Modern Indian Architecture
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Lecture 21
Western Architects: Walter Gropius - Part 2

Hello students, we will continue our presentation on the work or the impact of western architects in India and we are looking at the contribution of Walter Gropius, this is part 2.

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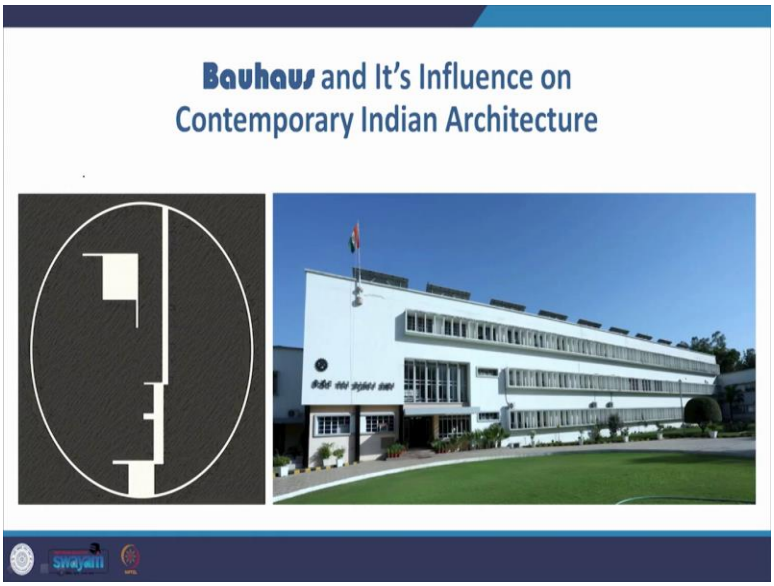

Bauhaus and it is influence on contemporary Indian architecture. This is the logo, so to speak of Bauhaus. And this is the central building research Institute CBRI IIT Roorkee, designed by A P Kanvinde.

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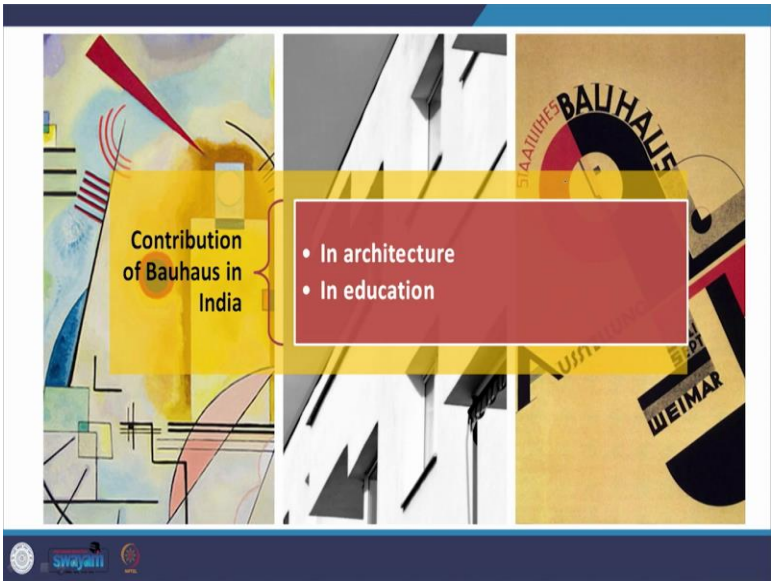

Now, the contribution Bauhaus has been in two parts in architecture and education. The education that you are receiving as students of architecture is predominantly based on the Bauhaus model.

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The visual clarity and boldness of expression of modernism captured the imagination of Indian architects. In the last presentation on Walter Gropius, I talked about the design of the Bauhaus school by Walter Gropius, and then the design of the curricular structure of the Bauhaus school,

which then got global presence, it has a global presence and that the architecture of the Bauhaus itself then has a global presence.

But like I mentioned last time, we cannot look at the design of Bauhaus as an isolated example of modernism. There is a range of architects and their buildings that form the composite picture of modernism. So, there is Corbusier, Mies van der Rohe, Walter Gropius, the D style architects like Rietveld, and then Adolf Loos, and then ahead, many architects like Richard Neutra, Mazel Royale, Albert Alto, Eero Saarinen and many others and then there is continue onwards into late modernism and so on. So, the picture that emerges in front of us is not one architect, but several architects contributing. This presentation is focusing on the contribution of Walter Gropius and Bauhaus.

So, the modernist leaning architects in India or much to their forms to that to the works of Bauhaus and Corbusier or I would say Walter Gropius and Corbusier primarily because Corbusier came to work in India, when he designed Chandigarh he designed several projects in Ahmedabad and Walter Gropius made his presence felt through the works of two prominent architects Habib Rehman and A P Kanvinde - the first generation of modernist architects in India, Louis Kahn also made his presence felt.

And he was able to do that through one building , the IIM Ahmedabad and architects like Doshi, were able to bring his ideas into their work, and many others also followed in the works did it. So, when we look at the contribution of Western architects post-independence in India, we generally focus on these three and this is the second one we are focusing on and the next presentation, we will look at Louis Kahn.

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Now, young Indian architects were inspired by this new architecture odds of simple solid unornamented blocks, clean structural system and large fenestrations. It is free from historical and colonial past. This is very important. All this while Indian architects were looking for a style or a concept of architecture that would break them away from the historical past and the colonial past.

Now, this is parallel to what the Europeans had pursued right after the industrial revolution. We see the new classical movement in the 18th century just before industrial revolution. We see it came to be known as the age of the intellectual revolution or the age of the intellectual or the age of the enlightenment 18th century. Industrial revolution happens and industrial progress begins, mass production begins etcetera .

Large number of buildings are required in Europe for variety of functions to be fulfilled. But the architects do or in a predicament, that they are in a kind of a confusion, because they do not have any precedents to these buildings. They have never seen what a railway station looks like or many of the buildings look like or what a modern office buildings looks like. They have not seen that. So, they do not have a form equivalent in the past.

And in order to get those forms they refer back to Renaissance to Gothic architecture, to classical architecture. And they adopt these old movements to modern buildings. Now, this of course, leads to a disconnect. Because the modern building, for example, cannot fit in the envelope of a

Greek temple. Because functionally the modern building is organized asymmetrically, and therefore, the, the form does not work.

So then, classically minded architects was a time, they decided that we can just adopt the principles, then it gave rise to what came to be known as eclecticism, which was probably the most dominant way of designing buildings at the time. Eclecticism, the word eclectic means a mixture, in this case, a mixture of historical styles. So, one building for example, the Saint Pancras Station in London is a mixture or an eclectic collection, eclectic mix of Renesa, a classical architecture et cetera.

But on the inside the train shed itself the shed over the railway tracks is made out of iron, and it is got glass in it to let light filter in and that is completely technical and a modern material and steel production jumped in Europe from 800,000 tonnes to 14 million tonnes by the end of the century.

Steel production improved both in quality and quantity and large number of buildings began to be built in steel, RCC also came up what is called as Ferro concrete, steel and concrete put together utilizing the properties of both steel and concrete. These materials brought about a fundamental shift in architecture, and building design change because functional requirements were different.

But architects kept on struggling with the aesthetic or the form of the building. Therefore, when Art Nouveau came up, the desire was how can we completely break away from the past styles, we want a completely new building a modern looking building for the modern times. Because they could not find the right inspiration and because you do need an inspiration, they look towards the only other alternative they had to the past styles, and that was nature.

Therefore, Art Nouveau relied heavily on natural forms by forms biomorphic, zoomorphic forms came up in buildings. Classically, let us take a classic example or an extreme example of such is that the works of Antoni Gaudi. Then also came up making mechanomorphic which forms that are morphed from machines or that are more rational mechanical looking, and this define, we find that in the works of C. R. Macintosh, and these works of C. R. Macintosh and then Joseph Hoffman, Otto Wagner, even to a certain extent, Joseph Marie Albridge , they gave us a foreshadow of what was to come in the modern times.

They became like the space occupied in between the end of Art Nouveau and the beginning of the modern movement. These works represent the second part of Art Nouveau, the works of C. R. Macintosh, and Joseph Hoffman et cetera. And then, as we move on to 1910 onwards, we are into the modern movement.

I believe, the modern movement in architecture is the single most revolutionary movement in architecture, at least in the modern times. In the post-industrial times. If not, I would say comparable to the impact of classical architecture, because they radically transformed what buildings look like, completely detached from the look of the buildings that had very clear evidence of historical forms, these buildings are completely different.

And these buildings were really connected with the structure and function of the modern building. It was a truly modern building. So, the contribution of these architects and modernism can never be understated. Therefore, India had the fortune that we did not have to go through these steps. In the sense that the day we became independent by that time modernism already taken deep roots in Europe, and when Indian architects went to study abroad, or even when they looked at the work of the Western architects while they were in India.

For example, we looked at the work of architects united in Pune, they could directly develop their works from there. They did not have to go back again to some historical process and then learn from the mistakes or the problems there and then move on. They directly had a modern format to build from. And this was the architecture of these simple solid unornamented blocks with clean structural systems, wonderful functional organization and large fenestrations free from historical and colonial past.

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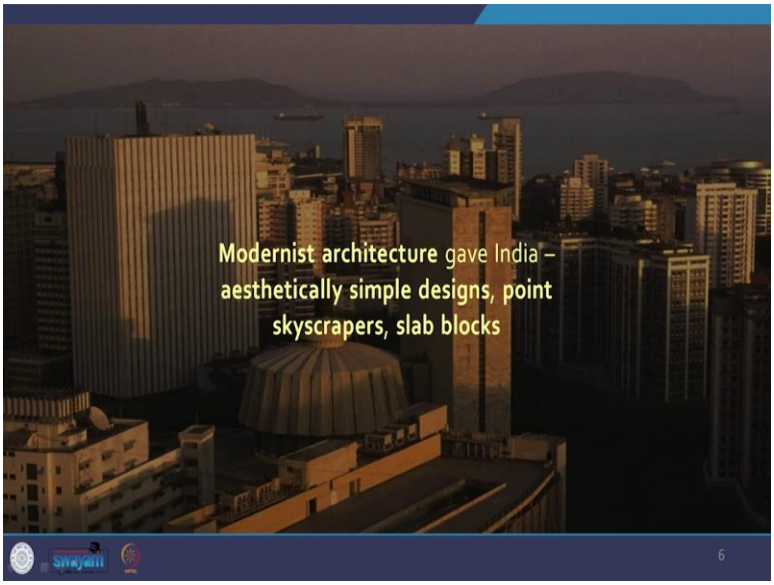

Modernist architecture also gave India the aesthetically simple designs point skyscrapers and slab blocks.

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For example, these buildings, this is the air India building in Mumbai the earlier air India building, this is the Trident hotel of the Oberoi chain. And this, I believe, is the residential buildings. So, these buildings along the Marine Drive, where we see the use of flat roofs and simple horizontal lines and fenestrations show clearly that Indian architects were informed about the concepts that were evolving in European modernist architecture.

Of course, these buildings were adapted for Indian situations. And as I have said earlier, climate is one of the defining factors of the way our buildings look, modernist buildings in India being built parallelly to the modernist buildings in Europe and America, particularly skyscrapers in America, for example. When I am talking about point blocks, they were sleek glass skyscrapers there. The same architect who were working there for example, the building that design India, they would adapt it to our climatic conditions.

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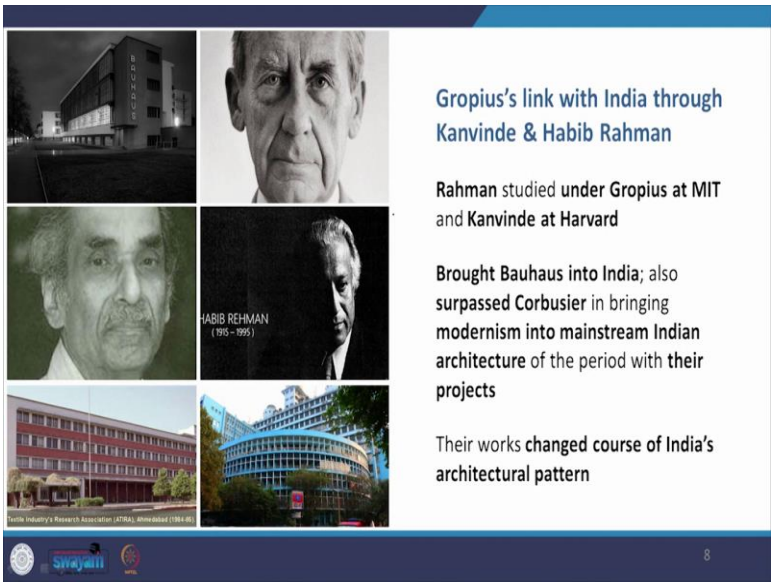

Gropius's link with India was through A. P. Kanvinde, Habib Rehman and that was because Habib Rehman studied under Gropius at MIT, Kanvinde studied under Harvard, how but how can one man been in two places. Gropius's was teaching in Harvard. And he also was taking lectures in MIT. Therefore, both of them got an opportunity to study under him.

They brought Bauhaus into India, and in fact surpassed Corbusier in bringing modernism into mainstream Indian architecture of the period with which their projects are related. Again, looking back to the middle class works of architects united in Pune. For example. Yes, those works are connected with modernism in general, and in some ways also connected with Corbusier because it is so difficult to differentiate where the contribution of one modernist architecture architect ends and the other one begins.

But definitely, there is a very strong impact of this functional organization of the Bauhaus and Walter Gropius. So, therefore, mainstream Indian architecture probably owes more to Walter

Gropius's works than to Corbusier. But like I said, it is very difficult to define these fine lines. Their works changed the course of India's architectural pattern of that time.

The contribution the impact of Walter Gropius's wok then resulted in the buildings we have today, with a regional addition that happened in the 70's 80's etcetera. Began for example, with works like the Gandhi Smarak Sangrahalaya that is a modern building with regional overtones.

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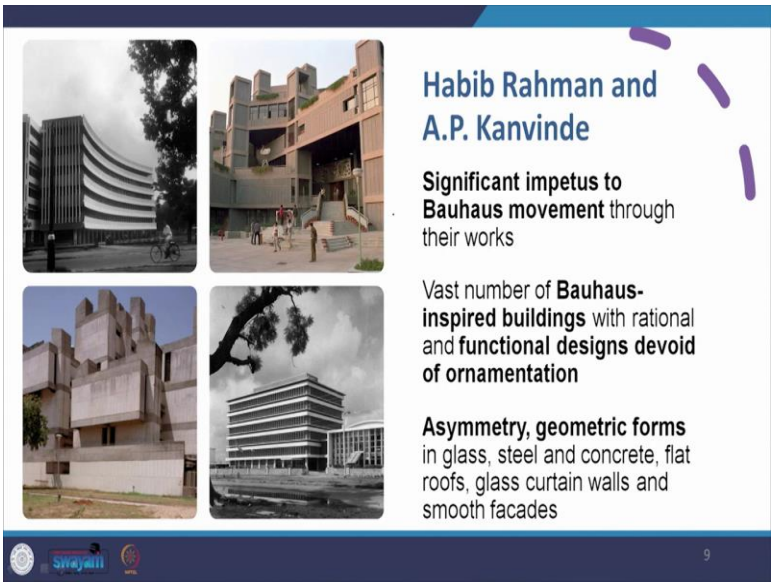

Habib Rehman and A.P. Kanvinde significant impetus to the Bauhaus movement through their works. Vast number of Bauhaus inspired buildings with rational and functional designs that were devoid of ornamentation, asymmetry, geometric forms in glass and steel and concrete, flat roofs, glass curtain walls, and smooth facades came up.

These are the works of Habib Rehman, this is W.H.O building. And these two works are the works of A.P. Kanvinde, who as time went on became even more exploratory in the form that he evolved. And so, we have these amazing forms. Although Dudhsagar dairy in Mehsana, and the Nehru science centre in Delhi.

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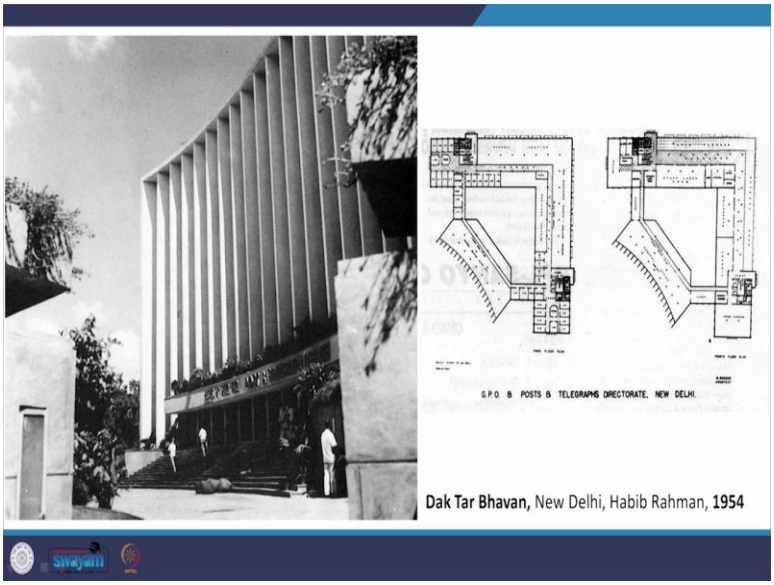

This is the Dak Tar Bhavan by Habib Rehman and the amazing contribution of Habib Rehman that we see here the kind of modernist buildings in India is also seen in sharper relief when we realize that he was working within the structured mechanism of CPWD, he was heading the CPWD, he never moved out of the CPWD and while working for them, he designed these amazingly iconic buildings. So, the Dak Tar Bhavan as you can see is a very strong lead connected with modernism, it has got these fantastic louvers or sun breakers. So, this is the impact of the Indian climatic conditions.

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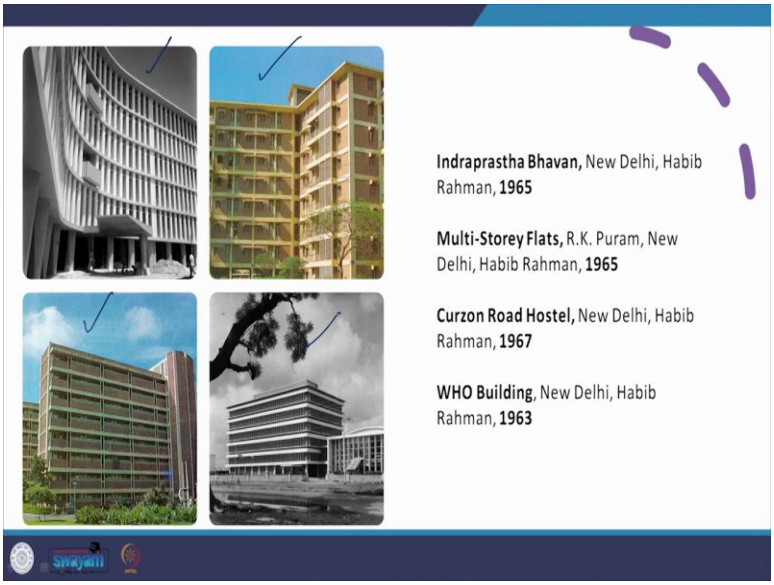

Then we have a series of building in the 60s we have Indraprastha Bhavan in Delhi 1965. We have these Multi Storey apartments in RK Puram in 1965. We have the Carzon Road Hostel near Connaught place in 1967 and the WHO building in 1963. So, these are the 60s contribution of Habib Rehman having stepped off the boat from America. He designs these buildings that are so strongly connected with Bauhaus and Walter Gropius,

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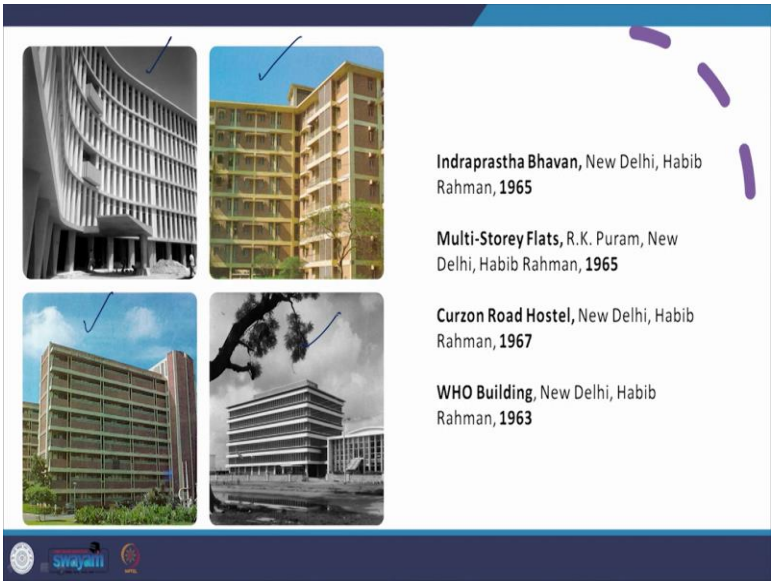

Then we have the contribution of A.P. Kanvinde which are probably somewhat earlier than that, now the reason why these buildings are appearing in the 60s in Delhi is because before this

Habib Redman was working with the Calcutta public works department and he designed a very important building, which set off his journey and that is a secretariat building.

We look at that, whereas, Kanvinde when they began and he was the consulting architect with the CSIR, and he designed the CSIR labs, he designed the national botanical research institute Lucknow in 1953 to 54. The Toxicology research centre again in Lucknow in 1969 to 70. He designed the CBRI in Roorkee in 1951, he designed the physical research laboratory in Ahmedabad in 1953 to 54.

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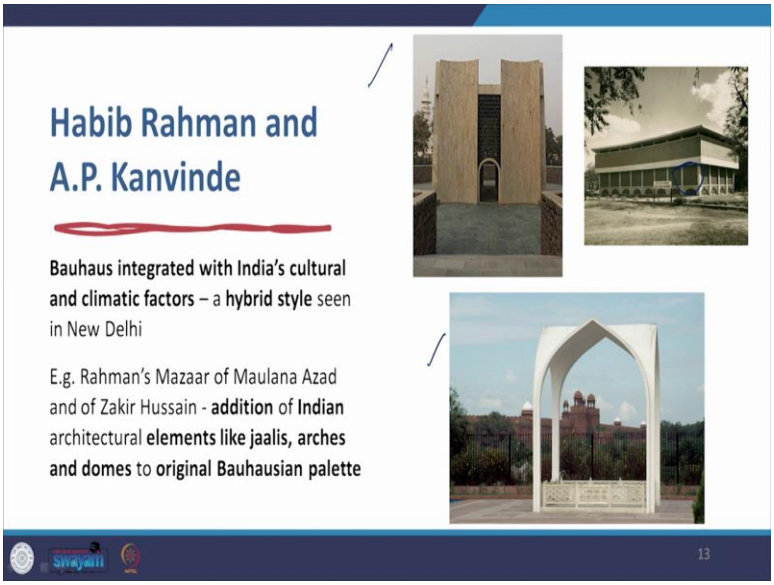

Bauhaus was integrated as time went on, it got integrated with India's cultural and climatic factors never things could never move forward in India purely as modernism. What I mean by that is, that they would come in, they did come in as purely modernist buildings in the works of Rehman and Kanvinde but the language of culture and climate of India was added on to it.

So, this happened in the works of Habib Rehman to very large extent in a contrasting way, it did not happen in the works of A P Kanvinde. A P Kanvinde stands out as one architect whose buildings had very limited connect with any traditional Indian elements. In fact, to a large degree, none at all.

We do find a very strong connect in the works of Stein and Korea and Doshi etcetera. And we also find it in the works of Habib Rahman, as his work evolves. For example, Rahman work of

the mazaar of Maulana Azad and the mazaar of Zakir Hussain in Delhi. Edition of Indian architecture elements like jaalis, arches and domes to the original Bauhausain palette.

So, when you look at these mazaars, yes, they are derived from Islamic traditions, but they are an addition to the Bauhausain palette. We also find jaali work, for example, in the Lalit Kala academy, which is which at that time was a modern derivation of the Indian jaali. Of course, when you look at the 21st century, the traditional jaalis have been used by many young Indian architects today in a much more scientific way. And we look at those examples.

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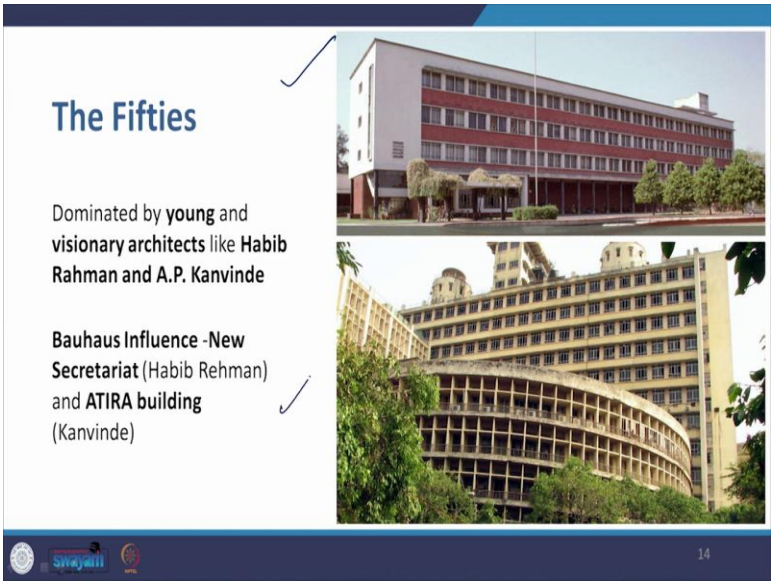

Now, in the 50s, they were dominated by these visionary architects, Habib Rahman and Kanvinde. And the Bauhaus influence, for example, is seen in the Atira building, the Ahmedabad textile industries research association building designed by Kanvinde and the secretariat building, designed by a Rehman in Kolkata.

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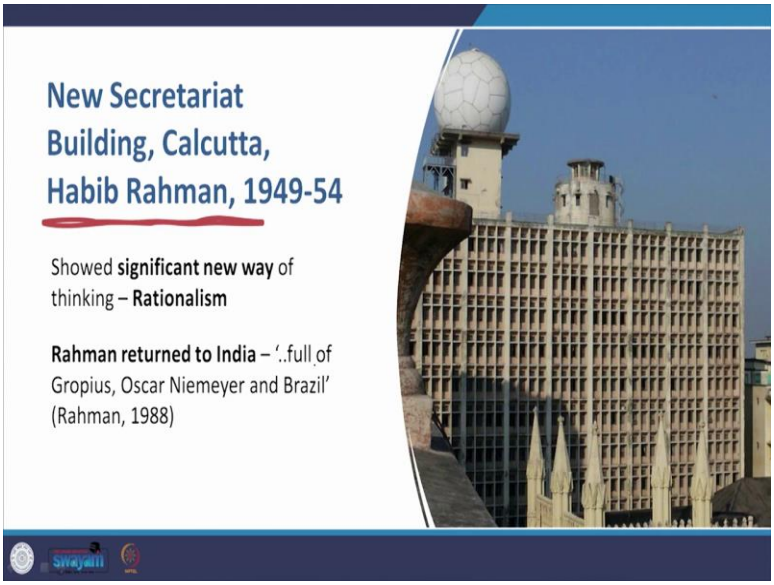

The new secretariat building in Kolkata, by Habib Roman in 1946 to 54, shows the significant new way of thinking in rationalism. Rehman having returned to India said that he was full of Gropius, Oscar Niemeyer and Brazil. He said that in 1988.

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And in this 15-storey modernist building that he designed is a great clarity of form, coming from Bauhaus, combination of geometric forms with vertical and horizontal lines, you can see the vertical mass in fact, the vertical mass is accentuated by these vertical lines of the louvers on this side. This is that facade where you see these vertical louvers and this verticality is accentuated by

a series of vertical lines here. And then you have this part of the building where you have these deep louvers or sun breakers or Brise-soliel like that of Corbusier. So, this part of the work refers back to Corbusier. Now, these Brise-soliel protect the sun from the south facade.

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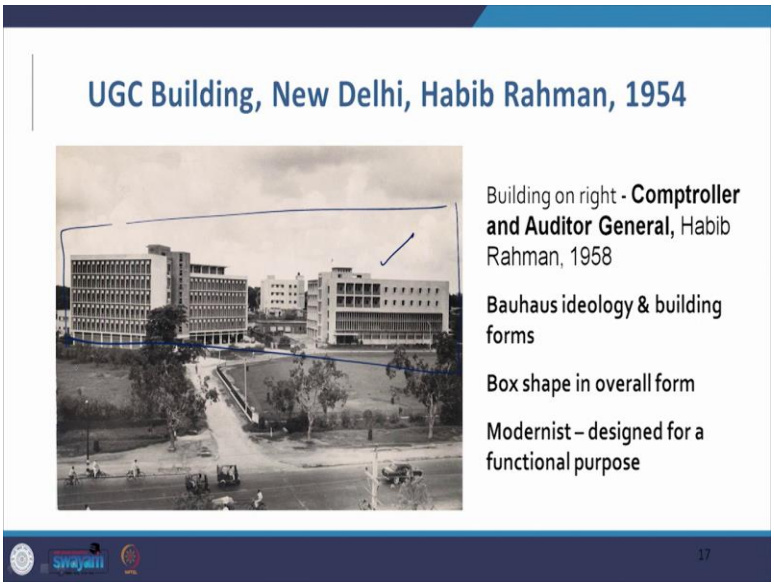

So, therefore, Indian climate immediately if the persons of the Indian climate is felt as soon as they start designing these buildings in India. Now, the UGC building in Delhi, the University Grants Commission building 1954. The building on the right that you see here is the Comptroller and Auditor General building designed in 1958. So, this entire, this set of two amazing buildings in the modernist Bauhaus category. So, the Bauhaus ideology and building forms there is a box shape in the overall form and it is designed in a functionalist manner.

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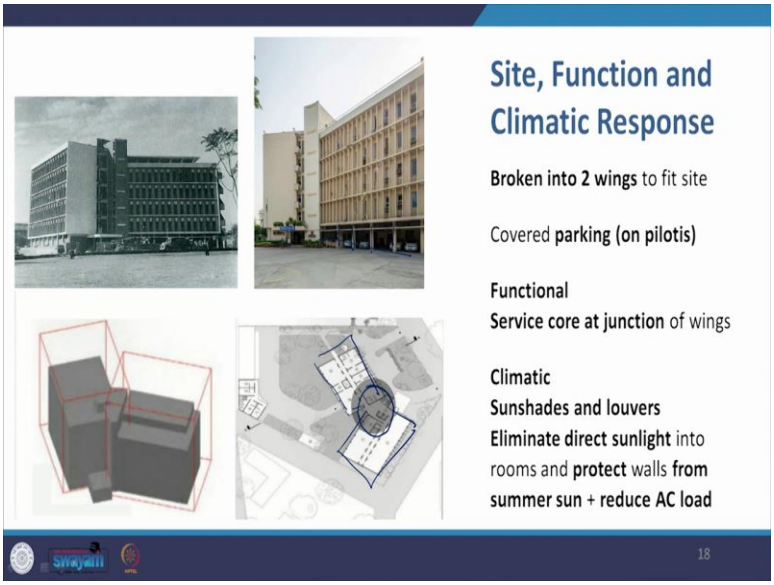

Now, with regard to the site function, climatic response, the entire building, the UGC building is divided up into two wings, to fit into the site and it has covered parking. The parking is provided by raising the building on a Pilotis. And the functional part that we see here is the Service Core is at the junction of these two wings of the UGC building. And then there are the sunshades and louvers provided.

So, this is the Indian climatic addition to the modernist building, which eliminates direct sunlight from the rooms and protects the wall from the summer sun reduces AC or air conditioning. So, these ideas about thermal comfort energy efficiency was already embedded in the modernist buildings in India at a time when they were not being talked about in such urgency, as we are talking about it today.

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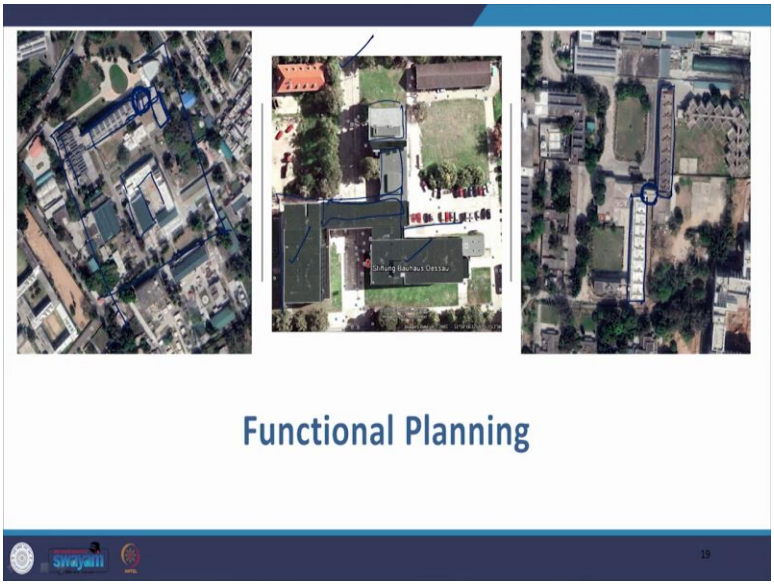

This is the idea of the functional planning. This is the Bauhaus and you can see the pinwheel design of the Bauhaus, like I said. I will again repeated this is the workshopping wing, this is the technical school part. These are the administrative offices. This is the auditorium section. And these are the student hostels, the dormitory.

All the functional parts are distinct from each other. But they are integrated together to work together as I mentioned last time, like the organs of the human body, or like you see in a printed circuit, a circuit board in which all the chips are connected to work together. So, now the idea of the functional organization came in CBRI by Kanvinde. As you can see, this is the aerial view, this is a CBRI compound.

And here, this particular wing, and this is where we enter the building. And this wing at the back where the architect's studios , offices are there on the ground level. And then behind it are the other parts, which have different research labs of the CBRI. Now, then there is another building, which is on our campus.

It is called the Khosla International House (KIH) designed by Kanvinde. And it has got these two wings very similar to what Rehman had done in the UGC building having these two wings. But instead of those wings being diagonal to each other, or coming at an angle, these two buildings are both in a sense parallel to each other. And they are connected here by the entrance wing. And again, this is a functional organizational building as in Bauhaus.

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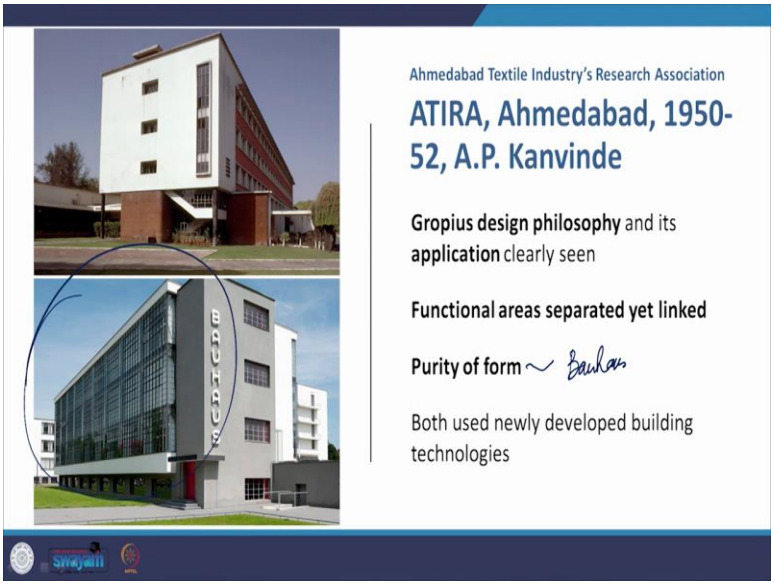

Now, the ATIRA building 1950 to 52. Again, Gropius's designed philosophy so clearly evident in its application here. The functional areas are separate yet link, there is a purity of form. Vis - Vie Bauhaus the purity of form , here I am referring to is basically with regard to the design of the Bauhaus itself, particularly the workshop wing and both use newly developed building technologies.

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Space planning , is it is open, zoned out into different activity areas administration cum lab component, all of them are functionally organized in a rectangular form, there is climate

protection with sunshades provided on the south facade and in the full course of the building in continuous lines on the north facade, where the sun shields are not required, the fenestrations are flush with the outside wall.

Now, therefore, the difference we find because of the climate, this building becomes more introvert because of the climate. And therefore, it cannot afford to provide such extensive curtain wall that we see in Bauhaus because we require deep sun penetration there, whereas here we need to keep out the sun.

So therefore, what we have is the glass curtain wall in Bauhaus versus the Masonry infill wall or Masonry curtain wall with fenestrations in ATIRA , Both Bauhaus and the ATIRA building are having an RCC structural frame. The structural design the introduction of the flexible RCC column and beam grid in India, through projects like the ATIRA building.

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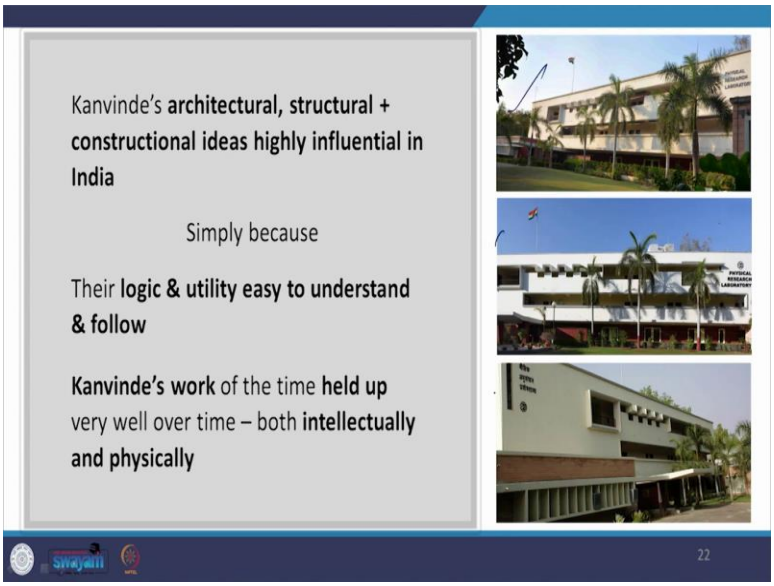

Now, Kanvinde's architectural structure and construction ideas were highly influential in India simply because their logic and utility was easy to understand and follow. Kanvinde's work of the time really held up very well, both as an intellectual exercise and as a physical exercise in functional planning of the building, whether it is the PRL , now this is the PRL all three of them are views of the physical Research Laboratory in Ahmedabad.

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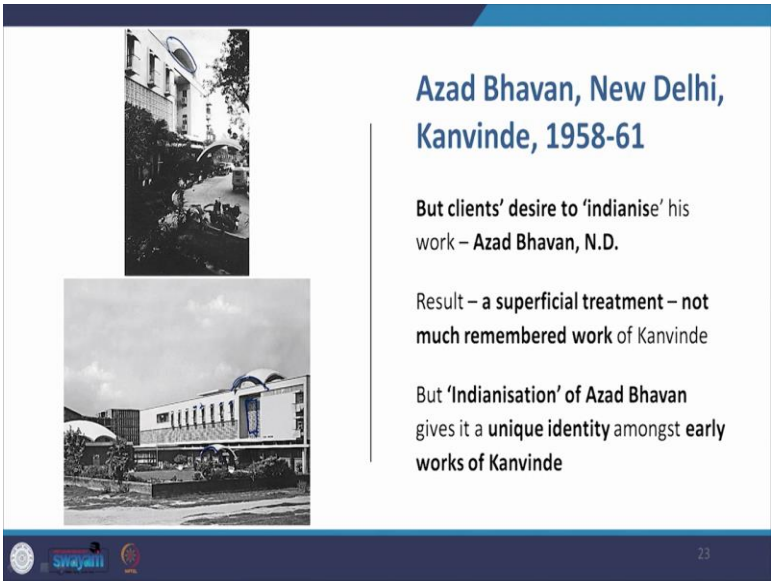

But let us come to a building, which is the only example that I have found where there is some kind of connection with some traditional Indian element and that is the Azad Bhavan in New Delhi from 58 to 61. In this building, the client's desire was to Indianized the work and therefore, what is said by critic says that this turned out to be a superficial treatment, which is not very well integrated and it is not a much-remembered work of Kanvinde.

Now, what is the traditional feature , this dome that you see at the entrance's that you see here this is jali work and then you find this dome and then a kind of a hierarchical fashion. The similar dynamical structure is there as sunshades over these windows, and then you have this as a cantilever at the entrance of the building.

So, this element is the Indianization of the building had Kanvinde done it as he had done the ATIRA building or the PRL etcetera. This element would not have been there, it would not have been there as sunshades over the windows, and the building would have been a straight up example of Bauhaus.

But Indianization of Azad Bhavan to me, does give it a unique identity amongst the early works of Kanvinde. In fact, to be very honest with you, I have appreciated or I have liked the Azad Bhavan, the most amongst the early, at least in the form in the appearance amongst the early works of Kanvinde. But that is my personal opinion, you must form your own opinions with regard to these works.

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But here is an interesting exercise. This is the Azad Bhavan and you can see very clearly this kind of the connect between the dome, the sunshades and the entrance cantilever.

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Now, watch carefully. I am comparing it to several buildings on our campus, designed by Mister Kanvinde, and that is the Civil Engineering Department. Now, look at this building carefully. And you will find that this has the same cantilever that you find here in the Azad Bhavan. Now, look at another building, which is just behind the civil engineering department is the mechanical department. And you find it is also got this kind of a cantilevered entrance here. So, the

cantilever entrance turns out to be the form element of the building that dominates the entrance of these buildings.

We again find this kind of cantilevered entrance in Khosla International House designed by Kanvinde. There are other buildings on the campus, not designed by him, but that follow a similar format. For example, the chemical engineering department also has such kind of a cantilevered entrance. This became a repetitive model. And we find that here in these buildings.

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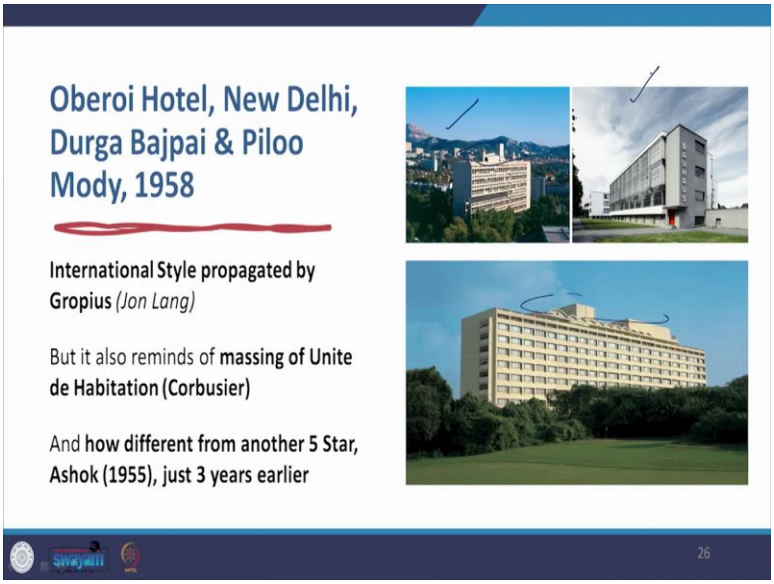

Then let us come to a different example by a different set of architects. This is the Oberoi Hotel in New Delhi by Durga Bajpai and Piloo Mody in 1958. Now here, Jon Lang says the international style has been propagated. The rather Oberoi hotel represents the international style propagated by Walter Gropius.

But when I look at this building, I am also reminded of the form of unite de habitation, this is unite de habitation. And in fact, even the roof scape, that is the roof garden of unite de habitation finds its resonance in the Oberoi Hotel, where you have these facilities right at the top of the hotel. And then of course, there is the block of the Bauhaus, which also is evident in the Oberoi hotel in its block form. So, not only is this building a reminder of the international style of Walter Gropius, it is also a reminder of the modernist brutalism or rather the international style of Corbusier. But this is so different from a Ashok Hotel that just came up three years earlier.

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And this is the difference. I told you that this is designed by B E Doctor has a modernist facade, but it is been covered with traditional Indian elements like the Jaroka , the chatri, the jail, the brackets, this on the other hand, the Oberoi hotel is devoid of this kind of traditional Indian elements, it is upfront a modernist clean-cut example.

Of course, it is having the elements of the shading devices etcetera for the climatic conditions and then let us compare it with unite de habitation and the Bauhaus. So, the form of the Ashok hotel also the block arrangement is very similar to other modernist buildings, but it is overshadowed on the outside by these traditional Indian elements.

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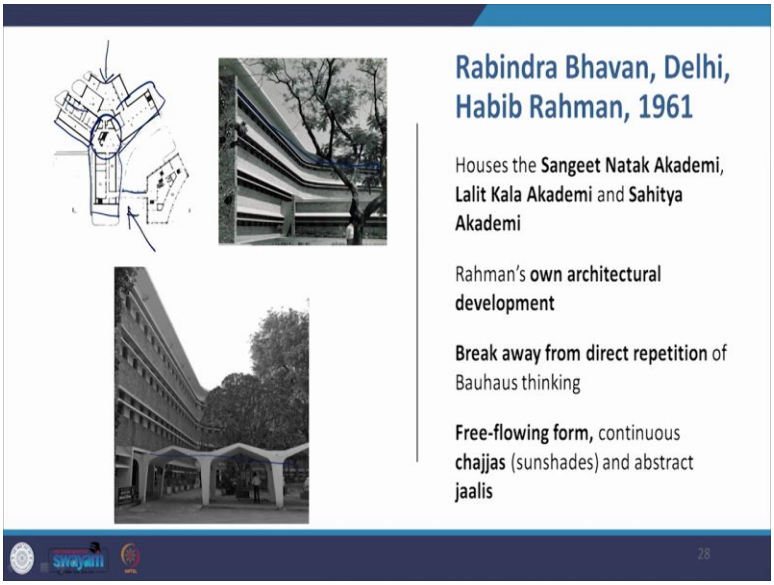

Then there is the Rabindra Bhavan in Delhi where Habib Rehman started evolving an different vocabulary, moving away from the Bauhaus. The Ravindra Bhavan, houses the Sangeet Natak Academy, the Lalit Kala Academy and the Sahitya Academy. This shows Rehman's own architectural development, which is a break away from direct repetition of the Bauhaus thinking.

This has three wings connected by one common area from where these three wings move outwards. The free flowing from with a continuous Chajjas or sunshade. And there are the abstract jaalis, we look at. So, when you look at this facade, for example, where you have these continuous sunshades, this facade represents the looking at the building from this side. And when you look at this facade, and you see this corridor, which is this one here, and you are looking at the building from this side.

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Now, another building that came up in 1932. One of the very important works of Alvar Aalto was the Paimio sanatorium in Finland, it is a very clear-cut example of international style.

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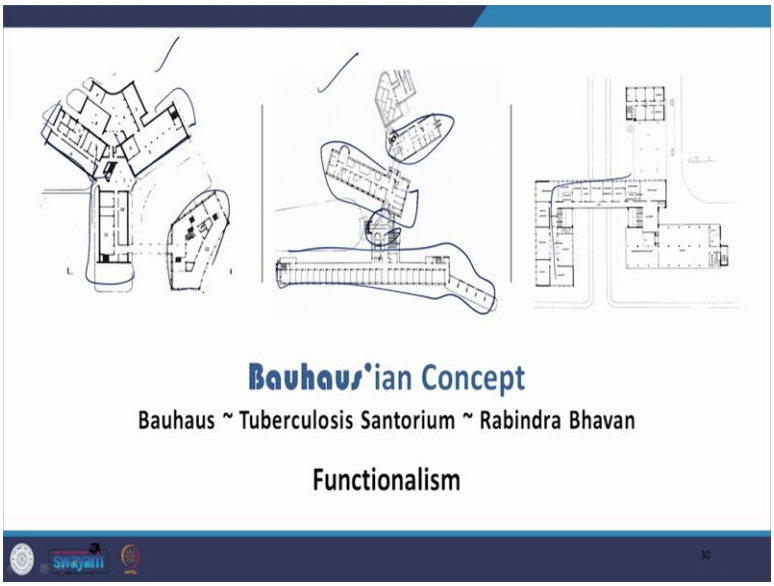

But the important point I want to make is this one, there is a Bauhaus'ian concept in the functional organization of Paimio sanatorium that is also reflected in Rabindra Bhavan. Now, what you find here in the Paimio sanatorium is that every segment every part of the building corresponds to a different function. Just as in Bauhaus, just as in the Rabindra Bhavan nd the

Lalit Kala Academy, these three wings have different parts of the Rabindra Bhavan and this is the Lalit Kala Academy.

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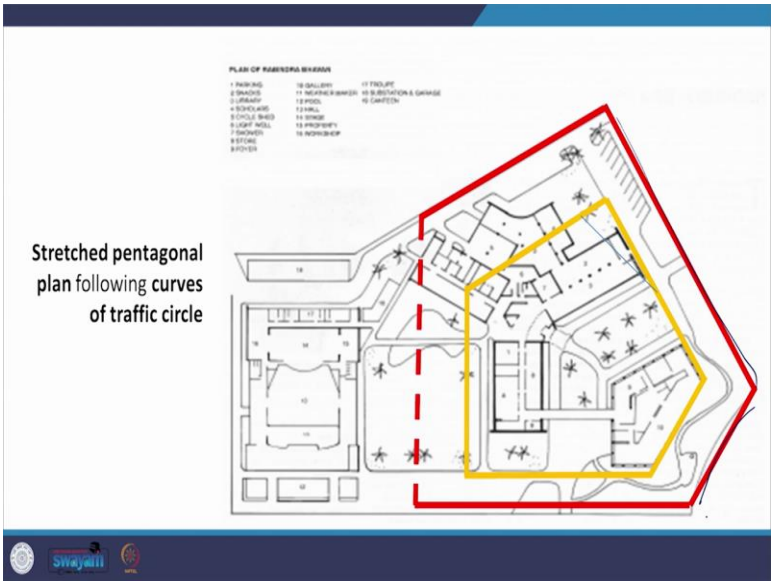

Now, the overall form of the Rabindra Bhavan is a stretched pentagonal plan, following the curves of the traffic circle, let us look at it. So, we have the larger pentagon and this is running parallel to the road network and then there is a larger pentagon being formed on the outer periphery.

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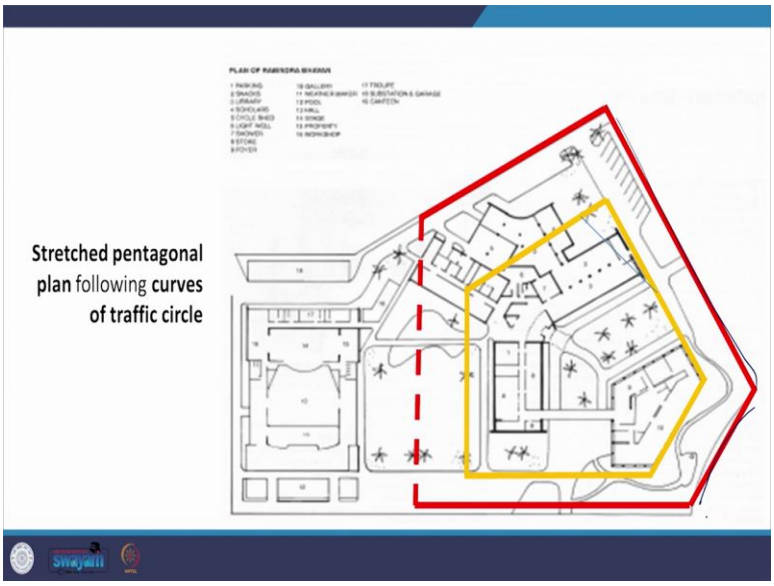

Now, the Lalit Kala Academy, this is the design, which in itself is a pentagon. So, what we have here is that you have this inner pentagon, and there is another inner Pentagon to this one and then you have the larger painting and on the periphery.

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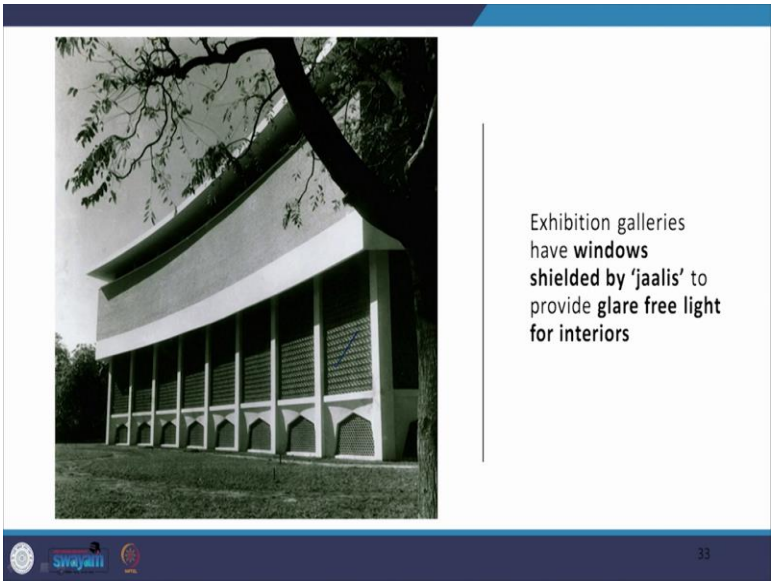

Now, this exhibition galleries Lalit Kala Academy have the windows shielded by these jaalis that provide glare free light in the interiors.

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So, this is what the interior looks like of the Lalit Kala Academy with these circular columns pilotis and this is a double height, facade with these diffused light filtering into the building and it is so similar strikingly similar to the entrance of the Paimio sanatorium, which again has circular column freestanding circular columns or pilotis.

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I will end here. And this shows you in a very summarized manner, the relationship or the contribution of Walter Gropius and Bauhaus to growth of modern Indian architecture, the works

particularly of Habib Rehman and A. P. kanvinde. Starting from next session, we will look at the work of Louis Kahn and his contribution to modern Indian architecture. Thank you.