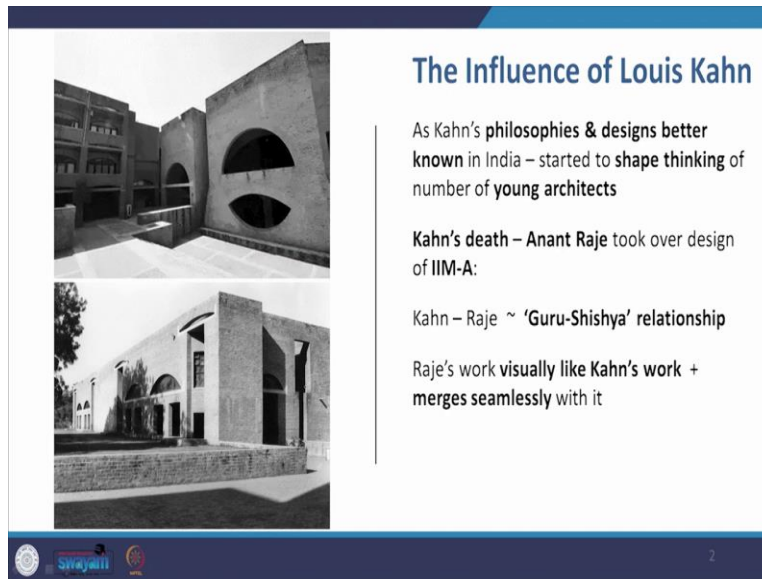


**Modern Indian Architecture**  
**Professor P. S. Chani**  
**Department of Architecture & Planning**  
**Indian Institute of Technology, Roorkee**  
**Lecture 23**

**Western Architects: Louis I Kahn - Part 2**

Hello students, we will continue our presentation of the impact of the works of Western architects in India. And we are looking at the impact of Louis Kahn. We had earlier seen some examples of his works. And we had focused on IIM Ahmadabad. And today we will look at how that impact got translated into works of Indian architects. We will start that sequence with Anant Raje.

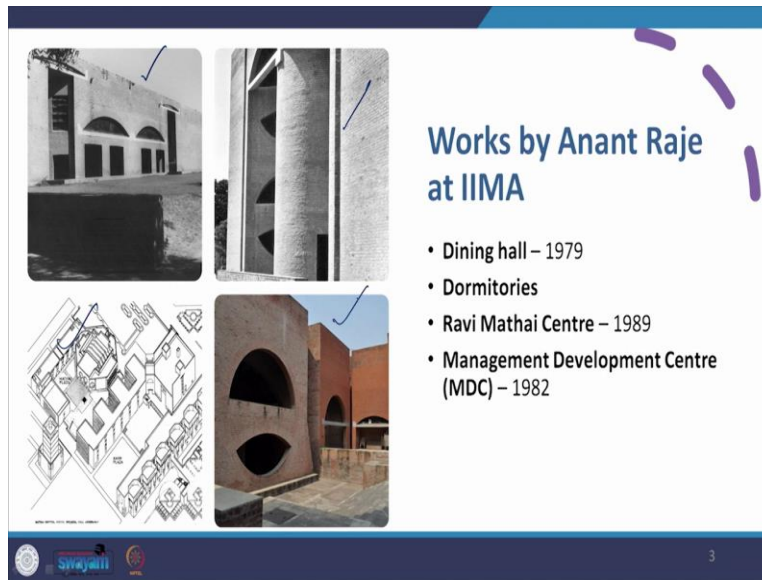
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As Kahn, philosophies and designs came to be better known in India, they started shaping the thinking of a number of young architects, one of them happened to be Anant Raje. After Kahn's death, because IIM Ahmadabad was not yet complete with the design that Kahn had done. Anant Raje to cover the design of IIM Ahmedabad.

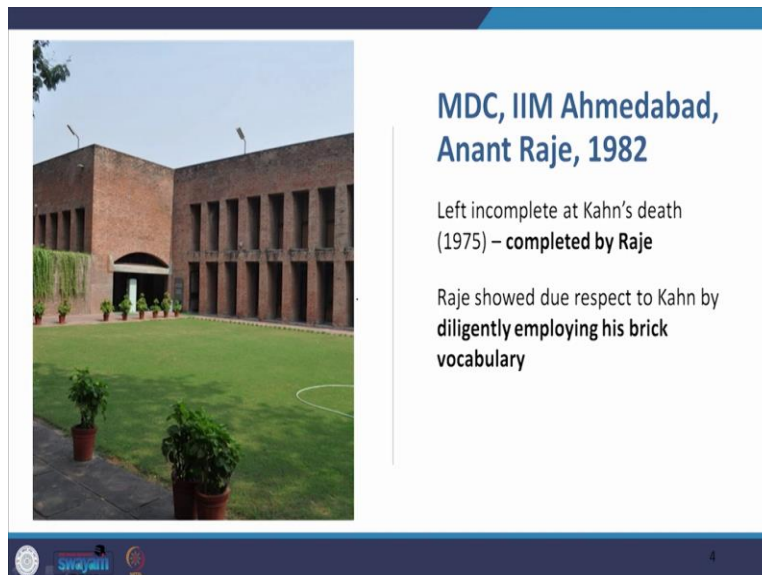
And in fact, Kahn and Raje shared a guru shishya relationship, Kahn's work or Raje's work are visually like Kahn's work and merges seamlessly into the works of IIM Ahmadabad. So much so that if you were to look at the pictures of IIM Ahmadabad, you will be hard pressed to know where Kahn ends and Anant Raje begins, unless you are familiar with some of the nuances that differentiate the works of Kahn and Raje.

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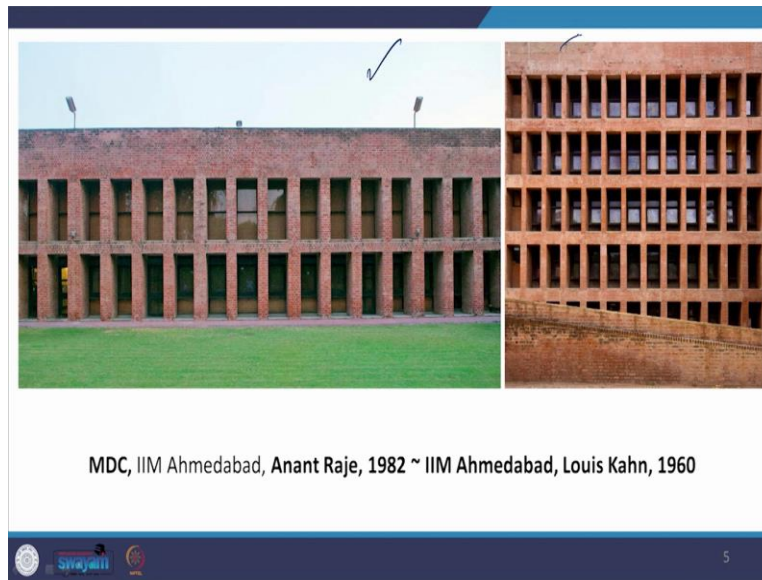
Now, the works of Anant Raje at IIM Ahmadabad include the dining halls that he did in 1979. There are two dormitories that he designed. Then there is the Ravi Mathai centre that was designed in 1989. Most importantly, the Management Development Centre MDC that was done in 1982.

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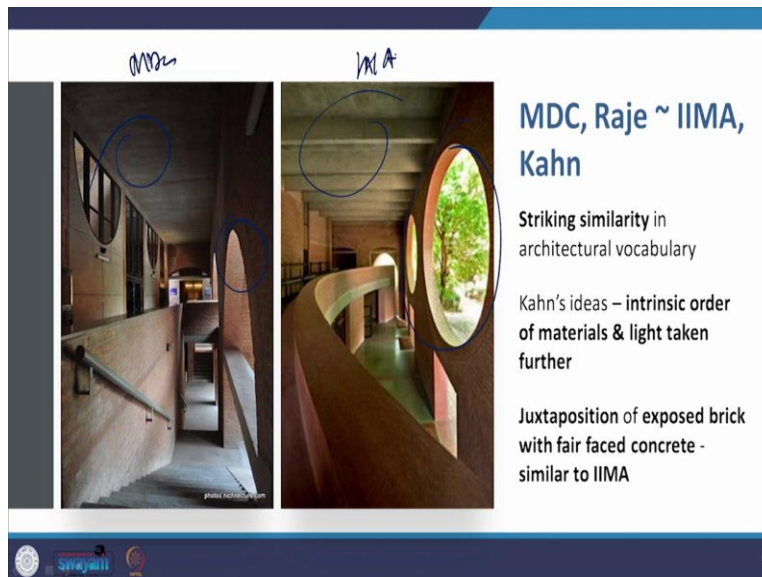
Now, the MDC was left incomplete at Kahn's death in 1975, when he died in 75. And it was completed by an Anant Raje. Raje showed due respect to Kahn, by diligently employing his brick vocabulary.

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For example, when you look at MDC and compare it with the faculty wings of Kahn, you find there is such a tremendous correlation between the brise soleil or the sun breakers provided on both the facades. The only difference happens to be the number of floors, both of them are a brise soleil provided on a human scale.

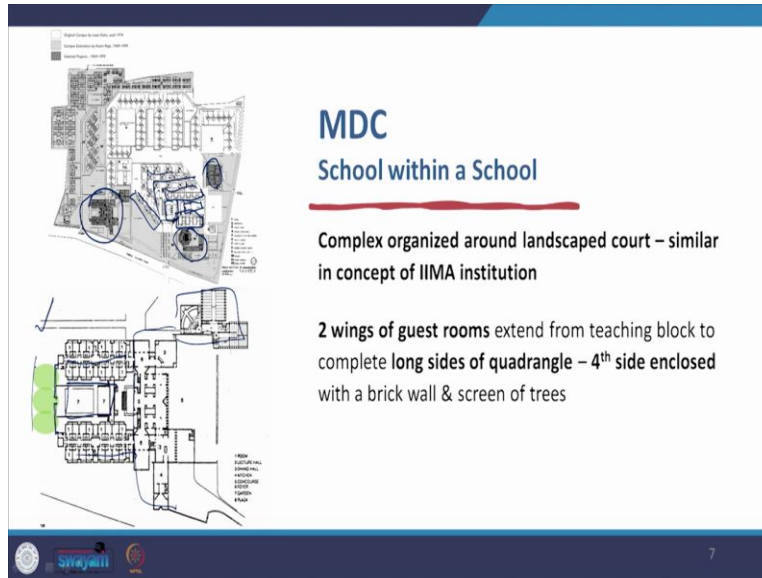
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Again, there is a slight striking similarity in the architectural vocabulary, Kahn's ideas of intrinsic order of materials, and light were taken further by Raje. There this juxtaposition of exposed brick and exposed concrete, as in the works of Kahn, and Raje takes it forward in the

MDC , this is the example of IIM Ahmadabad, I mean, the old the main campus, designed by Kahn.

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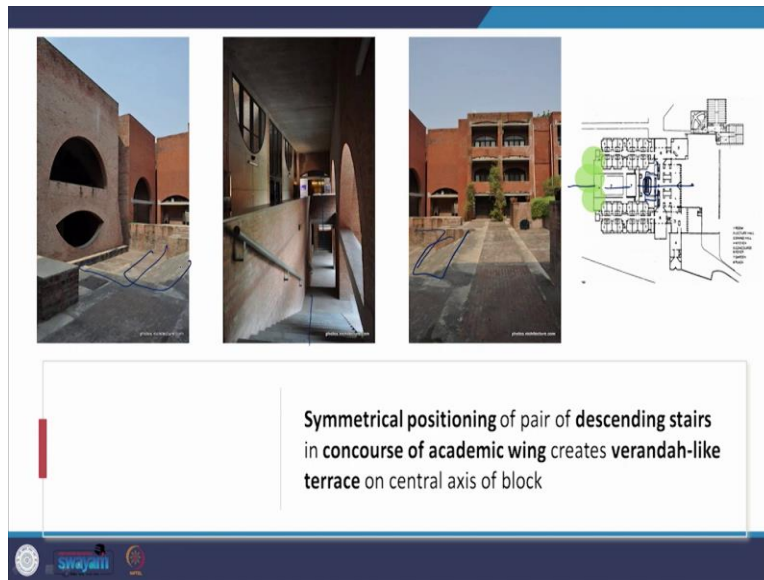


So, MDC happens to be a school within a school. It is a school within IIM Ahmedabad. It is a complex, which is organized around a landscape court, similar to the idea of the LIK Plaza, around which the institutional area of the old campus was designed. So, we have the LIK Plaza here, we have this lecture theatres, the library, the faculty wings, and we have the dormitories behind it.

Now, these three dormitories that you see have been designed by Anant Raje, whereas this entire set has been designed by Kahn. So, this is where the MDC is - The Management Development Centre. This is where the Ravi Mathai Centre is supposed to be. And this is the dining hall that was designed by Anant Raje. So here, when we look at the MDC, what you find is two wings of guest rooms which are extending from the teaching block.

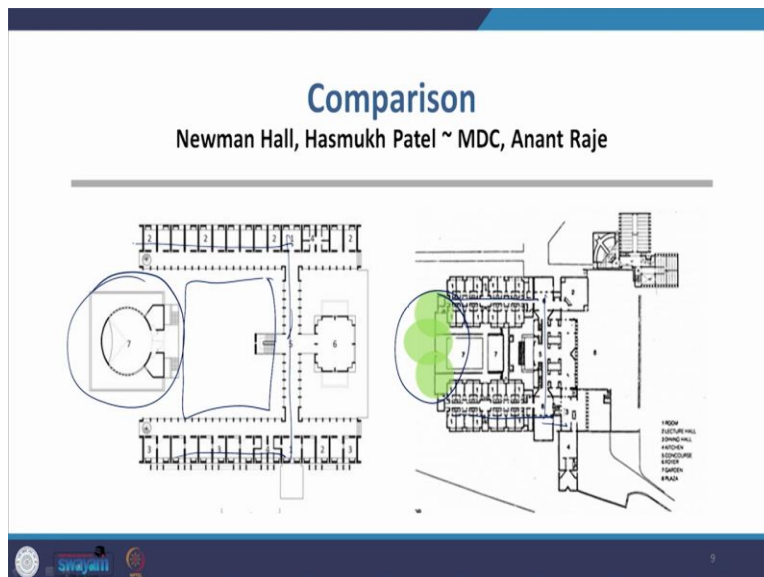
And these are the long sides of this court, like the LIK Plaza, but the quadrangle gets completed with these walls that are enclosing the court and then there are these trees. Now, please remember what I told you in the last lecture, that the LIK Plaza, though not having a wall as the fourth side does have the trees at a distance that in a sense visually complete the quadrangle or the court. Here in the case of the MDC, it happens practically that means there are walls provided at the edge, and the trees which are behind it.

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Now, the symmetrical positioning of a pair of descending stairs if you see this plan, these are the two descending stairs that you see here. And then there is a descending stair on the other side, these are descending stairs in the concourse of the academy wing and they create a verandah like terrace that you see coming here that you see here in this picture on the central axis of the block. So, this is the central axis. The step down that you see here is what is seen here in this picture, and you see it somewhere here.

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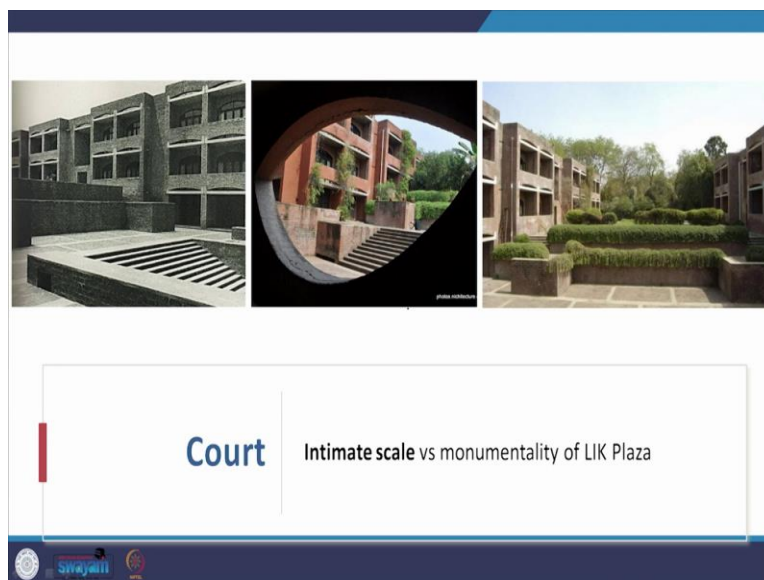


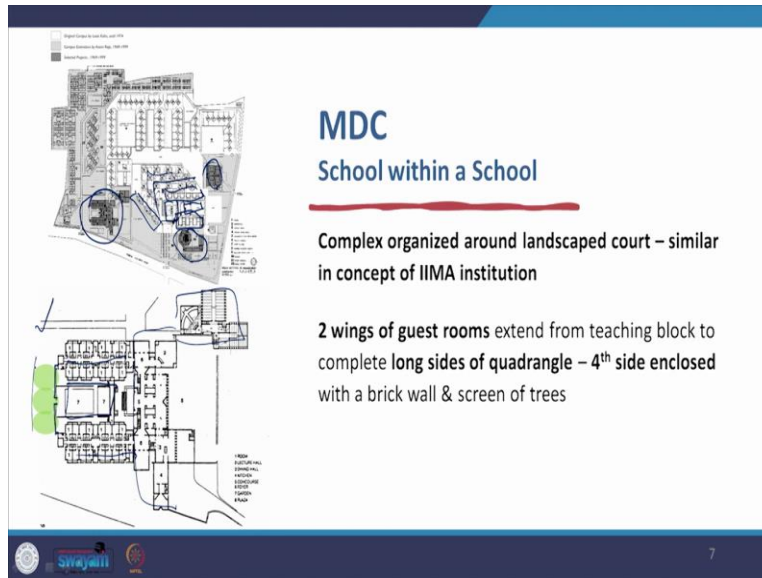
Now there's a comparison between this and the Newman hallway by Hasmukh Patel. If you remember that I taught you this earlier. And I taught you that this also has the rooms on either side, then there is this wing here. And this court or this quadrangle is completed by the auditorium on this side.

And the vocabulary of the rooms is straightforward Cartesian brick and exposed brick and concrete structure. Whereas the auditorium is totally different from the rigid symmetry and happens to be a completely different geometrical composition completes the quadrangle becomes the focus of the quadrangle.

In the case of Anant Raje again, there are rooms on either side, instead of this wing here, they have this entire academic block, but the quadrangle does get completed. So, this actually can be one of the visual devices that you might find helpful in your designs studio when you are faced with spaces like this.

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The cord itself, which I said is a scaled down version of the LIK Plaza, and when I talk of scaled down version, I am referring to the overall intimate scale of the MDC. Now, the reason why that happens is if you will go back again to the actual plan of the complex, you will find that the MDC is planned behind the faculty houses, and on the side of the dormitories.

Now, that is where the scale of the IIM Ahmedabad campus, lowered to a more intimate scale, particularly in the faculty housing. So when he composed the MDC behind it, he was away from the monumental scale of the LIK Plazas institution area, and he was closer to the human or intimate scale of the faculty houses. And we find that Anant Raje , this is my perception that therefore he went in for a more intimate scale.

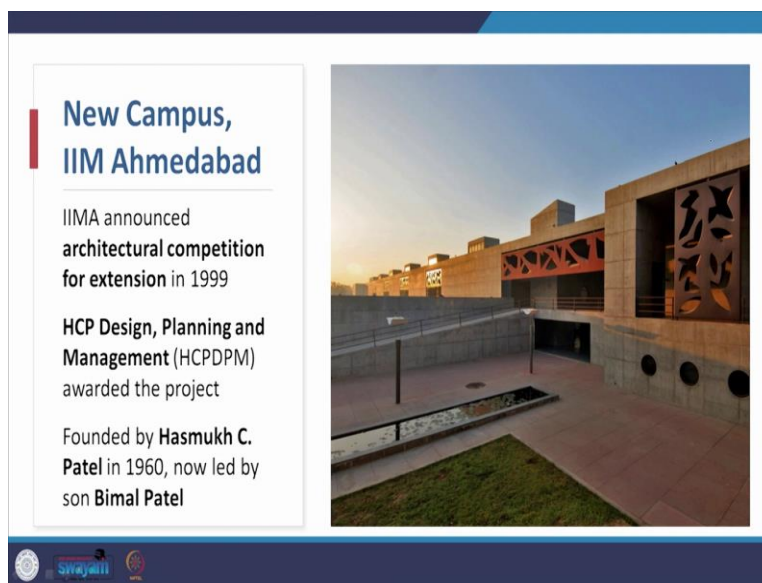
Now, when he brought down that scale, he also brought down the scale of the court itself. And he increased the number of elements that would make it more intimate. Now, this is a very interesting thing that he is trying to do here. He is trying to coordinate the court with the overall composition. In the LIK Plaza the overall composition on the plaza surrounding buildings are on a massive scale.

So, the plaza radiates that massiveness or accentuates that massiveness being massive itself. Now, if you move on to Chandigarh that it becomes even bigger, because Chandigarh is not just one big building. It is a series of big monumental buildings. There is the assembly building there is the high court building, there would have been the court of the governor's palace on the other

side, and there is a central secretariat behind the assembly building. So, the overall Plaza accentuates the overall monumentality of that vast composition.

Now, here, the composition and the plaza or the court are linked together in their scale. Now, this is an important thing that you might find useful. That if you were to provide humans intimate scale buildings with a monumental plaza or a very vast plaza or a court, there would be this kind of disconnect and the two wings of the court, you would find it very difficult to connect them together as one composition. Now, you can take it or leave it, but this is a suggestion that I am making here. This is what Anant Raje does. So, when you come back to this plaza or this court again, you find there are a series of green areas that he provides, going all the way back to the last wall and the trees behind it.

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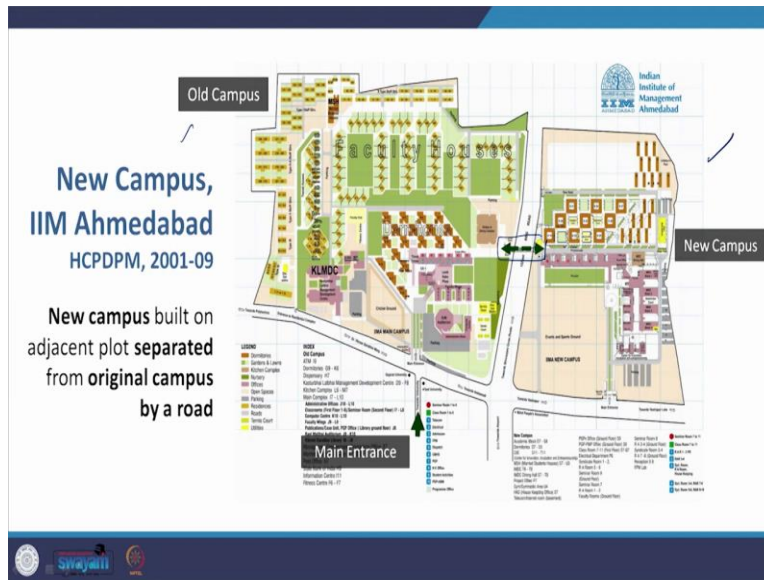


Now, the new campus , let us move on forward to the next stage and that was the design of the new campus of IIM Ahmedabad which was done by the HCP DPM Hasmukh C. Patel design planning and management consultancy firm and Bimal Patel is the designing the lead architect, IIM Ahmedabad announced the architectural competition for this new campus in 1999.

HCPDPM were awarded the project and this firm was founded by Hasmukh Patel in 1960. And is now led by his son Bimal Patel, you might know that Bimal Patel is the lead architect HCPDPM is the firm behind the upcoming new parliament building and the entire new arrangement and design of the central Vista in Delhi.

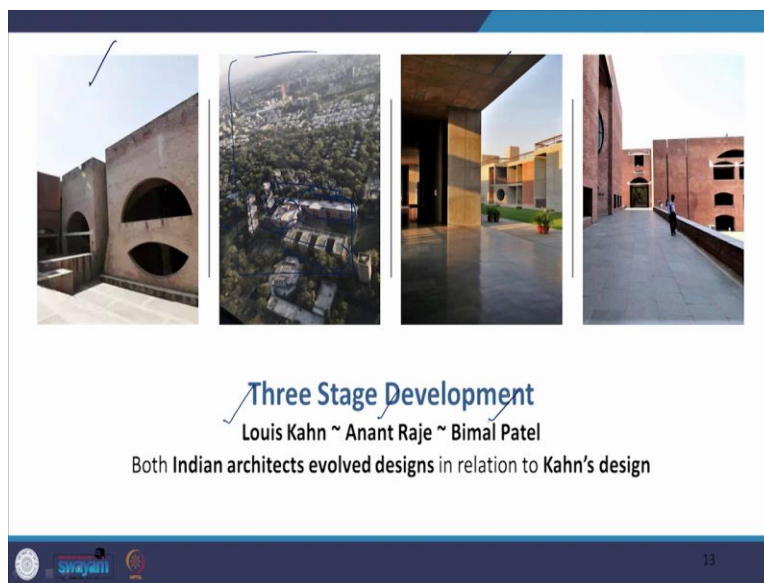


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Now, the new campus, this is the new campus, the old campus and they are both connected by an underpass here.

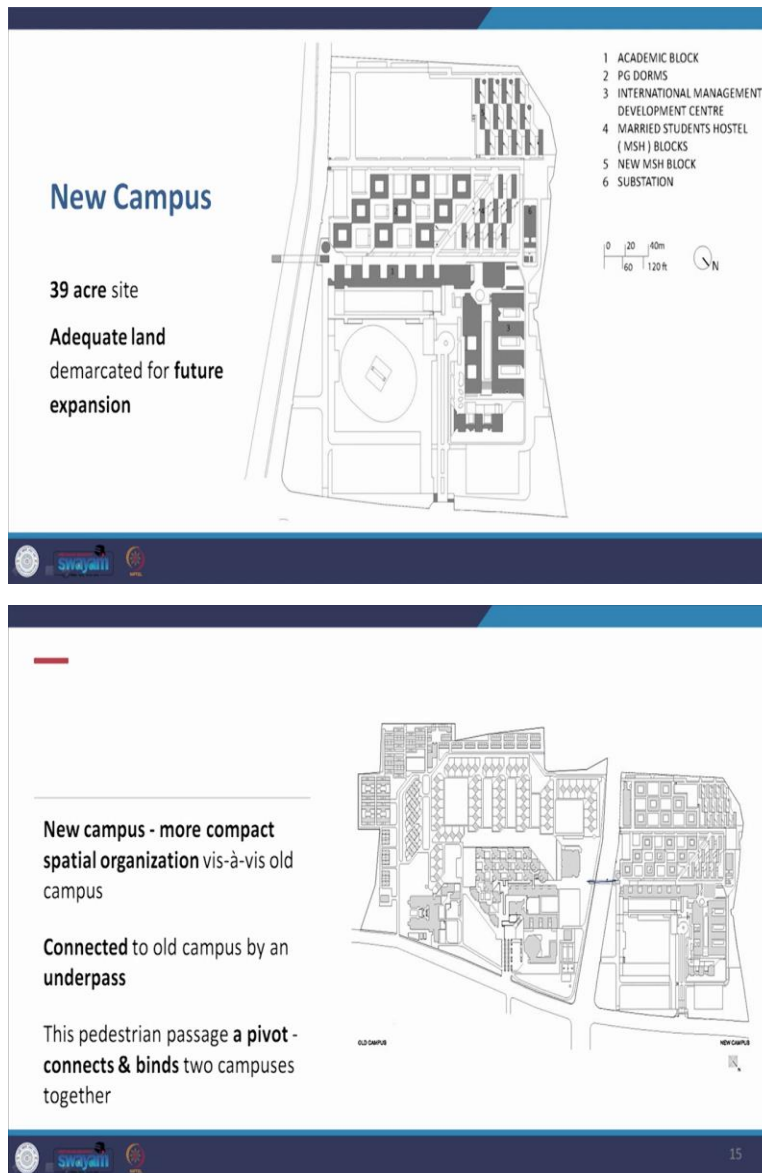
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Now, the three stage development, there is the main campus. And this is the institutional area, you find the library, the theatres, the faculty wing, and these are the dormitories behind it from the aerial view. These are the domes done by Anant Raje. And somewhere here is the MDC which you see here. And then on the other side, is the design done by Bimal Patel.

So, the three-stage development is the contribution of three amazing architects, Louis Kahn, followed by the next stage of young Indian architects Anant Raje followed by the architects the generation of modern architects practicing today, and that is Bimal Patel. Three wonderful architects at three different junctures coming in to complete the campus of IIM Ahmedabad, all doing remarkable work in their generation. Both Indian architects evolved designs which are in relation to Kahn's design and pay tribute to Kahn design.

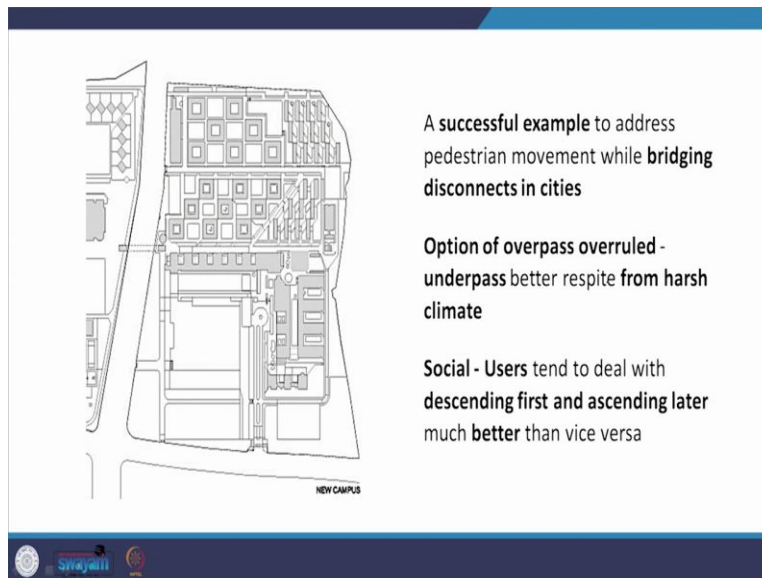
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The new campus is on 39-acre site being about 45 percent of 40 to 45 percent, the 67-acre main campus is adequate land, which was demarcated for future expansion. But because these

facilities but to be provided, the new campus happens to be more compact in its spatial organization vice versa the old campus. Therefore, and the two campuses are connected by this underpass. And this passage this underpass is pedestrian passage is a pivot that connects and binds the two campuses together. Why the underpass. Let us look at that.

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It is a successful example to address the pedestrian movement issue while bridging disconnects within cities. In this case, it happens to be the same institution with two campuses with the road in between them. So, the option of overpasses overruled, why? Primarily because of the harsh climate. Having an underpass does away with the impact of the harsh climate.

Plus, I believe it is also a statement aesthetically, an overpass may not have been that aesthetically, it will be an unnecessary intrusion on the visual at road level, whereas the underpass simply disappears. And the socially what has been said is that users tend to deal with descending first and ascending later much better than vice versa, which will happen in overpass, they will ascend first and descend later.

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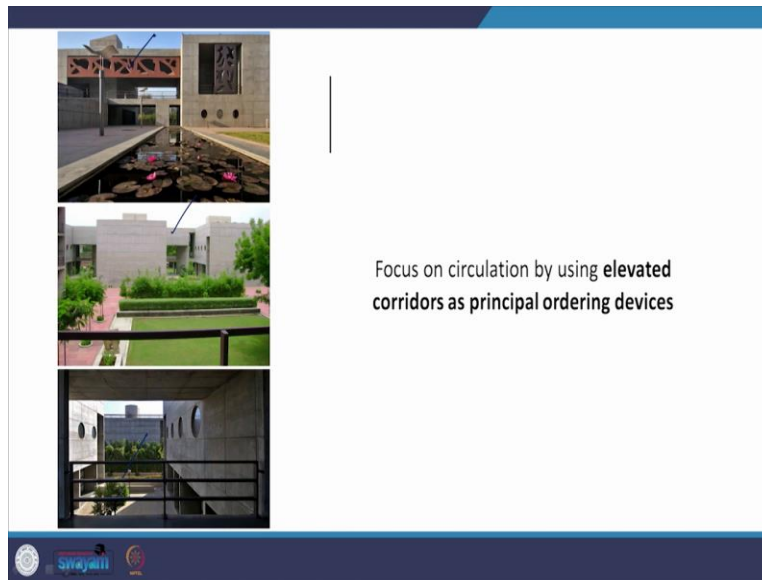
This is a 130 foot feet underpass which also doubles up as an exhibition space for the institution and it exhibits the works of Louis Kahn.

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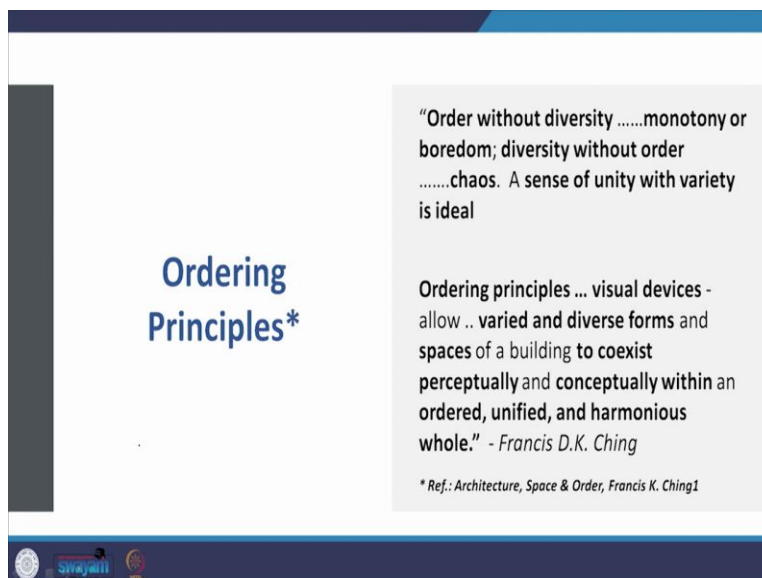
This is the example of the new campus where you have the lecture theatres, you have the dormitories and this is again the part of the main block.

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The focus on circulation is by using elevated corridors as principle ordering devices. They tend to bring the whole campus to a certain order, by connecting them through the elevated corridors, which happened for example to be here, they happen to be it happens to be here, this is the same corridor, looking at it from a different view. Why ordering devices or why ordering principles?

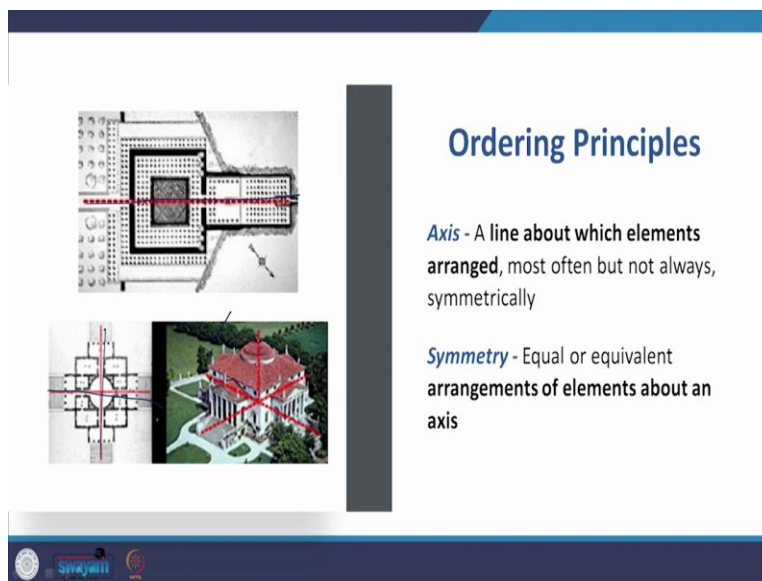
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We will have to go to Francis Ching, to understand that through his book architecture space and order. Order without diversity leads to monotony or boredom. Diversity without order leads to chaos, order without diversity, boredom, diversity without order chaos. So, the sense of unity has

to be done within variety. Now, that creates an ideal situation. Now, ordering principles are visual devices that allow for varied and diverse forms and spaces of a building to coexist perceptually conceptually within an ordered, unified and harmonious composition. Now this I am borrowing from the work of Francis Chang.

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Now, the ordering principles, the axis happens to be a line about which elements are arranged, most often, but not always, symmetrically. So, the axis plays an important role, generally in symmetrically placed compositions. Symmetry, also equal or equivalent arrangement of elements about an axis. This is the example of the Villa Rotonda by Andrea Palladio, where all the four facades are identical to each other. And they are placed on to this kind of symmetry, which is a very rigid, strict symmetry, but it leads to one of the most famous houses to come out of the Renaissance period.

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**Ordering Principles**

*Hierarchy* - Graded disposition of elements, so that some appear more important than others

*Repetition* - Recurrence of elements

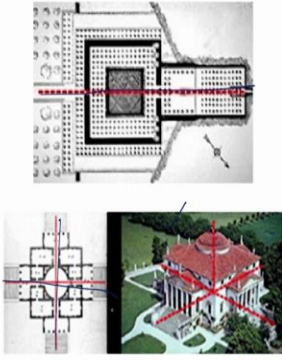
Ordering principles, hierarchy is one of them, which is a graded disposition of elements so that some appear, for example, in this case, more important than the other. So there is a hierarchical composition of elements, where the hierarchy clearly indicates which are more important. There is repetition where there is recurrence of elements. For example, like in this building. So if you just take one unit, you see that it is repeated across the façade.

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**Ordering Principles -**

*Rhythm* - Repetition in which a recurring variation has been introduced


*Datum* - Recurring reference system against which elements can be arranged



## Ordering Principles

**Axis** - A line about which elements are arranged, most often but not always, symmetrically

**Symmetry** - Equal or equivalent arrangements of elements about an axis



## Ordering Principles

**Hierarchy** - Graded disposition of elements, so that some appear more important than others


**Repetition** - Recurrence of elements

Then there is rhythm, you can have this rhythm, for example, A, B, A, there is A here, and then there's a gap by the B and then there is an A again. So, there is a rhythm being generated in the facade, then there is Datum like in this building in Italy, where is this recurring reference system against which elements can be arranged. So, we have looked at for example, axis, symmetry, hierarchy, repetition, rhythm, and datum. Two things worth remembering.



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## Ordering Principles



Elevated Corridor – IIM-A New Campus

Two things worth remembering:

- Number of ordering strategies (not just one) often used in a design
- Many buildings/spaces not ordered according to one or more above principles
- They may derive their order from other formal choices or general form-making principles



The number of ordering strategies can be used more than one can be used often in a design. So, design can have access and symmetry it can have rhythm, it can have hierarchy, they can be put together. Also, there are many buildings and spaces not ordered, as per the six principles that I have talked about. They are more than that. Then they may also derive their order from other formal choices or general form making principles. In this case, the ordering device happens to be an elevated corridor.

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### The Architecture – Late Modernist

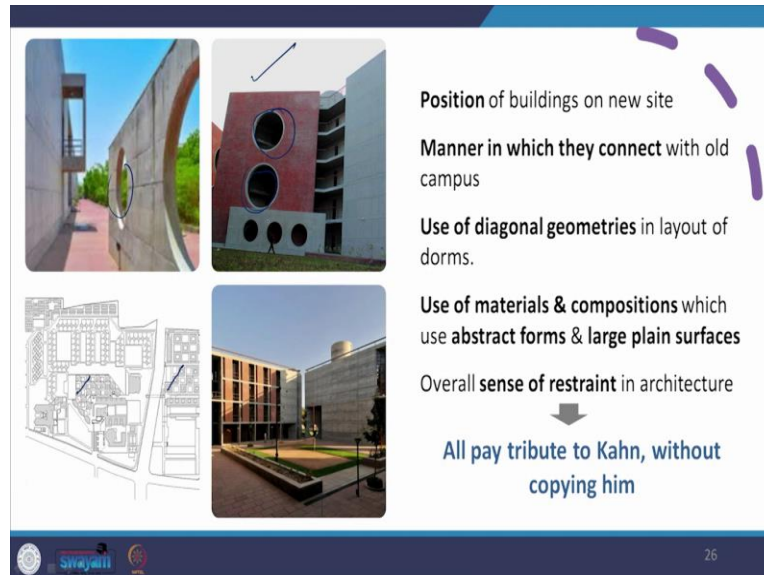
Maintains consistency with abstraction of forms and geometric expression vis-à-vis old campus

Similarity in massing – monumentality with human scale



Now, the architecture in general of IIM Ahmedabad , new campus is late modernist, and it maintains consistency with abstraction of forms and geometric expression in relation to the old campus. The similarity is in massing to this monumentality with a human scale, plus the overall composition itself, and the geometrical elements like circular cut out et cetera. we will look at that.

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So, the position of the new build the building on a new site, the manner in which they connect with the old campus, like the use of diagonal geometries in the layout of the dormitories here in the new campus, similar to that which happened in the old campus. The use of materials and compositions, which use abstract forms and large plane surfaces. So, we have these large plane surfaces, and we have these circular cut outs, which are similar to what was happening in the old campus.

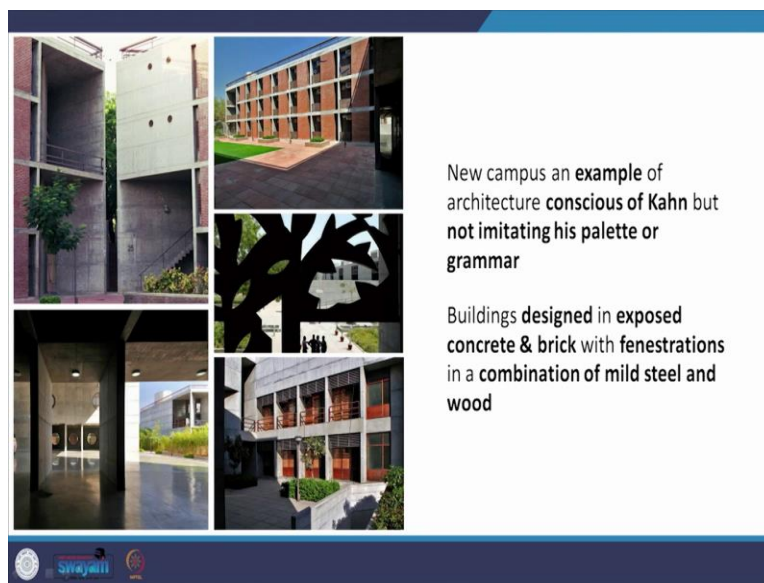
Then there is an overall sense of restraint in architecture. Even if the facade is monumental, even if the facade is very expressive, it is completely unornamented. The building material is exposed. In this case, it is exposed concrete and exposed brick and concrete versus exposed brick in the old campus. All pay tribute to Kahn without actually copying him at verbatim.

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On one side of the street. Like in Kahn concept, the dormitories are arranged in rows of three diagonally as done here, three diagonally, one behind the other. On the other side, are the lecture theatres, which are here and so also here , in the work of Kahn. So, what we find is that there is this road in between this vista which you find here which you find in the old campus also and this is that road here. And this is a similar concept as in the old campus.

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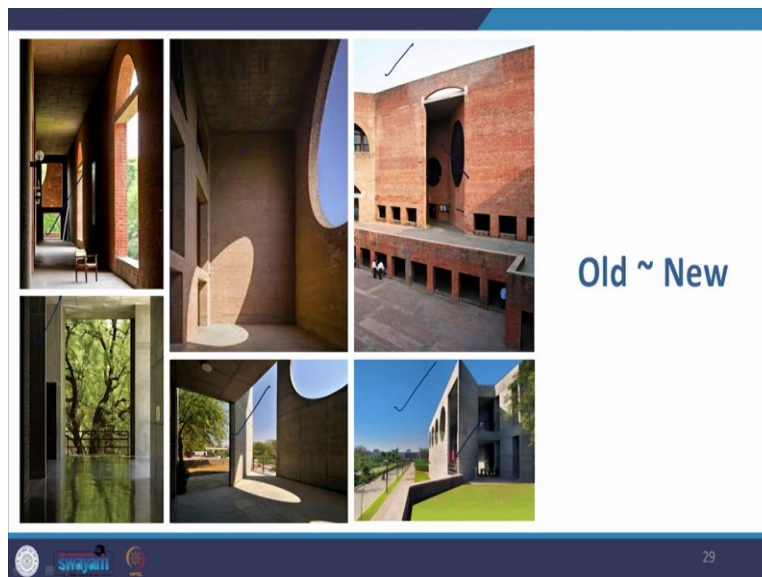


The new campus is an example of architecture which is conscious of Kahn, but is not imitating his palette or grammar at verbatim like I said, the buildings are designed and expose concrete

and brick with fenestrations in a combination of mild steel and wood, as you would see in the old campus, the cut outs, the fenestrations, etcetera.

Generally, the cut outs et cetera totally devoid of any kind of glass or any other thing. They are just there standing in silence without any steel or glass et cetera. Of course, there are windows, which we have not looked at specifically, but here we see them very, very clearly in the design for example of the dormitory.

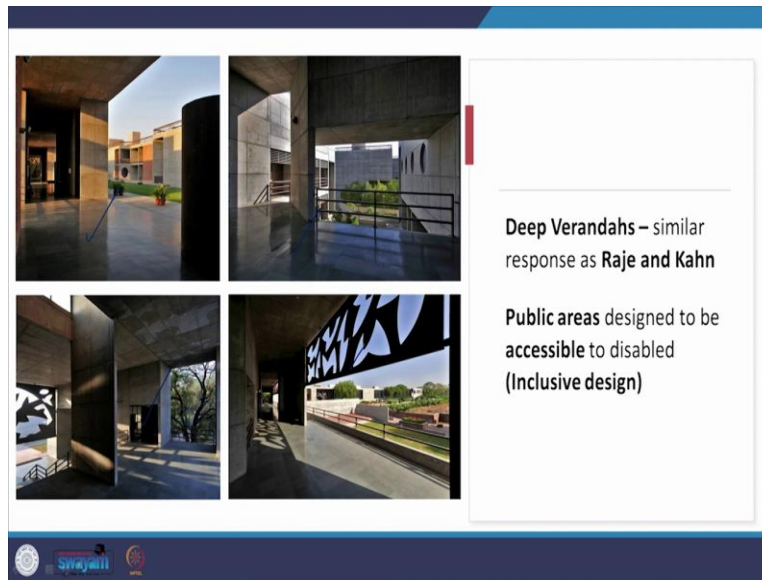
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So, this is again the comparison between the visuals of the old and the new. So, if you look at this corridor, for example, and you look at this exposed concrete corridor of the new campus, you look at this amazing play of light on the brick facade and the old campus amazing play of light and exposed concrete of Bimal Patel.

So, Bimal Patel is able to create the same poetry of light and shade that Kahn was able to generate in IIM Ahmedabad and then there is this monumental facade with the circular cut outs and you find that in exposed concrete in the new campus, and again the example of diagonal walls that reappear here.

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Then there are deep verandas, which are similar to both the works of Raje and Kahn. So, you find deep verandas in the new campus by Bimal Patel and the public areas are also designed for accessibility for disabled. Now, this is an addition in the new campus. Because inclusive design today has become one of the important areas we focus on when we design our buildings.

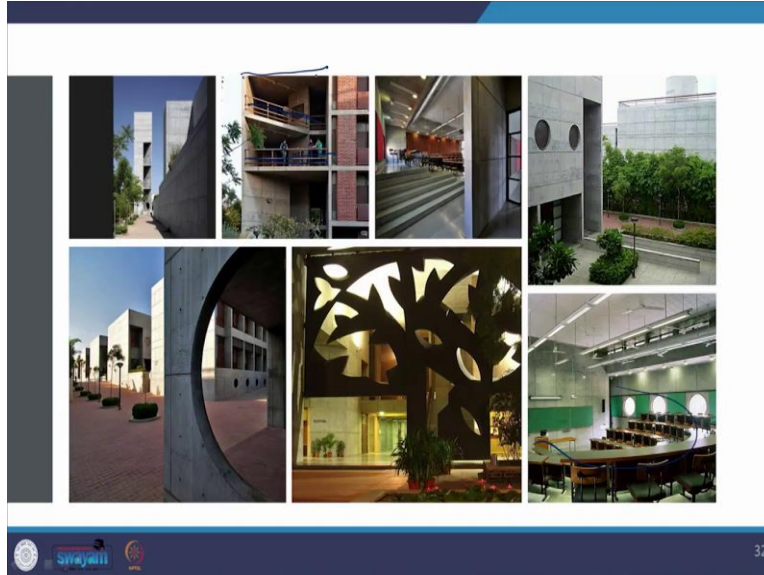
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Now, all individual buildings are a continuum between inside and outside, enabling multiple walking routes between and through the buildings to reach your destination. It enhances the experience of movement within the campus by allowing for more chance encounters between the

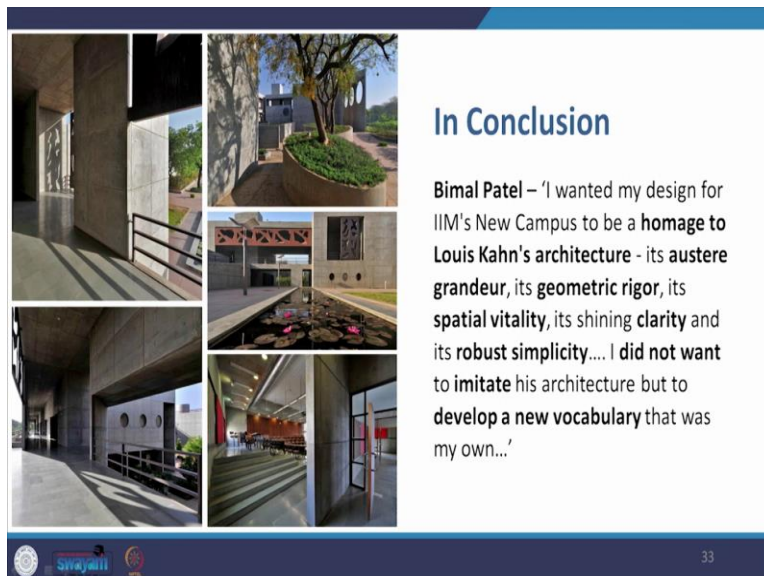
students and the faculty offers use of gardens and trees and water pools, very similar to the concept of informal interaction between students and faculty of the old campus.

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These are some of the views of the new campus. Again, you have an amphitheatre like arrangement of the lecture theatre as this happens in the old campus. And there are other features that are very interesting and, in some cases, unique. For example, this arrangement of the balconies within the dormitories with this diagonal placement under the overall projected roof of the dormitory is somewhat unique to the campus designed by Bimal Patel.

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In conclusion, I would like to refer to the words of Bimal Patel. I wanted my design for IIM's new campus to be a homage to Louis Kahn's architecture, its austere Grandeur , its geometric rigor, its spacial vitality, its shining clarity, its robust simplicity. But I did not want to imitate his architecture, but to develop a new vocabulary that was my own.

And in a way he is been able to do that. It is a reflection of the old campus without being a mere copy of it. It has its own vocabulary, which clearly shows the connection, but stands out as an amazingly wonderful project in its own right. We will end here with this. And we will continue with some of the other works, which are an influence of Louis Kahn in the next presentation. Thank you.