

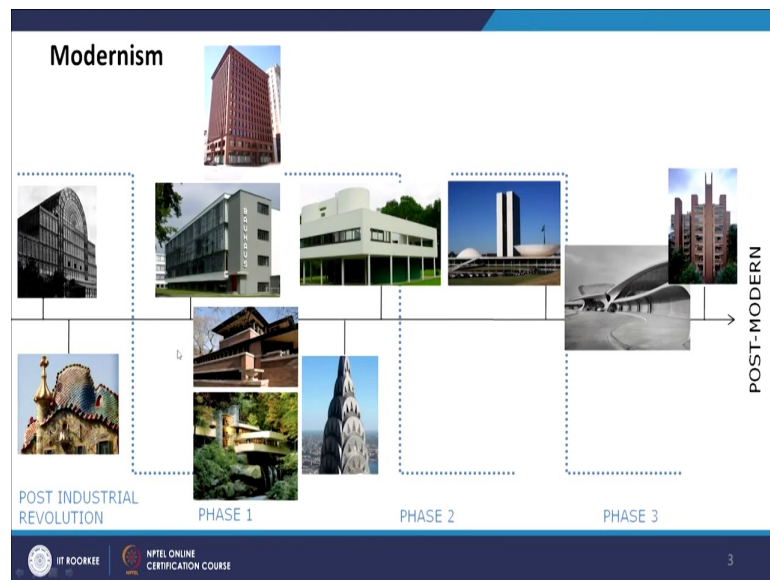
**Contemporary Architecture and Design**  
**Prof. Saptarshi Kolay**  
**Department of Architecture & Planning**  
**Indian Institute of Technology, Roorkee**

**Lecture – 15**  
**Phases of Modern Architecture- Organic Part II**

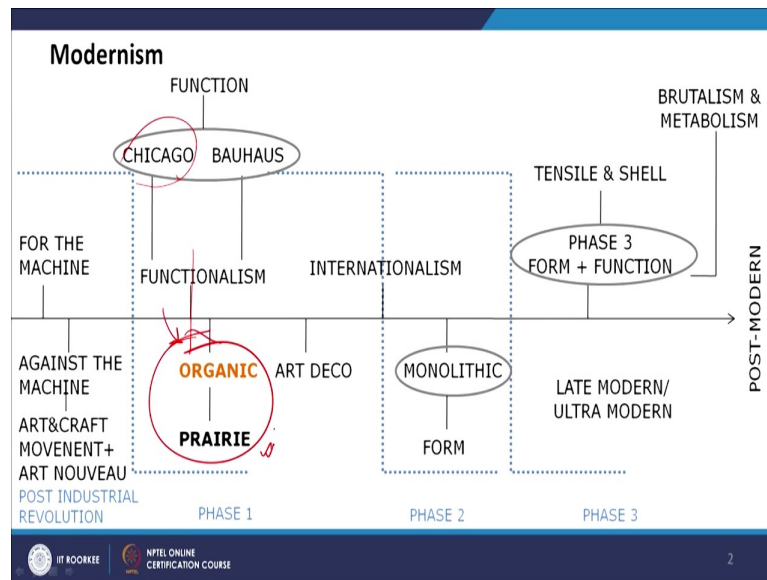
Welcome students into the online NPTEL course Contemporary Architecture and Design. In the previous class, we have... we started discussing about the organic architectural style. And here we have seen that this is a derivative of prairie architecture style which evolved in America, and which is against the reaction of neo classical style, which was there in the Chicago exposition and specially the white city is designed with the style of neo classical architecture style, which comes from the European architecture style.

And then American architects and designers thought that there has to be something native of America, and which should represent American architecture style. For that we have seen that in it comes this organic and prairie style is evolved in the reaction of that.

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So, here we will see this comes just after Bauhaus and Chicago which is functionalism after that, and in this Chicago style also Chicago architects they imbibed the European architectural style, because the Greek classical style was there in the Chicago that was the inspiration of the Chicago architecture style.

And that time in Chicago frame Chicago exposition the white city is designed based on the neo classical style, where Henry... Louis Sullivan works we have seen it is there. And in white city the styles and everything what American architects felt is a representing Europe; it is not native to America.

For that they started designing something and which should represent America. For that we have seen prairie... one was the prairie style, which is which comes from the prairie native style of... nature of America and because America did not have much architectural past. So, they had to go back to the nature, otherwise in case of Europe they had the all these movements, all the this classical architecture, classical renaissance and after renaissance till industry revolution most of the movements are in Europe.

So, if any if they had to go and take inspiration from something in architecture, it will represent Europe and it will not represent America.

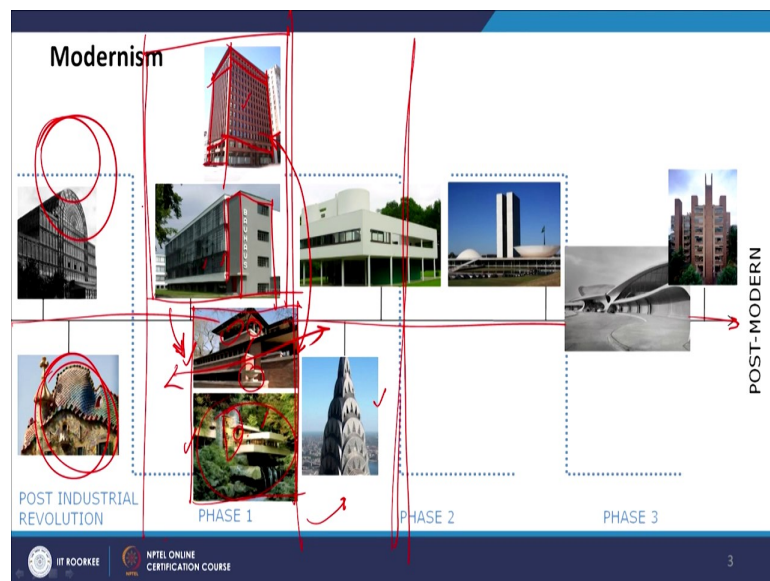
That is why they went back to the nature and the nature was the inspiration of the stylistic inspiration of the prairie architecture style. In organic architecture style also we

have seen that they have taken the inspiration from nature in case of hollyhock design; which the hollyhock flowers motif has been translated in the abstract format of geometric abstraction, which is predominately used by Frank Lloyd Wright..

Even in the style of glass painting and the interior design, it has been the similar kind of visual style has been used. And also there is a Usonian house we have discussed earlier, that is a town connoted by Frank Lloyd Wright, the Usonian depicts the new American style which is purely American and which evolves from the nature, and which is... which is which depicts organic styles also. The series of 60 buildings which falls under the Usonian houses has quite similarity with the prairie architecture style, but that blends with the national surrounding, and the context of that particular location and the color palette is the same.

And this is one storey single storey building with lot of horizontal line, this horizontality and the colour, which comes from the prairie architecture style to organic.

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So, here in the position if you look at, this we are following this timeline and we are placing each and every architecture style in the time lines. So, that there be a comprehensive understanding of how the building style evolved throughout the time period.

So, here we see this is the prairie architecture style, which is Robie house and this is falling water will... today we will discuss the falling water, and how falling water this building represents and takes inspiration and kind of complements the nature that we'll see today.

And this if you look at the stylistic features of these 2 architecture style; which is just after Bauhaus, but Bauhaus talks about pure geometry in terms of outside facade and pure form which... of course there is a pure geometric inspiration is there in Robie... prairie and organic style. But this is little bit more ornamental and in nature. And so, this ornamentations will see in this these styles, but not in Bauhaus.

And only Bauhaus will use pure colors, primary colors, which is blue, red and yellow, and a lot of industrial look the new material gives for example, glass cut involved and steel expose steel frame structure, and the grey, white and black color gives that look which is also... in Chicago school style also we have seen the similar function which comes first and then form will come later which is like form follows function which is connoted by Henry Sullivan.

Also has a box like structure, but ornamentation was there. And this has a simi.. colour pallet has some similarity with the prairie architectural style and Chicago style. Because many architects were also there in Chicago style or also the same architects are also there in prairie architecture style for example, Henry Louis Sullivan himself. And in Chicago style we have seen a.. a stylistic exploration to make the building look horizontal so, that they have divided it into 3 different region..

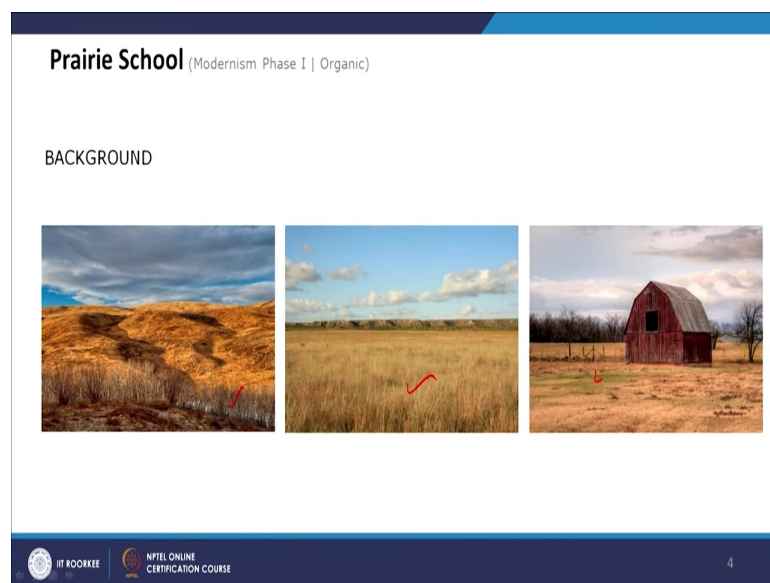
And here in prairie so, we have seen a lot of horizontal lines which is also coming from the Chicago movement. So, there are there are some similarities and the reactions and anti-movements which was coming in the modernism phase one.

That is why the phase one we call it a variety. So, lot of different kind of architecture style evolved. So, phase one is actually from this time line. So, phase one has all these architectural movements, and art deco we will start discussing art deco today itself. So, that combines the phase one all these different architecture style they are different from each other and, but they are also some few similarities are also there because they are evolved from the same time line.

So, that will be the phase 1, in phase 2 there will be the more similarity in... in stylistic approach. Before phase one we have seen that the there was absolutely 2 opposite pole were went for the machine and the other style went against the machine in phase one different different architectural styles; which are has some similarity and does not have in has few similarities, but few dissimilarities.

And in phase 2 onwards we will see more similarities and more internationalist style in the later movement of modernism.

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So, in prairie we have already discussed earlier it takes from the prairie grass land.

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**Prairie School** (Modernism Phase I | Organic)

ARCHITECTURAL FEATURES

- They had low pitched roofs, Or flat cantilever roof with deep overhangs,
- long rows of casement windows that further emphasized the horizontal theme (pure geometry)
- Native materials and the woodwork was stained, never painted, to bring out its natural beauty (purity of texture)

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And then low pitched, flat cantilever, pure geometric, native materials, pure texture are there.

So, also and also we will see it is never painted and the materials own texture and own color is will be the... the final color and the texture of this building. So, that is also there in the Robie house and other buildings and if it is plastered the it will white plastered and if it is concrete the concrete's color will be there

So, we have seen the few examples of a prairie architecture, and also we started discussing the organic architecture style. And we discussed the visual similarities of organic architecture style, with the prairie architecture style and Frank Lloyd Wright's painting.

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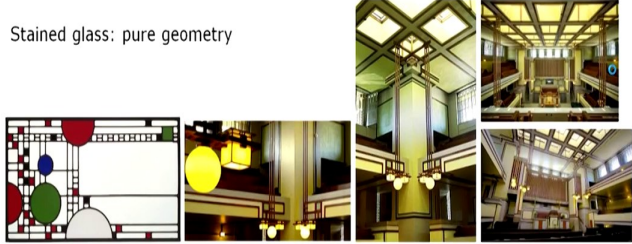
**Organic** (Modernism Phase I)

Unity Temple; Oak Park, Illinois (1905-'08) Frank Lloyd Wright

- F. L. Wright's style of architecture

Robust outside with reinforced concrete structure

Stained glass: pure geometry

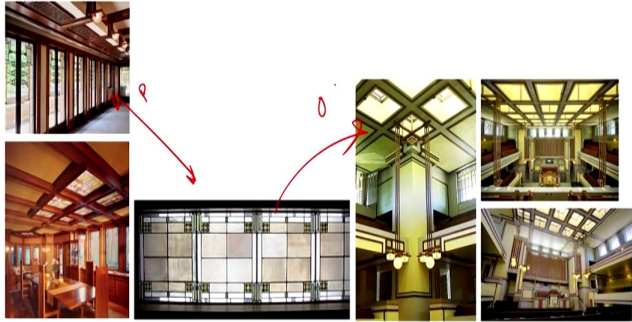


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**Organic** (Modernism Phase I)

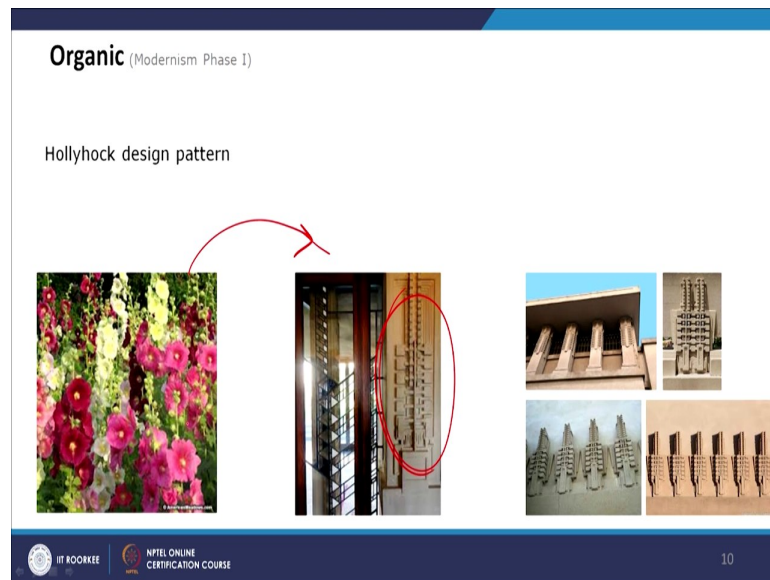
Unity Temple; Oak Park, Illinois (1905-'08) Frank Lloyd Wright



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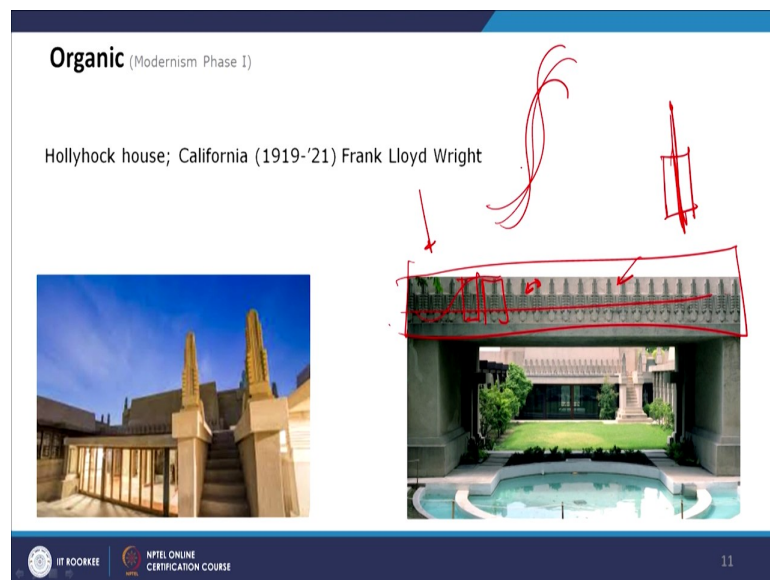
So, you see the similarity in the interior design in prairie and organic architecture style..

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And we have also discussed how biomorphic pattern is a... is a inspiration of making geometric abstract design which comes from the prairie on the hollyhock flower.

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And that is how the organic architecture style imbibes the nature into the imbibes the nature and translate that into their design. So, same kind of flowers floral patterns are there by it is a extremely geometric and modern in nature. And we have seen this biomorphic lines in the previous architecture style which is art nouveau.

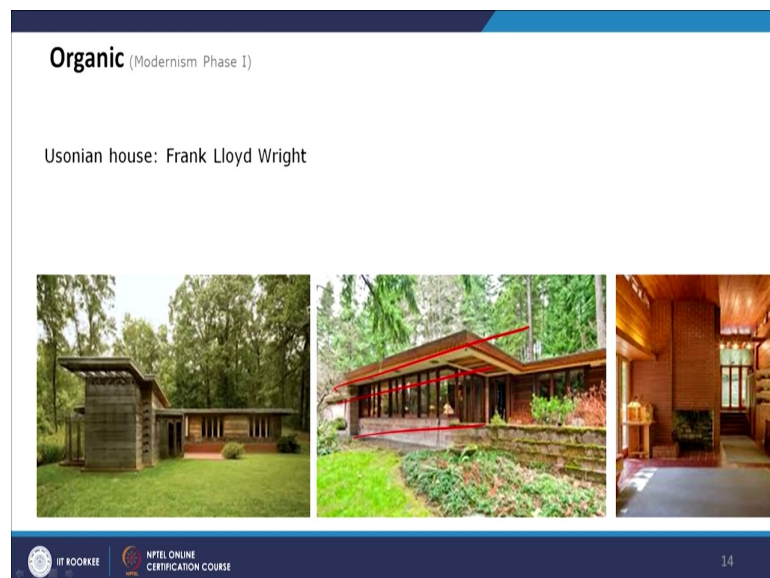


So, we whiplash pattern was there, now as we were discussing more from the more biomorphic style we are going towards the abstract simplicity. So, again in the same inspiration of floral pattern in art nouveau could have been done in some very fluid way, and with biomorphic lines with no repetition, because in art nouveau we have discussed that art nouveau never repeats the pattern.

So, it goes in one pattern will be different from the others, and we have seen that in the Victor Horta's Hotel Tassel and Anthony Gaudi's work in... in Barcelona Casa Mila, and we have seen all the lines are very fluid and no lines will repeat. So, in Casa Mila's metal... work we have seen each and every balcony's metal work is different from each other but in these styles also in the later styles like art deco and in other architecture style.

So, we see the similar repetition so that it can be mass manufactured and it can the motif can be generated in industry, and the same repetition can happened. So, we see repetition we see more and more geometric pattern. So, in here we see total geometry which represent a nature, but in arts nouveau we see lot of curvilinear line which represents nature.

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Similarly, in interior also we have seen this earlier, is there and even in the Usonian house we have seen lot of straight cantilever line ah... I am showing this again, because now when we discuss the next example which is falling water building and some product


design of Frank Lloyd Wright. We will see the similar color tone similar kind of design vocabulary and similar line qualities in the in his other designs. So, you will understand the Frank Lloyd Wright's visual vocabulary, what is visual style what is a line color texture and way of principles of designs are followed.

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**Organic** (Modernism Phase I)

Falling Water Building; Pennsylvania; (1935) Frank Lloyd Wright

- Was designed as an weekend home for a family, after 1964 it was converted into a museum
- A geometric extension of nature
- Large cantilevers (derivative of Prairie school)



1920

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Now, we discussed the falling water building which is one of his great architectural work, and people do visit this building this is designed as a residential building, but right now it is... it is a museum. Because of it is beauty and the way it responds with the surrounding. So, it is a designed as an weekend home for a family in 1935, we can see this timeline is quite similar to the same time frame which, when the prairie style organic architecture style was evolved which is 1920 was the early, was the beginning of modern architecture style. In the first phase just after 1920's the before there was art nouveau, art and craft movement, which is against the machine and for the machine movement was there.

Just after that we the... Chicago style and Bauhaus style evolved in 1920's, initial 1920's and after this 1930 around this prairie architecture style and organic style evolved. So, this is the time frame when the all the prairie styles buildings and organic architecture style building were coming up. Later it was altered into a 1964 it was converted into a museum. And now if we look at the building we see in the from the visual style we see,

the cantilevers which is quite similar, which comes from the prairie architecture style, in Robie house we have seen straight cantilever and huge overhang projecting outside.

And if we look at the volume of this building is just a position of different cuboids coming one after other. And then if you also look at this... there is lot of horizontal line coming ah, coming up in the in the design, because if you look at this solid lines they create a horizontal line in the visual... in the visual. Now if we look at the why this building will be called as a organic architecture style.

And if you have.... you must noticed that prairie architecture styles color palette is not followed here prairie Robie house has a brown color tint and this exposed brick will be the color tone of that. But here we see here we see the stone and here we see a white plaster.

Now, if we look at the surrounding in this of the sitting of this house in the Pennsylvania, you will see stone walk over stone bolder over here, and then avoid groove in the stone bolder and again a stone bolder and then avoid. On top of that when the building emerged, that building repeated this rhythm, so rhythm is one of the principle of design.

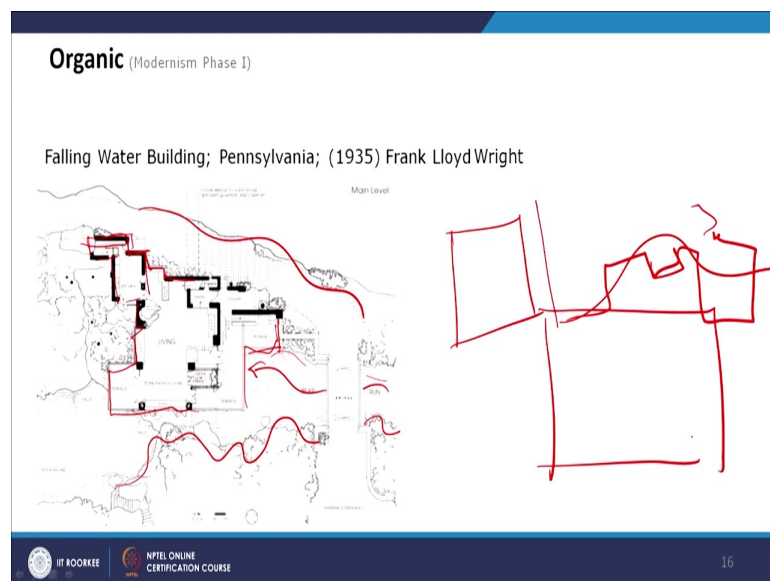
So, rhyme, rhythm, focal... creating a focal point and all this principles, he have maintained. So, the rhythm of the nature is translated in the building as well. So, solid , void, solid, void now he creates in the in the architecture is manmade element from the nature is again a solid and then void. Why this is a void? Because here is a series of windows which is again a architecture style of Frank Lloyd Wrights we have seen in the series of casement windows in Robie house, in oak park's building, and also in unity temple and hollyhock building.

The series of window gives a horizontal line, and that here acts as a void. So, this window because it is a very fragile material and you can see through it, this acts as a void, and then very solid robust concrete, and then again void and again concrete and this goes on top of each other, and then from the robustness also diminishes. So, if you look at this is a strong stone and then this is a bigger volume, then this is a smaller and this goes as a more fragile and smaller volumes which then repeated by this flat very thin line cantilever line.

So, gradually this diminishes from here to towards up. And then if you look at the texture, there is a texture brick here, but this gets because this is stone texture and this is a white plaster. But here we see the stonework is again there. The stone masonry which complements the color of this stone, is repeated in the robust vertical line which again visually connects the nature into the building.

That is why this building is so important and this building is a proper manifestation of an pure art work and blending nature into the building, and even if you look at this building does not is a situated on top of a cascade. The water flows in.. in this in the nature, and when the building is built it is built on top of this cascade, but it does not hamper the flow of the water. The water flows within the building and we will see the stone how the natural stone and water is also visible and amalgamated within the building's different rooms. So, we will see some other photographs of this building.

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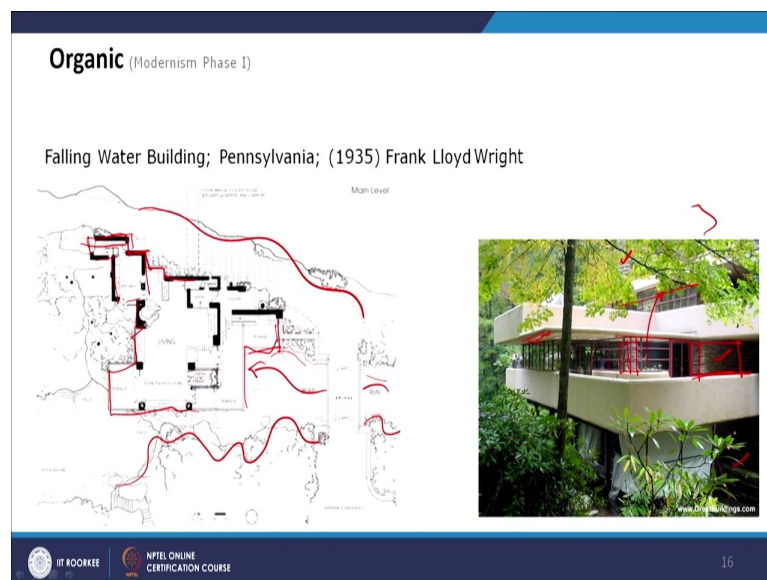


So, if you look at the plan of this building here is the water which flows, and if you look at the plan... plan is not a robust square plan like unity temple or other hollyhock building. So, this breaks and this is very fragile, and small cuboids there lot of angular breaks are there in the plan. Because of this, it contextually response with the nature and nature does not create a create a pure geometry, but as this is the modernist movement talks about geometry and straight lines..

So, this natural form natural contour is divided into many different straight lines and many different cuboids, and the arranging all these cuboids together gives the form outline of the form. So, this is does not have a very solid and robust form from outside this is broken from outside and that response to the curve of nature. And also we will see this.. this stream is passing through this... through this building, and if you look at the floor of this building we will see, this is also corresponds within the building as well.

So, if we look at the building insides so, the building's floor has a natural stones. So, this a flooring of the building is also the stone, which is available in the nature and he did not polish the stone and undulations of the natural stones of the also there in the inside the building.

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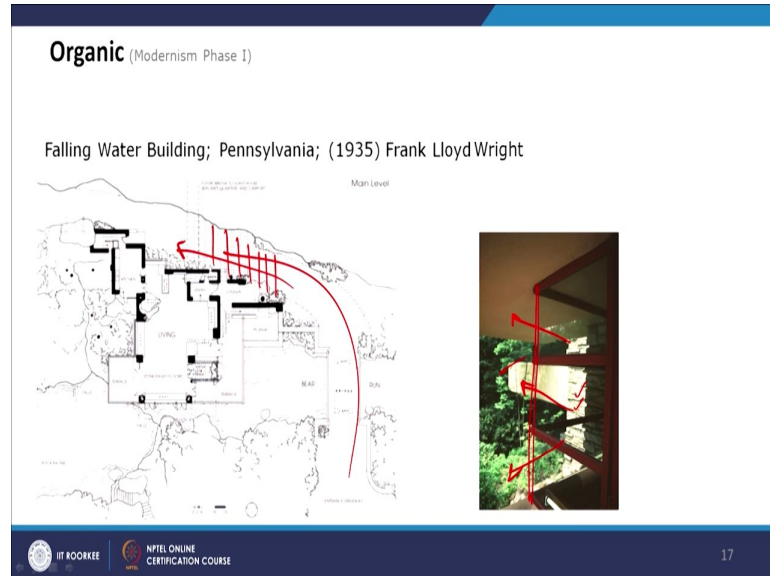


So, and if you look at the strong similar cantilever lines will be visible in the... in the... inside the building as well. So, if you see this the solid and wide which is replicated here, and the... and the outside periphery of the building is very it is does not follow particular line. So, if you look at the structural member which is column inside this glass cut, and all the glass windows and they do not match with each other so, that gives more fluid forms.

And then if we look at this cantilever is a very thin cantilever which also has the similarity with the prairie architecture style, and his style of long casement windows are also there. And in between you will see this kind of stone masonry work which is also..

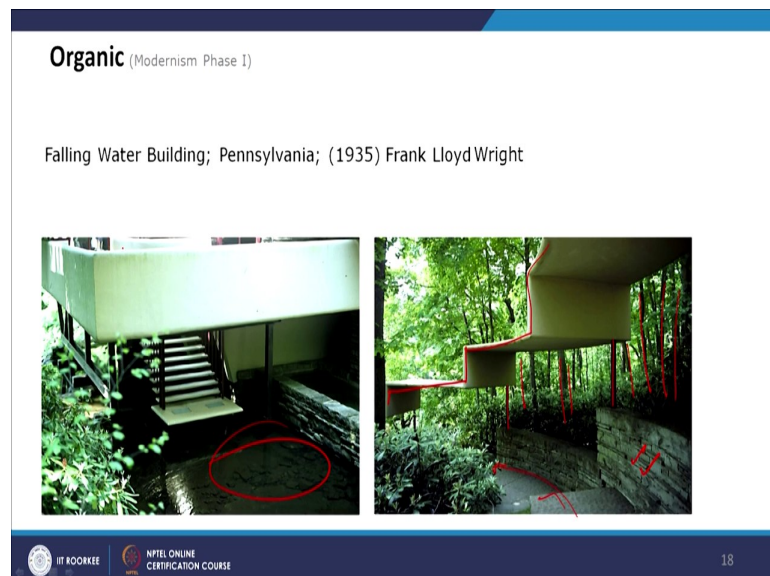
which replicates the stone to stone boulders on top which the falling water building as constructed. So, that is followed within the within the building as well.

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Now, from each and every site there is a small niche and small corners, you will see this kind of nature which blends within the building. So, natural materials are also there in the in the built form. And the corner elements of this... of the windows is avoided so that it gives maximum view of, from the corner of the building; because this corner window gives wider view point.

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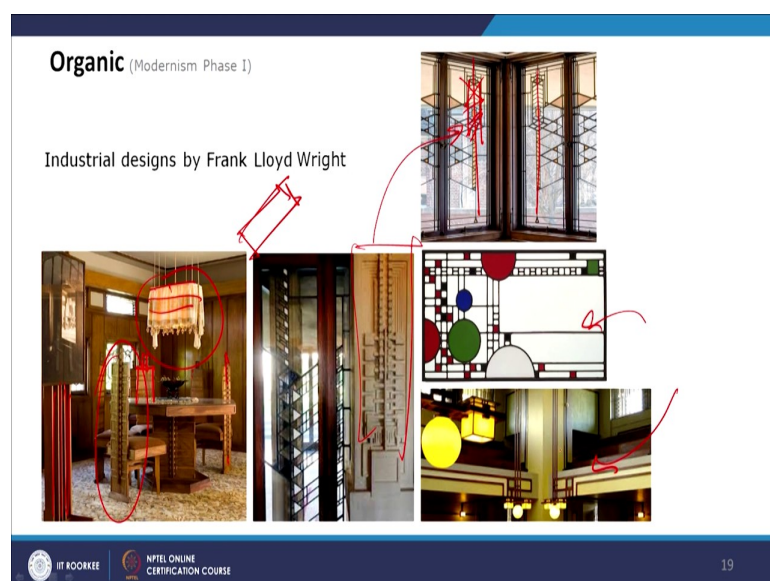


Now, if we look at there are other photographs, we can search in net that within the building as well this kind of stone, natural stones and there inside the interior of the building near the fire place. And the fire place is what you see in the vertical element that is the fire place and which is... which has the similar kind of stone work which is the vertical element we were showing in the first photograph, this one is the this comes from the fire place.

So, this is the entry of the building, we look at the plan from the here, the entry is and here the steps are gradually going down. So, this is the natural ramp and on top of the natural ramp and this.. kind of small steps. So, you will see cantilever which does which has a very thin and fragile.. ah.. vertical support which go branch with the trees. And we do not we do not see the vertical support and there is a..a step like thin cantilever which is going as a shade of this entrance.

So, this is the entrance of the building, and when you enter and in some cases if you look at this plan somewhere here, this kind of corners are created. So, this comes this is hanging from the cantilever, and this hanging steps comes very close to the water body, and can this how the building blends with the nature from within the built form as well. And you will see the similar stone is used in every different corner of this building so, that it takes the nature inside the building as well ah.

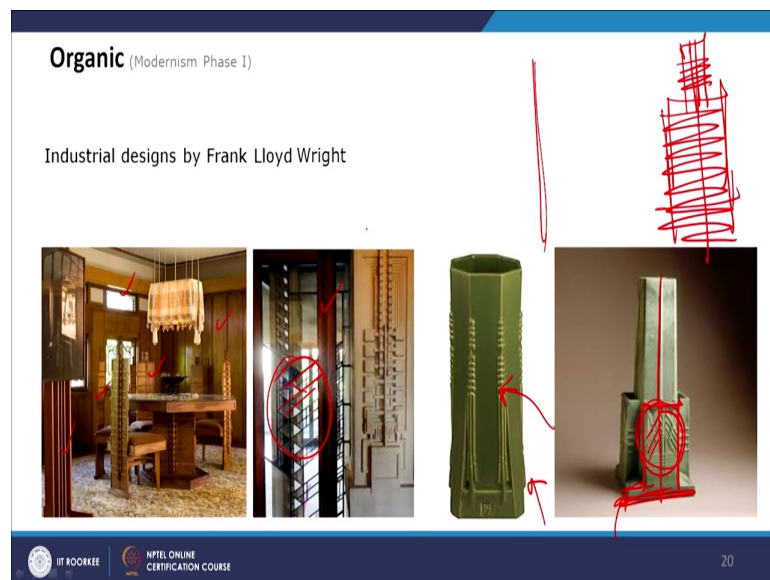
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And now if you look at some other works of Frank Lloyd Wright which is not architecture in also in industrial design and in painting and window frame design. So, we see the similar kind of in Frank Lloyd Wright design. So, we have already discussed this hollyhock building's interior design.

So, we see more clearly that this kind of flower, if you look at the flower and its stem is there in the furniture design. And also similar kind of lines and straight lines are also there, and if you look at this plan this is again a rectangle, and then series of straight lines woodworks is also there, same hollyhock pattern and similar kind of straight lines and pure geometry is there, in his painting and also in his... in industrial design.

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Now, this is the vase design by Frank Lloyd Wright, but if you look carefully; so, there is many other series of vases there by Frank Lloyd Wright, there you will see... pattern which comes from hollyhock design as well. And so, the bigger cuboid on top of that smaller cuboid will come. So, this is from his... series of vase design, 2 of the vases are selected as here for discussion. And here if you look at the way he creating the decorating the vase is quite similar the way he is decorating the window.

So, this kind of straight lines and triangles are also there in the decoration of the vase. And if you look at this is also pattern evolved from the hollyhock flower, and the same kind of lines are used. So, in this vase as well so, it is the similar lines are used in this design.



So, there are many other furniture design and industrial design by Frank Lloyd Wright if you look through more examples you will see similarity of the style of his style. So, here also designed some murals, and also in the furniture what we are discussing the wood works, and these straight lines which breaks and passes through each other which is also there in different cases of the furniture design in the interior.

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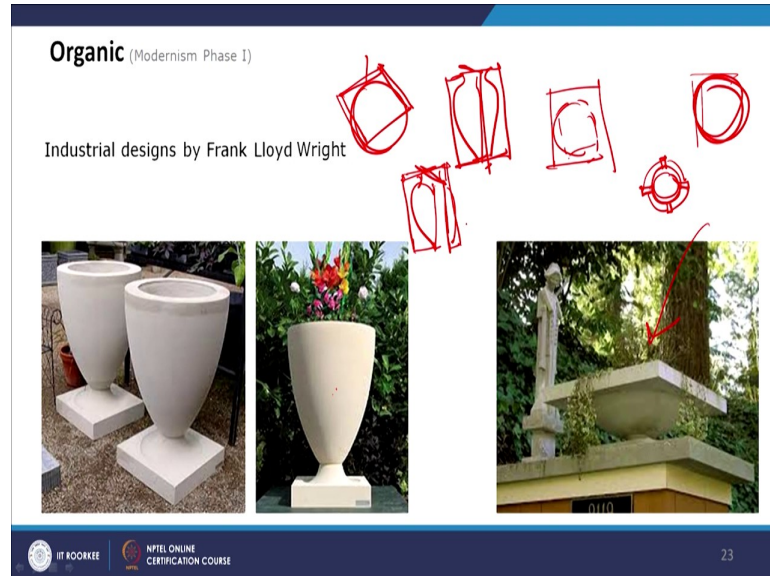
Also he designed some sculpture, this is sculpture, this is sculpture of chess which is which is outdoor garden chess, and this sculptures are designed by Frank Lloyd Wright. And also this and if you look at the sculpture carefully, you will see a similar visual style in the... in his sculpture. So, through his painting to glass, glass work, glass design and the window design and the interior design and the industrial design and the sculpture has a similarity in the visual style.

So, if you look at the sculpture are again broken into some pure geometric form, and this is this is human being, but it is broken in some cuboid and if you look carefully this kind of angular lines are there which is also there in the here and in the window design. And if you look at the face it is also broken in some geometry.

And if you look at the figures, these straight line and these series of lines which comes from his painting and holly... even in their in hollyhock houses interior ah... is there. And similar kind of line works are also there in each and every sculpture he have designed. And if you look at the ornamentation has these kind of beads and solid and void which is

there in his hollyhock design. And other design patterns which is he have derived and also there in the window design, we can see the similarity of this sculpture design.

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Now, in the vase as well this is this is garden vase or the flower bed in Robie house, we have seen the plan is square and then.. and then circle and then again a square.

Here also if you look at the plan this is... this is circle and then a square. So, he is playing with circle and square and then creating a design out of it, and if you look at their many other designs of vase designs and flower pots and basins design for the outside garden landscape... designed by him ah. So, there, there he will he is mixing the circle with square, even in his the light he have designed in unity temple and in Robbie house you will see a square frame and the globe inside this inside the light.

What he is doing in the furniture design and also his blending's pure circle with square. Even one of his vase is designed like vase generally has square cross circular cross section, but here it is mixed if you see the vase, it has square frame, and the vase will be something in between, and then the square frame is connecting the vase.

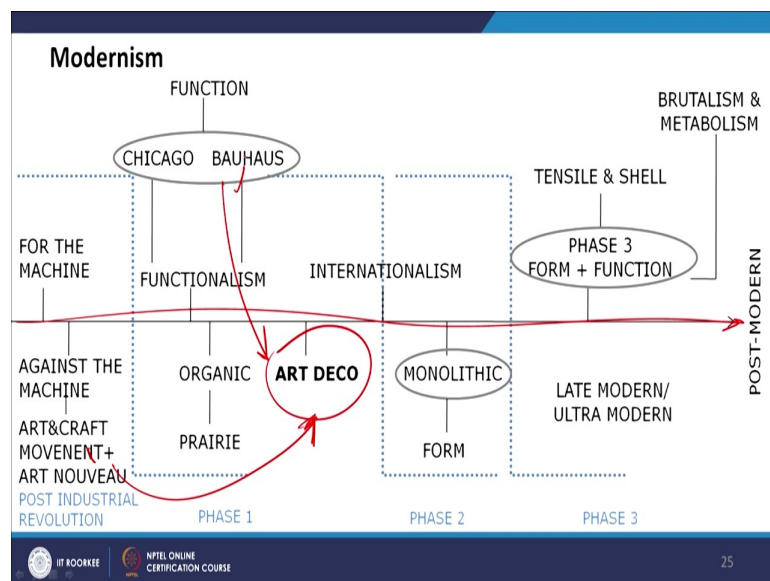
So, if you look at the vase is there in the cross section, but from outside there is a fin coming out from the vase, from all the 4 sides. So, in the plan you will see um... this, but this 4 sections from 4 side are coming out from the vase. So, you see more examples of the design of vases and flower pots by Frank Lloyd Wright, you will see the mixing the

geometry of a circular and cuboid together which you will see in the interior design like this. And specially in the Robie house's design, you will see this similar kind of mix mixing circle and um.. a square.

So, we have seen it earlier I have shown you in the Robie house's design. So, you will remember. So, how this circle and square is blending in his design in the next we will start discussing the art deco style which is... which just comes after prairie and organic movement ah. So, art deco style has earlier we are talking about art deco style is highly ornamental, and it takes lot of inspiration from art nouveau style, but again the way we have seen in prairie and organic architectural style, there is a geometric abstraction of natural form for example, the way Frank Lloyd Wright was transform... relating the hollyhock flower into the pure geometry.

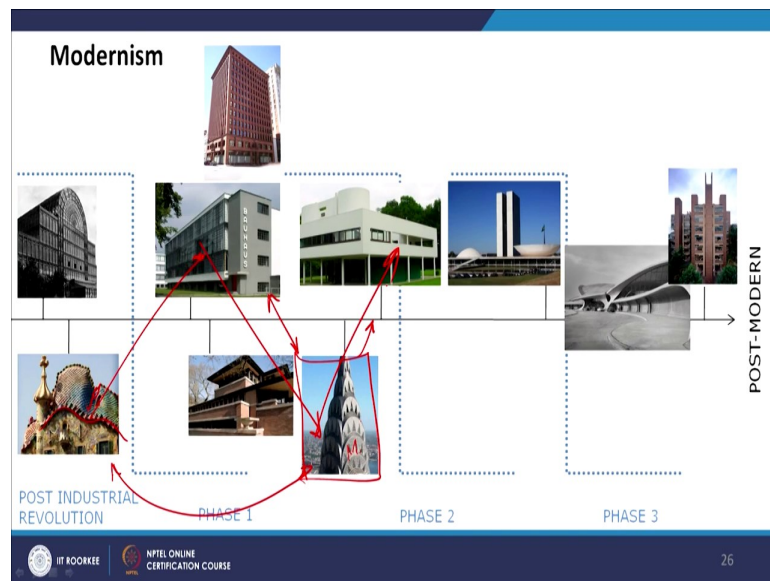
So, that similar form similar transformation is used in art deco, but it is again ornamental, and it is reaction against the Bauhaus movement, Bauhaus talks about minimalism, and Bauhaus talks about functionality and form will be... will have... will have a lesser priority than function. But art deco has is talking about form, and aesthetics is very important in there. But art deco style is more towards the machine aesthetics and so, it can be mass produced, and the style of machine aesthetic is blended in art deco... art deco which is different from the art nouveau style.

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So, if you look at the time frame art deco comes here which is highly ornamental as we were discussing the, which is coming down side of this frame is more ornamental in nature. So, it has a similarity with the art nouveau style, but it is more abstract and more geometric in nature. And which is reaction against the Bauhaus movement which was minimal in... in aesthetic style.

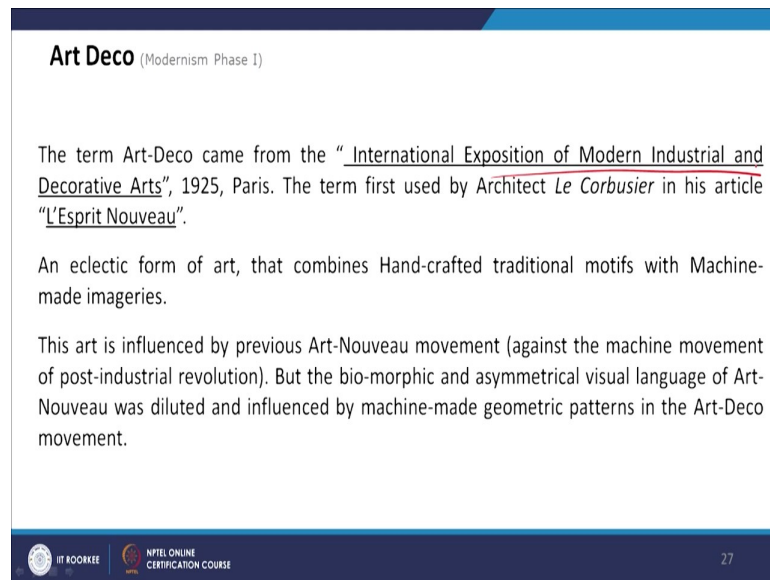
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So, if you look at art deco so, clearly we see there is a lot of ornamentation it is not minimal at all. Lot of forms coming and lot of different shapes are superimposed and it is lot of ornamentation are there. But it has a similarity with art nouveau, but this biomorphic lines we will not see. And but, it is a reaction against the Bauhaus movement which is a pure cuboid and less in ornamentation. And we will see later that is again a movement which is internationalist style which opposes art deco, which is again going back to minimally style and pure geometry.

So, it again from more aesthetic, more aesthetic value and more ornamentation to going towards the less ornamentation and then again going back to the more ornamentation and then again going to the less ornamentation. And this is how the modern phase one was changing rapidly with the different philosophy and different architectural visual style.

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**Art Deco** (Modernism Phase I)

The term Art-Deco came from the "International Exposition of Modern Industrial and Decorative Arts", 1925, Paris. The term first used by Architect *Le Corbusier* in his article "L'Esprit Nouveau".

An eclectic form of art, that combines Hand-crafted traditional motifs with Machine-made imageries.

This art is influenced by previous Art-Nouveau movement (against the machine movement of post-industrial revolution). But the bio-morphic and asymmetrical visual language of Art-Nouveau was diluted and influenced by machine-made geometric patterns in the Art-Deco movement.

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So, if you look at art deco... the term art deco came from the international exposition of modern industrial and decorative arts in 1925; where in the similar time this prairie or other architecture style while still going on, and that time architect le Corbusier and whose work who was famous architect and whose work in there throughout different modern movements and as well as postmodern movements. So, we will see the mostly in the modern movement will see not only in these styles, but also the other styles are there.

But his most of the styles are not in art deco style. So, this is just is he has he is connoting the way art deco is. And then the form of art which we will discuss later that hand crafted traditional motifs with machine made imageries are blended together. So, that there will be decorations, but which machine can make so that the decoration can be repeated, and then again this decoration is repetitive unlike the art nouveau style. And we will discuss the art nouveau style and art nouveau style also emerged from architecture poster and painting design and as well as furniture design.

So, it encompasses all the creative art forms, from architecture to industrial design to painting and commercial posters and all all these things. So, we will discuss this in the next class

Thank you.