Chapter 10

I. HUMANIST ITALY: PUBLIC SPACES AND PRIVATE PALACES OF THE RENAISSANCE

The movement to revive ancient Greco-Roman culture, known in hindsight as the Renaissance, had its epicenter in 14th- and 15th-century Florence.

- The wealthy Florentines shared a new taste for reviving the artistic ideas of the ancients through their humanist background.

- The movement began with the literary works of 14th-century Tuscan poets Dante, Petrarch, and Boccaccio, and tehn spread to the arts, above all architecture, which incorporated *all'antica* elements.

A. The Dome of Florence and Its Architect, Filippo Brunelleschi.
   1. During the 14th century, the wealthiest families from the merchant guilds dominated the artistic output of Florence.
      a. They channeled their collective resources into great civic projects:
         i. The Palazzo Vecchio
         ii. The new cathedral of Santa Maria del Fiore
         iii. The public grain market of Or San Michele (later turned into a church)
         iv. The city walls and the bridges
   2. The emergence of perspective vision accompanied the development of the principal public space of the city, Piazza della Signoria
      a. In 1356 the urban magistrates cleared a final patch of houses that connected the square, or piazza, to the north of the Palazzo Vecchio to a second square that served as a southwest entry to the civic center.
      b. The enlarged space, brought together on a grid of flagstones and brick pavers, allowed one to view the formidable volume of the city's public palace and bell tower in relation to its surroundings.
   3. Construction began on Florence's greatest civic project, the cathedral of Santa Maria del Fiore, in 1296.
      a. Arnolfo di Cambio proposed a simple Gothic style, with quadripartite ribbed vaults spanning the nave and two side aisles.
      b. The commune charged a committee to set the dimensions of the cupola in 1367 as wide as the Pantheon in Rome and nearly twice its height.
         i. Neri di Fioravanti produced a scale model showing the dome's central octagon, which stepped down to three partial octagons, each of which contained five radiating chapels.
         ii. The structural concept for Fioravanti's dome derived from that of the 12th-century Baptistery of San Giovanni.
         iii. Its unprecedented size, more than a third wider and over twice the height of the Baptistery, posed tremendous logistical problems for its construction.
         iv. Filippo Brunelleschi (1377–1446) took charge of the project after a competition held in 1418.
         v. He astounded the city by proposing to build the new dome without falsework.
         vi. The great cupola abounded with innovations in Gothic structure while also displaying novel elements of the revival of ancient Roman style.
   4. Brunelleschi also worked on:
      a. Foundling Hospital
      b. Dome of the Old Sacristy of San Lorenz
      c. Designed the Pazzi Chapel

d. Initiated the plan in the 1420s to rebuild the church of San Lorenzo.

B. The Florentine *Palazzo*: Architecture as a Civic Duty
   1. The city's cloth merchants and bankers who survived the Black Death of 1348 received an unexpected economic windfall, as considerable inherited wealth remained in fewer hands.
      a. This solid economic base stimulated patronage for exceptional works of public and private art.
      b. By 1500, Florence appeared the most orderly city in Europe, with well-paved and drained streets, monumental civic buildings, and a fabric of stately cubic palaces.
   2. The fortress-like Palazzo Vecchio, with its rustication of rough blocks and regularly spaced biforium windows, exerted the prime influence on the development of the Florentine merchant's palace.
      a. Cosimo de' Medici (1389–1464), the patron of San Lorenzo and other religious institutions, rebuilt his family palace in the 1440s and redefined the Florentine *palazzo*_type for many generations.
         i. Cosimo was the prototypical humanist patron, amassing a famous collection of ancient texts and statues and desired to build a residence more like an ancient Roman *domus* rather than an urban fortress.
         ii. Classical details, such as the Corinthian colonettes of the biforium windows, replaced military imagery.
         iii. Most palaces for the next two centuries followed the plan organization of Palazzo Medici: a series of interconnecting, or enfilade, rooms set around a square arcaded court.
   3. The Medici Palace embodied the attitude of *magnificenza*, whereby Florentine patrons contributed to the improvement of the public realm through their private palaces.
      a. Cosimo's example inspired the construction of more than sixty palaces in Florence during the second half of the 15th century, as well as countless imitations in other cities.
         i. Filippo Strozzi, the second richest man in Florence, began the city's largest palace in 1489.
         ii. Giovanni Rucellai (1403–1481), the third wealthiest man in the city, and one of the most documented patrons of the Florentine palace boom, began construction on his family palace in 1453.
            1. Built with the advice of humanist scholar Leon Battista Alberti.
            2. Supervised by the sculptor-architect Bernardo Rossellino.
   4. Leon Battista Alberti: Humanist and Architect
      1. Behind the harmonious proportions and classical details of Palazzo Rucellai was one of the greatest humanists of the 15th century, Leon Battista Alberti (1404–1472).
      2. Alberti found support for his humanist research in the papal bureaucracy and eventually entered the priesthood.
      3. He produced a prolific output of treatises on such diverse topics as the Tuscan language, sociology, code encryption, horseback riding, painting, and sculpture.
      4. His most enduring work remained the treatise on architecture, written in Latin as *De re aedificatoria*.
         a. Encouraged patrons to demonstrate their virtue and achieve fame by sponsoring appropriate buildings.
         b. Sympathies lay clearly with the republican ideal of moderation.

5. He designed or restructured:
    . Mausoleum inspired by the Holy Sepulchre
    a. Facade of the Dominican church of Santa Maria Novella
    b. Thirteenth-century church of San Francesco as a mausoleum (Rimini)
    c. Central plan church of San Sebastiano (Mantua)
    d. Pilgrimage church of Sant'Andrea (Mantua)
6. Lorenzo de' Medici (1449–1492), grandson of Cosimo the Elder, figured among the readers of Alberti's treatise on architecture.
    a. The Medici family commissioned Giuliano da Sangallo to prepare measured drawings of the great works of antiquity in Rome.
    b. The resulting notebooks served many generations of architects as a source for *all'antica* types and details.
    c. After Lorenzo obtained the estate at Poggio a Caiano in an exchange with Giovanni Rucellai, Giuliano designed a large villa in 1486, embellished with an unusual Doric temple front at its entry.
7. Alberti established a standard for Renaissance patrons and architects. Rather than copy the past, he recommended that the revival of ancient architecture follow a coherent set of rules with which one could approximate the grandeur of the ancients yet create something absolutely new.

C. The Quest for the Ideal City

1. Alberti's friend Federico da Montefeltro attempted to visualize the new architecture and urbanism of the Renaissance by commissioning a series of perspective city views.
    a. This ideal city had neither a castle nor a poor person's dwelling, implying an ideal republican social context in which everyone was equally well-off.
2. As a member of the papal bureaucracy from the 1420s until his death, Alberti worked for a succession of popes.
    a. Pius II (Piccolomini, r. 1458–1464) completed the transformation of Pienza, his birthplace, in the brief period from 1459 to 1464.
        i. Its design adheres to many of the ideas in Alberti's treatise, such as using a slightly curved main street to make a small town appear larger.
        ii. He then instigated the construction of nearly forty buildings for himself and his supporters.
3. The humanist interest in the ideal city led Antonio Averlino, better known by his pseudonym, Filarete (c. 1400–1469) to create the fictional city of Sforzinda.
    a. Filarete anticipated a complete social system and unwittingly introduced a recurring theme in architectural utopias: the belief that form can influence behavior for the betterment of society.
4. The humanist revival of classical culture in 15th-century Italy, following the examples built in Florence and the theoretical positions of Alberti, led to diverse attempts to perfect the visual order of the city.

B. EASTERN EUROPE: FROM THE SPIRIT OF WOOD TO THE CONVENTIONS OF MASONRY

E. The Formation of Russia: From Log Houses to Onion Domes

1. The vast, timber-using areas of Eastern Europe were sparsely settled, treacherous, and among the coldest climate zones on earth.
2. The Byzantine Empire exerted the primary cultural influence north of the Black Sea, and the Greek Orthodox faith spread through Kiev to greater Russia after the conversion of Vladimir the Great (r. 980-1015).
    a. Church of the Tithe in Kiev, finished around the year 1000 by masons from Constantinople, became the region's first monument in stone.
        i. Its original plan resembled typical Byzantine churches.
        ii. This central plan model of a cross within a square served for most Ukrainian and Russian churches for the next five centuries.
    b. In Novgorod, Vladimir commissioned a cathedral in timber, crowned with thirteen domes, one for Christ and the others representing the twelve apostles.
        i. Local craftsmen assembled the majority of the early Russian Orthodox churches using the traditional blockwork construction method.
    c. The oldest wooden church in Russia, the 14th-century Church of Saint Lazarus on Kizhi Island at Lake Onega, survived because it was encased inside a larger 17th-century church.
        i. Over the ridge beam of the nave's plank roof rose the sole symbolic element, a bulbous *lukovitsa* dome.
        ii. The onion-shaped dome, which has come to characterize Russian style, arrived with the 13th-century Mongolian invasions.
3. The use of masonry in Slavic lands was usually associated with royal clients and imperial intentions.
    a. The Church of Saint Sophia in Kiev built in 1025 and later expanded, remains the oldest example.
4. During the 13th century the Mongolian calvaries of the Golden Horde (Tatars) devastated Russia.
    a. The Tatars established their capital in Kazan and continued to threaten Russian autonomy until the mid-16th century.
5. The northwestern city-state of Novgorod went unharmed during the period of Tatar dominion, protected by its remote position amid forests and swamps.
    a. Like Kiev and other Russian cities, it comprehended a scattered series of walled enclaves.
    b. Its Kremlin fortress, an elongated oval, stood on the highest outlook, with smooth walls rebuilt in brick during the 14th century.
    c. Near the center of Novgorod's Kremlin the merchant regime sponsored the rebuilding in stone of Vladimir's wooden cathedral of Saint Sophia in 1045.
6. By 1480, Ivan III (the Great, r. 1462–1505) succeeded in both expelling the Tatars and subduing the independent city-state of Novgorod.
    a. Concentrating on Moscow as the fulcrum of a centralized state, he planned stone monuments to reinforce the dynasty's religious and political independence.
        i. Replanned Moscow to be a "third Rome."
        ii. Commissioned the new buildings for the Kremlin exclusively in stone and brick.
        iii. Sent an envoy to Venice to hire Italian professionals.
            1. Aristotile Fioravanti rebuilt Moscow's Cathedral of the Dormition.

iv. Opposite Fioravanti's church, Ivan ordered the rebuilding of the palatine chapel, the Cathedral of the Annunciation.
v. Between these two churches Ivan stationed an extraordinary secular building, purposefully alien in style, known as the Faceted Palace.
vi. Ivan's final church, the Cathedral of the Archangel Michael, served as his dynasty's mausoleum.

7. The Russian enthusiasm for Italian Renaissance design was interrupted by the construction of Moscow's most ostentatious church, Saint Basil.
    a. Built as a votive church just outside the walls of the Kremlin by Ivan's grandson, Ivan IV, the Terrible, after his victory over the Tatar city of Kazan in 1552.
        i. There was an unprecedented display of colorful bulbous *lukovitsas* with stacked gables girding their tall drums.
        ii. The iconography represented a conscious rejection of Italian influence as a triumphal expression of Russian identity and the triumph over the East.
        iii. In contrast to the severe red walls of the Kremlin, Saint Basil proffered a fanciful forest of surging cupolas and pointed *botchkas*, asserting the Russian traditions of wooden churches.

F. Unified Poland: Catholicism and Masonry

1. The political consolidation of Poland paralleled that of Russia.
    a. However, the Polish monarchs chose the western Church of Rome around the same time, in the late 10th century, that the Russians opted for the eastern Greek Orthodox.
        i. The new masonry works that began to appear in the first Polish monasteries and churches appeared markedly different from those in Moscow, closer to the models coming from the west.
        ii. Benedictine monks had built over 200 new monasteries in the region by the end of the 13th century.
2. The southern city of Krakow became the base for unifying Poland in the mid-11th century and led the movement toward stone architecture.
    a. The Wawel Hill compound, a bit smaller than the Kremlin of Novgorod, served as Krakow's original castle and cathedral, overlooking the Wisla River.
    b. North of the Wawel, the Polish crown sponsored the construction of a rationally designed new town, now known as Stare Miasto.
        i. Resembled those of other medieval new towns in Europe.
3. Kasimir III (the Great, r. 1333–1370) led Poland to a new well-being, strengthening ties to the West while expanding eastward into Russian territory.
    a. He commissioned over fifty castles and fortified towns and many churches.
        i. His insistence on building in masonry rather than the more expedient timber significantly altered the building traditions of the region.
    b. Kasimir rebuilt the principal structures of the Wawel.
    c. He attempted to use patronage to win the favor of the people.

i. In the vast plaza of the Rynek Główny, he commissioned the arcaded Cloth Hall.
ii. He sponsored the Town Hall, later destroyed, and the municipal Belfry.
iii. The king also set up the University of Krakow, demonstrating his commitment to developing a strong secular society.

d. Kasimir founded a second new town, Kazimierz, to the south of the Wawel, which, during the 15th century, became the principal residence of the Jewish community.

i. The Stara Synagogue, built in the late 15th century, is the oldest Jewish monumental structure to have survived in Eastern Europe.

4. The taste for Italian architecture arrived in Poland through contact with the court of Matthias Corvinus (r. 1458–1490) in Hungary, a ruler with strong sympathies for Florentine humanism.
   a. As in Russia, the arrival of artists and styles from Italy did not result in pure*all'antica* style.
      i. In Prague the court architect Benedict Reid (c. 1430–1516) had begun to transform Hradčany Castle during the 1490s.
         1. This led to a startling synthesis of Gothic and classical motifs in the Vladislav Wing.
      ii. In Krakow, Sigismund I hired a Florentine designer, appropriately named Francesco Florentino, to revise the Wawel Castle in 1516.
         1. The resulting eccentricity demonstrated that ingredients of*all'antica* language were freely borrowed without regard for syntax.
   b. A bit later, however, at the Sigismund Chapel, one of the many chapels that padded the perimeter of the Wawel cathedral, Florentine style arrived intact.
5. After the transfer of the capital of Poland to Warsaw in 1596, the patronage for important buildings emigrated north.
6. Krakow provided Poland with its finest models of stone-clad architecture, in which the traditions of log construction had been completely displaced by a new classical language of architecture.

C. PRECONTACT AMERICA: EMPIRES OF THE SUN

The European maritime exploits of the late 15th century changed the notion of "center" for most people in the world. The empires of both the Aztecs in Mexico and the Inca in Peru took root during the late 14th century and reached the height of their development on the eve of the Spanish arrival in the early 16th century.

i. North America before the Contact with Europeans
   1. What Europeans called the "New World"—the Caribbean Islands, Central America, South America, and North America—proved to be very old.
      a While the inhabitants of the Western Hemisphere did not have the wheel, the horse, or metal tools, and created only limited forms of written language, they designed monuments and spaces of outstanding craft and beauty.
   2. Before the arrival of Europeans, the architectural development of America north of Teotihuacan (now Mexico City) remained discontinuous and heterogeneous.

a. The hunter-gatherers in the northeast constructed nomadic structures such as wigwams and tipis.
b. Those living in the warmer climate zones built more permanent pit houses.
c. Log structures, comparable to the blockwork of Eastern Europe, appeared throughout North America.
d. The longhouse, a type built throughout Europe since Neolithic times, had a corresponding type among the Iroquois and other peoples of the American northeast.
e. Earthworks, mounded figures made from piles of dirt, provided the most durable Native American monuments in the Midwestern areas of what is now the United States.
    i. The most ancient mounds, a set of six concentric circles at Poverty Point, Louisiana, date to around 1,000 BCE.
    ii. The Adena culture of Ohio left more than 300 mounds around 500 BCE, which mostly served as tombs.

3. Cahokia, located at the exact geographic center of the continent, on the east side of the Mississippi River, facing what eventually became St. Louis, attained uniquely high development.
    a. Around 1200 CE a population of 15,000 participated in this vast ceremonial landscape.
    b. Monk's Mound, the great pyramid of Cahokia in the north, dominated an oval shaped *temenos* enclosed by a log stockade.
    c. The compositional similarity of Cahokia to Mesoamerican ceremonial spaces, such as Monte Albán and Teotihuacan, suggested the cultural, or perhaps colonial, presence of Mexicans.
4. The other significant urban culture in pre-Columbian North America settled in the Southwest at the "four corners" between present-day Colorado, Utah, Arizona, and New Mexico.
    a. The Hohokam, Mogollon, Anasazi, and other peoples of this region acquired the name Pueblos.
    b. Their settlements, subsequently known as "great houses," were usually multistoried collective structures made either of adobe walls or joined masonry, housing several hundred inhabitants.
        i. The Great House builders exploited natural topography for shelter and defense.
        ii. Mesa Verde tucked under the protective cliffs of Colorado.
        iii. Pueblo Bonito, set in the shadow of a cliff in the Chaco Canyon of New Mexico.
    c. The architecture of the Anasazi remained relatively autonomous from Mexico and, unlike that of the Mississippi cultures, lacked temple mounds or pyramids.
        i. They planned their sacred spaces in underground circular chambers, known as the *kivas*.
        ii. The Cliff Palace at Mesa Verde forms part of a cluster of three Great Houses under the protective canopy of a monolithic rock shelf.
        iii. The builders included twenty-three circular *kivas* amid more than 200 orthogonal dwelling chambers.
        iv. The builders stacked the rooms as high as four stories; they used wooden ladders to enter their dwellings, while lower-level tunnels offered internal circulation.

v. They built the roofs of corbelled logs that could support considerable live loads, including terraces and rooftop gardens.

5. About 200 km south of Mesa Verde, another branch of the Anasazi built a grander power base at Chaco Canyon.
    a. Pueblo Bonito commanded a 10 km (6.2 miles) stretch of a dozen communities.
    b. The elite created the largest and most refined of the Great Houses in five phases over the span of four centuries, revealed in the differing styles of masonry bonds.
    c. Pueblo Bonito was abandoned in the mid-12th century, and, after recurrent droughts, the Anazasi culture disappeared around 1300, its population dispersing to the south and east.

. Tenochtitlán: The Aztec Metropolis

1. The Aztecs, known in their own time as *Mexicas*, settled in the Valley of Mexico in 1325.
2. They founded their capital, Tenochtitlán, on an island near the western shores of the valley's network of five lakes.
    a. The Aztecs developed their city into a spectacular setting, rich with temples and palaces.
    b. The island metropolis proved larger, cleaner, and closer to the ideal city of the Renaissance than any city in Europe of the same period, including Florence.
3. Tenochtitlán grew on land recuperated from marshes.
    a. They created a grid of shallow canals for both drainage and circulation, providing transportation by canoes and flatboats for the merchant and military sectors.
    b. Aztec hydraulic engineers rivaled the ancient Romans, bringing fresh water via a 6 km (3.7 miles) stone-line aqueduct from Chapultepec Hill to the center of their capital.
    c. From the mainland, they built three paved causeways which functioned both as highways and dikes.
4. The Aztec capital remained unique among Mesoamerican cities because of its density.
    a. Government magistrates enforced orthogonal street and canal alignments with strict sanitary measures.
5. The common dwelling type gathered two or more one-room structures around a patio, similar to the *siheyuan* house type in China.
    b. As a seismically volatile area with frequent earthquakes, the residents of Tenochtitlán built their houses low, with wattle and daub walls and thatch roofs.
6. Moctezuma II (r. 1502–1520), king at the time of the arrival of the Spanish captain Hernán Cortés (1485–1547), created an immense palace in stone, with over a hundred rooms.
    a. Moctezuma's palace may have resembled a well-preserved structure at Mitla near Oaxaca, built a century or so earlier by the Mixtecs.
    b. Like his forebears, he rebuilt Coatepetl, the Great Temple of Tenochtitlán.
        i. This final version of the steep pyramidal sanctuary rose 60 m (196 ft), rivaling the dome of Florence in monumentality.
7. The Aztec city differed from most urban cultures in one chilling detail: the constant recourse to human sacrifice and the normalization of cannibalism, which provided the ritual fuel to appease the patron god Huitzilopochtli and secure the fortunes of the city.

a. The victims helped stave off the final annihilation predicted in the Aztec ritual calendar.
b. When the bearded Cortéz arrived with a fleet of eighteen caravel ships, guns, fanfare, and mounted steeds, he appeared to the Aztecs as the likeness of the dreaded deity Quetzalcoatl, fulfilling the prophecy of the demise of Moctezuma's realm.

A. Stones of the Inca: From Agricultural Terraces to Cut-Stone Memorials

1. During the same period of Aztec ascendancy over Mexico, the Inca assembled much of South America into a larger, better organized empire.
    a. Steeped in religious and ideological dictates, the kings and their court fostered a highly articulated monumental architecture.
2. The Inca ruled an empire they called *Tahuantinsuyu* with a form of theocratic socialism, scrupulously managing the distribution of surplus and the location of the population.
    a. A surfeit of manpower explains their impressive public works, which, aside from religious monuments, included extensive systems of agricultural terracing, tunnels for mining precious metals, rope suspension bridges, and a network of 30,000 km (18,640 miles) of paved roads connecting the four quarters of the empire.
3. Inca architectural know-how began with the agricultural infrastructure of irrigation canals and stone terraces in a land characterized by high mountains and coastal deserts.
    a. The pyramids at Sipan, built in adobe bricks by the Moche culture from the 1st to 6th centuries, were still used for ceremonies in the 15th century by the Chimu, the Inca's chief rivals.
    b. The Inca probably knew the mysterious geoglyphs cut into the desert by the Nazca culture, 200 km (124 miles) west of Cuzco.
        i. These colossal incisions depicted such figures as a condor, a whale, an alligator, a monkey, and the so-called astronaut.
4. The Inca ruling class made regular pilgrimages to three ancient sites that informed their monumental endeavors.
    a. The 7th-century BCE sanctuary of Chavin de Huantar, a temple with a function similar to Delphi's for the ancient Greeks.
    b. The oracle at the coastal site of Pachacamac, 30 km south of Lima, where they restored the pyramidal mud brick structure of the Temple of the Sun, begun between the 4th and 7th centuries
    c. Tiahuanaco, which was relatively close to their capital at Cuzco, on the Bolivian side of Lake Titicaca, a temple that represented the origins of human culture.
5. The Inca practiced a unique method of masonry construction.
    a. Without the benefit of metal tools, they impeccably worked it into smooth surfaces, joining it in highly irregular, interlocking courses.
    b. The cut-stone masonry in the Inca capital of Cuzco remains the finest in the empire, indicating the city's elevated religious status.
6. Pachacuti Yupanqui (r. 1438–1471), "the world transformer," rebuilt Cuzco during the 1440s.

    a. The grid-based Chimu capital of Chan-Chan served as a model for restructuring the Inca capital.
    b. Pachacuti designed Cuzco in the shape of a puma, a feline divinity.
    c. While built of orthogonal, *cancha,* blocks Cuzco did not follow a perfect grid. Fine examples of the tradition of walled urban blocks have survived in Ollantaytambo, 70 km north of Cuzco, built by Pachacuti during the same years as Cuzco.
        i. The *canchas* in Cuzco were similar to those of Ollantayambo, but double or triple the scale.
7. Each of the succeeding Inca built a palace in Cuzco upon assuming power.
    a. The walls often included trapezoidal niches, a special sign of sacredness.
    b. After the death of the patron, the palace was maintained as if he were still alive.
8. The most impressive work of Inca masonry remained the hillside site of Sacsahuaman overlooking the city.
    a. Sacsahuaman undoubtedly functioned as a cult site.
9. How Cortés in Mexico and Francisco Pizarro in the Inca empire of *Tahuantinsuyu* overcame these highly organized and heavily populated lands with small bands of steel-clad soldiers, a few guns, trumpets, and horses baffle the imagination.
    a. In less than a century, millions of indigenous American peoples disappeared.
10. The contact between Europe and the Americas thus represents the turning point for modernity.
    a. The victory of the pragmatic moderns began to shift the focus of architecture away from a cosmological center, to other priorities geared to the individual, political goals, and social pathologies.