

Architecture 101

A brief alphabetical history of architecture and architectural styles

Sources: Sir Banister Fletcher's A History of Architecture (20th Ed.); Architecture is Elementary (2005); Understanding Architecture - An introduction to architecture and architectural history (1994); What Style Is It? A Guide to American Architecture (1983); Encarta; Wikipedia; historyforkids.org; Encyclopedia Britannica; Reference.com

Architecture is the art of building, which varies from small buildings, such as sheds or houses, to very large buildings, such as a library, a court house, a place of worship, a theater or a sports stadium. Africa was probably the place where people first built shelter for themselves, out of mud and sticks, because people lived in Africa before they lived anywhere else. This was the earliest vernacular architecture. Not much known much about it, but vernacular architecture is based on cultural traditions that are probably utilized in current times. The first houses were built in West Asia (circa 7000 BC), but the first big buildings were built much later (circa 3000 BC). In West Asia the first big buildings were the ziggurats, and in Africa, in Egypt there were the Pyramids. Later on, approximately 1800 BC, both the Egyptians and the Babylonians began to build large, royal palaces, richly decorated. Soon the people of Crete and Greece began to imitate these palaces for their own kings and queens. In Egypt, the Pharaohs also built temples to honor their gods. Around 1000 BC a Dark Age discouraged people from building, because they were too poor and worried, and when the Dark Age ended there were no more kings in Greece, and so no more palaces. Instead, the Greeks built numerous temples, such as the Parthenon, for their gods. While in West Asia, the Assyrians, the Neo-Babylonians and the Persians all built palaces for their kings. Egyptian power and culture, which had declined, could not support construction of large buildings.

Because Alexander the Great conquered Egypt and West Asia (circa 331 BC), Greek architecture spread all over his empire, and even beyond it into India. Theaters and gymnasias, as well as temples, were built wherever Alexander had fought. When the Romans conquered their own Empire, they also built Roman buildings all over it. The Romans brought some new ideas to architecture: they built in brick and concrete, and they used the arch, the barrel vault, and the dome. They built theaters and amphitheaters, temples, palaces, basilicas, bath buildings, apartment blocks, restaurants and houses all over, from England to Iraq. The conversion of the Empire to Christianity (circa 350-400 AD) also inspired the Romans to build a lot of churches. It was also about this time that people in India began to build Hindu temples, many of them cut out of rock. With the fall of Rome (circa 450 AD) architecture also collapsed for a while, and only small churches were built in Europe. In the Islamic empire, however, many beautiful mosques were built from Spain to India, and also many big palaces. Hindu temples also continued to be built. By the time of Charlemagne in 800 AD, big buildings were going up again in Europe, like Charlemagne's own palace at Aachen. Soon big Romanesque churches were built all over England, France, and Italy. Then, beginning around 1100 AD, the great Gothic cathedrals were built in Christian Europe, while mosques continued to be built in West Asia, Africa, India, and Spain.

African: People lived in Africa before they lived anywhere else, so Africa was probably the place where people first built shelter for themselves out of mud and sticks. Little is known about this earliest form of vernacular architecture, because mud and stick houses are not as durable as brick or stone houses. By 3000 BC, however, people were beginning to build in stone, in places where stone was available. Pyramids were constructed in Old Kingdom Egypt, (circa 2700-2500 BC), and smaller stone tombs known as mastabas. Egypt is also where people built great temples during the New Kingdom (circa 1500 to 1200 BC). When the Phoenicians invaded and colonized North Africa (circa 800 BC), they brought with them the idea of building in stone, and there were many stone temples to the goddess Tanit and other Phoenician gods in Carthage and the Carthaginian empire, all along the North

African coast (circa 800 BC to 146 BC). The city of Carthage had stone houses, with drains and pebble floors.

African architecture spans a vast time period, beginning as early as 25,500 BC and continuing to the present. The architecture of sub-Saharan Africa is diverse with traditional architecture divided into two categories: buildings in rural settlements and buildings in larger, self-ruling urban centers called city-states. Tribal, cultural and life style differences in Africa's rural settlements determine the types of dwellings and communal buildings that are built. Utilizing vernacular architecture, agricultural settlements are comprised of relatively permanent houses grouped in villages that consist of a number of family compounds. Communal structures, for holding meetings and teaching children, are located in a prominent place in the village. Structures may be: round, rectangular, shaped like beehives, or semicircular; built of sun-dried mud brick, stone, sticks, mud-pack, or even sealed with cattle dung. Roofs are often thatched, and they are often decorated with geometric patterns that communicate information about the social status of the occupants. On the other hand, nomadic herders need homes that they can easily build and take apart when they move their herds to different ground.

Towns and city-states may have buildings that are larger and more elaborate than those in rural settlements. These buildings serve the purposes of government, trade, or organized religion. In general, towns and city-states have developed where trade has brought people together or where conquest has merged neighboring ethnic groups. Consequently, these settlements were built for diverse groups of people rather than for family units. Palaces to house the king and his court were often built out of the same materials and in the same basic forms as ordinary houses, although palaces had thicker walls, more elaborate designs, and larger spaces. Some palaces were so large they resembled a town inside of towns. European influences brought changes to African architecture during the eighteenth and nineteenth centuries. Colonial imperialism caused destruction of many city-states, with the subsequent architectural developments relating to the style of the time period or the colonial interests. Global influences affect African architecture of the present.

American: History of North America can be divided into two main sections. The first time period is prior to the arrival of European pilgrims and colonists, and the other is after the 1500s, approximately 500 years ago. What type of house you lived in depended on where and how you lived. Many people were nomadic, traveling around with their dogs, following the buffalo they hunted on the Great Plains. These people lived mainly in tepees, which were very large tents made of long wooden poles and covered with buffalo skin. Other people, who were farmers or fishermen in regions where there was abundant rainfall and plenty of forest lands, lived in wooden houses, either of planks, or built with pole frames and then covered with slabs of bark. Iroquois people lived in longhouses built of poles and covered with bark, while Chinook people lived in longhouses built of cedar planks. Algonquin people, north of the Iroquois, lived in wigwams, also built of poles covered with bark. Ute people, from modern Utah and Colorado, lived in wickiups which were also built of poles and covered with branches, but they were much smaller and more temporary than the Iroquois longhouses. Navajo people lived in similar houses called hogans. In the Southwest, though, there was not as much forest land, so wood was scarce. People built their houses out of clay, because it was plentiful. These clay houses are called pueblos. People also built bigger buildings to be tombs or temples or meeting halls. In the Great Plains (North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas), people built big meeting halls, and fortification walls around their town. Along the Mississippi River, people built big mounds of earth, which were tombs for their leaders, like the Egyptian pyramids.

British Pilgrims brought with them the memory of the basic seventeenth century dwelling, based on the medieval technique of post and beam construction. The first homes were simple timber structures with thatched roofs and white limestone walls. They soon learned that the harsh New England winters required adaptations to the traditional style. They protected the exterior with horizontal, hand cut

clapboards and roof thatch with wood shingles to withstand the biting northeast winds. There are still examples of this early Colonial style existing today. As America grew and prospered, new architectural styles and building techniques that made their way across the sea from Europe were adopted by local craftsmen, often with a unique American adaptation. With the beginning of the 18th century, the Georgian style was all the rage, replacing the Colonial. By 1780 the Federal style replaced the Georgian and was interpreted and brought to a high level of design excellence by America's first trained architects. Since that time there has been a procession of distinctly American adaptations of architectural styles that were utilized elsewhere.

American Foursquare: The American Foursquare house is one of the most popular styles that emerged from the suburban development in the 1880's, into the 1930's. Its strong square massing, usually with four square rooms above three square rooms and an entrance hall, with stairs tucked unobtrusively to the side on the first floor, made it economical and practical to build. The cubical shape made the most of every buildable inch of space, taking full advantage of small building lots and small budgets. It became the most house for the lowest cost, often with a dignified appearance. It often has arts and crafts detailing, especially in the main entrance where there may be a fireplace and built-in shelves and bookcases. The roof line is usually pyramidal or hipped. It usually has a front porch. There may be a small dormer on the second or third floor. The versatility of the Foursquare, usually built without the benefit of an architect, lent itself to endless variations and finish details by individual buyers. A Foursquare was most commonly built in wood frame, but they are also found in stucco, brick, and the Sears & Roebuck catalogue offered a cement block making machine, which could manufacture blocks on site, for the house. The style was influenced by the Prairie Style and has many of the same features, such as wide eaves, horizontal emphasis and a porch running the full length of the first floor. The Foursquare is what most people think of as "the all-American family home" on Main Street USA.

Ancient World: During prehistoric times (Paleolithic, Mesolithic, and Neolithic) building parts were not precise and construction methods were crude; structures served basic functions as well as religious rituals; artifacts from this time period are simple and crude.

Art Deco: an eclectic style fashionable in the 1920s and 1930s in Europe and the United States. It originated at the Exposition Internationale des Arts Decoratifs et Industriels Modernes, which was held in Paris in 1925, and was inspired by avant-garde art such as fauvism, cubism, futurism, and expressionism. Its sources also included motifs from ancient Egypt, the Russian baler, North and South American Indian art, and contemporary machinery. As a style it emphasized a modern and artistic expression that would complement the machine age. Its influence was broad in scope, as it was applied to jewelry, clothing, furniture, handicrafts, buildings, cars, trains, and kitchen appliances. Art Deco ornamentation consists largely of low-relief geometrical designs, often in the form of parallel straight lines, zigzags, chevrons, and stylized floral motifs. These features could be rich, varied and handcrafted or reduced to a slight hint of detail for efficient production. Art Deco produced a harmonious collaboration between architects, painters, sculptors and designers; all focused on a conscious rejection of historical styles, yet with a strong desire for attractive ornamentation. Rockefeller Center in New York City is one of the best American examples of Art Deco development.

Art Nouveau: a style which evolved in Europe and the United States in the 1890s, in reaction against historical revivals. It reached a peak at the turn of the century. Its leading motif is a sinuous, sometimes vegetal, often tense line, which was particularly suited to ironwork columns and railings. In architecture it led to asymmetry and novel curving plans.

Arts and Crafts Movement: The Arts and Crafts style, also referred to as the Craftsmen style, and sometimes interchanged with the Bungalow style, grew out of the Arts and Crafts Movement which originated in England with William Morris and Ruskin, as a revival of traditional crafts and vernacular

architecture in the second half of the nineteenth century in Britain, Europe and the United States. Inspired by the gothic revival, architects and designers sought creativity and originality through a return to traditional materials and techniques, honesty in design and joy in high standards of craftwork. Although England led the movement, each nation molded the arts and craft concept to its own interpretation. While British architects sought inspiration in the small buildings of medieval village, the cottage stripped to its bones, American architects incorporated Colonial Revival elements. Rather than revive past styles, Arts and Crafts architects made use of historic forms for contemporary ends. Large or small, these homes were informal, generally asymmetrical, and functional. Several forms flourished in the United States, such as the Craftsman and Bungalow style (originated in Southern California) were the dominant style for smaller house built from 1905 until the 1920's. It spread across the country in pattern books and was popularized in magazines, like Gustav Stickley's, *The Craftsman*. The most famous Craftsman style American architects were Charles and Henry Greene who combined high standards and natural materials to the design of small houses and have the credit for popularizing the Bungalow style which grew out of the Craftsman - Arts and Crafts style. The Bungalow has certain basic characteristics. Its lines are low and simple with wide projecting roofs. It may have two stories with a large porch and is made with materials that suggest a cozy cottage. It was sometimes referred to as the "most house for the least money" and although low cost materials were emphasized for construction, the Bungalow was not inexpensive. It depends on a costly foundation, wall and roof areas because of the spread-out first floor.

Asian: Builders in West Asia always had a serious problem - there was not enough stone or wood. But there was abundant clay. So their buildings were usually built of brick, or mud-brick. West Asian builders were so accustomed to brick, that buildings which are built of stone were often made to look like they are made of brick. Another thing which made West Asian people build a certain way is the constant arrival of nomadic people into the area: Persians, Parthians, and Arabs. All of these people had cultural traditions of living and entertaining in tents. When they built their houses and palaces, these structures had characteristics of tents, so they would feel at home. Sumerians (circa 3000 BC) were the first people to build big buildings in West Asia: they built ziggurats, or towers made of clay bricks, with temples to the gods on top of them. They also built city walls out of bricks. Assyrians (circa 1000 BC) did not build ziggurats, but they built great palaces out of limestone, while city walls were still made out of bricks. When the Babylonians (circa 600 BC) threw out the Assyrians there was a revival of pre-Assyrian ideas for utilizing clay bricks for buildings, such as the Ishtar Gate. But soon after that the Persians conquered West Asia (circa 539 BC). These nomads did not build anything at all for some time, but when they did decide to build a palace at Persepolis they hired the best workers from all over West Asia and the Mediterranean to work on it. Some of the men who worked on it were Greek. The Persians were eventually defeated (circa 331 BC) by Alexander the Great, which led to construction of Greek temples, theaters, and gymnasia throughout West Asia and India in the Hellenistic period.

Baroque: a classical style of architecture which developed in Italy in the seventeenth century and spread to other parts of Europe. It is characterized by exuberant sculptural forms, complex spatial relationships and illusionistic effects.

Bauhaus: German design school (1919-33) which promoted modernist architecture and design. It was closed by the Nazis in 1933. The New Bauhaus opened in Chicago in 1937.

Chicago School: Chicago is the site associated with development, during the late 19th and early 20th century, of the tall commercial building, within which new technology and materials were exploited by innovative architects and engineers to produce the skeleton-framed skyscraper. Previously, building height had been limited by the massiveness of the masonry walls needed for support. Experimental use of cast- and wrought-iron as structural members led eventually to the use of iron and steel skeleton which was combined with improvements in fireproofing, wind bracing, and foundation technology, to

make the skeleton framed tall buildings possible. Building design was divided into main three parts: a base with large display windows that were utilized for the ground-floor retail spaces, a shaft that housed identical floors of offices, and with an elaborate cornice crowning the composition. Ornamentation was usually minimal and subordinated to the functional expression of the internal skeleton that appeared as a grid on intersecting piers and horizontal spandrels. Exterior surfaces were light weight materials such as glass, terra cotta, or other non-supporting materials, which are referred to as a curtain wall. Windows are often the prominent feature of the building exterior, and are configured as either a projecting bay or oriel that extended the full height of the building to emphasize the verticality, or as the "Chicago window" which was composed of a large fixed central pane of glass that is flanked by two narrow casement windows that provide ventilation.

Chinese: Most people in ancient China lived in small houses made of mud-brick, with only one room and a dirt floor, just the way most people in the Roman Empire or West Asia or Africa lived, and the way most people in the world still live today. The doors of these houses usually faced south, to keep out the cold north wind. But rich people had fancier houses, and people also built fancy temples and palaces. All ancient Chinese architecture was built according to strict rules of design that made Chinese buildings follow the ideas of Taoism or other Chinese philosophies. The first design idea was symmetry: both sides of the building should be the same. The second design idea was that the roof would be held up by columns, and not by the walls. The curved tile roofs on most fancy Chinese buildings probably first came into fashion in the Shang Dynasty or in the Chou Dynasty. In the Han Dynasty (circa 200 BC), Buddhism first came to China from India. Buddhists built pagodas for all things sacred to them. At first these pagodas were wooden towers with levels that became smaller as they were built taller. They were related to Indian buildings called stupas. When Buddhism became more important in China, during the Three Kingdoms period, architects began to build special Buddhist temples. Sui Dynasty architects designed a beautiful bridge at Anji (circa 600 AD): The bridge shows the ideas of symmetry and balance that were important in Taoism. Under the Tang dynasty, architects designed even fancier Buddhist pagodas, with eight sides. One famous eight-sided stone pagoda is the White Pagoda at Chengde. Under the Sung dynasty (circa 1000 AD), people wanted buildings to be tall and thin, with high spires. Buddhist pagodas began to be built of stone. To make them fancier, they had complicated wooden lattices all around them. While the Mongol Yuan dynasty (circa 1200-1300 AD) ruled China, they built great palaces at Beijing, with many huge halls. Unfortunately, these palaces were all destroyed later. The great architectural accomplishment of the Ming dynasty (circa 1400 AD) was to build the Forbidden Palace, where the emperors lived.

Classical Revival: The tradition of academic revivals, which occurred in the United States from the 1890s through the 1920s, included Roman, Greek, Gothic, Tudor, Georgian, and Spanish colonial styles. These styles were adapted to a wide variety of building types in all regions of the country. During the same time period many structures were built that were not inspired by styles of the past, but were based on efforts to establish a truly American architecture.

Corinthian Order: the most elaborate of the Greek orders, invented in Athens (circa 500 BC) and further developed later by the Romans. The column is fluted and the capital ornamented with foliage, usually the acanthus leaf. The entablature is very ornate.

Doric Order: the earliest of the Greek orders, it was used on the Parthenon. The Greek Doric column is fluted and has no base, whereas the Roman Doric column has a base. The capital is a curved cushion capped by a flat square slag, and the entablature has a frieze consisting of alternating blocks with vertical grooves and either plain or decorated panels.

Early Christian: The invention of the Christian church was a significant solution in architectural history. This was achieved by a process of assimilating and rejecting various precedents, such as the Greek

temple, the Roman public building, the private Roman house, and the synagogue. In Early Christian architecture a distinct emphasis was placed on the centralized plan, which was of round, polygonal, or cruciform shape. Baptisteries and memorial shrines (martyria) were based on the traditionally centralized Roman funerary monument. Martyria were erected on sites connected with certain events in the life of Jesus and other places held to be sanctified by the sacrifice of the martyrs. In such buildings as Saint Peter's in Rome and the Holy Sepulcher in Jerusalem, the martyrium structure and basilica were combined, creating a new formal synthesis of great significance for the religious architecture of the medieval period. During the Early Christian period (circa 350-400 AD) there was acceptance and growth of Christianity, which had been largely a religion of the lower classes during the first three centuries AD. It was established as the state religion of the Empire under the successors of Constantine. Ecclesiastical administration was set up within the framework of the Roman Empire. Thus, there was little change in social and economic order. Over time, a gradual split occurred between Eastern and Western Empire in state and church, in part due to the political and economic breakdown of the West, ending in barbarian invasions. Under imperial sponsorship, Early Christian architecture flourished throughout the empire on a monumental scale. Buildings were of two types, the longitudinal hall, or basilica, and the centralized building, frequently a baptistery or a mausoleum. The Christian basilican church form was developed from the Roman secular basilica, which was a large public building in which administrative and legal matters were decided. The basilican hall, consisting of a nave flanked by lower aisles and terminated by an apse, was adopted as the standard structure in Christian congregational worship. This basilican plan was modified for liturgical requirements, so that the congregation and clergy segregated in a nave and the aisles versus secular basilica, where petitioners and the administrators were situated in the transept and apse, respectively.

Early Colonial: traditional qualities of English construction that are reflective of "late medieval" period, which occurred from early to late-17th century, include a steeply pitched roof, tall massive chimneys, and small windows with leaded casements; typically a heavy wood timber framing structure was covered with clapboards or shingles in New England, while brick was predominant in Southern colonies; as the era progressed into early Renaissance, medieval characteristics of verticality and steep, picturesque rooflines were combined with classical ornament and symmetry of plan and fenestration

Ecole des Beaux-Arts: a "school of the fine arts" was established, during the Napoleonic era, in Paris, providing academic architectural training beginning in 1819 and open to students of any nationality. The Ecole was the successor of the French Academie that was founded in the 17th century to monitor and guide painting, sculpture, and architecture. Over the span of 250 years it promoted a form of rational classicism. Artists and designers were influenced by their study of Greek and Roman structures, composition, symmetry, and elaborate two-dimensional wash or watercolor renderings of buildings. Associated with it were the advanced studies at the French Academy in Rome taken by the annual winners of the Prix de Rome. It attracted many architects from the United States in the nineteenth and early twentieth centuries. American Beaux-Arts designs generally were colossal public buildings. Characteristics of the style include: heavy ashlar stone bases; grand stairways; paired columns with plinths; monumental attics; grand arched openings; cartouches; decorative swags; medallions; and sculptural figures.

Egyptian Architecture: stone masonry, pyramid forms, and enormous, colossal scale are the most recognizable characteristics of Egyptian Architecture (4000-332 BC). Monumental tombs were built-up in stepped layers of stone, and then the steps were filled in and covered with highest quality materials to finish the pyramidal form. Tombs were also rock-cut and carved rather than built-up.

European Architecture: European Architecture is the source numerous architectural styles and revivals that have been utilized for major buildings, such as palaces, castles, places of worship,

fortresses, and tombs. Prior to the Roman Empire, houses, large buildings, and places of worship were built based on the vernacular architecture of the locality and region. Roman Architecture was imposed on all peoples and lands within the Empire, which covered Western Europe, Southern England, the Mediterranean Coast of Northern Africa, Turkey, Northern Arabia, and Iraq. Notable Roman structures include palaces, temples, sports arenas, aqueducts, bath houses, roads and bridges. Over a long period of time, 380AD-500AD, which is considered the first part of the Middle Ages, people living under Roman rule struggled to adjust to the decline of the Roman Empire, which occurred primarily because local and unconquered people living at the edges of the Empire began to take control, or invade, and claim portions of the Empire for themselves. Many people decided to live in groups and built stone houses close together, in clusters and small villages, as a defensive strategy against the conflict between the Empire and the rebels and invaders. As Christianity continued to spread, small churches were built throughout Spain, France and Germany in the Visigothic, Vandal, and Merovingian kingdoms.

In the eastern Mediterranean, however, the Roman emperors built great churches and palaces, such as the Hagia Sophia in Constantinople, present-day Istanbul, about 550 AD. In Italy, the Ostrogoths built churches and palaces too. And when the Arabs conquered the southern and eastern Mediterranean, including portions of Spain, in the late 600's AD, they also built great mosques and palaces, like the Dome of the Rock in Jerusalem. In 800, they built the great mosque in Kairouan, in modern-day Tunisia. By this time Western Europe was under the rule of Charlemagne, who had expanded his empire in Central and Eastern Europe. He built a palace at Aachen, in western Germany, along with a college and a number of churches. By the end of the first millennium, 1000 AD, the Romanesque style was used in Europe where people were building bigger churches, castles for defense, and more palaces: among the churches, the Baptistery at Pisa, St. Mark's in Venice, St. Germain en Laye and Toulouse in France are famous; among the castles and palaces, the Tower of London. In Spain, the Arab caliphs built the mosque at Cordoba. Around 1200 AD, people changed from the Romanesque style to a new Gothic style: first in Italy, with the churches at Florence and Pisa; then in France, with the cathedrals in Laon, in Paris, in Chartres, in Rouen, of Reims, of Amiens; in Germany at Cologne; in Italy at Milan; and finally in England with Westminster Abbey. French kings built two castles in Paris, the Louvre and the Conciergerie, and another castle outside of Paris, the Vincennes. After the Spanish people regained control of Spain from its Islamic rulers, a Gothic cathedral was built in Seville. While these castles and cathedrals were being built in western Europe, the Muslims were also building more mosques and palaces in the Islamic Empire. The Gothic style lasted until the Renaissance ended the Middle Ages.

Expressionism: a term applied to an architecture of emotion and ideals which developed in northern Europe prior to the First World War and lasted until circa 1925. It includes the housing estates of the Amsterdam School, accredited to Michael de Klerk. In Germany the fantastic sketches of Hermann Finsterlin, the buildings of Hans Poelzig such as his Grosses Schauspielhaus in Berlin and Erich Mendelsohn's Einstein Tower at Potsdam. Many elements associated with art deco and with postmodernism today have their roots in expressionism.

Exotic Revivals: often used during the 19th century, exotic historical styles were an effort to find appropriate symbolism that would relate to the use of the building. French archeological work during the Napoleonic years, led to the Egyptian Revival in the United States. This style often served as a basis for monumental buildings that needed to convey a sense of permanence, such as prisons, mausoleums, cemetery gates, churches and monuments, an example of which is the obelisk form of the Washington Monument, in Washington D.C. The Moorish Revival was exemplified by bulbous domes and horseshoe arches, but was most popular for garden structures and "pleasure palaces" such as fraternal organizations and clubs, hotels, and theaters. It also became associated with the Jewish

reform movement in America, and distinguished synagogues from churches, based in part on historical precedent of synagogues that were built in 14th century Spain.

Federal/Adamesque: Federal style (also referred to as Adam style due to the brothers that developed it in Scotland) was a combination of Renaissance and Palladian forms, the delicacy of the French Rococo and the classical architecture of Greece and Rome. It supplanted the Georgian style and flourished during the early decades of the new United States of America. Federal style was grander in scale and had more decorative details because it was based on the architectural research, completed by Robert Adam, which indicated that Roman domestic architecture was richer and more varied than Renaissance and neo-Palladian architects had acknowledged in their work. Utilized first by wealthy merchants and shipbuilders along the New England Coast, Federal Style (1780-1820) became the dominant style after the American revolutionary war. A notable example, among many Federal style buildings, is the Octagon, in Washington, D.C., which has a polygonal floor plan, with circular and oval rooms that illustrate the freedom of expression possible in Federal design.

Futurism: a movement dating from 1909 to the First World War in Italy comprising all the arts, including architecture. The futurists stressed the importance of new technology and sought to break the bonds of history. They were thus an important influence on the development of modernism.

Georgian Architecture: pertaining to the reigns of George I, II, III, and IV – British Monarchs during the years 1714-1830. Georgian style refers to a style originating in England in the 1600's based on forms following the classical principles of design developed by Andrea Palladio during the Italian Renaissance. In the mid 1600's, architects Inigo Jones and Christopher Wren began designing buildings using Palladian design principles. This style became wildly popular in England, replacing the medieval. By 1700 Georgian designs reached the American colonies in the form of architectural manuals and pattern books. During the late 1800's Georgian style was revived and builders modified the style to accommodate the more modern lifestyle and taste of the new century.

Gothic: period of architecture from the twelfth to the sixteenth centuries. The style is characterized by soaring effects, pointed arches, ribbed vaults, clustered shafts and walls pierced by large windows and supported by buttresses.

Gothic Revival: a movement dating from the late eighteenth and early nineteenth centuries which revived the gothic style and craftsmanship. Gothic Revival began in England and became the dominant style for country houses and was popular with Queen Victoria. It became the only "proper style" for English church building and was promoted as the proper style for all English buildings from 1840-1870. Americans liked it too, but as just one of several romantic styles to be modeled at will to Victorian American tastes. Gothic Style was an embodiment of public fascination with the romantic movement, which proclaimed the superiority of the Christian medieval past. Gothic Revival was distinguished by the pointed, lancet arch, which could be combined with towers, crenellation, steep gabled roofs, lacy bargeboards, verandas, clustered columns, foliated ornaments bay and oriel windows, tracery and leaded stained glass, even in the most modest cottage. House plans were asymmetrical to allow flexibility in the arrangement of rooms and to create picturesque external silhouettes. The timely invention of the scroll saw, or jigsaw, and the widespread availability of wood also led to a stylistic adaptation referred to as Carpenter Gothic, which is unique to New England and the United States, is distinguished chiefly by its profusion of wood sawn details. As a result of the economic opportunities of the Industrial Revolution, the growing middle class had more money to spend on housing and wanted attractive homes, outside of the city, in healthful surroundings where horse drawn rail cars could transport the man of the house back and forth to work, perhaps marking the beginnings of mass transit and urban sprawl.

Greek Revival: Early in the nineteenth century Americans fell in love with all things Greek. The Greek War of Independence from the Turks recalled the American Revolution and the architectural discoveries of the period sparked an interest in classical architecture. At the same time the War of 1812 diminished American affection for the British influence, including the still dominant American Federal style. The golden age of Greece shone forth as a model for Americans. For much of the mid 19th century, the Greek revival style dominated residential and public architecture. Identifiable features of a Greek-inspired building are columns and pilasters, although not every Greek Revival structure used them. Other hallmarks of the style are bold, simple moldings on both the exterior and the interior, pedimented gables, heavy cornices with unadorned friezes, and horizontal transoms above entrances. It was so popular that it became known as the National Style. It began and ended with public buildings in Philadelphia. It flourished in towns and regions that experienced growth between 1820 and 1860. The most enduring legacy of the Greek Revival style is the gable-front 19th century farmhouse, often ornamented by only a flat pilaster column doorway or corners.

Indian Architecture: The earliest big buildings in India were built in the Indus River valley, approximately 2500 BC. Tall brick walls were often built around their cities to keep out enemies. Most of the buildings were ordinary houses, with rooms arranged around a small courtyard. Probably some families owned a whole house (and lived in it with their slaves), while others rented only one room in a house, and the whole family lived together in the one room. The rulers built bigger buildings, like this public bathing house and a town warehouse for storing food grains, also out of mud-brick and baked brick. Like the houses, these bigger buildings were square or rectangular, with small courtyards in the middle. They used arches, but, like the Sumerians and the Egyptians, they only used them underground, as drains or foundations for buildings. After the collapse of the Harappan civilization about 2000 BC, for hundreds of years there were no more cities in India, and instead people lived in small villages with wooden palisade fences around them to keep their sheep in, and wild animals out. Their houses were different too: they built one-room cottages out of sticks and mud, with thatched roofs in a barrel vault. Richer people had more than one house, and they arranged their houses in a circle or square to make a courtyard in the center. Sometimes rich people made their houses out of mud-brick, and roofed them with wood shingles or clay tiles. Gradually these villages grew into new cities. The government divided these new cities into four parts - one quarter had the government buildings, one had the houses, and two were for businesses.

Ionic Order: used by both the Greeks and the Romans, the order has a rectangular capital with four spiral projections, or volutes.

International Style: simply stated, the International Style is based on modern structural principles and materials. First proclaimed in a 1932 architectural exhibition at the Museum of Modern Art, titled "Modern Architecture", the International Style illustrated similarities within a body of work by architects from fifteen different countries. Thus the International Style became the answer to the "stylistic confusion" that American and European architects were apparently caught in after the turn of the century. International Style served as a set of principles that stressed functionalism, stark simplicity, and flexible planning. Through the use of concrete, glass and steel, architects rejected non-essential decoration, instead using strips of windows and solid planes to emphasize horizontal characteristics of buildings, even high rise structures. Symmetry was studiously avoided, but balance and regularity were admired and encouraged. The classical tripartite expression of base, shaft, and capital was never used in the International Style. Otherwise mundane building components such as elevator shafts and mechanical equipment became highly visible aspects of design. Cantilever building forms and ground-floor structural piers were often significant features of the design.

Italianate and Italian Revival: First appeared in England as part of the picturesque movement, and in reaction to the formal classical styles that had dominated construction for the previous 200 years.

Italianate houses in the United States were first built in the early 1840's and were popularized by architectural pattern books of the time. The Italianate style dominated American houses constructed between 1850 and 1890. By the late 1860's the style had completely overshadowed its earlier companion, Gothic Revival. At its most elaborate, the Italianate house has: a low roof; wide overhanging eaves with large decorative brackets, that are infinite in their variety of sizes and shapes, are usually arranged in pairs, and are commonly placed on a wide horizontal trim band; an entrance tower that characterizes an Italian Villa; round-headed windows often arranged as pairs or triples, commonly have one or two panes and frequently are arched with decorated crowns or hood moldings; corner quoins; arcaded porches and balustraded balconies. Long and large, often wrap-around porches, as well as small entry and side-room porches are frequently present. At its simplest, it was a square house plan with a small entry porch, a low pyramidal roof with bracketed eaves; and perhaps a cupola or lantern atop the roof.

Japanese Architecture: The original people of Japan probably came both from the north and west, from the Korean peninsula or from the Chinese mainland during the Ice Age when Japan was not an isolated island country, as well as from the south from the islands of the Pacific by boat. Over thousands of years, Japanese architecture was influenced by the Korean and Chinese cultures, primarily because peoples from these main land civilizations were always visiting and exploring the Japanese islands. There are many differences between the architecture of these cultures. Homes were made with wooden frames, walls of grass or bark thatch, or bamboo, and thatched roofs. Often the exposed wood superstructure of Korean and Chinese buildings is painted, in Japanese buildings it traditionally has been treated to express the natural beauty of the wood. Chinese architecture was based on a lifestyle that included the use of chairs, while in Japan people customarily sat on the floor. Architecture in Japan has also been influenced by the climate. Summers in most of Japan are long, hot and humid; a fact that is clearly reflected in the construction techniques of homes and other buildings. The traditional house is raised somewhat so that the air can move around and beneath it. Wood was the material of choice because it is cool in summer, warm in winter and more flexible when subjected to earthquakes. Some of the earliest houses have similar characteristics of early Polynesian houses, indicating immigration from these Pacific Ocean islands. Bronze technology from Korea led to the production of bronze bells, tools, and weapons, such as swords and spears. During 200 A.D. - 592 A.D. Japan took its first steps towards unification. This was a time of warring clans, or groups united by ancestry, which fought for power and land. Enormous burial mounds were constructed by powerful rulers as symbols of their authority. The early Japanese built Shinto temples and shrines, or small places of worship, to the nature spirits, or kami. Buddhism first came from Korea about 538 A.D., and later Buddhism from China greatly influenced Japan. Shinto and Buddhist temples combined Japanese, Korean, and Chinese styles of architecture, such as the pagoda. Homes built for nobility (circa 794-1185), were configured with the main buildings and sleeping quarters centralized, with other surrounding apartments that were connected by corridors. Tea cottages, built when the tea ceremony became popular (circa 1333-1568), employed a style that was characterized by a delicate sensibility, slender wood elements and unornamented simplicity. People liked the harmony formed by the cottage and the landscaped garden. In the sixteenth century, when feudal lords dominated Japanese society, two new forms of architecture were developed in response to the militaristic climate of the times. Many castles were built, constructed for military defense, to house a feudal lord and his soldiers in times of trouble. These castles are admired for their watchtowers. Also, the shoin, a reception hall and private study area designed to reflect the relationships of lord and vassal within a feudal society. Soon after, Western architecture was introduced in Japan resulting in stone and brick being used construction materials. In more recent times, the trend is toward the construction of buildings that incorporate aspects of traditional Japanese architecture, using modern technology and new materials. The need to rebuild Japan after World War II proved a great stimulus to Japanese architects, and contemporary Japanese buildings rank with the finest in the world in terms of technology and formal conception. The best-known Japanese architect of the postwar period was Kenzō Tange, whose National Gymnasiums

(1964) for the Tokyo Olympics are dramatic statements of form and movement. The gymnasiums emphasize the contrast and blending of pillars and walls, and their sweeping roofs are reminiscent of tomo-e (an ancient whorl-shaped heraldic symbol). Recently, architects such as Isozaki Arata and Ando Tadao, have given Japan an even stronger and more distinctive presence on the international architectural scene.

Jeffersonian: derived from public structures rather than from Roman domestic architecture, as the Federal style was, Jeffersonian architecture was embraced by many of the new United States as they prepared to construct their respective state capitol buildings, which would house the newly elected officials, and serve as symbols of their new authority and prestige. Thomas Jefferson, as architect, believed that the Roman orders were the first principles of architecture and that they symbolized the republican form of government that he determined was being revived in the America. Jeffersonian buildings are characterized by heavy modillions, full-scale cornices and a more masculine feeling than Federal style mansions.

Mannerism: associated with Italian architecture from Michelangelo to the early seventeenth century. It is characterized by the free application of classical motifs which is distinct from their hitherto normal usage.

Mediterranean Revival: an eclectic design style that was first introduced in the United States around the turn of the nineteenth century, and came into prominence in the 1920s and 1930s. The style evolved from renewed interest in Italian Renaissance palaces and seaside villas dating from the sixteenth century, and can be found predominantly in California and Florida due to the popular association of these coastal regions with Mediterranean resorts. Structures are typically multi-story and based on a rectangular floor plan, and feature massive, symmetrical primary façades. Mediterranean Revival is generally characterized by stucco-finish wall surfaces, flat or low-pitched terra cotta tile roofs, arches, scrolled or tile-capped parapet walls, and articulated door surrounds. Balconies and window grilles are common, and are generally fabricated out of wrought iron or wood. Ornamentation can range from simple to dramatic, and may draw from a number of Mediterranean references. Classical, Spanish, or Beaux-Arts architecture details are often incorporated into the design, as are lush gardens. The style was most commonly applied to hotels, apartment buildings, commercial structures, and even modest residences. Mediterranean Revival was one of several architectural styles utilized extensively by the Atchison, Topeka and Santa Fe and Southern Pacific Railroads when designing their depots throughout the Southwestern United States and in California.

Metabolists: a group of Japanese architects set up in Tokyo in 1960, who advocated changeable, flexible architecture. It included Kiyonori Kikutake and Noria Kurokawa.

Modernism: an umbrella term which includes those twentieth-century avant-garde movements which shared a concern for new technology, a rejection of any historical ornament, and the desire to create new solutions for planning, architecture and design appropriate to the social conditions of the twentieth century. It emerged in Western Europe among a small group of architects and designers and achieved world-wide dominance after the Second World War, particularly for post-war reconstruction, commercial projects, and mass housing. Postmodernists have attacked modernism since the 1970s for its lack of sensitivity to locale, its banal, repetitive and undecorated forms, lack of communication and the rigid application of zoning to planning. The modernist faith in new technological and planning solutions is still propounded by some contemporary architects and is termed late modernist or high-tech.

Moorish Architecture: The first buildings that were built in the Islamic Empire were designed by Greek architects who had already been living in the area when the Arabs conquered it. Because of that, these buildings look a lot like earlier buildings in the area - Late Roman Empire buildings. But because

they were now building Islamic mosques and not Christian churches, these Greek architects were able to experiment with some new forms, developing a new Islamic style. One of the earliest mosques is the Dome of the Rock in Jerusalem, from the 600's AD. It's octagonal, like Hadrian's Pantheon, instead of being cross-shaped like a Christian church. In the late 700's AD, the new Arab rulers of North Africa marked their new territory by building great mosques like the one at Kairouan, in modern Tunisia, and the one at Cordoba, Spain. In the Abbasid period, beginning about 800 AD, the capital of the Islamic empire moved further east, to Baghdad, and so the caliphs needed a lot of new beautiful palaces and mosques built in Baghdad. Because Baghdad was in the old Sassanian Empire, the architects who lived there followed Sassanian architectural traditions, and these buildings, like the mosque at Samarra, looked very different from the ones built by the Greek architects. In the end, though, the Islamic Empire made it so easy to travel around that all the architects got to know each other's styles, and there got to be one main style of building all across the Islamic Empire. As the empire broke down into a lot of smaller kingdoms, the ruler of each kingdom needed to show how important he was, so he built mosques and palaces in his own capital. The Fatimids, for example, built the Al-Azhar mosque in Cairo in the 900's AD. In Spain in the late 1200's AD, the Almohads, built their own palace at Granada, the Alhambra. The Ottoman sultan built the last great Islamic building before 1500 AD - his palace in Istanbul, which he built in the late 1400's AD.

National Romanticism: the turning towards national architectural traditions as part of a desire for national or regional identity. This took place at the end of the nineteenth and the beginning of the twentieth centuries in Scandinavia, in England where it was inspired by the arts and crafts movement, as it was in America as the shingle style. Major examples include Copenhagen Town Hall and Tampere Cathedral.

Neo-Classicism: revival of the principles and spirit of ancient Greek and Roman architecture, which began in the mid-eighteenth century as a reaction against the baroque and rococo. The Grand Tour and the French Academy in Rome offered architects first-hand experience of ancient buildings, while other architects drew inspiration from the imaginative etchings of the Italian engraver G.B. Piranesi or from measured drawings such as those of the British architects J. Stuart and N. Revitt. Not simply a sterile copying, but often a creative reworking of ancient forms and principles, neo-classical buildings vary from the rationalism of Soufflot's St. Genevieve (Pantheon) in Paris, to the megalomania and geometry of Boullee's Monument to Newton and the elegant, decorative building and interiors of Robert Adam in Britain.

Neo-Georgian: a style that makes reference to eighteenth-century domestic architecture, through materials (brick), roof forms and detailing. Much used by Quinlan Terry for substantial mansion in Britain and in the United States it is also very popular in speculative housing developments. Doorways may be framed by classical pilasters, or details which hint at this; traceried fanlights, which in the original would be above the door opening, may be miniaturized and incorporated in the actual door itself.

Palladianism: deriving from the ideas of Palladio, Palladian architecture involved symmetry, a central emphasis in the façade and harmonic proportions. In Britain it was introduced first by Inigo Jones and subsequently in the early eighteenth century by Colen Campbell at Mereworth and Lord Burlington at Chiswick House.

Period Houses: related to the Classical Revival styles that were utilized for public and monumental buildings, during the first third of the 20th century much of the residential architecture constructed was based on several of these traditional styles. While the houses showed allegiance to one or another design heritage, together their plans, site orientation and general scale were of a whole. This led to a general stylistic term "period house", which indicates that although differing in style, all period houses

identified with the decorative vocabulary of an earlier time period. Rural structures served as models for these period houses. Other building types, such as churches and large country houses, were also influenced by this aesthetic.

Perpendicular: the last phase of gothic architecture in England, it is characterized by window tracery with straight verticals and horizontals, flattened arches and complex vaulting, often fan vaulting. It developed during the fourteenth century and continues until the sixteenth.

Picturesque Eclecticism: an English style characterized by eclecticism, asymmetry and variety of texture and materials, it was much in evidence in the work of John Nash. Pattern books published in the early years of the nineteenth century popularized the style.

Postmodernism: a style or critical approach in a variety of disciplines including architecture. Advocates are anti-modernism and the enlightenment, which are seen as authoritarian and insensitive to world cultures and individual needs, and pro-pluralism, sensitivity to place and the use of ornament to encourage communication with the public.

Prairie Style House: Architects of the Prairie School consciously rejected the academic revival styles of the early 20th century and sought to create buildings that reflected the rolling Midwestern prairie terrain on which they were to be built. The Prairie house had a predominantly horizontal appearance with a broad hipped or gabled roof and widely overhanging eaves. Walls were always arranged at right angles; there were no curves in the Prairie house. Windows were arranged in horizontal ribbons and often featured stained glass in distinctive stylized floral or geometric patterns. One story porches associated predominantly with the early work of Frank Lloyd Wright, the design was influenced by the open prairie of mid-western America. The houses featured open plans with a low, horizontal emphasis.

Queen Anne Revival: This style has nothing to do with Queen Ann or the formal Renaissance architecture that was dominant during her reign. Rather, it was influenced by Dutch seventeenth-century brick houses and English vernacular architecture. As it was interpreted in America, it satisfied the need of the newly rich of the 19th century industrial era for symbols of wealth and success. It became the style for the "Gilded Age". Queen Anne design characteristics played on contrast between different materials, often with brick or stone on the first floor, stucco, clapboard or decorative shingles on the upper floors. It was utilized for buildings that are of a domestic scale and feature numerous decorations, including: a partial or full width porch often with spindle-work ornamentation; painted in bright clear colors with contrasting trim; patterned masonry and carved red brick; patterned shingles (often called fish scales); cut-away bay windows; sash windows with large panes one-over-one with the upper panel having smaller set-in panes; tall chimneys; towers; steeply pitched roofs with front facing or shaped gables; irregular shapes and asymmetrical composition. It was very fashionable for middle-class housing and for school buildings. It became known as the architecture of 'sweetness and light'.

Romanesque Architecture: The Romanesque style is based on Roman architecture, but it is made around 1000-1200 AD instead of during the Roman Empire. Between the time of Charlemagne, approximately 800 AD, and the beginning of Romanesque period, 200 years later, Europeans were fighting for conquest and survival, so few big new buildings were built. Near the beginning of the new millennium, kings and queens, such as William the Conqueror were beginning to order important, stone buildings again, like Ste. Germain des Pres in Paris. Many castles and churches in France, England, Italy, Germany and northern Spain, which the Arabs did not conquer, are built in the Romanesque style. Some examples of Romanesque buildings are the Women's Abbey and the Men's Abbey and the in Caen, France, both built around 1050 AD. Other examples include: in Pisa, Italy the Cathedral and Baptistry were built in approximately 1060 and 1150 AD; the Church of St. Sernin in Toulouse, France in 1080 AD; and the Baptistry of Florence, Italy, built around 1100 AD. At the Romanesque cathedral

at Vezelay (1100 AD), Bernard of Clairvaux preached the Second Crusade. Romanesque buildings were made of stone, with wooden roofs. A few Romanesque buildings did have stone roofs, but the walls had to be very thick in order to support the weight of the roof, and there couldn't be very many windows either, so Romanesque buildings were often very heavy and dark inside. Decorative characteristics include round arches and column capitals decorated with carvings of people or animals, instead of plants.

Romanesque Revival: Henry Hobson Richardson is one of the few architects, both prominent and innovative enough, to have an architectural style associated with his name. His unique American interpretation of the Romanesque style has forever linked his name to this powerful massive style. During the 1870's he evolved his strongly personal style, which incorporated Romanesque form and unlike his predecessors, he borrowed from many sources. Broad round arches are frequently not truly Romanesque but Syrian, an early Christian form which springs from the ground level. Unusual sculptured shapes in stone, such as eyebrow dormers windows, and carved intertwining floral details, give these structures great individuality. Massive and heavy materials and forms are characteristic of the style, emphasized not only by the stone construction but also by deep windows, cavernous recessed door openings and bands of windows. Openings were further defined by contrasting color or texture of stone or by short, robust columns. Towers occur in a majority of Richardson's buildings, with a second tower at many of the buildings.

Rococo: the last phase of the baroque in the early eighteenth century in France, Austria and south Germany. Characterized by decoration which is light in color and form, even frivolous, asymmetrical and employing shell-like C and S curves. Rococo is rarely found outside of the regions identified above, but is sometimes associated with the use of Chinese and early Gothic revival forms.

Second Empire: Second Empire was a dominant style for homes constructed between 1860 and 1880's. At the time, it was considered a very modern style, as it combined features of various styles, and was an imitation of the latest French building fashion during the reign of Napoleon III (France's Second Empire), from which the style takes its name. It spread to the United States after the Paris Exhibition of 1855. The characteristics of the Second Empire style include: the mansard roof with dormer windows on the steep lower slope; decorative brackets below the roof eaves; side or central villa-like towers; prominent projecting and receding surfaces often in the form of central and end pavilions; classical pediments often with sculpture groups, balustrades and windows flanked by columns or pilasters which were often paired and supported entablatures that divided the floors of the building. The boxy roof line, had a double-pitched form with a steep lower slope, and named after the 17th century French architect, Francois Mansard, was considered particularly functional because it permitted a full upper story of usable space. For this reason the style became popular for the remodeling of older styles, as well as for new construction. After the 1870's, the basic Second Empire style had become part of a composite design style that is referred to as "picturesque eclecticism" due to the deliberate and free combination of styles in an effort to strive for design originality.

Shingle Style: Shingle Style originated in New England coastal towns and flourished from the 1870's into the 20th century. It evolved from the Queen Ann style, but ornamentation was reduced on the exterior. Turrets and verandas are more fully integrated into the design and details are used sparingly. The most important feature is the covering of the entire building with rough natural shingles without interruption at the corners, almost as if the shingles are stretched tightly around and over the structure like a girdle. Unity is the guiding principal behind the style. The shingled walls meld many irregular shapes into an almost seamless mass that is varied, unified and free. Its roots are threefold: (1) From the Queen Anne it borrowed wide porches, shingled surfaces, and asymmetrical forms. (2) From the Colonial Revival it adapted gambrel roofs, rambling lean-to additions, classical columns, and Palladian windows. (3) From the contemporaneous Romanesque it borrowed an emphasis on irregular, sculpted

shapes. When contrasting material was used, as for porch columns and foundations, it was often rough-surfaced, coursed stone or fieldstone rubble, which complemented the rough natural texture of the shingles.

Spanish Colonial: a major colonial style that was utilized for more than 200 years throughout Spanish North America, from Florida to California; a manifestation of the Baroque style was applied to frontier Catholic mission complexes resulting in forms that included twin bell towers, curved gables, elaborate ornament applied to plain walls, dramatic interior lighting and finely carved and painted reredoses. Native American building techniques influenced missions in New Mexico and Arizona, with adobe structures that had massive, unadorned, windowless walls, flat roofs with timbers that supported on decorative brackets and clerestory windows to illuminate carved and multi-colored alters. San Xavier del Bac, near Tucson AZ, with its complex domes and vaults and ornate entrance portal, represents a high point in architectural development on the Spanish-American frontier. In the late 1800s, Spanish Colonial Revival, often referred to as Spanish, Pueblo, or Mission revival styles, became popular in California, Florida, and the Southwestern United States. These styles blended characteristics of the provincial forms of the missions and haciendas, as well as the rounded adobe shapes and projecting timbers of pueblos and grand buildings that are found in Mediterranean Spain.

Stick Style: a style that evolved, during the mid-19th century, from Carpenter Gothic, this wood construction is characterized by: angularity, verticality and asymmetry; roofs with steep intersecting gables; verandas and porches; decorative, simple, diagonal braces; the expression of the inner structure of the house through the exterior ornament, such as a series of boards intersecting at right angles and applied over the clapboard surface, in a manner that symbolized the structural skeleton of the building.