

Mosque at the Northern Tower of the Madrasa

The northern end of the madrasa is secured to a small mosque. The qibla of the Mosque projects towards the reservoir by about 9.5 m (31.2 ft). A domed gateway from the south east provides entry into three rooms of size 5.3 m (17.4 ft) x 2.4 m (7.9 ft) whose utility is not traced. A "C"-shaped layout of a double row of pillars on a raised podium forms the prayer hall, which is open to the sky. The qibla wall seen clearly from the reservoir side has five mihrabs. The avant-garde setting of the central mihrab with a domed chhatri (cupola) with open sides is seen in the form of a pavilion projecting into the reservoir. The

other mihrabs are set, on either side of the main mihrab, in the walls with grilled windows.[6][7]

Firoz Shah's Tomb

Tomb of Feroz Shah

Affiliation Islam

District South Delhi

Province Delhi

Architecture

Architect(s) Malik Ghazi Shahna

Type Indo-Islamic architecture

Style Tughluqid period

Completed 1352 to 1354 A.D.

Specifications

Length 14.8 m (48.6 ft)

Height (max) 14.8 m (48.6 ft)

Dome(s) Seven

Dome dia. (outer) 8.8 m (28.9 ft) (Main dome)

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Firuz Shah, who established the tomb, ascended the throne in 1351 (inherited from his cousin Muhammad) when he was middle aged, as the third ruler of the Tughlaq dynasty and ruled till 1388. He was considered a well-liked ruler. His wife was a Hindu lady and his trusted Prime Minister, Khan-i-Jahan Junana Shah was a Hindu convert. Firuz Shah assisted by his Prime Minister was responsible for building several unique monuments (mosques, tombs, pavilions), hunting lodges and irrigation projects (reservoirs) in his domains, apart from establishing and constructing a new Citadel (palace) in his new city of Firuzabad.[12] Feruz died at the age of ninety due to infirmities caused by three years of illness between 1385 and 1388. On his death, his grandson Ghiya Suddin was proclaimed as his successor to the throne. During his enlightened rule Feroz abolished many vexatious taxes, brought in changes in the laws on capital punishment, introduced regulations in administration and discouraged lavish living styles. But the most important credit that is bestowed on him is for the large number of public works executed during his reign namely, 50 dams for irrigation across rivers, 40 mosques, 30 colleges, 100 caravanserais, 100 hospitals, 100 public baths, 150 bridges, apart from many other monuments of aesthetic beauty and entertainment.

Among the notable buildings of historical importance that he built within Hauz Khas precincts is the domed tomb for himself. The tomb which is very austere in appearance, is located at the intersection of the two arms of the L-shaped building which constitutes the madrasa. Entry to the tomb is through a passage in the south leading to the doorway. The passage wall is raised on a plinth which depicts the shape of a fourteen-faced polyhedron built in stones. Three horizontal units laid over eight vertical posts that are chamfered constitute the plinth. Squinches and muqarnas are seen in the solid interior walls of the tomb and these provide the basic support to the octagonal spherical dome of the tomb. The dome with a square plan – 14.8 m (48.6 ft) in length and height – has a diameter of 8.8 m (28.9 ft). The maximum height of the tomb is on its face overlooking the reservoir. The domed gateway on the north has an opening which has height equal to two-thirds the height of the tomb. The width of the gate is equal to one-third of tombs' width. The entrance hall has fifteen bays and terminates in another doorway which is identical to the gateway at the entrance. This second doorway leads to the tomb chamber

and cenotaph, which are accessed from the gateway through the L-shaped corridor. Similar arrangement is replicated on the western doorway of the tomb leading to the open pavilion on the west. The ceiling in the dome depicts a circular gold medallion with Quranic inscriptions in Naksh characters. Foliated crenellations are seen on the outer faces of the base of the tomb. Interesting features seen on the northern and southern sides of the tomb, considered typical of the Tuglaq period layout, are the ceremonial steps provided at the ground level that connect to the larger steps leading into the reservoir.

The tomb, a square chamber, is made of local quartzite rubble with a surface plaster finish that sparkled in white colour when completed. The door, pillars and lintels were made of grey quartzites while red sandstone was used for carvings of the battlements. The doorway depicts a blend of Indian and Islamic architecture. Another new feature not seen at any other monument in Delhi, built at the entrance to the tomb from the south, is the stone railings. There are four graves inside the tomb, one is of Feruz Shah and two others are of



Firuz Shah Tughlaq's tomb with
adjoining Madrasa,
Hauz Khas Complex, Delhi



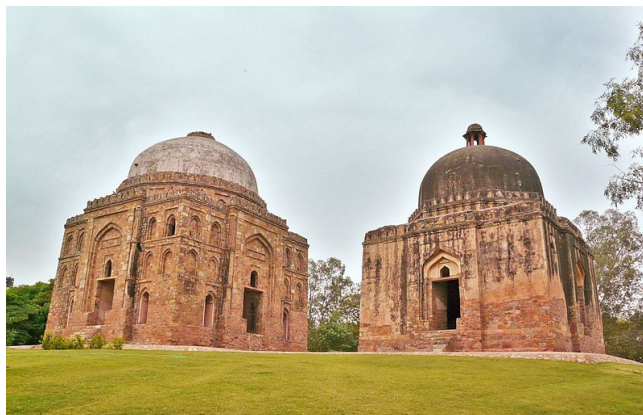
Three Pavilions (Front View)



3 tombs inside the Feroze Shah Tomb Monument



Inside view of the Dome of Feroze Shah's Tomb



Dadi-Poti ka Gumbad (mausoleums), close to the Hauz Khas Complex

Shift of power to the provinces and evolution of Regional Architecture with Examples- Bengal, Gujarat and Malwa, Deccan- Bijapur and Gulbarga with examples.

GUJARAT STYLE

First and Second Periods (1300- 1458)

Third or Begarha Period (1459- 1550)

- The Gujarat style is the most important of all the provincial styles in India. Two factors are responsible for the prodigious output of architecture in this region:
- The egotism of the powerful Ahmed Shahi dynasty who wanted to surround themselves with architectural evidences of their might.
- The supply of skilled indigenous workmen.

The Gujarat style is the most indigenous Indian style of all the provincial styles. Many structures are adaptations or extracts of local Hindu and Jain temples.

The style can be divided into three main periods:

First Period (First half of the 14th Century A.D.)

- Consisted of the customary phase of demolition of temples followed by reconversion of the building materials.
- The buildings of this period have the appearance of being formative and experimental.
- Many buildings were built using materials from Hindu temples. Most often, the pillars would be used as they were, while the walls would be built of original masonry, sometimes using stones taken from the temples and recut to suit the requirements.

Second Period (First half of the 15th Century A.D.)

- In this period, we see the art approaching an early consummation, with slightly tentative qualities.
- There is more directional authority in the buildings and increased assurance in the design.
- This can also be called the Ahmed Shahi period, after the Sultan Ahmed Shah.
- Third Period (Second half of 15th Century A.D.)
- This is the most magnificent aspect of the style.
- Most of the development in this phase happened under Sultan Mahmud I Begarha (1458-1511).

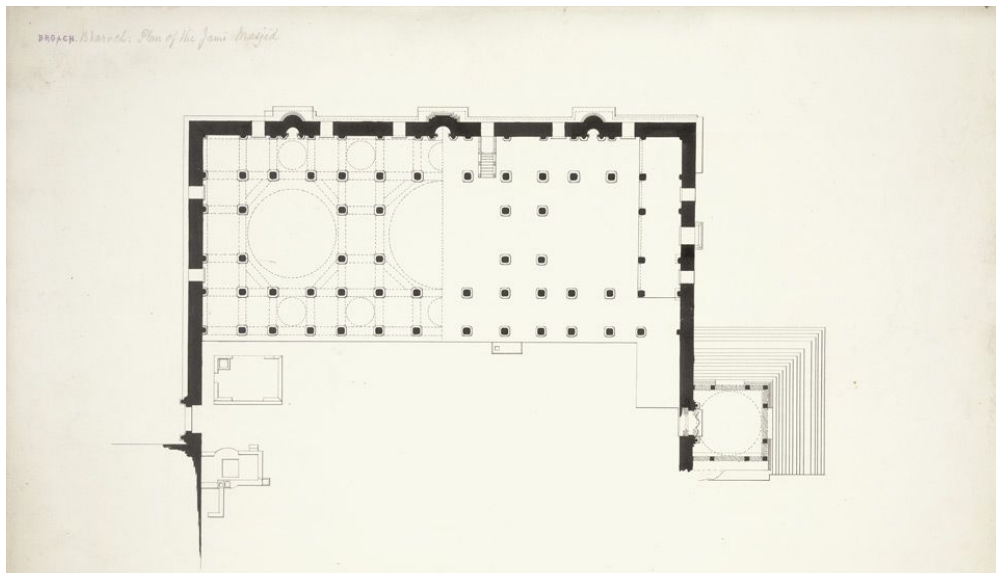
Main Buildings

First Period	Second Period	Third (Begarha) Period
Jami Masjid or Adina Masjid at Patan	Jami Masjid at Ahmedabad	Bai Hari Wav

Jami Masjid at Bharuch	Jami Masjid at Ahmedabad	Sidi Sayyid Masjid
Jami Masjid at Cambay	Teen Darwaza	Jami Masjid at Champanir

JAMI MASJID AT BHARUCH:

- Probably dates from about the beginning of the 1300's.
- Largely composed of temple materials, it was planned and constructed as per mosque principles.
- Consists of a courtyard with gateways on 3 sides and sanctuary in the west.
- The sanctuary is of the open pillared variety i.e. without a screen of arches put across the front. It is merely an elaborated loggia or verandah.
- All 48 pillars of the sanctuary are of bracket pattern.
- They are arranged so as to divide the interior into 3 compartments, each corresponding to the three temple mandapas from where the pillars were taken.



- The walls surrounding the sanctuary have been constructed out of stone cut for this specific purpose and are thus the earliest example of original masonry work for this style. The stones were quarried from existing temples and recut or reconditioned.
- There are 3 mihrabs on the interior of the western wall and a series of arched windows filled with stone tracery designed in the indigenous manner.
- The mihrabs are copies of niches found in Hindu temples with the Islamic pointed arch introduced under the lintel.
- The sanctuary roof consists of beams supporting 3 large domes and 10 smaller ones.

- Square sunk coffered ceilings are decorated with cusped and other geometrical patterns as found in temple roofs.



- Except for a certain amount of direction and supervision from Muslim overseers, the actual production is the handiwork of local artisans who had probably never seen a mosque before.

JAMI MASJID AT CAMBAY:

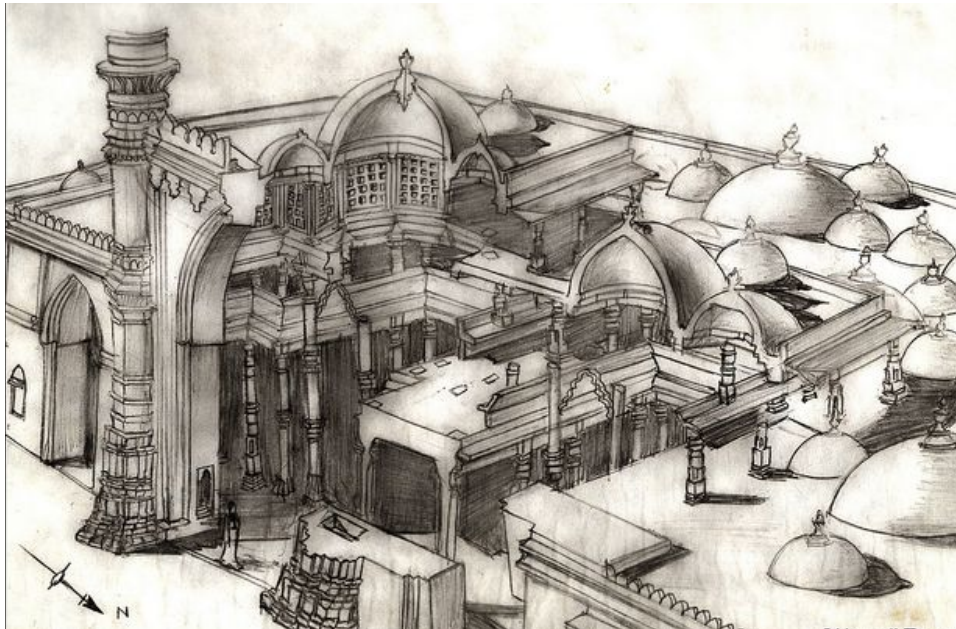


- Built in the year 1325 A.D.
- Judging from the appearance, it is probable that local artisans were reinforced by a group of artisans from Delhi to build this structure.
- The sanctuary of the mosque is having an enclosed facade with a screen of arches.

- The shape and position of the arches, the masonry consisting of alternate broad and narrow courses and the overall architectural treatment is reminiscent of the architectural style of Delhi under the Khalji dynasty.
- The arrangement of pillars inside the archways of the facade borrows from the Ajmer type of mosque.
- The pillars have been enriched by an engrailed arch similar to one found in temples, a motif which later figures prominently as the flying arch within the central openings of mosque facades in Gujarat.

JAMI MASJID AT AHMEDABAD

- Built by Sultan Ahmed Shah in A.D. 1423.
- Considered to be the high water mark of mosque design on western India.
- Most of the architectural effect is concentrated in the sanctuary.
- The flagged courtyard is 255' X 220'

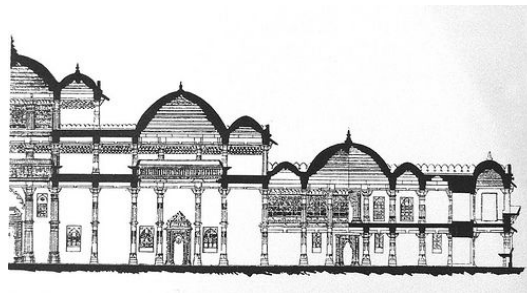
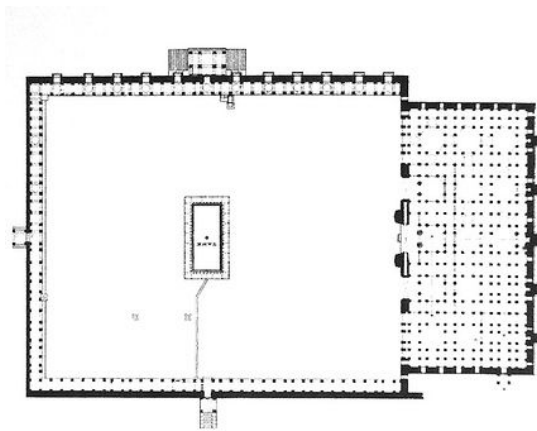


Sanctuary Facade:

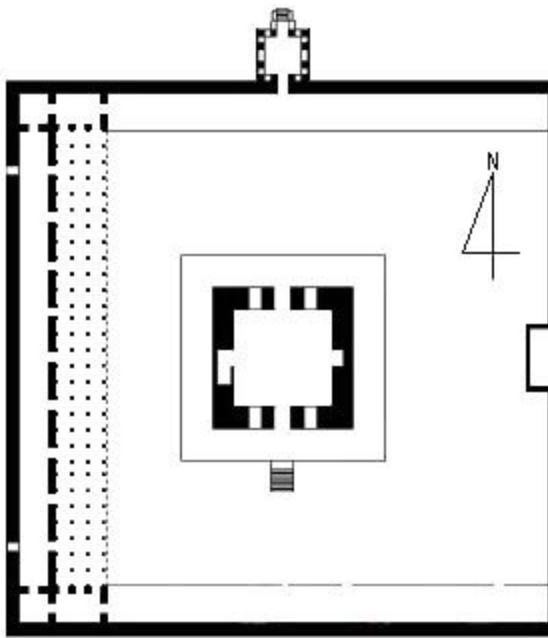
- The architect has combined the two types of sanctuary facades, the screen of arches and the pillared portico, with the screen in the centre and the portico on the wings.
- The juxtaposition of the two elements creates contrast between the volume and strength of the wall surface and the depth and airy lightness of the colonnade.
- The large central archway has large moulded buttresses of minarets on either sides, whose upper parts have now disappeared.
- Two smaller archways are placed on either side of the central one.
- Directly visible through the archway in the shadows is the colonnade of the interior with its engrailed arch springing lightly from its slender columns.

Sanctuary Interior:

- The sanctuary is a hypostyle hall 210' X 95'.
- It consists of around 300 slender pillars, closely set at an average intercolumniation of 5'.
- The columns are symmetrically arranged to form 15 bays across the long axis of the hall, each surmounted by a dome and connected to the next through a columned interspace.
- The central compartment of the nave rises up to 3 storeys, the side aisles are 2 storeys and the rest of the hall is single storeyed.
- The nave is composed of two pillared galleries one above the other. The enclosed triple height space which is overlooked from the galleries is square in plan on the first floor and octagonal on the second and is covered by a dome.
- Each overlooking balcony is provided with an asana or a sloping backed seat as seen in temples.
- Around the exterior of the balconies are pillared verandahs or loggias and in the arcade between the pillars are stone jalis through which the galleries are illuminated.



Hushangs Tomb:

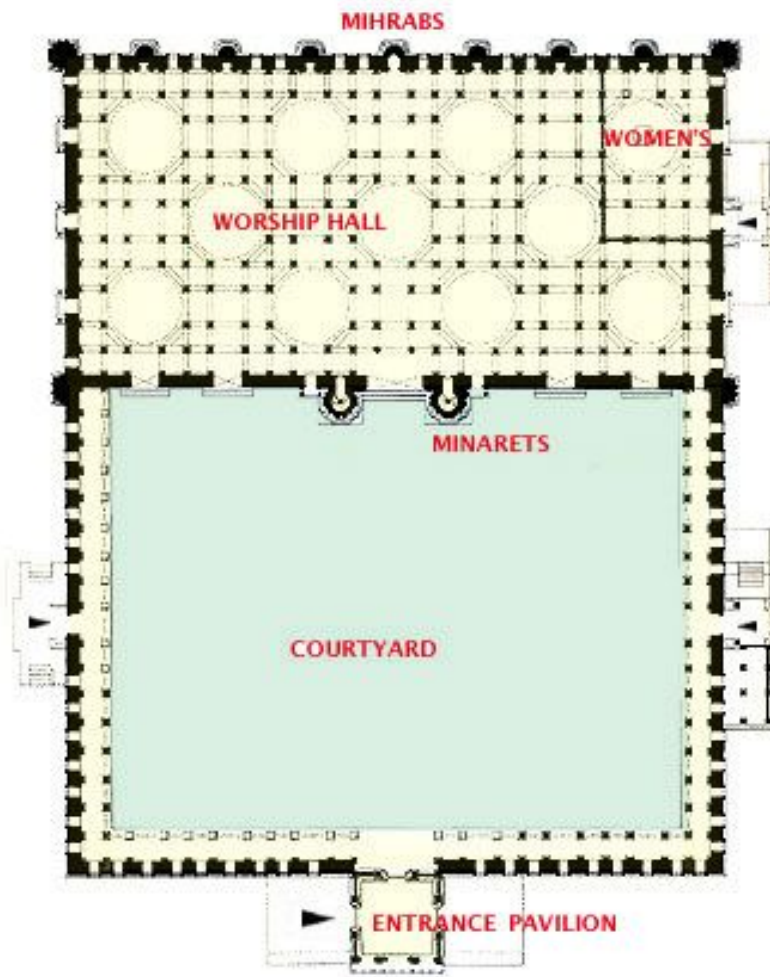


Teen Darwaza:

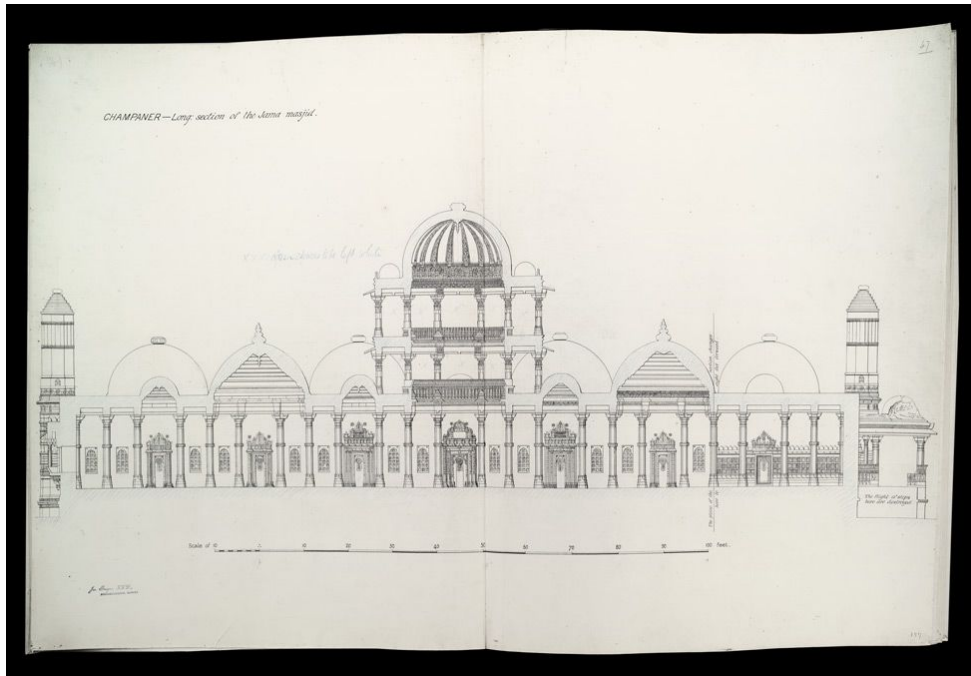


- Teen Darwaza is a triumphal archway straddling the 'King's Way' which connects the royal citadel and Jami Masjid in Ahmedabad constructed by Sultan Ahmed Shah.
- It is 37' high, 80' wide and 45' deep.
- It consists of 3 archways, each of the same height, with the two side arches only marginally narrower than the central archway.
- The contours of the pointed arches are some of the best to be found in India.
- The parapet is skillfully arranged, being relieved by three elegant oriel windows on brackets.

- The buttresses projecting from the piers are richly carved.



JAMI MASJID AT CHAMPANIR:



6t



JAMI MASJID AT CHAMPANIR

Built with the Jami Masjid at Ahmedabad as model except on a smaller scale and a few differences.

- The entire structure is a rectangle of 270' X 180'. A bit less than half the space is taken up by the sanctuary.

Cloisters

- The courtyard is surrounded by a range of arched cloisters, one aisle deep.
- An imposing entrance pavilion projects from the centre of each of the north, south and east cloisters. The eastern pavilion is a fine example of architecture in itself.
- A series of moulded buttresses along the exterior of the qibla wall along with traceried openings at close intervals along the entire periphery makes the exterior of the mosque attractive as well.

Sanctuary

- Sanctuary facade is of enclosed type containing 5 pointed archways with two slender minarets flanking the central opening.
- The ornamentation of the minarets is restricted to their buttress like bases, with the five stages above left mostly unadorned.
- On the whole, the frontal screen is more or less economically treated, relieved only by 3 oriel windows, one above the central arch and two on the minarets.
- Sanctuary is a pillared hall measuring 270' X 130', containing 176 pillars.
- The nave rises to 65' in height through 3 storeys and covered by a dome.
- From the second storey, it takes the form of a Latin cross with very short arms.
- Each storey is accessed by a staircase in the minarets.
- The level of the first floor is continuous with the roof of the rest of the building, forming a wide terrace for circumambulation among the cupolas with a square well above the nave.
- The second floor is restricted to the Latin cross and is a large pillared gallery with an octagonal well. This floor communicates with the oriel window above the central arch in the sanctuary facade.
- The zenana chamber is placed at the northern end of the transept.
- Around the galleries are provided stone seats with sloping backs.
- The Champanir mosque is based on the Ahmedabad mosque as a template, though the builders were not able to provide much of an improvement on the Ahmedabad archetype. The pillars in the Champanir sanctuary are more sophisticated than the Ahmedabad example, as may be seen in the vertical recessed chases of the shafts and other architectural details of a similar nature.

MALWA STYLE15th Century A.D.

Main examples of the style are found in the cities of Dhar and Mandu. Malwa was influenced more by the early Tughlaq style from Delhi. This was due to the lack of significant local traditions in Malwa and hostile relations with neighbouring Gujarat.

Salient Features:

Battered walls.

Pointed arches with spear head fringe.

Combination of Arch, Lintel and Bracket.

Boat keel domes.

Most artistic combination of arches with pillar and beam.

Buildings are raised on high plinths, accessed by long and stately flight of steps.

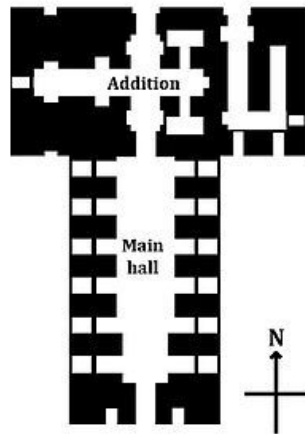
Prominent use of colour in decoration. Use of different coloured marble, semi-precious stones and glazed tiles. The artisans in Malwa possessed a secret formula for creating Turquoise blue colour.

The style can be divided into 3 phases:

FirstPhase:	Second (Classical) Phase:	Third Phase:
Dismantling of temples and converting them into mosque.	Monuments of original character. Sober and elegant. More substantial and formal order.	Less austere and more fanciful structures, implying a life of ease and luxury. Main examples are pavilions, loggias, kiosks, terraces etc.

First Phase	Second (Classical) Phase	Third Phase
<ul style="list-style-type: none"> • Kamal Maula Masjid (Dhar) • Lat Masjid (Dhar) • Malik Mughis Masjid (Mandu) 	<ul style="list-style-type: none"> • Jami Masjid at Mandu • Ashrafi Mahal • Hushang Shah's Tomb • Hindola Mahal • Jahaaz Mahal 	<ul style="list-style-type: none"> • Baz Bahadur's Palace • Kushk Mahal (Chanderi) • Jami Masjid at Chanderi

Hindola Mahal:



- Built by Hushang Shah, probably around A.D. 1425 as a Durbar hall.
- The walls are inordinately thick and slope like those of a castle. The slope of over 77 degrees gives a swinging appearance to the building, hence the name.
- The plan is 'T' shaped. The upright stem being the main hall (which was built first), and the cross bar is a transverse portion added later.
- The structure was probably supposed to have the zenana place as another storey above the main hall, which would explain the bulk and strength of the walls.

Main Hall

- Oblong building 110' X 60' and 35' high.
- Each of the long sided has 6 sunken arches with a doorway below and a window above. The short side has 3 similar arches. The central one is the entrance.
- The interior is a large hall 88 1/2' X 24 1/2' and 32' high with 5 transverse pointed arches supporting the flat roof.
- The flat roof rested on timber beams whose sockets are still visible, though the timber portions themselves have disappeared.

Transverse Building

- It is in the same dimensions as the main hall, but in two storeys.
- It is in a less formal style with some oriel windows of artistic design.
- The ground floor consists of a cruciform gallery, a short arm of which opens into the main hall. There are also subsidiary passages not connecting with the gallery and entered by a separate doorway.
- The first floor overlooks the main hall through an arched opening. It consists of a longitudinal hall of 70' X 40' divided into 3 aisles by 2 rows of pillars and a transverse chamber which may have been a retiring room.



Jahaaz Mahal:

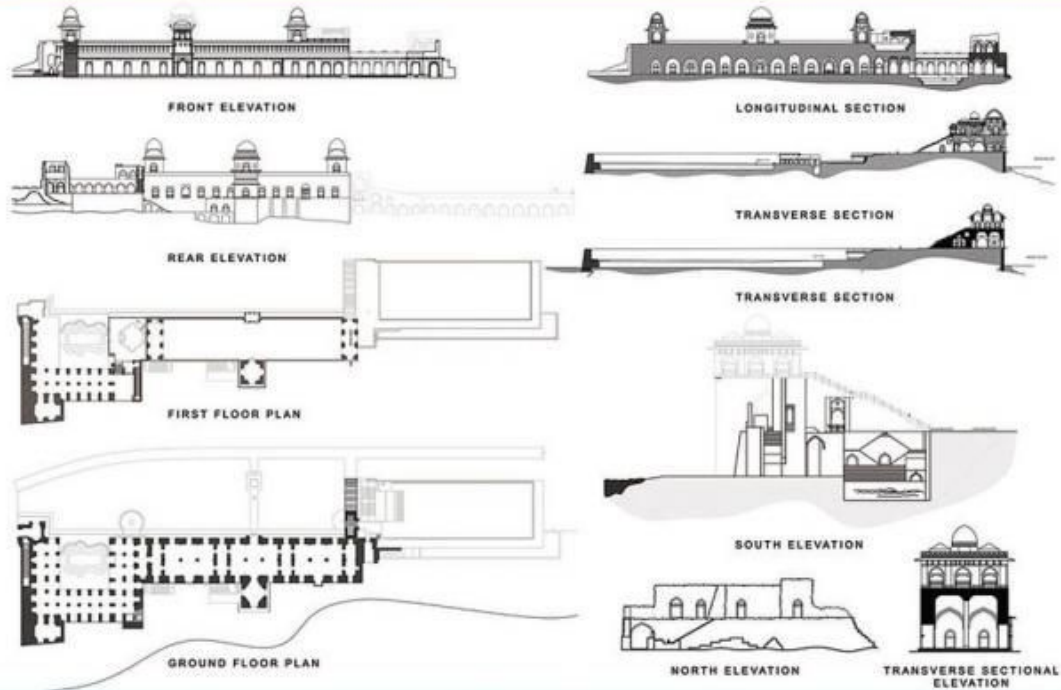


- Probably built by Mahmud I early in the last half of the 1400's
- The palace is a double storeyed structure, 360' long and 50' wide, extending along the edge of Kaphur Lake and Munja Lake.
- The shape, dimensions and position gives the illusion of a ship, hence the name.
- The building has a continuously arcaded front shaded by a broad eave above which is a triforium of recessed arches with a wide parapet showing a repetitive tile pattern.
- The roof has a series of open pavilions, kiosks and overhanging balconies.
- The interior consists of pillared compartments, cool corridors and sumptuous bathing halls.
- The character of the building is lively and entertaining, showing a progression from the phase of solidity and quiet solemnity to the lightly elegant and fanciful mode, with friezes of brightly coloured glazing on its surfaces.



DOCUMENTATION OF JAHAZ MAHAL | MANDU | MADHYA PRADESH

BACHELOR OF ARCHITECTURE



DECCAN STYLES

Gulbarga (1347-1422), Bidar (1422-1512), Golkonda (1512-1687), Bijapur (16th & 17th Centuries), Khandesh (15th & 16th Centuries)

Unlike other Muslim rulers who made full use of indigenous art and architecture in their domains, rulers in the Deccan largely ignored the local art and produced an independent style of their own.

Influences in this style come from two main sources:

Delhi style: Due to the forced migration of Muhammad Tughlaq from Delhi to Daulatabad, many influences of Tughlaqian Delhi were brought to the south.

Persian Style: Due to the migration of Persians to southern India via sea.

Deccan style can be divided into 3 main phases:

Gulbarga Phase (Bahmani Dynasty)	Laying the foundations of the style.
Bidar Phase (Bahmani & Barid Dynasties)	After moving the capital of the Deccan sultanate from Gulbarga to Bidar, the style developed under the Bahmani and later the Barid dynasties.
Golkonda Phase (Qutub Shahi Dynasty)	The capital of the Deccan sultanate finally moved to the southern city of Golkonda, the stronghold of the ruling Qutub Shahi dynasty.

Main Buildings

Jami Masjid at Gulbarga

Haft Gumbaz

Madrasa of Mahmud Gawan

Tomb of Ali Barid

Char Minar

Bijapur:

The Adil Shahi kingdom arose in Bijapur at the same time as the Golconda sultanate. While the Qutub Shahi rulers patronized various intellectual channels, the Adil Shahi kings concentrated mainly on architectural pursuits. Hence, the city of Bijapur has more than 50 examples of fine monuments in the style which developed here.

Khandesh:Artisans in the small area called Khandesh which lay between Deccan, Malwa and Gujarat took inspiration from each of these areas and also added some original ideas of their own to create a distinct style.

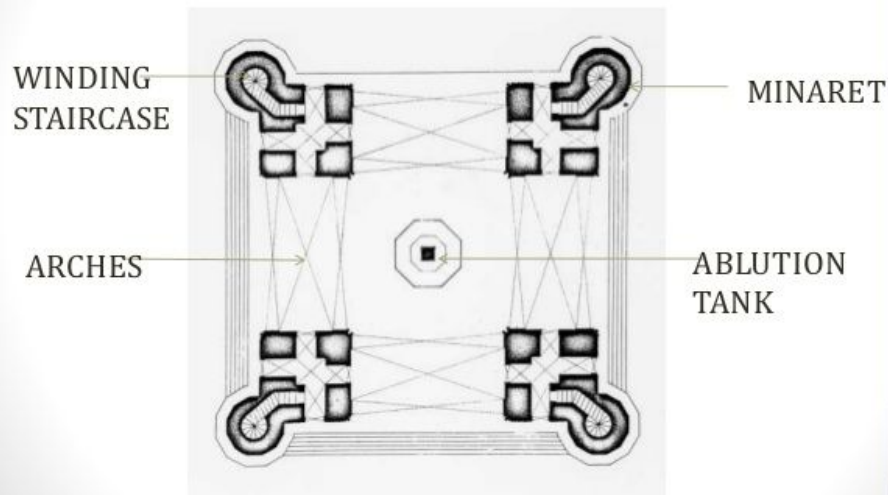
- Principle innovations in the Khandesh style are:
- Changes in the positions of openings such as wider spacing of doors and windows.
- Emphasis on parapets above eaves.
- Elevation of domes by raising them on octagonal drums and stiling of their sides.

CharMinar:

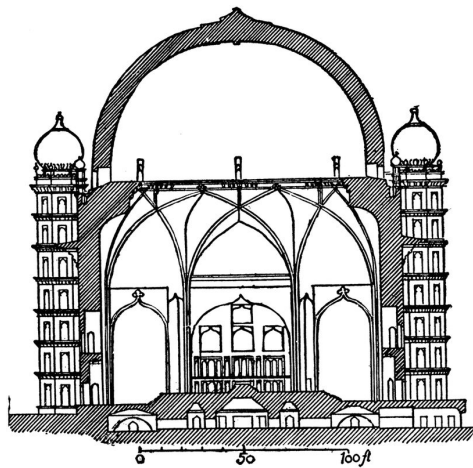
- Presents the most real architectural value of the buildings of the Qutub Shahi period.
- Built in A.D. 1591 in Hyderabad.
- The Char Minar is a triumphal archway, built for a purpose similar to the Teen Darwaza in Ahmedabad.
- It is a square in plan and measures 100' side.
- The minars, one in each corner are 186' high.
- The ground storey consists of large archways on each side, each having a span of 36'. Above the arches, the upper storeys show first a triforium, surmounted by a smaller arcade and a perforated balustrade above.
- The building displays the showily attractive character of the buildings of this period and style and a superfluous application of detail.



PLAN OF CHARMINAR



GolGumbaz:



- The Gol Gumbaz is the mausoleum of Mohammed Adil Shah.
- It is one of the largest single chambers ever built.
- Externally, the building is a great cube with a turret or tower attached to each angle, with a large hemispherical dome covering the whole.
- The effect of the building is derived from the fine proportions between its various elements, especially between the cubical part below and the domed part above.
- Subsidiary elements include the wide cornice supported by closely spaced brackets. Above this is an arcade of small arches, their formality broken by their skillful spacing. Above this are the massive merlons with finials which break the skyline well.
- Above the merlons are the foliations around the base of the dome concealing the junction between the dome and the cube below.
- The wall surface of the cube has three arches sunken into them, the central one paneled out to bring it to the size of a normal doorway.
- The width of each of the sides is equal to the height which is a little above 200'. The exterior diameter of the dome is 144'.
- The interior of the structure is a single large hall, one of the largest ever built, measuring 135' across, 178' high and the gallery from where the dome springs is 110' from the pavement.
- The main architectural features of the hall are the tall pointed arches which support the dome above.
- The arches have their bases within the sides of the square plan while their planes of surface are at an angle, the intersection above forming an eight sided figure on which the circular cornice is projected.
- The dome is set back some 12' from the inside of this cornice so that some of its weight is transferred onto the four walls, while the rest is projected onto the intersecting arches which also receive and counteract any outward thrust.
- The dome is a plain plastered vault with six small openings through the drum and a flat section at its crown but no central pendant.
- The dome consists of horizontal courses of bricks with a substantial layer of mortar between them. In other words, it consists of a homogeneous shell of concrete reinforced with bricks, the whole being of a thickness of 10'.
- Due to the system of oversailing courses of brickwork, timber centering would be unnecessary, hence it was probably not used in the construction of the dome except in the section near the crown.
- The system of supporting the dome on intersecting arches was something the Bijapur masons were surprisingly familiar with as this system is almost unheard of elsewhere, the only other example being on a much smaller scale, in the sanctuary cupola in the cathedral of Cordova in Spain, built some six centuries earlier.



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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

UNIT 2 - INDO ISLAMIC PERIOD

UNIT 2 INDO ISLAMIC PERIOD

Mughals in India, Evolution of Architecture and Outline of Mughal cities, gardens, shape grammar and fractals, Babur, Humayun, Akbar, Jahangir, Shahjahan, Aurangzeb- Important examples, Decline of Mughal Empire - Cross cultural influences across India and Secular Architecture of the princely states like Oudh and Vijayanagar.

Mughals in India:

Babur 14 February 1483 – 26 December 1530), born Zahīr ud-Dīn Muhammad, was the founder of the Mughal Empire and first Emperor of the Mughal dynasty, in the Indian subcontinent. He was 5th descendant of Timur and 14th descendant of Genghis Khan through his father and mother respectively.

Of Chagatai Turkic origin, Babur was born in Andijan in the Fergana Valley (in present-day Uzbekistan): the eldest son of Umar Sheikh Mirza (1456–1494, governor of Fergana from 1469 to 1494) and a great-great grandson of Timur (1336–1405). Babur ascended the throne of Fergana in its capital Akhsikent in 1494 at the age of twelve and faced rebellion. He conquered Samarkand two years later, only to lose Fergana soon after. In his attempt to reconquer Fergana, he lost control of Samarkand. In 1501 his attempt to recapture both the regions failed when Muhammad Shaybani Khan defeated him. In 1504 he conquered Kabul, which was under the putative rule of Abdur Razaq Mirza, the infant heir of Ulugh Beg II. Babur formed a partnership with the Safavid ruler Ismail I and reconquered parts of Turkistan, including Samarkand, only to again lose it and the other newly-conquered lands to the Sheybanids.

After losing Samarkand for the third time, Babur turned his attention to India. At that time, the Indo-Gangetic Plain of the Indian subcontinent was ruled by Ibrahim Lodi of the Afghan Lodi dynasty, whereas Rajputana was ruled by a Hindu Rajput Confederacy, led by Rana Sanga of Mewar. Babur defeated Ibrahim Lodi at the First Battle of Panipat in 1526 CE and founded the Mughal empire. He faced opposition from Rana Sanga, who at first promised to help Babur defeat Ibrahim Lodi; however he later backed out upon realising that Babur had plans to stay in India. The Rana prepared an army of Rajputs and Afghans to force Babur out of India, however the Rana was defeated in the Battle of Khanwa (1527) after which he was fatally poisoned (1528) by his own men.

Babur married several times. Notable among his sons are Humayun, Kamran Mirza and Hindal Mirza. Babur died in 1530 in Agra and Humayun succeeded him. Babur was first buried in Agra but, as per his wishes, his remains were moved to Kabul and reburied. He ranks as a national hero in Uzbekistan and

Kyrgyzstan. Many of his poems have become popular folk songs. He wrote the Baburnama in Chaghatai Turkic; it was translated into Persian during the reign (1556–1605) of his grandson, the Emperor Akbar.

Humayun:

Nasir-ud-Din Muḥammad Nasīr-ad-Dīn Muhammad; 6 March 1508 – 27 January 1556), better known by his regnal name, Humayun, was the second emperor of the Mughal Empire, who ruled over territory in what is now Afghanistan, Pakistan, Northern India, and Bangladesh from 1530–1540 and again from 1555–1556. Like his father, Babur, he lost his kingdom early but regained it with the aid of the Safavid dynasty of Persia, with additional territory. At the time of his death in 1556, the Mughal Empire spanned almost one million square kilometres.

In December 1530, Humayun succeeded his father to the throne of Delhi as ruler of the Mughal territories in the Indian subcontinent. Humayun was an inexperienced ruler when he came to power, at the age of 22. His half-brother Kamran Mirza inherited Kabul and Kandahar, the northernmost parts of their father's empire. Kamran was to become a bitter rival of Humayun.

Humayun lost Mughal territories to Sher Shah Suri, but regained them 15 years later with Safavid aid. Humayun's return from Persia was accompanied by a large retinue of Persian noblemen and signalled an important change in Mughal court culture. The Central Asian origins of the dynasty were largely overshadowed by the influences of Persian art, architecture, language, and literature. There are many stone carvings and thousands of Persian manuscripts in India dating from the time of Humayun. Subsequently, Humayun further expanded the Empire in a very short time, leaving a substantial legacy for his son, Akbar.

Akbar:

Abu'l-Fath Jalal-ud-din Muhammad Akbar (October 1542– 27 October 1605), popularly known as Akbar the Great, was the third Mughal emperor, who reigned from 1556 to 1605. Akbar succeeded his father, Humayun, under a regent, Bairam Khan, who helped the young emperor expand and consolidate Mughal domains in India.

A strong personality and a successful general, Akbar gradually enlarged the Mughal Empire to include much of the Indian subcontinent. His power and influence, however, extended over the entire subcontinent because of Mughal military, political, cultural, and economic dominance. To unify the vast Mughal state, Akbar established a centralised system of administration throughout his empire and adopted a policy of conciliating conquered rulers through marriage and diplomacy. To preserve peace and order in a religiously and culturally diverse empire, he adopted policies that won him the support of his non-Muslim subjects. Eschewing tribal bonds and Islamic state identity, Akbar strove to unite

far-flung lands of his realm through loyalty, expressed through an Indo-Persian culture, to himself as an emperor.

Mughal India developed a strong and stable economy, leading to commercial expansion and greater patronage of culture. Akbar himself was a patron of art and culture. He was fond of literature, and created a library of over 24,000 volumes written in Sanskrit, Urdu, Persian, Greek, Latin, Arabic and Kashmiri, staffed by many scholars, translators, artists, calligraphers, scribes, bookbinders and readers. He did much of the cataloging himself through three main groupings. Akbar also established the library of Fatehpur Sikri exclusively for women, and he decreed that schools for the education of both Muslims and Hindus should be established throughout the realm. He also encouraged bookbinding to become a high art. Holy men of many faiths, poets, architects, and artisans adorned his court from all over the world for study and discussion. Akbar's courts at Delhi, Agra, and Fatehpur Sikri became centres of the arts, letters, and learning. Timurid and Perso-Islamic culture began to merge and blend with indigenous Indian elements, and a distinct Indo-Persian culture emerged characterized by Mughal style arts, painting, and architecture. Disillusioned with orthodox Islam and perhaps hoping to bring about religious unity within his empire, Akbar promulgated Din-i-Ilahi, a syncretic creed derived mainly from Islam and Hinduism as well as some parts of Zoroastrianism and Christianity.

Akbar's reign significantly influenced the course of Indian history. During his rule, the Mughal Empire tripled in size and wealth. He created a powerful military system and instituted effective political and social reforms. By abolishing the sectarian tax on non-Muslims and appointing them to high civil and military posts, he was the first Mughal ruler to win the trust and loyalty of the native subjects. He had Sanskrit literature translated, participated in native festivals, realising that a stable empire depended on the co-operation and good-will of his subjects. Thus, the foundations for a multicultural empire under Mughal rule were laid during his reign. Akbar was succeeded as emperor by his son, Prince Salim, later known as Jahangir.

Jehangir:

Nur-ud-din Muhammad Salim (Persian: نورالدین محمد سلیم), known by his imperial name Jahangir (August 1569 – 28 October 1627), was the fourth Mughal Emperor, who ruled from 1605 until his death in 1627. His imperial name (in Persian), means 'conqueror of the world', 'world-conqueror' or 'world-seizer' (Jahan: world; gir: the root of the Persian verb gereftan: to seize, to grab).

The fictional tale of his relationship with the Mughal courtesan, Anarkali, has been widely adapted into the literature, art and cinema of India.

ShahJahan

Shahab-ud-din Muhammad Khurram^[3] (5 January 1592 – 22 January 1666), better known by his regnal name Shah Jahan (Persian: شاه جهان; "King of the World"), was the fifth Mughal emperor, who reigned from 1628 to 1658.^[9] Under his reign the Mughal Empire reached the peak of its cultural glory. Although an able military commander, Shah Jahan is perhaps best remembered for his architectural achievements. His reign ushered in the golden age of Mughal architecture. Shah Jahan commissioned many monuments, the best known of which is the Taj Mahal in Agra, which entombs his favourite wife, Mumtaz Mahal. His relationship with Mumtaz Mahal has been heavily adapted into Indian art, literature, and cinema. He owned the royal treasury and several precious stones such as the Kohinoor, worth around 23% of world GDP during his time, and he has been thus often regarded as the wealthiest Indian in history.

Shah Jahan was considered the most competent of Emperor Jahangir's four sons. Jahangir's death in late 1627 spurred a war of succession from which Shah Jahan emerged victorious after much intrigue. He put to death all of his rivals for the throne and crowned himself emperor in January 1628 in Agra under the regnal title "Shah Jahan" (which was originally given to him as a princely title). His rule saw many grand building projects, including the Red Fort and the Shah Jahan Mosque. Foreign affairs saw war with the Safavids and conflict with the Portuguese, but positive relations with the Ottoman Empire. Domestic concerns included putting down numerous rebellions, and a devastating famine from 1630-32.

In September 1657, Shah Jahan fell seriously ill. This set off a war of succession among his four sons in which his third son, Aurangzeb, emerged victorious and usurped his father. Shah Jahan recovered from his illness, but Emperor Aurangzeb put his father under house arrest in Agra Fort from July 1658 until his death in January 1666. He was laid to rest next to his wife in the Taj Mahal.

Aurangzeb:

Muhi-ud-Din Muhammad^[3] (3 November 1618 – 3 March 1707),^[1] commonly known by the sobriquet Aurangzeb (Persian: "Ornament of the Throne")^[3] or by his regnal title Alamgir (Persian: "Conqueror of the World"),^[4] was the sixth Mughal emperor, who ruled over almost the entire Indian subcontinent for a period of 49 years.^{[5][6][7]} Widely considered to be the last effective ruler of the Mughal Empire,^[8] Aurangzeb compiled the Fatawa-e-Alamgiri, and was among the few monarchs to have fully established Sharia law and Islamic economics throughout the Indian subcontinent.^{[9][10][page needed]} He was an accomplished military leader^[11] whose rule has been the subject of praise, though he has also been described as the most controversial ruler in Indian history.^[12]

He was a notable expansionist; during his reign, the Mughal Empire reached its greatest extent, ruling over nearly all of the Indian subcontinent.^[13] During his lifetime, victories in the south expanded the

Mughal Empire to 4 million square kilometres,[14] and he ruled over a population estimated to be over 158 million subjects,[13] with an annual revenue of \$450 million (more than ten times that of his contemporary Louis XIV of France),[15] or £38,624,680 (2,879,469,894 rupees) in 1690. Under his reign, India surpassed Qing China to become the world's largest economy and biggest manufacturing power, worth nearly a quarter of global GDP and more than the entirety of Western Europe, and its largest and wealthiest subdivision, the Bengal Subah,[16] signaled the proto-industrialization.[17][18][19][page needed]

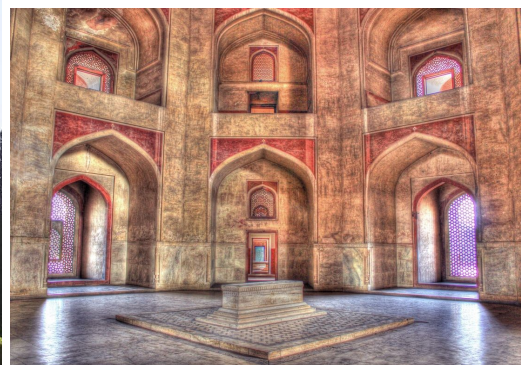
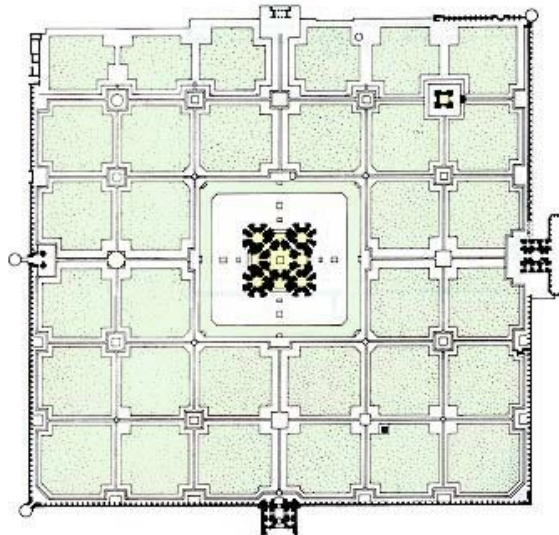
Aurangzeb was noted for his religious piety; he memorized the entire Quran, studied hadiths and stringently observed the rituals of Islam.[20][21] Unlike his predecessors, including his father Shah Jahan, Aurangzeb considered the royal treasury to be held in trust for the citizens of his empire.[21][page needed][22][page needed] He did not enjoy a luxurious life and his personal expenses and constructions of small mosques were covered by his own earnings, which included the sewing of caps and trade of his written copies of the Quran.[23][24] He also patronized works of Islamic and Arabic calligraphy.

Aurangzeb has been subject to criticism. Critics argue that his policies abandoned his predecessors' legacy of pluralism and religious tolerance, citing his introduction of the jizya tax and other policies based on Islamic ethics, demolition of Hindu temples, the executions of his elder brother Dara Shikoh, Maratha king Sambhaji[26][27] and the ninth Sikh guru Tegh Bahadur, and the prohibition and supervision of behaviour and activities that are forbidden in Islam such as music, gambling, fornication, and consumption of alcohol and narcotic. Some historians question the historicity of the claims of his critics, arguing that his destruction of temples has been exaggerated,[and noting that he also built temples paid for their maintenance, employed significantly more Hindus in his imperial bureaucracy than his predecessors did, and opposed bigotry against Hindus and Shia Muslims.

- Mughal Empire established by Babur in 1526.
- The Mughal era defines the most sumptuous phase of Islamic Architecture in India, due in part to the wealth and the settled political conditions of the empire and to the aesthetic nature of the emperors.
- Mughal Architecture flourished under the first five 'Great Mughals' of the dynasty, Babur, Humayun, Akbar, Jahangir and Shah Jahan and declined after the rule of Aurangzeb.
- The two most prolific builders of the dynasty were Akbar (1556-1605) and his grandson Shah Jahan (1627-1658), with a transitional phase observed under Jahangir (1605-1627).
- The style can be broadly divided into two phases, an earlier phase when the buildings were principally constructed of red sandstone during the reign of Akbar and a later phase when the buildings were constructed principally of marble under the reign of Shah Jahan.
- Due to the centralized political structure of the empire, the Mughal style of architecture had no provincial or regional manifestations, but was an imperial style only moderately affected by local influences.

- The major influences seen in the Mughal style come from Persia and from the indigenous styles of Gujarat and Rajasthan.

HUMAYUN'S TOMB

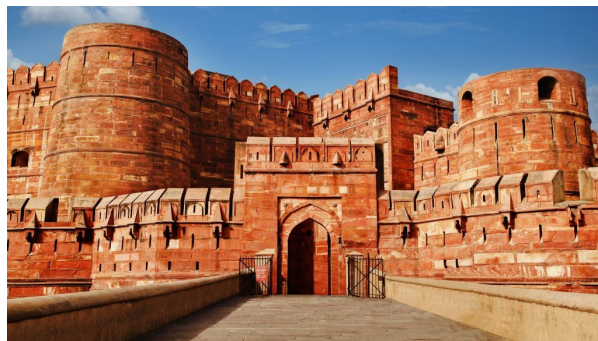
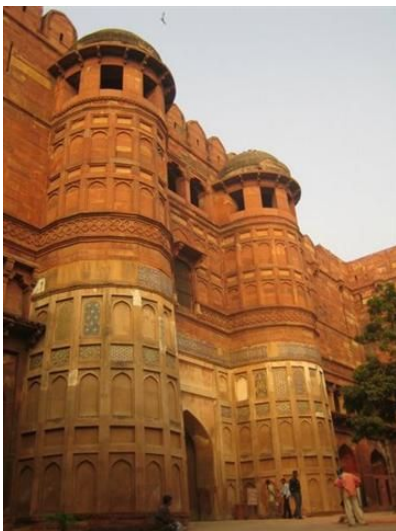


- The first Mughal building of note to be constructed in India.
- Built in A.D. 1564 by Haji Begum, wife of the Emperor Humayun , eight years after his death in Delhi in the vicinity of the city of Din Panah founded by the emperor.\
- The architect was a Persian by the name of Mirak Mirza Ghiyas.
- The mausoleum is placed in a spacious, square park like enclosure, providing seclusion and securing an appropriate setting.
- An imposing gateway is introduced in the middle of each of the four sides of the enclosure, the western being the main entrance with an embowed archway which frames the view of the mausoleum.
- The garden is laid out in a formal arrangement of square and rectangular compartments with flowered parterres and flagged paths and pavements.
- These are carefully designed and proportioned so as to form an integral part of the overall composition, the lines and spaces leading up to and harmonizing with those of the central structure.
- The central building stands on a platform of 22' height. The sides of the platform are arcaded, with each archway leading to a small room for visitors and their attendants.
- The tomb structure which is a square in plan with 156' side occupies the middle of the platform.
- All four sides are alike in elevation, with each face consisting of a central rectangular fronton containing an arched recess and flanked by embowed wings each relieved by a similar but smaller arched alcove.
- Over the whole hangs the marble dome with a height of 140' with a cluster of pillared kiosks with cupola roofs on each side.
- The interior of the tomb chamber resolves into a group of compartments, the largest one in the centre containing the cenotaph of the emperor, with a smaller one at each angle for the members of his family. Each room is octagonal in plan and they are connected to one another with diagonal passages.
- Clerestory windows with perforated screens fitted into the arched recesses of the facades light the interior.
- The architectural style can be said to be a synthesis of the Persian and the Indian, the Persian influence seen in such elements as the arched alcove in the façade and the shape of the dome along with the arrangement of the rooms in the interior, while the Indian influence can be seen in the kiosks and cupolas.
- The architectural effect of the structure is achieved by the logical relation of the plan to the design of the interior and exterior, the perfection of the proportion and relative positions of the various elements, and the use of red sandstone with white marble for emphasis.
- The dome is the first example in India of the double dome i.e. a dome with two shells, an outer one supporting the marble casing and giving the lofty shape from the exterior and an inner one built lower to create a better proportion with the space below.

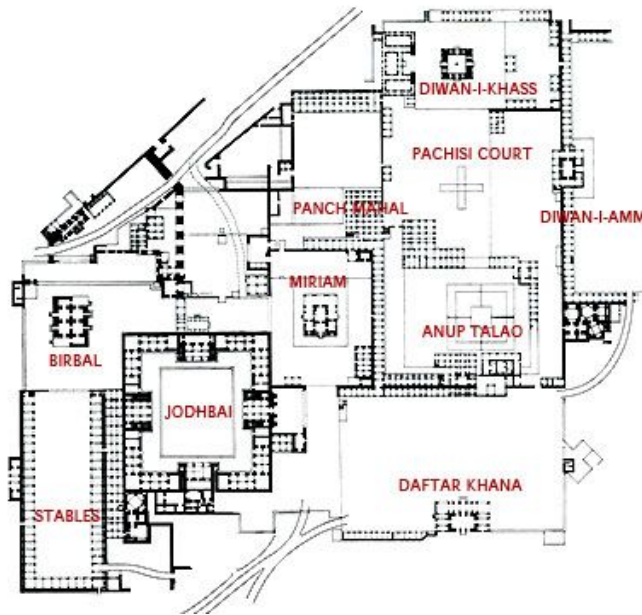
DELHI GATE AT AGRA FORT:

- Delhi Gate is the western gate of Agra fort, forming its main entrance.
- Built by Akbar in A.D. 1566, one of his earliest architectural efforts.
- The structure, along with the ramparts flanking it is constructed of red sandstone.

- The front or outer façade consists of two broad octagonal towers joined by an archway, while the back or inner façade consists of arcaded terraces surmounted by cupolas, kiosks and pinnacles.
- The gateway is large enough to accommodate a number of large rooms in the interior for guards.
- Architectural and decorative features such as arcades, arched recesses, patterns in white marble inlay give the structure an attractive appearance from all sides without detracting from its basic purpose as an essential part of the fortifications.
- One motif, repeated on the borders is a conventional representation of a bird, contrary to the Islamic principle of taboo against representation of animate objects, reflecting the tolerant nature of Akbar's reign.

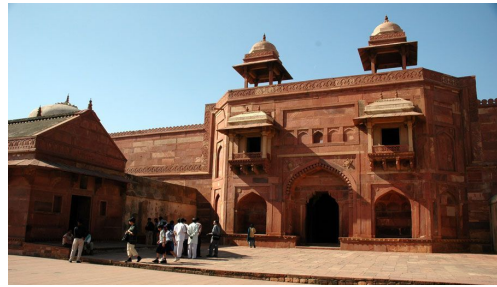


FATEHPUR SIKRI



- Built by Akbar as his capital about 26 miles west of Agra, Fatehpur Sikri is one of the most ambitious projects undertaken by the Mughals and perhaps the most notable architectural achievement of the dynasty next to the Taj Mahal.
- The city stands on a sandstone outcrop which runs in a north-east to south-west direction. It is surrounded by a bastioned wall enclosing an irregular area about 2 miles long and 1 mile broad.
- The city consists of an arrangement of broad terraces and courtyards around which are grouped numerous palaces and pavilions.
- A majority of the buildings are aligned at an angle to the north-east to south-west direction of the city to face north-south in order to align to the fixed orientation of the mosque.
- The main approach is from Agra, through the Agra Gate and a Naubat Khana which leads straight to the Diwan-i-Aam.
- The road then continues the Jami Masjid, thus arranging the structures in such a manner that the public areas are on the southern flank of the hill, while the private areas reserved for the Royal family and personages of importance are on the northern flank.
- Apart from the Jami Masjid, the structures in the city are for the most part trabeate, with some diversities in detailed treatment due to the different backgrounds of the artisans brought in from all parts of the vast empire.
- The dominant material used is red sandstone quarried on the spot.
- One of the earliest structures built on the site is the Stone-Cutters' Masjid, a small mosque on the western crest of the hill that the workmen built for themselves.
- The buildings can be segregated into two classes, the religious and the secular, the former all being part of the complex comprising the Jami Masjid, its triumphal gateway and the tomb of Salim Chisti within its courtyard. The secular buildings are palaces, administrative buildings and miscellaneous structures.

JODH BAI'S PALACE:

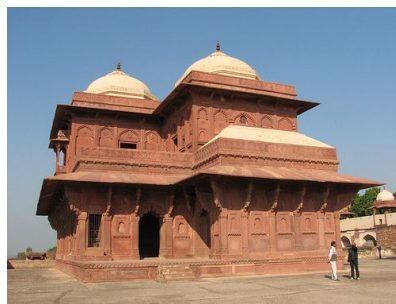


- Jodh Bai's Palace is a structure built as the house of the principal queen and discloses some of the conditions of living in the Mughal household.
- The palace in plan measures 320' X 215', consisting of a large central courtyard with buildings arranged around its periphery. The only entrance is through a guarded gatehouse with staggered doorways to provide seclusion.
- The external wall is 32' high, plain and forbidding on the exterior, the buildings attached to its inner side all facing the central courtyard.
- The outer façade of the wall is only interrupted thrice, once by the gatehouse on the east, the hanging pavilion of Hawa Mahal on the north and service and bathing apartments on the south.
- Most of the buildings, placed symmetrically around the square courtyard are two storeyed, with open terraced roofs at regular intervals.
- In the middle of each side and at each corner the structures rise up into separate blocks. Each of these blocks is a self-contained suite of living rooms, with corridors and passages communicating with each block on the ground floor. Each group of apartments could be divided off from the others, while the chambers below could be heated in cold weather; the one's above always remaining airy and cool.
- In many of its elements and carved decoration, especially in the design of the niches and brackets with their volute forms and the shapes of the pillars, an influence of Hindu temple architecture can be seen, showing that artisans from Gujarat were assigned with the construction of the palace.
- Other interesting details include the application blue glaze tiles to some of the roofs and cupolas and the use of wagon-vault ceiling with groins in one of the upper rooms.



BIRBAL'S HOUSE:

- The building known as Birbal's house is a two storeyed structure, complex in its arrangements and elaborate in its architectural ornamentation.
- The ground storey is made up of four rooms and two porches, while the upper storey is made up of two rooms and open terraces enclosed by screens.
- The upper rooms are roofed by cupolas while the porches have pyramidal roofs, all of which are constructed on a modified form of the double dome in order to keep the interior cool.
- The chief attraction is the treatment of the exterior, particularly the rich character of the eave brackets.
- Such bracket supports are common in most of the secular structures in Fatehpur Sikri, but they have employed most liberally and designed and executed most elaborately in Birbal's House.

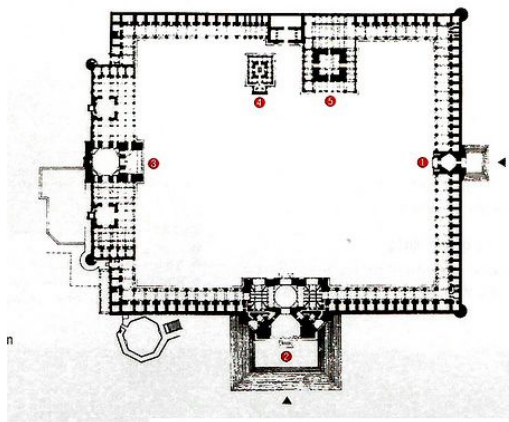


DIWAN-I-KHAS:

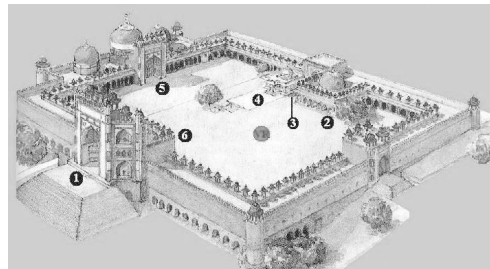


- Diwan-i-Khaas, or the Hall of Private Audience is the most distinctive of the administrative buildings built at Fatehpur Sikri.
- It is not a large structure, but it is conceived in an unusual manner.
- Externally, the structure is a rectangle in plan with two storeys having a flat terraced roof with pillared kiosks rising over each corner.
- The interior arrangements are quite unique. It is a single chamber whose principal feature is a large pillar occupying the central position with a massive expanding capital supporting a circular stone platform.
- From the platform, stone bridges radiate along each diagonal of the hall to connect with hanging galleries which surround its upper portion.
- The idea behind this arrangement is that the Emperor would occupy the central position while presiding over the representatives from various religious communities gathered there.
- The shaft of the central pillar branches out into 36 voluted and pendulous brackets carrying the throne platform.

JAMI MASJID AT FATEHPUR SIKRI



❶ Badshahi Darwaza ❷ Buland Darwaza ❸ Prayer room of the Friday Mosque ❹ The tomb of Salim Chishti ❺ Islam Khan Mausoleum

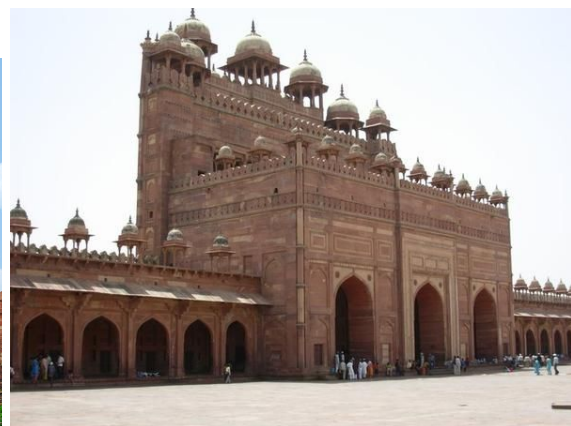


- The Jami Masjid at Fatehpur Sikri was built by Akbar in A.D. 1571.
- It covers a rectangular area measuring 542' X 438', with a large courtyard, originally entered by gateways on the north, south and east. Of these, only the eastern or King's Gateway has remained unaltered by subsequent additions.
- It is one of the largest mosques in the country.

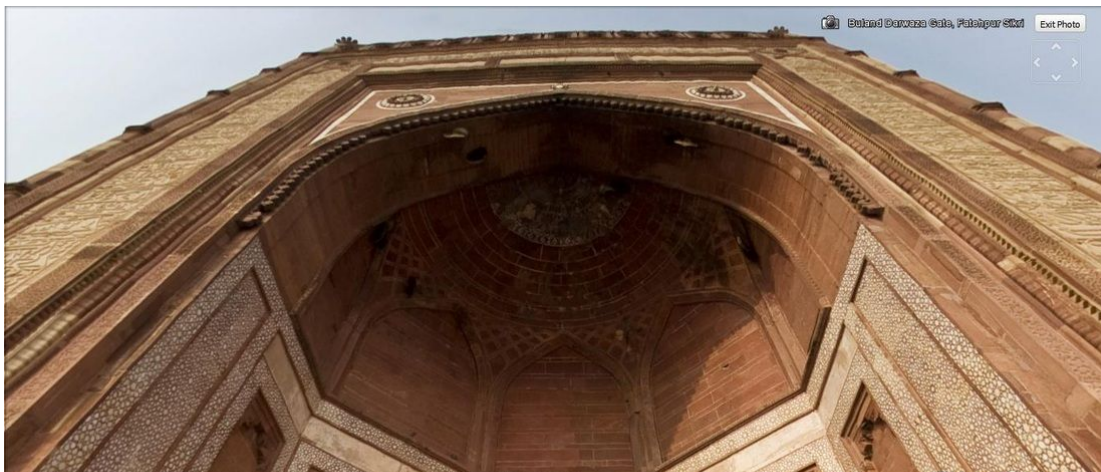
- The mosque follows the conventional plan form with a central courtyard surrounded by cloisters on 3 sides and the sanctuary on the western side.
- The sanctuary façade consists of a large rectangular fronton in the centre containing a spacious alcove, with a pillared arcade on each side to form the wings.
- Above and behind this central feature rises a large dome over the central nave and smaller domes over the wings.
- A range of pillared kiosks all along the entire parapet breaks the skyline.
- The nave is a square hall entered through three doorways in the alcoved fronton which contains the principal mihrab on its western wall and is covered by the main dome.
- The aisles are accessed through archways from the nave and correspond to the arcaded wings of the façade. In the centre of each of the aisles is a small chapel, covered by one of the two smaller domes.
- There is an admirable combination of beams and arches, the two structural systems in a well maintained balance.



BULAND DARWAZA:



- Buland Darwaza is a triumphal gateway built by Akbar about 25 years after the completion of the Jami Masjid. The southern gateway to the mosque courtyard was demolished and replaced with this monument to commemorate Akbar's victorious campaign in the Deccan.
- The gateway is 134' high, approached by a steep flight of steps 42' high. Thus, the total height of the structure comes out to be 176' above the roadway.
- The structure is 130' wide and 123' deep.
- The structure may be resolved into two aspects, the frontal and highest aspect forming the façade with the portal and the back view consisting of a lower and plainer portion intruding into the mosque courtyard.
- The façade is embowed by the means of three planes comprising a large central face and a lesser one on each side receding at an angle.
- The central plane is 86' wide and is rectangular in shape, the greater part of its surface occupied by an arched and domed recess whose semi-dome is carried on five surfaces in the form of a half-decagon down to the ground, with a human height doorway at the base.
- The smaller planes are in three levels with varied openings at each stage.
- The whole is crowned by a perforated parapet, behind which pillared kiosks break the skyline.
- The rear aspect of the gateway is less pronounced, consisting of three arched entrances and a parapet in two stages to accord with the arches and colonnades of the mosque interior as far as possible.
- The main element of the decorative treatment of the outer façade is the wide border of the gateway emphasizing its rectangular formation, providing ample space for a continuous ornamental inscription.



TOMB OF SALIM CHISTI:



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- The tomb of Salim Chisti is located in the courtyard of the Jami Masjid at Fatehpur Sikri, its construction beginning along with the mosque in A.D. 1571.
- Originally a sandstone structure, it was converted into a more expensive marble structure sometime during the end of Jahangir's reign and the beginning of Shah Jahan's reign as per the style of the period, and thus creates a contrast with the grandiose, massive and purposeful nature of the structures surrounding it with its own light and airy nature which gives an appearance of chiseled, polished and fretted exquisiteness.
- The tomb consists of a square exterior of 24' side which contains a mortuary chamber of 16' side, the whole covered by a low dome.
- A wide verandah is carried around the outside, its roof supported by pillars with the interspaces filled with perforated screens, the whole measuring 48' square.
- A porch, also supported on pillars is projected from the southern side.
- There are carved brackets all around to support the extremely wide eaves.
- The building itself is low and unimpressive but depends upon the material in which it is built and the ethereal manner in which the material has been handled for its effect.
- The pillars forming the porch with their honeycomb capitals and the brackets springing from their patterned shafts are its distinctive features. The brackets or struts are unique as they consist of serpentine volutes with the spaces between the curves filled in with perforated foliations, having the appearance of carved ivory than chiseled marble. Their prototype can be seen in the temples of Gujarat.
- The struts serve no structural purpose, but are mainly decorative.

LANDSCAPE ARCHITECTURE UNDER THE MUGHALS:

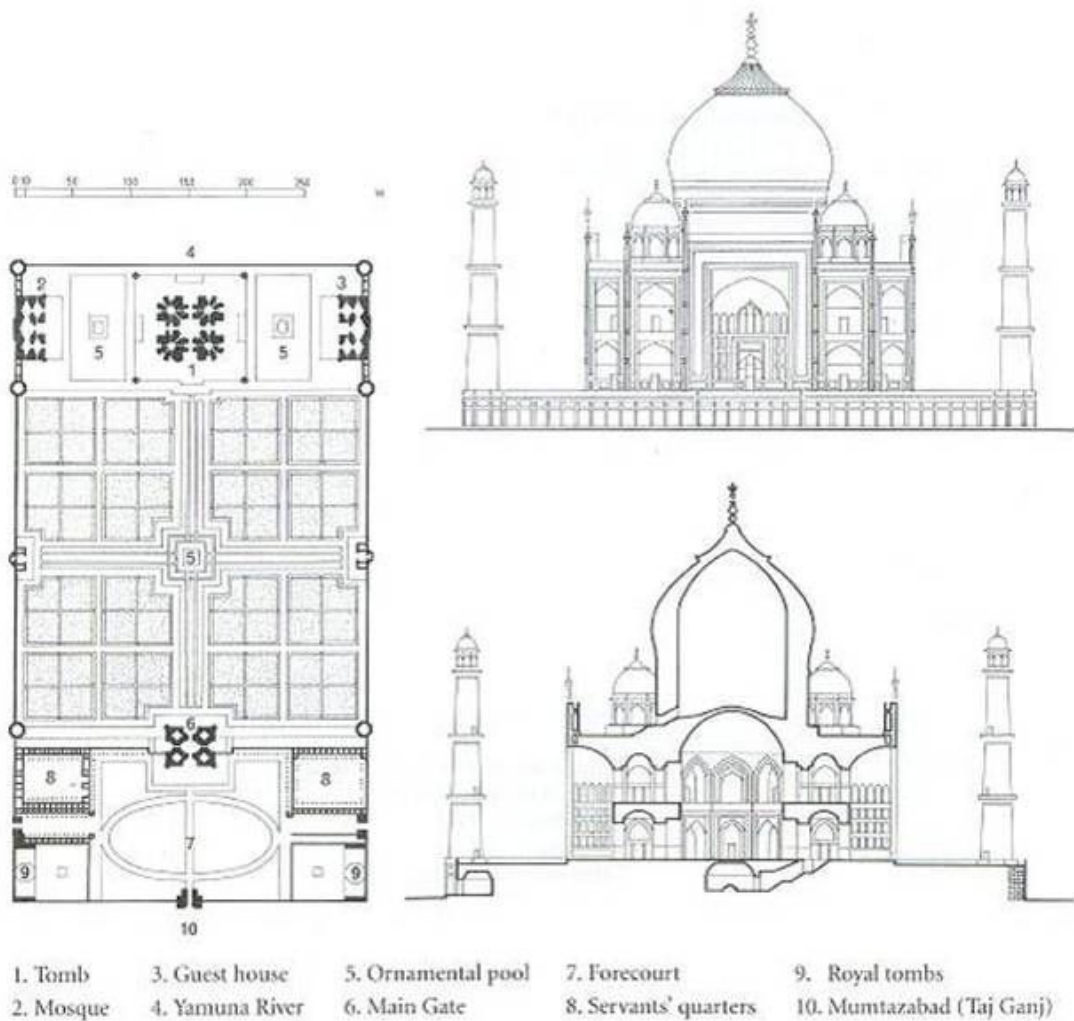


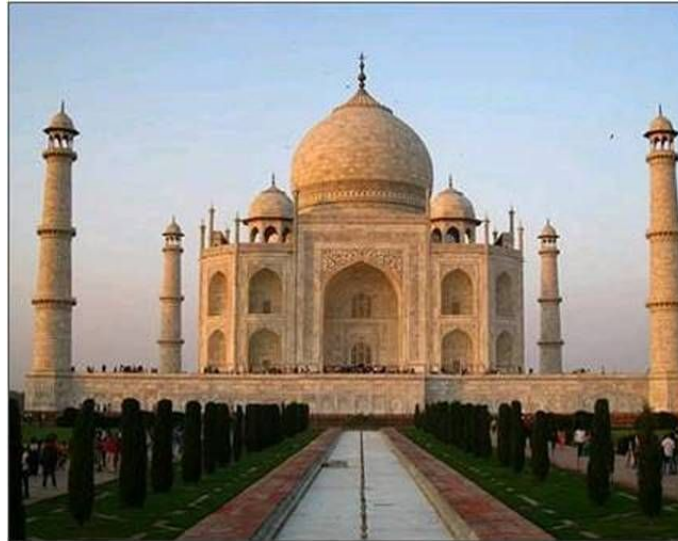
- Landscape architecture under the Mughals as illustrated by the large ornamental gardens which the rulers laid out in various places is an important aspect of Mughal architecture.
- The idea of these retreats was brought in from Persia.
- Babur, the founder of the dynasty, commemorated his victory over Ibrahim Lodi in 1526 not with a triumphal monument but with a large garden called Kabul Bagh at Panipat.
- Most of the principal architectural projects of the Mughal rulers were surrounded by park-like enclosures.
- Spacious gardens not associated with buildings were also created, especially the gardens of Kashmir, of which the Shalimar and Nishat Baghs are the most famous.
- In the plains of India, the Shalimar Bagh at Lahore was built by Shah Jahan in 1637.
- It is formed by means of a series of rectangular terraces arranged in descending levels to ensure a continuous flow of water throughout the entire system.
- Fountains, pools, basins, cascades and similar devices turn the whole into a very effective water garden.
- The layout is rigidly conventional and axially symmetrical.
- The aim of the design is to discipline nature and not to imitate it. Hence, this style belongs to the school of formalists and not naturalists.
- The plan of the Mughal gardens is worked out in a regular arrangement of squares, often subdivided into smaller squares to form the figure of the char bagh.
- Paved pathways and water channels follow the shapes of these squares, with oblique or curved lines used rarely or not at all.
- At central points in the scheme, masonry pavilions, loggias, kiosks and arbours are built, a prominent example being the pillared pavilion of black marble in the middle of the Shalimar Bagh in Kashmir.
- The entire garden was surrounded by a high enclosing wall to ensure privacy as is seen in the Shalimar Bagh at Lahore, which measures an oblong 1600' X 900'.
- The art of topiary and the science of arboriculture were not widely practiced, the main effect being achieved by means of parterres and borders of flowering and aromatic plants. The chinar tree (*Platanus orientalis*) is prominently featured in the Kashmir gardens, orchards in palace gardens and avenues or groups of cypresses in gardens around tombs.

- The water supply required to maintain such gardens was often brought in from distant sources by means of canals, which were in themselves great feats of engineering.



TAJ MAHAL:





- The Taj Mahal, built by Shah Jahan at Agra as the mausoleum for his consort Mumtaz Mahal, is considered to be the perfect moment in the evolution of Mughal architecture in India.
- The inspiration behind the Taj Mahal apparently comes from two sources, Humayun's Tomb at Delhi, built about 50 years before the Taj Mahal, and the lesser known tomb of Khan Khanan, built a few years before the Taj Mahal.
- The tomb building itself occupies only a small portion of the architectural scheme as a whole. The plan of the whole complex is in the form of a large rectangular enclosure aligned to the north-south direction measuring 1900' X 1000'. The central area is occupied by a square garden measuring 1000' side, leaving two oblong rectangles at the north and south ends. The southern end consists of a system of roads and service dwellings while the northern end, abutting the Jumna River, consists of a raised terrace on which there are the tomb structure and some subsidiary structures.
- The garden portion and terrace portion are surrounded by a high boundary wall with octagonal pavilions at each corner and a monumental entrance gateway in the middle of the southern side.
- Beyond the gateway on the south lie courtyards, stables, outhouses and other facilities with the addition of a bazaar for supplies. The entire scheme evidences the amount of preliminary thought that went into the design before any construction began.
- The structure was designed to be approached from both the road and the river, the first view of the building from the road being framed like a picture from the fine archways of the entrance hall, while the first view from the river augmented by its reflection in the river.
- The formal garden was laid out to harmonize with the main structure. There were water courses with fountains and an elevated lotus pool to reflect the structure from various viewpoints.
- The structures on the northern terrace form the main architectural focus of the scheme, with the tomb building at the centre and two detached subsidiary edifices on the eastern and western ends.
- The western structure is a mosque, while the eastern one is a replica added for symmetry and no real religious purpose and is known as the jawab or answer. It has been used as a kind of reception hall or guest house.
- The central tomb structure, the focal point of the composition is elevated in a plinth 22' high. It is a square in plan with 186' side, its sides chamfered. The shape is carried up to

a height of 108' with a marble cupola on each corner. Above this rises a bulbous dome, taking the total height of the structure to 187'.

- From each corner of the plinth, a minaret in three stages and crowned by a kiosk rising to a height of 137' enhances the architectural effect.
- The scheme and proportions of the structure are simple, for example, the façade width is equal to the height, and the height of the façade in the centre is the same as the height of the dome, thus the top of the parapet above the central alcove in the façade is the central point of the composition.
- The dome forms the crowning feature of the composition. The shape of the feature is in the form of a globe, its lower part truncated by the drum on which it rests, while the curves on its upper part rising tangentially to from the foliated base of the finial. The dome has two shells, making it of the double dome variety.
- The larger dome and the smaller cupolas at its base belong to two different architectural traditions, the larger dome belonging to the Persian while the smaller cupolas without constricted bases being of an indigenous variety.
- In the minarets, the face joints of the masonry are countersunk, forming a kind of rustication not observed in the rest of the building.
- The interior of the tomb chamber is a copy of Humayun's Tomb, with the octagonal central hall connected to subsidiary chambers in the angles by radiating passages. The main hall is in two storeys of arcades reflecting the treatment of the exterior. Above this is the inner shell of the dome. Each of the subsidiary rooms at the angles has a similar upper storey room right above it.
- The ornamentation consists mainly of a restrained use of murals of inlaid patterns over flat surfaces reserved for this purpose. In addition, there are some carvings on the dados and the perforated screens surrounding the cenotaphs are exquisitely carved.
- The main feature apart from the lucid and coherent composition is the quality and texture of the material itself, which is marble from Makrana. It takes on subtle variations of tint and tone, reflecting the changes in light that happen during the course of the day.
- The cenotaph of Mumtaz Mahal occupies the central position under the finial of the dome in the central chamber, while that of the emperor Shah Jahan is situated to one side. This may be due to the interment of the emperor there being an afterthought, the construction of his own mausoleum not materializing due to the war of succession with his son Aurangzeb.

Agra Fort :

Agra Fort is a historical fort in the city of Agra in India. It was the main residence of the emperors of the Mughal Dynasty until 1638, when the capital was shifted from Agra to Delhi. Before capture by the British, the last Indian rulers to have occupied it were the Marathas. In 1983, the Agra fort was inscribed as a UNESCO World Heritage site.[1] It is about 2.5 km northwest of its more famous sister monument, the Taj Mahal. The fort can be more accurately described as a walled city.

It had been used by the early mughal rulers. The Fort stands on an ancient site and was traditionally known as Badalgarh. It was captured by Ghaznavi for some time but in the 15th century A.D. the Chauhan Rajputs occupied it. Soon after, Agra assumed the status of capital when Sikandar Lodi (A.D. 1487–1517) shifted his capital from Delhi and constructed a few buildings in the pre-existing Fort at Agra. After the first battle of Panipat (A.D. 1526) Mughals captured the fort and ruled from it. In A.D. 1530, Humayun was crowned in it. The Fort got its present appearance during the reign of Akbar (A.D. 1556–1605).

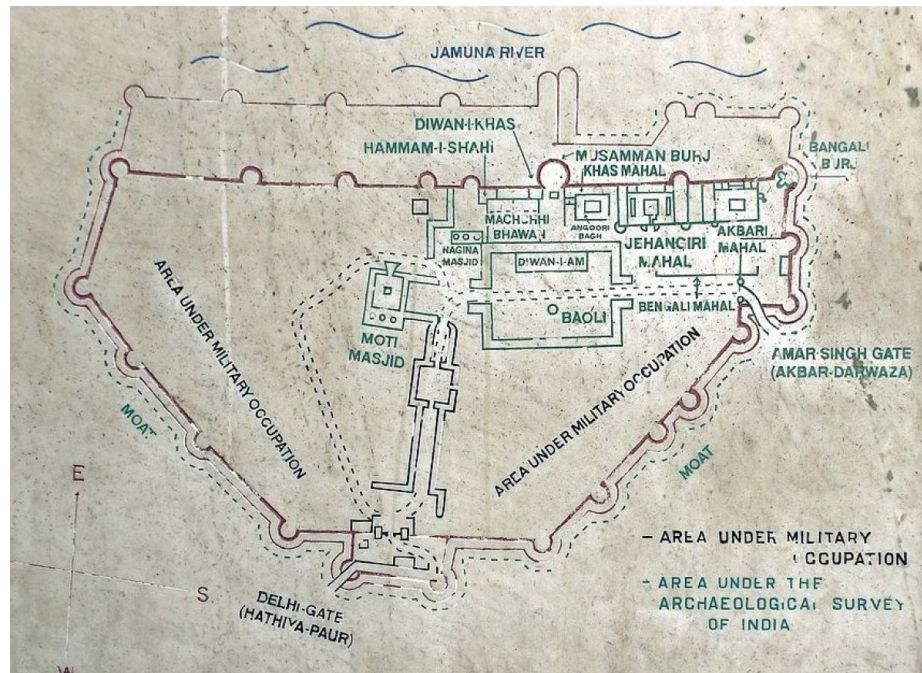
The 380,000 m² (94-acre) fort has a semicircular plan, its chord lies parallel to the river Yamuna and its walls are seventy feet high. Double ramparts have massive circular bastions at intervals,

with battlements, embrasures, machicolations and string courses. Four gates were provided on its four sides, one Khizri gate opening on to the river. Two of the fort's gates are notable: the "Delhi Gate" and the "Lahore Gate." The Lahore Gate is also popularly also known as the "Amar Singh Gate," for Amar Singh Rathore.

The monumental Delhi Gate, which faces the city on the western side of the fort, is considered the grandest of the four gates and a masterpiece of Akbar's time. It was built circa 1568 both to enhance security and as the king's formal gate, and includes features related to both. It is embellished with intricate inlay work in white marble. A wooden drawbridge was used to cross the moat and reach the gate from the mainland; inside, an inner gateway called Hathi Pol ("Elephant Gate") – guarded by two life-sized stone elephants with their riders – added another layer of security. The drawbridge, slight ascent, and 90-degree turn between the outer and inner gates make the entrance impregnable. During a siege, attackers would employ elephants to crush a fort's gates. Without a level, straight run-up to gather speed, however, that thing is prevented by this layout.

Because the Indian military (the Parachute Brigade in particular) is still using the northern portion of the Agra Fort, the Delhi Gate cannot be used by the public. Tourists enter via the Amar Singh Gate. The site is very important in terms of architectural history. Abul Fazal recorded that five hundred buildings in the beautiful designs of Bengal and Gujarat were built in the fort. Some of them were demolished by Shah Jahan to make way for his white marble palaces. Most of the others were destroyed by the British troops of East India Company between 1803 and 1862 for raising barracks. Hardly thirty Mughal buildings have survived on the south-eastern side, facing the river, such as the Delhi Gate and Akbar Gate and one palace – "Bengali Mahal". Akbar Darwazza (Akbar Gate) was renamed Amar Singh Gate by Shah Jahan. The gate is similar in design to the Delhi Gate. Both are built of red sandstone. The Bengali Mahal is built of red sandstone and is now split into Akbari Mahal and Jahangiri Mahal.





Introduction

- In the fourteenth century, the disintegration of the Mongol empire led Timur to unite Iran and Turan under one rule. Timur's empire was spread from the lower Volga to the river Indus, including Iran.
 - Asia Minor (modern Turkey), Trans-Oxiana, Afghanistan, and some part of Punjab.
 - In 1404, Timur died and Shahrukh Mirza, his grandson, succeeded his empire.
 - Timur gave patronage to arts and letters and he promoted Samarkand and Herat as the cultural centers of West Asia.
 - During the second half of the fifteenth century, the power of Timurids declined, largely because of the Timurid practice of partitioning of the empire.
 - The various Timurid territories that developed during his time, were kept fighting and backbiting to each other. Their conflicting acts gave an opportunity to two new powers to come to the forefront:
1. a) *The Uzbeks*: In the north, the Uzbeks thrust into Trans-Oxiana. Though the Uzbeks had become Muslims, but Timurids looked them down because they (Timurids) considered them to be uncultured barbarians.
 2. b) *Safavid Dynasty*: In the west (i.e. Iran), the Safavid dynasty appeared. They were descended from an order of saints who traced their ancestry to the Prophet.
- Safavids dynasty promoted the Shi'ite sect among the Muslims, and persecuted to all those who were not ready to accept the Shia views.
 - The Uzbeks, on the other hand, were Sunnis. Thus, the political conflict between these two elements was estranged on the basis of sectarian views.
 - The power of the Ottoman Turks had escalated in the west of Iran and they wanted to rule Eastern Europe as well as Iran and Iraq.

Indo Islamic Architecture

The Ghurid occupation of India at the close of the 12 century A.D has shown the seeds of Indo-Islamic architecture in the Indian Subcontinent . The Muslims having inherited a wealth of varied designs from Sassanian and Byzantine empires and being naturally endowed with good taste for buildings, never failed to adapt to their own requirements the indigenous architecture of almost every foreign country that they conquered.

The most important factors common to both forms of architecture, especially in respect of mosques and temples, were that to both styles, ornamental decoration was very vital and that the open court in many cases was surrounded by colonnades. But the contrast was equally striking: the prayer chamber of the mosque was spacious, whereas the shrine of the temple was comparatively small.

The distinctive features of Indo-Islamic architecture were :-

- (a) dome;
- (b) lofty towers or minarets;
- (c) arch; and
- (d) the vault

The tomb architecture is also another feature of the Islamic architecture as the practice of the burial of the dead is adopted. The general pattern of the tomb architecture is consisted of a domed chamber (hujra), a cenotaph in its centre with a mihrab on the western wall and the real grave in the underground chamber.

The pietra dura or coloured stone inlay work on marble became very popular in the days of Shah Jahan

and the finest examples of this type of work are available in the Red Fort in Delhi and the Taj Mahal at Agra. Besides, the structures within the Fatehpur Sikri complex, the forts at Agra and Lahore and the Shahi mosques in Delhi and Lahore are an important part of our heritage. During this period mosques, tombs of kings and dargahs came to dominate the landscape.

The first distinct example of proper Mughal architecture inspired by Persian architecture, is the tomb of Humayun, in Delhi, built by his widow, Begha Begum. This tomb is important for a proper study of the development of later Mughal architecture and has provided the prototype, followed by architects who designed the Mausoleum of Jahangir at Shahdara, Lahore, as well as the celebrated Taj Mahal, at Agra.



Zahiruddin Muhammad Babur

- Babur born on 14 February 1483 at Andijan in Mughalistan (present day Uzbekistan).
- Babur had the prestige of being a descendant of two of the most legendary warriors of Asia namely Chingiz, and Timur.
- Babur groomed himself to his begs by his personal qualities. He was always prepared to share the hardships with his soldiers.
- Babur was fond of wine and good company and was a good and cheerful companion. At the same time, he was a strict disciplinarian and a hard taskmaster.
- Babur took good care of his army and other employees, and was prepared to excuse many of their faults as long as they were not disloyal.
- Though Babur was an orthodox Sunni, but he was not prejudiced or led by the religious divines. Once, there was a bitter sectarian conflict between the Shias and the Sunnis in Iran and Turan; however, in such a condition, Babur's court was free from theological and sectarian conflicts.
- Though Babur declared the battle against Rana Sanga a jihad and assumed the title of '*ghazi*' after the victory, but the reasons were noticeably political.
- Babur was master of Persian and Arabic languages, and is regarded as one of the most famous writers in the Turkish language (which was his mother tongue).
- Babur's famous memoirs, the *Tuzuk-i-Baburi* is considered as one of the classics of world literature. His other popular works are *masnavi* and the Turkish translation of a well-known Sufi work.
- Babur was a keen naturalist, as he described the flora and fauna of India in considerable details.

- Babur introduced a new concept of the state, which was to be based on:

1. a) The strength and prestige of the Crown;

1. b) The absence of religious and sectarian bigotry; and

1. c) The careful fostering of culture and the fine arts.

- Babur, with all these three features provided a precedent and a direction for his successors

- In 1494, Babur, at the young age of merely 14, succeeded to Farghana. Farghana was a small state in Trans-Oxiana.
- Shaibani Khan, the Uzbek chief, defeated Babur and conquered Samarqand.
- In 1504, Babur conquered Kabul; at that time, Kabul was under the rule of the infant heir of Ulugh Begh.
- Almost 15 years, Babur struggled hard and kept attempting to re-conquest his homeland from the Uzbeks. He approached the ruler of Herat (who was also his uncle) for the help, but he did not receive any positive response.
- Shaibani Khan defeated Herat, which led to a direct conflict between the Uzbeks and the Safavids because Safavids was also claiming Herat and its surrounding area, namely Khorasan.
- In the battle of 1510, Shaibani Khan defeated and killed by Kasim Khan.
- By taking the help of Iranian power, Babur attempted to recover Samarqand. As a result of this, the Iranian generals wanted to treat Babur as the governor of an Iran rather than as an independent ruler.
- After the massive defeat, the Uzbeks swiftly recovered; resultantly, Babur had been overthrown again from Samarqand and he had to return back to Kabul.
- Shah Ismail (Shah of Iran) was defeated in a battle by the Ottoman sultan; the changes in geo-political scenario forced Babur to move towards India.
- Once Babur said that from the time he won Kabul (i.e. in 1504) to his victory of Panipat, he had never ceased to think of the conquest of Hindustan.
- Timur, the ancestor of Babur, had carried away a vast treasure along with many skilful artisans from India. The artisans helped Timur to consolidate his Asian empire and beautify the capital. They (the artisans) also helped Timur to annex some areas of Punjab.

Reasons of India Conquest

- Abul Fazl, the contemporary historian said that "Babur ruled over Badakhshan, Qandhar, and Kabul which did not yield sufficient income for the requirements of his army; in fact, in some of the border territories, the expense on controlling the armies and administration was greater than the income".
 - Babur was also always remained apprehensive about an Uzbek attack on his territory Kabul, and hence, considered India to be a safe place of refuge, as well as a suitable base for operations against the Uzbeks.
 - By the time, the political scenario of north-west India was much suitable for Babur's entry (into India).
-
- In 1517, Sikandar Lodi had died and Ibrahim Lodi (his son) had succeeded him.
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- Ibrahim Lodi was an ambitious emperor whose efforts to build a large centralized empire had alarmed the Afghan chief as well as the Rajputs.
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- Daulat Khan Lodi was one of the most powerful chiefs of his time. Though, he was the governor of Punjab, but he was almost an Independent ruler.
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- Daulat Khan wanted to conciliate with Ibrahim Lodi; therefore, he sent his son to his (Ibrahim's) court to pay homage. However, he was also intended to strengthen his power by annexing the frontier tracts of Bhira.
-
- In 1518-19, Babur seized the powerful fort of Bhira and sent letters as well as verbal messages to Ibrahim Lodi and Daulat Khan. Babur asked them for the cession of all those areas, which had belonged to the Turks.
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- Daulat Khan detained Babur's envoy at Lahore, neither granted him audience nor allowed him to go and meet Ibrahim Lodi. Daulat Khan expelled Babur's agent from Bhira.
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- Once again in 1520-21, Babur crossed the Indus, and easily clutched Bhira and Sialkot (popular as the twin gateways to Hindustan) and then, Lahore was also surrendered to him.
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- After capturing Bhira and Sialkot, Babur planned to proceed further, but because of the revolt in Qandhar, he returned back.
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- Babur recaptured Qandhar after almost one and half years. His political stability again encouraged him to move towards India.
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- Daulat Khan sent Dilawar Khan (his son) to Babur's court and invited Babur to come India. Daulat Khan suggested Babur to replace Ibrahim Lodi, as he (Ibrahim Lodi) was a tyrant ruler.

- Rana Sanga (Rana of Mewar), most likely at the same time, also sent a message to Babur inviting him to attack India. Two embassies from the powerful kingdom convinced Babur to conquest India again.
- In 1525, when Babur was in Peshawar, he received a message that Daulat Khan Lodi had changed the sides.
- Daulat Khan had collected an army of 30,000-40,000 men and ousted Babur's soldiers from Sialkot, and tried to advance towards Lahore. However, as Babur came, Daulat Khan's army ran away; resultantly, Daulat Khan got surrendered and was pardoned. Babur became the ruler of Punjab.

First Battle of Panipat

- On 20th April 1526, the First Battle of Panipat, was fought between Babur and the Ibrahim Lodi Empire (ruler of Delhi). The battle took place in north India (Panipat) and marked as the beginning of the Mughal Empire.
- The first battle of Panipat was one of the earliest battles in which gunpowder firearms and field artillery were used. However, Babur said that he used it for the first time in his attack on the Bhira fortress.
- Ibrahim Lodi met Babur at Panipat with the force estimated at 100,000 men and 1,000 elephants.
- Babur had crossed the Indus with a force of merely 12,000; however, in India, a large number of Hindustani nobles and soldiers joined Babur in Punjab. In spite of Indian army support, Babur's army was numerically inferior.
- Babur made a master plan and strengthened his position. He ordered one of his army wings to rest in the city of Panipat, which had a large number of houses. Further, he protected another wing by means of a ditch filled with branches of trees.

- On the front side, Babur lashed with a large number of cans, to act as a defending wall. Between two carts, breastworks were erected so that soldiers could rest their guns and fire.
- Babur used the Ottoman (Rumi) device technique, which had been used by the Ottomans in their well-known battle against Shah Ismail of Iran.
- Babur had also invited two Ottoman master-gunners namely Ustad Ali and Mustafa.
- Ibrahim Lodi, however, with huge army men, could not assume the strongly defended position of Babur.
- Ibrahim Lodi had apparently expected Babur to fight a mobile mode of warfare, which was common with the Central Asians.
- Babur's gunners used their guns strategically with good effect from the front; however, Babur gave a large part of the credit of his victory to his bowmen.
- After the seven or eight days fight, Ibrahim Lodi realized Babur's strong position. Further, Lodi's forces were also hesitant to fight with Babur's modern technological warfare.
- Ibrahim Lodi battled to the last with a group of 5,000 to 6,000 forces, but he (Lodi) had been killed in the battle field.
- It is estimated that more than 15,000 men (of Lodi kingdom) were killed in the first battle of Panipat.

Battle of Khanwa

- On March 17, 1527, the Battle of Khanwa was fought near the village of Khanwa (about 60 km west of Agra). It was fought between the first Mughal Emperor Babur and Rajput ruler Rana Sanga.
- The Rajput ruler, Rana Sanga, was the great threat for Babur to establish a strong Mughal empire in the Indo-Gangetic Valley, as Sanga planned to expel Babur from India or else confined him at Punjab.
- Babur had an authentic reason to accuse Rana Sanga i.e. of breach of an agreement. In fact, Sanga invited him (Babur) to India with a promise to fight with him against Ibrahim Lodi, but he (Rana) refused.

- Rana Sanga escaped from the battle field. Later he (Rana) wanted to renew the conflict with Babur, but he was poisoned by his own nobles.
- The battle of Khanwa strengthened Babur's position in the Delhi-Agra region. Later, Babur conquered the chain of forts including Gwalior, Dholpur, east of Agra, etc.
- Babur also conquered Alwar from Hasan Khan Mewati and Chanderi (Malwa) from Medini Rai. Chanderi was captured after killing almost all the Rajput defenders men and their women performed jauhar (it was the custom of self-immolation of queens and royal female of the Rajput kingdoms).



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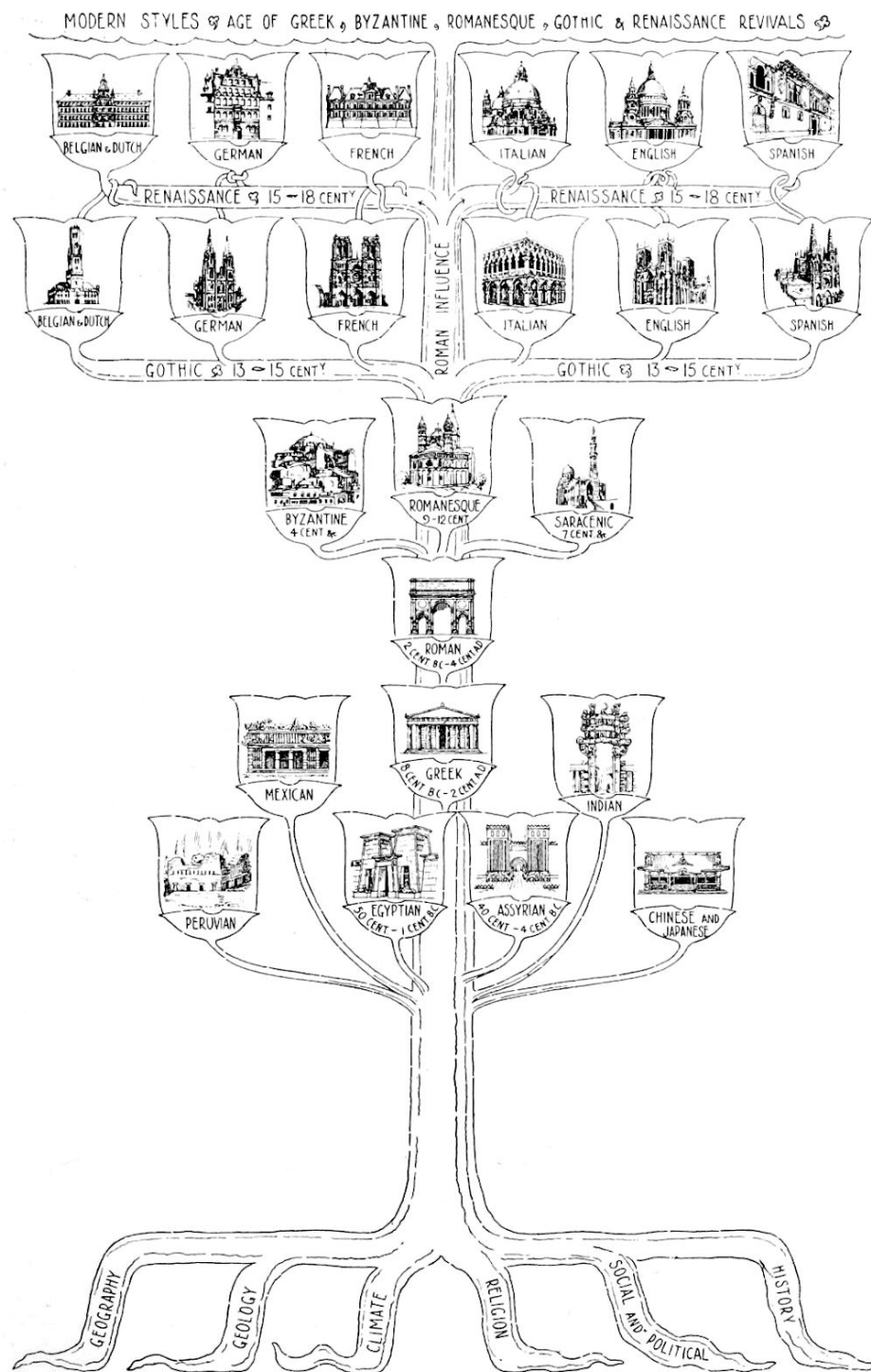
DEPARTMENT OF ARCHITECTURE

RENAISSANCE

The Idea of rebirth and revival of Art

The causes which led to the re-introduction, or re-birth (Renaissance), of Classic Architecture in Europe at the beginning of the fifteenth century, are instructive, and must be grasped in order fully to understand so great a change.

Influences



Geographical. The Renaissance movement, arising in Italy in the fifteenth century, spread from thence to France, Germany, and England, and over the whole of Western Europe over what had been the Roman Empire in the West. The Eastern empire did not come under its influence, for the Greeks in the East, who had been the most civilized people in Europe, were now falling before the Turks

Geological & Climate Refer to each country.

Religion. The invention of printing, which aided the spread of knowledge, the spirit of inquiry, and the diffusion of freedom of thought, led, among the Teutonic races, to a desire to break away from Romish influence..

Social and Political. A new intellectual movement manifests itself sooner in literature than in architecture, and thus the former influences the public taste. Dante (1265-1321), Petrarch (1304-1374), and Boccaccio (1313-1375) aided in the spread of the newly-discovered classic literature, which caused a revolt against mediaeval art, and the subsequent fall of Constantinople in A.D. 1453 caused an influx of Greek scholars into Italy, whose learning was an important influence in an age which was ripe for a great intellectual change. Thus a revival of classic literature produced a desire for the revival of Roman architecture.

Italian architecture was naturally the first to be affected, because the Gothic style had never taken a firm hold on the Italians, who had at hand the ancient Roman remains, such as the Pantheon, the Basilica of Maxentius, the Colosseum, the remains of the great baths, and the Roman fora. In Italy, therefore, where feudalism had never fully established itself, and where the municipalities had developed a spirit of municipal enterprise, practically a direct return was made to Roman forms.

Historical. At the beginning of the sixteenth century there was a general grouping together of the smaller states into independent kingdoms, under powerful rulers, who governed with authority, and kept large standing armies. Three great inventions had an important influence gunpowder, which had changed the whole method of warfare; the mariner's compass, which led to the discovery of the West Indies (1492) and America, and the foundation of colonies by European states; and, lastly, printing, which favoured that stirring of men's minds which caused the reformation in religion, and the revival of learning. Copperplate engraving was discovered in the third quarter of the fifteenth century. Galileo (1564-1642) proved that the earth was not the centre of the universe, but merely a minute planet in the solar system.

Architectural character.

The Renaissance of the fifteenth century in Italy, and of the sixteenth century in other parts of Western Europe, was a break in that orderly evolution of architecture which is based on the nature and necessities of materials. In place of such evolution there was the worship of style, that is, of the past results of the nature of materials as formulated into systems. Such results were worshipped for their own sake, and often to a great extent applied regardless of the materials of their execution.

The main features in the style were the Classic order viz., the Doric, Ionic, and Corinthian, which were often used decoratively, as by the Romans, and at other times with their true constructive significance. Buildings designed for more modern wants were clothed in the classic garb of ancient Rome, but it must not be supposed that in this development no advance was made. It is true that Roman precedent was the basis, but columns and pilasters, whether plain, fluted or panelled, with

entablature and details, were applied in many novel and pleasing forms, a system in their application being gradually evolved, and a style built up which has become the basis of all modern styles. Italy, the headquarters of the new movement, in the fifteenth century possessed skilful jewellers and excellent medallists, and it was by their help that the Renaissance commenced and expanded. From their well-known good taste, architects consulted them, and often, indeed, were their pupils, as Ghiberti, Donatello, and Brunelleschi.

FACTORS WHICH INFLUENCED ARCHITECTURE – ITALIAN RENAISSANCE

Religious & intellectual unity of Christendom crumbled due to Protestantism and Counter Reformation which gave rise to new religious orders such as Jesuits, Barnabites, etc. Rival Popes fought against each other

Wars were fought:

- Between city states
- Italy and France
- Napoleonic wars & invasion of Venice

Economic prosperity of Italy depended on

- Early urbanization
- Development of textile and banking industry
- Maritime trade in Venice, Genoa etc.
- Revenues of church

Literature works of Petrarch and others

Scientific inventions in printing – wood cut & copper plate engraving, movable types which spread from Germany

TYPES

1. **Churches**
2. **Palaces**
3. **Villas**
4. **Public buildings – Hospitals, Libraries, Theatres, Piazzas (city square)**

Architectural character churches

CHURCH PLANNING

Planning of churches was influenced by

1. **Liturgical change**
2. **Symbolism**

3. Reformation movement & evolution of new religious orders

4. Aesthetic preference of architects & clients

“**Decorum**” was crucial to the planning of a church and it was a fundamental rule of Renaissance culture and function

INTERIORS OF CHURCHES:

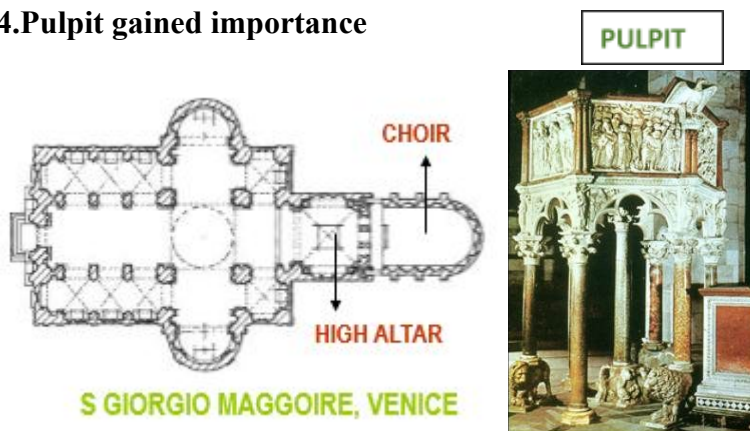
1. **Choir** – was converted into a Chapel behind the main altar

Eg. **S GIORGIO MAGGOIRE, VENICE**

2. **Emphasis** on preaching and participation in the mass – Liturgical change

3. **Screens behind choir & nave were removed**

4. **Pulpit gained importance**



TYPES OF PLANNING CHURCHES:

1. Aisle less single nave churches

S MARIA, VENICE

2. Centralized plans based on square, circle and the Greek cross (mainly for symbolic perfection)

Not suitable for cathedral or monastic churches

Suitable for Commemorative structures associated with miracles and martyrdom

S PIETRO, ROME (site of martyrdom of S Peter visible in the crypt below through a hole in the floor)

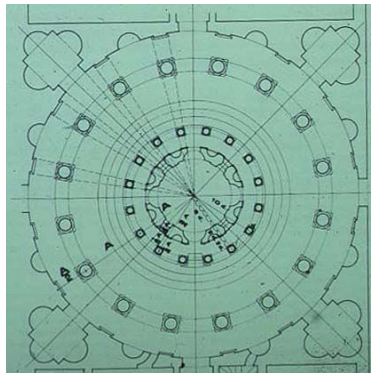
3. Combination of both

A composite plan attaching a longitudinal nave to a domed centralized crossing S PETERS, ROME.

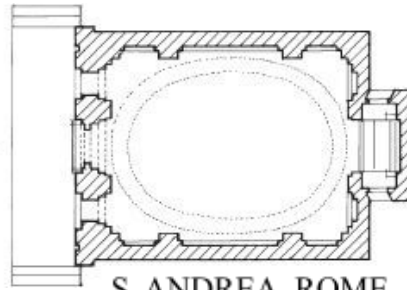
4. Oval plan which provided a directional axis in a centralized plan

S ANDREA, ROME

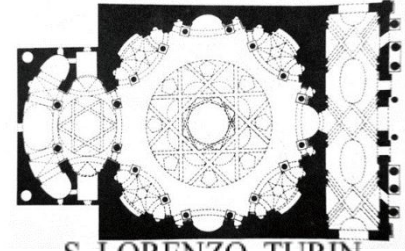
S LORENZO, TURIN



S. PIETRO, ROME



S. ANDREA, ROME



S. LORENZO, TURIN

Architectural character palaces

PLANNING OF PALACES

Large Urban dwellings were called “PALAZZO” in Italian for Palace (Pallazzi – Plural)

- It normally had a regional variation in plan
- There was a commonality in adopting a common language of decoration

FEATURES in the palaces of Italy:

1. Rectangular blocks of 3 storeys
2. Central colonnaded courtyard
3. “Piano Nobile” placing of main apartments on the first floor facing the street
4. Storeys: Vaulted Ground Floor – housed Shops, summer apartments, Stables etc. First Floor – Main Apartments – Piano Nobile Second Floor – Servants, Childrens room Basement – Wine, oil, and fuel storage.

PLANNING:

1. Symmetrical planning with a single axis was common PALAZZO FARNESE, ROME PALAZZO RICCARDI or MEDICI PALACE, FLORENCE

2. Apartments of the palaces consisted of:

SUITES of interconnecting rooms of diminishing size

GREAT SALON – a large drawing room or reception area

CAMERA – a small vaulted private chamber

3. Corridors were rare.

4. The function of the rooms was flexible and depended on their size and not on the furnishings

TYPES OF PALACES:

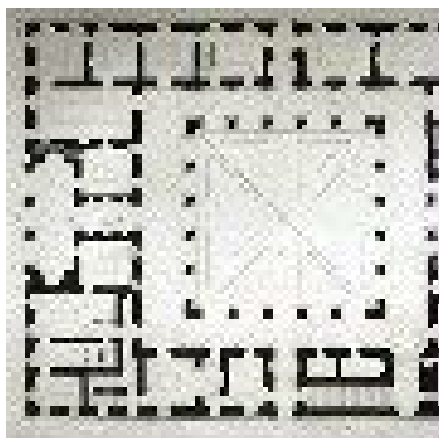
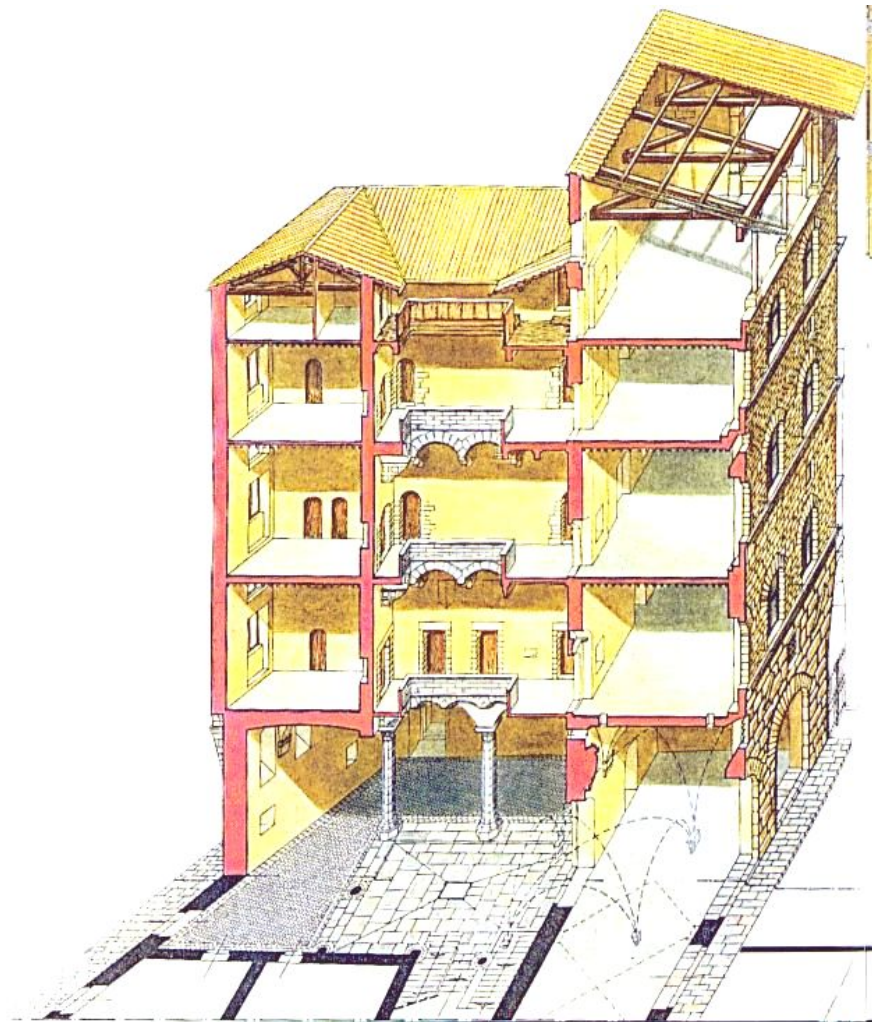
1. Medium sized palaces – for mercantile class

2. Large palaces – for high ecclesiastics and princes

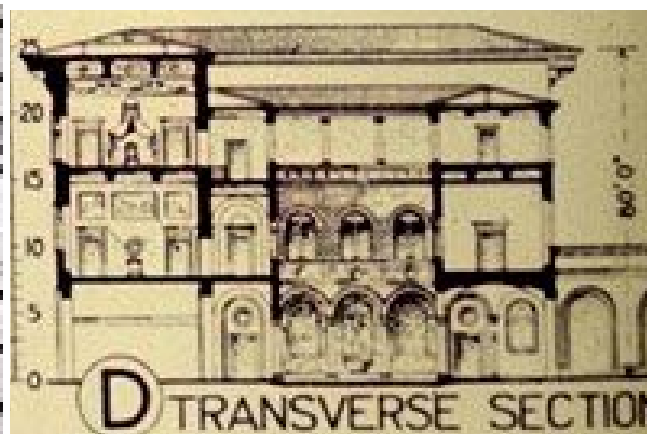
3. Use of Carriages due to the demand of large service areas and stables with wide entrances. Increase in the number of domestic staff and workers

BAROQUE PERIOD – There was an increasing emphasis on multi axes, spectacular staircases and interconnecting courtyards.

Eg. **PALAZZO BARBERINI, ROME**(H shaped plan)



PALAZZO FARNESE, ROME



D TRANSVERSE SECTION
SECTION- PALAZZO RICCARDI

REGIONAL VARIATIONS:
FLORENCE

1. Palaces retained an embattled air with **rusticated stone work**

Eg. PALAZZO RICCARDI

2. In the 16th c. – Use of rustication was restricted to **Quoins and Voussoirs****Eg. PALAZZO GUADAGNI**

3. A **continuous stone bench** for public use around the base of the palace was a characteristic Florentine feature**Eg. PALAZZO STROZZI**

4. **Large Pedimented windows** supported on Volutes appeared on the ground floor called the “**KNEELING WINDOWS**”. Oiled linen or paper was used in the windows instead of glass**Eg. PALAZZO RICCARDI**



ROME

- Large palaces had loggias at the upper levels also for maximum shade and breeze
- In small palaces Grandeur of façade, staircase and courtyard were given importance over size**Eg. PALAZZO FARNESE**

VENICE

- Distinctive planning of Venetian palaces is related to the water front setting and conservative mercantile occupants
- Sites were narrower and courtyards were smaller than in Central Italy
- Palaces were sometimes divided vertically between members of the family

Eg. PALAZZO CORNARO



Architectural character villas

PLANNING OF VILLAS

- Villas or large houses became a **distinct architectural typology** after its disappearance in the Roman period
- There were different **types of villas** based on the function

Agricultural

Suburban Retreat

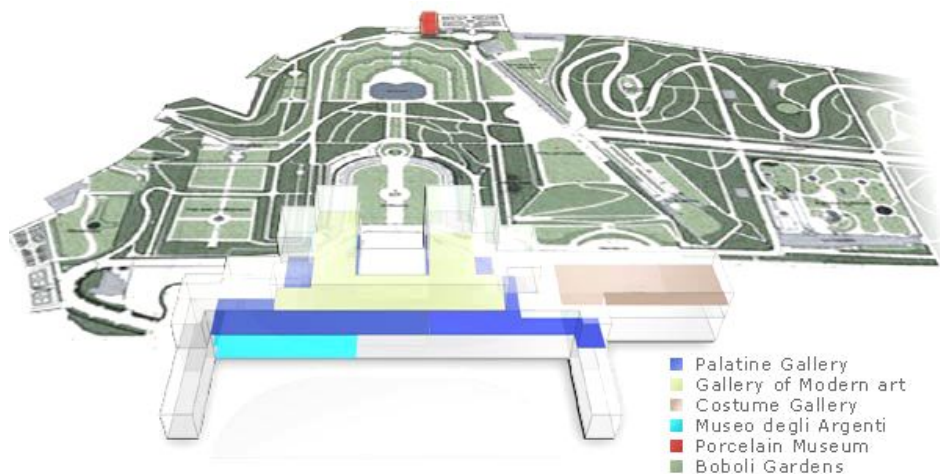
Common feature in the design of villas – **External Loggias**

Barns, storage loggias, granaries etc. were hierarchically grouped and incorporated in the agricultural villas

Dominated by **pediment fronts**

Water played an increasing part in the design of villas in the form of

- Feeding fountains
 - Cooling dining tables
 - Powering elaborate automata
- Eg. BOBOLI GARDENS, FLORENCE**



There are 4 distinct styles in Italian Renaissance:

1. EARLY RENAISSANCE (15th c.)
2. HIGH RENAISSANCE & MANNERISM (16th c.)
3. BAROQUE & ROCOCO (17th c. & early 18th c.)
4. NEO CLASSICAL (mid-18th – early 19th c.)

ARCHITECTURAL STYLES EARLY RENAISSANCE – 15th c.

FILIPPO BRUNELLESCHI (A.D. 1377-1446)

Filippo Brunelleschi, considered to be a founding father of Renaissance architecture, was an Italian architect and designer, and is now recognized to be the first modern engineer, planner, and sole construction supervisor.

Marks the beginning of the Early Renaissance style

Most of his works in the city of Florence

Architectural Principles of FILIPPO BRUNELLESCHI

1. SIMPLE MODULAR PROPORTIONS Eg. Foundling Hospital, Florence S Spirito, Florence
2. CLARITY OF DESIGN Eg. Pazzi Chapel, S Croce, Florence
3. STANDARDISED VOCABULARY OF MONOLITHIC GREY STONE COLUMNS & PILASTERS SET AGAINST WHITE PLASTER WALLS Eg. Pazzi Chapel, Florence

His forms depend less on ancient Roman buildings Eg. Use of Pendentive vaults (not Roman)

Use of arches supported on columns (Romanesque)

FOUNDLING HOSPITAL (1419-1445)

The Ospedale degli Innocenti is a historic building in Florence, Italy. It was originally a children's orphanage.

Function

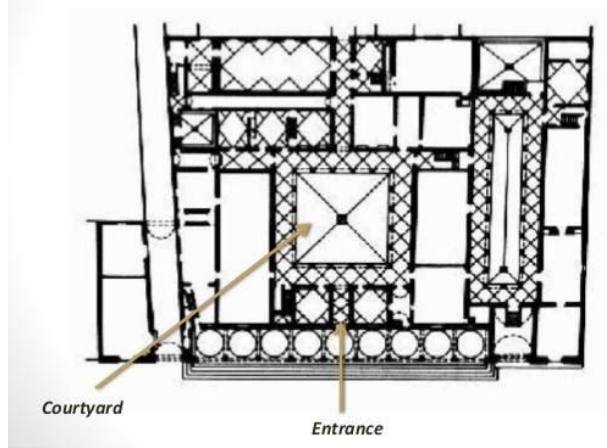
The Ospedale degli Innocenti (Foundling Hospital) was commissioned by Brunelleschi's own guild, the Guild of Silk Merchants and Goldsmiths, as a shelter for unwanted children. Renaissance guilds, such as this one, assumed a share of civic responsibility through charitable commitments, and contributed to a number of artistic commissions in the city. Brunelleschi's Ospedale was probably the first orphanage in history, and swaddled infants are depicted in plaques on the façade

- The loggia of 9 bays is based on repeated modular elements with sail vaults supported on monolithic grey stone columns and semicircular columns
- The ground floor plan of the hospital with 2 cloisters, church and dormitories is governed by modular and mathematical proportions and is roughly centralized, without being symmetrical.
- The main hospital and side bays of the façade
- Was not executed by Brunelleschi

<http://www.sgira.org/hm/brun4.htm>



Plan of Hospital



Entrance

Rational and clear proportions The distance between the columns is the same as the distance from the columns to the wall. The distance between the floors of the loggia to just above the impost blocks is also the same. Thus the cube is a major module in this proportional design. Other geometrical relationships governed the location of the cornice, the widths of doors and the heights of windows.



The entrance and a framing pilaster at the end

Brunelleschi framed the round arches of the bays on each end with fluted pilasters, an idea perhaps borrowed from the Colosseum.



Glazed terra cotta reliefs of children by the Della Robbia school

A column and capital

Although Brunelleschi borrowed from Roman architecture, his columns aren't fluted. The capitals have impost blocks and less projection than Roman Corinthian models.

Dome of Florence cathedral (1420 – 34)

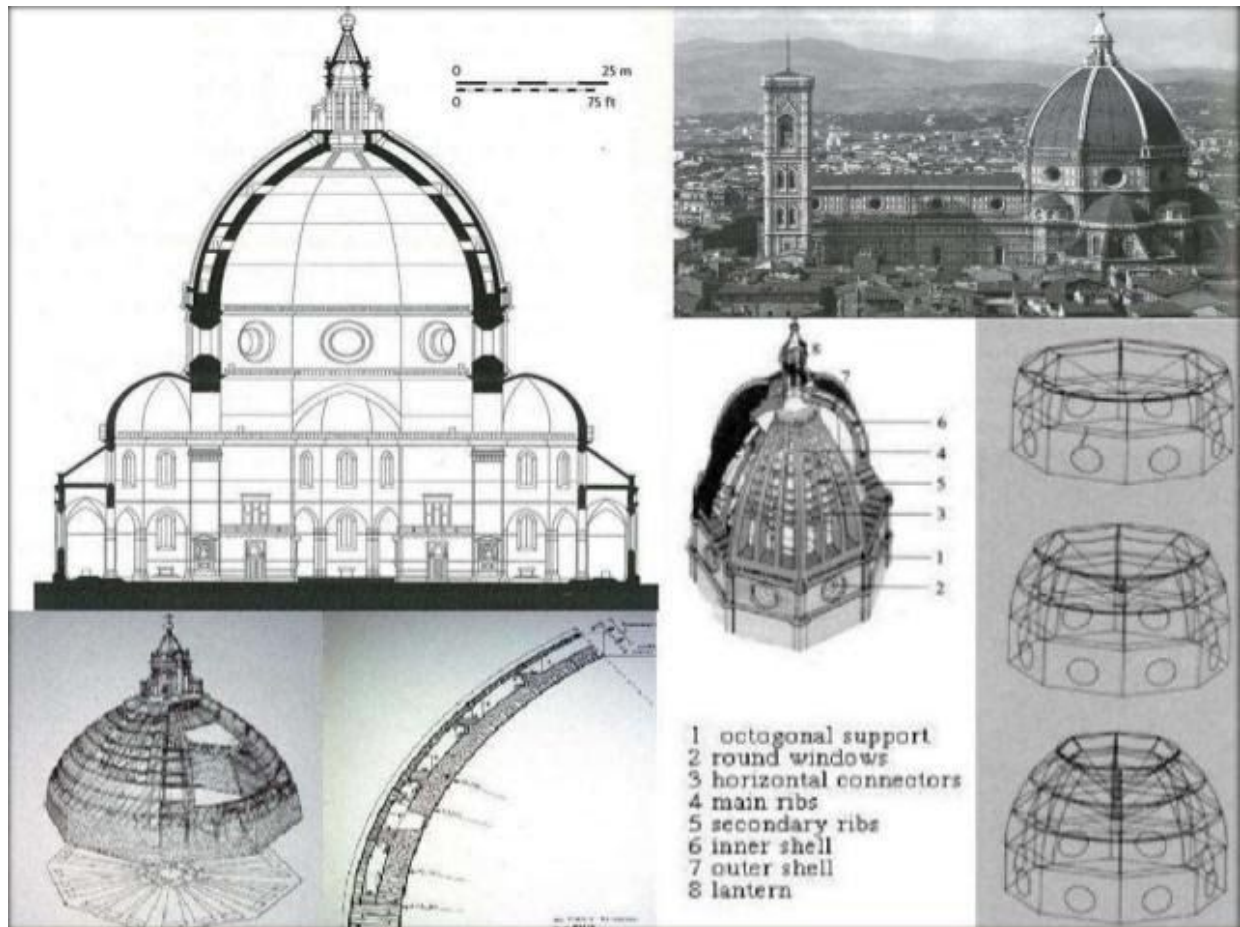
IN 1418 THE town fathers of Florence finally addressed a monumental problem they'd been ignoring for decades: the enormous hole in the roof of their cathedral. Season after season, the winter rains and summer sun had streamed in over Santa Maria del Fiore's high altar—or where the high altar should have been. Their predecessors had begun the church in 1296 to showcase the status of Florence as one of Europe's economic and cultural capitals, grown rich on high finance and the wool and silk trades. It was later decided that the structure's crowning glory would be the largest cupola on Earth, ensuring the church would be "more useful and beautiful, more powerful and honorable" than any other ever built, as the grandees of Florence decreed.

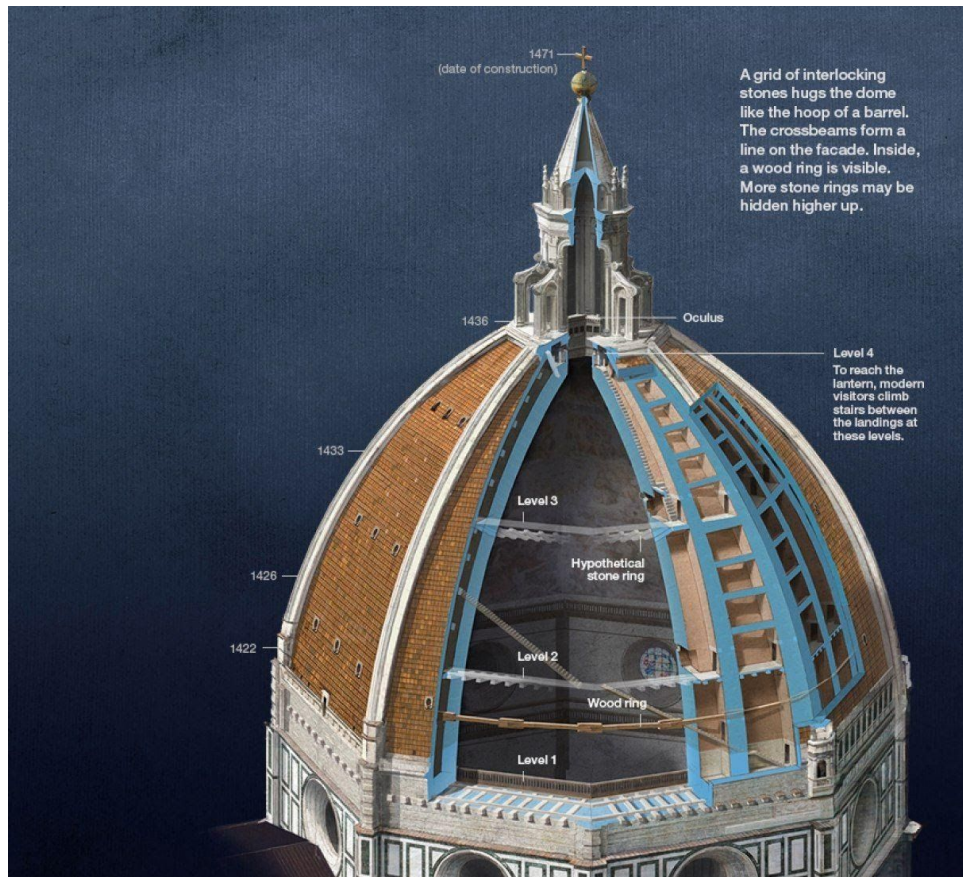
- **Construction of a dome without use of centering supported by scaffolding**
- **The octagonal drum, pointed profile and double shell dome has spiraling courses of herringbone brickwork, sloping beds and hoisting machines which made it possible**
- **The construction geometry of both the octagonal shells is circular**
- **The corner and intermediate ribs serve to join the shells**
- **Stone and timber chains were also used**

- Brunelleschi added semicircular exedrae with paired half columns and niches at the base of the drum.
- Marble lantern with double volute brackets were completed by Michelozzo and Rossellino
- Continued use of this system for Florentine domes
- The 2 shelled construction influenced St. Peter's and others



<https://www.nationalgeographic.com/magazine/2014/02/Il-Duomo/>



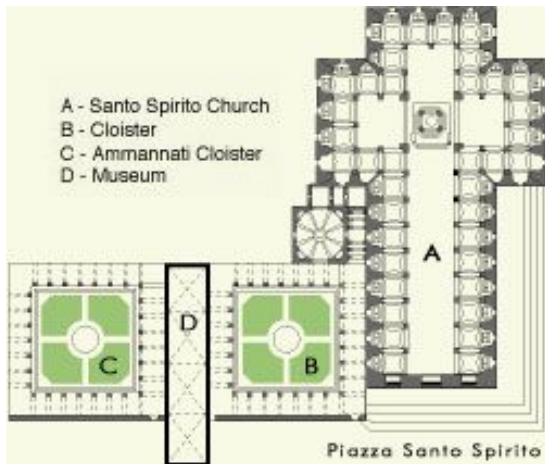


BASILICA DI SANTO SPIRITO

The Basilica di Santo Spirito ("Basilica of the Holy Spirit") is a church in Florence, Italy. Usually referred to simply as Santo Spirito, it is located in the Oltrarno quarter, facing the square with the same name. The interior of the building – internal length 97 meters – is one of the preeminent examples of Renaissance architecture.

Filippo Brunelleschi began designs for the new building as early as 1428. The first pillars to the building were delivered in 1446, ten days before his death. After his death, the works were carried on by his followers Antonio Manetti, Giovanni da Gaiole, and Salvid'Andrea.

- Basilican church
- Mature plan
- Square sail vaulted aisle bays and semicircular side chapels continue around the centralised crossing giving plan a modular unity



<https://www.visitflorence.com/florence-churches/basilica-santo-spirito.html>

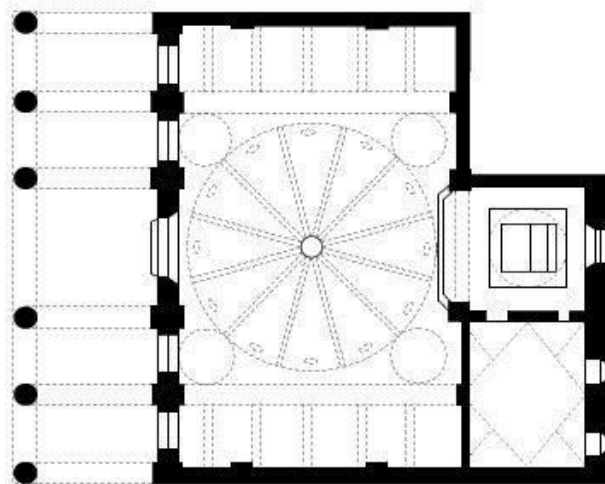
PAZZI CHAPEL, S CROCE

- Perfect
- Grey & white articulation of interior and terracotta roundels
- The façade does not reflect his design
- simple geometrical forms, the square and the circle

The chapel, used as the chapter house by Santa Croce friars, is preceded by an atrium, a sort of entrance hall, supported by six Corinthian columns placed next to the central arch.

It is a rectangular layout containing one square room, covered by an umbrella-shaped dome, and two sides of the remaining space, each covered by a barrel vault with round windows.

Pazzi Chapel



San Lorenzo, Florence

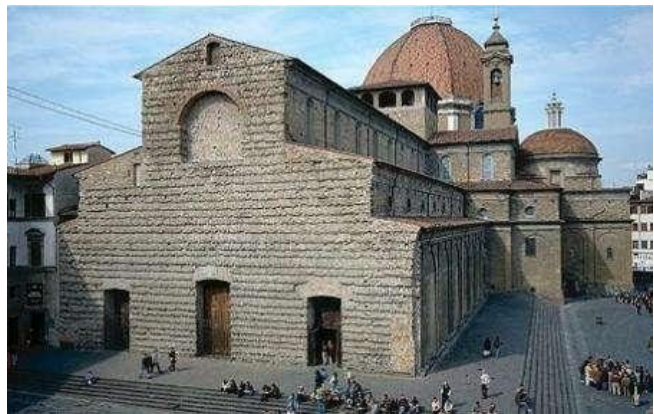
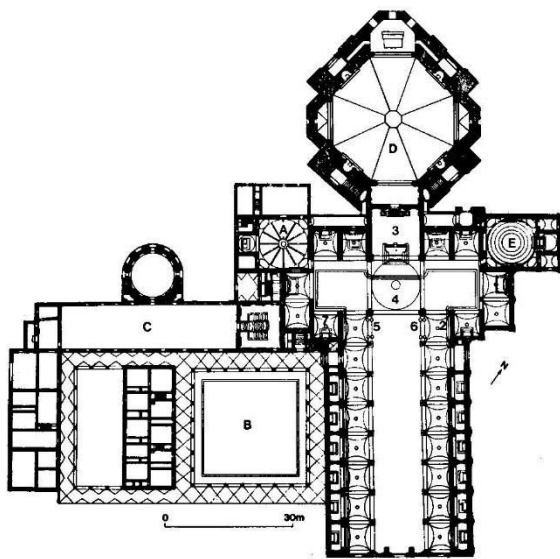
The Basilica di San Lorenzo (Basilica of St Lawrence) is one of the largest churches of Florence, Italy, situated at the centre of the city's main market district, and the burial place of all the principal members of the Medici family from Cosimo I Vecchio to Cosimo III. It is one of several churches that claim to be the oldest in Florence, having been consecrated in 393 at which time it stood outside the city walls. For three hundred years it was the city's cathedral before the official seat of the bishop was transferred to Santa Reparata.

- A cube with a hemispherical dome supported on pendentives.
- A smaller domed altar chapel with concave niches.
- Original grey & white articulation replaced now.
- The nave is brightly lit from clerestory windows and oculi in the aisles. And has his restraint in detail.

The building in Renaissance architecture

The Basilica of San Lorenzo demonstrates many innovative features of the developing style of Renaissance architecture.

- A simple mathematical proportional relationship using the square aisle bay as a module and the nave bays in a 2x1 ratio.
- The use of an integrated system of column, arches, and entablatures, based on Roman Classical models
- The use of Classical proportions for the height of the columns
- A clear relationship between column and pilaster, the latter meant to be read as a type of embedded pier.
- The use of spherical segments in the vaults of the side aisles.
- The articulation of the structure in pietraserena (Italian: “dark stone”)



LEONE BATTISTA ALBERTI (1404 – 1472)

Leon Battista Alberti was an Italian author, architect, and humanist* of the 1400s. His works embody the Renaissance ideal of combining ancient and modern ideas. He wrote in both Latin and Italian on a great variety of subjects. As an architect, he incorporated forms used by the ancient Greeks and Romans into modern structures. In the 1800s, historian Jakob Burckhardt described Alberti as the "universal man of the Renaissance," meaning a man who could do many things well.

Architecture. Alberti received his first job as an architect in 1438. The Este family, which ruled the city of Ferrara, hired Alberti to design an arch to support a statue of Nicolò III, the head of the family. In 1443 Alberti went to Rome with the Curia. While there, he produced an elaborate map of the city. He also participated in various projects involving restoration and city planning.

Alberti was a true Renaissance thinker. In his translations of Latin works and his monuments based on ancient models, he smoothly blended old and new ideas. At the same time, his treatises on grammar, painting, and architecture provided a basis for new literary and artistic creation.

- Most of his works were in Rome, Mantua, Urbino

<https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/alberti-leon-battista-1404-1472-italian-author-and-architect>

Architectural Principles:

- **Approach to antiquity was archaeological**
- He **introduced** specific ancient features such as the **Triumphal Arch, Roman Temple front** into his churches

In the use of **Orders**, he took care to combine arch with the pier and column with straight entablature in the Roman manner.

WORKS OF LEONE BATTISTA ALBERTI (1404 – 1472)

Santa Maria novella, Florence

Santa Maria Novella is a church in Florence, Italy, situated opposite, and lending its name to, the city's main railway station. Chronologically, it is the first great basilica in Florence, and is the city's principal Dominican church.

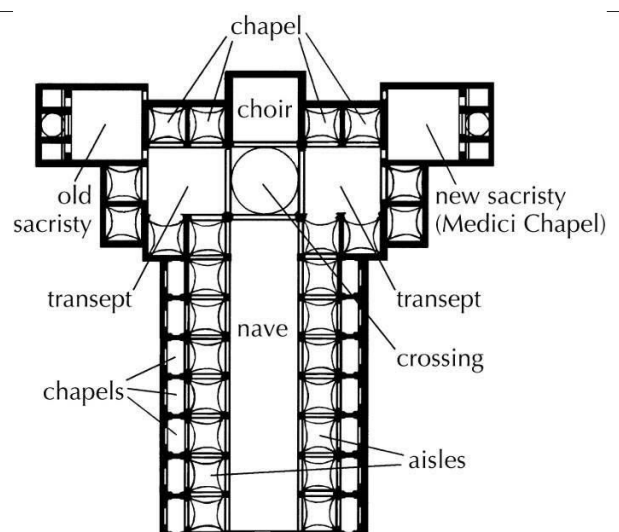
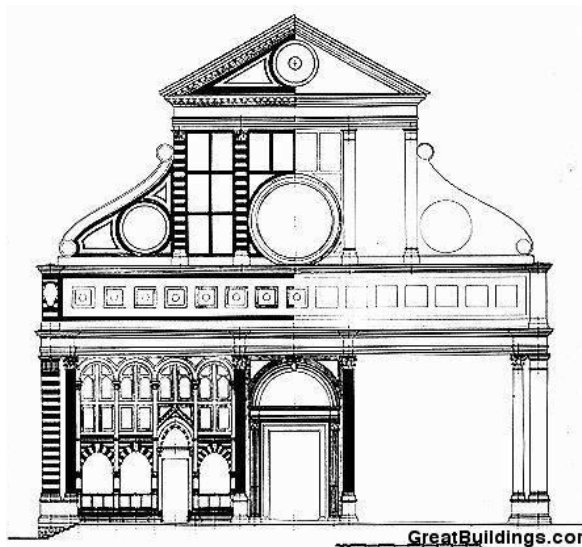
The church, the adjoining cloister, and chapter house contain a multiplicity of art treasures and funerary monuments. Especially famous are frescoes by masters of Gothic and early Renaissance. They were financed by the most important Florentine families, who ensured themselves funerary chapels on consecrated ground.

Interior

The vast interior is based on a basilica plan, designed as an Egyptian cross (T-shaped) and is divided into a nave, two aisles set with windows and a short transept. The large nave is 100 metres long and gives an impression of austerity. The piers are of compound form and have Corinthian columns supporting pointed Gothic arches above which is a clerestory of ocular windows above which rises a ribbed, pointed quadripartite vault. The ribs and arches are all black and white polychrome.

Alberti designed both the top section of the façade and the main doorway from 1456-70. The church itself was built much earlier and was redesigned in the 13th century. It is a very large brick structure with a Latin cross plan interior.

<https://smarthistory.org/alberti-santamarianovella/>





Sant'Andrea in Mantua

Sant'Andrea is built of bricks, though they are mostly concealed by painted stucco. The patron, Ludovico Gonzaga, estimated that at least 2 million bricks were needed. The bricks were baked in onsite kilns, making the church far less expensive and faster to erect than a building made with stone, which had to be quarried, transported, and finished.

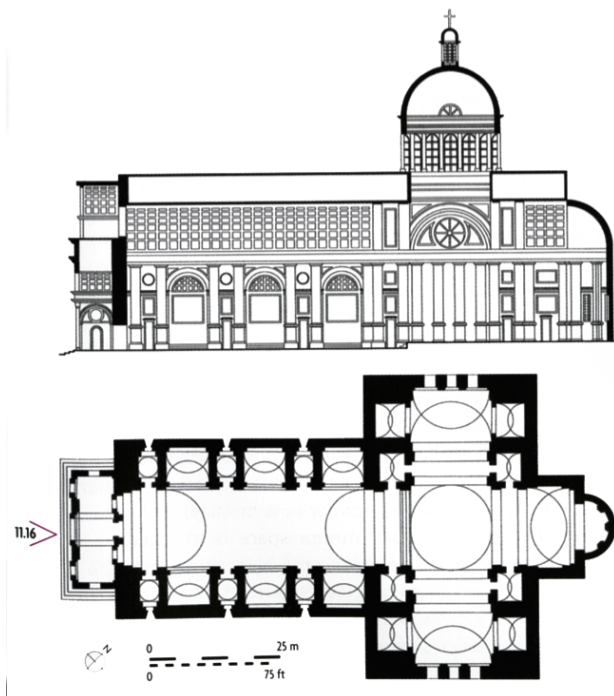
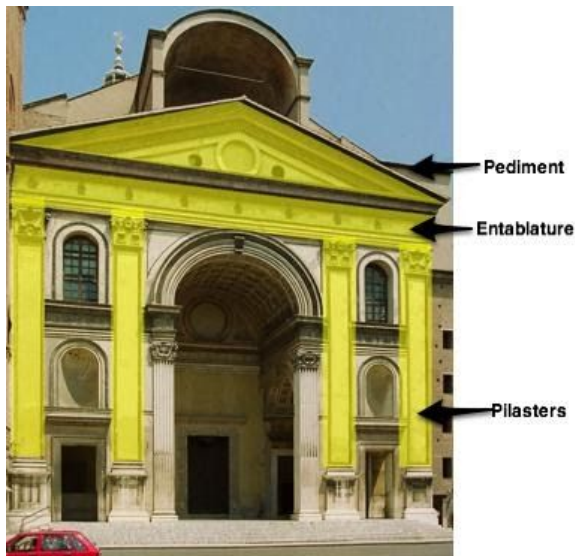
Sant'Andrea's attribution are important because it is such an ingenious, unified combination of three ancient Roman forms: temple front, triumphal arch, and basilica.

On the façade, four giant pilasters with Corinthian capitals support an entablature and pediment.

Together these elements recall the front of ancient temples, such as the Pantheon in Rome. There is also a grand arch in the center of the façade that is supported, at least visually, by two shorter fluted pilasters. Taken together, the lower façade, with its tall central arch and flanking side doors evoke ancient triumphal arches such as the Arch of Constantine.

When pilgrims pass under the arch and into the nave (the long interior hall), after their eyes adjusted to the purposefully dim, mystical light, they would look up and see a second, much more massive barrel vault, the largest constructed since ancient Rome.

Then, on both sides of the nave they would find three chapels with lower barrel vaults. Surprisingly, there are no side aisles or rows of columns, as at the old St. Peter's in Rome or other early churches like Santa Sabina.



Architectural styles

High renaissance and Mannerism– 16th c.

Emergence of 2 main themes in the 16th c:

1. A tendency to “Correctness” and the formulation of rules by Sangallo, Vignola etc. – HIGH RENAISSANCE
2. An inventiveness verging on eccentricity – MANNERISM

High Renaissance was a brief phenomenon confined essentially to Italy in about the first two decades of the 16th century and supremely embodied in some of the work of that time by Leonardo da Vinci, and Raphael. It is generally accepted that artists of the High Renaissance developed more

monumental forms and created unified and harmonious compositions that reject the decorative details of 15th-century art.

Mannerism is the name given to the stylistic phase in the art of Europe between the High Renaissance and the Baroque, covering the period from c. 1510–20 to 1600, and also called late Renaissance. Although 16th-century artists took the formal vocabulary of the High Renaissance as their point of departure, they used it in ways that were diametrically opposed to the harmonious ideal it originally served.

DONATO BRAMANTE (1500 – 1514)

(Marks the beginning of the High Renaissance period)

Donato Bramante introduced Renaissance architecture to Milan and the High Renaissance style to Rome, where his plan for St. Peter's Basilica formed the basis of design executed by Michelangelo.

The Italian architect and painter Donato Bramante (1444-1514) was the first High Renaissance architect. He transformed the classical style of the 15th century into a grave and monumental manner, which represented the ideal for later architects.

Architectural principles:

1. **MONUMENTALITY EVEN ON A SMALL SCALE** Eg. S PIETRO, ROME

2. **EMULATION OF MASSIVE SPATIAL EFFECTS OF IMPERIAL ROMAN ARCHITECTURE** Eg. CORTILE DEL BELVEDERE, VATICAN, ROME- gigantic enclosure 300m in length

3. **VITRUVIAN USE OF LANGUAGE OF ORDERS**

Eg. PALAZZO CAPRINI, ROME – use of Doric half columns with a Doric frieze above the window in the first floor

WORKS OF BRAMANTE (1500 – 1514)

TEMPIETTO in CLOISTER - S PIETRO, MONTORIO, ROME (1502)

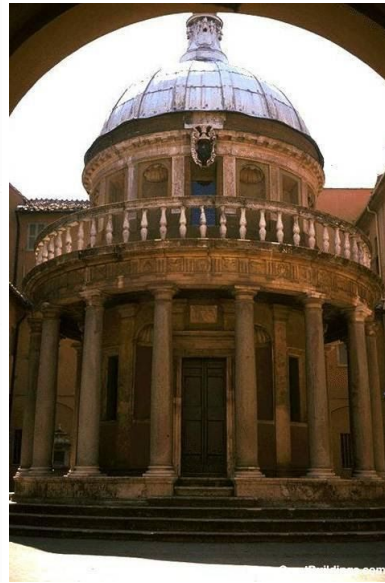
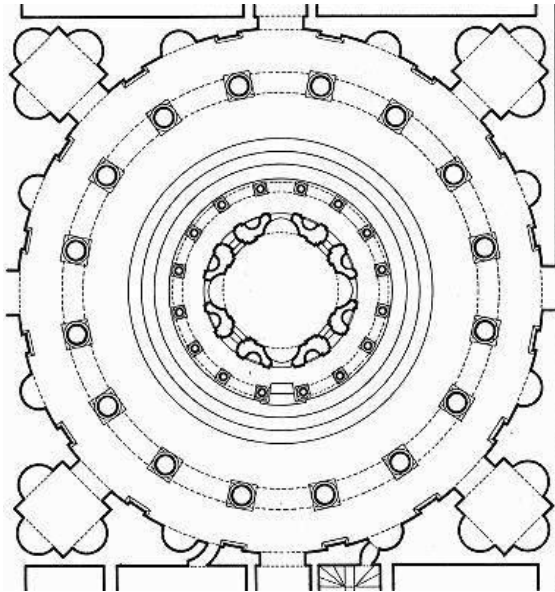
- Small impressive building with a **severity** and **antiquarianism** new to Renaissance architecture
- **Circular domed chapel** commemorating the site of martyrdom of S Peter

Perfectly proportioned

- A **stern Doric colonnade** with a correct **Doric entablature** encircling the exterior modeled after the ancient Theater of Marcellus
- The exterior resembles a **Roman peripteral temple**
- **Projecting drum** and **semicircular dome** are Christian elements

Restrained in ornament

- Wall surfaces are sculpturally treated all antica with arrangements of pilasters and shell niches
- Bramante planned to set it in within a colonnaded courtyard, but this plan was never executed.



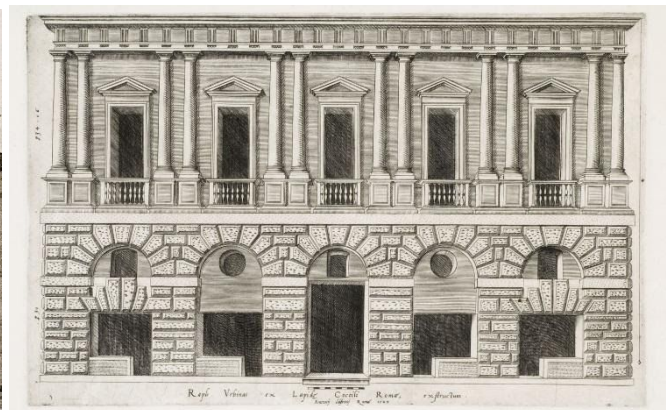
CORTILE DEL BELVEDERE, VATICAN, ROME (1505)

- **Gigantic enclosure 300m in length** connecting the papal church with the belvedere of Innocent VIII and Julius II sculpture court which ascends in three terraces
- He regularized the slope as a set of terraces, linked by rigorously symmetrical stairs on the axis, to create a sequence of formal spaces that was unparalleled in Europe, both in its scale and in its architectural unity
- A series of **six narrow terraces** at the base was traversed by a **monumental central stair** leading to the wide middle terrace.
- The divided stair to the uppermost terrace, with flights running on either side against the retaining wall to a landing and returning towards the center, was another innovation by Bramante
- The **upper terraces and gardens** were approached from the large lower terrace by a broad **flight of steps and zigzag ramps**
- At the far end a **semicircular exedra** was reached by a concave and convex staircase
- Constant roofline
- **Brick and stucco facades** are articulated
- **Triumphal arch** rhythm of the upper court
- **Pilasters** in lower court from **Doric to Corinthian**



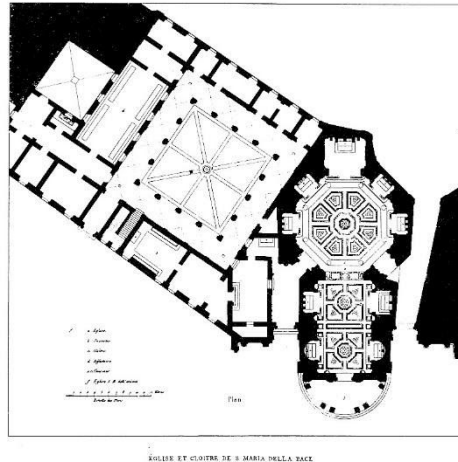
PALAZZO CAPRINI (1501)

- Revolutionary, influential palace façade of 16th c.
- An **arcaded basement** housing shops, **paired half columns** flank the **pedimented windows** of the **piano nobile** with a **Doric frieze**
- A **cluster of 3 half columns at the corner** is prominent leading to the Vatican palace
- Expressive differentiation between the **rusticated base** and the **classically ordered first floor** which was adopted in domestic architecture to follow



SANTA MARIA DELLA PACE , ROME

- The main feature of the church is the Bramante cloister.
- Built in 1500-1504 for Cardinal Oliviero Carafa,
- It was the first work of Donato Bramante in the city.
- It has two floors, the first with arcades on pilasters, the second with arcades on pilasters and columns



ST. PETER'S BASILICA(1506 – 1626) / BASILICA DI SAN PIETRO IN VATICANO

- The largest and most influential building of the Renaissance
- **Begun by Bramante** and finished by successive architects
- Design envisaged an **enormous dome** of roughly the size of the pantheon **supported on 4 massive crossing piers**

PLANNING:

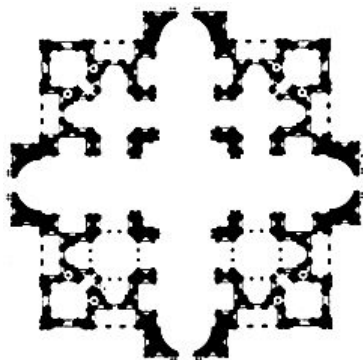
- A **Greek cross plan within a square**, with 4 subsidiary domes, towers at the corners, and half domes terminating each of the 4 arms
- A **centralized planning**

EXTERIOR

- Severe exterior depending on the **hierarchical massing of geometric forms** for effect

DOME:

- **Single shelled hemisphere** made of **concrete** with a stepped profile from the pantheon
- Raised on a colonnaded drum surmounted by a lantern



INTERIOR:

- Use of paired Corinthian pilasters supported on tall pedestals
- The floor was later raised by Sangallo

- Bramante's original and highly influential chamfered crossing piers, were later enlarged
- Enabled the nave and the transept to widen at the crossing giving a smooth transition between the pier and pendentive
- Sculptural approach to piers and wall mass represents new spatial conception

ANDREA PALLADIO (1508 – 80)

Andrea Palladio was an Italian Renaissance architect active in the Venetian Republic. Palladio, influenced by Roman and Greek architecture, primarily Vitruvius, is widely considered to be one of the most influential individuals in the history of architecture. While he designed churches and palaces, he was best known for country houses and villas. His teachings, summarized in the architectural treatise, *The Four Books of Architecture*, gained him wide recognition.

Architectural principles:

1. CLEAR HARMONIOUS *Eg. S GIORGIO MAGGIORE, VENICE*

2. MASTERLY DEPLOYMENT OF SELECT ALMOST STANDARDISED ANTIQUE FORMS *Eg. VILLA CAPRA, VICENZA*

3. COMMITMENT TO SYSTEMATIC FORMULATION OF RULES IN LATER BUILDINGS – ODD JUXTAPOSITIONS AND USE OF BIZARRE DETAIL

Eg. PALAZZO VALMARANA, VICENZA – in the outer bays of this palace, the Giant order is replaced by a bizarre Corinthian pilaster below and warriors in carved relief above.

4. INTRODUCTION OF PALLADIAN MOTIF – An arched opening flanked by 2 smaller square headed openings *Eg. THE BASILICA, VICENZA*

WORKS OF ANDREA PALLADIO (1508 – 80)

BASILICA VICENZA 1549

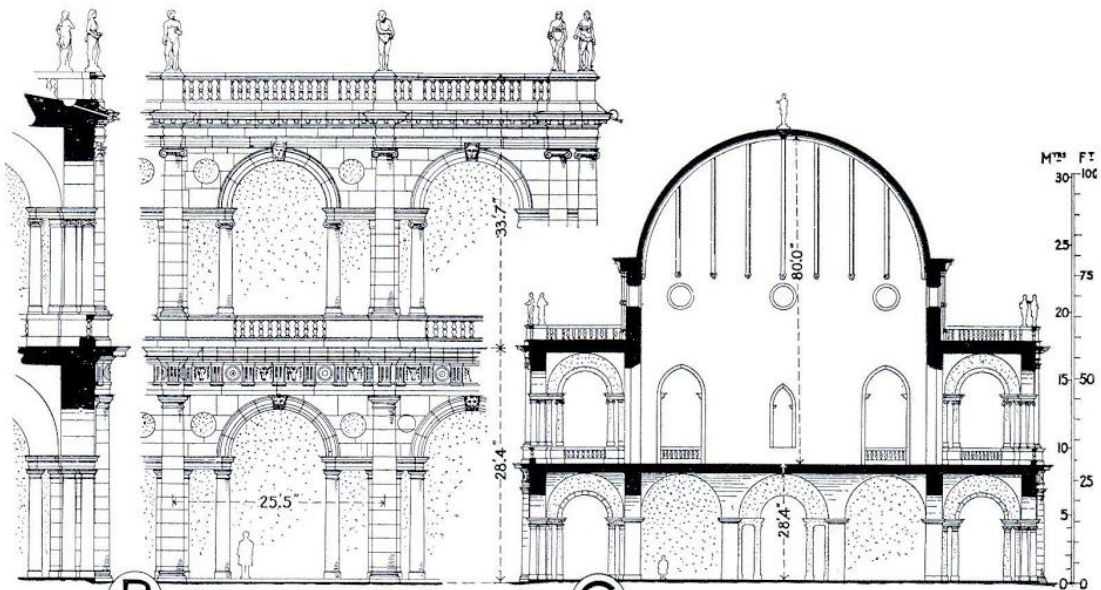
The Basilica Palladiana is a Renaissance building in the central Piazza dei Signori in Vicenza, north-eastern Italy. The most notable feature of the edifice is the loggia, which shows one of the first examples of what have come to be known as the Palladian window, designed by a young Andrea Palladio, whose work in architecture was to have a significant effect on the field during the Renaissance and later periods.

- Council chamber
- New stone façade on the 3 sides of the building
- 2 storeys – Doric below and Ionic above
- Serliana openings – Palladian Motif – frames by half columns which are doubled at the corner
- Flexible solution which allows for site restrictions and irregular bay widths due to the Gothic core behind
- The side openings of the Serliana can be expanded or contracted at will
- A balustrade punctuated by sculpture crowns the structure

THE BASILICA: VICENZA



A EXTERIOR FROM PIAZZA

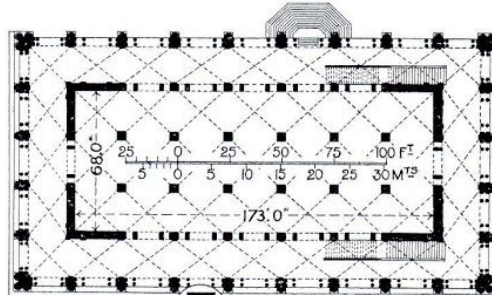


B BAYS OF FACADE

C TRANSVERSE SECTION



D SKETCH



E PLAN



F UPPER ARCADE

VILLA CAPRA / ROTUNDA , VICENZA

Villa Capra "La Rotonda" is a Renaissance villa just outside Vicenza, northern Italy, designed by Andrea Palladio. The correct name is Villa Almerico-Capra. It is also known as La Rotonda, Villa Rotunda, Villa La Rotonda, and Villa Almerico. The name "Capra" derives from the Capra brothers, who completed the building after it was ceded to them in 1591.

ARCHITECTURE

The site selected was a hilltop just outside the city of Vicenza. Unlike some other Palladian villas, the building was not designed from the start to accommodate a working farm. This sophisticated building was designed for a site which was, in modern terminology, "suburban". Palladio classed the building as a "palazzo" rather than a villa.

The design is for a completely symmetrical building having a square plan with four facades, each of which has a projecting portico. The whole is contained within an imaginary circle which touches each corner of the building and centres of the porticos.

The name La Rotonda refers to the central circular hall with its dome.

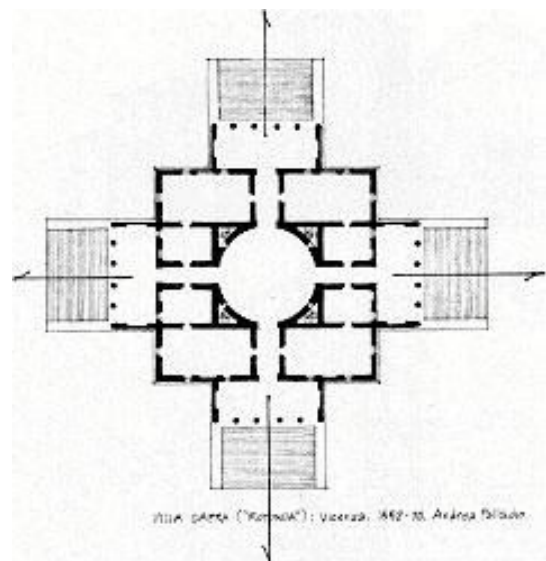
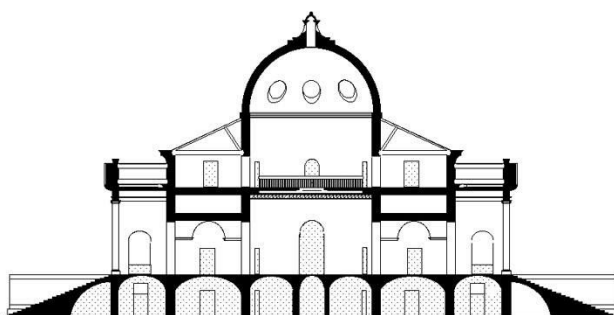
Each portico has steps leading up, and opens via a small cabinet or corridor to the circular domed central hall.

The design reflected the humanist values of Renaissance architecture. In order for each room to have some sun, the design was rotated 45 degrees from each cardinal point of the compass.

Each of the four porticos has pediments graced by statues of classical deities. The pediments were each supported by six Ionic columns. Each portico was flanked by a single window. All principal rooms were on the second floor or piano nobile.

INTERIORS

The interior design of the Villa was to be as wonderful, if not more so, than the exterior. The highlight of the interior is the central, circular hall, surrounded by a balcony and covered by the domed ceiling; it soars the full height of the main house up to the cupola, with walls decorated in trompe l'oeil. The landscape is a panoramic vision of trees and meadows and woods, with the distant Vicenza on the horizon. The northwest portico is set onto the hill as the termination of a straight carriage drive from the principal gates.



- A palatial retreat from the city

- A square building, completely symmetrical, as though an imaginary circle touched the walls of the square at any given point
- The round form of the central domed salon gives the villa its name
- Use of pedimented temple front motif
- Distinguished by its centralized square plan with 4 identical projecting porticoes overlooking spectacular views
- all rooms were proportioned with mathematical precision according to Palladio's own rules of architecture



INIGO JONES

Inigo Jones was the first significant English architect in the early modern period, and the first to employ Vitruvian rules of proportion and symmetry in his buildings.

His first important task as surveyor was to build a residence at Greenwich for the queen - the Queen's House. It was begun in 1617, but work was suspended at her death in 1619 and only completed in 1635. In 1619, the old Banqueting House at Whitehall Palace burned down and Jones began work on a new one. It was completed in 1622 and in 1635, an allegorical painting for its ceiling was commissioned from Rubens. Jones also worked on the restoration of St Paul's Cathedral, adding a magnificent portico to the west end (the whole cathedral was lost in the Great Fire of London). At Covent Garden, Jones created London's first 'square' (1630) on land developed by the fourth earl of Bedford, and designed the church of St Paul, inspired by Palladio

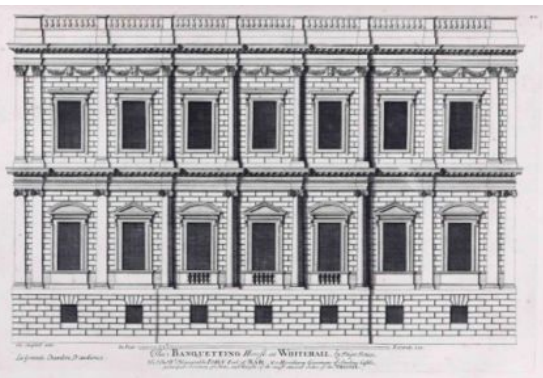
Architectural principles:

- Classical style was based on
- Pure geometrical shapes
- Inter related proportions
- A Vitruvian use of the correct forms and symbolic language of Orders

BANQUETING HOUSE, Whitehall London 1619 – 22

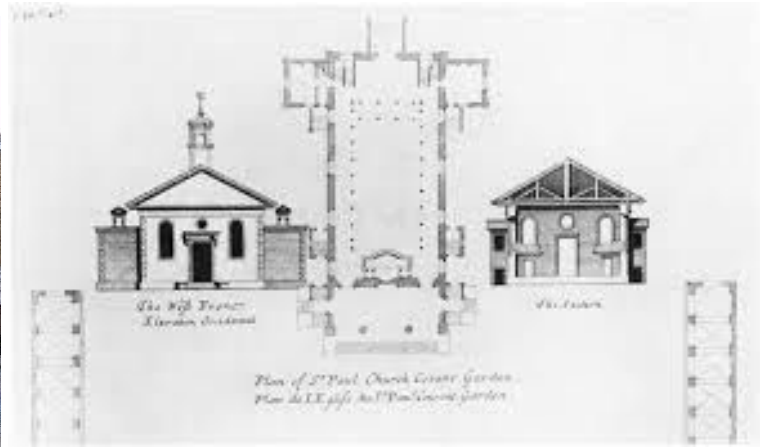
- One of the 1st truly Classical building of the 17th c.
- Addition to the mediaeval palace of Whitehall
- Built for court festivities and masques
- Plan based on 3 aisled basilica, double cube room
- The aisle columns pushed to sides
- Transformed into half columns – supporting the cantilevered balcony
- Use of Ionic and Composite orders, 7 bay façade
- Order changes from pilaster to half column and window panels become balconies
- No entrance in the façade

The exterior elevation has three levels: a rusticated base; a first storey with a series of windows crowned by alternating segmental and triangular pediments on brackets separated by engaged Ionic columns, and pilasters that are doubled at the ends of the building; and a second story with Corinthian columns and pilasters that correspond to those below, as do the windows (but with straight cornices), and with a garland swag tying the capitals together beneath the flat balustraded roof."



S PAULS COVENT GARDEN, London 1630

- Church for the Protestant services in a classical manner
- Plain
- A simple rectangular box
- Adoption of Tuscan order – austere
- The Tuscan tetra style portico with its large eaves is strictly Vitruvian in its detail



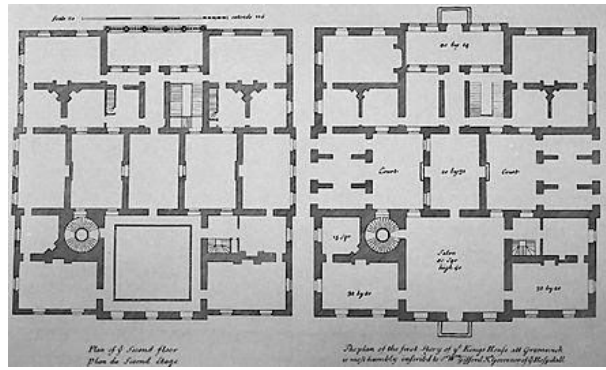
QUEENS CHAPEL, S JAMES PALACE, LONDON 1623 – 27



- Roman catholic chapel
- Simple exterior façade
- Windows, doors and quoins – domestic architecture
- Pedimented gable is the sole reference to it being an ecclesiastical building
- Lavish interior with serlian window above altar and an elaborate semi oval coffered vault

QUEENS HOUSE, Greenwich – 1616 – 35

- Built for Anne of Denmark, wife of James
- Conceived as a hunting lodge
- H shaped plan
- Consists of 2 blocks on either side of the road connected by a bridge at the 1st floor level
- A 2 storey cubic hall facing the river gives access to the bridge then to the loggia
- Consists of 2 suites of rooms on either side
- Typically Palladian
- Facades are tripartite with a central projecting portion
- Plain walls on rusticated ground floor crowned by a balustrade
- Curving steps lead to the main entrance
- The internal circular staircase is typically Palladian





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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

RENAISSANCE CLASSICISM

Outline the Renaissance in transition

The Renaissance was a cultural movement that profoundly affected European intellectual life in the early modern period. Beginning in Italy, and spreading to the rest of Europe by the 16th century, its influence was felt in art, architecture, philosophy, literature, music, science and technology, politics, religion, and other aspects of intellectual inquiry. Renaissance scholars employed the humanist method in study, and searched for realism and human emotion in art.

Renaissance humanists such as Poggio Bracciolini sought out in Europe's monastic libraries the Latin literary, historical, and oratorical texts of Antiquity, while the Fall of Constantinople (1453) generated a wave of émigré Greek scholars bringing precious manuscripts in ancient Greek, many of which had fallen into obscurity in the West. It is in their new focus on literary and historical texts that Renaissance scholars differed so markedly from the medieval scholars of the Renaissance of the 12th century, who had focused on studying Greek and Arabic works of natural sciences, philosophy and mathematics, rather than on such cultural texts.

In the revival of neoplatonism Renaissance humanists did not reject Christianity; quite the contrary, many of the greatest works of the Renaissance were devoted to it, and the Church patronized many works of Renaissance art. However, a subtle shift took place in the way that intellectuals approached religion that was reflected in many other areas of cultural life. In addition, many Greek Christian works, including the Greek New Testament, were brought back from Byzantium to Western Europe and engaged Western scholars for the first time since late antiquity. This new engagement with Greek Christian works, and particularly the return to the original Greek of the New Testament promoted by humanists Lorenzo Valla and Erasmus, would help pave the way for the Protestant Reformation.

Well after the first artistic return to classicism had been exemplified in the sculpture of Nicola Pisano, Florentine painters led by Masaccio strove to portray the human form realistically, developing techniques to render perspective and light more naturally. Political philosophers, most famously Niccolò Machiavelli, sought to describe political life as it really was, that is to understand it rationally. A critical contribution to Italian Renaissance humanism, Giovanni Pico della Mirandola wrote the famous text *De hominis dignitate* (Oration on the Dignity of Man, 1486), which consists of a series of theses on philosophy, natural thought, faith and magic defended against any opponent on the grounds of reason. In addition to studying classical Latin and Greek, Renaissance authors also began increasingly to use vernacular languages; combined with the introduction of printing press, this would allow many more people access to books, especially the Bible.

In all, the Renaissance could be viewed as an attempt by intellectuals to study and improve the secular and worldly, both through the revival of ideas from antiquity, and through novel approaches to thought. Some scholars, such as Rodney Stark, play down the Renaissance in favour of the earlier innovations of the Italian city-states in the High Middle Ages, which married responsive government, Christianity and the birth of capitalism. This analysis argues that, whereas the great European states (France and Spain) were absolutist monarchies, and others were under direct Church control, the independent city republics of Italy took over the principles of capitalism invented on monastic estates and set off a vast unprecedented commercial revolution that preceded and financed the Renaissance.

MICHELANGELO (1475 - 1564)

Michelangelo di Lodovico Buonarroti Simoni, known best as simply Michelangelo, was an Italian sculptor, painter, architect and poet of the Renaissance born in the Republic of Florence, who exerted an unparalleled influence on the development of Western art.

Michelangelo is widely regarded as the most famous artist of the Italian Renaissance. Among his works are the "David" and "Pieta" statues and the Sistine Chapel frescoes. Michelangelo was born on March 6, 1475, in Caprese, Italy. Born to a family of moderate means in the banking business, Michelangelo became an apprentice to a painter before studying in the sculpture gardens of the powerful Medici family. Painter, sculptor, architect and poet Michelangelo, one of the most famous artists of the Italian Renaissance, was born Michelangelo di Lodovico Buonarroti Simoni on March 6, 1475, in Caprese, Italy.

Michelangelo best known for the frescoes on the ceiling of the Sistine Chapel (1508–12) in the Vatican, which include the iconic depiction of the creation of Adam interpreted from Genesis, are probably the best known of Michelangelo's works today, but the artist thought of himself primarily as a sculptor.

<https://www.britannica.com/biography/Michelangelo>

Architectural principles:

1. PLASTIC APPROACH TO WALL MASS

Eg. S PETERS, ROME

2. SPATIAL INNOVATION

Eg. S PETERS, ROME – removal of ambulatory for better lighting, extensive use of niches etc.

3. FANTASTIC SCULPTURAL DETAIL

Eg. S PETERS, ROME NEW SACRISTY, FLORENCE

4. ADHERENCE TO A CLEAR STRUCTURAL FRAMEWORK

Eg. S PETERS, ROME, PALAZZO FARNESE, ROME

5. ADHERENCE TO PRINCIPLE OF SYMMETRY

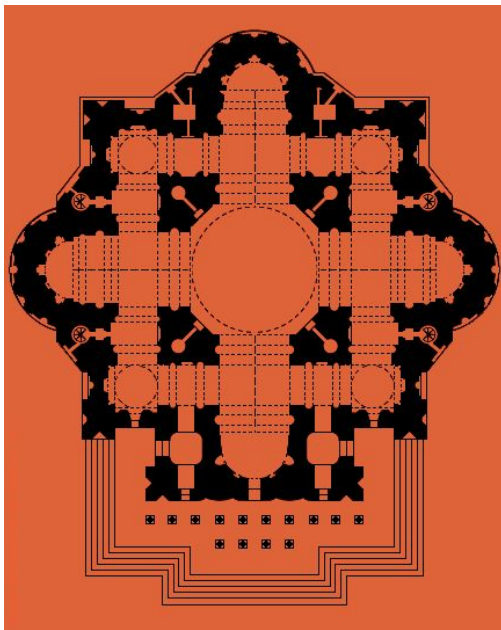
Eg. S PETERS, ROME, PALAZZO FARNESE, ROME

WORKS OF MICHELANGELO (1475 - 1564)

S PETERS BASILICA, ROME

- Embarked on a **radically new project** –
- **demolishing Raphael/Sangallo ambulatory**
- **Restoration of Bramante** – a simplified Greek cross from the nucleus of Sangallo
- The demolition of the ambulatories led to **better lighting and unified interiors**
- **External walls** are **articulated** with rhythmically spaced **Corinthian pilasters**, laid over unmoulded vertical strips
- The re entrant angles are splayed

- Above the attic rises **Michelangelo's dome** built by GiacomodellaPorta
- A **drum buttressed by paired attached columns**, continuing up into external ribs on the dome surface and further paired columns in the lantern
- The **pointed profile** of the dome follows Florence Dome along with the double shelled brick construction
- The outer shell rises much higher than the inner forming with the 4 subsidiary domes a pyramidal composition, the unity of which is enhanced by the verticality of the external articulation
- 137.5m high. The dome is 42m in diameter (1.5m less than Pantheon)

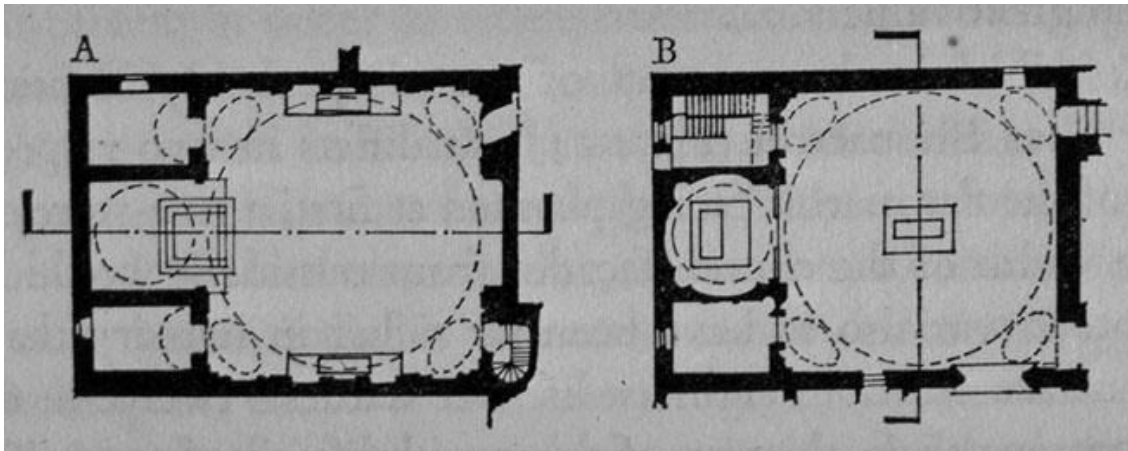


NEW SACRISTY, FLORENCE

A second family tomb in the church of Lorenzo

Plan:

- Mirrors Brunelleschi's Old Sacristy opposite
- **Grey and white stone with white plaster interior**
- Addition of an attic
- In strong contrast to the grey articulation is the **bizarre tomb monuments** in the centre of the side walls, made of **polished white carrarra marble**
- **Corner marble doors** with slab like cornices doubling as sills for oversize niches above
- Beneath the coffered dome it is illuminated by **4 extra-large windows**.



LAURENTIAN LIBRARY, FLORENCE

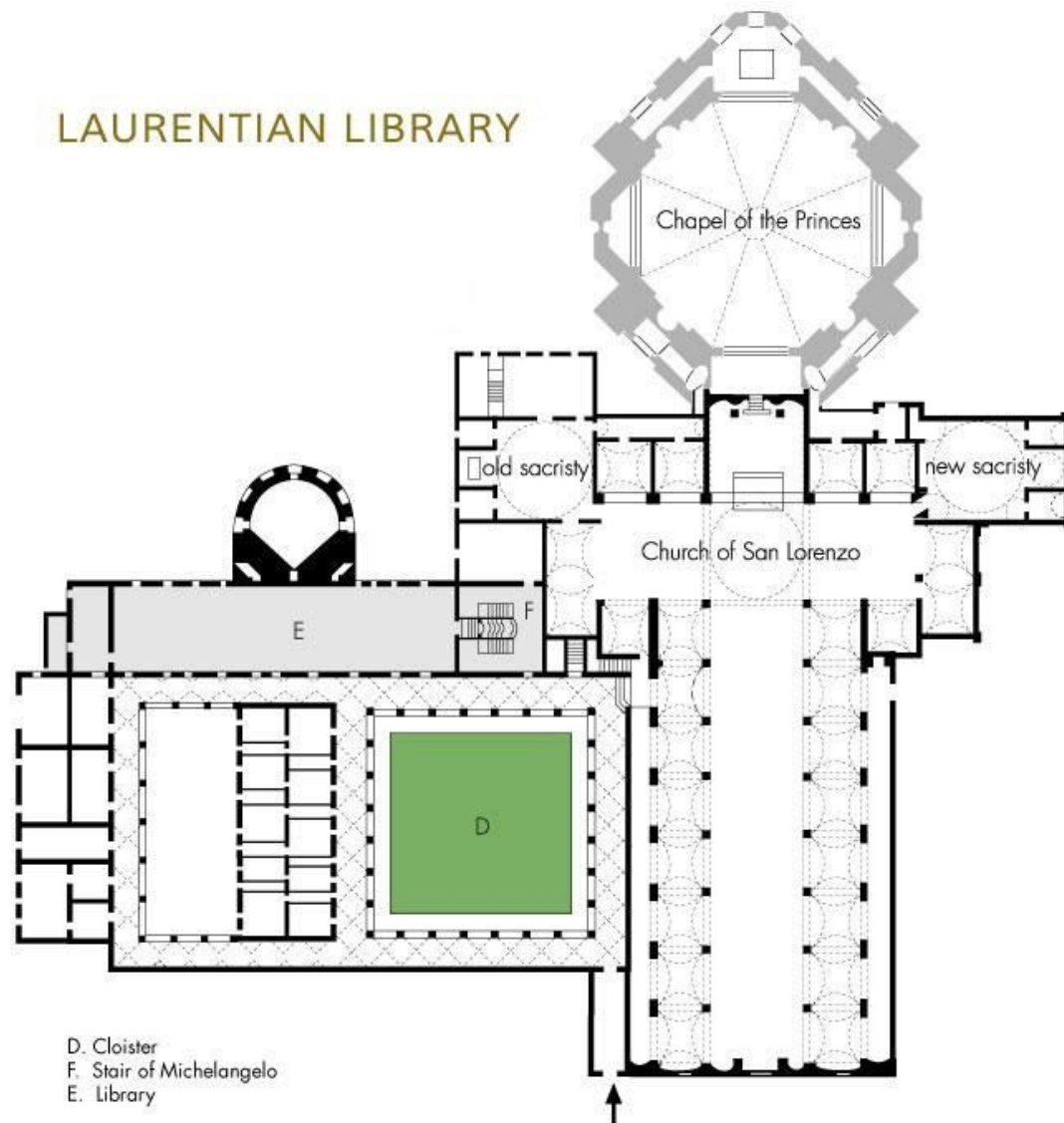


The Laurentian Library (Biblioteca Medicea Laurenziana or BML) is a historic library in Florence, Italy, containing more than 11,000 manuscripts and 4,500 early printed books. Built in a cloister of the Medicean Basilica di San Lorenzo di Firenze under the patronage of the Medici pope Clement VII, the library was built to emphasize that the Medici were no longer merchants but members of intelligent and ecclesiastical society. It contains the manuscripts and books belonging to the private

library of the Medici family. The library is renowned for its architecture, designed by Michelangelo, and is an example of Mannerism.



- Located in the cloister of San Lorenzo
- A long room with reading desks well lit by windows between pilasters which correspond to the beams of the ceiling



The Laurentian Library was commissioned in 1523 and construction began in 1525; however, when Michelangelo left Florence in 1534, only the walls of the reading room were complete. It was then continued by Tribolo, Vasari, and Ammannati based on plans and verbal instructions from Michelangelo. The library opened by 1571. In this way, the library integrates parts executed by Michelangelo with others built much later in an interpretation of his instructions. The Laurentian Library is one of Michelangelo's most important architectural achievements. Even Michelangelo's contemporaries realized that the innovations and use of space in the Laurentian Library were revolutionary.

The two-story quattrocento cloister remained unchanged by the addition of the library. Because of this, certain features of Michelangelo's plan, such as length and width, were already determined. Therefore, new walls were built on pre-existing walls and cloisters. Because the walls were built on pre-existing walls, recessing the columns into the walls was a structural necessity. This led to a unique style and pattern that Michelangelo took advantage of.

Staircase

The plan of the stairs changed dramatically in the design phase. Originally in the first design in 1524, two flights of stairs were placed against the side walls and formed a bridge in front of the reading room door. A year later the stairway was moved to the middle of the vestibule. Tribolo attempted to carry out this plan in 1550 but nothing was built. Ammannati took on the challenge of interpreting Michelangelo's ideas to the best of his abilities using a small clay model, scanty material, and Michelangelo's instructions.

Reading room

The reading room is 46.20 m. long, 10.50 m. wide, and 8.4 m. high (152 by 35 by 28 feet). There are two blocks of seats separated by a centre aisle with the backs of each serving as desks for the benches behind them. The desks are lit by the evenly spaced windows along the wall. The windows are framed by pilasters, forming a system of bays which articulate the layout of the ceiling and floor.

Because the reading room was built upon an existing story, Michelangelo had to reduce the weight of the reading-room walls. The system of frames and layers in the walls' articulation reduced the volume and weight of the bays between the pilasters.

ENGLISH RENAISSANCE ARCHITECTURE

The English Renaissance time period ran from 1485 to 1660. Thinking to this time you might think of the

- Tudor,
- Elizabethan, and
- Jacobean:

Design characteristics of the Tudor: Houses become more outward looking and center on courtyards, facades are irregular and windows change randomly in size. They also had military influence which helped in the choice of fortification: towered gatehouses for entrances and facades featuring battlements.

Design characteristics of the Elizabethan: horizontal emphasis and regularity on the lower portions of buildings, French stylistic traits, and the scale is much grander. Dominated by large windows on facades.

Design characteristics of the Jacobean: Feature more stylistic unity, foreign influence, and defined rooflines with towers or parapets, classical orders for front ornamental decoration. —Materials: brick and stone, half-timbered houses, trabeated masonry construction.

FRENCH RENAISSANCE ARCHITECTURE

French Renaissance Architecture is a mixture of the Italian Renaissance, a little drop of Gothic form, less emphasis on rules and correct proportions and more on inventiveness and surface richness. They admire classicism and highly regard order and symmetry among their design principles. Protection is still a pronounced element to architecture; hence, fortified castles, large entry gates, round turrets with conical roofs and central courtyards are of top priority.

The basic structure for a French Renaissance facade is as follows: from bottom to top:

- Repeatedly sized and shaped windows,
- Pilasters to divide the facade,
- Round arches,
- String course,
- Classical motifs,

- Classical figures,
- A pavilion, and
- On top a pediment.

Characteristics of the French Renaissance household: from bottom to top: round arches, pilaster, keystone, balustrade, french doors/windows, another keystone, broken pediment, quoins, a cornice, dormer windows, a steep roof pitch (these roofs remind me of a party hat: round and pointy) and finally on top is a chimney.

Chateau de Chaumont

The fortress of Chaumont-sur-Loire was built around the year 1000 to keep watch over the border between the counties of Blois and Anjou.



In 1465, Louis XI had the château burned and razed to the ground, but it was rebuilt just a few years later.

It was owned by the Amboise family for a good 500 years, and it was Charles II d'Amboise who turned it into an ornamental château in the Renaissance style, with sculpted decoration becoming the major feature of its outer façades.

Catherine de Medici acquired the Domaine in 1550 but did not make any significant changes to the château, which she gave to Diane de Poitiers in 1560. The King's former favourite had work implemented which gave it its current appearance, with, in particular, the completion of the parapet walkways of the tower-flanked entrance and the Saint-Nicolas tower.

The appearance of the castle, originally of the Gothic style, was later transformed into a Gothic-Renaissance style, with deep ditches, a fortified door with a drawbridge and a parapet walk. The castle has many towers covered with black slate roofs, chimneys, gables and buttresses and a double spiral staircase.

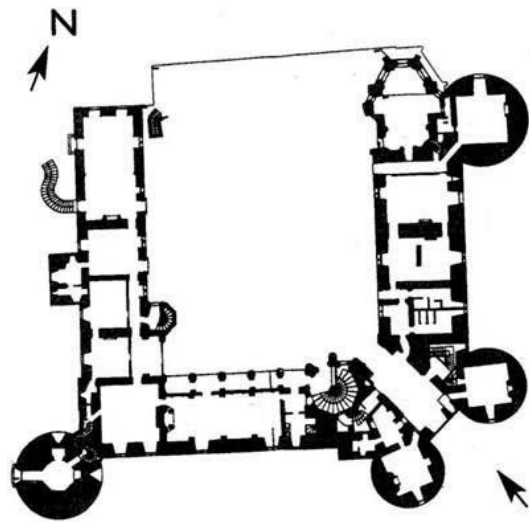
The interior of the castle is not one of the best in the Loire but is worth visiting as part of a visit to the gardens.

Inside the castle is very large and spacious, with some rooms decorated with 16th century tapestries, and finely crafted floors. Among the furnished rooms are those of Catherine de Medici, with an elaborately carved bed; and the Rugieri room with intriguing symbols sculpted on the

mantlepiece. The Council Room has a collection of seventeenth century Majolica tiling. More austere, but no less enjoyable, is the guard room with a display of Ottoman weapons.

The room of Diane de Poitiers is less sumptuous than that of Catherine de Medici, although the furnishings, tapestries and the fireplace are very elegant.

As well as the historical apartments you can visit the private apartments commissioned by Prince de Broglie and designed by the architect Paul-Ernest Sanson. These sophisticated apartments were used to entertain many royal and influential guests including Edward VII of England, Don Carlos of Portugal and the actress Sarah Bernhardt. Among these are the dining room, the library and the salon, all very tastefully and opulently decorated.



Sir Christopher Wren (1632 - 1723)

Wren was an English scientist and mathematician and one of Britain's most distinguished architects, best known for the design of many London churches, including St Paul's Cathedral.

Christopher Wren was born on 20 October 1632 in East Knoyle, Wiltshire, where his father was rector. His father later moved to Windsor and Wren was educated at Westminster School and then Oxford University. He showed an early talent for mathematics and enjoyed inventing things, including an instrument for writing in the dark and a pneumatic machine. In 1657, Wren was appointed professor of astronomy at Gresham College in London and four years later, professor of astronomy at Oxford. In 1662, he was one of the founding members of the Royal Society, along with other mathematicians, scientists and scholars, many of whom were his friends.

Wren's interest in architecture developed from his study of physics and engineering. In 1664 and 1665, Wren was commissioned to design the Sheldonian Theatre in Oxford and a chapel for Pembroke College, Cambridge and from then on, architecture was his main focus. In 1665, Wren visited Paris, where he was strongly influenced by French and Italian baroque styles.

In 1666, the Great Fire of London destroyed much of the medieval city, providing a huge opportunity for Wren. He produced ambitious plans for rebuilding the whole area but they were rejected, partly because property owners insisted on keeping the sites of their destroyed buildings. Wren did design 51 new city churches, as well as the new St Paul's Cathedral. In 1669, he was appointed surveyor of the royal works which effectively gave him control of all government building in the country. He was knighted in 1673.

In 1675, Wren was commissioned to design the Royal Observatory at Greenwich. In 1682, he received another royal commission, to design a hospital in Chelsea for retired soldiers, and in

1696 a hospital for sailors in Greenwich. Other buildings include Trinity College Library in Cambridge (1677 - 1692), and the facade of Hampton Court Palace (1689 - 1694). Wren often worked with the same team of craftsmen, including master plasterer John Groves and wood carver Grinling Gibbons

Wren died on 25 February 1723. His gravestone in St Paul's Cathedral features the Latin inscription which translates as: 'If you seek his memorial, look about you.'

SIR CHRISTOPHER WREN PROJECTS

- St. Paul's Cathedral (London)
- The Sheldonian Theatre (Oxford);

ST. PAUL'S CATHEDRAL IN LONDON, ENGLAND

The history of St. Paul's Cathedral in London, England, reflects the history of the city for which it was built. There were many phases of construction and the church was renovated several times, before the final and most important period of building by Sir Christopher Wren from 1675-1710. St. Paul's Cathedral is currently being restored and continues to serve as an important place of worship for the city of London and as a sanctuary for those who visit it.

Building and Architectural Facts

- Exterior walls are Saint Cloud granite
- Interior walls are American Travertine from Mankato, Minnesota
- Height: 306.5 ft. Length: 307 ft. Width: 216 ft.
- Seating capacity: 3,000
- The seven bronze grilles surrounding the altar depict the human response to God's grace. Since the Cathedral is dedicated to Saint Paul, special recognition is given to him in the bronze masterpieces.
- The chair in the sanctuary (the cathedra) denotes the Cathedral as the Archbishop's church.
- The Shrine of the Nations surrounding the sanctuary represents the national patron saints of the people who settled this city and state.
- The main walls of the Chapels are finished in Italian Botticino marble.
- The Ernest Skinner organ was installed in the sanctuary in 1927 and the Aeolian-Skinner organ in the choir loft in 1963.
- The east-facing window is the Resurrection window. The south rose window takes its theme from the Beatitudes and the north rose window depicts the eight North American Martyrs. These windows are the work of renowned stained glass artist Charles Connick.

The Exterior

The Cathedral of Saint Paul is set dramatically on Summit Hill overlooking the city of Saint Paul. The Cathedral's Beaux Arts architecture, inspired by the churches and cathedrals of France, is characterized by rounded domes and arches, a symmetrical cross floor plan and clean, straight lines. Decorative elements are grouped at certain points around the Cathedral—the facade, towers, sides, entrances and dome. The Cathedral's most prominent feature is a 120-foot-wide dome made of curved steel beams, covered with a clay tile surface and overlaid with copper. A copper-clad lantern, approximately 30 feet tall, sits on top of the dome. From the base to the very top of the lantern, the Cathedral stands 306 feet tall. The church body is made of granite stone from St. Cloud, Minnesota, in the shape of a Greek cross with nearly equal length arms. Twin 150-foot towers flank the main facade. The three front entrances rest under a monumental arch, which also frames a large rose window.

The Interior

Masqueray envisioned a Cathedral where all visitors would be able to see and hear the Mass, so he designed an interior with unobstructed views of the altar and pulpit. Twenty four large windows in

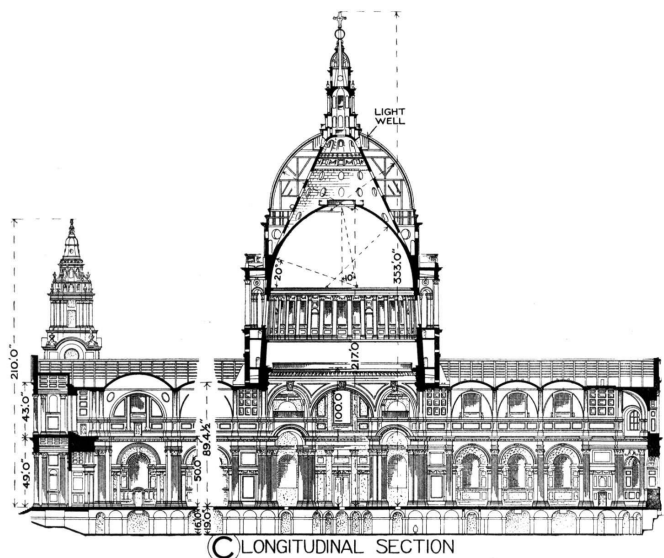
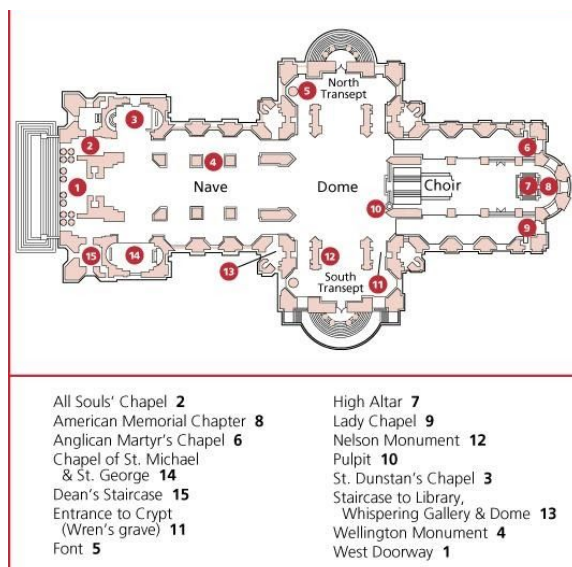
the dome and rose windows in the transepts flood the interior with natural light. Electric lighting, installed in the late 1940s, enhances the Cathedral's interior. Masqueray completed only a few interior designs before he died suddenly in 1917. Consequently, the archbishops and designers who succeeded Ireland and Masqueray assumed the responsibility of transforming the Cathedral's stark, whitewashed interior into a decorative masterpiece.

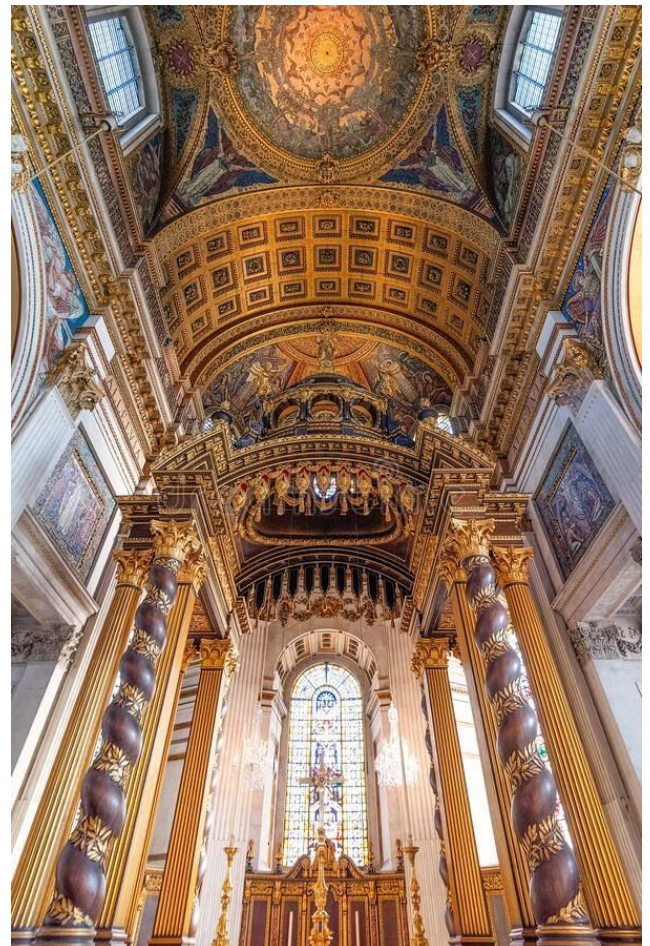
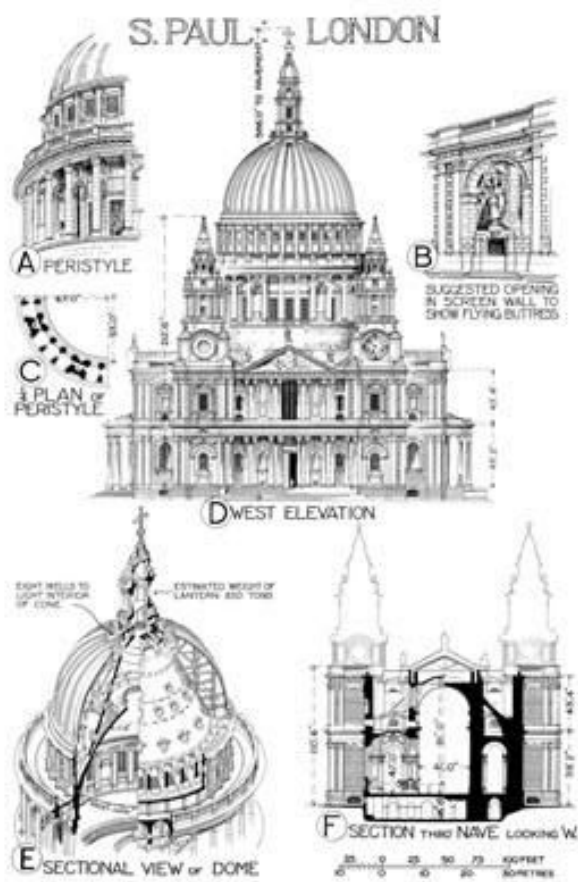
The Interior Dome

The interior dome of the Cathedral, 96 feet in diameter and 175 feet high, is just as impressive as the exterior, copper-clad dome. Warm-colored paint and gold leaf were added during a major dome renovation in the 1950s. The 24 stained glass windows of the angelic choirs, combined with the eight-pointed chandelier, bathe the church in light. Four massive piers support the dome.

Stained Glass Windows

The first stained-glass windows were placed in the Chapels of Saint Peter, Saint Joseph and the Blessed Virgin. The largest stained glass windows are the rose windows located in the north and south transepts and in the eastern wall of the building.





THE SHELDONIAN THEATRE (OXFORD);

The Sheldonian Theatre, located in Oxford, England, was built from 1664 to 1669 after a design by Christopher Wren for the University of Oxford. The building is named after Gilbert Sheldon, chancellor of the University at the time and the project's main financial backer. It is used for music concerts, lectures and University ceremonies, but not for drama.

HISTORY

What came to be known as the Sheldonian Theatre was Wren's second work and was commissioned by Gilbert Sheldon, Archbishop of Canterbury. With the triumph of the Restoration and with it the Church of England.

BUILDING

The building has a prominent eight-sided cupola in the centre of the roof, which is accessible via a staircase leading to the dome over the main ceiling. The cupola has large windows on all sides, providing views across central Oxford, and is open to visitors.

The Theatre is used for music recitals, lectures (such as the annual Romanes Lecture), conferences, and for various ceremonies held by the University (such as graduation and matriculation). Handel conducted the first performance of his third oratorio *Athalia* here in 1733. Today, the theatre is home to regular performances by local groups, including the Oxford Philomusica and Stornoway (band). The latter were the first ever pop band to play in the space, joined by the student-led Oxford Millenium Orchestra for their first single launch in 2009, then again to celebrate the launch of their third LP, in 2014.

The building seats between 800 and 1000 people and is on the grounds of part of the Bodleian Library adjacent to Broad Street. To the left at the front is the Clarendon Building and to the right is the Old Ashmolean Building. Behind the Sheldonian is the Divinity School.



A profile view of the Theatre from the east, behind the Clarendon Building

The Theatre features prominently in Max Beerbohm's 1911 novel *Zuleika Dobson* and was used as stand in for Harvard in the 1980 film *Heaven's Gate*.

The building designed by Christopher Wren himself for University of Oxford. This half circular in plan building is used for music concerts, lectures and graduation and degree ceremonies.

Wide span of a D- shaped building was difficult to cover with a standard type of roof with timber rafters so the architect used for the first time the construction similar to this of a timber truss today.

It is commonly known fact that designing the theatre Wren was inspired by the U-shaped Theatre of Marcellus in Rome and widely used neo-renaissance (English Palladian style) and generally classical style subsequently influenced the architecture of other Oxford buildings. The building is located next to the Bodleian Library and Radcliffe Camera.

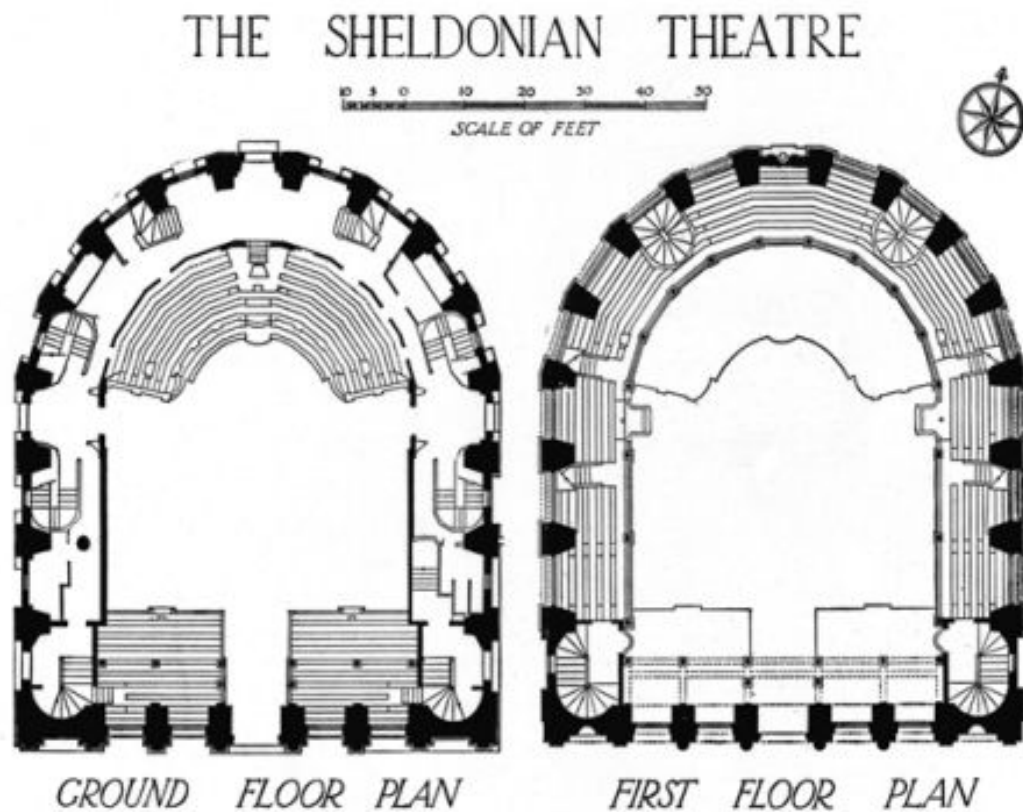


Fig. 7 Christopher Wren, Sheldonian Theatre, Plans.



Fig. 8 Christopher Wren, Sheldonian Theatre, Interior. Author

The Louvre

The Louvre is a museum of art and antiquities located on the Right bank of the Seine in Paris. Covering an area of 60,600 sq. m (652,300 sq. ft), and with more than 380,000 objects and 35,000 works of art, the Louvre is the largest museum in the world.

Origins as a Fortress

The Louvre complex today is a series of unified buildings that constitute the world's largest museum, one that contains the most famous painting in the world. However, its purpose has not always been to house fine art, as it was initially built in the 12th century as a solid fortress to protect the growing city of Paris from attacks. King Philip II ordered its construction in 1190 prior to leaving for the Crusades. This fortress, now existing only as remains underneath the museum, was built in the Romanesque style. This style is known for its roman arches, thick walls, and overall massive appearance. This structure was razed by King Francis I and a new residence was created, which subsequent rulers would continually add on to.

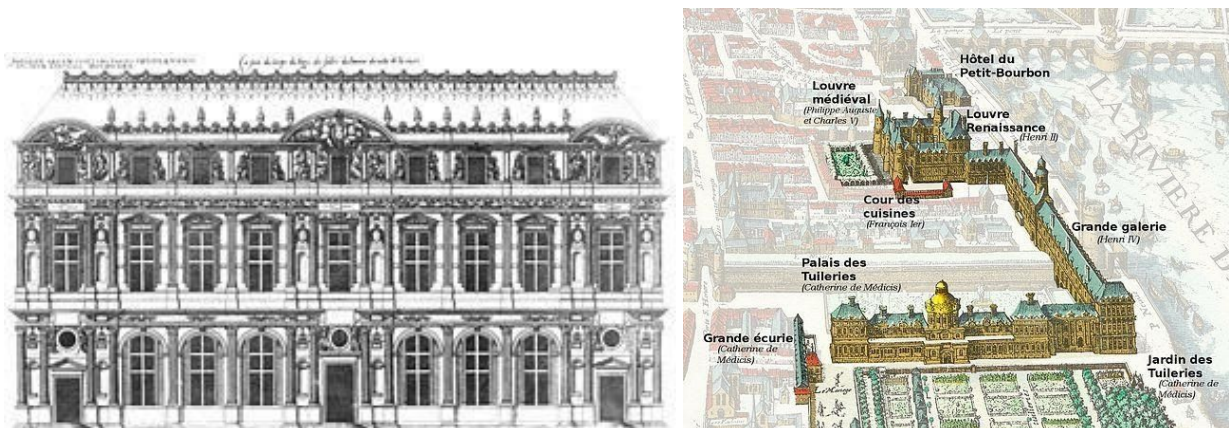
Louvre Palace in the 16th Century

In 1546, King Francis I commissioned French architect Pierre Lescot to transform the fortress into a palace. King Francis I requested renaissance style for his new home. Renaissance architecture used elements from ancient Greek and Roman architecture with a specific focus on symmetry and proportion. The palace grew as Henry II, successor of King Francis I, took power and continued to grow as Catherine de Medici, widow of King Francis I, constructed a second residence.

Architecture

In architectural terms, the Louvre is made of cut stone and is a vast complex of wings and pavilions on four main levels. Despite appearing to be unified, it is in fact the result of many phases of building, modification, destruction and restoration that took place over several centuries.

The architect Pierre Lescot was one of the first to apply pure classical ideas in France, making the Louvre one of the most influential buildings of the Renaissance. Its distinctive double-pitched mansard roof was the source of inspiration for many 18th century building in Paris, as well as throughout Europe and the United States.



Rococo Architecture

Rococo, also known as 'late Baroque', was an extreme, decorative development of Baroque architecture that emerged in the 18th century as a reaction against grandeur and symmetry. It was a more fluid and florid elaborate style, comprising ornate, asymmetric designs and pastel shades.

Rococo style is characterized by elaborate ornamentation, asymmetrical values, pastel color palette, and curved or serpentine lines. Rococo art works often depict themes of love, classical myths, youth, and playfulness.

Rococo developed out of Baroque. Both styles feature elaborate ornament and decoration, and both were used in large structures with a social or cultural status. Baroque architecture is serious, dramatic, and heavy. On the other hand, Rococo is light, airy, and decorative.

The Rococo movement was an artistic period that emerged in France and spread throughout the world in the late 17th and early 18th century. The word is a derivative of the French term *rocaille*, which means “rock and shell garden ornamentation”

It is characterized by lightness, elegance, and an exuberant use of curving natural forms in ornamentation. The word Rococo is derived from the French word *rocaille*, which denoted the shell-covered rock work that was used to decorate artificial grottoes.

Rococo architecture was a variation of baroque.

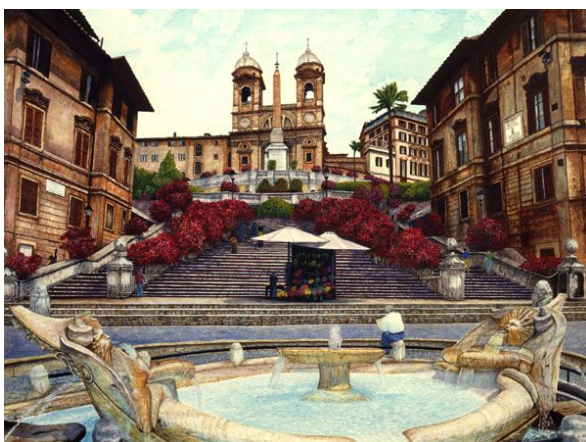
- It began in the eighteenth century at Versailles.
- Profoundly **influenced** by the ideas of **Borromini**.
- It was **lighter, more graceful, and more subdued** than baroque architecture.
- **Rococo** got its name from the **French word rocaille**, meaning **rocks and shells**.
- Most of the **rococo decorations** were natural forms such as tree branches, clouds, flowers, sea shells, surf, coral, seaweed, spray, and scrolls. Many colors that were used were pastels, but they also used lots of gold.

The architects in Rome —

1. Francesco De Sanctis- Spanish Steps

2. Filippo Raguzzini – Piazza S Ignazio

3. Niccolo Salvi – Trevi Fountain



Salons of the Hotel de Soubise, Paris.

The word "hôtel" does not translate literally here. In French a *hôtel* is also a city mansion or stately home, which is how it is used in this case. The Hôtel de Soubise was created in the early 1700's for the Prince and Princess of Soubise (Anne de Rohan-Chabot, a former mistress of Louis XIV). It

replaced a fortified manor house that had been on the site in the Marais since 1375. The interior decor of the Hôtel de Soubise is considered among the best examples of Rococo style in France.



The Hôtel de Soubise was built for the Prince and Princess de Soubise on the site of a semi-fortified manor house named the Grand-Chantier built in 1375 for connétable Olivier de Clisson, that had formerly been a property of the Templars. The site previously contained the Hôtel de Guise, the Paris residence of the Dukes of Guise, a cadet branch of the House of Lorraine. It was the birthplace of the last Duke, Francis Joseph, Duke of Guise, the son of Élisabeth Marguerite d'Orléans, Duchess of Alençon.

<https://parisianmoments.com/blog-1/2018/hotel-de-soubise>