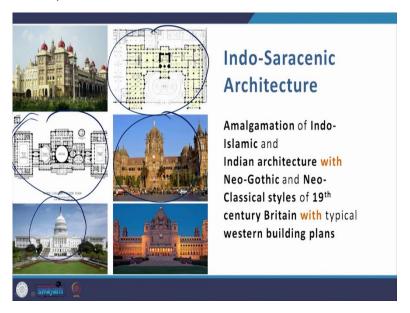
Modern Indian Architecture Professor P.S. Chani Department of Architecture & Planning

Indian Institute of Technology Roorkee
Lecture: 4

Pre-independence – Part 2: Colonial Architecture and Art Deco

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Good afternoon, students, we will continue our study, modern Indian architecture, and I will come to part two of pre-independence. Now, last time when we were looking at it we looked at Indo-Saracenic architecture, and I had said that it is the amalgamation of Indo-Islamic and Indian traditional architecture with neo-gothic and neo-classical styles of the 19th century, western architecture, along with western building plans or building layouts.

And we had seen examples of, where we had seen the capitol building, neoclassical plan and we had seen that the planning per se is very similar and we had compared it with the Chhatrapati Shivaji Terminus planning, but the overall form of the CST is an amalgamation of neoclassical or rather neo-gothic in this case with the western neoclassical planning or western planning. We also saw the example of umaid bhavan palace and other buildings.

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And these are some of the images that I had shown you last time of Indo-Saracenic architecture. Also mentioned that in spite of the fact that it was an attempt by Britain to try to validate the British empire with the sense of unity in the Indian subjects, it was on, it was actually only a superficial attempt, because the buildings were not truly Indian at heart, they were still European or colonial at the core, with regard to space planning concept and structure, and also by the turn of the 19th century, it started, rather I should say by the end of the 19th century in fact, colonial architecture was dominant again.

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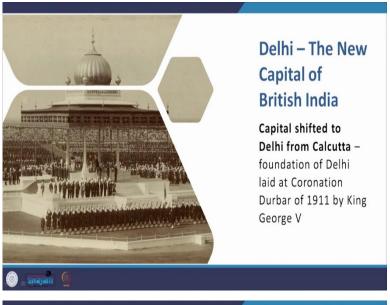


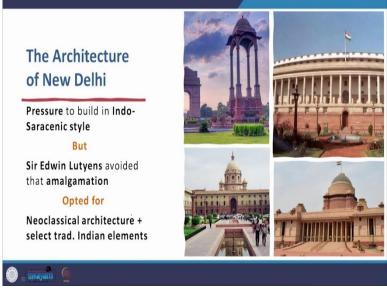
And, we see this example of the Lalitha Mahal, which was built in 1921 which was very strongly colonial, so we see a very definite shift from the Indo-Saracenic style back to colonialism.

And I had mentioned last time that this was because of their political compulsions, Indian independence movement was becoming very strong, and as a result of this, the British had to reimpose their colonial identity or imperial identity in India and one of the ways to do that is through architecture. Architecture has always been one of the means by which people try to define their political ideology or their cultural space, we see that in many parts of the world, there are extreme examples like that of the Nazi's in Germany, who had planned an entire city based on neoclassical architecture based on the roman model, because they said that they will have a 1000 year reich or 1000 year reign like the roman empire.

And, so different countries, the whole idea of modernism in the western world arose out of a socialist mindset and also because of other reasons like the world war, etc, and we will be coming to those points later. So, just to make a point here, I am digressing a bit to make a point here, that architecture plays a very important role in defining a moment in human history. And here the changing phase of architecture in India clearly highlighted the political compulsion of the British, and it was also the main retrent why Indo-Saracenic architecture was not the footing on which New Delhi was built in the 1920s.

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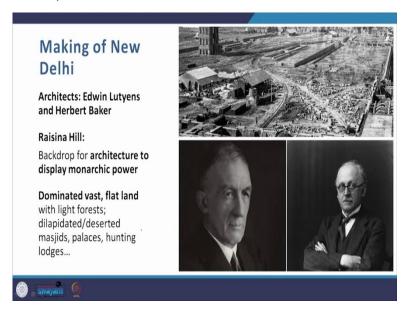


Now, New Delhi itself became the capital of British India in 1911 at the coronation Durbar of search of King George V and the capital was shifted from Calcutta to New Delhi. The architecture of New Delhi, there was a pressure to build in the Indo-Saracenic style, enough pressure had been built by people like Grouse and Stephen, Swinton Jacob, but Sir Edwin Lutyens avoided that amalgamation, I already told you that was a political compulsion, therefore he opted for a new classical architecture with select traditional Indian elements, and we look at that.

The other thing that we will also look at which was not a political compulsion, but has generally been the compulsion of all architecture that has merged into India and that is the climate of our region, climate, materials local technology, that has been the way it has been

with Mughal architecture, it has been the way it has been with British architecture or colonial architecture, and then later on we look at it when Corbusier came to India or when Louis Kahn came to India.

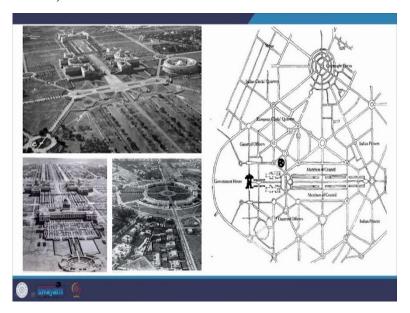
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So, the making of New Delhi two primary architects responsible were Sir Edwin Lutyens and Sir Herbert Baker and Raisina Hill, which is the, you know the focus of the making of New Delhi is the backdrop of architecture to display the monarchic power, it is a very, it was a very dominated by a very vast flat land, this is an old image that you see when the construction had started. There were light forests existing at the time they were dilapidated or deserted masjids and palaces and hunting lodges and this was the site this flat land that was chosen for the construction of New Delhi.

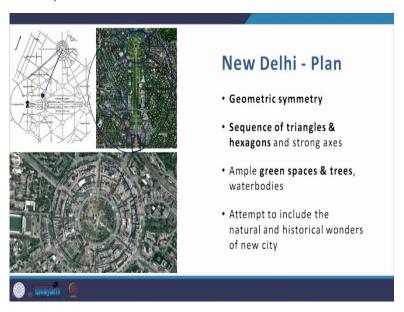
Now, while I was studying this I have come across some amazing similarities between the development of this totally new city or this part of New Delhi and that of Chandigarh, and we will come to those similarities and comparisons between New Delhi and Chandigarh, when we look at the contribution of Corbusier's visit in Chandigarh. So, one of the things is that both were predominantly on a flat land. The backdrop of Chandigarh, there are these hills, and it is a flat land on which both have been pretty much a flat land on which both are built, both are in the composite climate belt of India.

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And, this is a picture of the initial days of the establishment of the central vista, this entire area where you see the Rashtrapati Bhavan. You see the north and the south block which is today the central secretariat, you see the this a venue in between which is the Rajpath today, from here onwards and then you see the parliament building, and you move onwards further into the axis and you come to Connaught Place. Behind Rashtrapati Bhavan, you see this is the, these are the Mughal gardens, so when you look at the plan itself.

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Let us come to the plan itself, the plan of New Delhi was dominated by geometric symmetry and very interestingly the plan of Chandigarh is also dominated by geometry. Now, the way symmetry has been highlighted in New Delhi will is different from Chandigarh, we will come to that later, but this geometric symmetry here was a sequence of triangles and hexagons and strong axis not one but they were different axis used by Lutyens.

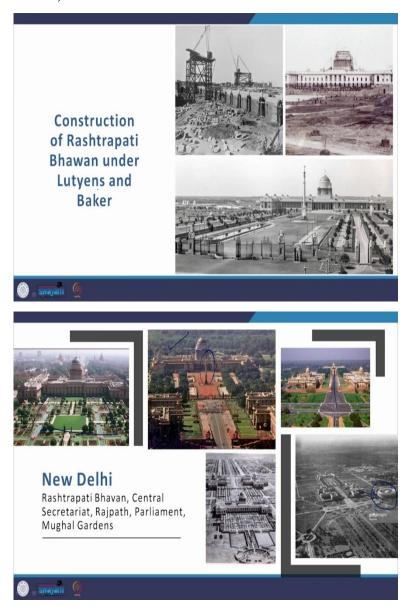
And, as you see here, in this satellite image, this is a hexagon here which is where India gate is located, this is the Rajpath, here is it is not completely clear in the satellite image, but this is where the Rashtrapati Bhavan, and the north and south block are which are here, and this is a hexagon divided into these triangles.

And now, this module continues, this is a bigger hexagon here, again subdivided into triangles, as you can see here from the plan, and there are these several axis for example Connaught Place or the Connaught circuit itself has several axial roads that are merging into the Connaught circuits' and all these are a combination of these hexagons and there are these triangles, and it was densely populated with green spaces and trees and water bodies, interestingly very similar thing happened also in Chandigarh.

The other thing that happened is that like in Chandigarh, in New Delhi, the central vista area, that is the Rashtrapati Bhavan, the true north and south blocks and that entire area the main that area, you do not find a lot of dense green growth there, very limited growth is there, much of it is focused on the monumentality of the buildings, and we will see a similar approach in Chandigarh, but overall in the city lot of emphasis was given to green areas and water bodies, and we will see a very similar thing here in New Delhi.

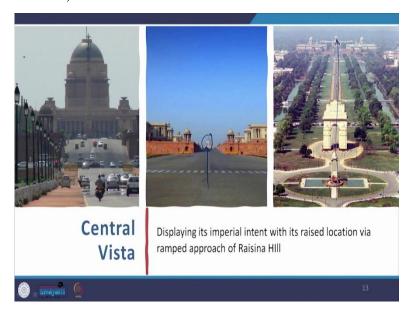
Even in the satellite image you can see its amazingly dense in terms of green areas and the geometry also in Connaught Place, he went in for a circular geometry. There was also an attempt to include the natural and historical wonders that were around this region, around this area to merge it with the new city or to make it a continuing part of the new city.

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This is a slide that shows you the construction of the Rashtrapati Bhavan under Lutyens and Bakers, rather the whole area various buildings coming up and these are some of the buildings as they are today. This is the Rashtrapati Bhavan with the Jaipur column in front, and the two secretarial buildings on either side, this is the Mughal Garden behind the Rashtrapati Bhavan, here we have the Rajpath, and this is as you climb up towards Arizona hill, and this is an aerial shot that shows you the long distance, the, at an angle is the parliament or the Sansad Bhavan.

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The central vista displays the imperial intent because it is on a raised location via this ramped approach, and amazingly as you climb on this ramp towards Raisina hill, where the Rashtrapati Bhavan is located. You do not see the Rashtrapati Bhavan, it does not come as you are not, you do not see it from Rajpath in totality.

As you climb the Raisina hill, it starts in revealing itself, so you first see the dome and then as you climb higher and higher, the whole Rashtrapati Bhavan is revealed to you, depending on from where the shot is being taken. And there is this very strong axis as you can see towards the Rashtrapati Bhavan, from the chhatri that is behind the gate, India gate and onwards to the Rashtrapati Bhavan.

So, this ramped approach, this ramp was not there, it was not a part of the natural landscape or the natural topography, it was created, to create this imperial approach towards the viceroy's lodge, what Rashtrapati Bhavan was then called. Now, one very interesting comparison between the Taj Mahal layout, the New Delhi central vista layout, and that of the capital building in Washington.

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The Taj Mahal as you know, you enter in from this Darwaja, which is a monument in itself, then you go down this very strong central Asian symmetry onwards towards Taj Mahal. Taj Mahal itself has two symmetrical blocks on either side and then when you look at the central vista you see the chhatri and India gate, very strong central axis towards the Rashtrapati Bhavan, and the central secret, the two secretariat buildings on either side of central secretariat. And here, in the Washington DC, you have the Washington monument, and you have a strong access towards the capital building here.

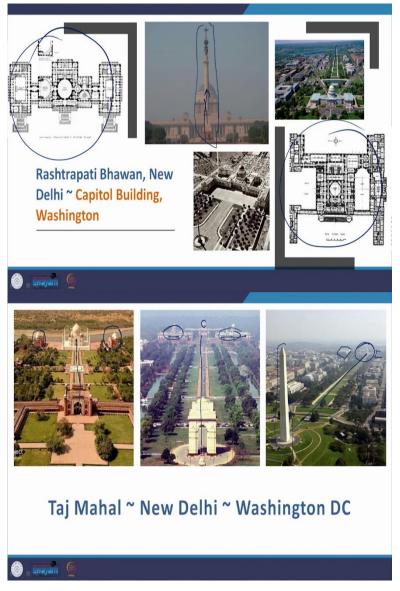
Now, the capital building itself has two symmetrical blocks which are connected to the main capital building on either side. Just as there are these two symmetrical buildings on either side of the Taj Mahal, you have the secretarial blocks on either side of the Rashtrapati Bhavan.

Now, whether this was intended or whether it was subconsciously done, it could have been an intention, it could have been a study done by them, because they were definitely influenced by the Mughal architecture, I forgot to mention last time that Mughal architecture was more understandable to the Europeans because of the strong dependence on symmetry, geometry, and hexality, in Mughal architecture.

Indian traditional architecture or Hindu architecture is more organic in the way not totally organic because temple architecture per se has also very strong symmetry, but the overall geometrical organization is much more complex and detailed. So, there is a kind of an appeal of linking Mughal architectural symmetry with that of British symmetry or colonial symmetry. So, we see this this kind of an interesting symmetry between the Taj central vista

and in Washington, the way the green areas have been planned, the pathways have been planned, etc.

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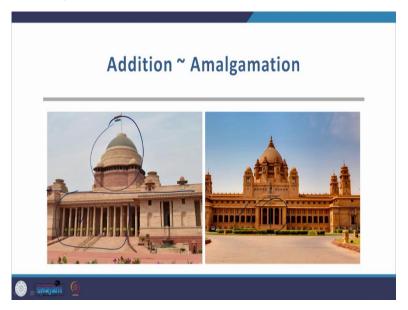


Now, comparing again the Rashtrapati Bhavan with the capital building, we made this comparison last time with regard to the CS terminus. Now, comparing it with the complexity of the plan, the plan itself is completely neo classical or western planning and we see that again also in the capital building. And here, in Rashtrapati Bhavan we have the Jaipur column, which is very strongly axially planned as you can if you go back again, you will find that the Jaipur column in this particular slide here. This is where we see the Jaipur column.

So, in Jaipur column and in this case, it is the Washington monument, very similar standalone columns, the only thing is it is nearer, much nearer in to the Rashtrapati Bhavan, this is fairly

distant from the capital building, and in this slide, we are making comparison that the Washington monument is placed or spaced as the India gate has been spaced. But coming in terms of the visual identification of the Jaipur column with the Washington monument, you find this very symmetrically aligned with the Rashtrapati Bhavan, and so also it happens with the Washington column and the capital building.

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Now, the comparison between neoclassical with Indian traditional elements as Lutyens applied it or as the Indo-Saracenic architects supplied it in the amalgamation, in the works of for example Swinton Jacob, you see this comparison here. Both these buildings, the Rashtrapati Bhavan and the Umaid Bhavan palace are very similar in the way they look, why? because the plan is western neoclassical plan, it is very symmetrically planned.

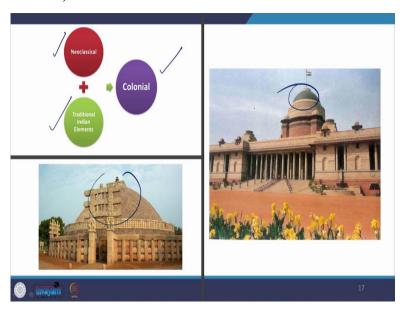
There is this central dome, and so also dome this is surrounded by composed chhatris which are united with the central dome and there are chhatris here also, this is more like the Panchyathna or the Pancharatna, that we see also in the Taj Mahal, as I described in the previous lecture.

So here also, there are these four domes which are composite with the main dome in the Rashtrapati Bhavan united or fused together but there is this big dome in between so this is a Pancharatna, and so also, we find in the Umaid Bhavan Palace, the only difference being and then you have the other elements of traditional Indian architecture, in the Umaid Bhavan Palace. What is the difference? amalgamation is two different entities fusing to make a totally new entity and this is what is happening in Umaid Bhavan.

The columns, the idea is strongly classical or neo-classical, but the columns per se are traditional Indian. They borrowed from Hindu architecture or Indian traditional identity, so also the dome at the top, the chhatri is the overall profile it is a complete merger. But in Rashtrapati Bhavan that complete merger does not happen, in Rashtrapati Bhavan much of the profile of the building below is purely neoclassical, and therefore we see that there is an addition of these elements not an amalgamation.

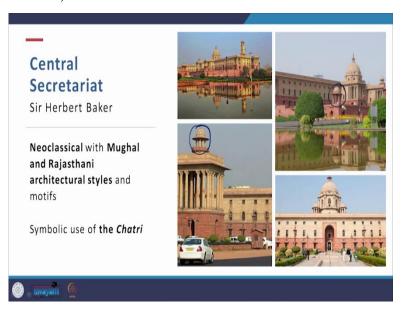
These columns are not traditional Indian whereas, these columns are this porch in front is traditional Indian, whereas this entire entrance is not, so there is that difference between addition and amalgamation, does it work? I believe it does. I believe even in the Rashtrapati Bhavan it works, but the kind of fusion we see in Indo-Saracenic is not there in Rashtrapati Bhavan. So, what is there? this is what is there.

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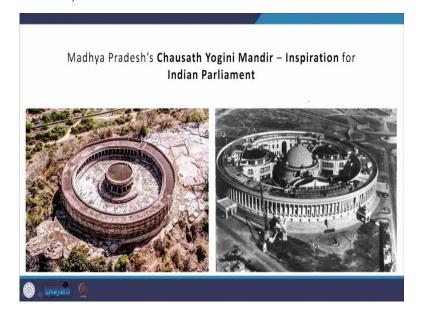
It is a merge; it is an addition of neoclassical with traditional Indian elements to make colonial architecture. What is the traditional element being used here? it is the Sanchi Stupa, the Sanchi Stupa is the dome at the top of the Rashtrapati Bhavan, and of course there are the chhatris which have been so modified and put together in the in this neoclassical building.

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Now, coming to the central secretariat which was designed by Sir Herbert Baker, again it is neo-classical with Mughal or Rajasthani architectural style elements, and motives, and one symbolic feature is the chhatri which keeps reappearing in many different parts of the central secretariat.

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And then, again the parliament building itself is taken from it is been identified that Madhya Pradesh's, Chausath Yogini Mandir is the model on which the parliament or the inspiration behind the Indian parliament building.

Then again, there are other issues there are other connections between Indian architecture and the colonial architecture of New Delhi. There is the use of indigenous materials, sandstone for example, and Indian labour which was a compulsion, both these are compulsions, the material has to be sourced from the place itself or the region itself, and so also the labour. So, the architecture because of the materials being used, because of the labour being used, carries a very close imprint of Indian tradition.

That is bound to happen with all architecture, the architecture, wherever architecture is created carries in itself an imprint of the technology and the materials used. If you are talking of glass and steel high-tech architecture in Europe today, it behaves in itself that very high technology or labour technology has been used or mechanical technology has been used or very high-end materials have been used, it is very obvious from looking at the building. So, when we look at these buildings, the indigenousness of the material and labour is obvious from these buildings also. We will see a very similar idea when we look at Chandigarh.

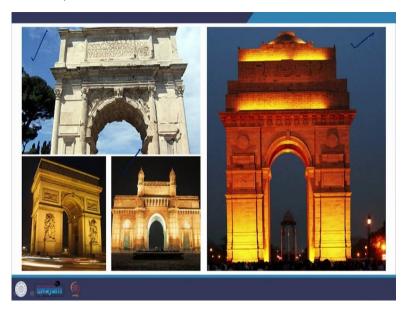
Now, the layout of the fountains both inside and outside that is the idea that I mentioned earlier the use of water bodies. Now, this is in planning of New Delhi, this is the climatic response, dense greenery use of water bodies is a very typical climatic response of composite climatic conditions of north India. We find that in Mughal architecture, we find Mughal Emperors using that as a part of their building design and use of chajjas, and jalis, etc, all of it coming together in these buildings.

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Now, this is very beautiful, it highlights how beautiful this axis is where we have the king George V Memorial, and India gate of course, the emperor's statue is no more there, only the chhatri remains, and this chhatri makes this beautiful access all the way to the Rashtrapati Bhavan.

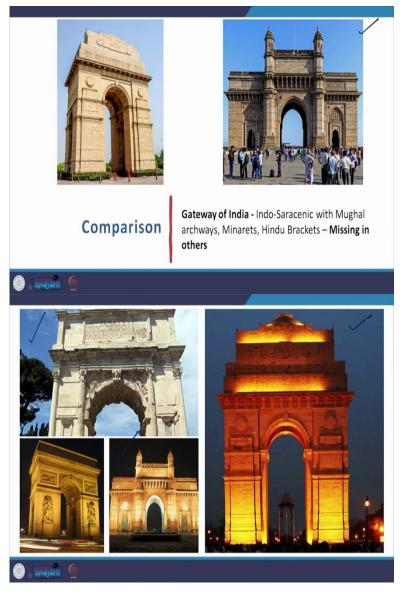
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Now, the India gate per se is a derivation of earlier gates made all the way to the roman empire. The triumphal arches used to be made in the roman empire, and this is an example of the triumphal arch and they used to be built when the roman general with the victorious roman army would enter Rome, and to commemorate that occasion, the triumphal arches were built.

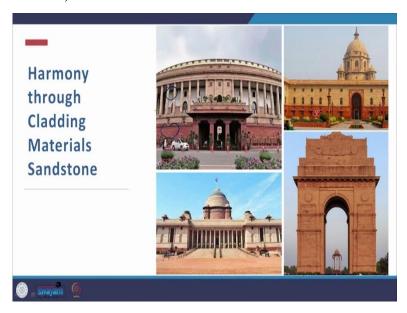
Now, similar gates exist in different parts of the world, for example, the Arc de triomphe in Paris, which is also an example of similar gate and then of course the gateway of India, which was also built for the arrival of the British Emperor in Mumbai, and we have then the India Gate in New Delhi. These are all connected ideas.

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The only thing if we compare the gateway of India with India gate, we again draw the same comparison of the amalgamation of Indo-Saracenic architecture. As we see in India gate and if you remember in the last presentation I had compared it with the BulanDerwaza of Fatehpur Sikri, the use of Brackets and the Minarets, etc. But in India Gate, that is not there, India gate is more a derivation of for example the triomphe arch or the arc de triomphe, rather than the gateway of India, but the idea is similar.

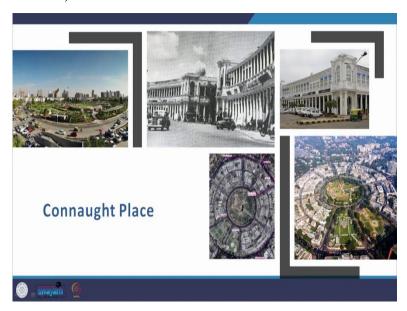
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Now, there is another way in which we harmonize architecture, particularly, urban design and city planning for example here, and that is through the harmony of cladding materials. Now, the parliament building is circular, the secretariat building Rashtrapati Bhavan, big neoclassical monumental scale buildings, India gate itself has its language, all of them are neoclassical. The elements that are used there are neoclassical, but one more way of uniting them together is the cladding material.

Sandstone has been used either in this darker red colour or in this lighter colour, and this, these are the Sandstone materials, we will find recurring in the works of modern architects like Raj Rewal, who have also used them, in one way when you look at those buildings particularly the works he has done in New Delhi, somebody who is a Delhite or who is sensitive to Delhi architecture will be able to relate Rewals work with the work of Lutyens in New Delhi, because of the cladding material that he has used of course, there are many other things we will come to them later, but this is one way in which the harmony was extended in New Delhi.

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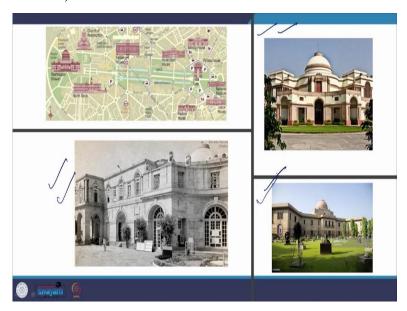
And then, we come to Connaught place. Now, one other difference we as, we look at Connaught place is that the Connaught place itself was not cladded with stone, it was stucco, it was plaster work.

Now, when we also come to the Lutyens bungalow zone which we look at later, there are also houses and bungalows which are also plastered, not cladded with stone. Therefore, the public buildings, the Rashtrapati Bhavan, Parliament building, all these main public buildings, first of all they are monumental in scale and they are cladded with stone.

The commercial space, the Connaught place, and the residential space, the bungalow zone is plastered, not cladded with stone, and the scale is not monumental, but human. A very similar interesting feature happens in Chandigarh again, because the public buildings made by Corbusier, the assembly building, etcetera in exposed RCC brutalist work.

Whereas, the housing work and other buildings done by Jean-Pierre Jeanneret, and the other members of the team, that is human scale and they are in exposed brick and plaster work, we will come to that later, I am just making a mention of those points, but will come to a visual comparison when we talk of Chandigarh.

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Now, here is some of the other important buildings that were again public buildings not private buildings, they were also are made with cladded stone. They are important buildings like the Hyderabad house, which is used today for very important meetings that our prime minister has with visiting dignitaries, official meetings, and then there is I believe this is the, this is the Baroda house, and this is the Hyderabad house, I am sorry, this is a Jaipur house, I am sorry. So, Hyderabad house, Baroda house, and Jaipur house, this is all a part of the development by Lutyens and Baker.

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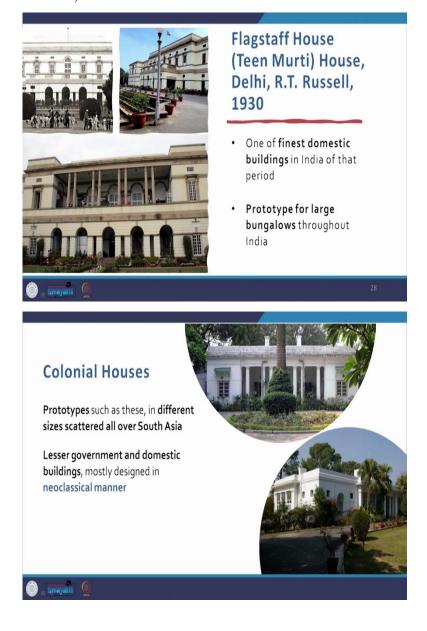


So, let us come to the last section that we want to talk about today, and that is the bungalow zone. It is a human scale, this plastered like Connaught place, but again, it is based on

neoclassical architecture as is Connaught place. The bungalow zone itself lies on the south of the central vista, each bungalow has very ample amount of space as you know that is being, that is a lot of talk about it that very vast tranches or very vast areas are occupied in the bungalow zone by these bungalows, and there is only 7 percent of the ground area of a site where the bungalow are placed.

And this immense amount of greenery, if you ever get to have an opportunity to go into the zone or you have been, there you will one thing that will really, you will really find evident there is how green the belt is. It is really an ideal vision of what a sustainable development should be visibly greenery, and the how densely green that that region is.

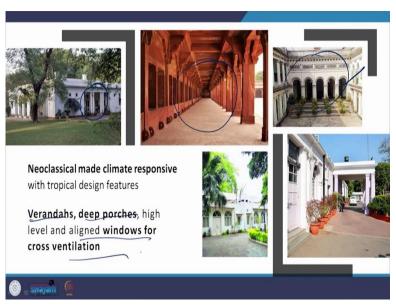
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Now, one of the very important bungalows to speak was the Flagstaff House, later on came to be known as the Teen Murthy House under Jawaharlal Nehru, which is designed by R.T. Russell in 1930. It is one of the finest domestic buildings of India of that period and became a prototype for large bungalows throughout India.

Now, the colonial house per se the prototypes just these are scattered all over south Asia they were executed by this, by the PWD, they are for lesser government and domestic buildings and they are mostly designed in the neoclassical manner. Now, though designed neo classically, they are made climatically responsive with tropical design features.

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For example, there are Verandahs, so you find the Verandah in the neoclassical bungalow and the Verandah has been borrowed from say Mughal architecture or even from other traditional architecture of India. Then there are these deep porches, which again, I am sorry, the Verandah here, and then we have the deep porches, and then there is the windows that are aligned for cross ventilation.

So, this is one thing that is a compulsion for all major architecture that is evolved in India, that they have to depend, they have to meet the climatic requirements of the building here. Because the buildings in those days, whether the Mughals made it or the British made it, they had to make them climatically responsive.

Now, since those ideas had been tried and tested in traditional Indian architecture for centuries, it was easy to learn from that architecture, and adopt those ideas into their buildings, and that is what the Mughals did, that is what the British did, that is exactly what

Corbusier and Kahn did when they came to India, they made their architecture climatically responsive. Corbusier's architecture continued to remain modernist but whether he built in Ahmedabad or in built in Chandigarh, it was climatically responsive.

Now, there was a time in Indian architecture, modern Indian architecture, post liberalization particularly, when India's economy opened up and we could bring in those western buildings that were actively controlled, that means they do not have to depend on the local climatic conditions. Like, glass and steel skyscrapers, which are completely sealed that is called as hermetically sealed and therefore you can condition those buildings with artificial conditioning and you do not have to depend on the climate outside.

Therefore, these buildings were no longer passively controlled by the natural climatic conditions, but actively controlled, and in India with the booming economy our cities as I would, if you remember the introduction presentation that I made our cities also had that buildings coming in that are actively controlled, corporate buildings, tall buildings, that are actively controlled.

So, there is a phase that happened, earlier why were the buildings passively controlled, why did Corbusier, because it was either in the early years the technology for air conditioning did not exist or when even when the technology was available, in India, in the early years, it was exorbitantly expensive to centrally condition buildings or even use air conditioning at a lower scale in our buildings, therefore they had to make the buildings climatically responsive.

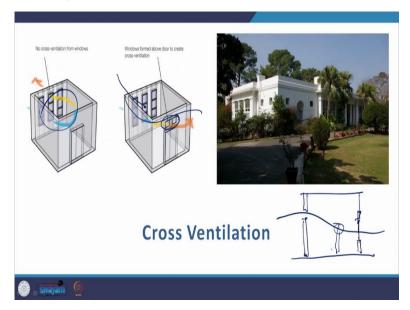
But when the boom happened, and we could spend that kind of money, we immediately went on for active controls, but now we are going back to climate responsiveness, and why is that? because now the cost we are paying is not in money, the cost we are paying is in climate change, is in global warming.

As I speak to you right now, and as you are wherever, you are in whichever part of India, you are experiencing climate change, and the impact of global warming. In north India, for example, at this time temperatures are many degrees higher than what is normal at this time, sudden climatic changes or weather changes happen, not only in India, but other parts of the world.

Therefore, in India, we are again reflecting on climate responsiveness, not only in India but in other parts of the world also. Parts of the world that had predominantly actively controlled buildings are going back to trying to make their buildings passively controlled and

climatically responsive, because the cost now is not money, the cost is the climate itself, the cost is our very survival. And, we will come to all these ideas, all these lessons later on in this semester.

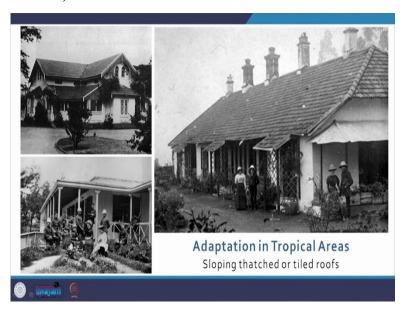
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So, just to talk about cross ventilation, if there is no cross ventilation this is what happens, the room heats up, what they did was a very simple idea, from the window air is pulled in and there are these ventilators provided above, the door for example, and the air pushes out. Now, what happens in a cross section? so if you have a window, if you have for example a ventilator here, and you have a window, here, the wind comes in and goes like this.

So, it is, if you are not able to provide window on this side, then, what it does is that for a very large part, we are in a zone where it is a human height, and the wind or the breeze flows through human height, and it is very comfortable for us. Of course, there are other attempts made to make this cross ventilation even more effective, maybe later on we look at those ideas, but this was an idea tried here in the bungalows. They modified they adopted these ideas for India's climatic conditions.

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And, the adaptation continued in other tropical areas of India, like south India, where they went in for sloping thatched and tiled roofs, because that was what was needed for the other parts of India where these buildings were built. So, the idea continued to be the bungalow idea, but it was modified based on the climate of India where it was to be built.

So, this students is just a glimpse of New Delhi, there is much more to learn, there is much more to learn and I hope that you will be curious enough through this lecture to take that initiative and read about it. Read about Sir Edwin Lutyens work, about Herbert Baker's work, read about their personal stories, and read about how step by step this amazing city came up which is now become a part of our architectural and cultural heritage.

Thank you so much, and I will be joining back with you in the next lecture when I will start with India's, I am sorry, I will again go back to pre-independence, we will look at art deco, and revivalism, and then we will step into the first generation of Indian architects which had studied in the west and come back to India from the period of around 1945 to 1970, we will look at that. Thank you so much, thank you for joining today.