

Chapter 9

I. THE MERCANTILE MEDITERRANEAN: NEW FACADES FOR OLD CITIES

- A. Italian Maritime Republics: The Taste for Marble Facades
1. Around the year 1000, four Italian ports, Amalfi, Pisa, and Genoa on the western side of the peninsula, and Venice on the east, emerged as key shipping powers around the Mediterranean.
 2. The success of the Italian merchants abroad greatly enhanced their status at home. The merchant regimes fostered a new civic consciousness leading to the construction of impressive public and religious monuments.
 3. The contact across the Mediterranean affected the development of European taste.
 - a. Food literally changed with the introduction of spices.
 - b. The decoration of imported silks, porcelains, and jewelry stimulated the artistic and architectural imagination.
 - c. The stilted arch windows of Byzantine Constantinople reappeared on the facades along the Grand Canal in Venice.
 - d. *Ablaq*, the alternating bands of contrasting colored masonry used on mosques and madrasas, found its way to important Italian religious works such as the 12th-century Cathedral of San Lorenzo in Genoa.
 4. Amalfi, south of Naples, was the first Italian city to operate an important Medieval port.
 - a. Twelfth-century log-books of Amalfi merchants record activity in Marseilles, Barcelona, Kairowan, and Alexandria.
 - b. The *ablaq* arches that define Amalfi's cathedral façade bears out the city's pan-Mediterranean ties.
 - c. Amalfi's decline in the late 11th century accompanied the rise of Pisa.
 5. Pisa
 - a. In 1081, the city established a republican government, or Commune, administered by an oligarchy of thirty wealthy families.
 - b. Two decades later the city's fortunes soared when it played a key role in the transport and supply of the First Crusade in 1096–1100.
 - c. The new wealth from this colonial endeavor financed the construction of the new cathedral, baptistery, and campanile.
 6. Pisa's Duomo complex
 - a. The setting proved unusual:
 - i. Standing in open space planted with grass
 - ii. Remained outside of the old city limits
 - b. By the mid-13th century they had added the marble-clad Campo Santo cemetery on the north side and the long elevation of the pilgrims' hospice to the south, further defining the area as an enclosed *temenos*.
 - c. The Pisans intended an analogy to the Temple Mount in Jerusalem.
 - d. Pisan mariners transported soil from Palestine as ballast in their ships to be spread in their new cemetery.
 - e. By the 1150s, the dome was complete, rising from an oval plan to a section that followed the profile of a pointed arch, similar to contemporary domes in the eastern Mediterranean area.
 - f. A small, bulb-like finial served as a cap and made the eastern association explicit.
 - g. The builders encased the elevations in marble, slipping narrow bands of dark gray stone in between the thick blocks of creamy white, like the *ablaq* pattern fashionable in Cairo and Damascus.
 7. The Pisan Baptistery

- a. Clear reference to the *Anastasis* in Jerusalem.
 - b. The sculptor Nicola Pisano (1215–1285?) and his son Giovanni (1250–1315) completed the two upper registers in 1265, alternating slender floriated pinnacles with steeply pitched pediments, framing busts of the saints.
- 8. The Campanile, or leaning tower, revealed the structural problems of the marshy soil of Pisa.
- 9. The last significant expression of Pisan patronage came with the tiny chapel of Santa Maria della Spina, located on the banks of the river.
- 10. Florence
 - a. Florence, 40 km upstream, was a military and cultural rival of Pisa, acquiring the city in the early 15th century.
 - b. Florence produced a different style for its churches, more planar and more chromatic.
 - c. San Miniato al Monte was a Benedictine abbey begun in 1018 on a hill overlooking the city.
 - i. Façade followed a flattened, geometrical scheme.
 - ii. Alternating green and white marble panels in the compartments of a lower blind arcade and an upper temple front.
 - iii. Almost as well-proportioned as a classical building, but on closer inspection there are eccentric flaws that contradicted the rules of Classicism.
- 11. Florence's major church, the Baptistery of San Giovanni.
 - a. It was first documented in 1059 and was still being worked on during the early 14th century.
 - b. Taking inspiration from the Pantheon in Rome, its walls rose as a thick, hollowed-out base to support a double-shelled dome.
 - c. Byzantine craftsmen taught the Florentines the art of mosaic, and they covered the entire interior expanse with golden mosaics during the 13th and 14th centuries.
- B. Mamluk Cairo: A Thousand and One Domes
 - 1. Cairo commanded the largest trading economy of the Mediterranean in the 13th century, providing the hinge between Asia and the Italian merchants.
 - 2. The Egyptian city's fortunes advanced through three geopolitical events.
 - a. Christians of the Fourth Crusade in 1204, following the advice of the Venetians, invaded Constantinople instead of Palestine, further weakening the power of the Byzantine Empire.
 - b. The Mongolian hordes of Genghis Khan destroyed Baghdad in 1258, bringing the Abbasid caliphate to an end.
 - c. During the late 12th century the Ayyubid leader Saladin successfully regained parts of the Crusaders kingdoms in Palestine and Syria.
 - 3. Three centuries earlier the Fatimid dynasty from Tunisia conquered Egypt and changed the capital's name from al-Fustat to al-Qahira (Cairo).
 - a. The new regime lived in an isolated compound away from the local inhabitants.
 - b. The major street, the Qasba (Casbah), ran straight through the middle, and two royal palaces rose in the center on either side of the street.
 - c. The Fatimids built their first Great Mosque, the al-Azhar, toward the end of the 10th century inside the walls near the eastern palace.
 - i. It became the principal Islamic study center and basis of the university.
 - ii. Fatimid arches and niches had a distinct style, like triangles with rounded corners.
 - d. The other important Fatimid mosque begun at the end of the 10th century was the Friday Mosque of al-Hakim.
 - 4. During the 13th century, Cairo became a city of domes.

- a. The trend began with a woman patron, Shagar al-Durr (r. 1250–1257).
 - b. Cairo's first dome, built for Shagar al-Durr in the 1250s, crowned the funerary monument to her first husband al-Salih Ayyub.
 - c. The monument inspired a series of domed mausoleums, including the sultana's own tomb.
 - d. The sultan Qalawun (r. 1279–1290), began his tomb in 1284 as the culminating element of a *madrassa* complex.
 - i. The complex drew from several precedents. Its octagonal plan may have derived from the Dome of the Rock in Jerusalem, and the windows of Qalawun's mausoleum appeared remarkably like those of European cathedrals.
 - ii. While formal ideas at this time usually moved from the East to the West, here the direction reversed.
5. al-Nasir Muhammed (r. 1293–1340), who ruled Cairo during its most prosperous period, built a *madrassa* next to his father's, for which he incorporated a significant spoil from Acre: one of the doors from the Christian cathedral. His designers framed it with interlocking *ablaq* masonry to enshrine this obviously alien presence within familiar patterns.
 6. The Mamluk emirs of Cairo, unable to will their property to their families, spent their fortunes on great tombs and religious structures as memorials.
 - a. Like the Normans, the Mamluks initially had no particular style of their own, and thus synthesized local craft traditions with ideas taken from conquered or admired peoples.
 - b. Their tombs became increasingly showy, such as the tall, fluted cupolas of Emirs Salar and Sangar al-Gawli (1303), and the mausoleum of Barkuk (1400).
 7. The Mamluks also placed domes over the great houses of Cairo. The house of Emir Taz (1352), for example, presented a tall recessed niche decorated with sculpted *muqarnas* over the entry.
 8. Mamluk palaces, such as that of Uthman Kathuda (1350), incorporated passive cooling devices.
 9. Foreign traders lived in *fonduks*, in Cairo usually called *wekelas*, hotel-like compounds.
 10. Construction of the grandest Mamluk monument, the Madrasa of al-Nasir Hasan (r. 1347–1361), commenced in 1356. The dome of the Hasan complex rose as the most prominent of the age, and with the sheer elevations of the *madrassa* gave form to Mamluk Cairo's major space of representation, the Rumayla.
- C. Venice: City Without Land
1. The Venetians created a maritime empire through special treaties with the eastern Mediterranean ports.
 - a. By the 14th century they controlled most of the Dalmatian coast and many Aegean islands.
 - b. Venice initially gained its political autonomy through its connections with the Byzantines and remained the only Italian city not aligned with the Holy Roman Empire.
 - c. These connections with eastern powers explained the appearance of strong traces of Byzantine and Arabic style in Venetian architecture, including stilted arch windows, floriated merlins, and the *fonduk* type.
 2. Venice did not undergo the typical struggles between citizens and land-based nobility, and after the mid-12th century never witnessed popular insurrections.
 - a. As the most stable and long-lasting republic in Italy, the state sponsored a wide array of projects, including the Rialto markets and bridge and the civic spaces and buildings of San Marco.
 - b. The city created the industrial district of the arsenal, which employed 16,000 people.
 3. Venice's small islands and network of canals resulted in an extraordinary urban fabric that had almost as many discontinuous streets as the *herats* of Cairo.

- a. The banks of the Grand Canal attracted the patronage of noble Venetians, who built more than 100 magnificent palaces on either side.
 - b. The private investment in magnificent architecture advanced the status of the merchant families while creating a rich backdrop for the city.
 - 4. Ca' Loredan and Ca' Farsetti, begun in the early 13th century, lacked any of the defensive battlements and towers found in the great houses in the rest of Italy at this time.
 - a. They included more fenestration than wall, with windows raised on the stilted Byzantine arches used in Constantinople.
 - b. Many of their neighbors preferred the ogive arch with pointed cusps common to both North African mosques and Gothic cathedrals.
 - 5. Great palaces were called *fontego*, after the Arabic *fonduk*.
 - a. While the layouts differed from the generous courts of the *fonduks* of Egypt and Syria, Venetian palaces combined commercial functions and warehouses on the ground floor and living functions above.
 - i. Ca' Foscari (1430s)
 - ii. Ca' d'Oro (Contarini) (1425)
 - iii. Fondaco dei Tedeschi.
 - 6. Many of the *fontego* palaces along the Grand Canal quoted the decorative fenestration of the Doge's Palace. The exceptional quantity of windows, verging on the openness of a modern curtain wall, responded to the need to keep structures light. It also reflected the city's singular lack of concern for fortifications.
 - 7. Venice aspired to the power of Constantinople: the Doge's Palace, the palatine church of San Marco, and the elongated piazza repeated the relationship of the Byzantine imperial palace, Hagia Sophia, and the hippodrome.
 - 8. Piazza San Marco
 - a. The elevations surrounding the piazza filled three stories of unified arcaded facades, similar to the exterior of Roman theatrical structures.
 - b. The long buildings belonged to the Procurators for their own dwellings and offices and as rented shops, offices, and housing.
 - c. The L-shaped configuration of the two piazzas provided the largest and most magnificent public space of Medieval Italy, serving as the theater for civic rituals.
 - 9. The church of San Marco
 - a. Rebuilt in 1063
 - b. Plan came directly from Constantine's Apostoleion in Constantinople, *aquincunx* composition of five domes on a central-plan Greek cross.
 - c. During the 13th century the Venetians tripled the exterior height of the domes, adding wood-framed superstructures over the original hemispherical vaults for tall, stilted cupolas covered with sheets of lead. These double-shell domes evoked both the structure of the Dome of the Rock in Jerusalem and the shapes of domes in Cairo.
 - 10. The Doge's Palace
 - a. Rebuilt in the 1170s.
 - b. An overall cubic shape, with three wings surrounding a large open court, closed on the fourth side by the apse of San Marco.
 - c. Renovated during the 1340s.
 - i. Facades that conveyed the sense of grandeur, transparency, and accountability associated with republican ideology.
 - ii. Cathedral-like tracery of the second level arcades suggesting the sacred role of the state.
 - iii. Signified a change in the direction of architectural sources, as Venice began to look west.
- D. The Italian Commune: Public Palaces Versus Private Towers
1. During the Middle Ages, over 100 cities in the northern and central regions of Italy established independent communes, citizen-led governments with a

- general council and elected officials. The emerging merchant class eventually excluded both the church and the feudal nobility from the government.
2. The public palace, during the 12th to 14th century, offered a novel secular program for architectural expression parallel to the creation of the great cathedrals.
 - a. The Palazzo del Broletto in Como, built in 1215, remains among the oldest surviving examples.
 - b. Frequent disputes between the bishop and the citizen governments led to the construction of independent council buildings, with a great hall as large as the nave of a church.
 - i. Padua built the largest and most impressive, the Palazzo della Ragione, in 1218.
 - ii. Its roof was constructed by the celebrated engineer monk Fra Giovanni degli Eremitani in 1305.
 - c. Public stairs and spacious loggias created the image of accountability at the public palaces in central Italy, often serving for civic spectacles.
 - i. Palazzo dei Consoli, in Gubbio, designed in 1332, captured the full scenographic value of the formal stairs.
 - ii. The public palace fronted the civic square that occupied a broad terrace supported on colossal barrel vaults, commanding a magisterial view of the city and countryside.
 - d. Florence constructed its second public palace, now called Palazzo Vecchio, at the end of the 13th century.
 - i. The public palace, designed by the sculptor Arnolfo di Cambio, appeared like a fortress, with heavy, rusticated masonry and high windows.
 - ii. Arnolfo's design showed a new degree of proportional rigor.
 - iii. It loomed above Florence as an incontrovertible statement of the power of its citizen-run government.
 3. During the late 13th century, Florence's perennial rival to the south, Siena, pursued a comprehensive program of public works as investments in overall well-being.
 - a. The government financed the major monuments and institutions, including the brilliantly decorated Duomo, the additions to the hospital of Santa Maria della Scala in front of it, the public palace, and its piazza.
 - b. Siena's ruling party of the Noveschi commissioned the greatest expression of the city's collective imagination, the Palazzo Pubblico, and its *cavea*-shaped Piazza del Campo.
 - i. The three wings of Palazzo Pubblico consolidated several governmental functions.
 - ii. The Cappella di Piazza, begun in 1352 and finished during the next century, marked the influence of the Black Death.
 - iii. The shell-shaped Piazza del Campo slopes down to Palazzo Pubblico like a grand outdoor amphitheater.

II. GOTHIC EUROPE: THE FABRIC OF THE GREAT CATHEDRALS

- A. The City Returns: Market Towns and New Towns
 1. The groundswell of medieval European urbanism coincided with the birth of Gothic architectural style.
 2. The new prosperity of the cities encouraged the expansion of city walls, gigantic cathedrals, and impressive civic buildings, such as town halls, covered markets, and hospitals.

3. In northern Europe the counts of Champagne and Flanders discovered that the tariffs on fairs and foreign merchants yielded more than their estates.
 - a. Their sponsorship of the Champagne fairs held in Troyes and three nearby towns during the 12th and 13th centuries, stimulated the axis of Medieval European commerce.
 - b. The seasonal markets rotated among the four towns in two-month durations throughout the year.
 - c. The Champagne fairs took place initially outside the city gates, where they generated permanent settlement areas known in French as *faubourgs*.
 - d. The growing economy of Troyes led to the rebuilding of the cathedral, the founding of the new church of Saint Urbain, and the foundation of a new hospital in the mid-13th century.
4. The transformation of Troyes prefigured that of numerous mercantile cities throughout Europe.
 - a. By the end of the 13th century, Bruges had rebuilt its walls as a gigantic oval enclosing the two earlier rings.
 - b. The city also improved its canal system and constructed several significant civic monuments, including the Belfry, the Cloth Hall, and the Waterhalle.
5. The Zähringer counts, lords of parts of southern Germany and Switzerland, initiated the concept of the new town as an enterprise.
 - a. Between 1119 and 1228, they sponsored a dozen market towns, each structured on a broad central street.
 - b. The Zähringer planners did not leave specific sites for cathedrals and town halls, but once a city had proven itself as a successful market they found sites for the religious and institutional buildings in secondary positions on the side streets.
6. In the mid-13th century the French king Louis IX conducted a campaign in the south of France against renegade Christians of the Cathar sect. One of the prime rebel forts, Carcassonne, fell to Louis IX in 1240. He rebuilt it as a fortress.
 - a. On a flat site adjacent to the fortress of Carcassonne, the king commissioned a polygonal new town with an approximate grid of square blocks for the resettlement and control of the population of Cathar origin.
 - b. The hilltop fortress walls of Carcassonne included round turrets and a semi-circular barbican entrance with a drawbridge to the castle keep, or *donjon*, on the highest peak of the hill.
7. The French and English both claimed Gascony and built hundreds of *bastides*, the French name for new towns, in southwest France during the late 13th century to consolidate their respective power over the area.
 - a. They each followed a basic grid plan with streets about 7 m (22 ft) wide.
 - b. They subdivided the land into oblong "gothic lots," which they allotted to the local peasants.
 - c. The new towns eventually entered into the international conflict of the Hundred Years' War, begun in the 1330s.
8. Other medieval new towns:
 - a. Military bases such as in Caernarvon, Wales, a compliment to the English bastides in France.
 - b. Santa Fe, Spain.
 - c. Systematically designed towns to hold down borders in Tuscany, sponsored by Florence.
9. The new towns and the expanded merchant cities increased people's accessibility and freedom of movement, reducing the intimidating presence of feudal control.

- B. The Gothic Cathedral: The Crown of the City
1. The building boom in European cities during the 13th and 14th centuries nurtured the new Gothic style in church building, architecture as distinct in its details as the classical style of the Romans.
 - a. The designers experimented with slender structural members to accentuate verticality, progressively eliminating the mass of the walls to fulfill an underlying goal of creating "heavenly" interior light.
 - b. The master builders of the cathedrals greatly advanced the technical possibilities of construction using three structural expedients: pointed arches, ribbed vaults, and flying buttresses. While none of the three was a new invention, together they comprised an architectural theory that served the symbolic nature of light.
 2. Gothic architecture commenced with Abbot Suger, a Benedictine monk who exercised great political and cultural influence in 12th-century France.
 - a. The interior of the church, with its spindly members and stained glass windows, would become the means to achieve a new light, the *lux nova*, as the transcendent metaphor for Christ.
 - b. Suger began with the rebuilding of the facade of St. Denis in the 1130s.
 - c. The novel motif of the oculus, a wheel-like round window, repeated on the facades of all successive Gothic churches, evoked the sun's rays and specifically represented the wheel of fortune.
 - d. The drive to progressively eliminate the mass from the walls came during the next decade.
 - e. The *chevet* modulated a hushed, chromatic light.
 3. By the end of the century more than a dozen large cathedrals were under way in Gothic style, pushing beyond borders as France expanded.
 - a. The Gothic style accompanied this expansion to cities such as Amiens, Troyes, and Rouen, leaving particularly strong statements in Reims, where the kings of France were crowned, and Laon, a strategic location on the northern borders.
 - b. Laon: The cathedral, finished in 1215, provided a symbol of cohesion for the once divided city.
 - c. The cathedral at Chartres: The strong vertical lines of its spires and buttresses beckoned pilgrims from 30 km (18 miles) away, as a new Christian *axis mundi* in the heart of France.
 - i. The ribbed vaults in the nave of Chartres reached an astounding 38 m (124 ft).
 - ii. The windows conveyed a broad spectrum of patronage.
 4. During the mid-13th century Louis IX reopened work at St. Denis. His designers reduced the walls to shockingly thin skeletons of stone, which acquired the style name *rayonnant* during the 19th century.
 5. The team of Chelles and Montreux also redesigned the transept of Notre-Dame of Paris and Sainte-Chapelle.
- C. The Spread of Gothic: International yet Local
1. The Christian faithful honored the masons who brought order to the cathedral's complex assembly as heroes of a great mystery.
 2. William of Sens, one of the earliest documented of the master masons, was lured to England in 1175 to rebuild Canterbury Cathedral.
 3. After it had been assimilated into a foreign context, however, Gothic soon shook off its ethnic, or nationalist, undertones, becoming English, German, Dutch, Spanish, Czech, Portuguese, and even reluctantly Italian.

- a. The English, because of their Norman heritage, were as much responsible for the development of the style as the French.
 - b. Several features at Wells Cathedral demonstrated that empirical engineering methods existed outside of France, and that the masons in the English lodges achieved quite innovative solutions on their own.
 - c. The *Notebooks* of Villard de Honnecourt, compiled during the first half of the 13th century, catalogued the type of knowledge an itinerant master mason could impart to a foreign context.
 - d. Gothic style migrated to Germany both through the arrival of French masons and the taste preferences of elite patronage.
 - e. In 1248 the archbishop of Cologne desired to reproduce the plan and tracery of Notre-Dame at Amiens for his new cathedral.
 - f. From this project there was further diffusion from Cologne to Burgos, Spain.
 - g. Even Italy, which resisted Gothic style in favor of its strong Roman heritage, witnessed new versions of ribbed vaults and pointed arches.
4. The best documented dynasty of master masons descended from Heinrich Parler of Cologne in the 14th century.
- a. He and his descendants pursued a clear style and signed their works with a family emblem, a stylized hook.
 - b. His son Peter worked with him on the cathedral of the Holy Cross at Schwabisch Gmund.
 - c. Then they gained the commission for the Frauenkirche at the marketplace of Nuremberg in the 1350s.
 - d. Peter caught the attention of Emperor Charles IV, who brought him to work on the new cathedral of Saint Vitus in Prague.
 - e. Peter also designed Prague's Charles Bridge in 1357.
 - f. Another member of the Parler clan, Michael, and perhaps his son Heinrich, worked on Strasbourg Cathedral in the 1360s.
 - g. Another family member, Johan Parler, designed the late 14th century choir and tower of the Freiburg cathedral, in the successful Zähringer new town.
 - h. The chain of commissions then passed to Johan's son Wenzel, who took charge of the design of Saint Stephen's in Vienna, begun in 1399.

III. SUB-SAHARAN AFRICA: LIVING ARCHITECTURE

As designers and builders of their own homes and villages, Africans created a truly living architecture, involving most of the members of their communities in the process.

- A. Eastern Africa: Ethiopia, the Swahili Coast, and Zimbabwe
 - 1. Intense heat, low yielding agriculture, and tropical diseases prevented most African regions from easy urban development. These climatic factors favored small-scale vernacular structures in villages rather than monumental expressions.
 - 2. Since the third millennium BCE, the Nubians posed serious competition to the Egyptians.
 - a. Their rulers built pyramids, temples, and monuments in the effort to rival their neighbors.
 - b. During the New Kingdom period, the land of Axum, led by the Negusa Negast (King of Kings), created hundreds of funeral stelae, some taller than the obelisks in Luxor. These flat needles, the last dating from the 3rd century BCE, carried inscriptions with architectural details and terminated in head-shaped rounded tops.
 - c. Both Nubia and Axum converted to the Coptic version of Christianity in the 4th century CE and continued exchanges with the Byzantines for

many centuries. The churches of Christian Nubia, known only from ruins at Faras and Old Dongola, generally followed central plans like Byzantine churches.

- d. During the 13th century, the Zagwe dynasty attempted to revive the declining status of Ethiopia, building a series of extraordinary rock-cut churches in the southern city of Lalibela. The twelve new churches cut from the local volcanic tufa stone represented a new Jerusalem.
3. Nubia kept its independence from Islamic rule until the 14th century as the major supplier of black slaves to Cairo.
 4. The other great African slave markets were found on the Eastern, or Swahili, coast of Africa, which saw significant urbanization after the year 1000.
 5. The emir of Kilwa built a palace in adobe with vaulted chambers and lumber reinforcing, successfully imitating the luxury and details of his Muslim trading partners.
 6. A few highland areas of East Africa attracted denser settlements, such as Engaruka near Lake Manyara in modern Tanzania, and south of this, Zimbabwe. The region came to prominence through trade with the Swahili coast in the 13th century, marketing ivory, gold, and leather.
 - a. The elites of the region created an extraordinary monumental setting, leaving the only large stone structures in Africa south of the Nile.
 - b. The Shona people built the magnificent granite drywalls of the Great Zimbabwe enclosure between the 12th and 15th centuries.
 - c. It was the largest and most carefully crafted of at least seven major *zimbabwes* (literally "stone structures") constructed at distances of 150 km (90 miles) from one another by the competing cattle-raising elites of the region.
 - d. The stones of Great Zimbabwe came as a gift of nature: the strips of granite in this region crumbled into brick-size pieces, which facilitated their assembly into smooth walls.
 - e. As the power of the kings increased they attached the huge walls to the large monoliths to provide even more impressive objects for cult veneration.
- B. West Africa: From Dogon Villages to the Yoruba Metropolis
1. Most Africans, from the Transvaal plains in South Africa to the rain forest in central Africa, to the West African savannah, lived in rounded cell structures in small villages.
 - a. Each year they fixed, added to, or totally rebuilt their shelters.
 - b. Depending on the agricultural yield of the land, the proximity of the individual cells of a village would vary from extremely close to widely scattered, with as few as a half dozen to over 100.
 - c. The village of Tongo, presented a social diagram based on the hierarchy of wives' courtyards, organizing the wives in chronological order, with their cooking areas, an area for their married sons, another for unmarried sons, a livestock pen, and granaries.
 - i. The granary stood out as the most articulated element of African villages.
 - ii. As the treasury of the community's alimentary surplus, the granary assumed a monumental function, comparable to the role of domes in the Mediterranean.
 2. Indigenous buildings tended to be round, derived either from the basket-like structures of woven twigs or the coiled adobe construction made of *banco* (wads of mud).
 3. Orthogonal geometry occasionally appeared in exceptional contexts. The Dogon culture in the modern state of Mali tended to construct its villages with square stone cells. The language used to name buildings and their parts in a Dogon village revealed a traditional anthropomorphic theory of design.

- a. The language used to name buildings and their parts in a Dogon village revealed a traditional anthropomorphic theory of design.
 - b. Every element corresponded as a metaphor to the human body and its parts, a conceit that appears in many other West African societies.
 - c. The Tamberma people of Togo shared this carnal interpretation of architecture, making bee-hive shaped, mud-walled dwellings representing a body.
4. The natural abundance of the Niger River system of West Africa encouraged the growth of several large city-states that created significant artistic and architectural works from the 12th through 15th centuries.
- a. Like the Dogon, the Yoruba-speaking tribes built with orthogonals but on a much grander scale.
 - b. The earliest Yoruba capital at Ile-Ife dates to the 9th century. Set in a hilly forest, a concentric series of five oval walls surrounded its central palace complex.
 - c. Benin City emerged as the new dominant city, controlled by non-Yoruba Edo speakers.
 - i. The king lived in the center in a large palace with many impluvium courtyards surrounded by fortified walls.
 - ii. Each of Benin City's dozens of adjacent enclaves had its own enclosure, yielding 16,000 km (9,940 miles) of rammed earth walls.
 - iii. After the arrival of Portuguese traders in the 1490s, Benin City became ever more prosperous, expanding an already thriving local slave trade into an international export market.
 - d. The slaves who were sent abroad, cut off from the spirit of their native villages, attempted to conserve some of their cosmic traditions in the meeting spaces, lean-to shelters, impromptu shrines, and, above all, the music that traveled with them across the Atlantic.

C. The Sahel: An Islamic-African Synthesis

- 1. The West African edge of the Sahara Desert, known as the Sahel, or the "coast," attracted urban development from the 10th century onward.
- 2. As Islam filtered into the cities of this region, it amalgamated with strong local belief systems. While mosques and minarets became dominant features of the skylines, indigenous technologies and religious functions, such as fetish veneration, melded with the new urban architecture.
 - a. The houses in the cities of the Sahel conformed to the orthogonal models imported from Islamic North Africa, densely packed around courtyards.
 - b. The dwellings nonetheless maintained the anatomical metaphors of West African mud structures.
- 3. Songhay emerged in the 9th century as the first of the indigenous states in the Sahel.
 - a. Two centuries later, Songhay returned to prominence, a fact marked by the construction of the mausoleum of Askia Muhammed, begun in 1495.
 - b. The mausoleum's impressive pyramidal form represents the culmination of the fusion between Arab and local sources.
 - c. The great adobe pile, studded with gnarled *toron* sticks, rose like a prickly ziggurat.
- 4. The legendary magician-king Sundiata Keita brought together the Mande-speaking region north of the Niger Valley during the mid-13th century.
 - a. The Mande Empire reached its apex under his grandnephew, Mansa Musa (r. 1312–1337), who after his famous pilgrimage to Mecca in 1324, began an ambitious building campaign.

- b. Two works in Tombouctou belong to this flourishing period of the mid-14th century.
 - i. The Andalusian poet-architect Abu Ishap Es Saheli Altuwaidjin, who accompanied the king on his return to Mali, designed the Great Mosque, or Djingueré, at the southwest edge of the city in 1327.
 - ii. The Sankoré mosque was begun by a female patron of Tuareg origin in 1340.
- 5. The city of Djenné during the mid-13th century through the aegis of the local king, Koi Konboro, converted to Islam.
 - a. The Great Mosque of Djenné, built in the 14th century, melted into ruin and was abandoned for two centuries.
 - b. In 1907, during the period of French dominance in Mali, the colonial government sponsored the rebuilding of the Djenné mosque.
 - c. The Great Mosque of Djenné requires replastering every year and relies on community volunteers to do the work as part of the Ramadan festival. With each application of mud, the building's contours take on a slightly altered shape.