History of Architecture and Culture - I

Unit 1 - Prehistoric Age
Lecture 1

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INTRODUCTION : Why History of Architecture ?

History is the best teacher. It prepares us for the present and the future. For every human being, they would have been influenced by a building at some point of their life, it is not regarding the built but the relationship with the built environment that creates this lasting memory.

Every architectural masterpiece that creates a lasting impression, has a timelessness feeling to it. Such a masterpiece should be studied in depth. As the famous architect, Daniel Libeskind once said, “To provide meaningful architecture is not to parody history but to articulate it.”

Another aspect that we imbibe from history, is our values. Architecture is nothing but the expression of our values.

Evolution of building and Spaces

How early humans resided in natural caves and to have managed structures inside caves. Human beings residing in planes, made structures out of trees, rocks etc. Which then went on to becomes apartments, houses etc. This is with regard to evolution of buildings

Now, we move on to, Evolution of space, for instance; if it were to be a community space, it was initially just a space where a community gathered under a tree, an open space surrounded by huts and then enclosed spaces. Later more function was added to this space, like religion, public gatherings etc.

Evolutions of structures

This began with the construction of a simple structure like tree branches, covered with twigs. As more activities were added and practiced amongst people, people required more room to conduct and practice, so the structure became more intricate. Thereby, leading to the use of materials like stone and water, cement, steel etc.

Evolution of Construction Methodology

Initially man did everything, they depended on manpower in order to move materials, erect stones etc, they then replaced man with animals, like cows, oxen, donkeys, elephants etc to carry materials. Today we have machines to carry out most of the work for us.

How to understand a historical building and classify the style of the building ?

We begin by looking into the basic detail; the location, the name of the building. We then look into the time period of the building, of with dynasty does the building belong to i.e who was the ruler while the building was built. We then go on to look at the architect, the sculptor/ the designer of the building, the influences under which the building was constructed. These influences can be geographical, geological, climatic, region, historical and socio political and then, the Function of the building. Was it built for recreation, religious purposes or simply for a community gathering. Then comes the idea or the concept behind the building. We then go on to look into the salient features of the building; the fundamentation of the building, the way the roof /any particular part of the building, is treated. We have to sketch these buildings in order to understand them better.

How to classify the style of the building ?

We have to understand the architectural character of the building in order to perceive its style. These architectural characteristics can be understood from the following;

> understand the plan of the building : a general distribution of the building; whether it is linear/radial etc and how the spaces of the plan are associated with each other.

> The walls - How they are constructed, treated and what material have they used.

> The roof - The shape of the roof; dome roof, flat roof, conical etc and how have they constructed the roof and what is the ornamentation on the roof.

> The openings - How have they treated the openings, the character in shape of these openings.

> The Columns - Their position, structure and decoration. We have to particularly look into the the capital, the shaft and the base decorations to look out for which era/period this column belongs to.

> Mouldings - The form, the decoration

> Ornaments - What kind of ornamentation, what kind of material was used; is it stone, metal etc?

PREHISTORIC AGE :

Paleolithic Age :

- The first of the evolved homo sapiens or humans led a nomadic life. Food, shelter, protection are the main reasons behind humans coming together i.e to colonize.

- These humans or rather known as nomads took shelter in caves. They used to create records of daily activities by carving onto the walls of a cave. Artworks include cave paintings. One of the most famous paintings, can be found in France.

- Gradually started domesticating animals for traveling. Around 9000 BC, humans discovered agriculture and farming, thereby leading to domestication, for milk, work, wool etc.

- Not everyone was into farming, instead, they were people who engaged in potmaking, metal working, art and many more, including Architecture.

Prehistoric Structures :

“The origins of architecture, although lost in the midst of antiquity, must have been connected intimately with the endeavors of man to provide for his physical wants.” - History of architecture, Banister Fletcher. The early prehistoric dwellings, were imitated from nature. Man in his primitive nature began to imitate nature, he looked at the way, birds built their nests etc The main three classifications of dwellings in this era was;

> Caves

> Hut

> Tent

Caves were used by people who hunt and fish. Huts were used by agriculturists and tents for the nomads.

Prehistoric structures can be classified as follows;

> Menhir - A single or upright stone. For eg; 63 m high and 14 feet wide in diameter and weighing 260 tonnes menhir at Brittany.

> Dolmen - Dol means a table and men means stone. This means a flat stone which is erected on vertical stones. Examples of dolmen can be found in England, Ireland, Italy and India.

> Cromlechs - Circles of stone consisting of series of upright stones arranged in a circle and supporting horizontal slabs.

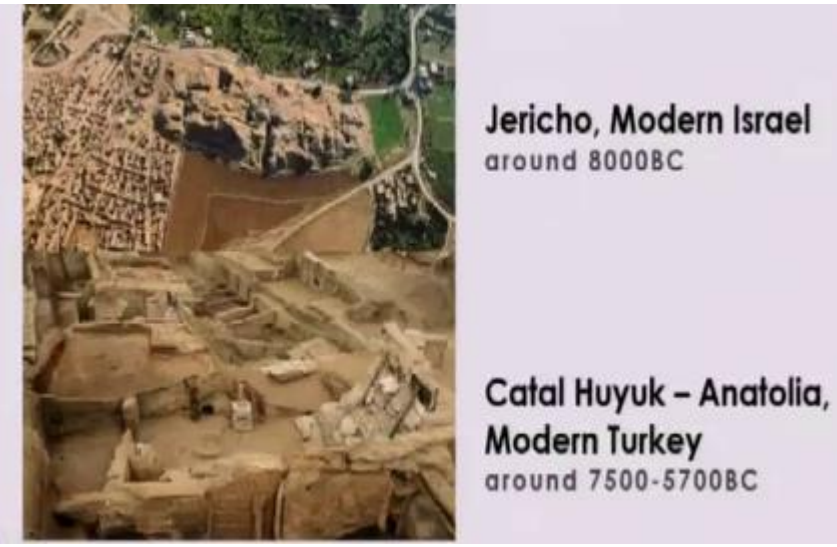
> Tumulus/ Beehive hut

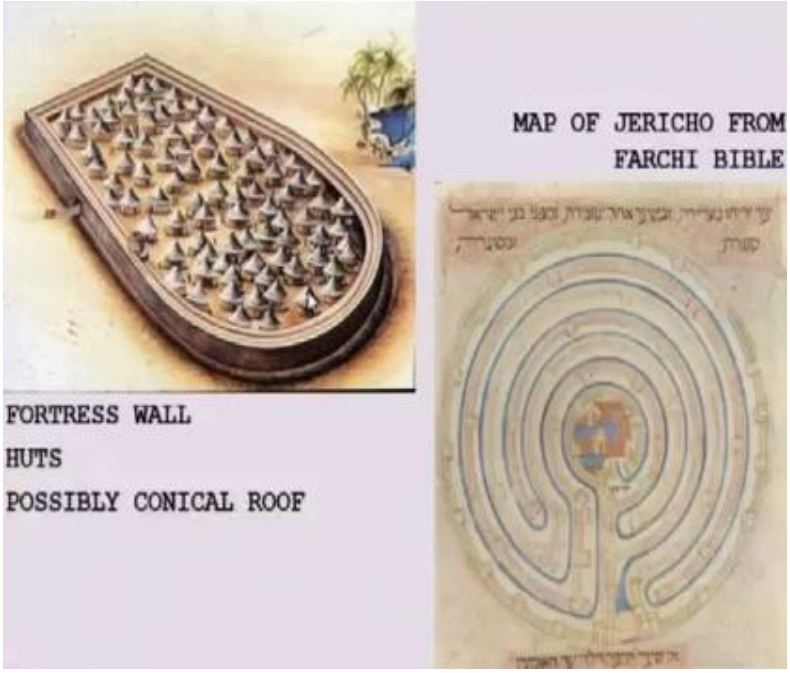
> Lake dwellings - they are generally found in Switzerland, generally found in valleys of rivers. The are wooden huts constructed on wooden piles and were placed for protection against attacks of all kinds.

NEOLITHIC AGE - dwellings

- Agricultural evolution - rise of neolithic era

- Earliest known civilizations existed





Jericho

The earliest systems of Jericho had a 27 ft thick fortress wall, covering an area of 10 acres inside. The initial settlements within boundaries were structures that had cone like roofs. Their habitants were farmers and hunters who buried the dead below the hut roof.

This is the map of the settlement of Jericho from the farhi bible. This shows, the fortress was like a maze with the city inside. This is the expression of how much fortification was done for the settlement.

Catal Huyuk

In contrast to the settlement Jericho, this does not have fortress walls. The town was a dense package of dwelling without streets. Residents gained access to the dwellings via roofs, in the above pic, you will notice that there are ladders on roofs for the residents' conveyance. There were high openings in the walls for ventilation. The structure was made of mud brick walls. Post and Lintel timber framework enclosed the rectangular spaces that averted the neighbouring houses, so that together they established a 'perimeter town wall'. Hence, there was no need for fortification. The densely packed houses themselves, defined a boundary wall for the settlement. The shrines in these settlements, were not provided with any windows and were decorated with motives of bulls and cult statues.

NEOLITHIC AGE - Structures :

Megalithic constructions - Significant constructions in the neolithic age, these are large stones erected in a circular pattern for astronomical observations and communal tombs. Megalith literally means large stone. A famous megalith construction is stonehenge which is found in Wiltshire, England and communal tomb is present in Passageway grave, New range.

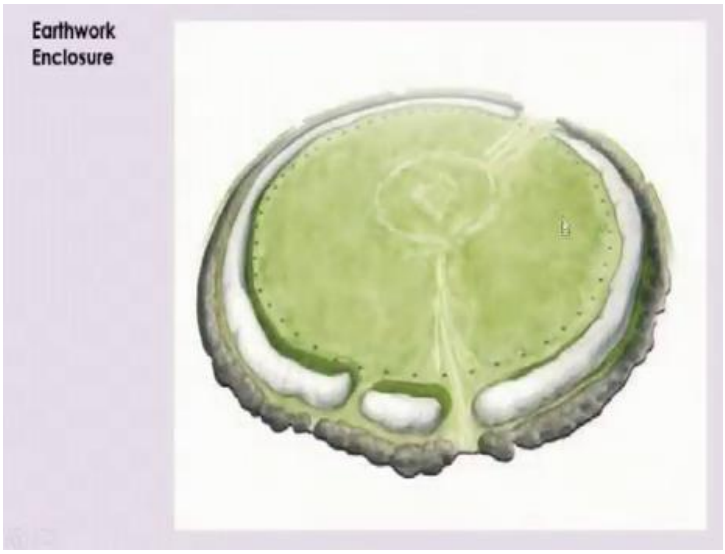
It is evident from the above information that, in the neolithic age, more respect was given to the dead, constructing this communal grave was not only a sign of reverence to the dead but also, a means of establishing claims to land.

One of the earliest of the megalith tombs dated to 4200 BCE is in Brittany - a chambered tomb stabilized by a covering of the earth.

Stonehenge - phases of construction

Earthwork Enclosure -

It is a circular ditch and bank monument, about 375 ft in diameter, in about 3000 BC. This earthwork is the henge in the stonehenge. Though in most neolithic henges, the ditch was outside the bank, in this stonehenge, it is inside the bank. The 56 circular pits that you see from the image above, timber posts would have been made to stand in these pits. They are aligned in the edge of the bank.



Timber monuments -

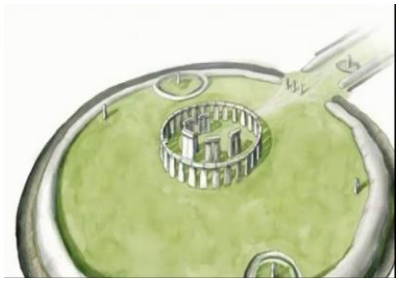
A distinct new phase took place in the middle of the neolithic period. Timber posts were erected in linear patterns, near the north east entrance and across the center towards the southern entrance.

Blue stones -

These stones gather the colour blue, when wet. They were erected either in a semi circular or circular arrangement. These stones probably appeared around the year 2500 BC, at the earliest being about 410 blue stones brought from about 250 miles from Wales. These were erected in the center of the earth bank.

Sarsen Circle :

Stonehenge got its iconic form when, 16 ft huge sarsen circle was constructed. Sarsen circle was made from stones, Sarsen stones. You can see that the outer circle was made 30 worked stones, topped by lintel, within this circle there was a horseshoe configuration in sight, the thulitians. Thulitians are made of three stones of which, one stone is erected on two stones.

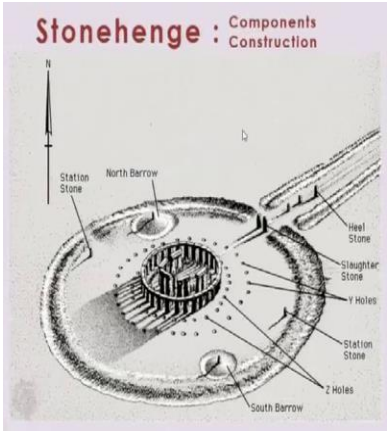


Later refinements :

Later refinements were made to this structure. The blue stones that were cast aside, were repositioned as a circle in horseshoe and a double ring of pits were dug around the north and south. By 1500 BC, the stone henge was not properly maintained.

Components of a Stone henge :

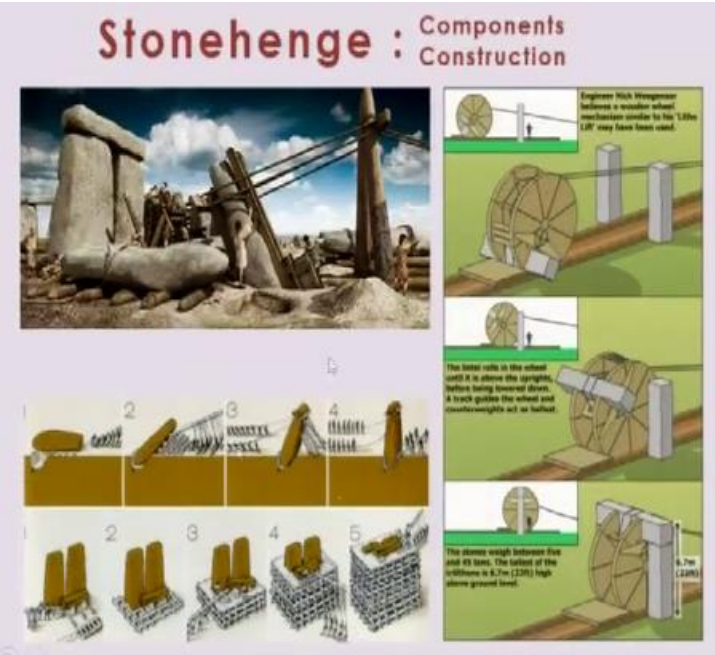
As seen earlier, the center of the stonehenge is made up of Sarsen circle. To the north, is the north barrow and the south, the south barrow. The outer Starcen circle is further surrounded by pits in the ground known as, Z holes. The next ring of holes is called Y holes. To the east of the south barrow stone was the station stone, two station stones were erected, one to the north of the south barrow and the other to the north of the south barrow stone. In the north east direction of this structure was the 'Heel' stone. The position of the heel stone is perpendicular to the center of the Sarsen circle, where the 'Altar' Stone is erected. The position of the heel stone, Slaughter stone, altar stone and the trilithons, define the Solstices.



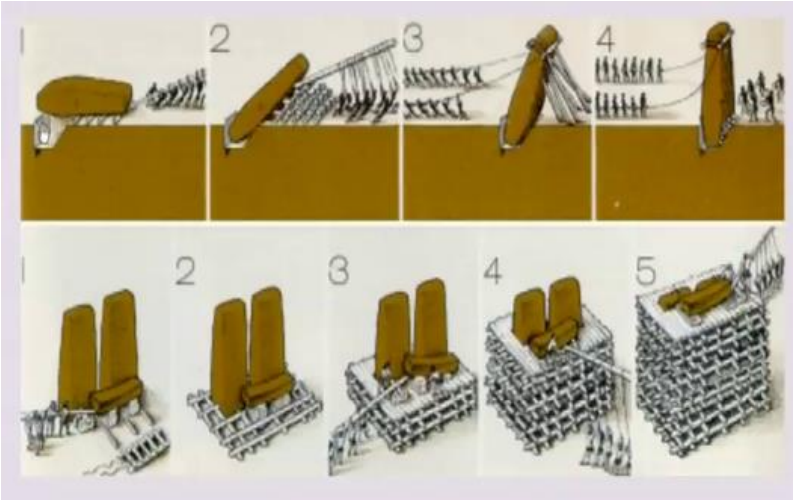
The construction of Stonehenge :

There are many stories behind the construction of the stonehenge, the most common being, the stones were transported in wooden logs and were hoisted to an erect position with the help of ropes.

The image below, depicts the construction process;



The stones were pulled and pushed to the pre duct pit. Once one edge was placed in the pit, it was hoisted and erected with the help of ropes. They brought in timberlocks to help erect the stones, once the stones were erected, they filled the pit with earth thereby blocking the stone in the pit. The made temporary structures with the help of wood logs (image bottom 1) and made platforms on top. They used timber and wooden platforms to raise the lintel slab to position it on top of the erected stones.



Another theory behind the construction process was, they used a wheel. The engineer Nick Weegenaar believes that a wooden wheel was used to erect the lintel on top of the stone. This is a mechanism similar to his letho lift. The lintel is attached to one portion of the wheel and the wheel was rotated,

thereby causing the level to be placed on to the erected stones. This required careful planning and calculation. The stones weighed about 5 - 45 tonnes.

SUMMARY

Introduction to the history

Prehistoric Age

Prehistoric Structures

Paleolithic Structures :

- Cave, tent, hut
- Monolith, dolmen, Tumulus, lake dwellings, cromlechs

Neolithic Structures:

- Jericho, Catal Hayuk
- Megalithic constructions - Stonehenge, Megalith tombs

QUESTIONS:

- Explain how relevant it is to study the history of Architecture
- What are the differences between Paleolithic and Neolithic age ?
- Explain Stonehenge with respect to the sun's path and how it was used for astronomical observatory
- Explain in detail a Megalith Tomb with an example