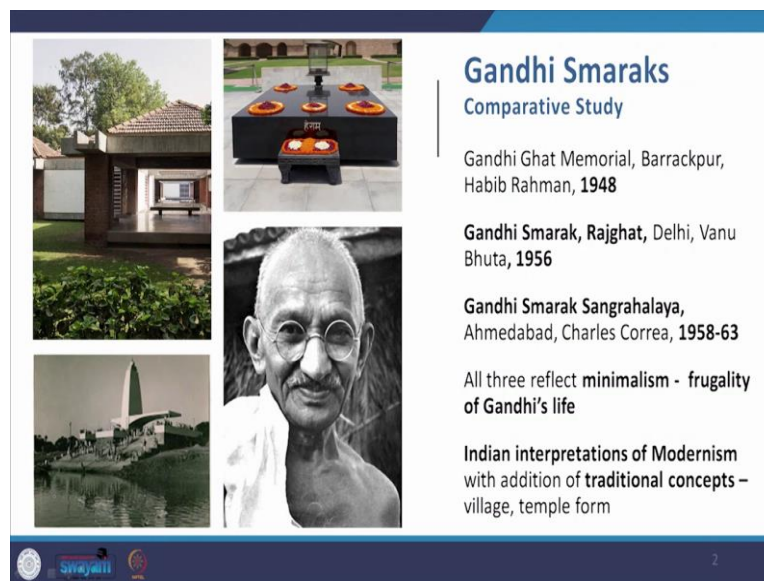


Modern India Architecture
Professor P. S. Chani
Department of Architecture and Planning
Indian Institute of Technology Roorkee
Lecture 12
The First Generation (1945 - 70) – Part 5

Hello students, we once again come together to continue our study of Modern Indian Architecture. And we now go to part 5 of the first generation that is the period from 1945 to 1970.

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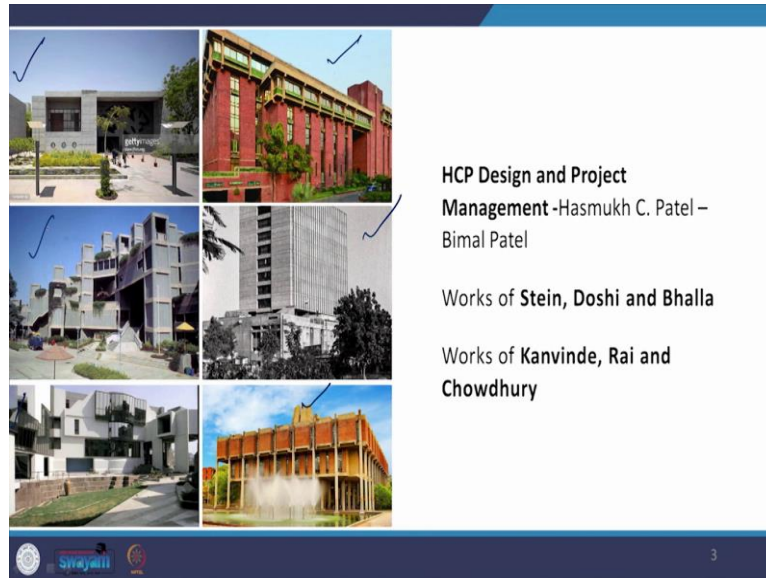
So, we had already seen last time the important example of the comparative study of three Gandhi Smarak one made by Habib Rahman in Barrackpur the other in Delhi by Vanu Bhuta and the third was the Gandhi Smarak Sangrahalaya, by Charles Correa in Ahmedabad, all three reflected the minimalism that is the Western modernist ideology, but it was so similar to the frugal lifestyle of Gandhiji and also the lifestyle that he followed, whereas, there was also the addition of Indian interpretations of modernism in these examples, with for example, the appearance of the temple form in Barrackpur.

And the appearance of the village concept in the Gandhi Smarak Sangrahalaya. So, modernism was supplemented by Indian architectural or traditional Indian architectural language. And this was one of the early steps that these architects were taking to amalgamate these traditional Indian elements into modernist buildings in such a manner that they do not seem dealing from each other. We have seen this earlier in the approach of CPWD.

But there as I showed you through the examples that the modernist building was the traditional elements were added on to them, but it was very clearly evident that they were

added, but not amalgamated, they were not fused together to make one new building as seems to be happening in these buildings here.

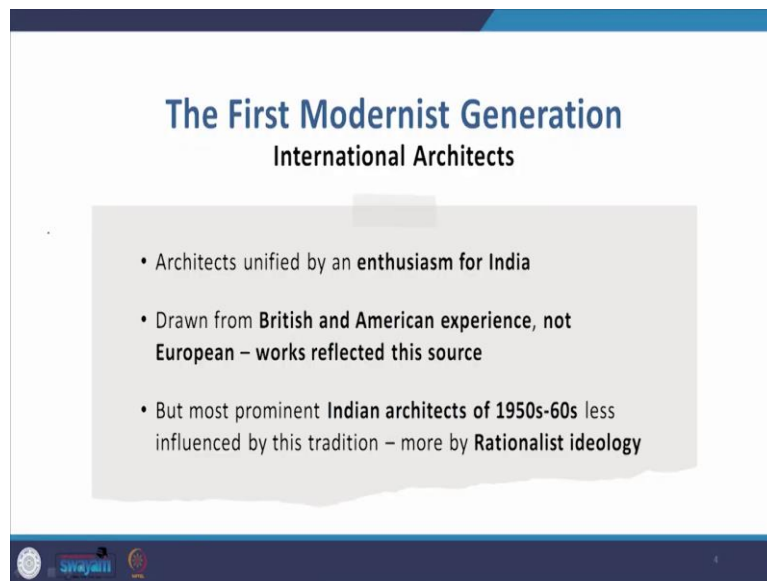
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We also saw last time that there was the arrival of major architectural firms of that period, one which continues even till today, that is the HCP design and project management it was earlier Hasmukh Patel was the lead architect, now architect Bimal Patel, is the lead architect and this was the work done by Hasmukh Patel.

And this is the extension of IIM Ahmedabad campus done by Bimal Patel, then they were the works of Stein, Doshi and Bhalla and so we have the works of Mr. Doshi, this is the NIFT campus in Delhi and this is the India habitat centre by Joseph Allen Stein, then the works of Kanvinde, Rai and Chowdhury, the earlier work of IIT Kanpur by architect Kanvinde and then the Nehru Science Centre in Delhi. So, this was the arrival of these important firms.

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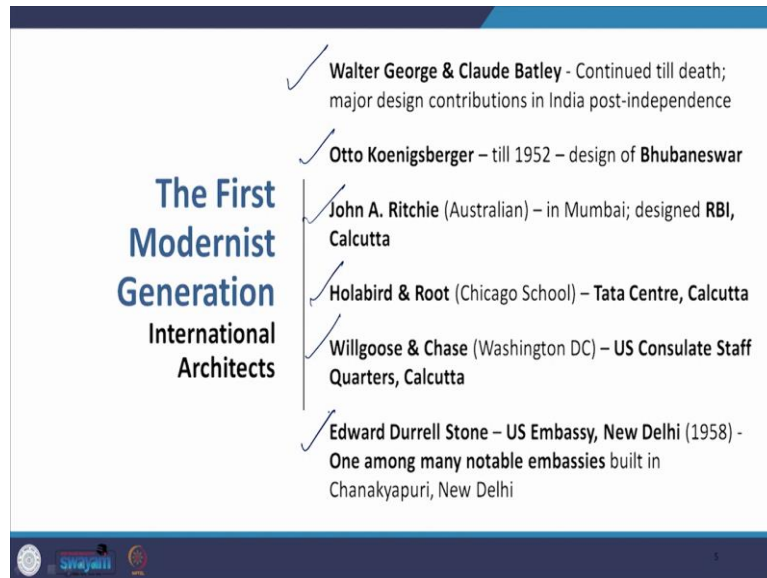


The first modernist generation of international architects to practice in India, these architects were very enthusiastic towards their response to produce a modernist architecture for India. And they were drawn the basic primarily from their British and American experience, and not so much from the European experience, as is reflected in the works that were seen in the early years.

But the most prominent Indian architects of the 1950s and 60s, were less influenced by the British and American tradition and more impacted by the rationalist ideology that was coming from Europe. Now, this is the first generation of international architects. This was also followed by the most important contribution of an international architect in India. And that was that of Corbusier.

And along with him his team, that is his cousin, Pierre Jeanneret, Maxwell Frey and Jean Drew, and parallelly or a little later than that was the American impact through Louis Kahn, which was also very strongly modernist in the Indian Institute of Management, Ahmedabad.

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Now, this modernist generation of international architects or rather let us go back, even to pre-independence and then moving to post independence, we had seen the contribution of Walter Sykes, George and Claude Batley and their work continued till death, post-independence. Then there was Otto Koenigsberger we have seen his contribution also in the design of Bhubaneshwar.

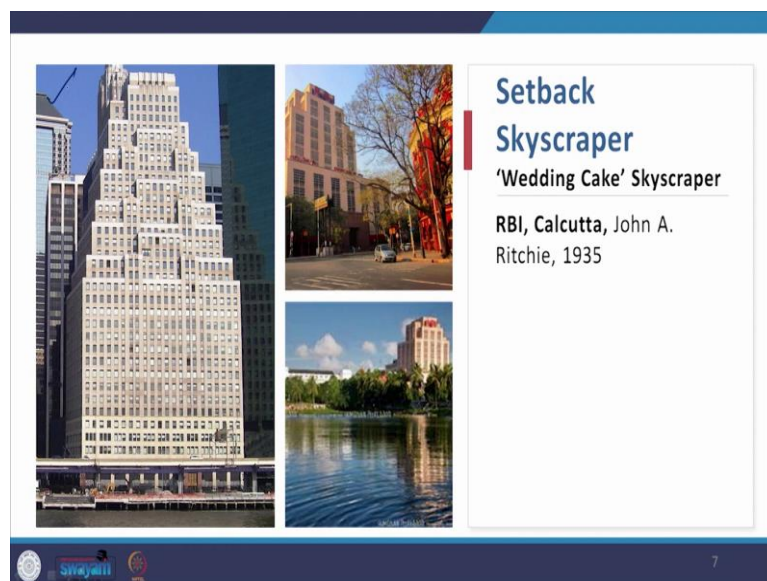
There was John Ritchie was an Australian in Mumbai who designed RBI, Kolkata. Holabird and Root two architect team from Chicago school of design the Tata Centre in Kolkata. Then Willgoose and Chase from Washington who designed the US Consulate Staff Quarters in Kolkata and Edward Durrell Stone, who designed the US Embassy in New Delhi in 1958. This was one amongst the many notable embassies that are part of Chanakyapuri in Delhi today.

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These are the various examples. And Chanakyapuri is a hub of modern architecture representing these different countries. So, for example, we have the Swiss Embassy which is typically modernist and very neat and tidy in its appearance. Then there is the traditional architecture that you see in Thai embassy, we again see modernism in the Polish embassy, this is the British Consulate or the British High Commission. Then we have the Middle Eastern architecture being reflected in the Saudi Embassy. And again, modernism in the Norwegian Embassy.

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Then coming to the skyscraper design, one was the use or other the adoption of the wedding cake or the setback skyscraper. In the RBI, Kolkata building by John A Ritchie, this is an

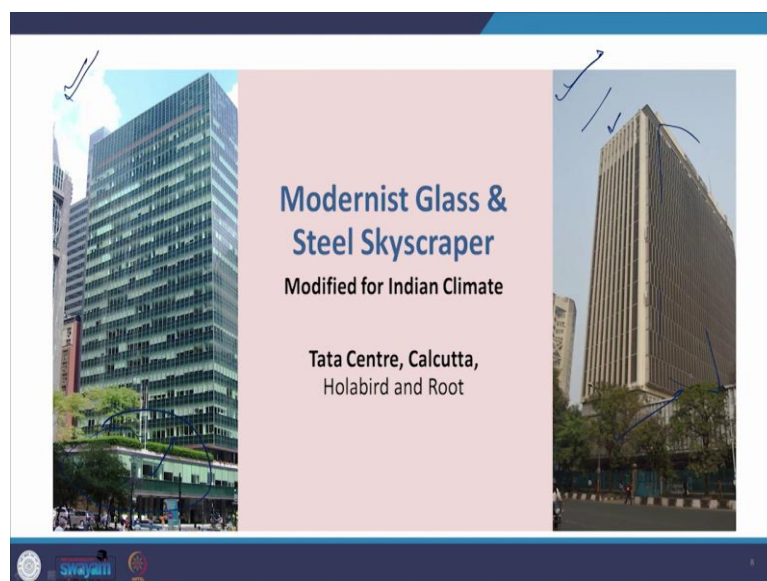
example of the setback skyscraper, or the wedding cake skyscraper in New York. Now, this kind of skyscraper had originated because of the zoning resolutions of New York of 1916.

Just before this in New York to just to give you an idea of what why this shape came up was that in New York, a building, it come up in around the 1910s, around that time, called the equitable building, which had a very massive, straight up block, complete, going completely going straight up.

And because of that, there was a very large shadow cast on the nearby buildings of that equitable building and the street level was completely dark, there was no sun penetration. And this created a kind of an anti-reaction amongst the New Yorkers, that these kinds of buildings will continue to arise in New York, we will not be having any sunlight on the street level and lot of buildings which are connected around which are surrounding that building will be cut off from sun completely.

And as a result of that, this resolution was adopted in 1916. That this the skyscraper needs to be set back as it rises up, and they were we do not right now have time to go into that the details of the angles that will provide it so that at the street level, sun would be able to penetrate and the nearby buildings would not be completely overshadowed, or completely the sun would be completely cut off from them. And this RBI Kolkata building was that it was a reflection of the wedding cake skyscraper.

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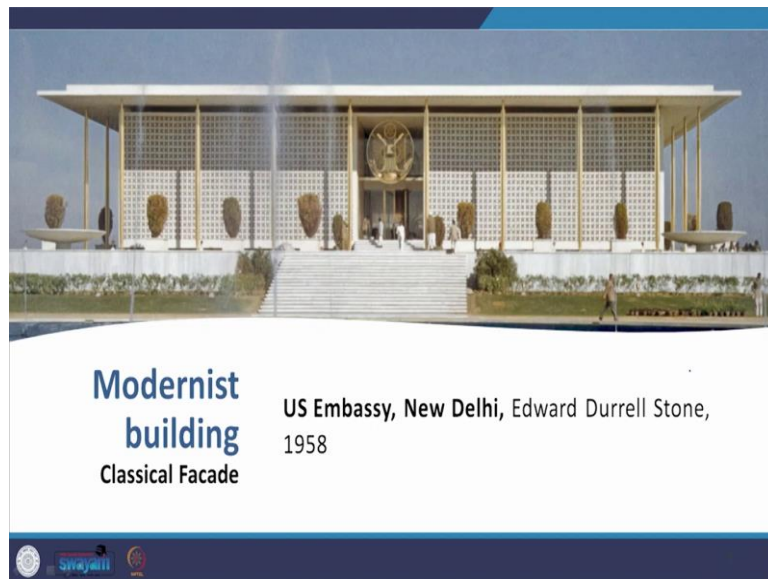
Moving on to the idea of the modern skyscraper. For example, the liver house in the 19, in early 1950s ,in New York by Skidmore, Owings and Merrill, this skyscraper was then

adopted by Holabird and root for the TATA Centre in Kolkata. It is a very similar cuboidal skyscraper. As you can see there is a complete base under the liver house occupying the entire site for about 2 or 3 stories, this is that base and we see a similar base in the TATA Centre.

And later on, when we look at the study of point blocks, I will again come back and refer to this kind of configuration of point blocks. But here we see that this was a sleek glass building The Liver House house and this block of TATA Centre is very similar to this the only difference is it has been modified to Indian climate.

So, it has got these vertical fins or louvers here and on the in this facade, so that direct sun does not impinge on the facade. So, the modification happened in a modernist skyscraper model is glass and steel skyscraper, to adopt it to the Indian conditions also, this is not in steel, but in RCC frame.

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Now, coming to the building by the US Embassy by Edward Durrell Stone, it was a modernist building in a kind of a classical geometry.


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So, if you compare or rather if you take the example of the classical geometry, we find that in the Greek temple, and if you compare this geometry with that of the Altes museum by Karl Friedrich Schinkel at the turn of the 20th century or the rather you can say the end 19th century or you compare it with the mid-20th century Neue Nationalgalerie in Berlin by Mies van der Rohe and then you have Edward Durrell Stones US Embassy in Delhi.

All four of them are following the Greek classical temple facade geometry. And only thing is that in case of new national, this Altes Museum is, it is a very direct reflection of the classical temple facade, whereas new Nationalgalerie is an interpretation in steel. And Mies did that. Whereas in the US Embassy, we find a similar concept of these symmetrically placed columns, but there is a projection over the entire building to completely shade the facade from the hot sun of Delhi.

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White rectangular composition with slender gilded cols. – classical quality but not classical features

✓ Elements that relate it to Indian context.....

11



Comparison

Neue Nationalgalerie, Berlin, Mies van der Rohe

Greek Temple

US Embassy, New Delhi, Edward Durrell Stone

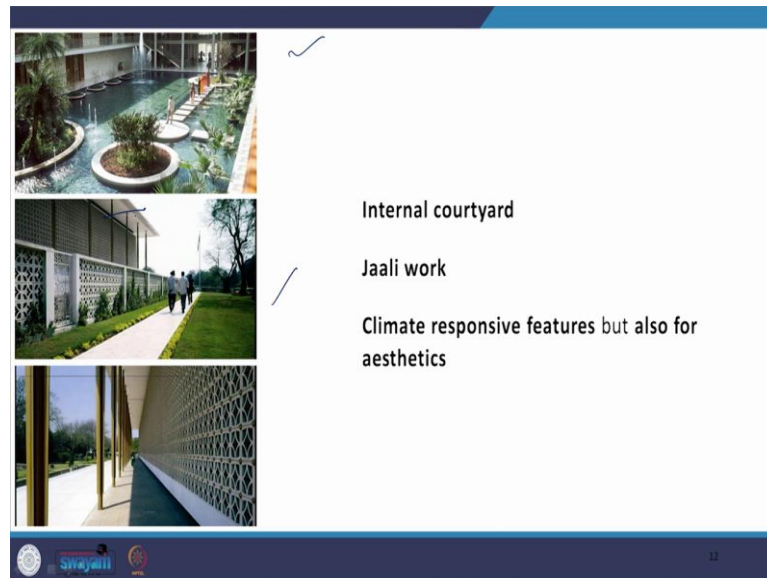
Altes Museum, Berlin, Karl F. Schinkel

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So, this embassy was a white rectangular composition, akin to the modernist white rectangular geometry. But it had these slender, gilded columns. They were golden gilded columns. And they were in this classical quality, but not the classical feature the column itself was not having the dimension of a classical column.

This in a sense was similar to the approach of the Neue Nationalgalerie museum by a Neue Nationalgalerie by Mies van der Rohe, where the column is in steel I section so it is a slender column, but the facade is a reflection of the classical façade. The other was that the elements that related to the Indian context.

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So, what you have here is, you have the internal courtyard, you have the Jaali work. So, all of these elements are not only as a part of the climatic response of the building, that Jaali work and the projected roof over the building, to prevent direct sun impacting on the facade, and you have internal courtyards to with water and greenery to cool down the building on the inside very, very typical North Indian concept of internal courtyard planning, but the this arrangement was also there for aesthetic purposes, the overall appearance of the building wedded, modernist architecture, with Indian aesthetic.

So, it was a climatic response and an aesthetic response. And thus, the building though modernist was an Indian modern building. And this was a solution given by an American architect.

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Development of CEPT, Ahmedabad

Bernard Kohn – American educated Frenchman- joined Doshi in **co-directing CEPT, Ahmedabad**

With input from **Harry Weese** (American architect) – they developed **educational programme of CEPT**

Christopher Benninger (American) came to India in 1968; **1st HOD of School of Planning at CEPT (1972)**

Benninger - Alliance Francaise Library, 1973, Ahmedabad

Continued as educator at Centre for Development Studies and Activities, Pune



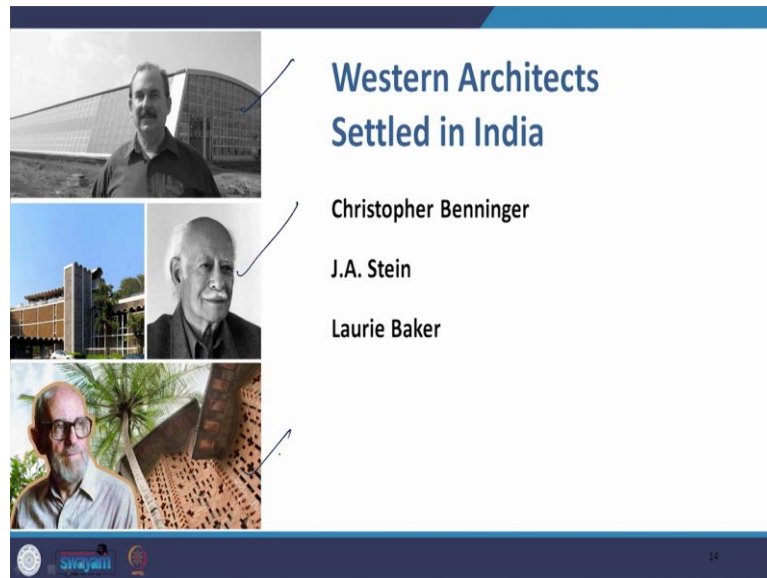
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Now, looking at one of the most important schools that came up around the mid-20th century, we had seen earlier that Sir J.J. School of Art had come up pre-independence and that was the school producing the most of the architects of that time. And then there was the arrival of CEPT along with the CCA in Chandigarh, when Chandigarh was developed, and we look at that when we study the impact of Corbusier or the impact of Western architects in India. And then around the time or little later was SPA Delhi.

So, Bernard Kohn was an American educated Frenchman, who joined Doshi to co direct CEPT Ahmedabad. And the inputs were also taken from Harry Weese who was an American architect to develop the educational program of CEPT which was, which is a very important architectural program developed in India for in architecture education in India.

Christopher Benninger came to India in 1968 and became the first head of department of CEPT in 1972. He was one building that we will see subsequently in this presentation today is the Alliance Francaise Library that was designed by him in Ahmedabad in 1973. And he continued as an educator in the centre for development studies in activities in Pune.

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Western Architects Settled in India

Christopher Benninger

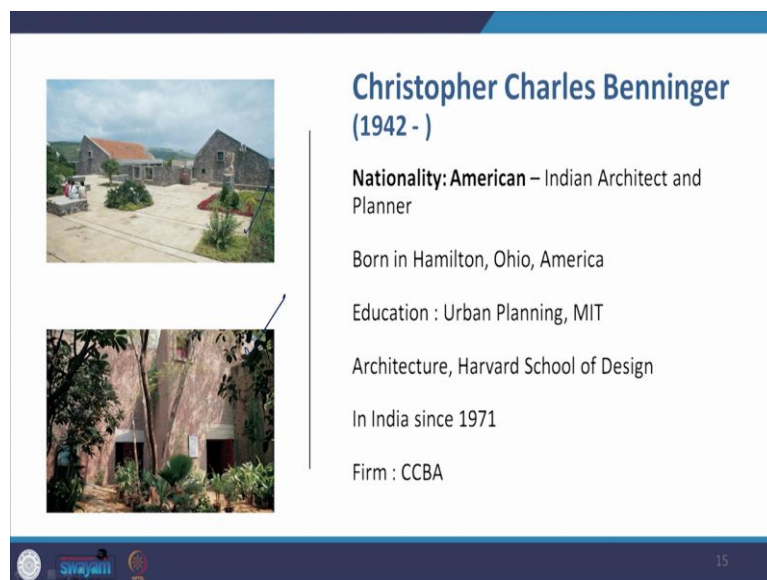
J.A. Stein

Laurie Baker

The slide features three portraits of architects: Christopher Benninger (top), J.A. Stein (middle), and Laurie Baker (bottom). Arrows point from the text labels to their respective portraits. The slide also includes a small image of a modern building and a brick wall. The footer contains the Swayam logo and the number 14.

Now, we have seen just before this, I showed you the list of international architects who worked in India post-independence, with more aligned to the modernist ideology, but they were also Western architects who came to India and then settled in India and spent a lifetime in India. So, we have Christopher Benninger, we have Joseph Allen Stein, and then we have Laurie Baker, who finally became an Indian citizen.

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Christopher Charles Benninger (1942 -)

Nationality: American – Indian Architect and Planner

Born in Hamilton, Ohio, America

Education : Urban Planning, MIT

Architecture, Harvard School of Design

In India since 1971

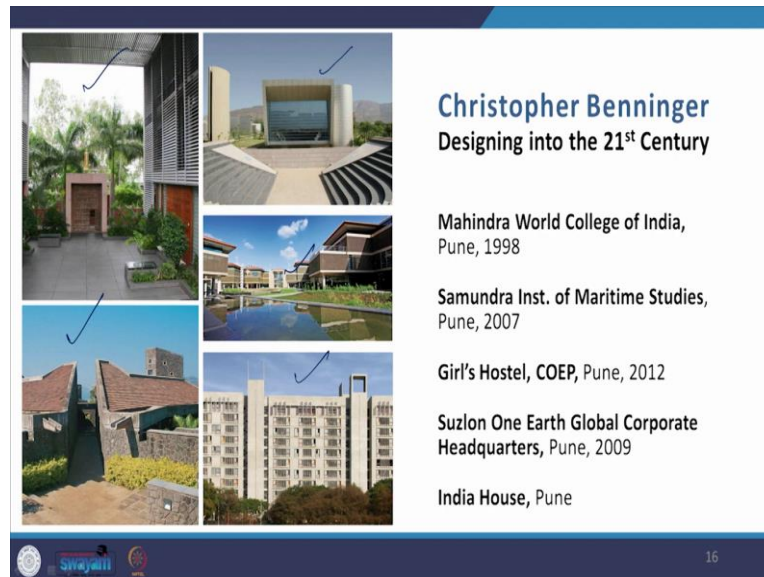
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The slide features two images: a photograph of a building complex (top) and a photograph of a brick building (bottom). The footer contains the Swayam logo and the number 15.

Christopher Benninger was an American and he has is now can be considered as an Indian architect and planner. He was born in Ohio America, educated in urban planning in MIT and architecture in Harvard. And he came to India, well I would say since 1968, because he became he had already come to India in 68 and become the director of CEPT by 72 and his

firm is Christopher Charles Benninger architects. So, examples are the Alliance Francaise Library and this, the other buildings that have been done by him.

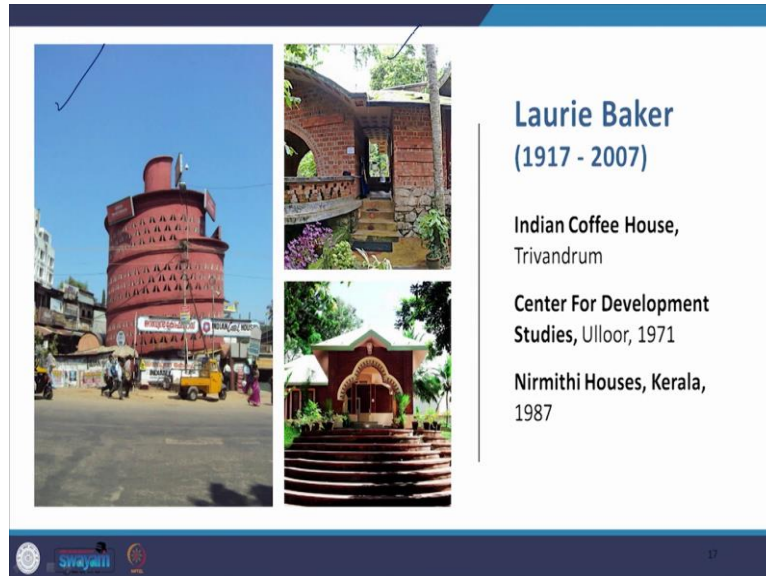
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His designing is continued into the 21st century, we have the Mahindra World College of India in Pune in 1998. We have the Samundra Institute of Maritime Studies in Pune in 2007. We have the girl's hostel of COEP in Pune in 2012, we have Suzlon in 2009 again in Pune and India house in Pune.

Now, it would seem as if most of his works of course, are in Pune, but, there are work spread even in Bhutan and other parts in neighbouring country and the other parts of India. So, when we will look at iconic works, we will again refer back to the works of Christopher, we will again look at the works of Christopher Benninger, in more detail.

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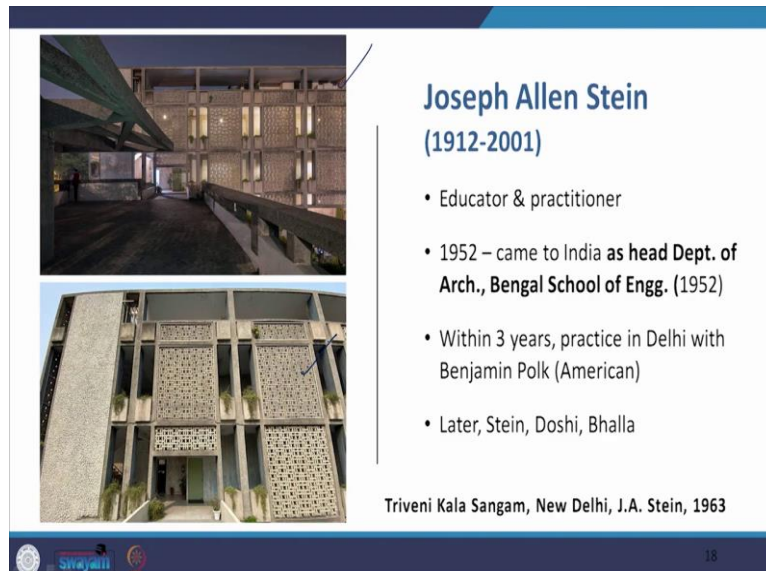


Laurie Baker
(1917 - 2007)

- Indian Coffee House, Trivandrum
- Center For Development Studies, Ulloor, 1971
- Nirmithi Houses, Kerala, 1987

Laurie Baker was from 1917 to 2007 and works were predominantly in Kerala and heavily entwined with the vernacular architecture and with local materials and local construction technologies use of local labour. And when we go on to study the iconic works by architects in India, we will again look at the works of Laurie Baker. For example, there is the India Coffee House in Trivandrum, there is Centre for Development Studies in a Ulloor and then there is the Nirmithi Houses in Kerala in 1987.

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Joseph Allen Stein
(1912-2001)

- Educator & practitioner
- 1952 – came to India as head Dept. of Arch., Bengal School of Engg. (1952)
- Within 3 years, practice in Delhi with Benjamin Polk (American)
- Later, Stein, Doshi, Bhalla

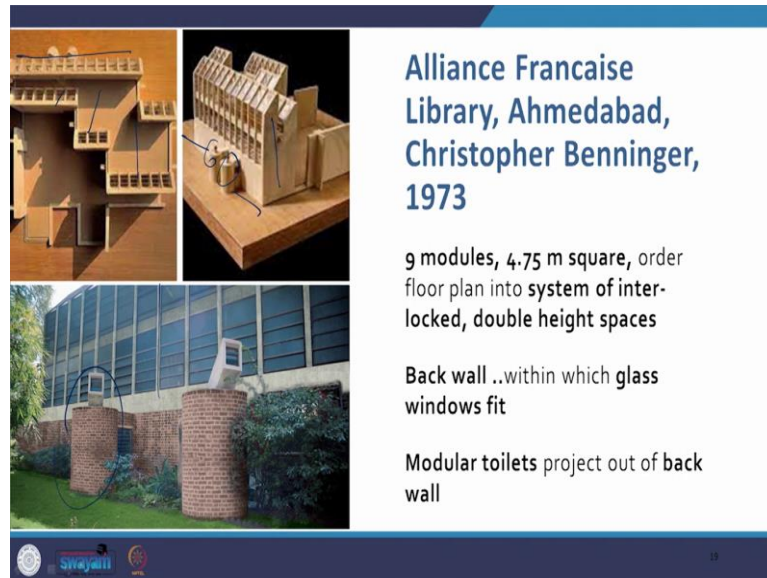
Triveni Kala Sangam, New Delhi, J.A. Stein, 1963

Then, the third is Joseph Allen Stein, from 1912 to 2001. Both an educator and an practicing architect in 1952 came to India as the head of the Department of Architecture of Bengal school of Engineering in 1952. Within 3 years, he had established a practice in Delhi with

Benjamin Polk and later on he started he teamed up with Doshi and Bhalla to form Stein, Doshi and Bhalla this is the example of the Triveni kala Sangam in New Delhi in 1963.

And this here itself, you find one adoption of the Jaali work here in a modern form, by Stein to have a climatic response to the Indian climatic conditions, very, very important principle he continued to adopt to make his buildings climatically responsive in Indian conditions.

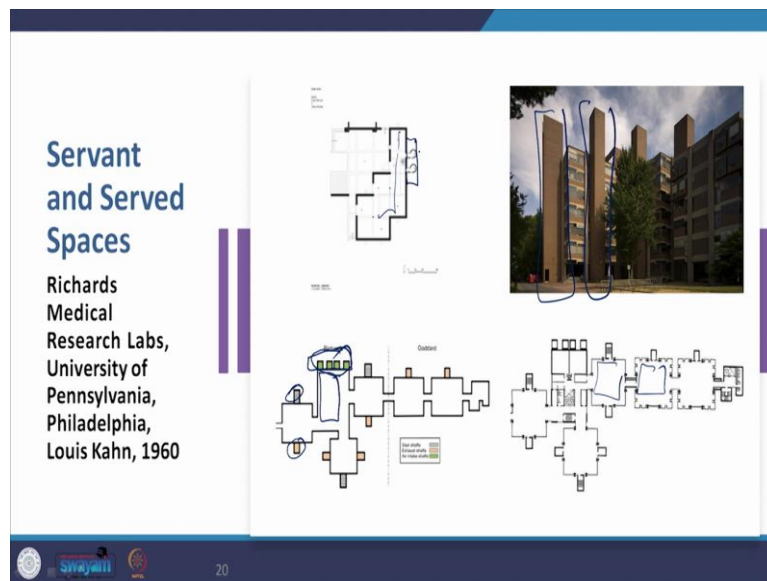
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So, coming to the Alliance Francaise Library in Ahmedabad by Christopher Benninger, this library essentially has 9 modules a 4.75 by 4.75 square and this ordered floor plan is into a system of interlocked and double height spaces as you see here, these are double height spaces, if you see this in this model, and here also and this rear wall this back wall if you see here in the model, this back wall is completely glazed.

And there are these modular toilets, as you see in this photograph, that are projecting out of the back wall. So, the Floor Plan per se, is completely free for the various functions of the building without being intruded upon by the services like toilets.

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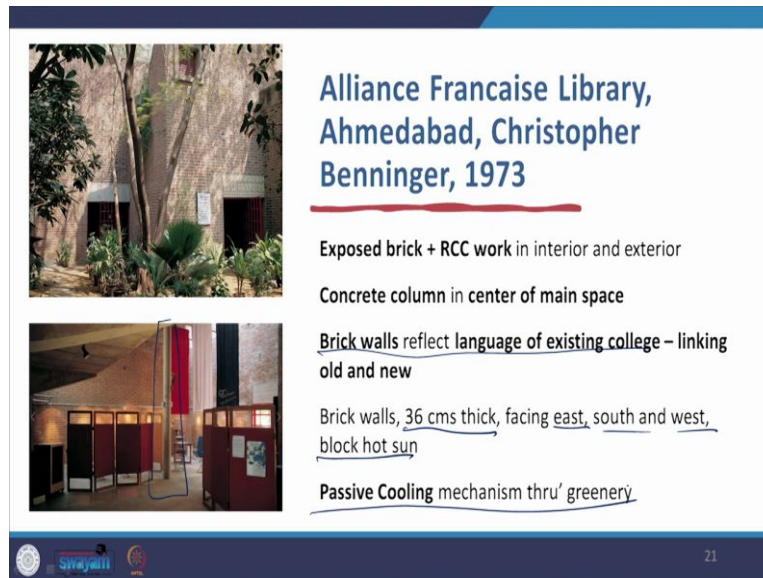
Now, this concept has also is coming from the concept of servant and served spaces by Louis Kahn. And he had brought forth this concept in the Richard's Medical Research labs in the University of Pennsylvania in 1960.

And how does it work that these facilities that you see here, these projections that are visible also in the picture, they are having the staircases the exhaust shaft, so the services are provided in these modules which are attached to the building. So, according to what Kahn's idea was that these are the served spaces and these are the servants spaces the services.

So, they should be on the periphery and on the they should be on the outside of the building so that the floor space can be completely free for the function of the building. Similarly, Christopher Benninger, according to my viewpoint, did the similar thing. This floorplan is completely free for the various activities whereas the toilets or the servant's spaces attached the building.

Later on, in high tech architecture. A similar idea would also be followed by Richard Rogers, Renzo Piano and Norman Foster in buildings like Lloyds of London and the in HSBC Hong Kong.

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**Alliance Francaise Library,
Ahmedabad, Christopher
Benninger, 1973**

Exposed brick + RCC work in interior and exterior

Concrete column in center of main space

Brick walls reflect language of existing college – linking old and new

Brick walls, 36 cms thick, facing east, south and west, block hot sun

Passive Cooling mechanism thru' greenery

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And then this is exposed in RCC brickwork both inside and outside the building. By this time, when we start putting the entire jigsaw puzzle together, you will come to know that from 1952 onwards syndicated already begun and in the housing a part of Chandigarh, the houses were being built in stucco and exposed brickwork, and also some of the works that Corbusier did in Ahmedabad, were an exposed brick and RCC.

So, this was a concept that Corbusier had already brought into India. And if you refer back to my earlier lecture, I had told you that Shoe Smith and Walter Sykes George were the first ones to bring this idea into India through their work and expose brick and concrete. And this had become a dominant trend in the architecture of Delhi.

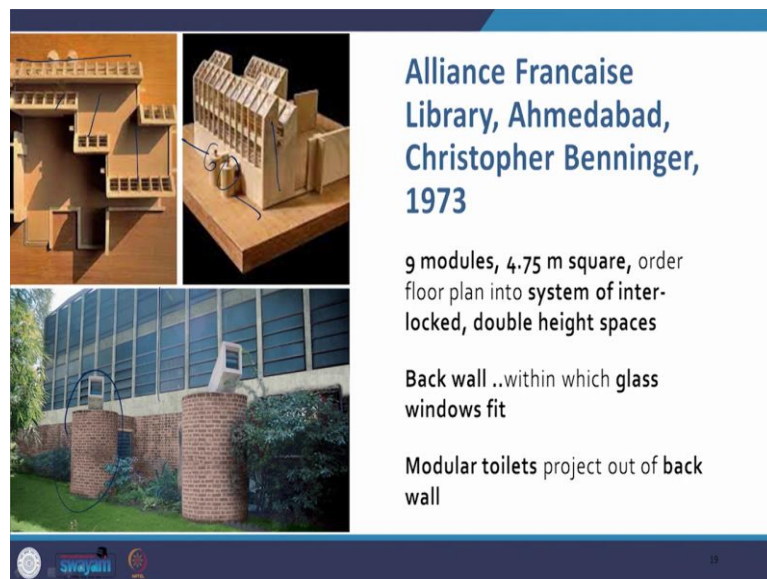
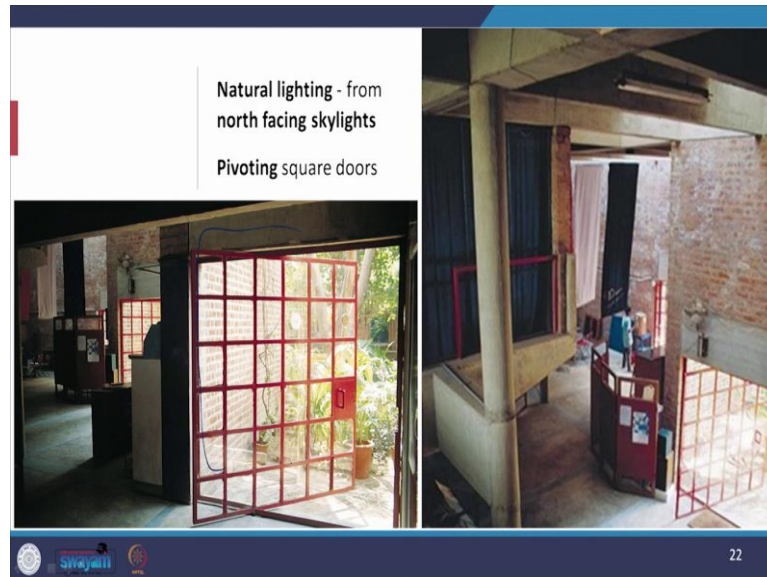
So, we find the same thing here in Ahmedabad, there is also an exposed concrete column in the centre of the main space. Now, the brick exposed brick walls also reflect the language of the existing colleges an old college on this to which this library building is a part of that bigger, older campus. And so, it is linking the old with the new.

So, the idea being that a new building can be linked to an older building, by the way in which we show the outward, the materials on the outside, that by providing a similar material palette on the outside, we can link to a different architectural, two different architectural concepts together. On one hand, we have a modernist building, which is the Alliance Francaise Library, and then we have an older building.

And just by keeping the Material Palette similar we are we are bringing them to connect with each other. There are other ideas of connecting old buildings with new buildings. And if we

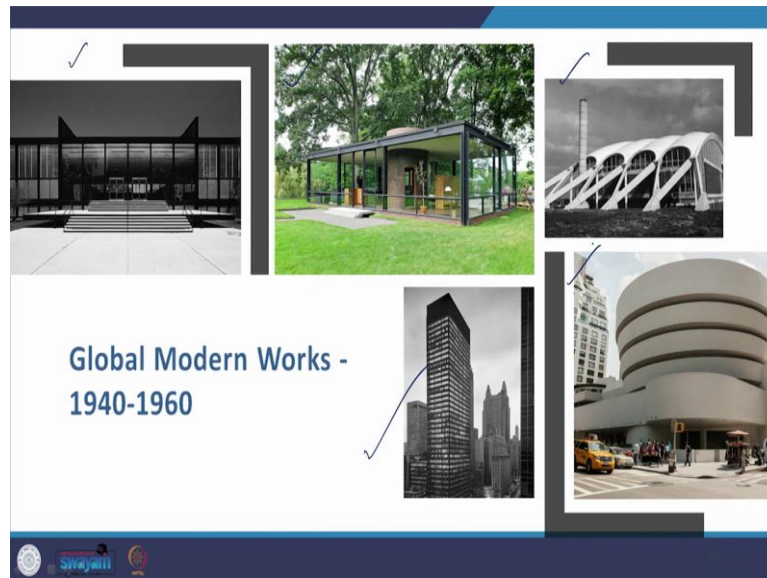
get an opportunity we will look at those ideas later. Now, this has brick walls which are 36 centimetres thick facing on the east, south and west to block the hot sun and the passive cooling is also aided through greenery. So, the entire building has been designed to give a favourable climatic response.

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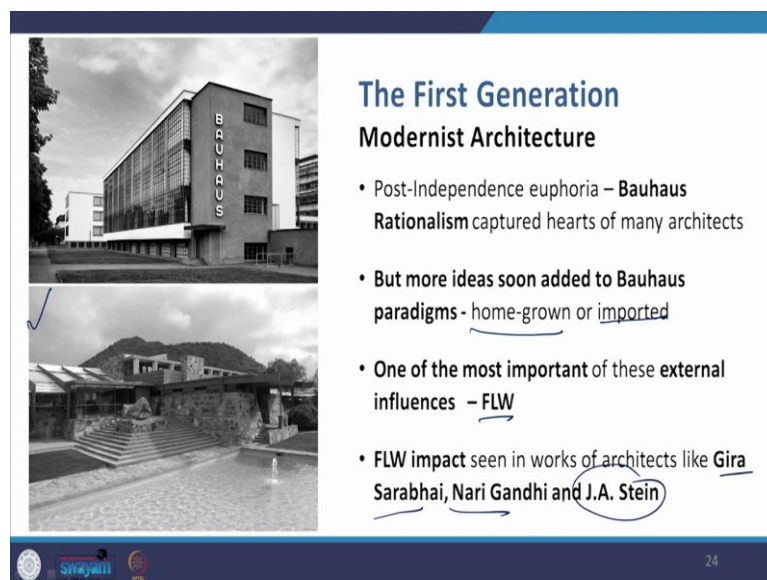
There is natural lighting that is coming from north facing skylights. I will take you back again to give you to show this these are the north facing skylights from where the light is filtering into the building. And the main door is a pivoting square door and it is completely glazed, that also brings in light. And as you can see, glare does not coming because of the projection over the main door.

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Now, what was happening globally around the same time 1940 to 1960 there was buildings like the Crown Hall in IIT Illinois by Mies there was the glass Johnson by Glass House by Philip Johnson. They were the works of Architects like Pier Luigi Nervi there was Mies van der Rohe Seagram Building and the Guggenheim Museum by Frank Lloyd Wright in New York.

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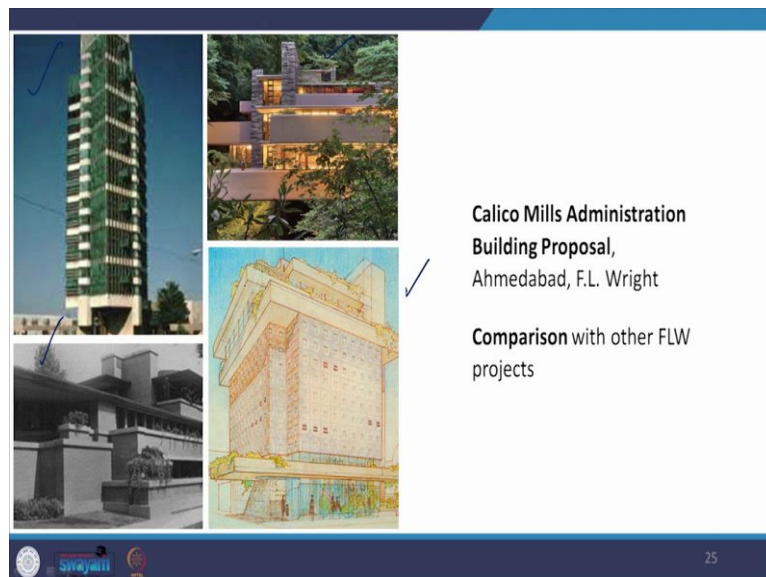
So, the first generation of Indian architects associated with modernist architecture. If we talk about them, there was a tremendous euphoria post-independence, and it was Bauhaus Rationalism that really captured the heart of many young Indian architects. Also, because architects like Habib Rahman, AP Kanvinde and directly come under the influence of Walter

Gropius in America. And even architects say Charles Correa had learned these modernist concepts. In, for example, the University of Michigan where he started, but more ideas were soon added to the Bauhaus paradigm at the Bauhaus palette.

And these ideas are both homegrown and imported. For example, one of the most important ideas was that or the external influence was that of the work of Frank Lloyd Wright and the impact of Frank Lloyd Wright, the organic architectural approach of Frank Lloyd Wright. He said, a house should be off the hill and not on the hill. That means the building should completely merged with the surrounding landscape, the way he would make spaces to flow into each other. The whole idea of the free plan really started came in first in the works of Frank Lloyd Wright and then graduated in the work of younger European architects.

And so, these architects who had trained in this license school or Frank Lloyd Wright, like Gira Sarabhai, Nari Gandhi. They were, they brought that influence into India. Stein did not study under Frank Lloyd Wright, but Stein was influenced by Frank Lloyd Wright, because there was a major part of several years that Stein had worked in the United States and designed buildings executed buildings in United States.

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Now, if we were to see the actual building of Frank Lloyd Wright, none were executed in India, one building he did design the Calico Mills Administration building proposal in Ahmedabad it was never built. But if you can just look at this building, you quick immediately reminded of the design features of Wrights work in the final, let us say 15 to 20 years of his life, we see that happening in the price tower, we see those modernist international style ideas along with this organic approach in the falling water, we see the idea

of vertical horizontal floating planes in the Robie House around 1908, I believe, and we see a similar idea of vertical and horizontal planes in the work of Calico Mills building.

So, this is a kind of the same idea that we find in other works of Wright also being seen in Calico.

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Now, we see the same ideas of organic architecture, free flowing spaces, the way materials are used in forms are used in the works of Nari Gandhi. We see the way spaces are put together in the works of Gira Sarabhai in a one house that she did that she designed in Ahmedabad and also in the NID building that she had done in NID. The National Institute Design building this is the one.

And if you look at the similarity between this house she designed so this is the spaces the way the flow of spaces is taking place. And this is the terrace of a falling water. So, if you look at this house in the way, the view is through and through from one end to the other through the glass, and we find a similar thing in the falling water and the way the planes are organized in NID.

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J.A. Stein

Egs. of growing modern architecture in India – group of institutional buildings adjoining ND's Lodhi Gardens ('Steinabad') -

- Ford Foundation, 1969
- UNICEF Building, 1981
- India International Centre, 1959-62
- India Habitat Centre, 1993

Other projects - Kashmir Conference Centre, 1983

Continued consistency in line of thought about architecture

Now, Stein example of growing modern architecture in India with a group of institutional buildings, that he designed in adjoining to the Lodi Gardens of New Delhi. In fact, this group of buildings resulted in this area being called Steinerbad because there are several buildings done by him there is the Ford Foundation, the UNICEF building, the IIC and IHC in 1993, all of them in a very limited radius around the Lodhi Gardens or in the Lodhi estate area. Other projects that he did for example or the Kashmir Conference Centre in 1983, this is the one and there was a continued consistency in his line of thought about architecture.

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F.L. Wright and Beyond

Though Stein little direct contact with FLW, his work of 1950s – India International Centre, 1959-62

And

Early 1960s – American International School, 1962-68

Organic in aesthetic character + alliance with nature shunning formal orthogonal geometries and abstract formal compositions, of Rationalists

Now, if we were to see FL Wright and beyond in India, those Stein had written direct contact with FLW in his works of the 1950s like the IIC and his early 1960s work of the American

International School in 1962 to 68 or approximately this is the same time parallelly these two projects have been done. There is an organic aesthetic character to these buildings, there is an alliance with nature without and at the same time shunning or doing away with the formal orthogonal geometries of modernist architecture. They are there, we will see that in IIC, but he breaks that orthogonal geometry.

And there is the, and he also does away with the abstract formal compositions of rationalists, hence buildings are more down to earth, they are more in tune with the climatic realities of India, they are a more serene in the way the spaces have been created. And we will look at that, that does not in any way negate the ideas of modernist architecture, the rationalist ideology of modernist architecture that just puts it in perspective with regard to Indian conditions.

So, we will try to look at those examples again and again, we have already seen the example of Gandhi Smarak Sangrahalaya where modernist architecture has been brought down. The minimalism of modernist architecture has been wedded with Indian architectural ideas. So, I will stop here with this. And in the next presentation, I will start with the works of Stein, particularly the India International Centre.