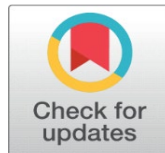


EVOLUTION OF ARCHITECTURAL STYLE

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ABSTRACT

Architecture has always been important throughout history, showing what people value, how technology changes, and what society needs. The way buildings have changed over time is interesting. It's like a story that shows how different cultures, societies, technology, and art have all mixed together. The aim of this research paper is to establish a comparative study of architecture evolution style over the period over the period. The paper will talk about the architectural styles of different time and do a comparative analysis to come for a conclusion. It is necessary to study and compare the evolution in architecture as it will help us in knowing what kind of evolution happen, when were new architecture introduced and so on. As we keep moving forward, buildings show how smart and creative people are, and they give us spaces that make us think and feel in different ways, making life more interesting for everyone.

Keywords: Human History, Reflecting Cultural Values, Technological Advancement, Societal needs, and Architecture Evolution

1. INTRODUCTION

The history of architecture dates back to ancient civilizations when early humans constructed shelters using readily available materials like wood, stone, and mud. As the needs evolved, so did architectural designs which leads to the creation of monumental structures such as Pyramid of Giza, the Parthenon, and the Colosseum, which became the symbol of wealth, power, and influence (Polishchuk, 2023). The Renaissance period marked a shift towards a more human-centred approach in architecture with the revival of classical design principles and the application of mathematical proportions. Following this era, the Baroque introduced a new level of grandeur which was characterized by the use of dramatic use of light and intricate decorations. In the 19th and 20th centuries, architecture became more experimental, with the emergence of new technologies and materials. From the majestic temples of ancient Greece to the houses made from mud,

innovative structures of contemporary design, each era has left an unforgettable mark on the built environment. Architectural styles show how societies have changed over time. It's like a journey from ancient times when buildings were grand and fancy, to modern times when they're simpler and more practical. This journey reflects how people express themselves and what they need in their buildings. Looking at how architecture has changed helps us understand both the past and the buildings we see around us today. The modernist movement rejected the ornamental designs in favor of a functionalist approach, with buildings designed to serve their intended purpose. The use of reinforced concrete and steel were more favoured due to the development of new construction techniques requiring different materials.

2. METHODOLOGY

- This research is conducted using blog written by experts on the internet and some relevant book which can be found in the library.
- As the topic ranges of different topics with different timelines, different online platforms and books needs to be covered.
- Each blog and books were thoroughly reviewed which we select the important and relevant topic related to the research paper.
- We finalised our research paper by thoroughly going through what we have selected.
- Lastly, we had an analysis of the research paper which we had written on how the evolution of architecture took place, what evolutionary architectural style took place and concluding it with a proper conclusion which sums up our entire research paper.

2.1. AIM AND OBJECTIVE

- The aim of this research is to have a study on the evolution of architectural style between the Greek period till today's architecture.
- The study will be based mainly on ancient Greek architecture, Roman architecture, Medieval architecture, renaissance architecture, Baroque architecture, neoclassical architecture, and modern architecture.
- This study will include their characteristics, materials used, the period in which each of these architecture periods are on and how they evolved from each architectural period.
- Taking these into account we will try to have research on how they differ to one another and try to come up with a conclusion.
- With that being written, the objective of this research is to learn about the architectural evolution style.

3. LITERATURE STUDY

1) Greek architecture

Greek architecture stretches from 900 B.C.E. to the first century C.E., with the earliest extant stone architecture dating to the seventh century B.C.E. Greek architecture influenced Roman architecture and architects in profound ways, such that Roman Imperial architecture adopts and incorporates many Greek elements into its own practice. The characteristics of Greek architecture can be seen by its

simplicity, harmonic and balance in their design. The most recognizably “Greek” structure is the temple. They are famous for the use of columns and pediment in their temples and houses. Greeks’ love for beauty gave rise to different versions of columns or Orders mainly Doric, Ionic and Corinthian. The use of timber became minimal and was replaced by marble in Greek architecture. Due to the love of their aestheticism, entasis (the delicate adjustment to correct the optical illusion so that the form and proportion appear to be perfect) was used for their inscriptions in the temples or houses. (A. Becker, 2014).

Figure 1

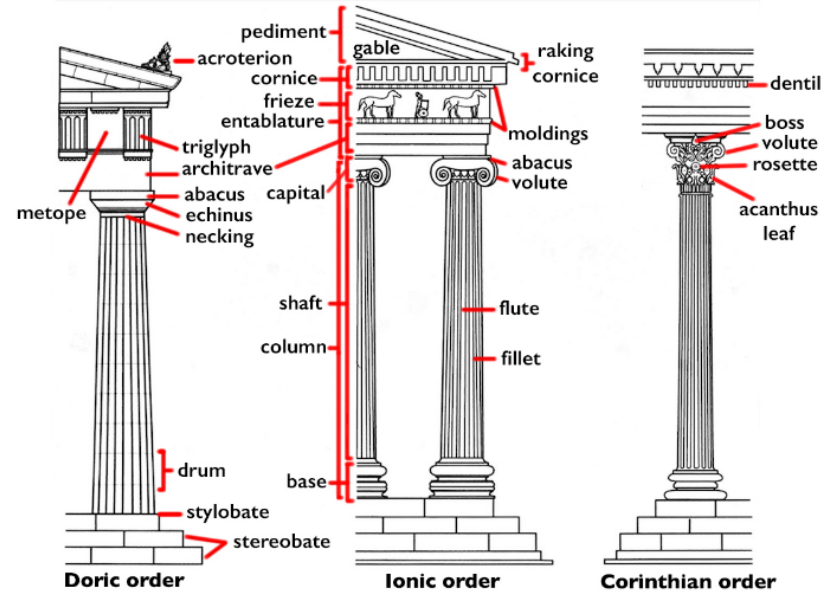


Figure 1 Greek Order.

Source Google Photos

2) Roman architecture

Roman architecture stretches from 509 B.C.E till 476 C.E. Buildings were designed to impress when viewed from the outside because their architects relied on the post-and-lintel system. This method used two upright posts, like columns, with a horizontal block, known as a lintel, laid flat across the top. Roman architecture, influenced by Greek architecture, emphasized grandeur and engineering. Ancient Roman architecture is part of classical architecture and builds on the three classical orders—Doric, Ionic, and Corinthian—developed in ancient Greece. The Romans later added two orders of their own: Composite and Tuscan. Like other classical architecture, the Roman style emphasized proportions and symmetry. The extensive use of concrete allowed Roman architects to build large-scale constructions such as aqueducts and the Colosseum. ‘Tufa’, a volcanic stone coming from Italy was used before the use of concrete. Roman architecture is known for innovations such as the vault, arches, and domes. The Romans built aqueducts throughout their cities and supply water into the cities they built and occupied, increasing sanitary conditions and reduces scarcity of water. Rome had their power for a long period of time, due to this a defined architectural style in building, location and era cannot be seen. Some of the notable characteristics which can be seen in Roman architecture are their arches, concrete structures, columns, domes, and design based on symmetry and equal proportions. (McLaughlin, 2023).

Figure 2**Figure 2** Aqueduct

Source Google Photos

3) Medieval Architecture

Medieval architecture developed in Europe from the 5th to the 15th centuries during the Middle Ages. The architectural style was shaped by the cultural and religious beliefs of the period, along with practical needs such as protection and the display of wealth and power. Cultural and religious factors of the time influenced the design, while practical aspects like security and showcasing affluence played a significant role. The need for protection, the wish to exhibit wealth and power, and the prevailing cultural and religious beliefs all contributed to the architectural style. Some characteristics of the Medieval architecture are their use of brick and stone, the use of rounded and pointed arches, with the development of ribbed vault taking place. The style is also known for beautiful elements such as large stained-glass windows, elaborate sculptures, and intricate carvings. Medieval architecture is mainly comprising of the following architecture: Byzantine, Romanesque and Gothic architecture. Byzantine architecture was constructed during the early 10th century during the Byzantine empire. The construction of domes, ornate decorative elements, and intricate mosaics were used during Byzantine period. The interplay of light and shadow emitted by arches and different fenestration can be seen with the use of marble, gold, and glass. The use of these elements largely impacts the style and showcasing as the symbol of power, wealth, and cultural sophistication, and they had a lasting impact on the development of Medieval architecture. During this period the use of pendentives takes place. (Mutuli, 2024).

Figure 3**Figure 3** Hagia Sophia (Byzantine)

Source Google Photos

Romanesque architecture, spanning the 11th and 12th centuries, was influenced by Roman architecture. It featured rounded arches, barrel vaults, and classical elements like columns, arcaded walls, and pilasters, resulting in simple, functional, and sturdy structures for buildings such as churches, monasteries, and castles. The use of barrel vaults in Romanesque architecture allowed for larger interior spaces and made significant contributions to decorative arts through carved portals, capitals, and tympana.

Figure 4



Figure 4 Abbey of Sainte-Trinité (Romanesque)

Source Google Photos

Gothic architecture stretches from the 12th-16th century. They were known for using pointed arches, flying buttresses, and ribbed vault. The uses of these arches lead in the creation of light and free look. Stone and glasswork were also use which largely added in the beauty of the structures. Gothic architecture featured decorative arts like intricate sculptures, medieval stained glass, and illuminated manuscripts. The style symbolized the power and wealth of the church; the grand cathedrals, abbeys, and other religious structures of the time were often seen as symbols of the church's power, and the style was used to promote its influence and spread its teachings. (Giuroiu, 2024)

Figure 5



Figure 5 Note-Dame De Paris (Gothic)

Source Google Photos

4) Renaissance Architecture

Renaissance architecture is between 14th-17th century. It is inspired by the revival of classical art and learning. The characteristic of Renaissance architecture includes on proportion and symmetry with the use of classical order. The Renaissance style is a mixture of different local traditions from different part of the world which faces comparison by the new richly decorative Baroque style arriving from the 17th century. It is mainly divided into three periods:

- Early Renaissance (c. 1400 onwards), revival in the reuse of classical ideas.
- High Renaissance (c. 1500), revival of classicism.
- Mannerism (Late Renaissance, c. 1520-30 onwards) the reuse of classical ideas became much more inventive and decorative. (Cartwright, 2020)

Renaissance architecture represents a turning point in the history of the field, marking the transition from the medieval to the modern era. Its largely focuses on humanist principles, artistic expression, and classical ideals still implemented and used during that time. The 17th century introduced a more playful new architecture movement which dominated Renaissance style, this architecture was known as Baroque style.

Figure 6



Figure 6 St. Peter's Basilica, Rome

Source Google Photos

5) Baroque Architecture

Baroque architecture stretches from the late 16th century-18th century. Baroque architecture is characterized by ornate details, curved shapes, large-scale decoration, and dramatic effects of light and shadow. Baroque architecture was influenced by the Catholic Church's goal to counter the Protestant Reformation and show the power and glory of God. This style is known for its elaborate designs, marble, large decorations, and bright colours. Baroque buildings often had domes, colonnades, twisted columns, and trompe-l'œil (highly realistic optical illusion of three-dimensional space and objects on a two-dimensional surface) paintings that created realistic illusions. The style spread across Europe and beyond, influencing architecture worldwide. Baroque architecture adapted to local traditions and climates, creating different versions of the style. In Latin America, for example, it mixed with indigenous and colonial influences to create unique forms. Baroque architecture moved away from the simple and restrained Renaissance style,

favouring a more expressive and ornate design. Its focus on emotion, movement, and spectacle influenced modern architectural styles. (Augustyn, 2024).

Figure 7



Figure 7 Palace of Versailles

Source Google Photos

6) Neoclassical Architecture

Neoclassical architecture stretches from the late 18th-19th century notably in the Europe, Britain, and the United States as well as Latin America. Modern buildings today are derived from the neoclassical design which were modified or are used as a sample towards modernism. Some of the characteristics of the Neoclassical architecture are the use of grand scale volumes, simple geometric forms, dramatic columns, Doric Greek, or Roman detailing and domed or flat roofs, depending on the style. Neoclassical principles also shaped urban planning, with cities featuring classical elements in their public spaces, street designs, and civic structures. This influence is visible in cities like Washington, D.C., where neoclassical architecture is prominent. Neoclassical buildings often sought to project a sense of grandeur and monumentality, particularly in government offices, museums, and libraries. The inclusion of large-scale columns, pediments, and porticos added to their impressive appearance. (Hohendel, 2024).

Figure 8



Figure 8 Washington D.C.

Source Google Photos

7) Modern Architecture

Modern architecture began in the late 19th and early 20th centuries, responding to the industrial revolution, urban growth, and society's changing needs. It moved away from old styles and traditions, favouring new methods that focused

on functionality, simplicity, and using new materials and building techniques. Architects started using materials like steel, glass, and reinforced concrete, which allowed for creative structural solutions and bright, open spaces. They embraced new technology in construction and engineering, using advanced building techniques and machinery to create innovative designs and make the construction process more efficient. Modern architects believed that buildings should be practical and meet the needs of their users. This led to designs that prioritized functionality over decoration. Spaces were organized logically, emphasizing usability and practicality. The design principle of "form follows function, function follows form" emerged from this thinking. Overall, modern architecture was a time of experimentation, innovation, and evolution in design. It still influences contemporary architecture today, with a strong focus on sustainability, technology, and cultural diversity, allowing for endless new and creative architectural ideas. (Archisoup, 2024).

Figure 9



Figure 9 Burj Khalifa

Source Google Photos

4. COMPARATIVE ANALYSIS

	Greek Architecture	Roman Architecture	Medieval Architecture	Renaissance Architecture	Baroque Architecture	Neoclassical Architecture	Modern Architecture
Time Period	900 BC - 1st century BC	1st century BC - 5th century AD	5th century AD - 15th century AD	14th century AD - 17th century AD	17th century AD - 18th century AD	Late 18th century AD - early 19th century AD	Late 19th century AD - present
Materials	Stone (marble, limestone), wood	Stone (concrete, marble), brick, wood	Stone (limestone, sandstone), brick, wood	Stone (marble), brick, stucco	Stone (marble), brick, stucco	Stone (marble), brick, stucco	Steel, reinforced concrete, glass, various industrial materials
Roof type	Gabled or hipped roofs covered in tiles	Mostly flat or slightly inclined roofs with terracotta tiles	Steeply pitched roofs with shingles or thatch	Pitched roofs with terracotta tiles or slate	Elaborate roofs with curves and dramatic shapes, often with metal or slate	Flat or low-pitched roofs with parapets	Flat or gently sloping roofs with various materials including metal, glass, and concrete
Load Bearing	Post-and-lintel construction, archaic truss systems	Arch, vault, and dome construction, concrete technology	Thick walls, groin vaults, flying buttresses	Symmetry, domes, pilasters, pediments, classical orders	Grandeur, dynamic forms, use of light and shadow, massive domes	Symmetry, classical motifs, columns, pediments, strict proportions	Structural innovation, minimalism, functionalism, experimentation

5. CONCLUSION

Architecture has changed a lot over time, from the Greek temples to modern skyscrapers. Each period had its own style and influences. Greek and Roman architecture focused on grandeur, while the Renaissance added intricate details. Later, the Baroque and Neoclassical periods showed off wealth and classical designs. Modern architecture is all about practicality and new ideas. Today, we're focused on sustainability and using technology in our buildings. Throughout history, architecture has reflected our culture and beliefs, shaping the world around us.

CONFLICT OF INTERESTS

None.

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None.

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