LECTURE 012

Gothic Architecture

Gothic architecture is a style of architecture that flourished during the high and late medieval period. It evolved from Romanesque architecture and was succeeded by Renaissance architecture.

1100 to 1450 AD Pointed arches, ribbed vaulting, flying buttresses, and other innovations led to taller, more graceful architecture. Gothic ideas gave rise to magnificent cathedrals like Chartres and Notre Dame.

Fundamentals of Gothic Architecture

There are three things that make Gothic architecture Gothic:

1. The **pointed arch**
2. The **ribbed vault**
3. The **flying buttress**

In 1137, Abbot Suger began to rebuild the Abbey Church of St. Denis. Suger was not content with the dark, bulky, haphazard style of Romanesque architecture. Suger wanted his church to be a graceful expression of geometric harmony, striving toward Heaven and flooded with miraculous light. Years later, the new Church of St. Denis was revealed to the world. As Suger had wished, this new church was definitely unlike its Romanesque predecessors. Where Romanesque churches were short and thick, his new church was tall and elegant. Where Romanesque churches were dark and imposing, his new church was bright and inspiring. Suger called his new style of church 'modern.' His critics called it Gothic.

A thousand years ago, the word 'Gothic' referred to the Goths, a group of Germanic barbarians who had invaded and looted much of the Western Roman Empire. When the people of the 12th century called Suger's new church Gothic, they meant it was unrefined, barbaric and non-Roman.

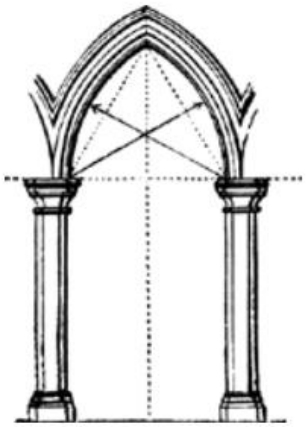
Those critics were almost entirely wrong. Gothic churches showed incredible refinement. They marked the apex achievement of medieval civilization. However, they were right about one thing: these churches certainly were not Roman. This is what makes Gothic architecture so fascinating. After centuries living in the shadow of Rome and trying to copy the marvels of the Roman Empire, Western Europe had finally come up with something new, something marvelous in its own right: the Gothic cathedral.

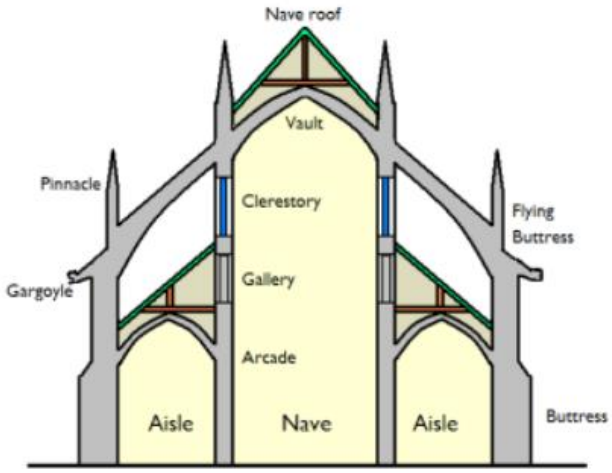
The Pointed Arch

The pointed arch makes all the rest of Gothic architecture possible. Its predecessor, the semicircular or Roman arch, had some severe limitations. These limitations have to do with what engineers call 'stress lines.' A **stress line** is basically the direction in which an arch distributes the pressure above it. The stress lines of the semicircular arch are mostly horizontal. This meant that the weight above these arches was distributed to the sides of the arch, pushing against the walls on either side. This is why Romanesque churches had such thick walls and tiny windows. They needed all that bulk to support the weight of the roof pushing outwards.

By contrast, the stress lines of the pointed arch are much more vertical. The weight above the pointed arch is mostly directed downward to the supporting pillars. This means that you no longer need big heavy walls

Support the roof. This redirection of force from a horizontal to a more vertical plane is characteristic of the other elements of Gothic architecture.





TYPICAL DETAILS OF A GOTHIC CHURCH

Renaissance Architecture

Renaissance architecture is the architecture of the period between the early 15th and early 17th centuries in different regions of Europe, demonstrating a conscious revival and development of certain elements of ancient Greek and Roman thought and material culture.

1400 to 1600 AD A return to classical ideas ushered an "age of awakening" in Italy, France, and England. Andrea Palladio and other builders looked the classical orders of ancient Greece and Rome. Long after the Renaissance era ended, architects in the Western world found inspiration in the beautifully proportioned architecture of the period. Renaissance style places emphasis on symmetry, proportion, geometry and the regularity of parts as they are demonstrated in the architecture of classical antiquity and in particular ancient Roman architecture, of which many examples remained. Orderly arrangements of columns, pilasters and lintels, as well as the use of semicircular arches, hemispherical domes, niches and aedicule's replaced the more complex proportional systems and irregular profiles of medieval buildings.

Baroque Architecture

1600 to 1830 AD In Italy, the Baroque style is reflected in opulent and dramatic churches with irregular shapes and extravagant ornamentation. In France, the highly ornamented Baroque style combines with Classical restraint. Russian aristocrats were impressed by Versailles in France, and incorporated Baroque ideas in the building of St. Petersburg. Elements of the elaborate Baroque style are found throughout Europe.

Rococo Architecture

Less commonly **roccoco**, or "Late Baroque", is an 18th-century artistic movement and style, affecting many aspects of the arts including painting, sculpture, architecture, interior design, decoration, literature, music, and theatre.

1650 to 1790 AD During the last phase of the Baroque period, builders constructed graceful white buildings with sweeping curves. These Rococo buildings are elegantly decorated with scrolls, vines, shell-shapes, and delicate geometric patterns.

Neoclassicism in Architecture

1730 to 1925 AD A keen interest in ideas of Renaissance architect Andrea Palladioinspired a return of classical shapes in Europe, Great Britain and the United States. These buildings were proportioned according to the classical orders with details borrowed from ancient Greece and Rome.

Art Nouveau Architecture

1890 to 1914 AD Known as the New Style, Art Nouveau was first expressed in fabrics and graphic design. The style spread to architecture and furniture in the 1890s. Art Nouveau buildings often have asymmetrical shapes, arches and decorative surfaces with curved, plant-like designs.

Beaux Arts Architecture

1895 to 1925 AD Also known as Beaux Arts Classicism, Academic Classicism, or Classical Revival, Beaux Arts architecture is characterized by order, symmetry, and formal design, grandiosity, and elaborate ornamentation.

Neo-Gothic Architecture

1905 to 1930 AD In the early twentieth century, Gothic ideas were applied to modern buildings. Gargoyles, arched windows, and other medieval details ornamented soaring skyscrapers.

Art Deco Architecture

1925 to 1937 AD Zigzag patterns and vertical lines create dramatic effect on jazz-age, Art Deco buildings. Interestingly, many Art Deco motifs were inspired by the architecture of ancient Egypt.

Modernistic Styles in Architecture

1900 to Present. The 20th and 21st centuries have seen dramatic changes and astonishing diversity. Modern-day trends include Art Modern and the school coined by Walter Gropius, Deconstructivism, Formalism, Modernism, and Structuralism.

Post modernism in architecture

1972 to Present. A reaction against the Modernist approaches gave rise to new buildings that re-invented historical details and familiar motifs. Look closely at these architectural movements and you are likely to find ideas that date back to classical and ancient times.

Built Environment

Built environment refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply or energy networks. The built environment is a material, spatial and cultural product of human labor that combines physical elements and energy in forms for living, working and playing. The "built environment encompasses places and spaces created or modified by people including buildings, parks, and transportation systems."

Culture, Architecture, and Design

Focusing on answers to these and other questions, Culture, Architecture, and Design discusses the relationship between culture, the built environment, and design by showing that the purpose of design is to create environments that suit users and is thus user oriented. Design must also be based on knowledge of how people and environments interact. Therefore, design needs to respond to culture.

The purpose of design is to improve environmental quality, which defines as the many characteristics, or attributes, of environments that respond to wants and are preferred (chosen) or rejected. It is linked to culture through the questions: What is better? Better for whom? How do we know it is better? And so on. Design can then be seen as a process of choosing among alternatives, which involves tradeoffs and ranking components of environmental quality.

Cultural variables also play a significant role in design. They are important in understanding specific user groups, situations, and environments. Environment can be understood as

(1) The organization of space, time, meaning, and communication;
(2) A system of settings;
(3) The cultural landscape; and
(4) The fixed, semi-fixed, and non-fixed elements of systems of settings.

To understand:

- The Nature and Role of Environment-Behavior Studies
- The Nature and Types of Environments
- The Importance of Culture
- Preference, Choice, and Design
- The Nature of Culture
- The 'Scale' of Culture • Making 'Culture' Usable

Evolution of human being

Man is clearly an animal. His heart, intestine, liver, lungs differ little from the corresponding organs of cat, a dog or a monkey. His respiration, digestion, reproduction muscle contraction, nerve or endocrine co-ordination fine the same general processes and same general chemical and physical relations that one finds in animals. Ecologist concerned with the study of various eco-systems regard man chiefly as a disturbing element in it, and it is this growing attitude on the growing reality of man's disturbing tendency that has given rise to the academic interest in man-nature relations.

Ecology

The word ecology derived from the Greek word 'Oikos meaning habitation, and logos meaning discourse or study, implies a study of the habitations of organisms. Ecology was first described as a separate field of knowledge in 1866 by the German Zoologist Ernst Haeckel,

Environment

The term environment has been derived from a French word "Environia" means to surround. It refers to both abiotic (physical or non-living) and biotic (living) environment. The word environment means surroundings, in which organisms live. Environment and the organisms are two dynamic and complex component of nature. Environment regulates the life of the organisms including human beings. Human beings interact with the environment more vigorously than other living beings. Ordinarily environment refers to the materials and forces that surround the living organism.

History reveals that human race was once afraid of nature and the natural forces. Human beings worshiped nature and considered nature as superior to human race. Enormous increase in human population raised the demand for development and increased the consumption of various natural resources resulting in environmental deterioration. The term environment describes the sum total of physical and biotic conditions influencing the responses organisms. Everything which surrounds us may be collectively termed as environment. It is from the environment that we get food to eat, water to drink, air to breathe and all the basic necessities required for day to day living. The environment therefore can be said to constitute as "Life support system".

Environment may be divided into the following major components.

Natural and physical component - it can be further divided into two types namely abiotic or non-living and biotic or living component.

The abiotic component is made up of the following –

Location	It can be understood in terms of the exact location of a place on the earth. Related to the location other factors can be understood such as climate, temperature, rainfall, forest, availability of water and other natural resources.
Terrain	Altitude or degree of slope forms another significant aspect of physical environment.
Geological structure	It is the presence and composition of underline rocks and determines land forms and occurrence of mineral wealth
Climate	it is the most dominant component of physical environment. It is understood through temperature, rainfall, humidity and sunlight. It affects various aspects such as plant growth, type of soil, occupation etc.
Energy	Energy received from sun is the main source of heat and light is the environment. It is also the life giving force for the plant and animal world.

The biotic components are those which influence living organism, plants, animals and man. These components are interlinked and form a food chain. Culture or human components - it basically includes all the man-made and artificial characteristics of human society. In other words he develops a cultural environment.
The cultural environment can be further divided into the following categories

1	Social environment	It can be understood in terms of the nonmaterial aspect include the norms, values, ideas knowledge etc. whereas the material aspects are the manifest forms of the nonmaterial aspects.
2	Economic environment	Itt involves the different types of economic activities developed by man. Each type of economic activity has its own requirement of resources as well as technology.
3	Political environment	It includes the type of environment and its ideological principles, various important factors such as production, consumption, use of resources etc. are determined by the strategies and policies advocated by the - government. This in turn determines the level of development and progress of the society.