Ka’ba

Most sacred building of Islam located in the centre of the Holy Mosque in Mecca.

In its present form the Ka’ba consists of a tall, rectangular, box-like structure 15 m high with sides measuring 10.5 m by 12 m. The building is oriented 30 degrees off the north-south axis so that the corners face the cardinal points. The flat roof has a gentle slope towards the north-west where there is a water spout (mizab al-rahman, or spout of mercy). The Black Stone (possibly derived from a meteorite) is built into the eastern corner of the structure. Also at the east corner is another stone known as Hajar as’ad (the lucky stone) which is touched during the circumambulation. Outside the north-west side there is a low semi-circular wall which encloses an area known as the Hijr which is believed to mark the burial place of Ismail and his mother Hajar. The Ka’ba is built of large blue-grey granite blocks set in mortar resting on a base of marble. The entrance is on the north-east side and is 2 m above ground level (it is reached by a portable set of wooden steps). Inside the Ka’ba there are three tall wooden pillars which support the wooden roof which can be reached by a wooden ladder. The floor is made of marble and the ceiling is covered with cloth hangings.

According to Muslim tradition the Ka’ba was built by Ibrahim and Ismail and was the first sanctuary established on earth. This early building was simply a rectangular unroofed enclosure the height of a man. Idols were housed within the Ka’ba, the most prominent of whom were al-Lat, al-Uzza and al-Manat. Three hundred and sixty idols were arranged in a circle outside the Ka’ba forming a sacred area (Haram) where no blood could be shed. In the time of Muhammad the old Ka’ba was burnt down and it was rebuilt with the help of a man called Baqum. This new Ka’ba was built of alternate layers of stone and wood, possibly in a similar fashion to traditional Meccan houses. The height of the building was doubled and it was covered with a roof. The entrance to the building was some distance from the ground and a ladder was needed to enter it. Muhammad is said to have placed the Black Stone in its position with the help of the main tribal leaders.

In 629 after a period of exile Muhammad conquered Mecca but left the form of the Ka’ba unchanged.
unaltered (except for the removal of idols). In 683 during the conflict between Abd Allah Ibn Zubayr and the Umayyads the Ka'ba was destroyed by stones hurled by catapults. After the Umayyads withdrew the Ka'ba was rebuilt on a larger scale with two doors. This Ka'ba was subsequently destroyed by the Umayyad general Hajjaj bin Yusuf who rebuilt it in its previous form with only one door. This is essentially the form of the present Ka'ba although the Black Stone was removed for a period of twenty years by the Qarmathians in 929. Flood damage in 1611 necessitated its rebuilding in 1630, although the old form of the building was retained. A continuous feature of the Ka'ba's history, at least from Muhammad's time, is that the outside of the structure is covered with a huge cloth of fabric (kiswa) which is replaced annually. During the first years of Islam the old covers were not removed and new covers were placed on top. This practice was stopped in the Umayyad period as the weight of cloths was thought to threaten the stability of the Ka'ba.

See also: Mecca

Further reading:

Kano

Major Islamic city in the Hausa region, northern Nigeria.

Kano is the most famous of a group of cities including Zaria, Katsina, Gobir, Daura, Biram and Rano which trace their origins back to the eleventh century. At this time Kano was probably pagan, although Muslim traders may have been living there. During the fourteenth century the city was at least superficially Muslim but it was not until the end of the fifteenth century that Kano was firmly established as an Islamic town. The Kano Chronicle records how an Egyptian, Cabd al-Rahman, came to Kano to confirm Islam in the town and build a Friday mosque with a minaret there. During the eighteenth century there was a large migration of people to Kano from the city of Agades in present-day Mali. This influx had a great effect on the culture and architecture of Kano making it into a centre of scholarship and trade.

The city is surrounded by mud-brick walls which at their maximum extent enclose an area more than 15 km in circumference. The area within the walls includes not only the city itself but agricultural and grazing land as well. The city wall is pierced by several monumental gateways, including the massive triple-arched Nasarawa Gate. Inside the city are narrow streets leading on to houses which consist of square or irregular-shaped compounds. A typical compound (or gida) is entered via a circular entrance vestibule that leads into an outer courtyard which may contain huts for unmarried sons and a reception room. At the back of the rectangular reception room is a door leading to the inner courtyard which contains the owner's house, huts for his wives, granaries, a well and a bathroom. The best houses are located within the fifteenth-century palace compound of the emir known as the Gidan Rumfa which is a large area of over 30 acres. This compound is entered via an ancient gatehouse known as the Kofar Kwaru which, with an internal height of 19 m, is the highest internal space in Kano. Within the compound are grazing land for the royal cattle, houses of retainers and public reception rooms, as well as the apartments of the ruler himself. Since the early twentieth century the internal layout of the palace has changed with circular entrance vestibules (zaure) replaced with rectangular rooms (this reflects a wider development in Hausa architecture where rectangular buildings are replacing round constructions). The most elaborately decorated part of the palace is the royal audience chamber which consists of rectangular rooms covered with domed roofs supported on intersecting arches. Both the soffits of the arches and the ceiling panels in between are decorated with brightly painted moulded abstract designs.

The famous Great Mosque of Kano (now destroyed) may be the mosque erected by Cabd al-Rahman in the fifteenth century although little of the structure remains to confirm this. One of the better known mosques of the town is the Yangoro Mosque built by the famous master-mason Bala Gwani. The mosque is divided into a series of small rectangular domed bays (2.75 by 3.35 m) resting on two-tier arches.
kapilica

See also: Fulbe, Hausa, West Africa

Further reading:

Turkish term for a specialized form of bath house, or hammam, where the building is provided with hot water from a thermal spring. Kapilicas usually have swimming pools unlike the usual Ottoman bath house.

Karaman (Laranda)

City in Konya region of Anatolia noted for its medieval architecture.

In 1071 the Byzantine city of Laranda fell to the Seljuks and remained under Muslim control until the present day, except for a brief period when it was controlled by the German emperor Frederick Barbarossa. In 1256 the city became the capital of the Karaman Oghulu who established many fine buildings in the city. In 1300 the name of the city was changed to Karaman although by 1321 the capital was moved to Konya. In 1397 the city was briefly occupied by the Ottomans but managed to regain its independence after 1402 until it was finally incorporated into the Ottoman Empire in 1415.

Undoubtedly the most famous building in Karaman is the Hatuniye Madrassa built in 1381–2 by Sultan Khatun, the wife of the Karamanid 'Ala al-Din Beg. The building has a projecting entrance portal carved in high relief and flanked by two small domed rooms. The coloured marble doorway is recessed within the portal frame and covered by a tall muqarnas hood in the Seljuk tradition. Inside there is a rectangular courtyard with a vaulted dershane and three cells on each side with an iwan flanked by two domed rooms opposite the entrance. The entrance to the domed rooms flanking the iwan are richly carved with vegetal, epigraphic and abstract motifs. Originally the interior of the madrassa was covered in hexagonal dark turquoise-green tiles although most of these have disappeared.

Other important monuments in the city include the khanqah of Sheikh 'Ala al-Din built in 1460 the imaret of Ibrahim Beg and the turbe of 'Ala al-Din. The citadel and city walls of Karaman seem to have been destroyed in the fifteenth century and the present fortifications were probably erected in the sixteenth. The present Great Mosque has been radically restored and also seems to date from the late sixteenth century.

See also: Konya, Ottomans, Seljuks, Turkey

Further reading:

Kashmir

Isolated region of northern India famous for its wooden architecture.

Islam arrived in Kashmir in the mid-fourteenth century although it did not really become a major force until the Mughal conquest of the late sixteenth century. Wood is the standard building material with deodar (a relation of cedar) being the preferred material for monumental structures. The traditional mosque form consists of a square or rectangular timber hall covered with a pyramid-shaped roof with a pointed spire or finial. The walls are built of logs laid horizontally and intersecting at the corners. Often there was a small gallery or pavilion below the spire which could be used by the muezzin for the call to prayer. This form was also used for saints’ shrines which locally are known as ziarat. After the Mughal conquest extensive royal gardens were built around Lake Dal; these were equipped with grey limestone pavilions built in the form of wooden Kashmiri mosques.

See also: India, Mughals

Further reading:

Kenya

Country in East Africa with a significant Muslim population on the coast.

The coastal population of Kenya are part of the Swahili people who occupy the coast from Somalia to Mozambique. The origins of the Swahili culture are problematic although it has recently been shown that the Swahili are an indigenous people
who converted to Islam rather than Arab colonists. Most of the settlements have their basis in the Indian Ocean trade to Arabia, India and the Far East and are consequently located next to the sea. There was, however, a strong local economy with connections to the interior which has not yet been investigated in any great detail. For example the walled city of Gedi is 6 km inland and presumably had some contact with inland tribes. It is known, too, that Kenya's fertile coast was attractive to nomadic herdsmen and tribesmen from the north, who periodically raided and migrated southwards into Kenya causing large-scale desertion of mainland sites on the northern coast. The most famous of these nomadic groups were the Galla who raided as far south as Mombasa in the sixteenth and seventeenth centuries.

The Kenya coast contains the remains of many settlements dating from the eighth to the nineteenth century. The remains can be divided into two geographical groups — a northern group based around the Lamu archipelago, and a southern group between Gedi and Mombasa. Between these two areas there are few remains of earlier settlement, probably because there are no useful creeks or anchorages.

The Lamu archipelago is a complex series of islands and creeks which probably represents the remains of the Tana river delta before it moved further south. This heavily indented coastline provided an ideal area for coastal settlement and some of the earliest remains of Islamic trading sites have been found here. The main islands in this group are Pate, Manda and Lamu. Pate is the largest island of the group and contains the walled city of Pate which under the Nabhani kings ruled a large area of the coast during the seventeenth century. Other important sites on Pate are Faza, Siu, Tundwa and Shanga. The ruins at Shanga are mostly fourteenth century, but excavations have revealed a dense continuity of occupation which stretches back to the eighth century and includes the earliest remains of a mosque in sub-Saharan Africa. The nearby island of Manda also contains an early site (known as Manda) which is dated to the ninth century and is one of the only sites on the coast to use baked brick for construction. As well as the important early site of Manda, the island also contains the ruins of Takwa and Kitao. The island of Lamu contains the settlements of Lamu and Shella which have in recent times dominated this area of the coast. To the north there are a few sites on the mainland like Ishikani, Omwe, Mwana, Dondo and Kiunga noted for their monumental tombs. On the mainland to the south, at the mouth of the Tana river, are the sites of Mwana, Shaka and Ungwana. The site of Ungwana is famous for its congregational mosque with two parallel prayer halls which was built in several phases between the fifteenth and sixteenth centuries. The early mosque was built in the fifteenth and later in the same century a second prayer hall with three rows of piers and a domed portico was added.

The southern group of settlements are located south of the Sabaki river and are mostly mainland sites based around creeks. Immediately to the south of the Sabaki river is the town of Malindi which, although largely modern, is built over the remains of one of the main towns on the coast that flourished in the sixteenth century under Portuguese protection. Nearby is the walled city of Gedi where the Sheikh of Malindi had his residence during the fifteenth and sixteenth centuries. To the south of Gedi are the three ruined settlements of Kilifi, Mnaarani and Kitoka which collectively formed the city-state of Kilifi during the sixteenth century. Several other ancient settlements can be found next to creeks further south towards Mombasa. One of the best-known sites is Jumba La Mtwana dating mostly from the fourteenth century. Mombasa itself was an important early settlement with its deep water anchorage at Kilindi although little remains of the early settlement with the exception of a small mosque in the harbour. Mombasa island is dominated by Fort Jesus built by the Portuguese as their base on the coast and later captured and remodelled by the Omanis. One of the most intriguing monuments in Mombasa is the Mbraaki Pillar which has been dated to the eighteenth century. The pillar is a hollow cylindrical structure resembling a minaret, an idea which is reinforced by its position next to a small mosque. However, the pillar has no internal staircase and minarets are unknown in the area before the nineteenth century implying some other function. South of Mombasa towards the Tanzania border there are few early sites although there are ruined early mosques at Tiwi and Diani.

In addition to the pre-colonial Islamic architecture Kenya also contains Muslim buildings dating from the period of British rule and later. Mombasa has the largest community of Muslims on the coast and has several modern mosques which are
keshk

Central Asian term used to describe mud brick buildings with square or rectangular plan and corrugated sides.

khan

Building which combines the function of hostel and trading centre. Standard features which one might expect to find in a khan are stables, store rooms, sleeping accommodation and a mosque.

The word khan is a Persian term, indicating the eastern (non-Roman) origin of this architectural form. Both the Parthians and the Nabateans built khans, the former on the eastward route to India and the latter on the desert routes in the Negev. The earliest Islamic khans are found in Syria and date from the Umayyad period; examples include Qasr al-Hayr East and West, Khan al-Zabib and the building at Tell al-Sadiyyeh in the Jordan valley. These buildings all have a standard plan comprising a square or rectangular enclosure with rooms built around a central courtyard. During the Abbasid period khans were established on the Darb Zuyayda (the pilgrimage route running through Iraq and central Arabia), although the commercial importance of these installations is not known. From the twelfth century onwards khans became a standard feature of Islamic architecture and were particularly popular under the Seljuks. During this period khans began to be established in towns where they would become centres for trade. Also at this time...
the caravanserai is established as a more specialized form of khan catering specifically for caravans.

During the sixteenth century Ottoman khans developed a variety of forms where the central courtyard is enclosed; some of the best examples are in Damascus and Aleppo. Also at this time khans become part of larger complexes that included a mosque, fort and bath house, as at the village of Payas near Iskenderun in Turkey.

khanqah
A monastery or hostel for sufis or dervishes.

Kharana
Early Islamic or Sassanian building in the Jordanian desert 60 km east of Amman.

Kharana is a remarkably preserved square two-storey structure with solid semi-circular and circular buttress towers. The building is made out of roughly hewn stone blocks laid in courses covered with successive layers of plaster. There are three rows of vertical slits in the walls which have been interpreted as arrow slits, although their height above the inside floor level makes this unlikely. The gateway is set between two quarter-round towers which lead into an entrance passage flanked with two long vaulted rooms that functioned as stables. Inside the building is a square courtyard with a series of undecorated rooms (for storage?) whilst on the upper floor the rooms are decorated with plaster/stucco designs similar to those at Ukhaidhir in Iraq. These include engaged pilasters, blind niches and decorative bosses. Two of the upper rooms have semi-domes resting on wide squinches at the end.

Although it was built before 710 (according to an inscription) and is Sassanian in style, the building is now generally believed to be early Islamic.

Further reading:

Khirbet al-Mafjar (Qasr Hisham)
Umayyad palace located in the Jordan valley near the ancient city of Jericho.

The palace at Khirbet al-Mafjar is a large complex comprising three main architectural elements: the mosque, the palace, and the bath house or audience hall. These are all set within a large enclosure entered by a main gateway in the outer enclosure wall. This gateway projects outwards from the enclosure wall and is set between two quarter-circular solid buttress towers. The gateway leads into a long rectangular courtyard which runs the whole length of the western side of the palace. In the centre of the courtyard is a square pool or fountain whilst towards the south end of the west wall there is another gateway leading into the central palace complex. This consists of a roughly square enclosure with solid round corner towers and semi-circular buttress towers in the middle of
the south, west and north walls. In the centre of this palace area is a square colonnaded courtyard with access to the ground-floor rooms. The north range consists of one large rectangular room divided into fourteen bays (two bays wide and seven long). The south range consists of five long rooms oriented north-south; in the south wall of the central room is a large concave niche which may have functioned as a mihrab. Approximately in the middle of the west colonnade is a staircase descending into a small serdab, or cellar.

In the north-west corner of the central palace is a staircase leading to a gateway which gives access to a rectangular courtyard connecting the palace to the bath house or audience hall. In the west wall there is a small opening to the outside, whilst on the east side there is a mosque. The mosque is a fairly simple rectangular structure aligned north-south and entered via a rectangular entrance vestibule on the north side. The sanctuary at the south end is three aisles wide and two bays deep with a concave mihrab niche in the centre of the south wall. In addition there is another entrance to the mosque via a staircase leading down from the upper floor of the palace to a position in the south wall of the mosque next to the mihrab.

Probably the most famous part of the palace is the audience hall or bath house which stands at the north-west corner of the complex. This was a highly sophisticated building consisting of a nine-domed hall supported on sixteen piers and flanked on all four sides by barrel-vaulted exedrae terminating in semi-circular apses. At the south end of the hall is a pool three aisles wide and filling the three southern apses. In the centre of the east wall is a monumental doorway which leads from a small courtyard in front of the mosque. Directly opposite this doorway in the centre of the west wall is the principal apse distinguished by a huge stone chain which hung down from the arch above. At the end of the chain was a tall conical pendant which has been interpreted as a representation of an imperial

Stone decoration of Khirbet al-Mafjar, near Jericho

148
Sassanian crown. In the western most apse of the north wall is a doorway into the actual bath complex which is heated by an underfloor hypercaust system. In the north-west corner of the hall is a doorway leading into a small rectangular room with an apse at the end. This room has been interpreted as the caliph’s private audience room and is decorated with the famous mosaic of a lion bringing down a gazelle in front of a large tree.

The complex is mostly built out of finely dressed ashlar blocks although baked brick is used occasionally as in the bath complex. One of the most significant features of the palace is its decoration which consists of elaborately carved and painted three-dimensional stucco as well as extensive carpet-like mosaics. The stucco decoration includes representations of semi-naked women as well as male statues which are thought to represent the caliph himself.

There has been much discussion of the purpose of the palace and the function of the various rooms, most of which emphasize the evidently luxurious nature of life in the palace. It is not known exactly when the complex was built and there is no specific identification of it in early Islamic texts. The only historical evidence comes from a piece of graffiti which mentions the caliph Hisham (724–43); however, it is now generally agreed that in its final (unfinished) form the palace represents the tastes and lifestyle of al-Walid II (mid-eighth century). The solution may be that the core of the palace represented by the courtyard palace structure was built during the rule of Hisham whilst the ‘bath hall’ was added by his more exuberant nephew.

See also: Khirbet al-Minya, Palestine, stucco, Umayyads

Further reading:
Khirbet al-Minya (Hebrew: Horvat Minim; ‘Ayn Minyat Hisham)

Small Umayyad palace located on the north-western shore of the Sea of Galilee (Lake Tiberias).

The palace is contained within a rectangular enclosure (66 by 73 m) oriented north-south with round corner towers and semi-circular interval towers on the south-west and north sides. In the middle of the east side is the main gate formed by two projecting half-round towers separated by the arch of the gateway. The centre of the building is occupied by a colonnaded courtyard with twin staircases giving access to an upper floor level. In the south-east corner is the mosque which is divided into twelve bays supported on piers. Next to the mosque is a triple-aisled basilical hall, whilst to the north are the residential quarters.

The building of the palace is attributed to al-Walid (705–15) on the basis of a re-used inscription set into the gateway. There is evidence that the palace continued in use at least until the end of the Umayyad period and probably, on the basis of Mamluk pottery found at the site, later. Nearby are the remains of the medieval and Ottoman site of Khan Minya which was an important post on the Damascus–Cairo trade route.

See also: Palestine, Umayyads

Further reading:

Kilwa

Trading city on the southern coast of Tanzania which has the largest group of pre-colonial ruins in East Africa.

The name Kilwa today is used for three settlements: Kilwa Kiswani, Kilwa Kivinje and Kilwa Masoko. The ruins are confined almost exclusively to Kilwa Kiswani (on the island), whilst Kivinje and Masoko are both later settlements on the mainland.

The history of Kilwa is known from the Kilwa Chronicle which relates the history of the city from its foundation to the beginning of the Portuguese period in the sixteenth century. The earliest settlement at the site seems to have been in the eighth century although there are few standing remains from this period. At some time between the ninth and the twelfth century the settlement was taken over by a new dynasty from Shiraz in Iran who established themselves as sultans of Kilwa. The first sultan was Ali bin al-Hasan who is said to have bought the town from a pagan. The sultans of Kilwa continued to rule the town until the nineteenth century when the last sultan was deported to Zanzibar.

The wealth of the town depended on trade in ivory and other goods, but the most important commodity was gold. Gold was mined in the area of the African city of Great Zimbabwe and taken to the coast at Sofala (present-day Beira), from which it was shipped up the coast via Kilwa. There was also an overland route from Kilwa to Lake Nyasa and the Zambezi but this was always secondary to the sea routes. Sometime in the thirteenth century the sultans of Kilwa seem to have gained direct control of Sofala.

The wealth brought in by the gold trade meant that Kilwa had its own mint and was the only place in sub-Saharan Africa to issue coins. In 1332 the city was visited by Ibn Battuta who described it as one of the most beautiful and best-constructed towns he had visited. The wealth of Kilwa was legendary and it was mentioned by Milton in 'Paradise Lost' where it is called 'Quiloa'. However, the arrival of the Portuguese at the beginning of the sixteenth century brought an abrupt end to the prosperity of the city. During the seventeenth century the city seemed to have declined, and to have become a very small settlement, and it was only with the establishment of an Omani base there in the eighteenth century that the city again rose to prosperity. By the nineteenth century the city had again declined to a point where the administrative centre was moved to the mainland settlement of Kilwa Kivinje.
The history of the city is reflected in the surviving buildings, although it should be remembered that the number of stone buildings was small compared to a majority made out of less permanent materials. The main building materials on the island were the same as elsewhere on the coast and included reef and fossil coral used as stone, mangrove poles for wood and coconut palms for roofing. A notable feature of the medieval architecture of Kilwa is the use of domes which is not paralleled anywhere else on the East African coast at this early period. With the exception of some domes in the palace of Husuni Kubwa all of the domes in the Kilwa area are supported on squinches. Elsewhere on Kilwa buildings are covered either with barrel vaults or flat roofs made out of wood and concrete. The Makutani Palace may be an exception to this as it seems to have had a wooden roof covered with palm thatch (makuti).

The main buildings on Kilwa are the Great Mosque and the Great House, the Small Domed Mosque, the Jangwani Mosque, the palace of Husuni Kubwa and the nearby Husuni Ndogo, the Makutani palace and the Gereza fort. There are also important ruins on nearby islands including Songo Mnara, Sanje Majoma and Sanje ya Kate.

The best-known building in Kilwa is the Great Mosque which is a large complex structure dating from several periods. The building consists of two main parts, a small northern part divided into sixteen bays and a larger southern extension divided into thirty bays. The earliest phase evident at the mosque is dated to the tenth century although little survives of this above foundation level. The earliest standing area of the mosque is the northern part which dates to the eleventh or tenth century and was modified at the beginning of the thirteenth. This area was probably covered with a flat roof supported on nine timber columns. The next phase included the addition of a large cloistered courtyard to the south supported on monolithic coral stone columns and a small chamber to the south-west covered by a large dome. This was probably the sultan’s personal prayer room and the dome is the largest dome on the East African coast, with a diameter of nearly 5 m. Also belonging to this period is the southern ablutions courtyard which included a well, latrines and at least three water tanks. Sometime in the fifteenth century this arcaded southern courtyard was rebuilt and covered over with the present arrangement of domes and barrel vaults supported on composite octagonal columns, making this the largest pre-nineteenth-century mosque in East Africa.

Adjacent to the Great Mosque on the south side is the Great House which mostly dates to the same period as the latest phase of the mosque (i.e. eighteenth century). The Great House actually consists of three connected residential units each with a sunken central courtyard. Most of the complex would have been a single storey although a second floor was added to some of the central area. The purpose of the Great House is not known, but it is likely that at some stage it served as the sultan’s residence judging from a royal tombstone found during excavations.

To the south-west of the Great Mosque is the Small Domed Mosque which together with the Jangwani Mosque are the only two examples of a nine-domed mosque in this area. This building probably dates from the mid-fifteenth century (it is built on an earlier structure) and contains an arrangement of vaults and domes similar to the later phase of the Great Mosque. There are only two entrances, one on the south side opposite the mihrab and one in the centre of the east side. Domes cover most of the area of the mosque except for two bays covered with barrel vaults, one next to the entrance and one in front of the mihrab. The central bays are differentiated from the side bays by being wider and by the use of barrel vaults at either end, emphasizing the north-south axis. The dominant feature of the mosque is the central dome which is crowned with an octagonal pillar and internally contains three concentric circles of Islamic glazed bowls set within the dome. The two vaults to the north and south of the central dome are also decorated with inset bowls of glazed ceramics whilst the two domes either side of it are fluted internally; the other four domes are plain internally.

The other nine-domed mosque is of approximately the same date and is known as the Jangwani Mosque; it is located to the south of the Small Domed Mosque. Although more ruinous, excavation has shown this mosque to be similar, with the same use of fluted and plain domes, and entrances only on the south and east sides.

To the east of the main group of buildings are
Plan of Great Mosque, Kilwa, Tanzania. Original mosque in black (after Chittick and Garlake)
The remains known as Husuni Kubwa (large Husuni) and Husuni Ndogo (small Husuni). The term Husuni derives from the Arabic term *husn* meaning fortified enclosure or fortress. Whilst this term may be appropriate for the latter, its application to Husuni Kubwa seems unlikely for a palace complex. Husuni Kubwa is located on a coastal headland overlooking the Indian Ocean. It seems to date mostly from the late thirteenth or early fourteenth century and may well have never been completed. The complex consists of three main elements, the gateway or monumental entrance, the large south court and a complex of four courtyards which form the core of the palace. Also at the northern end of the complex there is a separate private mosque located on rocks next to the sea and reached by a staircase. The four courtyards at the northern end of the complex comprise an audience court, a domestic court, a bathing pool and a palace court. On the east side of the audience court are a flight of steps leading up to a flat-roofed pavilion which has been interpreted as the sultan’s throne room. To the east of this is the domestic court which opens on to a complex of residential rooms, or *beyts*. The bathing pool consists of a sunken octagonal structure with steps and lobed recesses on each side. The palace court at the northern end of the palace is a sunken rectangular structure aligned north-south with steps at either end. The north set of steps leads to a further residential unit which overlooks the sea and the small mosque. It is possible that the sea mosque and the staircase represent the sultan’s private entry to the palace. The royal nature of the palace is confirmed by a floured Kufic inscription found during excavations which mentioned Sultan al-Hasn bin Sulayman.

By contrast Husuni Kubwa is a severe-looking building which fits the name Husuni (fort). It consists of a rectangular structure aligned north-south and measuring over 70 m long by more than 50 m wide. Thirteen evenly spaced, solid, semi-circular bastions protect the outside of the wall with one rectangular tower on the west side. The only entrance is in the middle of the south side and consists of a wide gateway leading into a gateway with the exit on the east side thus forming a bent entrance. Excavations have revealed the traces of a few structures inside but these may be later and do not give any indication of the function of the building which is unparalleled elsewhere in East Africa and suggests an outside influence. There is little evidence for dating this structure although it is thought to be contemporary with Husuni Kubwa.

The other two important buildings on Kilwa island are also defensive structures although they seem to date mostly to the eighteenth century. The largest of these is the Makutani palace which was the residence of the sultan in the eighteenth century. This building is contained within a fortified enclosure known as the Makutani, which consists of two curtain walls fortified by square towers with embrasures. The wall was originally approximately 3 m high and crenellated. Although there is no trace of a parapet this could have been built of wood like many other features of the eighteenth-century remains at Kilwa. The palace occupies a position between the two enclosure walls and appears to be built around one of the earlier towers. It is the only building on the island still to have an upper floor which contained the main residential area of the palace.

The Gereza or fort is located between the Makutani palace and the Great Mosque. It consists of a roughly square enclosure with two towers at opposite corners. Although there is some evidence that the original structure was Portuguese, the present form of the building seems to be typical of Omani forts.

In addition to sites on Kilwa island there are important sites on nearby islands. The earliest of these sites is Sanje ya Kate, an island to the south of Kilwa where there are ruins covering an area of 400 acres, including houses and a mosque. The mosque is of an early type with a mihrab niche contained in the thickness of the wall rather than projecting out of the north wall as is usual in later East African mosques. Excavations have shown that the settlement was abandoned before 1200 and most of the ruins date to the tenth century or even earlier.

To the east of Sanje ya Kate is the larger island of Songo Mnara which contains extensive ruins on its northern tip. The remains date to the fourteenth and fifteenth centuries and consist of thirty-three houses and a palace complex, as well as five mosques contained within a defensive enclosure wall. The remains at Songo Mnara are informative as they are one of the few places in East Africa where pre-eighteenth-century houses survive in any numbers. The houses have a standardized...
design with a monumental entrance approached by a flight of steps leading via an anteroom into a sunken courtyard, to the south of which are the main living quarters of the house.

See also: coral, East Africa, nine-domed mosque, Tanzania

Further reading:


kiosk (köşk)

Turkish term for a small pavilion not intended for permanent residence.

konak

Palatial Ottoman Turkish house.

The traditional Ottoman konak in western Anatolia and the Balkans is based on a four-iwan plan which is said to derive ultimately from the Cinili Kiosk in Istanbul. The plan consists of a central hall leading off to four iwans between which are enclosed rooms, often the plan is varied from this but the basic principal of a central hall with iwans is retained.

Most konaks are built of wood and have their main rooms on the upper floor with the lower floor used as a basement. The central hall is often covered with a wooden dome or a two-dimensional representation of a dome made of carved wood or paint. Sometimes the central hall is open on one side and functions as a veranda. The walls of the rooms are usually lined with sofas or long benches which are the main form of furniture. The most common form of decoration is painted ceilings, although shallow relief carving is also used. In eastern Anatolia konaks are built of stone and are built around open courtyards in the Syrian fashion; there is also a more strict division between the men's area (selamlik) and the women's area (harem).

See also: Istanbul, Ottomans, Topkapi Palace

Further reading:
N. Çakiroğlu, Kayseri Evleri, Istanbul 1952.

Konya (Byzantine: Iconium)

City in southern Anatolia (Turkey) which was the capital of the Anatolian Seljuks now famous as the home of the whirling Dervishes.

Konya was established as capital in 1084 after the defeat of the Byzantines at Myriakefalon and just before the recapture of Iznik from the Crusaders. During the Byzantine period Iconium had been one of the richest Anatolian cities, a prosperity which was continued under Seljuk rule. In 1258 Konya was taken by the Mongols although it was later recaptured by the Karramanli Turks who continued to build in the Seljuk tradition. In the fifteenth century Konya was incorporated into the growing Ottoman Empire and became a regional capital.

The oldest mosque in Konya is the Alaeddin Cami built by the Seljuk sultan Alattin Keykubat between 1219 and 1221. This building stands on a hill in the centre of the city next to the remains of the Alaeddin palace. Within the mosque courtyard is an octagonal mausoleum with a tall conical (pyramid-shaped) dome which contains the remains of eight Seljuk sultans. In common with other Seljuk buildings in Konya, the entrances to the courtyard and prayer hall are surrounded by elaborate marble interlace patterns. The prayer hall is covered with a flat wooden roof supported by over forty Byzantine and classical columns. Other important Seljuk mosques in Konya include the Sahih Ata Mosque, the Iplikçilî Mosque and the İnce Minareli. The İnce Minareli Mosque also has a madrasa with one of the most striking entrance façades in Seljuk architecture. This consists of a small pointed-arched doorway recessed within a huge stone frame which is covered with ornamental calligraphy. Two bands of calligraphy start either side of the doorway arch, cross over, run parallel up the centre of the portal and again cross over at
the top. The edges of the frame are also decorated with calligraphic ornament whilst the areas in between are covered with stylized vegetal motifs. The Sahib Ata Cami also has a monumental portal consisting of a small pointed doorway set within a deep recess covered within a fourteen-tier muqarnas hood and flanked by bands of geometric motifs and calligraphic bands. The doorway is set between the bases of two minarets only one of which has survived as a fluted stump decorated with star patterns. Little remains of the Seljuk palaces of Konya although excavations have recovered architectural fragments indicating a rich artistic repertoire, including glazed tiles, stucco work and carved stone ornament. The decoration is noticeable for its rich figural content including depictions of birds, horses, mythical beasts and human figures. The tiles consist of eight-pointed star-shaped panels set between cross-shaped tiles.

The city's religious importance can be traced to the Sufi mystical poet Jalal al-Din Rumi who died in Konya in 1273. Jalal al-Din's tomb is the most famous building in Konya and forms part of a complex known as the Mevlana Masjid which included a mosque, madrassa, kitchen and semahane, or dance hall. The tomb itself is covered with a conical dome resting on a tall fluted cylindrical drum. The outside of the tomb and drum are covered in green tiles which distinguish it from the lead-covered roofs of the rest of the complex. Most of the complex with the exception of the tomb itself dates from the reign of Suleyman the Magnificent who added the mosque and dance hall. Next to the Mevlana complex is the Selimiye Cami commissioned by Sultan Selim II and designed by the famous architect Sinan. The mosque is unusual for the period as it has no courtyard.

See also: Ottomans, Seljuks, Turkey

kraton

General term for Javanese palaces. Derived from the Javanese root *ratu* meaning 'king', the term thus means 'residence of the king'. Sometimes the
Kubadabad Palace

Kubadabad is located on the south-western shore of Lake Beyshehir in central Turkey. The settlement is dated by an inscription to the first half of the thirteenth century and is known to have been used by the Seljuk sultans Keykavus II and Keyhusrev III. The remains consist of more than sixteen buildings on the mainland and a separate castle or palace on an island known as Maidens’ Castle. The tilework included underglaze painted star-shaped tiles with figurative scenes.

See also: Konya, Seljuks, Turkey

Further reading:

Dar al-Imara, Kufa, Iraq

term kadhaton is also used which has a more specialized meaning referring to the royal quarters.

See also: Java

Kubadabad Palace
Seljuk palace famous for its glazed tilework and stucco decoration.

Kufa
Southern Iraqi city founded in the early Islamic period.

Kufa is located on the west bank of the Euphrates near the Shi'a shrine city of Najaf. Like Baghdad, Kufa was a purely Islamic foundation, although it stood close to the Lakhmid capital of al-Hira.
After the battle of Ctesiphon and the capture of al-Mad'ain (Ctesiphon and Seleucia) the Arab armies settled in the old Sassanian capital. Soon afterwards, the armies moved to Kufa because of its pleasanter climate and strategic location on the west bank of the Euphrates (i.e. easy access to Syria and the Hijaz). In 645 Ali transferred the seat of government to Kufa. The assassination of Ali in the Great Mosque of the city in 645 brought an end to the city's role as capital.

The original city had no walls and was simply surrounded by a ditch. The principal monuments in Kufa are the Great Mosque and the Dar al-Imara, or Governor's Palace. The Great Mosque consists of a number of different phases from the early Islamic period to the present day. The first mosque on the site was laid out by a man who threw spears to each of the cardinal points to delineate a square two-spear throws long. The area was enclosed by a ditch and the only permanent architectural feature was a marble colonnade 20 m long. The columns were taken from the nearby city of al-Hira. In 670 CE the mosque was expanded and covered with a flat roof resting on stone columns. The mosque visible today has a beautiful golden dome and contains the tombs of the two saints Muslim ibn Aqeel and Hani ibn Arwa. The golden dome and tilework date to the Safavid period (seventeenth and eighteenth centuries), although the outer wall of the mosque which is supported by twenty-eight semi-circular buttress towers probably originates in the early Islamic period.

To the south of the Great Mosque is the Dar al-Imara which was excavated by the Iraqi Antiquities Authority. The palace is enclosed by a square enclosure 170 m per side with walls 4 m wide supported by twenty semi-circular buttress towers and four round corner buttresses. In the centre of the palace there is a square (domed?) chamber approached by a vaulted hall which was probably the throne room.

See also: Dar al-Imara, Iraq

Further reading:

Kuwait

Ottoman term used to describe large complexes around mosques, which might include madrassas, libraries, khanqas, bath houses and a kitchen for the poor.

Kuwait

Small desert country located in the northern Arabia/Persian Gulf.

The first Islamic settlements in the Kuwait area were on the island of Failika and at the small port of Kathima near the modern town of Jahra. The present state of Kuwait was founded in the eighteenth century when descendants of the ruling al-Sabah family established themselves as rulers in alliance with local merchants. The prosperity of the town of Kuwait rapidly increased attracting a growing population. In 1793 the British moved their commercial base from Basra to Kuwait and in 1899 Kuwait ended its formal ties to the Ottoman authorities by signing a protection treaty with Britain. In the early part of the nineteenth century Kuwait was relatively poor with an economy reliant on a declining dhow trade and pearl fishing. After the Second World War the economy was transformed by the discovery of oil (it had actually been discovered before the war) and since then the country has seen unprecedented economic growth.

Little has survived of Kuwait's traditional architecture because of its high-speed development. The traditional building materials were rubble stone covered with thick mud plaster, mud brick and some coral stone. With the exception of date palms wood was rare, although mangrove poles imported from East Africa were used for the roofs.

Kuwait city was surrounded by a wall with five gates in the eighteenth century but this has now disappeared. Apart from the city wall Kuwait was protected by two forts, one in the city and the other on the end of the peninsula known as the Red Fort. Within the city there were a number of mosques most of which have been rebuilt several times. The oldest mosques in Kuwait are the Masjid al-Khamis built between 1772 and 1773 and the Masjid Abd al-Razzaq built in 1797. Before the nineteenth century minarets were rare and where they did exist consisted of small square towers covered with a small roof canopy.

A typical Kuwaiti merchant house was built in
the Ottoman style which reached the city from Basra. Ottoman features included projecting wooden balconies enclosed with wooden screens, or mashrabiyya, and carved wooden doorways which sometimes included European motifs. The extreme heat of the city made wind-catchers and ventilators a necessity for most houses.

Modern architecture in Kuwait is mostly in the modern international style, although there are several buildings which demonstrate some relationship to Islamic themes. The best-known example of Kuwaiti modern architecture is the water towers, consisting of tall pointed conical spires on which spherical water tanks are skewered.

See also: Bahrain, Qatar, United Arab Emirates

Further reading:
Lahore

*Imperial Mughal capital located in the Punjab region of Pakistan.*

Lahore is located in the eastern Punjab close to the Indian border and the Sikh city of Amritsar. The origins of the city are obscure although it is known that it existed as early as the tenth century. In 1021 the city was captured by Mahmud of Ghazni who demolished the fort and appointed Malik Ayaz as governor. In 1037 Malik Ayaz began construction of a new fort on the remains of the old one, which was completed in 1040. Excavation of the old fort has recently revealed a section which consists of a mud-brick wall approximately 4 m high. The new fort was also built of mud brick and consisted of a large rectangular enclosure by the banks of the river. In 1556 this fort was demolished by the Mughal emperor Akbar and replaced with a baked-brick enclosure fortified with semi-circular bastions. Akbar extended the area of the fort to the north to enclose the low lying area next to the river which was supported on vaulted sub-structures. Akbar’s construction forms the core of the present fort which was added to by later Mughal emperors, as well as Sikh and British rulers of the area. The basic design of the fort is similar to the Red Fort at Delhi and the fort at Agra and consists of a huge public courtyard to the south with the private apartments and gardens to the north overlooking the river. The public courtyard known as Jahangir’s Quadrangle contains some of the best examples of Akbar’s architecture built in the characteristic red sandstone. The courtyard is lined by pavilions supported by massive brackets resting on twin columns. Most of the fort, however, is attributed to Akbar’s successors, in particular Jahangir and Shah Jahan. Jahangir was responsible for the most magnificent example of ceramic art in Pakistan which is the ‘Picture Wall’. This is an area of more than 6,000 m square decorated with human and animal figures besides the more usual geometric and figural designs. Areas of the palace built by Shah Jahan are characterized by the use of white marble and intricate decoration. One of the most extravagant rooms in the building is the Sheesh Mahal, is a half-octagonal room decorated with mirror tiles. Outside the fort, Lahore contains a number of important Mughal buildings including the Badshahi Mosque, Jahangir’s tomb, the Shalimar Bagh and the Shahdara complex. In addition to the imperial Mughal buildings there are a number of Mughal period buildings which exhibit a mixture of Mughal, Persian and local design. One of the most famous examples is the mosque of Wazir Khan built in 1634 which is profusely decorated with brightly coloured tile mosaic. At each corner of the courtyard is a thick octagonal minaret of a type which later became characteristic of Lahore. Several mosques of the late eighteenth and early nineteenth century exhibit the influence of Sikh architecture from nearby Amritsar. One of the best examples is the Sonehri Masjid (Golden Mosque) built by Bhikari Khan in 1753 which has bulbous gilded copper domes with miniature domed chhatris.

See also: Mughals, Pakistan

Further reading:


Lamu

*Town on an island off the north Kenya coast, noted for its fine eighteenth- and nineteenth-century houses.*

The origins of Lamu are uncertain although archaeological evidence suggests that there has been a settlement on the site since well before the sixteenth century. However, the present town of Lamu developed largely in the eighteenth and nineteenth century, eventually taking over from its
Lamu

torial city of Pate. Like all Swahili towns the wealth of Lamu was built on the Indian Ocean dhow trade and the main focus of the town is still the sea front or quay. The town is built on a gentle slope which runs down towards the sea and at its centre is the old fort constructed by the Omanis, who controlled the area from the eighteenth century onwards. Unlike most other towns Lamu has survived as a traditional Swahili town with a dense network of streets between tall stone mansions and over twenty-two mosques. In addition to the stone buildings of the town are suburbs of mud and thatch houses in which many of the population of Lamu live, as was probably the case in the past. The stone houses are built of out of coral stone and mangrove poles in the manner typical of East Africa until the twentieth century. Most were originally single storey, and upper floors were added subsequently as separate living units. The typical eighteenth-century Lamu house has a small entrance porch, or daka, with stone benches either side which forms the main reception area of the house. The outer porch opens on to a small inner porch (tekani) and at right angles to this is the main courtyard of the house (kitwanda) thus forming a bent entrance to ensure privacy. Next to the inner porch, on the same side of the courtyard, is the guest room (sabule). Also contained within the courtyard is a bathroom or toilet, stairs to the upper floor and a semi-open kitchen covered with thatch. The main residential part of the house is located on the side of the courtyard away from the entrance and consists of a series of rooms of increasing privacy. Thus next to the courtyard is an outer living room followed by an inner living room behind which is the harem. The inner and outer living rooms are open to each other and the courtyard, whilst access to the women's area or harem (ndani) is via a pair of doors. The remarkable feature of these rooms is the use of decorative carved plaster and wall niches on the outward-facing walls of the living rooms and harem. The most elaborately decorated area is the harem, followed by the inner and outer living rooms. The wall niches are usually arranged in tiers and may cover the entire wall of the harem. The purposes of the niches is not fully understood although they are often used to display valuable pottery. Behind

Wall panels and niches in eighteenth-century house, Lamu, Kenya (after Allen)
the harem are the inner bathroom and a room known as *nyumba ya kati* which may be for laying out and washing the dead.

Access to the upper floor is via a staircase which also has its own porch which may be used for receiving visitors. The arrangement of the upper floor is similar to downstairs except that there is no room for the dead and the kitchen is raised above the rest of the building on one side of the courtyard.

**See also:** coral, East Africa, Kenya

**Further reading:**


**Lashkari Bazar**

*Ruined eleventh-century city in Afghanistan.*

Lashkari Bazar is located to the north of the modern city of Bust on the east side of the Helmund river in south-west Afghanistan. The principal ruins at the city date from the Ghaznavid period in the eleventh century although there are both earlier remains from the Parthian period and later remains from the Ghurid period (twelfth to thirteenth century). In many ways the site resembles the Abbasid site of Samarra with its monumental size, its palaces, its mud-brick architecture and its elongated development alongside the river.

The citadel of Bust to the south seems to have been the first area of settlement and Lashkari Bazar seems to have developed as a suburb or camp referred to as al-'Askar. The three principal structures at the site are the North, Centre and South palaces. The earliest of these is the Centre Palace which was probably built in the Samanid period. This is a rectangular building (32 by 52 m) with circular buttress towers at the corners. There are two storeys – a ground floor and an upper floor – although it appears that these were not connected. The largest building at the site is the South Palace which has been identified as the palace of Mahmud of Ghazni. This is a huge structure (170 by 100 m) built around a central courtyard which opens on to four main iwans. The building is entered from the south which leads into the courtyard via a cruciform hall. At the opposite end of the courtyard is a large iwan which leads, via a passageway, into a larger one overlooking the river. This iwan which has a staircase leading down to the river has been compared to the Bab al-Amma at Samarra although it has a different form. The private quarters were arranged down the west side of the courtyard and include a small mosque at the south end (this was not accessible from the rest of the palace). The interior of the palace was richly decorated with stucco work, frescoes and carved marble panels. To the east of the palace was a large walled garden which may have contained animals.

In addition to palaces there are remains of smaller private mansions built in the same style, with iwans opening on to a courtyard. One of the more interesting features of the site is the bazar from which the site gets its name. This is a street more than 100 m long lined with small shop units (3.5 by 5 m). On one side of this street, approximately in the middle, there is a courtyard building with store rooms, which was probably the office of the market inspector (muhtasib).

**See also:** Afghanistan, Samarra

**Further reading:**


**Lebanon**

*The republic of Lebanon is located on the east coast of the Mediterranean between Palestine and Syria.*

Lebanon is dominated by two geographical features, the sea and the Lebanon and Anti-Lebanon mountains. The principal cities of the country are located on the coast and include the old Phoenician settlements of Tyre, Sidon, Beirut and Tripoli. The history of Lebanon in the Islamic period is similar to that of Syria with some minor variations. The main consideration is that the Lebanon mountains cut off Lebanon from the rest of Syria whilst the sea opened it up to European contact. One of the first indications of Syria's separateness occurred in the eighth century when the Christian Maronites
established an independent state in the Kadisha valley amongst the mountains of north Lebanon.

In the eleventh century dissident followers of the Fatimid caliph al-Hakim settled in the mountains
of southern Lebanon and established the Druze community. During the twelfth and thirteenth centuries the country was dominated by the Crusaders who had conquered the coastal cities for use as bases in their conquest of Palestine. With the expulsion of the Crusaders in 1289 the Mamluks rebuilt cities such as Tripoli to remove all trace of the Crusader presence. In 1516 Lebanon was incorporated into the Ottoman Empire although its position enabled it to develop its own trading links with Europe. Contact with Europe was increased throughout the Ottoman period and in the eighteenth century Maronites were placed under the special protection of France. Massacres of Christians in the nineteenth century led France to press for the autonomy of Lebanon within the Ottoman Empire and from 1860 Lebanon has functioned as a semi-independent state. The country achieved full independence in 1944 at the end of the Second World War.

Stone is the principal building material in Lebanon and is used both in a dressed form and as uncut rubble. The presence of black basalt and limestone has made striped (ablaq) masonry a popular form of decoration for important buildings. Wood is used as a roofing material as well as for balconies and projecting windows. Unfortunately the cedar forests of Lebanon were destroyed before the medieval period and the principal types of wood are poplar, walnut, willow and maple. Mud brick is used as a building material in the Beq'a valley where the climate is dry enough and there is suitable clay.

The only major creation of the Umayyad period was the city of Anjar which like Ramla in Palestine was intended as a new regional centre away from the predominantly Christian cities. The Mamluk period is represented by the city of Tripoli which was completely rebuilt after its conquest. Moreover, the Mamluk period left a great impression on the Christian, Druze and Muslim architecture of the country which can be seen in buildings such as the Bayt al-Din Palace.

The most distinctive feature of Lebanese architecture is seen in the houses of the coast, which display a mixture of Middle Eastern and European influence. European elements include the use of pitched wooden roofs covered with clay tiles, prominent windows and balconies (distinct from the enclosed spaces usual in Islamic domestic architecture). Middle Eastern elements include the use of the vaulted iwan (open arched room), arcades and the occasional use of domes. Mountain-houses are generally less sophisticated and are often built of roughly square blocks held together in a mud mortar. Roofs are usually flat and made of earth resting on mats supported on wooden beams. Inside, the mountain-houses may be decorated with mud plaster mixed with white lime to produce a type of stucco. This material is used to decorate walls and is also used for the construction of storage bins and hearths.

See also: Anjar, Syria, Tripoli (Lebanon)

Further reading:

Libiya (Libyan Arab People's Socialist State)

Large North African country located between Tunisia and Egypt, with the Mediterranean to the north and the Sahara desert to the south.

Libiya comprises two main geographic areas, the coast and the Sahara; these areas may be further separated into several regions. The narrow coastal strip is divided into three regions: Cyrenaica in the
east with its capital of Benghazi, the Gulf of Sirte in the centre and Tripolitania in the west. The interior desert region may be divided into several areas, the most important of which are the Jabal Nafusa in south-eastern Tripolitania, and the Fezzan in the south-east of the Libyan desert.

The present state of Libiya is largely a modern phenomenon created by Italian colonialism in the early twentieth century. Ironically, 2,000 years previously the Romans developed the regions of Cyrenaica and Tripolitania into some of the wealthiest provinces of their empire, providing grain for the Italian peninsula. During the Byzantine era the prosperity of the area continued with a population that was predominantly Christian with a large Jewish minority. The area was first conquered by Islamic forces in the mid-seventh century with the capture of Barqa (modern al-Marj) in 642 under ‘Amr ibn al-As, followed in 643 by the conquest of Tripolitania. After the coastal strip was secured a further force under ‘Uqba ibn Nafi was sent to take control of Zuwayla in the Fezzan. In the past it has been generally assumed that the Islamic conquest led to the collapse of the Roman urban network but it has recently been shown that change was more gradual, with a considerable degree of continuity of settlement from the Byzantine to the early Islamic period.

During the early tenth century the power of the Abbasid caliphs in North Africa was destroyed by the radical Shi‘ite Fatimid dynasty who ruled from their capital of Mahadiyya in Tunisia. During this period the importance of Libiya increased and the best examples of early Islamic architecture in the country are from this period. After the Fatimid conquest of Egypt much of North Africa, including the area of present-day Libiya, came under the control of the Berber Zirid governors. In the eleventh century North Africa was subject to a new influx known as the Banu Hilal who were supposedly dispatched by the Fatimid caliphs to reintroduce Fatimid propaganda to the rebellious Berber tribes. In the past the Hilalian invasions have been seen as the cause of North Africa’s comparative backwardness in the Middle Ages. More recently this view has been modified, but the idea of the
Libiya (Libyan Arab People’s Socialist State)

Libiya (Libyan Arab People’s Socialist State)

Beirut house, Lebanon © Kerry Abbott

During the twelfth century this weakness was exploited by Roger, the Norman king of Sicily, who established a Norman kingdom in Ifriqiya which included the area of Libiya. After the expulsion of the Normans the history of Libiya is fragmented into successive dynasties controlling individual cities. For a brief period in the early sixteenth century part of Libiya was occupied by the Spanish, but they were soon displaced by the Ottomans who established naval bases on the coast to harass European shipping in the Mediterranean. During the eighteenth century Libiya was briefly ruled by the semi-independent Qarahmanli dynasty. In 1911 Libiya was again brought under European rule when the Italians invaded and established the country as an Italian colony.

The main building materials in Libiya are stone and mud brick. Re-used Roman or Byzantine stone has always been in plentiful supply so that many of the older buildings in Tripoli, Adjadibiyah or elsewhere use Roman columns and capitals. Mud brick was employed as a cheap alternative when dressed stone was not readily available, although baked brick was also sometimes used. In the southern desert areas where Roman material was not so plentiful the main building material is roughly hewn stones set within a mud mortar. This use of material determined architectural forms, thus in the Jabal Nafusa area tall triangular arches were used as there was no suitable material for normal arch construction.

With the exception of the occasional building in the old Byzantine coastal cities, the first distinctive Islamic architecture in Libiya dates from the Fatimid period. During the later tenth century the Fatimids were increasingly interested in Egypt and to this end developed a number of garrison cities or staging posts on the route between Mahdiya and Egypt. Probably the best-known site is the garrison city of Ajdabiya, south-west of Benghazi, which had both a large mosque and a palace. The palace is a rectangular stone-built structure with a central courtyard flanked by suites of rooms. Directly opposite the entrance is a monumental portico which gives access to the principal rooms of the palace which are arranged in a T-plan. The mosque was a mud-brick building with stone used for the corners, piers and jambs. The mosque had a main entrance in the north-west side opposite the mihrab as well as several lateral entrances. The aisles run at right angles to the qibla wall, with the exception of the transept adjacent to the qibla wall which runs parallel (an arrangement frequent in Fatimid mosques). The mosque is important for its early evidence of a minaret which consists of a square base with an octagonal shaft, a design which later became the basis for the Mamluk minarets of Cairo.

Another early Fatimid site is the city of Madinah Sultan (Surt or Sirt) which is approximately midway between Benghazi and Tripoli. The city was enclosed by a large oval-shaped town wall with at least three gateways. One of the larger buildings uncovered during excavations was the Friday mosque which is oriented south-east (an incorrect qibla). The mosque had four gates, the most prominent of which was the monumental north gate which is of double width. Monumental gateways are a characteristic feature of Fatimid mosques and can also be seen at Mahdiya in Tunisia and in Cairo. The Madinah Sultan Mosque has a central aisle running at right angles to the qibla wall, although unusually for North Africa the rest of the aisles run parallel to the qibla wall. Some remains
of the original decorative scheme of the mosque have been recovered including stucco frames for coloured glass windows, red and green coloured bricks. There are traces of a subsidiary mihrab in the arcade facing the courtyard which may possibly be the remains of an eighth-century mosque which was rebuilt in 952 by the Fatimid caliph al-Muciz. Several other Fatimid establishments are known but have not yet been investigated in detail; one of the better known examples is Qasr al-Hammam near the ancient site of Leptis Magna.

Few early Islamic remains survive in Tripoli although traces of the rebuilt Umayyad fortification walls have been excavated. These were made of stone and mortar and vary between 6 and 7 m in thickness. The oldest mosque in Tripoli is the al-Naqah Mosque which was probably built by the Fatimid caliph al-Muciz in 973 although some suggest that it may be older. The present shape of the mosque is irregular indicating numerous alterations throughout history although the basic plan consists of a rectangular courtyard and a sanctuary or prayer hall covered with forty-two brick domes. Although many of the other mosques in Tripoli may have medieval origins their remains mostly date from the Ottoman period. Few important monuments of the post Fatimid medieval period in Libiya have survived although many small mosques may date to the medieval period. At the oasis site of Ujlah (Awjlah) 200 km to the south of Ajdabiya is a small twelfth-century mosque built of stone and brick. The mosque consists of at least twelve bays covered with pointed conical domes, although the most interesting feature of the building is the recessed minbar niche to the side of the mihrab (this feature is also found in East Africa and Arabia and may represent an Ibadi tradition). South of Tripoli in the area of Jabal Nafusa is a region with a high concentration of ancient mosques, many of which date from before the thirteenth century. Many of these mosques are built partially underground giving them a low profile and an organic feel accentuated by the absence of minarets. The area is also characterized by fortified store houses, known as qusur (plural of qasr), which consist of agglomerations of barrel-vaulted units contained within a defensive wall. The barrel-vaulted units are often stacked one on top of the other and are reached by ladder or ropes. During peaceful times each qasr functions as a central storage area and in times of attack the population of the village retreats into the qasr where it can withstand a long siege.

See also: Ajdabiya, Fatimids, Tripoli (Libiya)

Further reading:
ma‘adhana

Place for the call to prayer, often identified with the minaret.

machicolation

*Downward openings or slits used defending a castle or fortification.*

There are three types of machicolation, a box machicolation, concealed machicolation and continuous machicolation.

A box machicolation resembles a projecting window or gallery and may also be used for this purpose. There are usually one or more slits in the floor and the box is normally located over a gate or doorway. Box machicolations were used in Roman times and their first use in Islamic structures is at Qasr al-Hayr (East and West).

Concealed machicolations are usually set into the roof above a vaulted passage leading from a gateway and are often used in conjunction with a portcullis. The first example in Islamic architecture comes from the eighth-century palace of Ukhaidhir in Iraq. These were frequently used in medieval Islamic fortifications.

Continuous machicolation consists of a parapet which is cantilevered over the front face of a wall with a series of downward openings. The earliest example of this is also at Ukhaidhir although it is not used later on in Islamic architecture.

See also: fortification

madafa

Arabic term for guest house, or room for guests.

Madinat al-Zahra’

*Tenth-century palace city (now in ruins) 6 km west of Córdoba in southern Spain.*

The complex was begun by Abd al-Rahman II and completed by his son al-Hakim II. The complex was named after Abd al-Rahman’s favourite wife Zahra’ and located near springs at the foot of the Sierra Morena. The complex was founded as a palatial residence and administrative centre away from the crowded capital at Córdoba and had a staff of 20,000 people including guards, officials and families. It was finally destroyed by fire in 1010 by the caliph’s vizier al-Mansur who resented the caliph’s personal residence. Material from the palace was re-used by Pedro the Cruel to build his palace in Seville.

The complex was built on three terraces surrounded by gardens with pools and water channels. On the lowest terrace is a garden pavilion built for Abd al-Rahman as a formal reception and ceremonial centre. This consisted of four pools and the pavilion itself known as the Salón Rico which has intricate decoration carved in stone to match the stucco work of the maqsura at the Great Mosque in Córdoba. This pavilion is associated with a hammam in an arrangement common to the desert palaces of Syria. Across a bridge from the Salón Rico is the main mosque of the complex with an arcaded courtyard leading on to the sanduri five aisles deep. Next to the mosque is the Dar al-Yund (army headquarters) which consists of a cruciform basilical hall with triple-arched arcades and a ramp leading out on to the parade ground.

The upper part is occupied by the caliph’s personal residence known as the Dar al-Mulk. This consisted of several apartments based around courtyards which in turn enclosed a central hall. It is likely that these apartments were at least four storeys high although they are now much damaged.

The complex is a useful example of how the Spanish Umayyads tried to copy the architecture and protocol of their more powerful ancestors. In particular the complex is thought to recall the country residence of Abd al-Rahman, the first Spanish Umayyad, at Rusafa in Syria.

See also: Córdoba, Córdoba Great Mosque, Spain
Further reading:

madrassa
Building which functions as a teaching institution primarily of Islamic sciences.

It is thought that the earliest madrassas were built by the Seljuks in eleventh-century Iran and that the design was derived either from contemporary house plans or Buddhist teaching structures, known as viharas, which survived in Afghanistan and Central Asia. The oldest extant madrassa is the Gumushutugin Madrassa in Bosra built in 1136. This is a small structure (20 by 17 m) with a domed courtyard and two lateral iwans. However, the majority of early madrassas are found in Anatolia where two main types occur, based either on an open or a closed courtyard building. The domed madrassas are usually smaller buildings whilst those with an open courtyard are generally larger and have central iwans surrounded by arcades. The first Egyptian madrassas date from after 1160 when Sunni orthodoxy was returned to the country. The significance of the Egyptian madrassas is the four-iwan plan where each iwan represented one of the four orthodox schools of law. This design later spread to other countries and can be seen in the Mustansriya Madrassa in Baghdad. Another significant development which took place in Egypt is the madrassa becoming the dominant architectural form with mosques adopting their four-iwan plan.

Although it is traditionally thought that madrassas provide sleeping and working accommodation for students, the extant examples show that this was not a rule and it is only later on that student facilities became an accepted part of a madrassa.

mahal
Arabic term for place or location. In Mughal architecture it is used to describe the palace pavilion, or more specifically the women's quarters.

Mahdiya
Fatimid capital of North Africa located on the east coast of Tunisia.

The city of Mahdiya occupies a defensive position on the peninsula of Ras Mahdi. The city was established in 913 by the Fatimid Mahdi (leader) 'Ubaid Allah on the site of the destroyed Carthaginian port of Zella. The city functioned as a port from which the Fatimids were able to launch their campaign to conquer Egypt.

Architecturally the most significant building in the town is the Great Mosque built in 916. This is the earliest surviving example of a Fatimid mosque. The design of the mosque differs considerably from earlier North African mosques as it had no minarets and only one monumental entrance giving it the appearance of a fortress rather than a mosque. This view is reinforced by the massive square corner buttresses and the stark simplicity of the design. The internal layout of the mosque is similar to earlier mosques of the region with nine aisles running perpendicular to the qibla wall and a transverse aisle parallel with the qibla wall. In the eleventh century erosion by the sea destroyed the original qibla wall which was subsequently rebuilt further back thus reducing the space of the prayer hall.

See also: Ajdabiya, Fatimids, Tunisia

Further reading:

maidan
A large open space, or square, for ceremonial functions.

Malaysia
Predominantly Muslim country in south-east Asia divided into two parts, the southern half of the Malay peninsula and the northern part of Borneo.

It seems likely that Islam came to Malaysia as early as the ninth century although at present there is no archaeological confirmation of this. The earliest record of Islam in Malaysia is the Trengganu Stone dated to 1303 or 1386. The stone is written in Malay with Arabic script and records various regulations of Islamic law.

Before the fourteenth century the southern half of the Malay peninsula was home to a series of small weak states which were dominated by their northern neighbours of Cambodia and Thailand and later by the Indonesian kingdom of Majapahit. By 1403, however, the first king of Malacca had
established himself as ruler of the southern Malay peninsula with the support of the Chinese emperor. The king of Malacca made several friendly visits to the Chinese emperor in return for support against the Thai kingdom of Ayudhya which was encroaching on the northern part of the peninsula. At this time (in the 1420s) the king of Malacca converted from Hinduism to Islam making Malacca the main centre of Islamic culture in south-east Asia. Under Chinese protection the state of Malacca grew to become the most powerful in the area with its control of the strategic straits of Malacca which were the main route for commerce between China and the west. By the end of the fifteenth century Malacca's position was threatened by the Portuguese who saw it as a threat to their further eastward expansion. In the early sixteenth century China withdrew its naval support of Malacca and in 1511 the sultanate of Malacca was finally defeated.

The Portuguese victory was the start of a long period of colonial rule first by the Portuguese, followed by the Dutch after 1641 and finally by the British from 1824 until 1957. Despite the crusading zeal of the Portuguese the Malay inhabitants remained Muslim throughout the colonial period.

Unfortunately there are few architectural remains from the pre-Portuguese period and these are mostly Buddhist or Hindu, although the surviving fortifications of Malacca may be Islamic. Most pre-nineteenth-century mosques in Malaysia were built of wood and have not survived very well. The oldest mosque in Malaysia is generally agreed to be the Masjid Kampung Laut in the state of Kelantan built in the sixteenth century. The mosque was moved from its original location in 1970 after serious floods damaged its structure. The mosque stands on a square raised platform and has a three-tier pyramid roof with each tier separated by a gap to allow air circulation. A similar mosque was built at Demak in Indonesia by the same group of Muslim traders. Another early mosque is the Masjid Trengkera in Malacca built in the early eighteenth century (1728). This is a four-tier structure on a square base with a polygonal six-storey minaret. The form of the minaret resembles a pagoda and suggests strong Chinese influence. Most early Malaysian mosques have neither minarets nor mihrabs although these were often added in the nineteenth century. The window frames were usually decorated with bands of Quranic calligraphy and there are often elaborately carved minbars and Quran stands.

The colonization of Malaysia by Britain in the nineteenth century introduced a new Anglo-Indian stone- and brick-built mosque form. These mosques are characterized by the use of domes, crenellations and arched windows which locally are characterized as 'Moorish architecture'. One of the best examples of this architecture is the Headquarters of the Malayan Railway Company which is covered with onion domes with arched windows and striped masonry. This architecture which can also be seen in Singapore seems to be derived primarily from south India.

Since Independence in 1957 there have been attempts to move away from this Anglo-Indian architecture to buildings that are more traditionally Malay. The model for such buildings is usually the traditional form of Malay houses — wooden buildings with tall thatched roofs in three or more tiers. One of the earliest examples of this post-colonial architecture is the National Museum at Kuala Lumpur which uses traditional roof forms, although many of the other elements are built in a modern international style. More successful as an evocation of the traditional style is the Bank of Bumiputra which is based on the traditional Kelantan house design. The building has a huge three-tiered roof on a rectangular base.

See also: Indonesia, Java, Singapore

Further reading:

Maldives

A group of over 2,000 islands off the south–west coast of Sri Lanka which now forms an independent republic with its capital at Male.

The inhabitants of the Maldives have been Muslim
Mali

since 1153 when they were converted by a Berber known as Abu al-Barakat. The language of the islands is Dihevi which is related to Sinhalese although it is written in a script based on Arabic numerals.

The houses are made out of coral stone and coconut wood; the stone is used to build a platform and the wood is used for the superstructure. As experienced boat builders the Maldivians were able to build wooden houses without nails and make very tight joints. Ibn Battuta visited the islands twice in 1343 and 1346 and gave an account of the construction of houses. The house was built around a hall which opened on to the reception room, known as the malem, where the owner of the house would receive his male friends. At the back of the malem was another door which opened on to the rest of the house forbidden to guests.

There are many mosques on the islands; at present Male has thirty-three including the main mosque known as the Hukuru Meskit (Great Mosque). The standard mosque plan which seems to have remained the same since the seventeenth century consists of a stone building raised on a rectangular platform with an entrance at the east end and a rectangular recess at the west end. Near the entrance is a well set within a paved area with a path leading to the mosque entrance to keep feet clean after washing. Many of the mosques are built of stone although some are built out of wood like the houses. Each mosque is surrounded by a graveyard on three sides with tombstones made of finely dressed coral blocks (rounded stones represent women and pointed stones represent men). In general Maldivian mosques do not have mihrabs although they are oriented towards Mecca and have a square recess at the qibla end. Minarets are also unusual although the Hukuru Meskit has a thick cylindrical tower which functions as a minaret.

See also: coral

Further reading:

Mali

Islamic West African empire which flourished during the thirteenth and fourteenth centuries.

The date of the first emergence of the kingdom of Mali is not known although there are references to it as early as the ninth century. However, it was not until the thirteenth century that the kingdom achieved the status of empire through the conquest of a number of rival states. The medieval empire of Mali was formed out of the unification of two distinct Manding groups, an established northern group and a more recent southern group. The unification was achieved by the famous Mali hero Sundiata who defeated Sumaguru Kante, lord of Susu in 1234 and then went on to conquer Ghana, Gangaran and the gold-producing area of Bambuko. The ruling clan, from which the king was selected, was the Keita clan of the northern group which traced its ancestry back to Bilal, the first black follower of the prophet. The empire had two distinct capitals: Kangaba, the religious capital, and Niani, capital of the Keita clan and birthplace of Sundiata. Although some branches of the Mali dynasty were Muslim fairly early on, it was not until the thirteenth century that the kings were Muslim.

After Sundiata the most famous king of Mali was Mansa Musa who made a legendary pilgrimage to Mecca in 1324–5. Although previous kings of Mali had made the pilgrimage to Mecca the journey of Mansa Musa made a particularly big impression because he dispersed large quantities of gold on the way. The amount of gold given away was so large that a contemporary account said that the value of gold in Egypt depreciated considerably after his arrival. In consequence of this the fame of Mansa Musa and Mali spread all over the Islamic world and beyond, so that Mali even appeared on contemporary European maps for the first time. When Mansa Musa returned to Mali he was accompanied by several North African travellers amongst whom was Abu Ishaq al-Saheli a poet from Andalusia who is credited with the introduction of a new style into West African architecture.

Mansa Musa was succeeded by Maghan I (1337–41) about whom little is known except that he had acted as regent for Mansa Musa during his absence on pilgrimage. In 1341 Maghan was succeeded by Mansa Musa's brother Sulayman who reorganized the empire and financial system in order to recover from the excessive expenditure of his brother. Sulayman was the ruler at the time of Ibn Battuta's visit in 1355 so that there is quite a detailed description of his rule including the king's friendly relations with the Marinid sultans of Morocco. Ibn Khaldun traced the careers of the next
five kings until the beginning of the fifteenth century, when the kingdom had been seriously weakened by civil wars and was no longer in a position to control all its dependencies which gradually were lost to rival kingdoms. One of the most formidable of these rivals was the Songhay kingdom of Gao or Kawkaw based on the banks of the Niger east of Mali. The arrival of the Portuguese during the fifteenth century introduced another new factor into the politics of the region. The ruler of Mali sought the assistance of these newcomers to fight off African rivals but they were unable to prevent the continuing disintegration of Malian power. In the 1590s the Moroccans occupied Djenne and the rulers of Mali were unable to retake the town. However, the greatly reduced kingdom of Mali continued to survive until 1670 when it was finally destroyed.

Despite its fame there are few architectural remains of the empire of Mali and one is forced to rely mostly on contemporary Arabic descriptions and rather complex oral traditions. At the spiritual capital of Kangaba there is little that remains from the medieval period with the exception of the giant linke (baobab) tree which marks the ancestral centre of the Mali Empire. There are several descriptions of the political capital at Niani, one of the best is that of the fourteenth-century writer al-Umari.

[The capital] extends in length and breadth to a distance of approximately one barid (postal stage). It is not surrounded by a wall and most of it is scattered . . . . The town is surrounded on four sides
by the “Nile”.... The buildings of this town are made of iwad or clay like the walls of the gardens of Damascus. This consists of building two thirds of a cubit (approximately 30 cm) in clay, then leaving it to dry, then building above it in the same way... and so on until it is complete. The roofs are of wood and reeds and are generally domed or conical, in the form of cupolas of camelbacks, similar to the arch-shaped openings of vaults.'

Ibn Battuta’s description of 1353 is not so full although he does indicate that he reached the city by boat and that it had a separate quarter for white merchants. He then describes the king’s palace in some detail, in particular the audience hall which may be the same as that built by Abu Ishaq al-Saheli a decade or two earlier. The audience hall is contained within the palace and consists of a square domed chamber with triple-arched windows in each side. The windows are filled with wooden lattice work or grilles covered in silver and gold leaf (mashrabiyyat). Ibn Khaldun probably describing the same building notes that it was ‘solidly built and faced with plaster; because such buildings are unknown in his [the sultan’s] country’. Obvious parallels for this building can be found in the architecture of fourteenth-century North Africa and Spain (compare for example the Salón del Trono in the Alhambra). Next to the palace was a large open area used as a mosque or place of prayer.

The location of Mali’s capital is unknown although it may be the site of Niani-en-Sankrani in Guinea occupied between the sixth and seventeenth centuries. Archaeological work at the site has revealed a large complex with a fortified royal compound, several residential areas, a metal-working centre and many cemeteries. A possible mosque site and Muslim cemetery have been identified near the royal complex which consists of a large square courtyard (20 m per side) and a smaller circular structure. The residential structures at the site consist of roundhouses built of mud with stone foundations.

See also: Djenne, Manding, West Africa

Further reading:
influenced by other styles, in particular Italian and Andalusian architecture.

As with Ayyubid architecture there is a significant difference between Syrian and Egyptian Mamluk architecture, which can be explained by the availability of materials and differing traditions of building. In Egypt brick remained an important material of construction up until the fifteenth century, whereas in Syria it was seldom used. Other differences can be detected in decorative details such as the type of arch used in muqarnas moldings (in Egypt they are angular points whereas in Syria they have a rounded profile). Another factor which created different styles was Cairo’s position as capital city which meant that its buildings tended to be grander and more highly decorated than those of Syria. Jerusalem is interesting in this respect as its position midway between Damascus and Cairo made it susceptible to influences from both Syria and Egypt.

There are, however, several features which are characteristic of buildings throughout the area under Mamluk control. These can be considered under three headings: surface decoration, layout and planning, and structural elements.

Surface Decoration

The most characteristic feature of Mamluk architecture (and art in general) is the use of heraldic blazons. These are usually round discs divided into three fields with various emblems (e.g. cup, horn, disc, etc.) set into the middle. Each sultan and group of Mamluks had their own blazon which would be applied to any objects belonging to the group including buildings. As well as providing dating evidence these blazons give a useful insight into how the Mamluk regime operated. Another related decoration employed on buildings was monumental calligraphy in Naskhi script, this would usually state the name and rank of a building’s founder.

The usual surface for both blazons and calligraphy is ashlar masonry, although plaster and wood are also sometimes used. Other decorative motifs employed are geometric and floral patterns which are often interlaced. Ceramic tile decoration is rare, although coloured glass mosaics and inlaid marble are occasionally used for mihrabs and other places of special importance. One decorative feature to spread from Syria to Egypt is the use of ablaq (alternating layers of different colours, or shades of masonry); this was used in Syria in Ayyubid times but is not found in Egypt until 1300 (it is possible that this idea may have Italian origins). Mashrabiyya screens of turned wood were also used for interiors.

Structural Elements

In addition to surface decoration many structural elements were developed into decorative features. Openings, in particular doorways, became subjects for elaboration and frequently consisted of a monumental frame or panel and a recessed niche for the door covered with a muqarnas vault. Another example of such elaboration is the joggled voussoir where the stones of an arch were cut so as to interlock and provide increased strength to the arch. Usually the effect is enhanced by using ablaq techniques. Sometimes this becomes purely surface decoration when the actual voussoirs are not intercut and there is simply an interlocking façade. Another decorative effect created with openings was the horsehoe arch which was introduced during this period.

Buildings were generally roofed with cross vaults although sometimes plain barrel vaults were used. In Jerusalem an elaborate form of vault called the folded cross vault was developed from Ayyubid military architecture. This is basically a cross vault with a large circular hole in the roof over which a wooden clerestory or other feature could be added. Domes were common in buildings of this period and could be made from a variety of materials including baked brick, wood and stone. Wooden domes were often used in houses and palaces because they were lighter and easier to build, although mausoleums tended to be covered with brick or stone domes. In fourteenth-century Cairo, masonry domes carved with arabesque designs became a fashionable method of covering tombs.

Layout and Planning

The growth of cities during the Mamluk period meant that most types of building, even palaces, were located within the fabric of a city. The result of this was that buildings were often built on an irregular-shaped plot because of the shortage of space. Many Mamluk buildings which
Mamluks

Mamluks

Doorway of Serai al-Takiyya. Mamluk period, Jerusalem (after Burgoyne)

seem to be square and symmetrical are built on irregular ground plans. The architects were able to make the buildings appear square by a variety of techniques such as horizontal lines (ablaq) and controlled access (passageways) which distort perspective. A related problem was that narrow streets tend to detract from the visual impact of a building façade. This was overcome by use of recessed entrances, domes, and projecting corners which have a cumulative effect of a staggered façade which can be viewed from the side.

The military nature of Mamluk rule affected society in many ways although it did not have much effect on architecture. The main reason for
this was that so many fortresses had been built by the Ayyubids and Crusaders that there was generally no need to build new castles when existing fortifications could be repaired. Also with the advance of the Mongols the nature of warfare changed so that speed and communications became more important than the defence and capture of strongholds. As a consequence of this the Mamluks invested instead in an efficient system of communication based on small forts, fire beacons and pigeon lofts. This system was kept separate from the usual trade network of khan and caravanserais and was regarded as part of the Mamluks’ military organization.

Building Types

Some of the most distinctive buildings of the Mamluk period are the many religious foundations. Most cities already had Friday mosques so that these were seldom built during this period. The Great Mosque in Tripoli is one exception to this and was built soon after the city was taken from the Crusaders, it has a traditional plan based around a central courtyard with single arcades on three sides and a double arcade on the qibla side. More typical of the period are the many religious institutions such as madrassas, zawiyas and khanqas built to counter the spread of Shi'ism. In Cairo these were often built to a cruciform plan which developed from the four-iwan madrasa where each iwan represents one of the schools of law. Many of these buildings also had some political purpose, thus they were often built as memorials to a particular Sultan or were used as centres for training officials. During this period it was common for the tomb of the founder to be incorporated into the building, this applied to mosques, madrassas and even hospitals.

Madrassas became a common feature in most cities and were used to train administrators. Jerusalem in particular seems to have been developed as a training ground for Mamluk clergy and officials and the area around the Haram was extensively developed (Mecca was too far from Cairo to be developed in this way and in any case was not directly under Mamluk control).

The stability provided by the Mamluk regime was a stimulus to trade and numerous suqs, khan and caravanserais can be dated to this period. The Suq al-Qattanin (Cotton Market) in Jerusalem is one of the best preserved Mamluk city markets. It was built on the orders of Sultan al-Nasir Muhammad in 1336 as a huge complex with over fifty shop units, two bath houses and a khan. Each shop is a small cross-vaulted room opening onto the covered street with another room (for storage or accommodation) located above with a separate access. Although the highest concentration of suqs and khan was in the cities there was also an extensive network of roadside khan and caravanserais. Some of these buildings were quite large as they were not restricted by the competition for space evident in city buildings. Khan Yunis in Ghaza is a huge complex built in 1387 on the main road between Egypt and Syria. The plan comprises a huge central courtyard (perhaps with a building in the centre) with accommodation and storage units around the sides and a domed mosque with a minaret next to the gateway.

See also: ablaq, joggled voussoirs, mashrabiyya

Further reading:

There are several books devoted to Mamluk cities; the most useful of these are:

Other useful works are:
J. Sauvaget, La Poste aux Chevaux dans l’empire des Mamlouks, Paris 1941.

Manda

Island trading port on the north Kenya coast in East Africa.

This is the largest early Islamic complex in the Lamu archipelago and one of the largest on the coast. The earliest occupation seems to have been in the mid-eighth century and to have continued until the sixteenth when it was noted by the Portuguese.

The earliest structures at the site were made with timber posts and walls of wattle and daub. During the tenth century the settlement expanded on to an area of land reclaimed from the sea by sea walls built from huge coral blocks. Sometime in the tenth century the wooden structures were replaced with stone buildings made out of reef.
mandal

Mughal term for a pavilion or house.

manding (Mande)

West African language group which formed the ruling class of the empire of Mali, now used to describe one of the dominant urban architectural styles of the region.

The current distribution of the Manding peoples covers an area including southern Mali, Burkina Faso and the Ivory Coast. Prominent cities with Manding architecture include Mopti, Djenné, Ségou, Bobo Dioulasso, Wa and Kong.

Characteristic features of Manding architecture are the use of mud brick, conical towers with projecting toron, and elaborate decorated entrance façades. Mud is the traditional building material of the area and is used in several forms, either as spherical hand-rolled lumps or as rectangular or cylindrical bricks. Conical towers may either occur as buttresses or as towers marking the position of a mihrab in a mosque. It is thought that the conical towers derive from the pre-Islamic ancestral pillars of the region whilst the use of toron traditionally suggests continual rebirth. Whilst the façades of mosques and palaces are often decorated with earthen pillars and projecting toron, the decoration of house façades is normally restricted to the entrances. Some of the most elaborate entrance façades can be found at Djenné in Mali which is usually considered the birthplace of the Manding style. A traditional façade will consist of three levels contained within two parallel buttresses. The first two levels correspond to the two storeys inside the house whilst the third level corresponds to the roof level parapet. The first level consists of the doorway covered by a steep sloping sill above which is the second level containing a rectangular panel with a square window in the middle. The third level consists of a line of projecting toron made of split palm, a panel containing four pillared niches and four pointed crenellations on the top. See also: Djenné, Mali, Sudan, West Africa

Further reading:

manzil

Arabic term for house or way station (literally 'a place to stay').

maq‘ad

Projecting balcony overlooking a courtyard in Egyptian houses.

maqbara

Graveyard.

maqsura

Screen which encloses the area of the mihrab and minbar in early mosques.

The origin of the screens was to protect the caliph from assassination attempts during praying. There also may have been some spiritual connotation similar to the chancel screen in churches. They were often wooden screens decorated with carvings or interlocking turned pieces of wood (mashrabiyya).

Marakesh

Southern capital of Morocco.

Marakesh is on a wide plain located 40 km from the High Atlas. It was founded by the Almoravid ruler Yusuf ibn Tashfin in 1062, although there are few buildings which have survived from this period. The best surviving example is the dome of the Almoravid palace; built of baked brick covered with plaster, the dome rests on a square brick base. The area immediately below the drum is pierced with twenty-four
multi-foil niches, whilst the dome itself is decorated with interlaced arches in relief and zig-zag patterns on the top. Inside the dome has an entirely different configuration and consists of an eight-pointed star rising to a muqarnas dome.

Remains from the Almohad period (twelfth to thirteenth century) include the Kutubiyya Mosque, the Kasba Mosque and the Bab Agnaou. The Kutubiyya Mosque is built in the traditional Almohad style with the lateral arcades of the courtyard forming an integral part of the prayer hall. The mosque has a minaret more than 60 m high, decorated with windows and blind niches with interlaced arches; at the top there is a small kiosk covered with a fluted dome. The parapet is decorated with ceramic tile inlays and stepped merlons. The minaret is ascended by a ramp which is built around a hollow square core. The core contains a series of six vaulted rooms, one on each storey and each with a different form of vault (the design is similar to the Giralda tower in Seville). The Kasba Mosque is a square building containing five courtyards, four subsidiary and one central. The minaret is decorated in a similar style to the Kutubiyya and inside there is a staircase built around a central core. The Bab Agnaou is part of the massive Almohad fortifications which stretch around the city for a distance of over 10 km. The gateway is built of brick and comprises a wide opening covered with a pointed horseshoe arch. The inner arch is framed by a magnificent round horseshoe arch decorated with a bold interlaced pattern. The intrados of the arch is decorated with bold stylized flora, and the whole is enclosed within a giant rectangular frame with a Kufic inscription.

The city has three madrassas the oldest of which is the Bin Yusuf Madrassa built as a mosque in the twelfth century and converted in the sixteenth. The town also contains the tombs of various Moroccan rulers, including that of Yusuf ibn Tashfin founder of the Almoravid dynasty, and the tomb of the seven saints which is still the object of an annual pilgrimage.

There are several palaces within the city, the oldest of which is the Dar al Makhzan founded by the Almohads but considerably altered in the sixteenth century. The city also contains historic gardens, the most important being the Mamounia, originally laid out in the seventeenth century.

See also: Morocco

Mardin

City in south-east Anatolia (Turkey) associated with the Artukid dynasty during the medieval period.

Mardin is located in a strategic position on a rocky spur overlooking the crossroads between east–west and north–south routes. The city is dominated by the fortress which has stood on this site since Roman times. During the Islamic period the castle has been extensively repaired several times, first by the Hamdanids in the ninth century, later by the Artuksids and more recently by the Ottomans. From 1104 to 1408 the city became the principal stronghold of the Artuksids who resisted successive attacks by the Ayyubids, the Mongols and the Timurids.

The buildings of the town are terraced into the hillside and all have magnificent views over the Mesopotamian plain. The main building stone is brilliant white limestone which provides a dazzling contrast to the grey-black basalt which characterizes the surrounding region.

Several important buildings survive from the Artukid period including the Great Mosque, a hammam and several madrassas. The prayer hall of the Great Mosque is a multi-domed unit in the usual Artukid style whilst the minaret is a tall cylindrical tower with elaborately carved carouches. One of the most striking buildings in the city is the Kasim Pasha Madrassa built in 1445 by the Aq-qoyunulu ruler Kasim b. Jahangir. There are also several important churches and monasteries in the region.

See also: Turkey

maristan

Hospital.

marqad

Tombstone.

mashhad

Shrine, or commemorative mosque.

mashrabiyya

Wooden grille or grate used to cover windows or balconies. The word is derived from the niches used to store vessels of drinking water. The grilles are traditionally made from short lengths of turned wood joined together through polygonal blocks so that
they form large areas of lattice-like patterns. The patterns formed by the lattice work vary from place to place although commonly the main lines of the grille are at a 45 degree angle. Mashrabiyya can also be made of metalwork although this is more rare and was usually reserved for the houses of the very rich or public buildings.

**masjid**
Mosque.

**mastaba**
Bench or platform.

**mathara**
Place of ritual ablution.

**mazar**
Mausoleum or shrine.

---

**Mecca (Makka)**

*The most sacred city of Islam located in western Saudi Arabia.*

The city of Mecca lies about 70 km inland from the Red Sea port of Jeddah. It is built in a hollow in the mountains known as Batn Mecca. The oldest part of the city contains the Holy Mosque and the Ka'ba and is known as al-Batha. Rainfall is extremely scarce and unpredictable; in ancient times water was supplied by a series of wells, the most important of which is the well of Zamzam within the holy precinct. Despite the aridity of the area the city's position makes it prone to flash floods which are diverted by a series of dams and channels which deflect water away from the city centre.

**History**

In pre-Islamic times Mecca was known as a sacred site and was referred to as Maccorba in the time of Ptolemy. The first permanent settlements on the site were made in the fifth century CE by the Quraysh tribe. By the sixth century the city appears to have become a great trading centre profiting from the caravan trade between the Mediterranean and the Indian Ocean. In 570 the prophet Muhammad was born in Mecca, by the year 610 he had begun to preach the message revealed to him as Quran. Muhammad's teaching annoyed the prominent merchants of the town so that in 622 he was compelled to leave for the city of Medina. (This event is known as the Hejira or migration and is the starting point for the Muslim calendar.) In Medina Muhammad attracted a large following who were able to attack the Meccan caravans. By 630 Muhammad and his followers (the Muslims) had defeated Mecca and converted most of its inhabitants to Islam. In the following years Medina became capital of the new Islamic state whilst Mecca retained its position as religious centre and centre of pilgrimage.

For a brief period between 680 and 692 Mecca became the capital of a rival caliphate established by Abd Allah Ibn Zubayr who controlled most of Arabia and Iraq. During the Abbasid period huge sums of money were spent on developing the city. In the tenth century the decline of the caliphate allowed the Qarmathians (a radical anti-establishment group) to sack Mecca and carry off the Black Stone to their base in Bahrain. The Black Stone
Mecca (Makka)

was later returned and Mecca continued to develop as a religious centre.

From the late tenth century to the beginning of the nineteenth century Mecca was ruled by the Sharifs of Mecca who attempted to remain independent of the dominant powers of the time. In 1929 Mecca became part of the Kingdom of Saudi Arabia.

Architecture

The most important building in Mecca is the Holy Mosque of Mecca which contains the Ka'ba, a tall box-like structure which stands in a courtyard in the centre of the mosque. The Ka'ba is pre-Islamic in origin although at the beginning of the Islamic period it became established as the main object of pilgrimages to Mecca.

The area around the Ka'ba was first enclosed by a wall in 638 in order to create an open space for the tawaf (circumambulation). In 646 the area was enlarged with a new enclosure wall with arcades opening on to the courtyard. In 684 under Abd Allah Ibn Zubayr the mosque was further enlarged and decorated with marble and mosaic decoration. In 709 the Umayyad caliph al-Walid covered the arcades of the mosque with a teak roof resting on marble columns. A further enlargement was carried out by the Abbasid caliph al-Mansur between 754 and 757, and it was at this time that the first minaret was built. For the next 700 years numerous modifications were carried out although no major alterations to the form of the building occurred until the Ottoman period in the sixteenth century. The best medieval description of the mosque is by Ibn Jubayr who visited it in 1183. He describes a roofed arcade around a central courtyard decorated with large merlons and stucco decoration.

Major renovations were carried out in 1564 under the direction of the Ottoman sultan Suleyman the Magnificent who replaced the flat roofs of the arcades with stone domes and rebuilt the minarets. The next major rebuilding took place in the twentieth century under Saudi rule and made the Holy Mosque of Mecca the largest mosque in the world. In its present form the mosque has seven minarets, two-storey arcades around the enlarged courtyard and a covered street (Masa) between the hills of al-Safa and al-Marwa (1920s).

Other features within the Holy Mosque include the well of Zamzam and the Maqam Ibrahim. According to Muslim tradition the well of Zamzam sprang up when Hajar (the wife of Ibrahim) was looking for water for her child Ishmael. In the ninth century the well was covered with a vaulted roof by the Abbasid caliph al-Mu'tassim. The form of the building was changed several times in the following centuries the most enduring of which was that built by the Ottomans in the seventeenth century. In addition to its function as a cover of the well the Maqam Zamzam also functioned as a base for Shafi theologians. Hanbali, Hanafi and Malaki theologians each had their own maqam within the courtyard which were also rebuilt at this time. In the 1950s all these maqams were removed by the Saudi authorities to make more space for the circumambulation of the Ka'ba. The Maqam of Zamzam was replaced by two underground ablutions rooms fed by the well of Zamzam. The Maqam Ibrahim contains a stone with two footprints which are thought to be those of Ibrahim. This building was restored by the Saudi authorities in the 1950s.

In its present form Mecca is predominantly a modern city although it does contain a few houses from the Ottoman period (eighteenth century or later). Traditional Meccan houses are generally tall (three to four storeys) with projecting wooden windows (mashrabiyya) and flat roofs enclosed by walls 2 m high. The extreme heat of the city in the summer (50 degrees celsius) means that the houses are equipped with airshafts which allow hot air to escape. Most of the houses in Mecca are dual purpose, serving as family homes and as pilgrim hostels during the season of the Hajj.

The main building materials used in Meccan houses are stone, brick and wood. Two types of stone are used, finely dressed stone and rubble stone. The dressed stone (sandstone or granite) is used for decorative panels around doorways and windows that often incorporate decorative niches. Rubble stone is used for load-bearing walls which are usually two stones wide and laid in rough courses of mud-based mortar. At regular intervals (between 50 and 70 cm) there are layers of wood (usually palm or mangrove) which improves the load-bearing capacity of the walls. The windows are made of hardwood (usually teak) and are highly decorated. Windows may be either flat panels with openings protected by screens or elaborated structures resting on carved brackets. Brick is used in
Eighteenth-century house in Mecca (after Uluemegin)
walls which enclose the terraces or roof gardens on the top of each house. The brick is locally made and laid in a decorative pattern which leaves holes for ventilation.

See also: Hajj routes, Ka’ba, Medina, Saudi Arabia

Further reading:

medina

Literally 'city'. This term is often used in North Africa to describe the older part of the city.

Medina (Madina al-Monawwara)

*Second most sacred city of Islam located in the Hijaz region of Saudi Arabia.*

The city of Medina stands in a fertile oasis 360 km north of Mecca and 160 km east of the Red Sea. In pre-Islamic times the city was known as Yathrib although by the early years of Islam it was also referred to as Medina. The original city of Medina comprised a series of small settlements dispersed over a wide plain. The spaces between the settlements were filled with fruit gardens, fields and date-palm groves. Each settlement was protected by a number of forts or towers which at the beginning of Islam are said to have numbered more than 200. At the time of Muhammad’s arrival in Medina (the first year of the Hejira) the town had a large Judaeo-Arabic population in addition to the pagan Arab population. The first Muslim converts in Medina were converted by Muhammad whilst they were on a pilgrimage to Mecca. In 622 Muslim pilgrims from Medina invited Muhammad to come to their city to escape the growing hostility of the Meccan hierarchy. With Muhammad’s arrival in Medina the city became the capital of an expanding Muslim Empire. After Muhammad’s death Abu Bakr was appointed as caliph and continued to rule from Medina as did his two successors Umar and Uthman. Under Ali the newly established town of Kufa replaced Medina as the capital. Medina remained in a secondary position under the Umayyads although they did develop it as a religious centre.

The first city wall was built around the centre of Medina in 974 in preparation for a Fatimid attack. In 1162 a larger area was enclosed by a wall with towers and gates erected by Nur al-Din Zangi. After the Ottoman conquest of the Hijaz in the sixteenth century the Ottoman sultan Suleyman the Magnificent enclosed the city in a new wall 12 m high made of granite and basalt blocks. Suleyman was also responsible for building an aqueduct which brought water into the city from the south. In the 1860s the Ottoman sultan Abd al-Aziz increased the height of the walls to 25 m. During the twentieth century the walls were gradually removed as they were thought to be of no further use.

The most important building in Medina is the Mosque of the Prophet Muhammad. When Muhammad arrived in 622 he was given a plot of land on which to build his house and prayer area (the first mosque). The mosque was a rectangular enclosure (35 by 30 m) with covered areas at the south and north ends. The house of Muhammad and his wives was built on the outside of the east wall. Originally Muhammad and his followers prayed towards Jerusalem but after a revelation the direction of prayer was changed to Mecca in the south. In 629 the mosque was extended on the north, south and west sides to form a square enclosure. In its earliest form the mosque had no mihrab although there was a wooden minbar of three steps which was used by the prophet for preaching the Quran. After his death Muhammad was buried in his house in the room of one of his wives. Subsequently the caliphs Abu Bakr and Umar were buried in the same place. During the reign of Umar the palm trunks were replaced with stone columns and a new roof of teak was added.

The first major rebuilding of the mosque was carried out during the reign of the Umayyad caliph al-Walid. Walid more than doubled the size of the mosque and incorporated the room contain-
The mosque of the Prophet, Medina; with tomb of Muhammad in lower right-hand corner (after Sauvaget)

ing the graves into the body of the mosque. To prevent any confusion with the Ka'ba in Mecca, the enclosure around the graves was of an irregular shape. Walid also added a mihrab and four minarets to the structure of the mosque and embellished the interior of the mosque with mosaic and marble
Medina (Madina al-Monawwara)

decoration. The mosque was further enlarged under the Abbasid caliphs in 781 by al-Mahdi and in 862 by al-Muawakkil. In 1256 the mosque suffered from a major fire which destroyed the roof, the Quran of Uthman and the minbar of the prophet. The mosque was rebuilt by the Egyptian Mamluk sultan Baybars who established a tradition of Mamluk restoration work on the mosque. In 1279 the Mamluk sultan Qala’un added a wooden dome over the tomb of the prophet. In 1467 this was replaced by a stone dome under the directions of Qayt Bay who also replaced the maqsuras.

The Ottoman conquest of the city in the sixteenth century introduced a new architectural style into the Medina Mosque. One of the first modifications was the mihrab Suleymani added by Suleyman the Magnificent. Later on in the sixteenth century the mosque was extended to the west and a new minaret was added. The present green dome over the tomb of the prophet was added in 1818 under the Ottoman sultan Mahmud II. In the 1920s the mosque became the responsibility of the Saudi rulers who undertook various repairs and restorations. In 1951 the Saudi government initiated the largest programme of expansion in the mosque's history making the total mosque area 22,955 m² square. In 1973 a huge new court was added on the west side of the mosque to cope with the increasing number of pilgrims.

Like Mecca, the city of Medina is mostly a modern concrete construction. By analogy with the Prophet's mosque it is known that in the early days of Islam the houses were built of mud brick with palm wood used for roofing and pillars. The advent of Islam brought new wealth to the city and may have encouraged the development of stone architecture. Certainly by the beginning of the Ottoman period stone was in use on a large enough scale to be employed for the city walls. The traditional house form in Mecca appears to have been a courtyard house three or four storeys high built out of granite or basalt. Water was relatively more plentiful than at Mecca and each house had its own well. According to reports, some of the houses had columned halls opening on to bathing pools.

Further reading:

Meknes

*Former capital of Morocco located on a high plateau between Fez and Rabat.*

The city of Meknes was founded by the Almoravids in the eleventh century, before that period the site was occupied by a cluster of small villages. The city suffered from the Almohad conquest in 1150, although it was later restored and in the thirteenth century was provided with an aqueduct, bridges and a madrassa. The city reached its peak under the Sa’adians who adopted it as their capital in the seventeenth century. Under the sultan Moulay Ismail the city was enclosed by a triple wall with a perimeter of more than 30 km pierced by twenty gates. To the south of the city is a huge separate enclosure reserved for the sultan which contains two palaces, one for the sultan and one for his wives and 500 concubines. The palaces were built as a series of gardens connected by pavilions supported on marble columns. There are a total of forty-five separate pavilions within the grounds, as well as four mosques and twenty domed tombs containing the graves of sultans and their families. To support the palace there was a huge granary, storehouse, stables, an army camp and palatial residences for the officials.

See also: Morocco

Mérida

*City in south-west Spain noted for its Roman ruins and early Islamic fortress.*

The fortress is located next to the river Guadiana and the famous Roman bridge. It is probably a continuation of an older structure, although it was substantially altered to its present form in 875 according to an inscription found in the fortress (now in the local museum). It is similar to sixth- and seventh-century Byzantine forts of North Africa although the arches above the gateways are horseshoe-shaped indicating their Islamic provenance.

The fortress is essentially a large square enclo-
Merv (also Marw or Marv)

Ancient city in the Central Asian republic of Turkmenistan. Also called Merv al-Shahijan or Royal Merv to distinguish it from the city of the same name in modern Afghanistan.

The city is located in the Merv oasis fed by the Murghab river. During the early Islamic period it functioned as one of the chief cities of Khurassan and under the Abbasids was capital of the east. During the eighth century the centre of the town gradually moved from its old Sassanian site of Gyaur Kala to a new site which is now known as Sultan Kala. In 1070 the Seljuk sultan Malikshah rebuilt the city wall which remains as one of the finest examples of medieval fortification. Other remains from the Seljuk period include the mausoleum of Sultan Sanjar which is a domed structure standing on a square base measuring 27 m per side. The Mongol invasions caused severe damage.
to the city which never fully recovered. Under the Timurid sultan Shah Rukh attempts were made to revive the fortunes of the city. The city dam was rebuilt to restore the irrigation system but this was only partially successful. Also the city of this period was built on a different site known as Abd Allah Khan Kalla.

**Further reading:**
E. O'Donovan, *The Merv Oasis and Adventures East of the Caspian During the Years 1879–81*, London 1882.

**mescit**
Turkish term for a small mosque without a minbar, equivalent to the Arabic term masjid.

**mihrab**
Niche or marker used to indicate the direction of prayer usually in a mosque.

A mihrab is usually a niche set into the middle of the qibla wall of a building in order to indicate the direction of Mecca. The earliest mosques do not appear to have had mihars and instead the whole qibla wall was used to indicate the direction of Mecca. Sometimes a painted mark or a tree stump would be used to reinforce the direction. In the cave beneath the rock in the Dome of the Rock there is a marble plaque with a blind niche carved into it which, if contemporary with the rest of the structure, may be dated to 692 making it the oldest surviving mihrab. The first concave mihrab appears to have been inserted into the Prophet's Mosque at Medina during some restorations carried out by the Umayyad caliph al-Walid I in 706. Excavations at Wasit in Iraq have confirmed this date for the introduction of the first concave mihrab where there are two superimposed mosques; the lower one datable to the seventh century has no mihrab whilst the upper mosque has a concave mihrab.
In addition to its function as a directional indicator it is thought that the first mihrab niches had a ceremonial or ritual function associated with symbols of royalty. Certainly the mihrab became a focus for architectural decoration and was often embellished with the latest artistic techniques (e.g. stucco, polychrome glazed tiles, carved woodwork, glass mosaic, marble inlay). The designs were usually epigraphic and often geometric or vegetal, but never with any suggestion of figurative imagery.

The area in front of the mihrab was also emphasized, either by a maqsura immediately in front of the mihrab or a raised aisle leading from the courtyard to the niche. In later mosques, especially in Bengal, multiple mihrabs are set into the qibla wall, thus diffusing any hierarchy of sanctity.

There is also an early association of mihrab and minbar, with the minbar placed next to the mihrab possibly to lend spiritual authority to the sermon. In some areas such as East Africa the mihrab is linked to a recessed minbar niche so that the imam climbs the minbar by entering a door in the side of the mihrab. This arrangement, however, is extremely unusual as the mihrab should be kept free of any mystical connotations.

minar
Islamic term for architect.

minaret
Tower-like structure usually associated with mosques or other religious buildings.

Although the mosques of Damascus, Fustat and Medina had towers during the Umayyad period it is now generally agreed that the minaret was introduced during the Abbasid period (i.e. after 750 CE). Six mosques dated to the early ninth
minaret

century all have a single tower or minaret attached to the wall opposite the mihrab. The purpose of the minaret in these mosques was to demonstrate the power of Abbasid religious authority. Those opposed to Abbasid power would not adopt this symbol of conformity, thus Fatimid mosques did not have towers. Although later minarets appear to have become synonymous with Islamic architecture they have never been entirely universal. In parts of Iran, East Africa, Arabia and much of the Far East many mosques were built without them. In such places the call to prayer is either made from the courtyard of the mosque or from the roof.

The form of minarets differs throughout the Islamic world. A brief summary of the form in each area is required.

Egypt

In post-Fatimid Egypt minarets developed into a complex and distinctive form. Each tower is composed of three distinct zones: a square section at the bottom, an octagonal middle section and a dome on the top. The zone of transition between each section is covered with a band of muqarnas decoration. In earlier structures the square shaft was tall and the dome was ornate, later the central octagonal section became longer whilst the square shaft was reduced to a square socle at the base. During the fourteenth century the dome at the top was modified into the form of a stone bulb.

Another feature of the post-Fatimid period (after the twelfth century CE) is the increase in the number of buildings which had minarets. Whereas under the Abbasids minarets had been restricted to congregational mosques, during the Mamluk period all kinds of buildings could have minarets including smaller mosques, tombs, khanqas and madrassas.

Syria

The traditional Syrian minaret consists of a square plan tower built of stone. The form is thought to derive from the traditional Syrian church tower of the Byzantine period. The tower standing opposite the mihrab in the Great Mosque of Damascus is the oldest minaret in Syria, dating from the early ninth century, although the upper part may have been rebuilt several times. Another early Syrian minaret is that of the Great Mosque at Harran (now in modern Turkey) built sometime between the eighth and eleventh centuries. It is built of large dressed ashlar blocks with a cyma reversa moulding at 16 m above ground level. Generally during the Ottoman period the square tower was abandoned in favour of the octagonal or cylindrical minaret.

North Africa and Spain

North Africa and Spain share the square tower form with Syria and are thought to derive from the same source — Syrian church towers. In time this design was adapted by Christians in Spain for use as church bell towers.

The earliest minaret in North Africa is that of the Great Mosque of Qayrawan built in 836. This massive tower with battered walls is over 31 m high with a square base 10.6 m per side. The lower 4 m are built of large re-used stone blocks whilst the upper sections are built of smaller long slabs which resemble baked bricks. The smaller minaret at Sfax also dated to the ninth century was probably modelled on that at Qayrawan.

Several early minarets survive in Spain including that belonging to the congregational mosque in Seville and that of the mosque at Medina al-Zahra. However, the most impressive early minaret is that of Abd al-Rahman of Cordoba completed in 968 and now encased within the church tower. The minaret is 8.5 m square at the base, 47 m high and contains two independent staircases. Related minarets are those of the Qarawiyyin Mosque in Fez (built 955) and the mosque of the Andalusians at Fez (built 956) although both are smaller than that at Cordoba.

The Almoravids and early Almohads followed Fatimid precedent in not building minarets. The earliest Almohad tower is at the mosque of Timnal which is unusual both for its positioning (behind the mihrab) and its relatively short height of 15 m. It appears that the architect sought to make it appear tall from outside without it being visible from the courtyard of the mosque. However, later Almohad minarets were tall, impressive structures such as that of the Kutubiyya Mosque which is 67 m tall and 12.5 m per side at the base. The exterior is decorated with panels of decorative motifs around paired sets of windows. The top is decorated with sconces and three gilded copper balls.

In the same tradition are the minarets of the
Great Mosque of Seville (built 1184), the unfinished minaret of the mosque of Hassan at Rabat and the minaret of the Qasaba Mosque in Marrakesh.

**Iran**

The oldest known minaret in Iran is that of the congregational mosque at Siraf dated to the ninth century. It is known that many minarets were built during the tenth century although the only the survivors are the minarets at Fahraj and Nayin. The minaret at Fahraj has a tapering cylindrical form and a projecting balcony. The minaret attached to the Friday mosque at Nayin consists of a tall tapering brick shaft, the lower part of which is octagonal in plan whilst the upper part is cylindrical. The shaft is decorated with a simple chevron pattern using diagonally laid bricks. A similarly ancient minaret is attached to the Tarik-Khana in Damghan built in 1026. Like the minaret at Nayin it is decorated with bricks bonded in different ways, although here the decoration is more complex containing seven bands of diamond patterns.

The cylindrical minaret form, which was developed in Iran, spread over a huge area with the Seljuk conquests of Syria, Anatolia, Iraq, Afghanistan and India. Some of the structures were severe plain brick shafts whilst others were highly decorated with complex brick patterns. A variation of the standard form was the introduction of various forms of cylindrical fluting. The Jar Kurgan minaret has semi-circular fluting whilst the minaret of Ghazna attributed to Masud II has angular flutes. Minarets of this type may be interpreted as victory towers rather than as religious towers in the strict sense. Probably the most surprising example of this type of tower is the Jam minaret. This 60 m high tower stands in a secluded valley in Afghanistan and is decorated with monumental calligraphy celebrating the victory of the Ghurid sultan. It is significant that the Qutb Minar in Delhi was built by a Turkish general who served in the army of the Ghurid sultan who built the Jam minaret.

**Iraq**

Probably the earliest standing minaret in Iraq is the minar al-Mujida located in the desert northwest of Kufa. This has a cylindrical shaft 7 m high on a square base with a spiral staircase inside. The minaret structure is not associated with any mosque but is dated to the Umayyad period (before 750 CE) on the basis of its plain brick decoration and association with nearby structures.

The most famous minarets in Iraq are the giant spiral minarets of Samarra both of which are dated to the ninth century. The larger of these, known as the Malwiyya, stands away from the rear of the Great Mosque at Samarra. The other minaret stands in the same position near the Abu Dulaf Mosque. Although it is generally believed that the form of these minarets is derived from the ziggurat (e.g. Khorsabad) their relationship to the topography of Samarra is often not considered. As the Great Mosque at Samarra was the largest mosque in the world it would have needed a correspondingly tall minaret. To have built a cylindrical minaret 50 m high would have been both impractical and visually unimpressive within the vast horizontal spaces of Samarra. However, a giant spiral minaret contains enough mass in relation to its height to make a significant visual impact.

The spiral minarets of Samarra were never copied, except in the mosque of Ibn Tulun in Egypt which copies many other features from Samarra. In the Ibn Tulun minaret the top part has a small spiral ramp reminiscent of the minarets of Samarra.

Later minarets in Iraq are versions of Iranian Seljuk minarets although Iraq seems to have developed its own local schools. Thus, the minaret of the Friday mosque in Mosul (known locally as al-Hadba) is decorated with complex geometric patterns and seems to be related to other minarets in the vicinity such as Mardin, Sinjar and Irbil.

**India**

Minarets were never universally adopted in India and where they were built they were not necessarily used for the call to prayer.

The most famous minaret in India is the Qutb Minar attached to the Kuwwat al-Islam Mosque in Delhi which was begun in 1189. This tower has four storeys marked by balconies supported on bands of muqarnas corbels. The upper storey was rebuilt in 1368. An interesting feature is the alternation of circular and angular flutes which relates it to similar minarets of Jam and Ghazna in Afghanistan.

With the exception of Gujarat and Burhanpur in
Khandesh functional minarets attached to mosques did not become popular until the Mughal period. In Gujarat and Burhanpur minarets were always built in pairs flanking the central iwan as in Iran. These minarets were cylindrical constructions with internal staircases with intermediate balconies leading to conical roofs. Elsewhere before the Mughal period solid tower-like buttresses were attached to the corners of mosques.

The first minarets of the Mughal period are the four seventeenth-century towers flanking Akbar’s tomb at Sikandara. These are tapering white marble constructions with two intermediate balconies and an open canopy on top. The lower stages of these towers are fluted. Later Mughal minarets copied this form with some variation in the decoration of the shaft.

**Ottoman Minarets**

The earliest minarets in Anatolia were built by the Seljuks. Often these were pairs of towers with a stone base and a brick shaft. Some mosques however were built with single minarets such as the Alaeddin Mosque at Konya.

The combination of tall pointed minarets and large lead covered domes gives Ottoman architecture its distinctive form. In most mosques in the Ottoman Empire this was achieved with a single minaret attached to the corner of a mosque. However, in the major cities of the empire mosques were built with two, four or even six minarets. At some point it seems to have been established that only a reigning sultan could erect more than one minaret per mosque. A characteristic feature of these minarets is the use of multiple balconies which was first developed in the Uç Şerefeli Mosque in Edirne which was built in 1447.

**Arabia**

Outside Mecca and Medina minarets were fairly rare before the nineteenth century. The few minarets that do survive are either square or circular in plan often with a slightly tapering profile. In southern Yemen the larger mosques occasionally have large minarets to distinguish them from the tall tower houses. In northern Yemen minarets are rare outside the capital San’a. The minarets of San’a are similar to those of medieval Cairo although the external decoration is characteristically Yemeni.

**East Africa**

With the exception of the thirteenth-century mosque of Fakhr al-Din in Mogadishu (Somalia) minarets dating from before the nineteenth century are rare. Nineteenth-century minarets include those of Mombasa and the Shella minaret on Lamu island.

One of the most curious structures in the area is the Mbraaki pillar dated to circa 1700. This 14 m-high structure has no means of access to the interior although it is believed to be hollow. At the foot of the minaret a mosque was excavated which is believed to be of the same period making this the oldest minaret in Kenya.

**West Africa**

The earliest minarets are those of the ninth- to thirteenth-century settlements at Koumbi Saleh and Tegadoust. Excavated remains indicate that these had large square minarets. During the thirteenth and fourteenth centuries the characteristic West African minaret developed. These minarets have a massive square structure with tapering sides and projecting wooden beams (torons). One of the most famous minarets is that of the Kano Great Mosque (destroyed 1937) which was over 20 m high on a square base with battered sides. The Fulani reformers of the nineteenth century objected to the use of minarets and replaced many of them with staircase minarets.

**Far East**

Minarets are not a traditional feature of Far Eastern Islamic architecture and have only recently been introduced on a large scale. In western China minarets usually take the form of squat pagoda-like structures, with a few exceptions such as the minaret of the Huaisheng Mosque in Guangzhou which is a tall tapering cylinder 20 m high.

See also: East Africa, Cairo, India, Iran, Iraq, Mosque, Syria, West Africa.

**Further reading:**

The minbar is one of the earliest architectural features to be identified with Islam. The earliest historical reference to a minbar states that in 629 the Prophet made a minbar from which he used to preach to the people. This minbar consisted of two steps and a seat (makā'ad) and resembled a throne. After the death of the Prophet the minbar was used by caliphs and governors as a symbol of authority. This continued under the last few years of Umayyad rule until in 750 CE the caliph Mu‘awiya ordered that all the mosques of Egypt be provided with minbars. This process was repeated in other Islamic lands so that by the beginning of the Abbasid period the minbar’s function as a pulpit was universally established.

Most minbars are made of wood and are highly decorated whilst those made of stone or brick tend to be much simpler and often comprise a bare platform reached by three to five steps. The earliest extant wooden minbar is that in the Great Mosque in Qairawan which is said to have originated in Baghdad. It is a fairly simple design without a gate or canopy and consists of seventeen steps leading up to a platform. This minbar is made of plane tree and decorated with 200 carved panels and strips of unequal size. Although it has been restored several times most of the decoration seems to be Umayyad, consisting of diverse motifs held together within a rigid framework in a manner similar to that used at Mshatta.

In the Fatimid period minbars are built with a doorway at the entrance to the stairway and a domed canopy above the platform. The best example of this type is that in the Aqsa mosque in Jerusalem built for Nur al-Din in 1168. An example of this style in stone is the minbar in the mosque of Sultan Hasan (1356–63). Over the doorway to the minbar and also in the mihrab of this mosque muqarnas carving is used. Later on muqarnas remains an important decorative element in minbar design and is used particularly on minbar domes.

Most early minbars in Persia and Afghanistan were destroyed by the Mongol invasions; however, from the Timurid period we have several examples. One of the most impressive of these is that in the Djawahr Shah Agah in Meshed (constructed between 1436 and 1446). Structural elements in this minbar are subordinated to the covering of pentagonal and star-shaped panels with tendrils in relief, which has the overall effect of a woven carpet.

In Ottoman Turkey although most minbars were made of wood some of the most important were built of marble. Thus in the Selimiye Cami in Edirne there is a tall minbar of Marmara marble which is widely regarded as the finest in Turkey. The form of this minbar with its solid portal, its steep stairs and tall hood are all characteristic Ottoman features.

In India almost all minbars are built of stone and...
Mogadishu
are often elaborately carved. In Gujarat and Ahmadabad minbars are in the form of pavilions on four piers. In Hyderabad, to the south, the minbars are heavier and plainer, with no canopies or portals.

The Swahili mosques of the East African coast usually have simple stone mihrabs. At Sanje Ya Kate in southern Tanzania there is a sixteenth-century mosque with a unique minbar set into the wall. This is entered through an opening in the qibla wall from which the stairs lead to a niche next to the mihrab.

Mogadishu
Capital of Somalia located on the southern coast.
Mogadishu was established as a trading city sometime before the twelfth century although no early remains have yet been discovered. There are a number of historic mosques in the old quarter of the city which mostly date from the nineteenth century or later. The principal mosque of the town is the mosque of Fakhr al-Din dated to the thirteenth century. This is the most sophisticated example of mosque architecture in East Africa and demonstrates architectural planning. The mosque has a narrow courtyard which opens on to a portico of five bays, the central bay of which is covered with a fluted dome. Entry into the prayer hall is through doorways decorated with marble panels. The prayer hall is divided into nine bays covered with a panelled ceiling with a central dome. The mihrab is carved out of north Indian marble and carries a date of 1269. The mosque also has a minaret which is the earliest occurrence of this feature in East Africa (minarets only become widespread from the nineteenth century).

See also: East Africa, Somalia

Monastir
Important medieval city on the east coast of Tunisia.
At present Monastir is on the coast, but in early Islamic times it was probably a peninsula or island. Monastir was one of the coastal cities developed by the Aghlabids during the ninth century. The city contains the remains of three ribats or fortified monasteries the earliest of which is the great ribat of Harthma ibn A’iyan founded in 796. The Great Mosque of the city was built in the ninth century although most of the structure dates to the tenth century or later.

Morocco (Arabic: Maghrib)
Country at the north-west corner of Africa with an Atlantic and Mediterranean coast.
The country may be divided into three main regions, the coastal plains, the Atlas mountains and the Sahara desert. The majority of the population lives on the plains with a smaller, more rural population in the mountains. The Sahara is sparsely inhabited.

Traditionally Islam first reached Morocco during the conquest of the Arab general ‘Uqba who reached the shores of the Atlantic in 684. However, it seems likely that the first real conquest, as opposed to a temporary raid, took place at the beginning of the eighth century under the general Musa ibn Nusayr. The predominantly Berber population was quickly converted to Islam and took part in the Muslim conquest of Spain. After the initial success of the Spanish conquest the Berbers were disappointed with their share of the land allocations, in addition many were affected by the doctrines of Kharijism which represented a deviation from orthodox Islam. By 740 the situation had become critical and there was a rebellion against the Umayyads. A Syrian army sent to restore order was defeated in 742 leaving Morocco independent of central control. For the next forty years there was a period of anarchy with several Berber groups vying for power. In 788 the Idrissids emerged as the victors and were able to establish an independent monarchy which lasted until the end of the tenth century when it became a victim of Fatimid and Umayyad (Spanish) rivalry. During the eleventh century the country was taken over by the Almoravids who ruled an empire which included southern Spain and much of north-west Africa. In the mid-twelfth century the Almoravids were displaced by the Almohads who conquered a vast territory from the southern Sahara to central Spain. The Almohad Empire collapsed in the mid-thirteenth century to be replaced by the Marinids who ruled an area roughly equivalent to modern Morocco although there were constant attempts to expand eastward. Local unrest and increasing European interest in Morocco led to the collapse of the Marinids in the fifteenth century. A period of anarchy was followed by a reaction against Christian occupation of the coast which was embod-
ied in the Sa’dian dynasty. The Sa’dians who claimed descent from the Idrisids lasted until the mid-seventeenth century when they were defeated by the ‘Alawids. The ‘Alawids also had a semi-religious basis claiming their descent from ‘Ali, members of this dynasty still rule the country.

A large variety of materials are used in historic and traditional Moroccan architecture. This partly reflects the variety of the natural landscape which includes extremely high mountains, fertile plains and arid desert. Another important factor is the influence of Spanish architecture which was reinforced by the Christian reconquest which drove Muslims southwards into Morocco. The coastal cities of the north inherited the Byzantine system of construction in stone and baked brick. In the Atlas mountains mud pisé and rubble stone construction were the predominant materials although these were often covered with plaster. Overlapping gutter-shaped tiles with a characteristic blue-green colour were used for the roofs of important buildings and may represent Spanish influence. Small monochrome tiles were used for floors, as dadoes for courtyards and sometimes as decoration for whole façades. Wood was relatively plentiful, cedar, cork and oak from the Atlas mountains was used for a variety of functions including roofing timber, supports for projecting windows, panelled ceilings and decorative mashrabiyya screens. The quality of wood carving is extremely high and resembles that of Muslim Spain. Stucco was extensively used for decorative features such as multifoil arches and decorative panels.

There are few examples of Moroccan Islamic architecture from before the eleventh century and those which do survive have been extensively altered. The most important city for the early period is Fez which was established as a capital in 807 by Moulay Idris the Younger. Very little survives of the early city although it is known that it had an advanced water system which supplied water for domestic use. Architecturally the most significant buildings in the town are the Qarawiyyn and the Andalusian mosques which were both built in the ninth century. The form of these mosques with aisles running parallel to the qibla wall cut by an axial aisle is a Syrian-Umayyad plan. Later mosques in Morocco follow the more usual North African practice of aisles perpendicular to the qibla. No mosques of the Almoravid period have survived with the exception of the Great Mosque of Taza which was considerably remodelled in later periods.

Remains of the Almohad period are more plentiful and include the Kutubiya and Kasba mosques in Marakesh, the Hassan Mosque in Rabat and the Great Mosque of Timnal. The earliest of these is the mosque of Timnal which is built out of mud pisé and baked brick. The prayer hall has nine aisles perpendicular to the qibla wall and one aisle parallel to the qibla wall, an arrangement which was to become standard. The unusual feature of the building is the incorporation of the mihrab into the base of the minaret. This arrangement was not used in subsequent mosques although huge decorative minarets became one of the characteristic features of Almohad architecture. The most impressive example is the unfinished mosque of Hassan in Rabat begun in 1196. This vast mosque measures 140 by 185 m and includes three rectangular courtyards. The minaret, at the north end of the building (opposite the mihrab), has a massive square base measuring 16 m per side containing a ramp which rises around a square core. Although the tower is only 44 m high its is known that its projected
the Great Mosque of Al-Mansura in Tlemcen (Algeria), within Morocco their chief concern was the building of madrassas in which they excelled. Fez in particular contains a large number of Marinid madrassas the most famous of which are the 'Attarin, the Sahrij and the Bu 'Inaniya. The standard plan comprises rooms arranged around a rectangular courtyard with a central pool and decorated with tile mosaic and stucco work. The main focus of each madrassa is the prayer room which opens on to one of the shorter sides of the courtyard.

Another development of the Marinid period is the funerary complex which sees its first expression in the necropolis of Challa near Rabat built in the fourteenth century. The complex is a large garden enclosed by a high wall fortified with buttress towers and an Almohad-style gateway. Within the complex there are tombs set within extensive areas of vegetation. There are two funerary mosques within the complex both with square decorated
minarets in the Almohad style. In the sixteenth and seventeenth centuries the Sa'adians built a similar type of complex but on a grander scale with decoration of unparalleled ornateness. A different type of funerary–memorial complex is represented by the city of Moulay Idriss built by the Sa'adian ruler Moulay Ismail in the seventeenth century. Here the tomb of Idris I forms the centre of a sacred city which is restricted to Muslims.

The domestic architecture of Morocco represents a wide variety of architectural forms from semi-permanent camps to the luxurious courtyard villas of Fez, Rabat, Marakesh and Meknes. The simplest form of dwelling is the thatched hut or gourbi which may either be rectangular with a pitched roof or circular in plan with a conical roof. In the Atlas mountains there are villages of semi-permanent huts built around a central keep, or kasba. Sometimes these are purely for storage (tiremt) and have no accommodation although there is usually a guard’s house. Some of the more developed villages formed walled enclosures with the keep functioning as a residence for the ruling family. City houses were enclosed courtyard structures with little external decoration. Inside the wealthier houses contain some of the most eloquent examples of Islamic decoration and recall the splendour of Muslim Spain.

See also: Almohads, Fez, Marakesh, Meknes, Rabat

Further reading:

mosaics

Inlay of small tiles or stones used for decoration of walls or floors.

The use of mosaics in Islam is derived directly from Roman and Byzantine architecture where their most common function was to decorate churches and public buildings. It is known that many mosaics in the early Islamic period were carried out by Byzantine craftsmen and artists. Two main types of mosaic can be distinguished, those used for floors and those used for walls. Floor mosaics were made out of coloured fragments of stone or marble and were often arranged as patterns. Wall mosaics were often made out of specially manufactured tesserae of glass and were usually arranged as illustrative scenes.

Examples of floor mosaics have been found in excavations of the earliest Islamic structures in Syria and Palestine which were often converted Byzantine buildings. Floor mosaics usually lack any figural depictions of animals or humans and it is noticeable that many churches had the figural parts of the mosaics removed or scrambled during the Islamic period. Nevertheless, private palaces such as Qasr al-Hayr in Syria and Khirbet al-Mafjar had figural mosaics on the floor. It has been argued that figural representation on the floor was permitted as it was not in a respectful situation and could be walked over. The most famous example is the apse of the audience hall at Khirbet al-Mafjar which has a depiction of a lion attacking a deer in front of a tree.

Wall mosaics are more elaborate than those on the floor and are often gilded with gold leaf. The oldest example of wall mosaics in Islamic architecture is the decoration of the Dome of the Rock in Jerusalem, dated by an inscription to 691 CE. The motifs used include both Sassanian (winged crowns) and Byzantine (jewelled vases) themes held together within an arabesque foliage. Other early Islamic wall mosaics are those of the Great Mosque in Damascus which depict houses and gardens next to a river but significantly no people or animals. Although mosaic was primarily a technique employed in the Mediterranean area it was occasionally used further east in Iraq and Iran. Some of the best examples have been found at the palace of al-Quwair in Samarra. Generally mosaics declined in importance after the tenth century, although in Egypt glass mosaics were used for the decoration of mihrabs as late as the thirteenth century (see for example the mausoleum of Shahjar at al Durr in Cairo). From the eleventh century onwards mosaics were replaced by glazed tilework in most parts of the Islamic world.

See also: pietra dura, tilework, Umayyads

mosque

Building used for Muslim prayer, the principal unit of Islamic architecture.

The first mosque was the house of the Prophet Muhammad in Medina. This was a simple rectangular (53 by 56 m) enclosure containing rooms for the Prophet and his wives and a shaded area on the south side of the courtyard which could be used for prayer in the direction of Mecca. This
Mosque

building became the model for subsequent mosques which had the same basic courtyard layout with a prayer area against the qibla wall. An early development of this basic plan was the provision of shade on the other three sides of the courtyard, forming a basic plan which has become known as the Arab-plan mosque. The roofs of the prayer area (sanctuary or musalla) were supported by columns which were either made of wood (palm trunks in the Medina Mosque) or later on of re-used columns. From the ninth century onwards columns began to replace piers as the main form of roof support and domes were introduced as a roofing method.

Several features which were later to become standard features of mosques were introduced at an early stage. The first of these is the minbar, or pulpit, which was used by Muhammad to give sermons. A later introduction was the mihrab or prayer niche which was first introduced by the Umayyad caliph al-Walid in the eighth century. Other features include the ablutions facilities and a central pool or fountain and the minaret which

Plan of Mshatta, Jordan (after Cresswell)
seems to make its first appearance in the Abbasid period. Also during this formative period the maqsura was introduced which was designed to provide privacy and protection to the ruler and also possibly to give him added mystery. This sense of mystery may have been reinforced by the placing of the royal palace or Dar al-Imara at the back of the mosque behind the qibla wall often with a connecting door.

The details of mosques in different areas of the Islamic world were dictated by local building traditions and materials, although the basic form remained the same until the eleventh century when the Seljuks introduced new architectural forms based specifically on the dome and the iwan. Although these had been known in Sassanian times and had been used in mosque architecture, they had not been used to alter the basic plan of the mosque. However, the Seljuks introduced the idea of four iwans set into the middle of each courtyard façade, as seen in the twelfth-century mosques of Isfahan, Zawara and Simnan. This arrangement became the standard form for the Iranian mosque and was later adopted for madrassas.

See also: Aqsa, Cairo, China, Damascus, East Africa, Fatimids, India, Indonesia, Iran, Iraq, Java, Malaysia, Mughals, nine-domed mosques, Ottomans, Spain, Turkey, West Africa

Mshatta

One of the most famous desert castles of the early Islamic period.

The palace of Mshatta is located on the border of the desert in Jordan (about 25 km south-west of Amman). It is generally dated to the late Umayyad period (the reign of Walid II) although an Abbasid date has also been suggested.

The palace consists of a large square enclosure with four semi-circular buttress towers. Outside the enclosure are the remains of a large bath house which has recently been excavated. The best-known feature of this palace is the southern façade which consists of a delicately carved stone frieze incorporating animal and plant motifs within a geometric scheme of twenty giant triangles (this façade is now in Berlin). Internally the building is divided into three longitudinal strips of equal size; only the central strip (running north–south) was developed, and contains within it the entrance, the central courtyard and the audience hall. The area immediately inside the entrance has only foundations to mark the positions of rooms which were arranged symmetrically on either side of a central axis. This consists of a narrow vaulted passageway leading to a small square courtyard, on one side of which is the small palace mosque. This courtyard opens on to a large central courtyard (including a rectangular pond) at the other side of which is the heart of the palace. This consists of three iwans, the central iwan leading to the throne room (audience hall) and the side iwans leading to housing units (buyut – pl. of bayt) either side of the audience hall. The audience hall consists of a triple-apsed room covered by a large brick dome.

The importance of the palace for architectural historians is that it combines western (Roman and Byzantine) elements with features derived from the art of the Sassanians. The decorative frieze at the front of the building is one of the best examples of this combination. The vine leaves and naturalistic depictions of animals resembles Byzantine art although the decoration also includes popular Sassanian motifs such as the senmurv, a dragon-like mythical beast, and griffin. The most significant eastern feature of the design is thought to be the way the geometric pattern of giant triangles dictates the nature and space of the more naturalistic ornament.

Other eastern features found at Mshatta include the use of brickwork for vaults and the layout of the palace which resembles that of early Islamic buildings in Iraq (cf. Abbasid palaces at Ukaidhir and Samarra). However, Byzantine elements are also present, most notably in the basilical arrangement of the approach to the triple-apsed room and in the motifs of the stonework.

Further reading:
R. Hillenbrand, 'Islamic art at the crossroads; East versus West at Mshatta', in Essays in Honour of Katharina Otto-Dorn, Malibu 1981, 63–86.

mud brick

Traditional building material in much of the Middle East, India and North Africa. It is likely that in the past the majority of buildings in an Islamic city were made of this material. Mud brick has only recently
Mughals

been superseded by concrete as a cheap and versatile building material and is still used in many areas.

The traditional form of a mud brick is a large flat square slab produced by filling a wooden mould with mud or clay of the preferred type. In some areas the shape of the bricks is varied; thus in Djenné, West Africa, conical bricks were used until quite recently. Often some additional material (temper) such as straw is added to the brick to give it increased strength. The brick is then left to bake in the sun for several days until it is very hard and can be used for building. The bricks are laid in the normal manner, with layers of mud mortar used to bind the bricks together. When a mud-brick wall is completed it is usually coated with a layer of water-resistant mud plaster. In order to avoid the problems of water erosion mud-brick buildings are often built on stone footings or have overhanging roofs with water run-off directed into special channels. Mud brick also requires a certain amount of maintenance usually in the form of annual replastering.

Mud brick has several advantages over more modern materials: it has better thermal insulation (warmer in winter and cooler in summer), it is cheaper, it can be produced locally and it is environmentally less harmful. Recently there have been attempts to revive the use of mud brick through special projects such as those instigated by Hassan Fathy in Egypt.

See also: Djenné; Fathy, Hassan

Mughals

The Mughals were an Indian Islamic dynasty which ruled most of northern India (including the area of present-day Pakistan) from the beginning of the sixteenth to the mid-eighteenth century. As patrons of architecture the Mughals commissioned some of the finest buildings known to the world including the Red Fort at Delhi and the Taj Mahal.

History

The earliest Muslim presence in India dates from 712 with the Arab conquest of Sind which was a part of the original eastward expansion of Islam. However, it was not until the eleventh century that Muslim warriors first penetrated to the Indian heartland under the leadership of Mahmud of Ghazni. For the next 150 years the Punjab and Lahore were part of the Ghaznavid Empire although the Rajput princes of Rajasthan prevented further penetration into the subcontinent. In 1192 an Afghan sultan, Mahmud of Ghur, defeated an alliance of Rajput princes and captured Delhi, one of their principal cities. Although Mahmud soon left India he made his Mamluk (slave) general Qutb al-Din Aibak governor of Delhi. For the next 300 years this part of India was ruled by various competing Islamic dynasties including the Timurids.

The first Mughal ruler was Babur who traced his descent on his mother's side from Chengiz Khan and on his father's side from Timur (Tamarlane). Babur was a Central Asian prince who ruled the area of Farghana but had some claim to Samarkand which he repeatedly tried to capture. In addition to his dream of taking Samarkand Babur also believed he had some claim to the Delhi sultanate through his Timurid ancestors. At the battle of Paniput in 1526 Babur defeated Ibrahim Lodi, the Muslim sultan of Delhi, with a small force which had, however, the additional advantage of artillery and gunpowder. A year later this victory was consolidated by Babur's defeat of the combined forces of the Rajput princes at Khanuana. Three years later, in 1530, Babur died at Agra leaving the sultanate to his son Humayun. Despite the enormous advantages bequeathed by his father Humayun did not have his father's ruthlessness and in 1540 lost the throne to the Bengali ruler Sher Khan. For the next fifteen years Delhi was ruled by Sher Khan and after his death by his son Islam Sher Sur. Humayun had lost the throne mostly through the treachery of his brothers and it was only after he had defeated them by recapturing Kabul and Kandahar in 1545 that he was in a position to retake Delhi which he did in 1555 defeating Sher Sur. Unfortunately Humayun was only able to enjoy his position for a year as he died in 1556 falling down a stairway in his library in Delhi.

Humayun left the empire to his 13-year-old son Akbar and his Turcoman guardian Bairam Khan. For the next four years the prince and his guardian had to fight off rival claims to the throne whilst securing the boundaries of the kingdom. Akbar's first concern on assuming full power was the pacification of the Rajput princes who constantly threatened the Delhi sultanate. In 1502 Akbar
married the daughter of the Raja of Amber (the nearest Rajput state to Delhi later known as Jaipur) who became the mother of the Sultan's heir Jahangir. This was the beginning of a policy that he continued with other Rajput princes so that by the end of his reign all were under his overlordship although with varying degrees of independence. In addition to marital alliances and diplomacy Akbar also gained territory by force conquering Gujarat in 1573, Bengal in 1576, Kashmir in the 1586, Sind and Baluchistan between 1591 and 1595. The southern part of India was added in the latter part of his reign and included Berar and part of Ahmadnagar.

Akbar's territorial victories were consolidated by an efficient system of government with a paid non-hereditary civil service. In addition Akbar abolished the 'jizya', poll tax payable by Hindus and other non-Muslims, in order to integrate and unify the differing peoples of his expanding empire in the same way that the Rajput dominions had been incorporated. Religious toleration became a central principle of Akbar's government to the extent that in 1570 he convened a conference between the different religions at his newly established city of Fatehpur Sikri. The conference included scholars from Hindu and Muslim sects as well as Jains, Zoroastrians and Catholic Jesuits from Goa. The result was a new religion conceived by Akbar himself and known as Din Ilahi (Divine Faith) which drew elements from all the sects. Although the religion was not successful it shows Akbar's concern to create an empire free from religious divisions. Akbar died in 1605 leaving the empire to his son Jahangir who had recently been in open revolt of his father. On his accession to the throne Jahangir left his son Shah Jahan in charge of the military campaigns, a pattern which was later repeated when as emperor Shah Jahan delegated control of the south to his son Aurangzeb. Both Jahangir and later Shah Jahan continued the policies of Akbar so that the empire remained relatively stable despite more or less constant warfare in the south of the country. Shah Jahan failed in his attempt to create a united Sunni state incorporating India with Central Asia, but managed to keep the empire more or less intact for his son Aurangzeb.

The last of the great Mughals, Aurangzeb, departed from the pattern of government set by Akbar and precipitated the decline of the empire. Aurangzeb devoted a great deal of energy and manpower to continuing the conquest of the south of India at the expense of all other policies. The empire reached its greatest extent during this period and included the whole subcontinent with the exception of the southern tip. However, this brought increased problems of communication and military control which the empire was not able to manage. These problems were exacerbated by Aurangzeb's fanatical Muslim zeal which meant that he reversed the policy of religious tolerance exercised by his great-grandfather by introducing the poll tax (jizya) for non-Muslims. Similarly he encouraged the destruction of Hindu temples and other religious shrines and his southern conquests became one of the greatest iconoclastic excursions in India's history. Although Aurangzeb may have been a pious Muslim, this policy was not successful in an empire which depended on the co-operation and toleration of different ethnic and religious groups. Perhaps the best example of Aurangzeb's policy was the Great Mosque built to tower over the Hindu holy city of Banares.

With Aurangzeb's death at the age of 90 in 1707 the empire passed to his son Bahadur Shah who only lived another five years. During the next half-century the rapidly disintegrating empire was ruled by eight sultans. The weakness of the empire was shown in 1759 when Delhi was sacked by the Persian emperor Nadir Shah who carried off the peacock throne along with countless other treasures. The latter part of the century witnessed the conflict between a variety of forces including the Mughals, the Hindu Marathas and the British East India Company. In 1803 the East India company occupied Delhi and Agra thus ending Mughal power in India. For the next half-century the powerless Mughals were retained by the British as 'Kings of Delhi'. Finally in 1857 the last Mughal Bahadur Shah II was stripped of even this title and was removed from Delhi for his part in the sepoy mutiny.

Architecture

Mughal architecture was derived from three main sources: native Indian Islamic, Persian Central Asian and local Hindu architecture. It is difficult to determine the extent to which any feature or building type used by the Mughals derives from any of these particular sources, partly because earlier Indian Islamic architecture contains both Hindu and Islamic elements. What is clear, however, is
that Mughal architecture does incorporate many elements from local Hindu architecture, in particular the art of the Rajput palaces. Distinctive Hindu features incorporated into Mughal architecture include trabeate stone construction, richly ornamented carved piers and columns, and shallow arches made out of corbels rather than voussoirs. In addition there are particular constructions usually associated with Hindu buildings, including chhatris, chajjas and jarokhas, which became characteristic of Mughal architecture. A chatri is a domed kiosk resting on pillars which in Hindu architecture is used as a cenotaph but in Islamic architecture is placed as decoration on top of mosques, palaces and tombs. A chatri is a sloping stone overhang at roof level, used to deflect rain water away from the walls of a building and usually supported on heavy carved corbels. A jarokha is a projecting balcony supported on corbels with a hood resting on columns. Whilst all of these features may be paralleled elsewhere in Islam, the particular form which they assume in Mughal architecture shows a clear derivation from local Hindu architecture. In addition to Hindu features there are some elements derived from the pre-existing Islamic architecture of India. The best example is the curved do-chala roof derived from Bengali huts which was first used in this stone form in the sultanate architecture of Bengal. Another Indo-Islamic feature is the cusped arch which can be found in the pre-Mughal architecture of Delhi and Gujarat.

Obvious Persian influences in Mughal architecture are the extensive use of tilework, the iwan as a central feature in mosques, the use of domes, the charbagh, or garden, divided into four and the four-centrepoint arch. The form of buildings and some of the decorative motifs also suggests obvious Persian influence.

The materials used for Mughal architecture varies widely depending on the region and the type of construction. As with most other areas, many of the original buildings have not survived because they were made of less permanent materials such as wood, as well as having been subject to deliberate destruction as a result of wars or rebuilding. However, the material which stands out as characteristic of Mughal architecture is the use of a hard, deep-red sandstone. This material is very strong under compression and so can be used for trabeate construction where roofs are made of flat stone slabs supported on stone columns. When domes were built these were sometimes constructed in the Persian tradition using squinches or pendentives, but more commonly they rested on horizontal flat beams laid over the corners of the structure. Despite its strength and hardness the Indian masons trained in the Hindu tradition of building ornate temples were able to carve this sandstone with intricate details as seen in the columns of the Jami Masjid in Delhi. White marble is the other type of stone often associated with Mughal architecture. It is first used in conjunction with red sandstone as a stone cladding for the front of monumental buildings such as the tomb of Humayun in Delhi where it is used as an inlay and outline for the red sandstone ground. Later, during the reign of Shah Jahan in the seventeenth century, white marble facing was used to cover entire buildings, the best-known example of which is the Taj Mahal. In addition to the fine-cut stone masonry used for façades coursed rubble stone construction was used for the majority of walls. Baked brick was also used for some elements of the construction like domes and arches although this was usually covered with plaster or facing stones.

Decoration of buildings was carried out using a variety of techniques including ceramic tilework, carved and inlaid stonework, pietra dura inlay with coloured and semi-precious stones. Tilework was applied to the exterior of buildings in the Persian manner using Chinese, Persian and Indian tiles. Two main types of tile were used – cuerda sec using coloured glazes, and tile mosaic which used cut pieces of monochrome tiles to produce a pattern. Mughal architecture excels in the quality of its carved stonework, from shallow relief depictions of flowers to intricate pierced-marble screens known as jalis. It has previously been thought that the pietra dura work in Mughal architecture was an Italian introduction because Shah Jahan used some Italian examples of the technique in his palace in Delhi, however this technique had an independent development in India which is obvious when the Italian panels are compared with Indian examples. The main types of building designed for the sultans included palaces and forts, mosques, tombs and gardens. The range of buildings indicates the image the emperors wished to project of themselves as all-powerful rulers close to heaven. One of the most important types of building was the fortified palace as seen at Delhi, Agra, Ajmer,
Fatehpur Sikri and Lahore. Although differing substantially in details the palaces share a common overall design where severe external walls conceal a series of courtyards, pavilions and gardens which convey an impression of paradise on earth. The standard plan was of a monumental outer gate which leads inside to another gate known as the 'Hathai Pol' where visitors dismount from elephants. From here there was access to the Diwan-i Amm or public audience hall behind which were the private areas of the palace. The private areas of the palace were usually raised up above the rest of the complex for increased privacy and to catch any breezes in the summer heat. This part of the palace usually included a private audience hall, a bath house, several courtyards with pavilions based around pools and a separate area for the women, known as the zenana. On one side of this private area was a tower projecting from the outer walls known as the Mussaman Burj (octagonal tower) from which the emperor appeared once a day to show that he was still alive.

Babur, the first Mughal emperor, only reigned for four years, during which time he was too busy securing his empire to spend time on major building projects like palaces and instead governed from tented encampments. The earliest Mughal palace is the Purana Qila in Delhi built by Humayun and continued by the Bengali usurpers Sher Sur and Islam Sur. The palace is surrounded by a huge wall 1.5 km long with three huge gateways. Each gateway consists of an arched opening flanked by two huge semi-circular bastion towers with battered walls, arrow slits and pointed crenellations. Little remains of the original structures inside the fort with the exception of the mosque and a domed octagonal pavilion known as the Sher Mandal so that it is not possible to tell much.
Mughals

about the building's layout. The next imperial palace to be built was Akbar's fort at Agra where enough remains to show that it was the basic model for subsequent Mughal palaces. The palace is built next to the river Jumna and is surrounded by huge walls fortified with semi-circular towers. There are two gates, an outer gate with a drawbridge and complex bent entrance leading to an inner gate called the Hathai Pol where visitors were required to dismount from their elephants. Most of the buildings inside the complex belong to Akbar's successor Shah Jahan with the exception of the court known as the Jahangiri Mahal. This structure was built in the style of a Hindu Rajput palace with carved stone beams and giant corbels supporting chajjas. This tendency is carried further in Akbar's new city of Fatehpur Sikri founded in 1570 where the whole palace is overwhelmingly Hindu in its form with Islamic elements reduced to a minimum. Of the same period is the fort at Ajmer in Rajasthan, this is much smaller than the imperial palaces and consists of a rectangular courtyard enclosure measuring 85 by 75 m with four octagonal corner towers and a half-octagonal gateway. In the centre of the courtyard is a rectangular pavilion built of yellow stone and divided into nine chambers in the form of a Hindu mandala. Hindu elements were also predominant in Akbar's other palaces at Allahabad and Lahore although little of Akbar's original work survives at either of these palaces.

The palaces of Shah Jahan by contrast have a more familiar Islamic appearance as can be seen in his modifications to Akbar's fort at Agra where he added several new courtyards, the most famous of which is the Anguri Bagh (grape garden). This is a square garden divided into four sections with a central rectangular pool with lobed sides which provides water for the garden. The garden is surrounded by various pavilions the most prominent of which are the Khas Mahal (private audience hall) and the Sheesh Mahal (glass pavilion). Although these pavilions have many of the same Hindu features seen in Akbar's architecture (i.e domed chatris and chajjas) they are less prominent and tempered with more Islamic forms like lobed arches and the curved Bengali do-chala roofs. In addition the white marble facing of the buildings produces a new lighter appearance which is not found in the earlier buildings of Akbar or in Hindu architecture. The most lavishly decorated building of the palace is the Mussaman Burj which overlooks the river at the east side of the palace. The tower has an octagonal copper dome and inside is lined with carved marble dadoes, pietra dura inlay, pierced screens above the doorways and decorative rows of niches. From inside there is an uninterrupted view of the river and the Taj Mahal built by Shah Jahan for his wife Mumtaz Mahal.

In 1638 Shah Jahan chose the site of his new city at Delhi based around his palace which became known as the Red Fort. By 1648 the fort was completed at a cost of ten million rupees. The layout and design of the Red Fort bears a striking resemblance to the Agra Fort on which it was probably based. Like the Agra Fort, the Red Fort has rectangular open pavilions with cusped arches, white marble dadoes carved in relief and pietra dura work. However, the Red Fort has a more regular symmetrical design, reflecting the fact that it was planned and built mostly by one patron (with a few additions by Aurangzeb) unlike the Agra Fort which gradually developed under two emperors. The most magnificent of the rooms at the Red Fort is the Diwan-i Amm or public reception room where the enthroned emperor would receive audiences. This room was approached from the main gate via an arced passageway, a large courtyard, another gateway and an even larger courtyard so that visitors were suitably awed by the time they reached the emperor. The room consists of a hypostyle hall nine bays wide and three bays deep supported by twelve-sided columns spanned by cusped arches. The throne occupies a special position in the middle of the back wall and consists of a raised platform covered by a dome supported on columns. The area behind the throne is decorated by pietra dura panels imported from Italy. Within the palace is the Diwan-i Khass or private audience hall which is equally lavishly decorated and originally had a silver-clad ceiling inlaid with gold.

Unlike the palaces, the mosques of the Mughals were built to accommodate the public and were thus more restrained in their decoration although equally monumental. Delhi contains some of the earliest examples of Mughal mosques in India which clearly show their derivation from earlier Sultanate mosques. The Mahdi Masjid is one of the earliest examples of a Mughal mosque and its architecture resembles that of the Lodi sultanate
which preceded the Mughals. The mosque is built like a small fort with corner turrets and a monumental gateway built in the style of Lodi tombs. The arrangement inside is unique and consists of a rectangular courtyard with two prayer halls at the qibla end either side of a central piece of blank wall. Nearby is the Jamali Kamali Masjid built between 1528 and 1536 which has a more distinctively Mughal appearance. The building is faced in red sandstone with white stone outlining the details to relieve the intensity of the red. The sanctuary façade consists of an arcade of four centrepoint arches resting on thick piers; the heaviness of the façade is relieved by rosettes in the spandrels of the arches, two-tier blind arches on the piers and a row of smaller blind arches running in a line above the arches. The central arch leading on to the mihrab is the same size as the other arches but is emphasized by a tall pishtak-like façade with engaged columns. The area behind this arch is covered by a squat masonry dome typical of Rajput and earlier Sultanate architecture.

The earliest surviving imperial Mughal mosque is the Qala-i-Kuhna Masjid in the Old Fort (Purana Qila) in Delhi although ironically it was begun in 1541 during the Shah Sur period. Like the Jamali Kamali Masjid the sanctuary of this mosque consists of five bays running north-south parallel to the qibla with the central bay emphasized by a dome. The arrangement of the arcade is the same although here the arches are set within taller pointed arches of differing sizes to lighten the appearance of the façade. The next imperial mosque is attributable to Akbar's reign and rather surprisingly shows more signs of Hindu influence than mosques of the earlier period. This is the mosque of Fatehpur Sikri, the palace city built by Akbar in the 1570s, where Hindu influence was at its most pronounced. The basic plan of the mosque conforms to the established pattern of Mughal mosques with a large courtyard surrounded by an arcade and a centrally placed iwan set into the arcade of the sanctuary on the west side of the courtyard. However, the details of the mosque are mostly Hindu in their associations, from the richly carved columns and corbelled arches in the arcades and the sanctuary to the domed chitrās lining the roof. With the reign of Jahangir and later Shah Jahan the appearance of mosques returns to a more overtly Islamic form. In the Jami Masjid of Shahjahanabad built in 1650 the use of Hindu elements is drastically reduced to two chitrās on the roof whilst other more Islamic feature such as the minarets, the central iwan and cusped arches assume a higher prominence. The domes have a taller pointed appearance familiar in Islamic buildings elsewhere instead of the squat Hindu style domes used in earlier Mughal mosques. The design of the Shahjahanabad Jami Masjid was a major influence on later Indian mosque architecture with its use of three domes over the sanctuary in conjunction with a raised central arch, or iwan, and engaged minarets. During the reign of Aurangzeb this form was developed as the standard mosque form. The Moti Masjid (Pearl Mosque) built by Aurangzeb in the Red Fort at Delhi was too small to incorporate all the features found at the Jami Masjid but incorporated a three-domed sanctuary with a raised central arch and mini-domed pillars projecting out of the roof to resemble minarets. In the Badshahi Mosque in Lahore built by Aurangzeb in 1674 the pattern of the Jami Masjid was copied with the addition of more minarets making a total of eight.

An important function of imperial Mughal architecture was to overawe people with the power, wealth and sophistication of the sultans; in no area was this more effective than in the design and construction of the sultans' tombs. The earliest tombs of the Mughal period resemble those of the previous Muslim sultans of Delhi and typically consist of an octagonal domed structure sometimes surrounded by an open veranda. One of the first Mughal examples is the tomb of Adham Khan built by Akbar for his wet nurse and her son who was killed in a palace dispute. Another example of this tomb type is the mausoleum of Sher Shah Sur at Sasaram built before 1540. This has the same basic plan as the Adham Khan tomb with a central domed octagonal chamber surrounded by an open veranda. One of the first Mughal tombs was the tomb of Adham Khan built by Akbar for his wet nurse and her son who was killed in a palace dispute. Another example of this tomb type is the mausoleum of Sher Shah Sur at Sasaram built before 1540. This has the same basic plan as the Adham Khan tomb with a central domed octagonal chamber surrounded by an open veranda. One of the first Mughal tombs is the tomb of Sayyid Lodi (1517), the tomb of Isa Khan in Delhi.

Later Mughal tombs were also based on an octagonal form but instead of sides of equal length four of the sides were shortened thus producing a square shape with cut off corners. An early example of this type is the Afzarwala tomb in...
Mughals

Delhi, situated in the garden of the Arab serai near the tomb of Humayun. Humayun's tomb built in the 1560s is the first example of the imperial Mughal tomb complexes which came to characterize the splendour of the dynasty (Babur was buried in a simple garden grave and later his remains were transferred to Kabul). Humayun's tomb is composed of four-square octagonal shapes built on two storeys around an octagonal domed space. Between each octagon is a deep iwan giving access to the central domed space which contains the tomb of Humayun. The central structure is surrounded with arcades forming a low square with chamfered corners. In turn this central structure is set in the middle of a square garden divided into quarters which are further subdivided into thirty-two separate sections. The tomb of Humayun was a model for later Mughal tombs, although the tomb of his immediate successor Akbar differs greatly from this model. Akbar's tomb, located in the district of Sikandara (8 km outside Agra) was begun in 1605 and completed seven years later. It is not known whether Akbar took any part in the design of the tomb although it is known that his son Jahangir may have altered the original design. The outer part of the building is a rectangular structure with engaged octagonal towers at each corner and a tall iwan in the centre of each side. The central part of the complex is very different from any other tomb as it lacks a central dome. It consists of a five-storey pavilion with an open rectangular courtyard at the top containing a tomb-like cenotaph. This architecture is characteristic of Akbar's reign and can be compared with the Panch Mahal in the palace at Fatehpur Sikri where there is also a conglomeration of pavilions five storeys high. The outer form of the complex can be compared with the tomb of Itimad-ud-Daulah's tomb completed in 1628 which consists of a low building with a square plan and short engaged octagonal corner towers. In the centre, raised one storey above the rest of the structure, is a vaulted pavilion.

The classic form of tomb was returned to for the Taj Mahal built by Shah Jahan for his wife Mumtaz Mahal who died in 1631. The basic form of the tomb recalls that of Humayun's tomb at Delhi and consists of four octagonal structures joined together by iwans and grouped around a central domed area. As in Humayun's tomb the central building is two storeys high, but here the central dome is more than double the height of the rest of the structure. Instead of being surrounded by arcades the lower part of the structure is raised on a terrace, the sides of which are marked by blind arcades. At each corner of the square terrace is a tapering cylindrical minaret on an octagonal base. The basic forms used in the Taj Mahal were re-used in later tombs but never with the same success. The Bibi ka Maqbara tomb, built less than forty years later, has the same design as the Taj Mahal but the octagonal minarets are thicker and higher in proportion to the central complex which consequently loses some of its significance. A later tomb in this tradition is that built for Safdar Jang in 1753. In this building the minarets are incorporated into the central structure as engaged corner turrets whilst the terrace becomes an arcaded substructure.

One of the most important aspects of Mughal architecture was the design of gardens which provided the setting for tombs and palaces or stood on their own as places for relaxation. Babur, author of the first Mughal architecture, was a lover of gardens and laid out several after his conquest of Delhi. One of the earliest Mughal gardens is known as the Rambagh or Aram Bagh in Agra and was planned by Babur. Although the original form of the garden may have been altered the narrow water channels are indicative of its early date. The usual form of Mughal gardens was derived from the Persian char bagh which consists of a square walled garden divided into four equal units around a central feature usually a pool or fountain. The geometric form of gardens meant that the plant borders assumed a certain importance as can be seen at the Anguri Bagh in Agra Fort where the flower beds are made of interlocking cusped squares like a jigsaw puzzle. Also the form of gardens meant that the plants were usually kept quite low so that the shape of the arrangement was visible. In Kashmir Mughal gardens assumed a less formal and more natural appearance, with tall trees and shrubs and architecture hidden within the garden rather than dominating it as was the case with the more formal gardens of Delhi and Agra. At Srinagar there were once several hundred gardens built around the Dal Lake although only a few still remain. One of the most famous of these is the Shalimar Bagh laid out during the reign of Jahangir in 1619. The form of the garden echoed that of palace architecture and consisted of a ter-
raced system where the garden was divided into three parts; the lowest part was accessible to the public, the middle section was for the emperor and his friends, whilst the highest part (which was totally out of view) contained the zenana, or women’s private area. In the centre of the women’s area, in the middle of a formal pool, is the Black Pavilion built by Shah Jahan. The building has a three-tiered tiled roof and is built in the style of local Kashmiri wooden mosques.

Like his ancestor Babur, Aurangzeb was more concerned with garden architecture than the construction of palaces. One of the most impressive of these gardens was that of Fatehbad near Agra which although now largely derelict contains the zenana, or women’s private area. In the centre of the women’s public, the middle section was for the emperor and his friends, whilst the highest part (which was totally out of view) contained the zenana, or women’s private area. In the centre of the women’s area, in the middle of a formal pool, is the Black Pavilion built by Shah Jahan. The building has a three-tiered tiled roof and is built in the style of local Kashmiri wooden mosques.

Public buildings of the Mughal period were usually of a utilitarian design with very little embellishment. The roads were one of the primary concerns of the Mughal administration and during the 1570s Akbar initiated a programme of road improvements including the provision of milestones, wells, reservoirs and caravanserais. The best examples of this are the caravanserais built at Chata near Mathura and Chaparghat. These buildings have a fairly uniform design consisting of a large rectangular enclosure with octagonal corner towers. Inside there are iwans leading on to cells along the side of the walls. The cells are usually arranged in pairs with a connecting door in between, thus forming units of four (two iwans and two closed rooms). In addition to the standard rooms there are usually at least two larger sets of rooms for more important travellers. Most caravanserais have one entrance; where there are two there are usually opposite each other. Sometimes the central axis of the caravanserais are built as bazaars for the visiting merchants. The only areas of architectural elaboration are the gates or entrances.

Milestones, known as kos minar (small towers), were used to mark the roads. These are usually very plain structures with an octagonal base and a tapering cylindrical shaft. One of the main routes which received attention during Akbar’s reign was the Agra to Ajmer pilgrimage route which was provided with road markers and small resthouses. Under Jahangir the improvement of roads continued with trees planted on the road from Agra to Bengal, the construction of wells and kos minar on the road from Agra to Lahore and the provision of small stations on the Pir Panjal pass into Kashmir. During the reign of Aurangzeb the roadside facilities were extended and improved, with particular attention paid to the roads between Agra and Aurangabad and Lahore to Kabul. Repairs carried out on bridges, caravanserais and roadside mosques were paid for out of the emperor’s private income.

See also: Fatehpur Sikri, Taj Mahal

Further reading:
R. Nath, History of Mughal Architecture (i) (Babur to Humayun), New Delhi 1982.
muhtasib

A municipal officer responsible for public morals and regulation of markets.

An important duty of the muhtasib was the supervision of building construction which involved regulation and inspection of materials. The uniform size of materials used in construction was ensured by the use of wooden templates which were kept in the mosque. The muhtasib was also responsible for checking mould boxes used for baked bricks and mud bricks to check that these were not distorted. Raw mud bricks were not allowed to be used until they had whitened. Also the muhtasib ensured that builders kept stockpiles of the correct spare materials such as bricks for lining wells, floor bricks, and fire bricks for ovens.

mulqaf

Arabic term for wind-catcher.

See also: badgir

muqarnas

System of projecting niches used for zones of transition and for architectural decoration.

Muqarnas is one of the most characteristic features of Islamic architecture and is used throughout most of the Muslim world (in North Africa a related system known as muqbaras is also used). Muqarnas is usually associated with domes, doorways and niches, although it is often applied to other architectural features and is sometimes used as an ornamental band on a flat surface.

The earliest examples of muqarnas so far discovered were found at Nishapur in eastern Iran and date to the late ninth or early tenth century. These consist of fragments of stucco niches with carved and painted decoration which were found within domestic buildings. Of a similarly early date are fragments of painted stucco muqarnas belonging to a bath house of the Abbasid or Fatimid period at Fustat in Egypt. The wide dispersion of muqarnas at this early date (ninth–tenth century) suggests that its origin was somewhere in the centre of the Islamic world, probably Baghdad.

During the eleventh century muqarnas spread to most parts of the Middle East (from Egypt to Central Asia) whilst in the western Islamic World a similar device called muqbaras was also used. The earliest use of muqarnas seems to have been on the inside of buildings in association with domes and vaults. The first use of muqarnas on the exterior of a building is on the tomb of Ladjin in Mazandaran built in 1022 where two superimposed rows are used as decoration. Some of the most
impressive examples of muqarnas on the exterior of buildings are where it is used as corbelling for balconies on minarets. One of the best examples of such muqarnas corbelling is found on the minaret of Suq al-Ghazzal in Baghdad dated to the thirteenth century. The base of the minaret is encased in a thick sleeve of muqarnas corbelling above which there is a short shaft which supports a giant six-tiered band of muqarnas corbelling which forms a platform for the balcony.

Generally, however, the most elaborate muqarnas are associated with domes. Some of the earliest and simplest forms of muqarnas can be found in the eleventh-century mausoleums at Aswan in Egypt. One example consists of an arched squinch divided into three lobes on the bottom with a small single niche on top. In Iraq the same device was taken to its most extreme form with the development of conical domes made of muqarnas. The oldest surviving example is the mausoleum of Imam Dur north of Samarra. This dome is extraordinary both for its height (over 25 m) and its profuse, almost organic, muqarnas plaster decoration.

One of the most common uses of muqarnas was for column capitals. Before the eleventh century Islamic buildings would rely on re-used classical and Byzantine capitals or copies of these forms. Muqarnas was particularly suited for use in capitals as it lends itself to the transition from circular column to the square section of an arch and was uniquely Islamic in form. In Ottoman architecture,
where Turkish triangles performed the same function as muqarnas pendentives and squinches, muqarnas was still employed for portals, niches, column capitals and other decorative features.

It is in its use for domes and vaults that muqarnas was to have its most significant impact. By providing a diffused method of transition from flat to curved, muqarnas zones of transition were able to break down the distinction between vertical and curved, domed and horizontal. The best examples of this can be seen in conical domes such as that at Natanz in Iran where the roof emerges not as a hemispherical dome but as a multi-faceted prism-like series of surfaces.

The almost universal adoption of muqarnas as architectural decoration meant that it was also adapted for woodwork such as mosque furniture. The minbar of Nur al-Din built for the Aqsa Mosque in Jerusalem had three bands of tiered muqarnas on a canopy above the foot of the stairs.

In Iraq, Iran and the eastern Islamic world the most suitable materials for muqarnas construction were plaster and baked brick. Both materials have the advantage of being light whilst bricks have the additional advantage of being made to a standard dimension which is useful when repeating the complex geometric alignments necessary for muqarnas. Plaster also has the advantage that it can easily be decorated by carving or painting. In Syria and Egypt the first muqarnas domes were made from plaster suspended from a wooden frame within an outer dome made out of stone. The most famous example of this technique is the dome in Nur al-Din’s maristan built in 1154. Later muqarnas stone domes were made, the best examples of which belong to fifteenth-century Egypt.

The first muqarnas was made purely out of interlocking cut niches but fairly early on ‘dripping’ stalactites were developed. These are thin downward projections from the cut side of the niche which give the illusion of arches suspended in mid-air. These stalactite niches are some of the most elaborate form of muqarnas which defy attempts at two-dimensional representation.

There are several theories about the origins of muqarnas. Generally the decorative origin and function is favoured over the suggestion that muqarnas was the solution to a particular structural problem. The reason for this conclusion is that some of the earliest examples of muqarnas found were decorative plaster bands, although equally early are examples of muqarnas squinches from Egypt. Whilst certainly muqarnas did have a decorative function, from the beginning its early and frequent association with domes and pendentives suggests that the form had structural associations. The tiered form of muqarnas means that the thrust of the dome could be directed downwards into the corner of a building without adding the extra weight of a pendentive. On the other hand muqarnas squinches are a way of providing a greater span without having to build large heavy arches. In general muqarnas tends to blur the distinction between squinch and pendentive and provides a more subtle transition from square to octagon. A view which combines both decorative and structural functions suggests that the origins of muqarnas may be found in Islamic theology which promotes an occasionalist view of the universe whereby the continued existence of anything is dependent on the will of God. Muqarnas is then a way of expressing this view of the universe where the dome appears to stand without visible support.

Further reading:

musalla

Literally a place where prayer is performed, although in practice it has come to refer to large open spaces outside cities for that purpose.

The prime function of a musalla is to provide additional space for prayer during festivals such as Ramadhan. Sometimes they are referred to as ‘Festival Mosques’, and in India, Iran and Ottoman Turkey they are referred to by the term namazgah. Sometimes a musalla is no more than an open space marked out with a line which indicates the direction of Mecca (the qibla), although more often it will include a long wall on the qibla side which may include a mihrab. Sometimes musalla reached advanced stages of building with an arcade covering the qibla wall (as recorded at Bahrain) and elaborately decorated mihrabs such as that of Mashad. The usual position of a musalla was outside the city gates although they are occasionally within the city as in Abbasid Samarra.