# B. ARCHITECTURE
# THEORY OF ARCHITECTURE – I (AR6102)
# ELEMENTS OF ARCHITECTURE – FLOOR, WALL, COLUMN & ROOF
# Lecture - 5

## Introduction of Elements of Architecture:

Introduction - the basic elements of a building or space making. What we saw in the previous chapter as elements of architecture are the basic elements of design in general. Those elements are points, lines, planes and volumes. This is a simplified and a modern way or looking at architecture that will help in the profound understanding of architectural design. These elements are applicable even for other art forms like sculpture painting etc which are also made up - point, line, planes and volume that makes the composition of art and communicates through these elements. However, traditionally architecture is fragmented into its basic elements in a different way. Elements that are easily identifiable, unique building units that are repeated to create the architectural whole. These elements are apparently unique amongst themselves because they are structurally, visually and also functionally have a unique purpose. This is the way traditional architecture has been divided further into basic elements - Floor, wall, column, roof, door, window and Stairs. The present lecture elaborates on the inherent qualities of elements. It also explains the expressive meanings, and the potentials of those elements as space making tools.

The above list of elements are not exhaustive. They can be further extended, because the architecture of various regions of the world have their own unique set of basic architectural elements in addition to the above. However, the above list is the most common and most indispensable for architecture of any region. For example, the element of architecture you see here, is neither a window nor a floor, nor a wall; it is a unique element called Jarocha according to the vernacular architecture of Rajasthan. This element is a unique attribute from that place which cannot be found in other regions of the world. Similar way, we have many other architectural elements

unique to that particular region, which cannot be included in a common discussion of world architecture. Here you have an example of an architectural element of what is called as thinnai in South Indian Residential architecture. It is neither a floor, nor a step, it is a unique element used as a seating in an open space, not seen in other architecture forms. Here on the right, you see another unique architectural element, it is called as the Wind catcher. The architecture of desert regions such as Egypt and Middle East. This is an example of unique elements that are unique only in that place, which you cannot find common in all other architecture. We will be excluding these unique elements of the region and will be seeing only the general elements of architecture. The list of which we saw before.

## Elements of Architecture for Floor & Wall:

We will look at the elements one by one in detail. First, let's take a look at element of architecture or element of space making called the floor. A floor in architecture is a horizontal plane that forms a base for the other architectural elements to stand upon. Without a floor, you cannot compose another architectural element column, a roof and a wall. This is the most essential and the basic element. Here we will discuss some significant aspects of the 'floor'.

A floor has certain attributes of a horizontal plane that forms a base for the other architectural elements to stand upon. Here we will discuss some significant aspects of the floor. A floor has certain attributes of a horizontal plane. Which we will see in this lecture. A floor can refer to a place for an activity. In architecture it can mean a well defined horizontal plane that is different from the natural undulating ground, created for an activity or a movement. A floor can be spatially created or defined in many ways as follows - it can be created by elevating or depressing a plane from its surroundings. Here you can see an elevated plane, that is elevated from this ground level. Here you can see a depressed plane from its surrounding level. By elevating a depression, you can create different spatiality. Changing surface qualities of a plane is also one of the method of creating a spatiality. Here you can see a floor plane differentiated just by the material used. The green material in the centre with a pebble rocky surface around it and a surface at the periphery. This is one of the best examples of space making

with floor manipulation of materials of a zen garden and this is a mughal garden with the building in the centre.

What is called as a floor plane, doesn't have to strictly be a horizontal plane. There can be many variations according to the context. It can have levels of variations in its form. It can take any shape like rectangle, square, circle, etc. What you see here is a picture of the complex of Fatehpur Sikri, the capital complex of the emperor Akbar. You have a play of horizontal planes which is the floor. Everything is horizontal plane but everything has a unique function. The part of the floor you see on the right is the movement space. The floor that you see here, is not meant for movement, its for a water body to help maintain some cool under the harsh sun. The floor plane what you see here is not meant for movement, it is meant for a performance. The floor plane being the same horizontal unit can take different functional forms according to its form and elevational experience.

Here you have another example from Mughal architecture of floor plane manipulation. Everything is a horizontal plane here but with slight uniqueness. What you see here on either side is a movement way as a floor plane. What you see here in the centre is a water channel which is once again a floor plane. What you see on the side, a centre attractive decorative element and there is a water fountain in the centre of the space. Thus, through the above variation there is possibility of creating a floor within a floor and even creating a hierarchical organisation of floors within the same space. Other than being a supporting base, a floor also acts as a unifying entity that visually connects separate units in a single plane. Thus, a floor acts as a Datum. The picture that you see here explains it. If there is no floor plane that connects all the individual towers of the Angerwad temple, there won't be any unification. The floor is an element which is performing an activity of a Datum, unifying element. Another similar example from Indian architecture from Karnataka where you have an elevated floor plane that connects the different parts of a temple complex. Also if you observe, by elevating the floor plane, a sense of sacredness, a sense of importance is created, there is a raise a gradual raise in the floor in any religious architecture from the entrance to the main central space. By manipulating the floor, you can manipulate the importance of the space and architecture.

Another example of floor plane that gives importance to the main central structure (the image). Floor can be used as a medium of communication in spatial experience. It can depict spatial boundaries. It can take forms and incorporate symbolic meanings also like what you can see in this picture. What you see here is a space in the cathedral where the form of a maze has been depicted on the floor which has religious connotations. In Indian architecture you can see many examples of floor decorations which have religious and symbolic meanings.

Now, we will see in detail about the architectural element called 'the wall'. A wall in architecture is a vertical plane that forms an enclosure of an activity or a space. It is the space making tool in architecture. Here, we will discuss some significant aspects of the wall. A wall has certain attributes of a vertical plane which we will further see in detail.

A wall may act as any of the following - A structural support for the roof, An image maker or as a communication tool, A decorative element for the space inside as well as outside. If a wall is very low and stout, it can be used as a seating and other purposes. A wall maybe used as a mere visual block. We will certain examples of architecture that show various qualities and properties and attributes of a wall. The image that you see here shows wall as an enclosure. You see various layers of walls that are being shown in the aerial view. Different layers of walls signifies different layers of importance where there is a transition from the public to the sacred. More and more you step further inside, the more you are in the sacred space, the significance of which is brought by the layers of the wall. Wall as an enclosing element. In this example, architecture created by architect Mies van der rohe, called the Barcelona Pavilion, is one of the best examples to show wall as a space making element. This is the plan of the building, this is the exterior view of the building. The building plan doesn't have enclosed walls which makes the space inside but it has discontinuous free standing walls that still create a very good spatiality within and a very good sense of movement and direction within. Not just the interior space, even the exterior space can be very well defined, can be given a character by the enclosing walls. The example you see here, is a courtyard in Jawahar Kala Kendra by architect Charles Correa in Jaipur. The central courtyard is the main gathering and activity space i.e. given a form by the enclosed walls around and it is given a traditional character which is again with the form of the wall and the colour of the wall.

Sometimes in cases like what you see in this picture - wall form is the form of the building, there is no other element of architecture that gives forms to the building. The sinus form of the wall is the form of the building. This is an example of architecture, this is a building done by Alvar Aalto, MIT Hostel building. Another building where wall acts as a main form maker or as an image maker, residential complex designed by architect Antonio Gordea in Barcelona. Wall also acts as an image making or as a communicating element. If you see any traditional architecture, the wall won't be left as a simple plain thing. The wall will always be utilized to communicate certain meanings, to make the complex more symbolically communicable. The wall of a traditional building is filled with sculptures and paintings. Not only in Indian temple architecture, any religious architecture from the world, we can find in the same situation. Not only in temple architecture, even tribal mud architecture, if you take a look at the bhonga houses of Rajasthan, the wall is not left plain. The wall is decorated to show the aesthetic expression of the human beings living in this space.

## Elements of Architecture for Column & Roof:

Now we will see in detail about the architectural elements, what is called as the Column. A 'column' in architecture is a vertical linear element. Here, we will discuss some significant aspects of the 'column'. A column has certain attributes of a vertical line. Which we will see with architecture examples in this lecture. A column in architecture may act as a structural support for the roof and the superstructure above. It may again act as an image maker or as a communicating element. A column can be very potentially used as a decorative element also. A column is also a space making tool, as powerful as a wall. A column can effectively act as a movement guide as well. We will see all this with certain architectural examples further.

The picture here shows a row of columns that creates an undisturbed office space here. If there is no column and you have only walls, you won't get a free flowing space like the one you see here. the column is the main space making element. A seamless space, this is an example of Johnson wax building by Frank lloyd wright. Again in space making of interior space, a column can create hierarchy like what you see in this picture. There are a set of columns here and another set of columns that creates a hierarchy in space. This is a normal space of an Egyptian temple and this is the main

movement space of an Egyptian temple where the procession of the deity will happen. By varying the character of the column, you can create a variation in the character of the space also. A row of columns can suggest movement like what you see in this picture. A column within a space can be a decorative element like what you see within this building. An example from Mughal architecture in India. The column is one of the most decorative elements but it has a reason here. It is a main space where Emperor Akbar used to attend his ministers. The importance of the activity is shown through the decoration of the column. In a way, the column here acts a communication tool as well. We have another example of column as a space making tool. You can imagine the complex of Taj Mahal without the minarets. Without the minarets which are in a way the vertical columns, the complex will be dwarf and not so magnificent as you see here. The magnificence is due to the imagined wide volume that is created due to these vertical columns, typologically called minarets. Another example of imaginary space making in the exterior by the vertical element column. In this case, it is an architecture in a place called Istanbul. Again an example from Islamic architecture.

Here we have an example of column as a space making tool, not in architecture but in an urban design level. The main central gathering space of St.Peter's Square is not defined by a continuous wall but it is defined by a row of columns like what you see here. Also in St.Peter's square there is a central focus, the main element that is created by the Obliques which is again a column, taller than any other element in the complex. A column can act as a space making tool and also a focus creating or a centrality creating tool in architecture and also in urban design and townscapes. Another example of column or a tower as an image maker or as an identity creating element, in this case it is the Qutub Minar, again from Islamic architecture.

Column as a space making element, is an example where the columns in the front verandah differentiate the exterior space and the interior semi open space. The public and the semi private space, without the columns, this differentiation wouldn't be possible.

Now, we will see in detail about the architectural element called Roof. A roof in architecture is an overhead plane that shelters an activity or a space. Here we will discuss some significant aspects of the roof. A roof also has

certain attributes of the horizontal overhead plane which we will see in detail. A roof may act as any of the following - it may act as a sheltering element, an image maker, a decorative element, a space making tool, a communicative surface, a roof can act as a form making tool as well. Moreover, a roof can create interesting lighting inside a space. We will see all this with the following architectural examples -

A roof is a main sheltering element of architecture and roof gives a prominent form to any building. It gives a main character of the building. Here we will see a main example of a roof form from the vernacular architecture of Kerala. The roof form is pyramidical due to climatic reasons, due to heavy rain. In Fact the architecture character of entire Kerala is due to the roof form mainly. Another example of roof as a main space making element. The roof which is semi-spherical creates a spherical form inside the building. Any change in the roof form will change the eventual form inside the space as well. This is an example of Pantheon from Roman architecture.

Roof doesn't stop with just giving shelter to a space, it can bring in very interesting light scapes as well. In this case of Kimbell art museum, architect Louis Kahn, you can see natural light falling inside from the roof. Another example from India, in this case, the Hussain Doshi Gufa art gallery of Artist M.F Hussain. Here we have another architectural example of the roof as a main communication tool or as an image maker. The Lotus temple or what is called as the Bahai temple will have the form of the roof which is nothing but the form of a building in the shape of a Lotus, which in a way communicates the spirtual nature of the function of a building. Another example of a roof form which gives a strong form to the entire architecture. In this case the Sydney Opera house. The form of the roof reflects a form of shell next to each other. It may also be related to the form of the sail of boats i.e. what you can see in the water body around. Another example of interesting roof forms which creates a strong image for a building, in this case the Ronchamp Chapel by architect Le Corbusier. The interesting roof form by architect Santiago calatrava, a roof form that looks like a bird in a way communicating the activity nearby, the airport. A roof can also act as a communicative tool, it can carry a lot of meanings and communication in its design. Like what you see in this example of a ceiling under the roof in the Mount Abu temple, the Dilwara temple in Rajasthan, the decoration is about communicating a celestial life of Jain architecture.