Modern Indian Architecture
Professor P. S. Chani
Department of Architecture & Planning
Indian Institute of Technology, Roorkee
Lecture 32
Critical Regionalism in Indian Architecture - Part 5

Hello students we will now come to this last section of Critical Regionalism in Indian Architecture as of now. And then we will move on to other presentations discussing what happened around with regard to structures and post 1990s. And then again, when we come back to the very fag end of our study of Modern Indian Architecture. We will look at the latest works being done under critical regionalism by some of the young architects and firms today. So, we will conclude with that there. But today, we move on from here.

As I told you, that critical regionalism is a fusion of modernism with the regional identity or regional architectural identity of region. And one of the reasons why it is done is because architects realize that we cannot, we must take advantage of the climate to make our buildings thermally comfortable, for example, to be comfortable from within, because we could not afford the high level of air conditioning or heating or cooling required for these buildings. And these were big building projects post-independence.

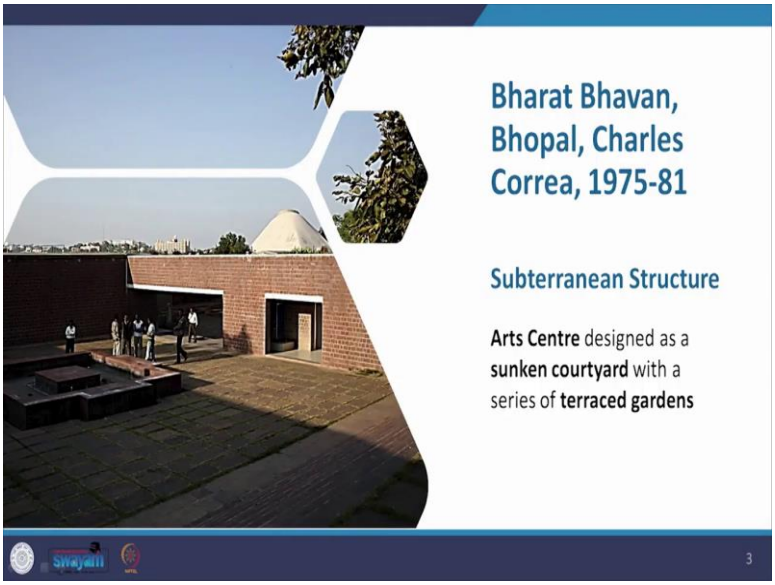
So, that is why they had to rely on passive techniques. Passive techniques that were learned over a period of centuries by the people living in that region of India. And they then took those principles and adopted them in a modern context in their buildings. Because of this adoption being done, they had to do a lot of hard work in the overall planning and design of the building. Because other issues also came in things like views, which is very important in this particular project, the use of the site topography, the climate of the region and even to the extent of the socio-cultural value systems of the people.

They did not neglect any of these aspects in designing a holistic building, which is a modern Indian building. I will never get tired of saying this again, again, if I have to see a modern Indian building. These are the buildings I will be looking at or the buildings that are being built by younger Indian architects today, who are taking cognizance of these very facts when they design their buildings. It is so easy to design, a very fabulously looking glass and steel or RCC and steel, RCC and glass building, which is very it has a lot of fascinating and amazing material all around it and all of fantastic cladding on it.

And the views are being created because there is glass all around it. And there are a large number of levels in the corporate office, etcetera. But the plan has not really been worked upon industriously to be able to respond to the outdoor climate. But like I have told you earlier, this cannot go on for long, because now we have got markers, we have to reduce our carbon emissions to nearly by half by 2030 and become completely carbon neutral by 2070.

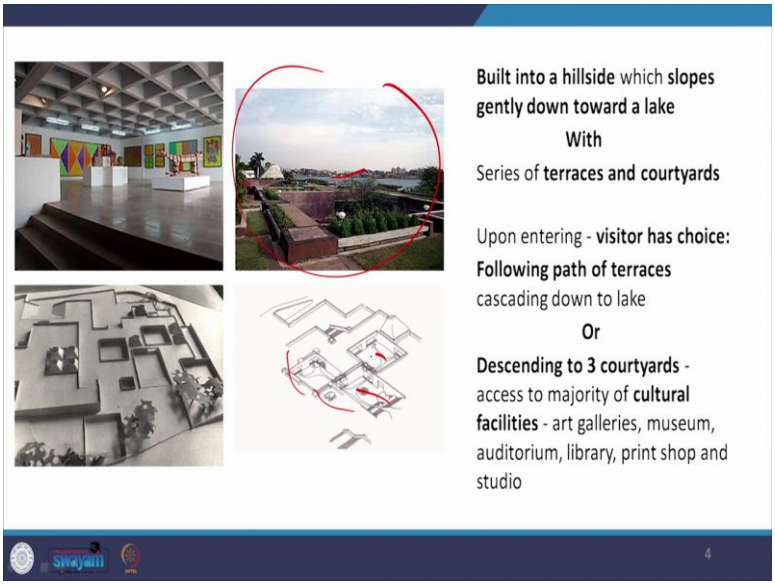
Therefore, those architects who were getting away by designing gas guzzling buildings cannot do so anymore. Or they are depending on the idea of clean energy, which is true that tomorrow will be the world of clean energy. And our buildings, our industries, our infrastructure will be powered by clean energy. There is no doubt about it, but why not be a part of the solution and design buildings that are sound when it comes to this aspect of building design that is sustainability. And while doing so come up with a building that is also beautiful and good looking.

(Refer Slide Time: 04:37)



So, here we have the Bharat Bhavan from Charles Correa 1975 to 81. This is basically a subterranean structure, where the Art Centre is designed as a series of sunken courtyards with a series of terraced gardens.

(Refer Slide Time: 04:53)



It is built into a hillside. So, here again, topography is playing a role. You are not going to flatten it out and make it neutral. He will play with the hillside. And thus he will expand the amount of work he has to do to play with that, why, because he will have to bring in levels in his building. He will have to create the kind the sight and the view of the Bhopal Lake, as you see here in this picture out there in the distance is going to govern the design of the Bharat Bhavan.

He is not coming to the site with an imaginary Bhavan in mind. He is coming to the site and then imagining the Bhavan that will fit onto this site. Am I speaking the language of Frank Lloyd Wright? Am I not saying the house must be not on the hill, but off the hill that the building must respond to its location, its topography, its climate, its vegetation, its available materials. My design should not be a preconceived hypothesis. My design should be a result of the existing conditions that I see.

As in when I go, see the site and study the condition of that region, then should the image of the design start floating in front of him. There is no doubt that all architects have some general idea of the building they want to do when they start thinking about it, but it must be greatly tempered by all these conditions. And thus it was tempered.

Bharat Bhavan is an iconic building or a building, which is so low key that it really does not even have a proper elevation. I have been trying to find one shot that would define it as the elevation of the building, it does not exist. It is just a series of levels that are interconnected sunken courtyards and terraces. That is all there is. And within that the entire Bharat Bhavan

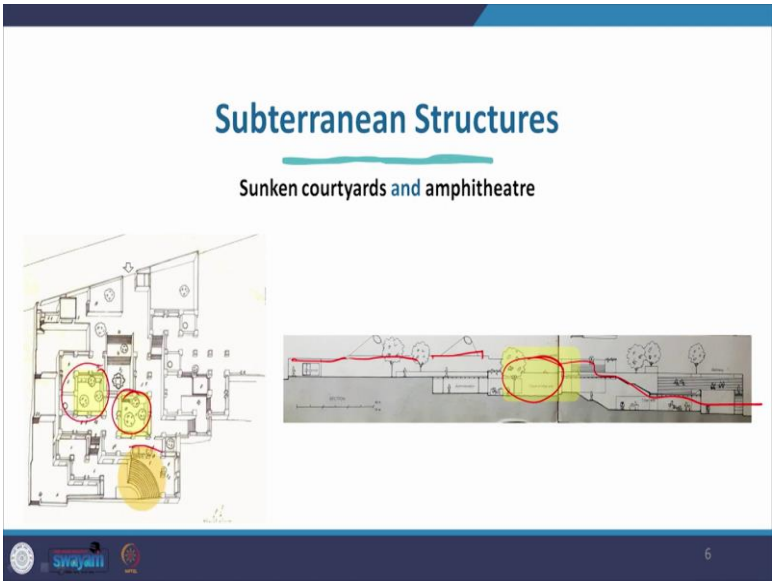
has been put together. Beautifully done. There are a couple of more projects which we reflected on earlier of Charles Correa and you can look at them too. They are the predecessors of this project.

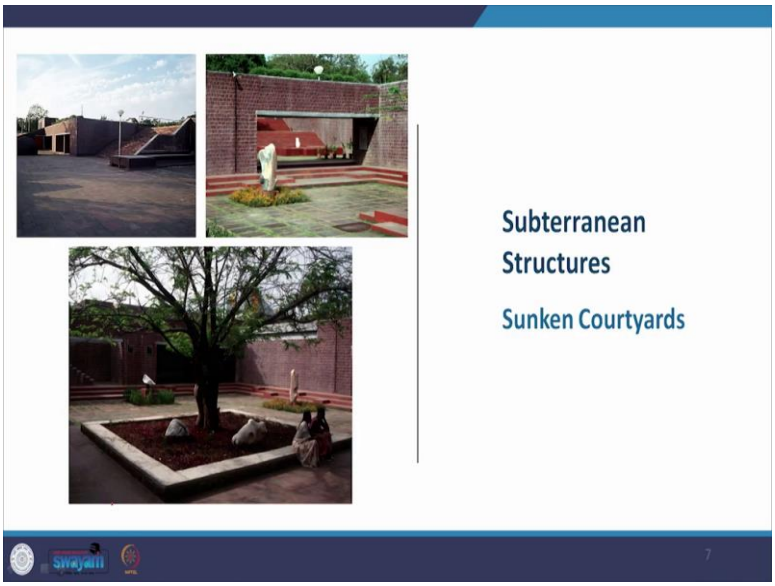
Now here we have this built into a hillside which slopes gently down towards the lake. And thus a series of terraces and courtyards were set up. So, upon entering the visitor has a choice, he can either follow the path of the terraces and he can which are cascading down towards the lake or he can descend into the courtyards and get access to majority of the cultural facilities, the art galleries, the museum, the auditorium, the library, the print shop and the studio.

(Refer Slide Time: 07:43)

This is a picture of one of the art galleries, sunken. The natural contours of the site where we were used to create these terraced gardens and sunken courtyard. So, this is a terraced garden and you look down into a sunken courtyard.

(Refer Slide Time: 07:58)





Now when we look at the subterranean structure of sunken courtyards and a sunken amphitheater. In the section, this is the showing of the sunken courtyard. These are the terraces that you will be following as you go down, down, down, down towards the lake. And then here in plan, these are the courtyards and this is the amphitheater. So, these are the sunken courtyard that you see on site.

(Refer Slide Time: 08:30)

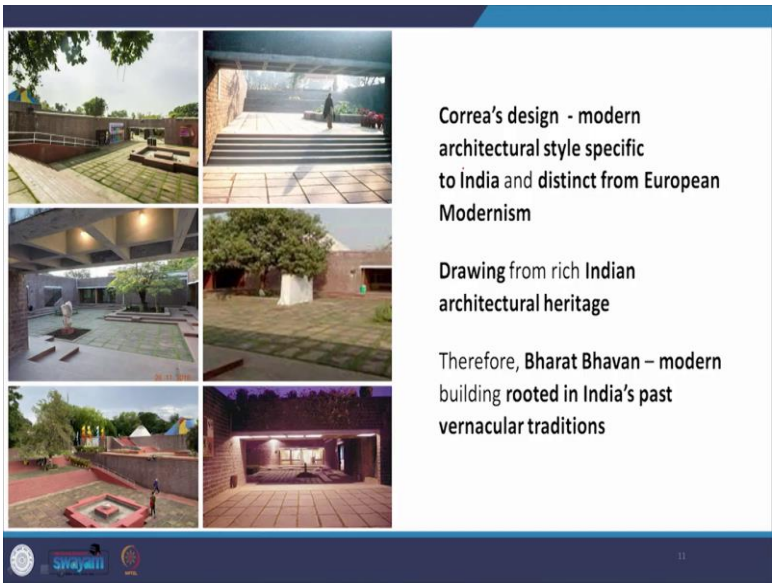
And this is the amphitheater with the play going on. And the amphitheater is looking towards the lake. It is at the bottom of the site, with open air performances taking place, with the lake forming the backdrop, the formal backdrop or the natural backdrop. These are the galleries, which are a part of the, which open up from the sunken courtyards.

(Refer Slide Time: 08:54)

Then also the idea of the ritualistic pathway. If you go back to some of my lectures, some previous lecture where I talked of the ritualistic pathway, where Charles Correa is using the pathway movement of a temple or a palace or even a village, that ritualistic movement to create the movement within his building. I have talked of an earlier museum by him where he had used the ritualistic pathway. Here also it happens.

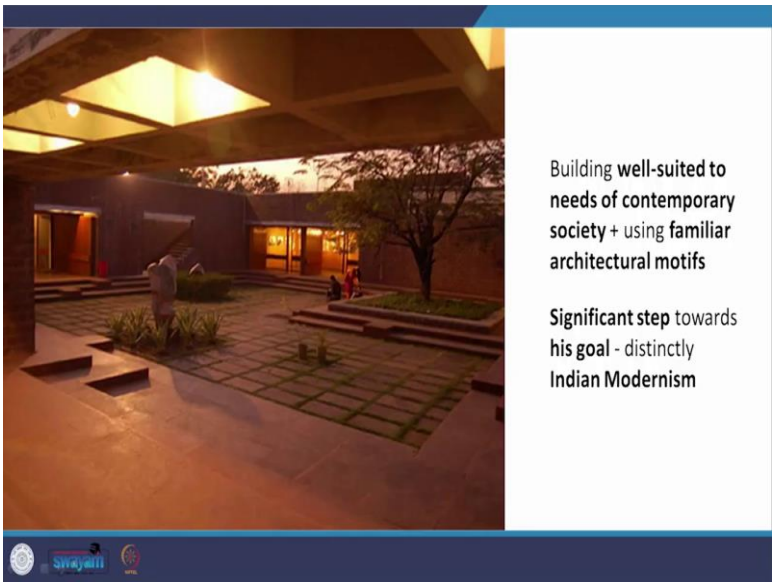
The pathway here is through terraces, encouraging the movement of people along the natural gradient of the site. And courtyards on the way, provide as relaxing areas. There are tranquil spaces we can just sit down and rest and relax.

(Refer Slide Time: 09:40)



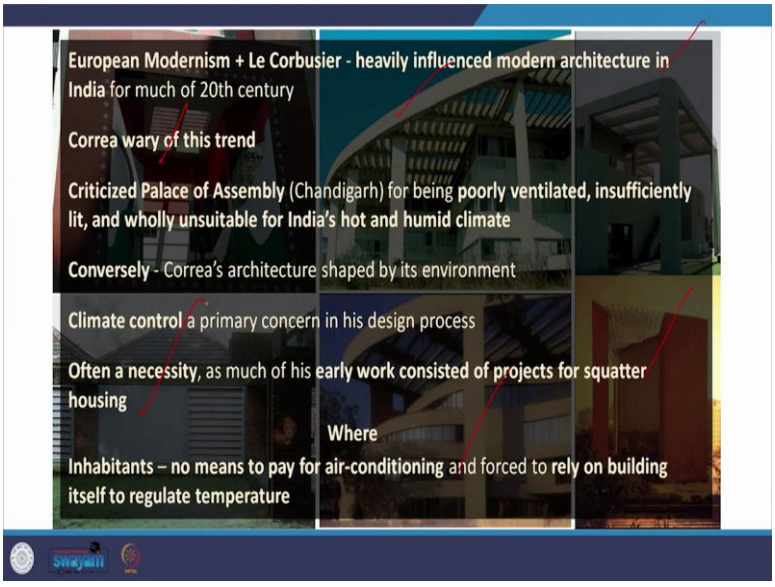
So, Correa's design is modern. It is a modern architectural site specific to India, distinct from a modernism which is for Europe. This is modernism, which is for India. It is drawing from India's rich architectural heritage. Therefore, Bharat Bhavan is a modern building, which is rooted in India's past vernacular traditions. The traditions of open spaces, courtyards and terraces, the chhat and the aangan, all playing their role in putting this building together.

(Refer Slide Time: 10:17)



It is well suited for the needs of contemporary society, which has got familiar architectural motives that respond to the man of the 80s. But he also took significant steps in his goal to create a very distinct Indian modernism.

(Refer Slide Time: 10:32)

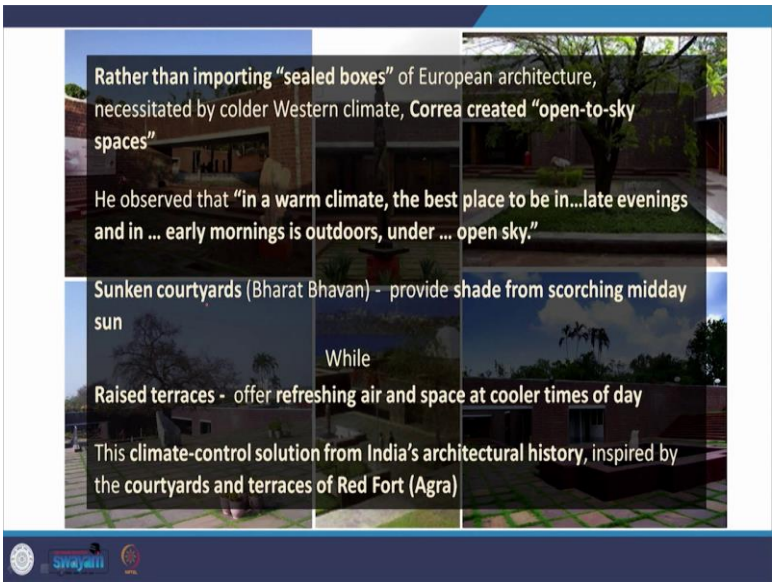


These are some of the buildings of Charles Correa. This is the Consulate building he did in New York. This I have started with you. This is in Mauritius, this is in Bangalore, this is LIC Delhi and this is the Gandhi Smarak sangrahalaya. But the important thing are these points. European modernism and Corbusier were heavily influenced modern architecture in India for much of the twentieth century. Correa was very alert towards this trend. He criticized the palace of assembly by for being poorly ventilated, insufficiently lit and wholly unsuitable for India's hot and humid climate, or in that case, composite climate.

Conversely, Correa's architecture is shaped by the climate, by the environment. Climate control is of primary concern to him in his design process. Often a necessity, as much of his early work consisted of projects for squatter settlements or squatter housing, where inhabitants have no way to pay for high expensive air conditioning and are forced to rely on the building itself to regulate the indoor temperature. This is not an idea that restricted him only to squatter development, whether he designed the Ramakrishna house or the Parekh house , of the rich people, whether he designed Kanchanjunga apartments or the high income group people he resorted to the same passive techniques to make the houses thermally comfortable without dependence on air conditioning.

Was air conditioning dependent upon I believe so, but not to the extent it would have been required had the principles not been applied.

(Refer Slide Time: 12:17)



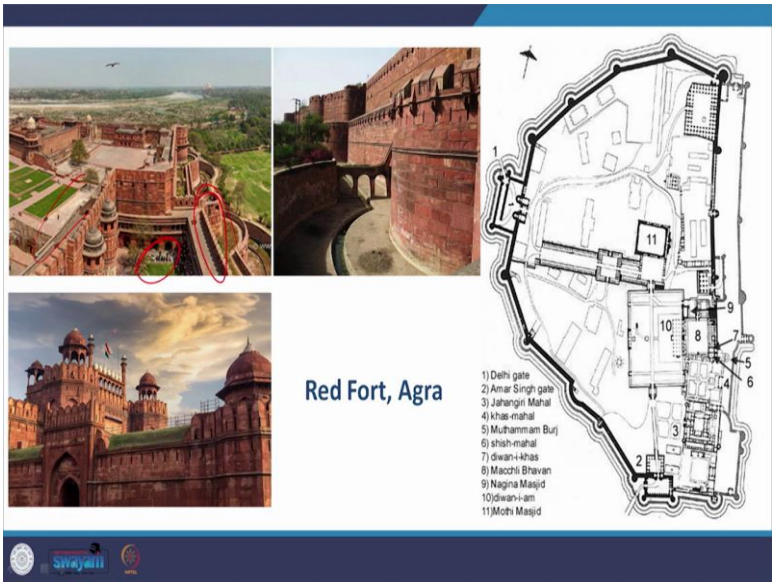
Now, rather than importing sealed boxes of European architecture, which has been necessitated by the Western colder climate, Correa instead wanted to create these open-to-sky spaces. So, vital in India. I do not know whether the young generation gets to see these open-to-sky spaces in the upcoming urban centers of India. But when I was growing up, when I saw Delhi and other places I saw so many open-to-sky spaces were deliberately created. It was a part of our lifestyle to spend the evenings outdoors in summers. And even in winters of course.

When you go out to play in the maidan or the ground or whatever, whatever city afforded, whatever green space and much of the family life was spent in the verandah, or on the terrace

or in the maidan in either early mornings or late evenings in summers and in winters also there are specific times when we could spend time in the outdoors. He observed that in warm climate, the best place to be in late evenings and early mornings is under the open sky.

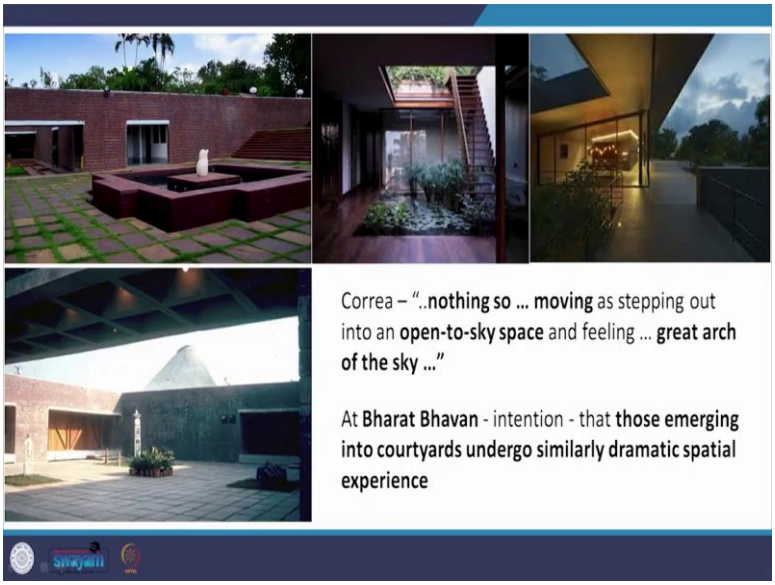
Sunken courtyards, as you see in the Bharat Bhavan provide shade from the scorching midday sun. While the raised terraces offer refreshing air and space at cooler times of the day, exactly what they were supposed to do in the various mohallas and gullies of for example, Delhi or the older part of Delhi, where the chhat was the place where people use to sleep at night. This climate control solution for India's architectural history was inspired by the courtyards and terraces we find even in the Red Fort.

(Refer Slide Time: 14:09)



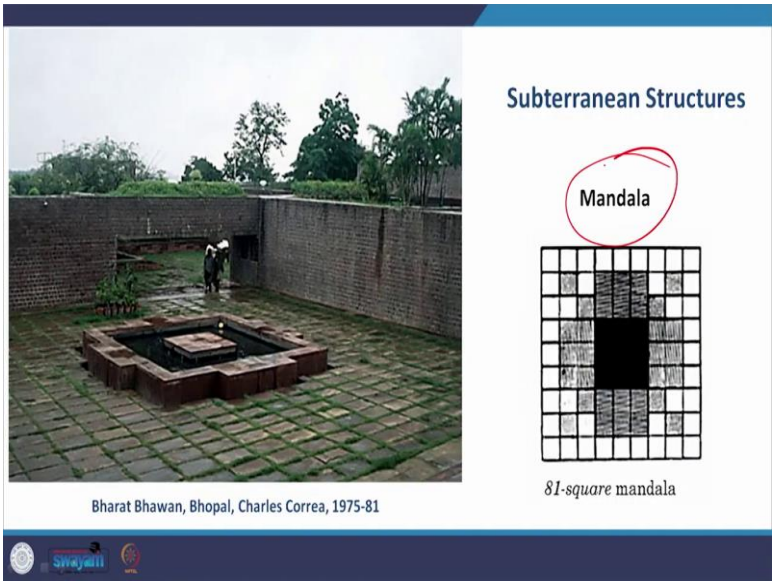
So, when we go to the red fort, we find the same thing happening. We find terraces, we find courtyards, we find all these spaces we brought in here, because this was the vernacular response to the climatic conditions of the region.

(Refer Slide Time: 14:27)



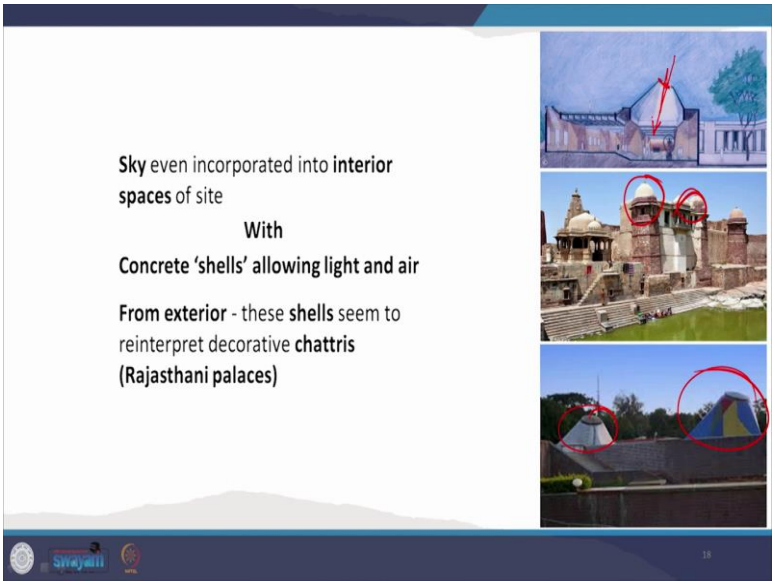
Now Correa says there is nothing so moving as stepping out into an open-to-sky space and feeling the great arch of the sky or looking out towards the horizon. At Bharat Bhavan, it is intended that those emerging into the courtyard undergo the similar dramatic spatial experience of coming outdoors and being able to see the arch of the sky, particularly as the sunsets in the late evening.

(Refer Slide Time: 14:58)



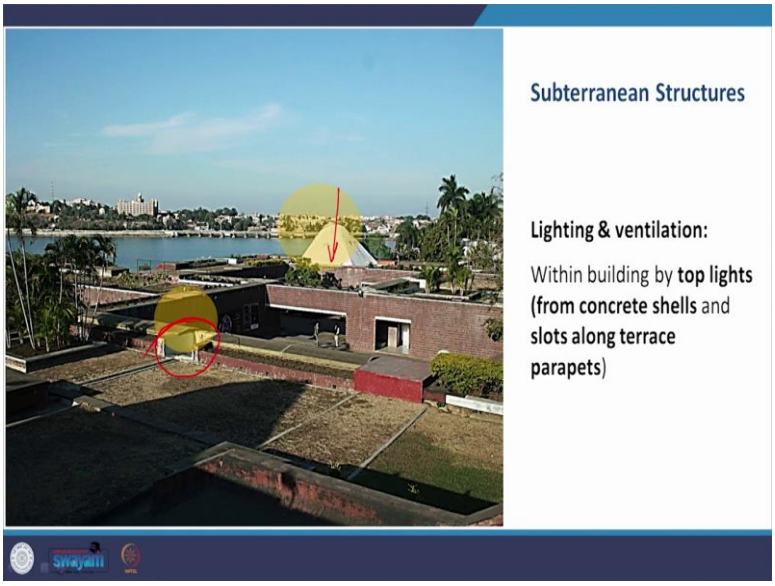
The subterranean structure now is confined to being symbols of passive comfort or the kinds of species that were derived because of the existing topography, which allowed it to continue in the manner, but also because of using the Mandala's form in creating the sunken courts.

(Refer Slide Time: 15:18)



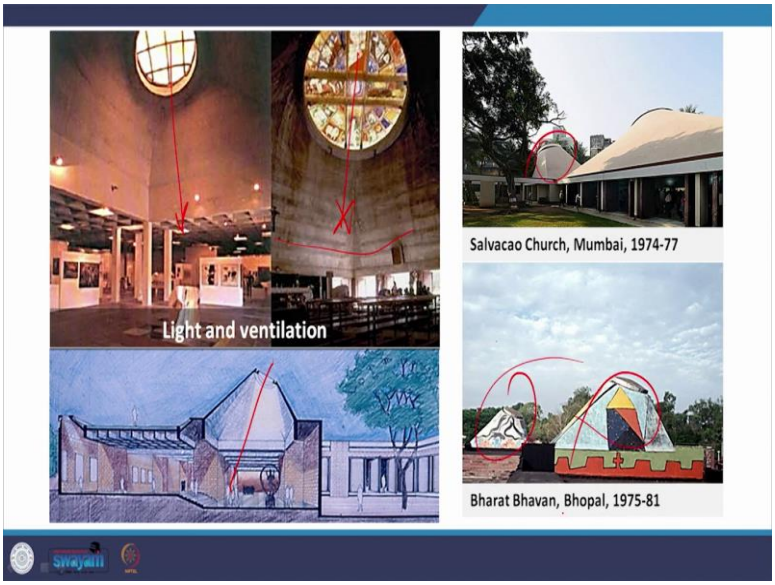
The sky, even incorporated into the interior spaces of the site. So, trying to pull in daylight into the deep interior areas by these concrete shells that you see here, for example, this concrete chairs placed over the terraces and they allow light to filter into the deep areas. From the exterior, these shells are actually a reinterpretation of the Rajasthani Chatri. Only thing is, this got an Oculus, an eyepiece to pull the light in.

(Refer Slide Time: 15:51)



So, what we have light and ventilation, within the building by top lights, from the concrete shells and then to top lights and then there are these small cavities provided slots provided along the parapets of the terrace, which also take in light deep inside the building below.

(Refer Slide Time: 16:14)

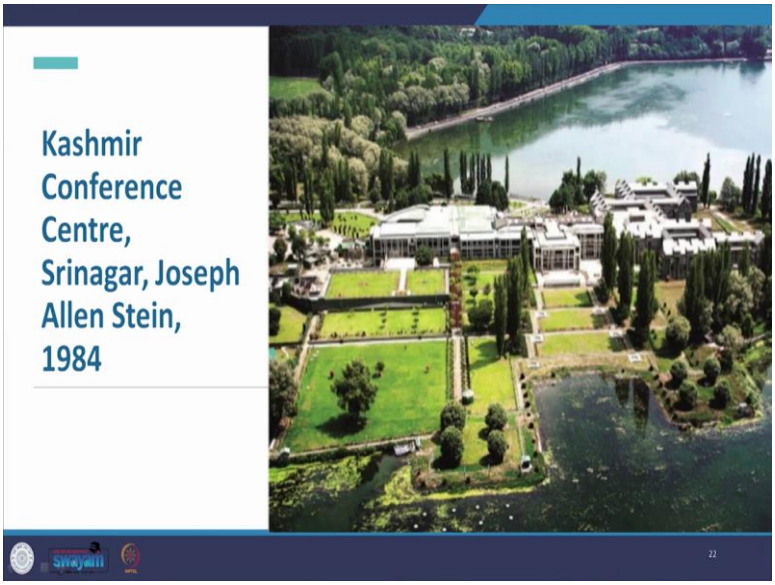


Now, light and ventilation the idea of bringing in light using these concrete shells in Bharat Bhavan actually came from an earlier project maybe about 5, 7 years earlier. The Salvacao church he did in Mumbai, where again, he used a raw concrete finish concrete shell and he used the stained glass dome to pull in light into the Salvacao church. He used the same idea in the Bharat Bhavan and brings light into the interiors. This is the Salvacao church, concrete shell and these are the shells of the Bharat Bhavan.

(Refer Slide Time: 16:50)

So, from the courtyards there are these wide glass paneled openings to ensure that the arts program displayed inside is accessible to all is just move in.

(Refer Slide Time: 17:01)



The next project is on the other side of the climate spectrum. From composite, we are going to cold climate of Kashmir and they were the Kashmir conference center by Joseph Allen Stein in 1984. This conference facility with a 325 room hotel is adjoining the Dal lake.

(Refer Slide Time: 17:23)

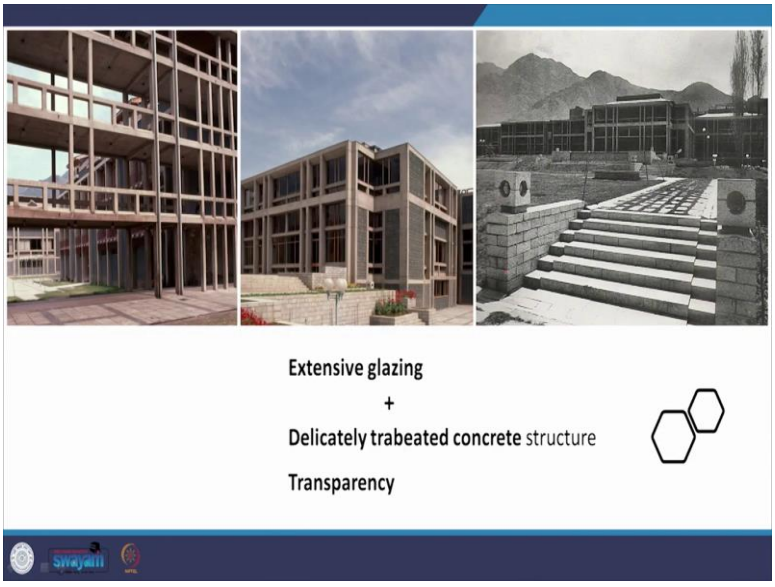
In that case, the project was adjoining the Bhopal lake. This is adjoining the Dal lake. In cooler climates or cold climates of Himalayas. The building has been stripped of all sunscreen textures, because we want the sun to penetrate the building. It is a very lean and elegant in the mountain light when we see it is made of exposed concrete or concrete block construction instead of bricks which are not readily available in the mountains but rocks are

and that is the availability of the material and the surrounding landscape responds to this kind of material.

(Refer Slide Time: 18:04)

Now the formal Mughal gardens we have the Nishat gardens of Srinagar here itself. The formal Mughal Gardens of Kashmir are a guideline for a sensitive intervention.

(Refer Slide Time: 18:14)

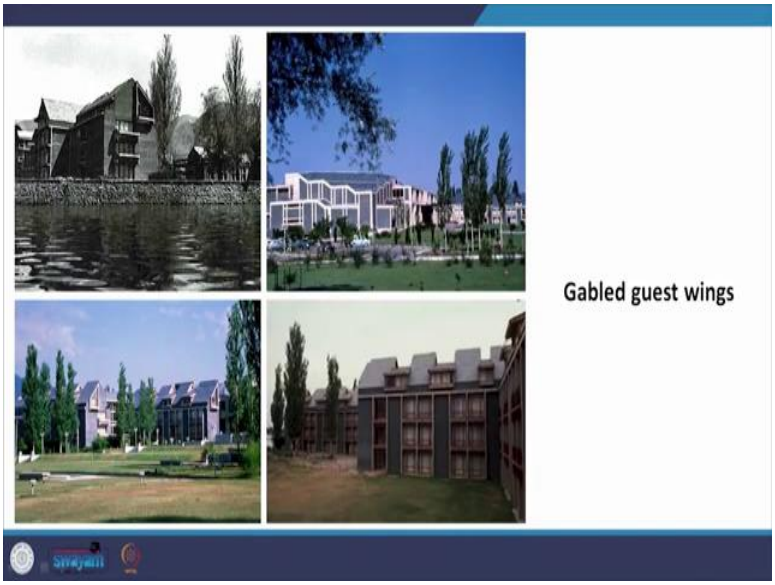


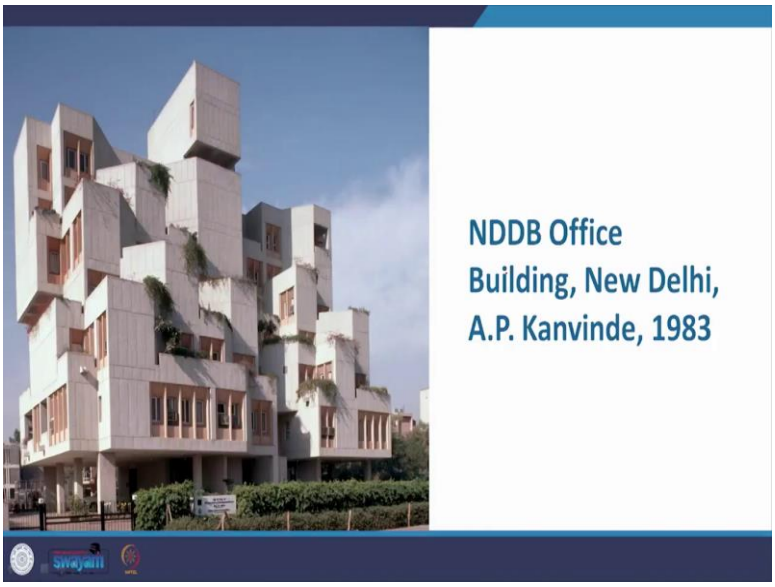
But here again, he does not imitate them ad verbatim. What he does is to bring in maximum sun into the building something that probably Charles Correa, or somebody else would not have done a composite situation. He gives extensive glazing. He gives a delicately trabeated concrete structure. And he gives maximum transparency. All to pull in as much sun into the

building as possible. So, whereas in composite climate, they were trying to keep out the sun and the glare as much as possible. Climate changes, conditions change, building changes, it is too cool in the sun.

Had not been actively controlled building, I can say for sure. The same building design of an active control building in Delhi could have worked equally well in Kashmir. The only difference being from conditioning air for cooling, you can convert that to conditioning for heating.

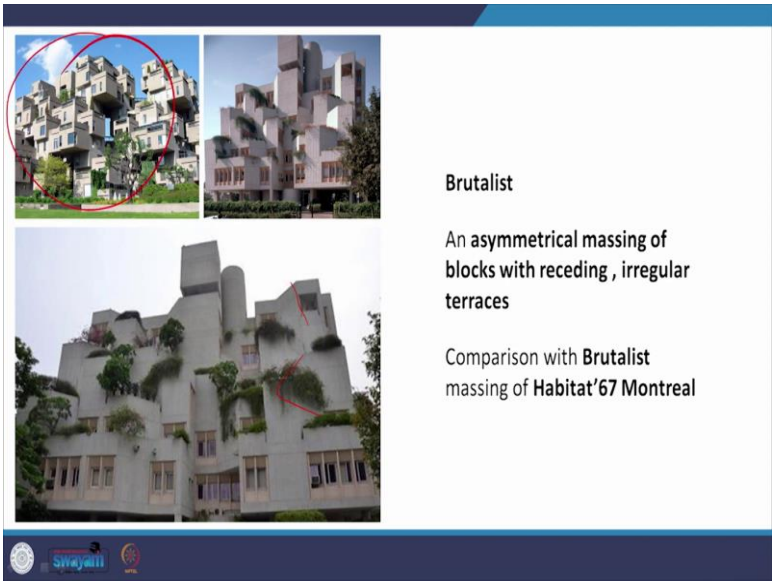
(Refer Slide Time: 19:15)





These are the gabled guests wings to respond to the topography the form of the mountains, the hills behind. Then we have this amazing composition of in brutalism called the NDDB office building by A. P. Kanvinde in 1983.

(Refer Slide Time: 19:34)



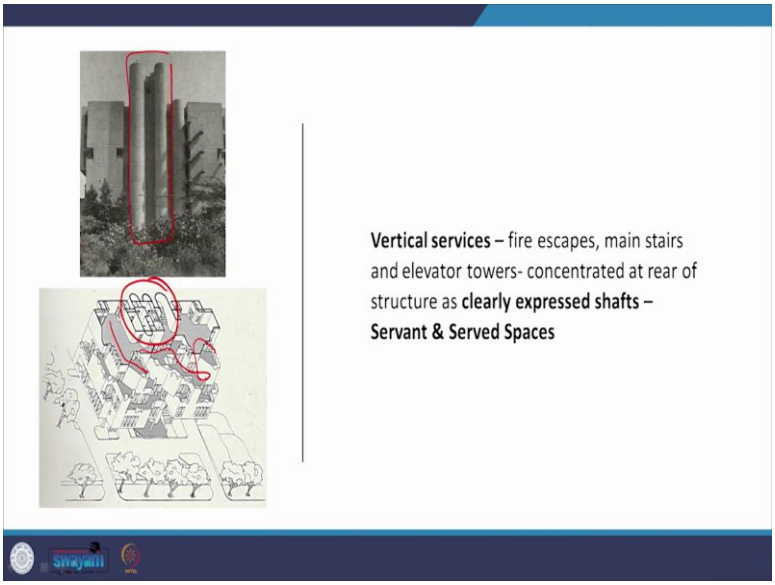
This is brutalist but it is finished with a white cement and rugged stone marble chip work, but it is brutalist because it is rough cast work. It is an asymmetrical massing of blocks with receding irregular terraces as we go up. And the comparison of this brutalist work can be made with Montreal 67, the project of Moshe Safdie the housing project that he did, which also had the series of blocks placed asymmetrically over the entire composition.

(Refer Slide Time: 20:14)

This is an alternative to conventional office planning. The emphasis in office worker amenities and an environmentally sensitive workspace. More exclusive functions that have the chairman, the director office etcetera, are provided right at the top. The larger public

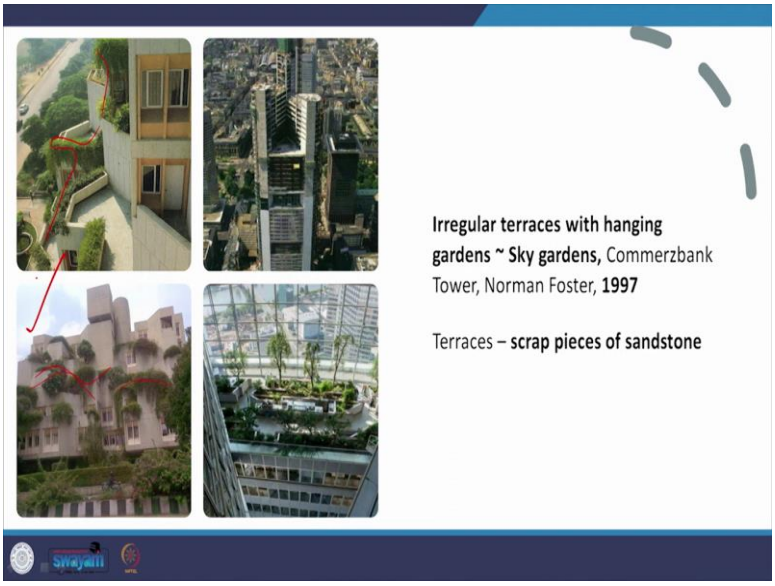
spaces including reception etcetera, are on the lower floors and exterior is rough plaster of marble chips and white cement.

(Refer Slide Time: 20:41)



The vertical services that are provided the back of the building are kept separate that the fire escape, the main stairs elevate towers. So, the served spaces and the servant spaces are clearly defined. If you look at the plan, for example, this isometric here. You can see that these are the servant spaces and these are the served spaces here. So, the ideology of Kahn of servent and served spaces also comes into play in this building.

(Refer Slide Time: 21:13)

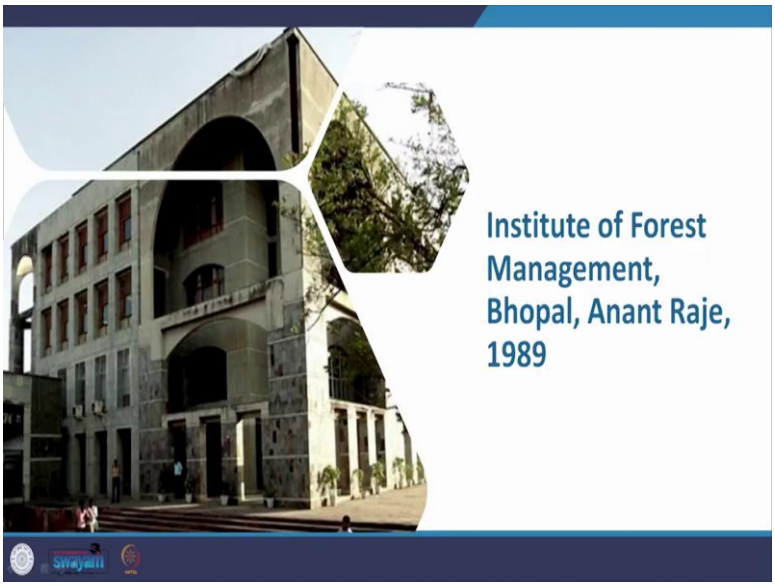


Irregular terraces with hanging gardens have been provided. As you can see here in this picture, these are the various hanging gardens of the irregular terraces. This is the view from

above, as you can see these gardens. Now this same idea of hanging gardens was later applied in 1997 by Norman Foster in Commerce Bank, where he called them Sky gardens. They were not so randomly organized. This in this case, they are more symmetrically more randomly organized. In the case of the Commerce Bank building, they were more symmetrically organized.

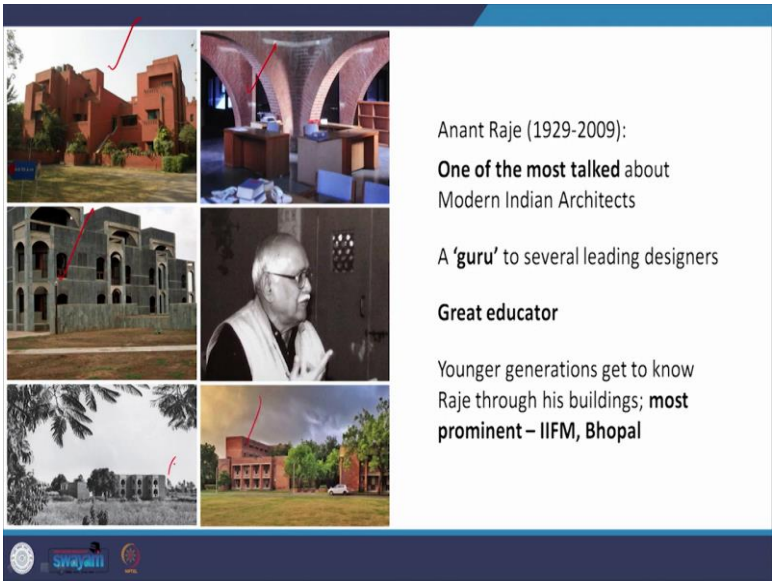
But we have these Sky gardens all the way up the Commerce Bank building. I am not saying that he bought the idea from NDDB building, I am saying that NDDB building, the Commerce Bank and several others are a same chain of buildings who continue to apply a vegetation even at higher levels. The idea of green roofs today or gardens that at high levels is all these buildings are all a precursor to an idea that has now been firmly enshrined in our definition of what entails what makes a green building.

(Refer Slide Time: 22:25)



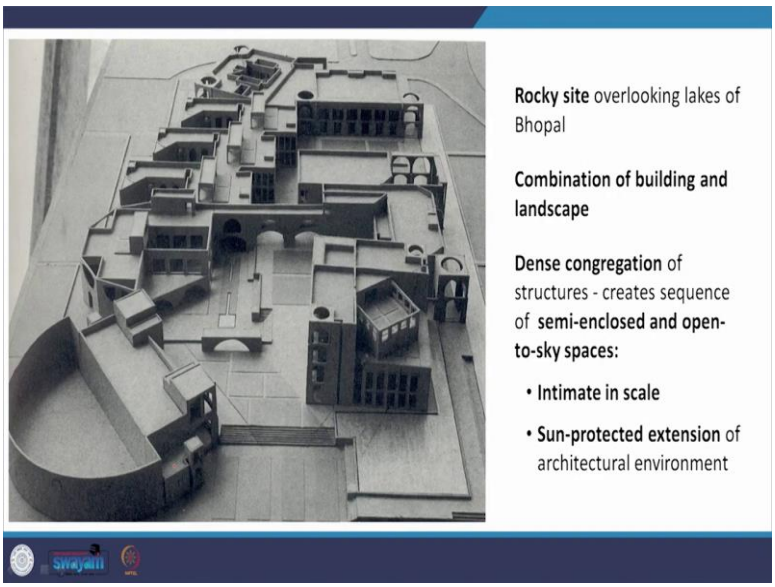
Then we come to the institute of forest management in Bhopal by Anant Raje in 1989. We are very close to the start of liberalization in India.

(Refer Slide Time: 22:36)



And Anant Raja himself is on the most talked about modern Indian architects guru to several leading designers, a great educator. Young generations get to know Raje through his buildings, the most prominent being the Indian Institute of forest management in Bhopal. So, we have projects connected with housing, this is the MDC the Management Development Center in IIM Ahmedabad. This is the IIFM then there are other projects done by him in different places.

(Refer Slide Time: 23:09)



So, here again, the site plays an important role. It is not deviled out. It is not neutralized, but used. It is a rocky site overlooking the Bhopal Lake again as in the case of Bharat Bhavan. It is a combination of building in landscape. Dense congregation of structures are creating

sequences of semi enclosed and open-to-sky spaces. They are intimate in scale, the sun protected extension of the architectural environment.

(Refer Slide Time: 23:41)

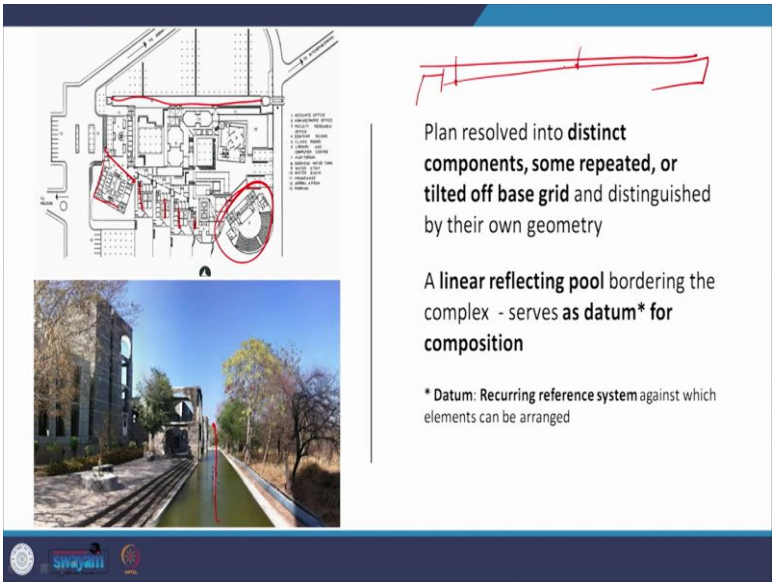
It is a large government project as is Bharat Bhavan as is the Kashmir conference center and as is to a certain extent the NDDB building is also sponsored by the government. In this case, monumentality has a deep there is monumentality, but we see an overall deep impact of Kahn for example, in the element like this or in the arches like this, all reminding us of Louis Kahn's IIM Ahmedabad. It is but got a richer architectural language idiom as compared to Anant Raje's Management Development Centre that I have taught you earlier, because this expands beyond just exposed brickwork.

To play with stone, there is the idea of the Palim says there is the idea of the datum, there is the idea of the way the forms have been created with the light. There is a lightness of form that he generates instead of the heavy blocked massing that he used earlier in the MDC.

(Refer Slide Time: 24:45)

The facilities are related to teaching, seminars, residences and recreation and is set to promote ecologically sound program for forestry. Being so it is needed. The building itself has an ecological responsiveness.

(Refer Slide Time: 25:01)

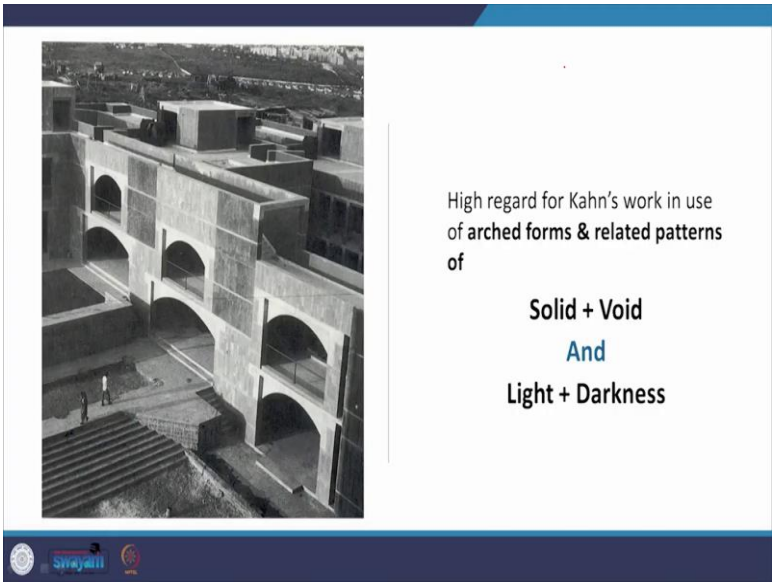


The plan is resolved into distinct components, some are repeated, some are tilted off the grid and are distinguished by their own geometry. For example, this one. There is a linear reflecting pool as you see here, there is a linear reflecting pool, which is bordering the complex and it serves as a datum to the entire composition. Now, what is a datum? A datum is a recurring reference system against which all the elements can be arranged. It is like

example, you can draw a straight line and then all the elements that you arrange in a project are aligned with this in some way or another.

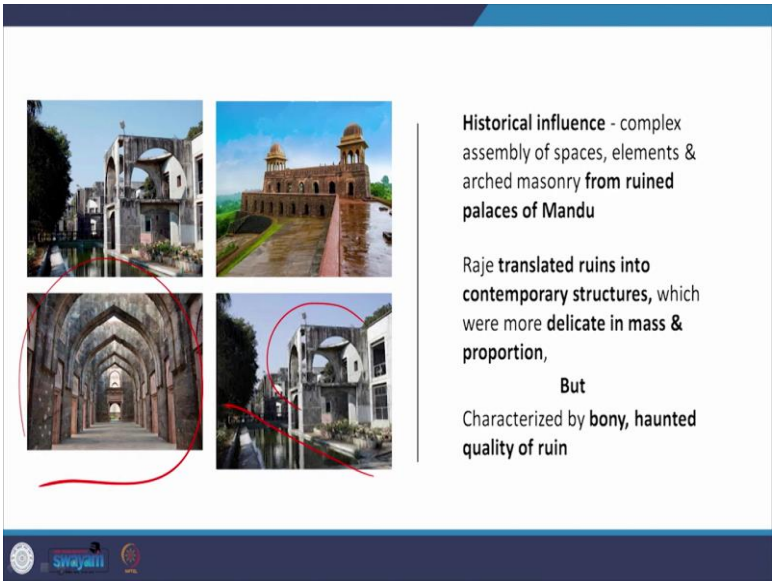
So, that serves as a kind of a reference system for aligning spaces together. In this case this water body which is other functions also serves as a datum also.

(Refer Slide Time: 25:58)



There is high regard in Kahn's work in the use of arched forms and related patterns of solids and voids and light and darkness, coming from where, straight from Louis Kahn.

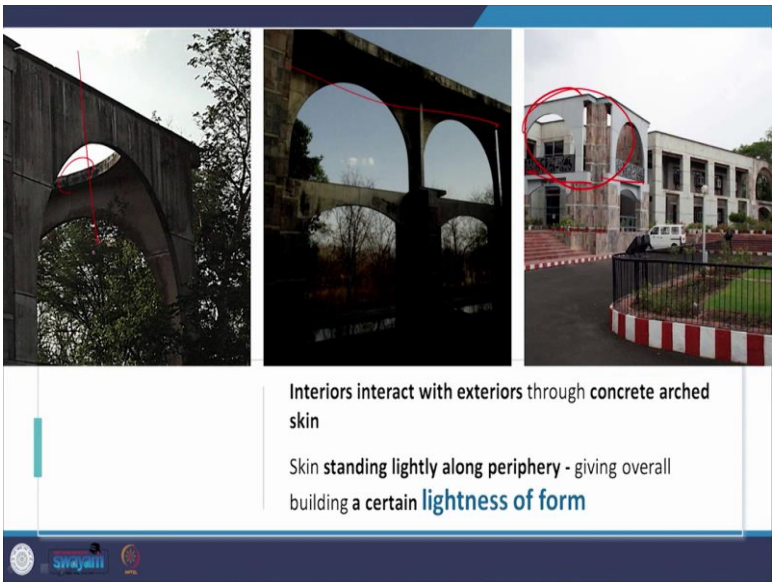
(Refer Slide Time: 26:09)



So, we have this. A historical influence is also there in IIFM Bhopal and that is of the ruins of Mandu, which are nearby. And what does he gather from the ruins of the palaces of Mandu?

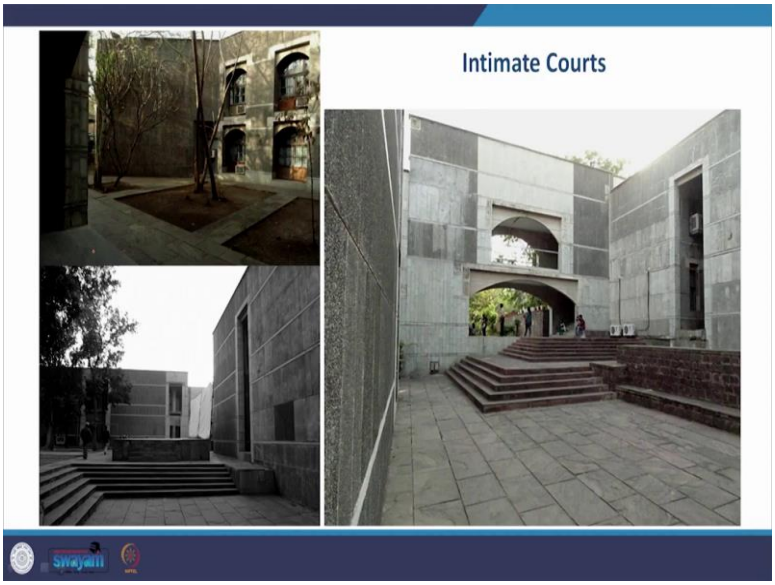
Raje translated the ruins into contemporary structure, which were more delicate in mass and proportion vis-a-vie, the Mandu palaces but characterized by bony, haunted quality of the ruin is there. This haunting quality of this gray stone work of the palace at Mandu is getting reflected here along the datum line in these buildings that are placed here.

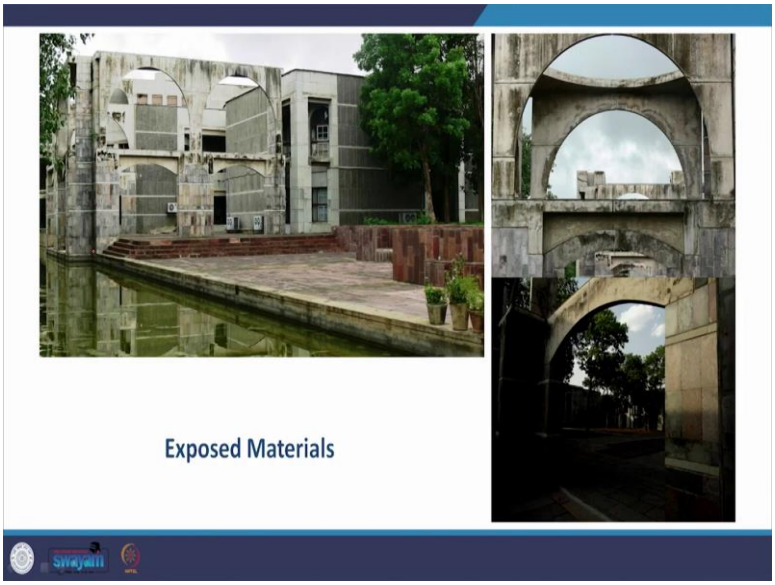
(Refer Slide Time: 26:57)

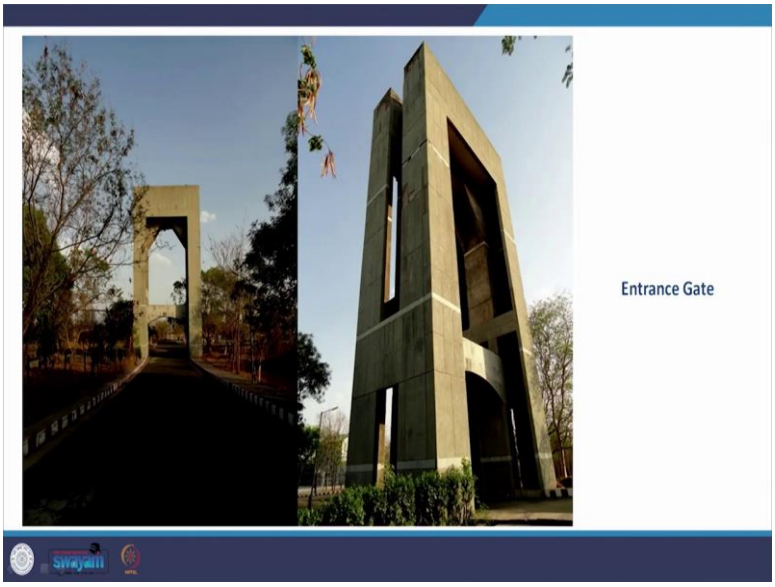


Inside and outside light and darkness is also reminded of IIM Ahmedabad. Interiors interact with exteriors through these concrete arched skin. This one, but this skin suggests lightness of form. It is very lightly along the periphery of the block giving the overall building this sense of lightness of form, the building looks bare bones, thin plates, thin members and not only that, the way the sun filters in from the round openings at the top.

(Refer Slide Time: 27:33)

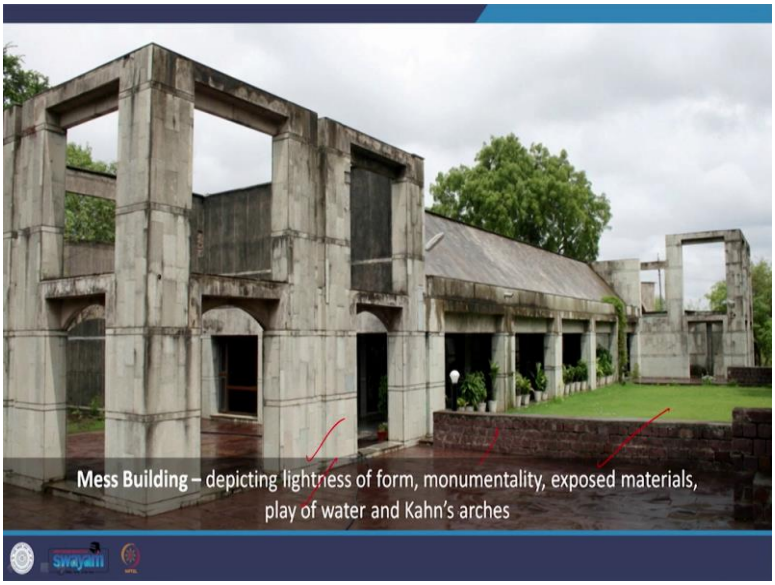






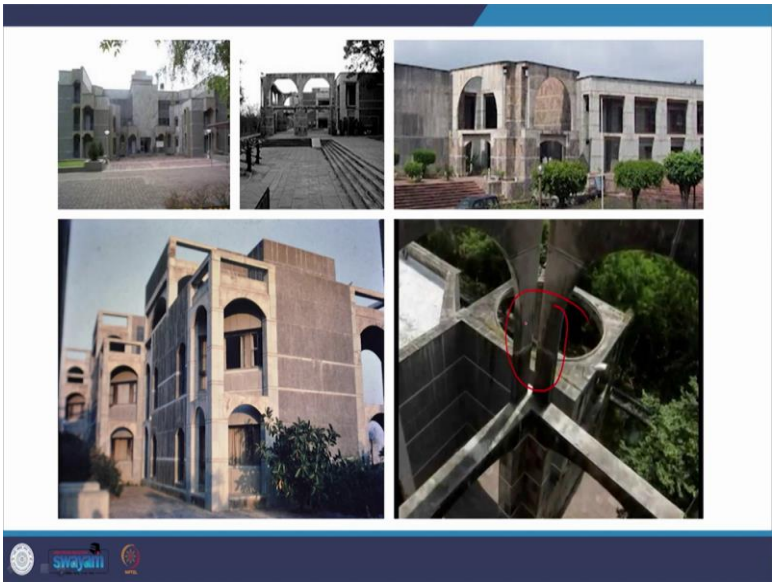
So, intimate courts are there, expose materials are there, entrance gate is there.

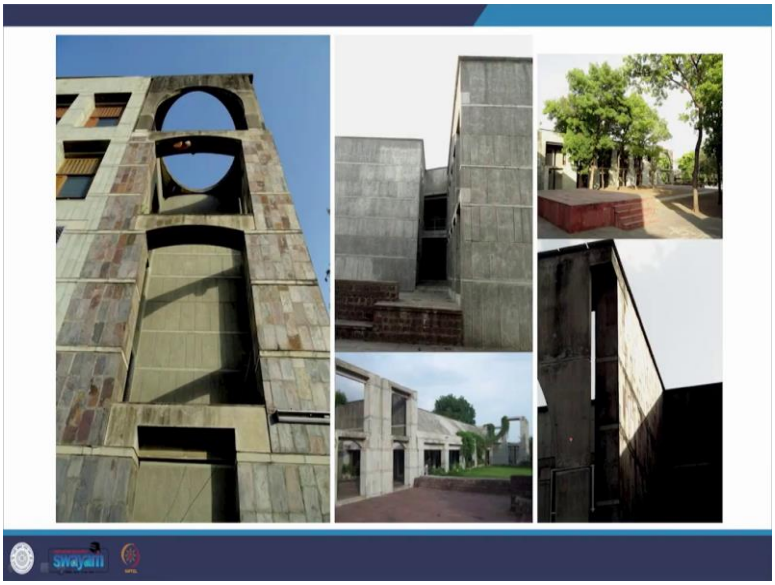
(Refer Slide Time: 27:40)



And let us take for example all these points in one building the mess building we have the lightness of form, the monumentality, the expose materials, the play of water and Kahn's arches all coming together.

(Refer Slide Time: 27:53)



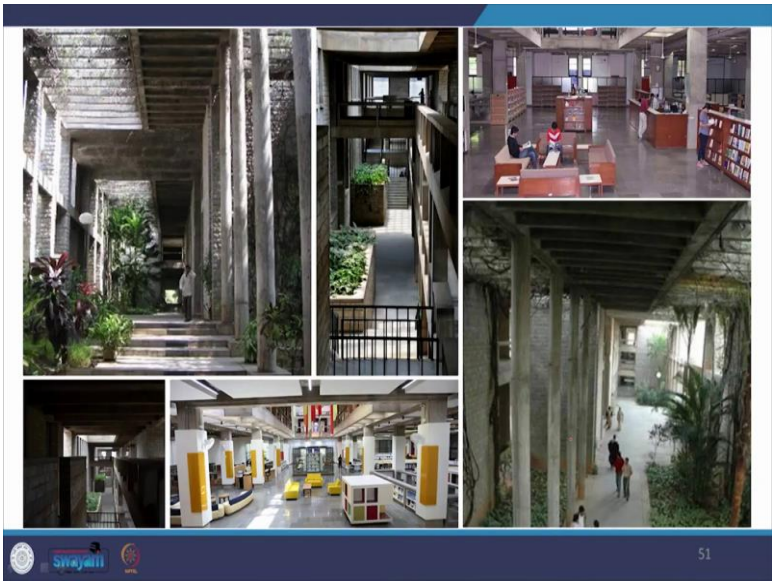


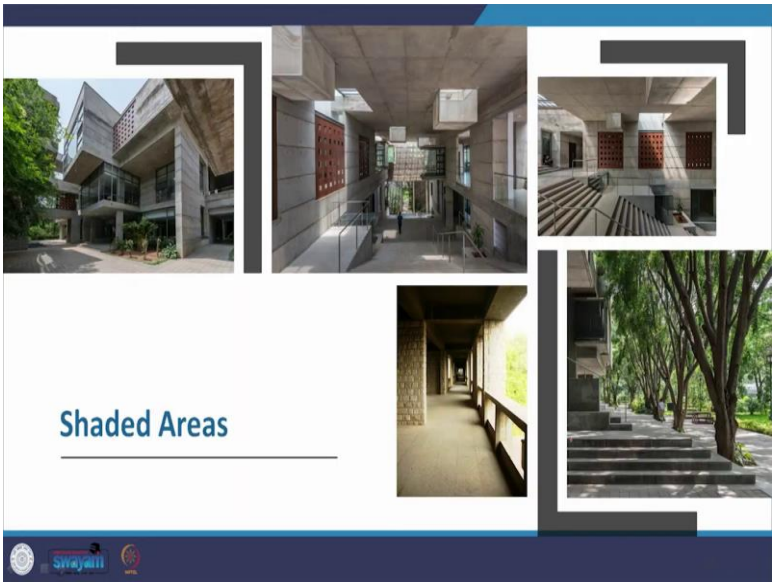
There is some of the other images of IIFM, Ahmedabad. Bhopal, you can again see the lightness of form how delicately this concrete panel has been supplanted over this the beam below it and these.

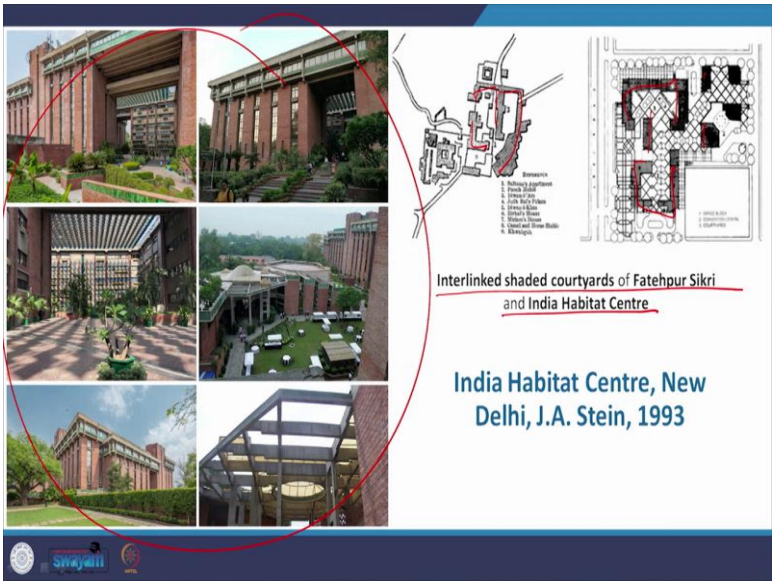
(Refer Slide Time: 28:30)

So, we have essentially seen a series of iconic projects, but there are so many more. There is no end to the amazing work done by many many architects. Some other important projects that you can study in more detail are the Indian Institute of Management in Bangalore by B V Doshi, light and shade and use of raw concrete with expose stonework and greens and blues and an amazing mix of complex of spaces. So, so rich in their architectural language, we can look at that.

(Refer Slide Time: 28:52)







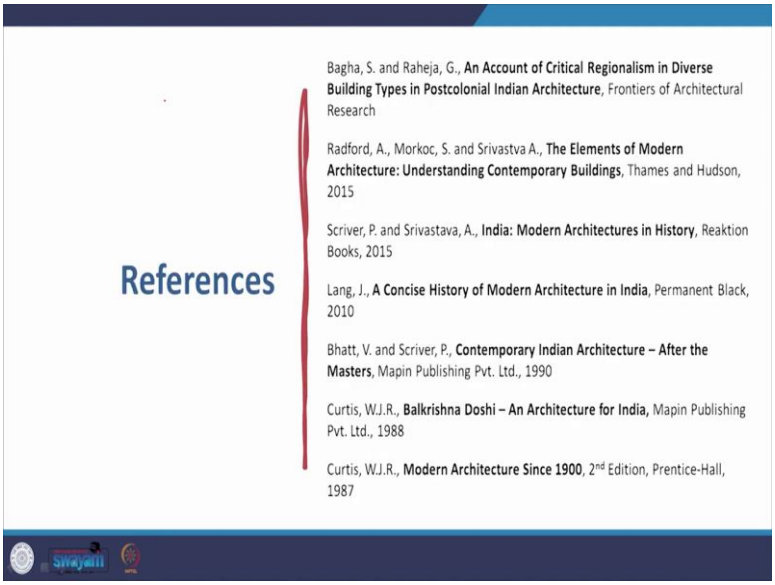
This is IIM Bangalore and the greens of IIM Bangalore. The shaded areas and then there is the India Habitat Centre in New Delhi by Joseph Allen Stein 1993. In fact, the interlink shaded courtyards of Fatehpur Sikri and that of India Habitat Center relate to each other. If this is the Fatehpur Sikri, interlocking building blocks, these are the building blocks that you find in the India Habitat Centre.

And these are the various views of this amazingly beautiful exposed brick and concrete construction with that massive, massive cohort in between, monumental in height, human scale because of the series of floors on either side, very similar to the idea that you tried in fort foundation that is covered with this amazing louvre at the top and the entire space comes alive even in the daytime, even when it is hot, because of the greens and blues implanted in that in that court area.

(Refer Slide Time: 29:55)

These are the interior spaces of the India Habitat Centre in Delhi.

(Refer Slide Time: 30:00)



So, I will close here that we have covered a huge range of buildings of various architects and how they responded to the context of critical regionalism. I do hope that this will have opened up a direction for you to look and search for more. There are many, many more. And there will be a few more that I will teach you at the end of the series. When I will look at the work of the latest younger architects, firms like morphogenesis and maybe total environment, Rahul Mehrotra and Sanjay Puri we will look at some of their books. But for the time being do this much.

Start studying and exploring on your own. We have given you the guidelines, we have given you the pointers. Please start joining them together to get the complete picture. Thank you so much for today.