History of Architecture and Culture – 5
Lecture - 18

Works of Frank Lloyd Wright

Frank Lloyd Wright – American architect, interior designer, writer and educator. In his life he has designed more than 1000 structures of which 532 of them have been completed. Frank Lloyd Wright believed in designing structures that were in harmony in nature with humanity and environment. Philosophy which he so rightly called is organic architecture. His philosophy was exemplified in the best manner with his 1 project called, fall in water, which he designed in 1935. For that and for all the projects that he has done, he has been called the best all time work of American architecture. Frank Lloyd Wright was the leader so the prairie school movement. He has this concept of usonion home which is the unique vision for urban planning in the United States. He has worked on a variety of projects such as offices, churches, schools, skyscrapers, hotels and museums. He has also designed many interior elements of his building such as furniture, stain glass, the grills and everything and in his life, he wrote close to 20 books and many articles and was a popular lecturer in the United States and in Europe. Let's take a look at some of his buildings. First building that we are going to look at is wind mill. It's called the Romeo and Juliet windmill. Romeo and Juliet windmill is a wooden tower, it is one of the oldest existing of Frank Lloyd wright building in Wisconsin. He designed this n 1886 simply to carry water to the hillside school and also to withstand some of the areas greatest storms. Even the critics said that it would never stand more than 10 years but even today the building is standing. It stood for more than 100 years when finally renovation had to be taken to replace the building. But it stood for more than 100 years when they said the building will stand for 10 years. It's called Romeo and Juliet windmill because if you look at the cross section, because this is octagon which is mated to a diamond. This is the cross section which gives the building its strength. So this is why the building is called the Romeo and Juliet building. The next famous building that we are going to look at is, the Walter Gale house. This is designed in a geometric wheel and style architecture and this is an example which gives or demonstrates architects predilection for informal planning. Despite the several evident Queen Anne of architecture, the Gale house has some geometric purity which makes this building very unconventional of Queen Anne architecture. It represents the starting point of the architect move towards to free himself from the clutches of historic designs. Queen Anne style historic design, Wright's architecture was somewhere here and

this building represents somewhere in the middle which he was planning to depart from historic architecture towards modernist buildings over here. The next famous example that we are going to look here is Frank Lloyd wright's own house and studio in Oak Park, Illinois. This building is a microcosm of the prolific designers and it is an example that architecture is ever revolving in his aesthetic. Make a note of the horizontality in his architecture, his stress for horizontal line is very evident in the architecture. In an age where people were going right, he went horizontal. His house was one of the expression of the early formative years of architecture. This house represents series of additions and it also expresses the changes in philosophy in which he underwent as an architect during the 20 years which he lived there. 1889-1909 he lived in his house and whatever philosophical changes he underwent, the building also underwent same changes.

This building was nowhere like any of his later style building. This building was different. The front door was in traditional place unlike other prairie style homes where it is not easy to find as you approach them.

A wrap around front porch sits beneath the house massive triangular gable, this is the wrap around the front porch, the massive gable over here,and this is a private outdoor space which the wright family often gather in this space to discuss private things. Once you enter the house, there is main staircase that spills into the entry way, the living room itself beckons you to the left. Take a look at the living room and dining room of rights. The living room is actually the only room in the house that remains as it was in the original design, the original 1889 home and it provides a seating with storage underneath. So this bay window creates space for the people to sit,let's light inside and also has space to store things inside. This is the living room that we saw with 2 bay windows on either sides. Entrance itself leads to steps immediately, automatically moved towards the left to the living room with a study. And if you had gone straight you would have seen the dining room with kitchen,collar spaces over here. He integrated his house and office in the same building. This is the main studio entry the reception, the office, the lighting area and the library. if you go to the top of the building 2nd floor , this is how it looks in the 2nd floor all the bed rooms , top floor with rooks and decks , a play room . In the middle of the large massively arc ceiling is an equally massive skylight that looks like this which has four intricately –cut grille panels that screen the harsh mid-day sun which gives you light at the same it gives you a character that filters through these grills. What wright did with his house was, he tried to experiment with lot of new design ideas and decoration ideas and eventually what he did was,

he tried to invent lot of new design elements which he would in his later years try to develop in his style of his own . So the addition integration of the studio and the house was a radical departure from the rest of the homes single style interior. The interior of the studio itself was completely different from what is the interior of the house. Even though it was the same building, what wright did here was, he did not unify the elements of all the rooms. He clearly had a distinction that this is office and this is house, I want to differentiate it. My house is going to be in single style exterior, my office is going to be something different. He used this building as a testing ground for lot of motifs he tried, some of them motifs are you can see in the picture itself . He tried lot of motifs, in the future e would follow all these motifs in the style of his own. This was the testing round.

Solomon R. Guggenheim Museum

Next we are going to look at another important project of Frank Lloyd wright which is called Solomon. R. Guggenheim museum of New York. He designed a variety of plans for this building. Because he wanted to get this thing really correct. So what he did was, he created a lot of plans, where one of the plans scheme C had a hexagonal shape and hexagonal level floors for all the galleries, while all the other schemes he designed had circular schemes and used continuous ramp around the building. O this continuous ramp around the building, the circular ramp or something was common for all the other schemes that he designed for this building which eventually was selected. The initial concept was inverted ziggurat, it is a pyramid. The ziggurat is stalks smaller unit on top of the bigger unit but here, the whole concept was inverted down, the smaller unit is at the bottom and the top unit is slightly bigger than the bottom unit. So inverted ziggurat was the original concept which wright had in mind and the building looks like this. Wright did something very special in the museum layer because conventionally museums were being designed in a way which wright did not want to continue in the same way. So what wright did was, he thought that the visitors should be lead through a series of completely interconnected rooms and what he did was, he thought that he will take the visitors from the lift to the top most floor and from the top most floor, he will connect all the galleries via one continuous ramp so when the visitors are coming down, when they are walking down the ramp, they can take a look at all these exhibits one by one when they are coming down. Walking down the ramp was very easy than going up. So what he did was he took them all up through the elevator and while coming down, he came down through the ramp all the visitors came through the ramp. This is how the interiors of the buildings looks like

continuous ramps. So ramp starts over here and it is continuous spiral to the bottom of the building. This was he had 2 advantages. One advantage is the people are not getting tired, they clearly know what is going to happen. They know ok I am going to be taken to top floor via elevator and am going to walk down the ramp which is not a big deal that I can walk down. So they are not going to be tired and they will exactly know the way in which they need to go. Just follow the ramp so you will get down the end of the gallery. Number 2 is what usually happens in a museum is some exhibits you see them and you skip an idea of exhibition because you skip the entire room or the entire section of the library or museum by skipping a room. Here wright did not allow any way to skip any rooms so they have to continuously come through the ramp so which means that every part of the museum is actually seen by all people. So that was another great advantage.

The open rotunda offered the views to the viewers, this is the open rotunda so it gave the viewers to have different views of the building, anyone can look down or up from here visually interact with people on different levels. He ascribed different meanings to symbolic shapes. Wright says that all the geometric forms suggest certain human ideas certain moods, certain sentiments for example according to him, circle means infinity, triangle is structural unity, spiral means organic process, square is integrity. Based on these forms, what he wanted to achieve is, he chose these forms, geometric forms which gives sentiments. So wright was simple. This is the plan of Solomon. R. Guggenheim museum, he still uses the Romeo and Juliet idea of one element fusing with another element. The basic Romeo and Juliet idea is the same except the octagon became a circle and the diamond became the shape. Here again he uses triangles, squares, circles and spirals. This is the section of the building where he has designed the different ramps which continuously goes down, the central rotunda which is clear courtyard and all the exhibits they are placed on the sides.

Falling Water

Now let us look at another project which is probably the most important project which wright has designed and the most famous one. It is called the the falling water, Kaufmann residence or the falling water is the house designed in 1935 in rural Pennsylvania about 43 miles from Pittsburg. This house, the specialty of this house is that it is partially built over a waterfall. The final working drawings were release in 1936 and the work began immediately the next month itself. This is how

the building looks, built over the waterfall itself. Here you can see the reminiscence of the bridge and this is how the falling water looks in the winter. So there were lot of fights and lot of misunderstandings between the wright and the architect. Apparently it took off when the clients were comfortable with what they saw. Because they thought wright had very very insufficient experience in reinforce concrete and his daring cantilever design, you can see here the daring cantilever part here. So he wanted all these cantilever designs to be reviewed by a firm of consulting engineers. He did that but falling water still stands for its dynamism and integration with working natural surroundings. It is often been described as an architectural tour de force of Wrights organic philosophy. Again look at the horizontality which wright had designed, horizontal way of reinforce concrete and vertical way made of stones that we have got from the query nearby. Frank Lloyd wright's passion for Japanese architecture was highly influenced. Strongly defected in the inside of the building, particularly where interpenetrating of exterior and interior spaces and strong emphasis was placed on harmony between man and nature. These are the points where he clearly got a Japanese influence in his building. This is the plan of the building where this is the waterfall. This is the bridge and this is how you enter the house. Across the bridge you enter the house and this is the waterfall and the terrace which we saw here. Here is the waterfall ravine and upon the ravine is where the building sits. This is the section of the building and this is why the Coffman got really scared because they thought that this part would fall off. Not only did Frank Lloyd wright design the entire thing with grace and with lot of ideas , incorporating the nature inside the building , he also made sure that, god is in the detail according to what he said . He even gives importance to little things. When there are 2 stone walls and there is glass in between these 2 walls, he did not give a metal frame to the glass which will totally negate the idea of stone work which is not uninterrupted. So what he did was, he gave a little cocking recess on the stone itself, and he placed the glass inside the stone so that the stone walls now appear totally uninterrupted by the glazer. So there is no metal frame which you see. Similarly he designed lot of such things in this particular project that is why the falling water is still being talked about. The famous building that we are going to talk about is the Johnson Wax building. This building is completely opposite to that of falling waters. The falling waters what the architect wright do was he totally integrated the nature inside the building where as in Johnson wax building he totally deliberately denies the building environment. It closes itself like a fortress totally isolated from the environment. Wright creates his own idea of architecture inside the building,

because he thought that the relationship of the building with the environment was very unhealthy and hostile. So he encountered them with outracedenial. The building does not have any windows, it has long blind folded wizard with impressive red brick wall but no windows. This is how the building looks if you are wondering how the building looks. Wright always designed in horizontal mount contrary to what was so fashionable at that particular point of time tall buildings. For wright, the horizontal line was risen,for him it was horizon, a line has to be associated with the ground and the only direction that could make the building belong towards the ground. The resort has a vertical tower but this does not belong to the original draft but was designed 10 years later by wright himself . Even in the vertical tower you can see the horizontal line above all lines. This is the vertical tower and even in that tower, you can sense the horizontality which you could sense in these building. To get a break between these 2 façades here, what wright did was he created 2 separate structures, the facades and the gap would be covered by corners. The corners were formed by a glass of Pyrex tube which is placed on racks. Thereby what actually created was he not only achieves natural light inside the building but also gets rid of sharp right angles that gets created in the building . See in this building you don't have sharp right angles. Here the building is a gentle curve so he also gets rid of right angle it kind of creates a corner which people have never seen before. People usually see corners that are projected away from the building but here there is nothing that is seen earlier and in this building new architecture style was born. This gives an idea of how far wright can go to get the unique architecture for that particular building. These are the famous columns in which the entire building plan with lighting placed on top. The building is held by 60 columns of 6. 5 meters in height with a base of only 22 cm which is expanding to reach the roof covering the whole surface. This 22 meter thick column spreads out to take the entire road of the roof itself. Which means that each pillar column should be able to support at least 6 tons of weight. So if you look at the pillar which is only 22cm in diameter and look at the load which the building has to carry 6 tons per column due to the skepticism around, the building lost skepticism so the commission said we are go are going to approve this building only if the column will be able to withstand twice the load which it should actually take. If the columns should take 6 tons of weight or load I will allow the commission to approve only if the column takes 12 tons of load. They even thought that Frank Lloyd wright should make a real not just a scale model replica in itself and they wanted to load the column. But actually what they did was, when they made the column and when they started

loading that, it just did not take only 6 tons, but it took the entire 12 tons. When they were about to close the experiment Frank Lloyd wright was very very angry about the whole skepticism about not believing in his whole concept thing what he did was, no don't stop the experiment , keep loading the column until it breaks he said. So they kept on adding loads to the column until it finally broke at 60 tons. Frank Lloyd wright designed the column that was only 22 cm wide which can take a load of 60 tons when it was actually supposed to take only 6 tons such was the depth of knowledge that Frank Lloyd wright had when he designed. According to him, buildings is not just few lines or few colors or mosaics for him building is an organic element an organism itself which has life, which has blood running through it . Frank Lloyd wright has understood every single cell of it. That is why we call him as architect of all time