History of Architecture and Culture – 5
Lecture - 26

Works of Walter Gropius

Walter Gropius was a German architect, who was the founder of Bauhaus school as I mentioned earlier. Along with Moe's van der rohe, le Corbusier frank Lloyd Wright best widely recognized as one of the pioneering masters of modern architecture. If you count the top 5 Architects in the world, Gropius is for sure to make it to that list. So he is that important of an architect. Why he is important, we will get to know about him in a little while. So Gropius did lot of innovative designs. He borrowed Materials and construction method from Modern Technology. He was always in line with all the latest technological development. And his advocacy of building that is to become an industrialized building he carried with it a belief that teamwork is better than single individual work and he accepted standardization and prefabrication and embraced the advantages of standardization and prefabrication prints. He uses Technology as a basis of transforming building into science which is made of precise calculation. What he does his he takes the latest technology from the market which is available? He incorporate them into his Building. There by whatever function the building has to perform is precisely performing the exact function which is intended to do. German engineering and its architecture where best. Gropius was just not a practitioner he was also a very renowned theorist and a teacher. It was Gropius who introduced the concept of screen wall system. Screen wall system for people who don't know is using of a structural Steel frame which supports the floor an there is an external glass cladding to continue without any interruption on the external side you don't see. Any interruption between floor labs and joints. All you see is glass curtain wall and on the inside there will be a screen steel frame which will act as a structural hold, actually it will hold all the floors together. It was Gropius who introduced to screen wall system. Gropius is extensive facility for Bauhaus this how. He combined teaching student and faculty members housing, auditorium and office spaces. All together in one single campus. He came up with an arrangement which is called the pinwheel configuration where from one point there will be four different radial configuration where each of the wings can represent different function if you look at the whole building from the air From the top a helicopter view it represents the form of propeller of an airplane which are manufactured in the Dessau area. That area is Famous for manufacturing aircraft propellers. From aerial view the whole building will look like a propeller. This Bauhaus building embodies various technological and design oriented advancement in that particular... At that particular point of time glacing was very very new to the market and it was Gropius who introduced the whole concept of screen wall system and he created and architecture that became one with transparency. He had supporting structure pricing behind the facing skin. There was a facing skin and there was structural members which was supporting the building and holding the building together and the facing skin has nothing to do with the structural support. This was a great Achievement because from the outside for the people who are looking at the building what he can tell is, we can show the complete transparency of the building whatever is happening on the inside is easily visible on the outside which means that transparency not just in the literal sense but also the metaphorical sense because sometimes you have to tell people openly what you are doing and this exactly give him the tools to be transparent with what he was doing. It was

completely radical structure. The structure was populated by a group of progressive mines starting a unique group of, group oriented approach to learning. Like I said in the previous episode, when we are doing Bauhaus school of Architecture, this is a place where lot of people from different part of Europe had come to teach and lot of people in and around the area had come to learn architecture and related arts.. So whole campus became a breeding ground for very progressive minds during that area. The Bauhaus building provides an important landmark of architectural history do it was dependent on earlier projects of architect as well as on the basic outlines and concepts of Frank Lloyd Wright. It consists of 3 connected wings or bridges. One building over here and the other building over here. There is school building here and the workshop building over here. They are connected through two story Bridge. This Bridge expanse the road that comes from Dessau. From the city when you want to enter Bauhaus you have to come through this road and you necessary have to pass between this Bridges. On the bridge here, the lower level of the bridge all the admin areas where located. All the administrative works, administrative officers were located on the lower deck. And on the upper deck was the private offices. Architects Meir and Gropius had their personal offices over here. On the upper level was the private office of two Architects WalterGropius and Adolf Meyer which could be compared to the ship's captain command Bridge due to its location. If you take a ship there is something called command Bridge next the panel areas and the engine areas of a ship. This is one of the most important areas, a captain is always positioned at the command bridge so, putting Maher and Gropius on this place metaphorically means that they are the steering captains of the ship that is Bauhaus. The dormitory and the school building is connected through wings where, assembly hall the dining room is created with stage in between. Basic structure of Bauhaus consists of clear and carefully thought out system of connecting wings which corresponds to the internal operating system of the school. There are different functions of the school interspace at different locations. When they are connected by buildings or spaces that are cafes dining rooms gym rooms or auditoriums which clearly marked the beautiful circulation between those two spaces. The technical construction of the building is stated by the latest technological development of the time. The Skeleton of reinforced concrete with brick work. If you look at the screen this is the plan of the building. Like I said there are two buildings over here. There is school on one side of the road and there is workshop on the other side of the road! On the ground floor this is the lord that comes from Dessau, it passes through the two buildings and it goes like this. On the first and second floor what you see is a bridge connecting the two wings. Workshop wing and a school wing. Here is the bridge showing the first floor plan has administrative office on the bridge. Again workshops and shop areas and other activities on the side. And teaching learning activities on the other side of the road. This is the site plan of overall Bauhaus school. They had mushroom shaped ceilings on the lower level and they had all the routes covered with asphalt tiles. So even on the roof people can actually walk upon. So that is added as another space were where they can meet talk and discuss architecture. The overall construction volume was more than 32000 cubic meters and the total cost of the building amounted to more than $900,000. Which was the currency of Germany at that particular kind of time. Economical achievement was possible only because of all the Bauhaus students and teachers the same time of course could be viewed as an ideal means of education... Because constructing 32500 cubic meters of volume in just 900 thousand marks at that particular point of

time was very very difficult. This kind of economical architecture was possible because they had enormous Corporation and coordination between the teacher’s students and lot of people who were actually involved in the process. By that process itself the overall education seems very flat and apparent, that it is a participatory school rather than an instructive kind of school where the teachers participate with the students true ideas for work, kill ideas click ideas, generate lot of interesting and amazing possibilities of the ideas or discussions that is how the ideal School environment developed. This was the finest example of that. One of the outstanding achievement of the new constructional technique has been the abolition of separating function of the world. Usually happens is walls are usually built as an element of support. Brick built house or low bearing structure what happens is the walls actually takes the load which means the walls will be really thick. The new concept which was developed by Bauhaus here is space saving construction which means all the load is transferred to a steel or concrete field work which is designed at specific intervals which eliminates the role of walls being as a load bearing structure. So the walls need not bear load any more. So the concepts of the walls load bearing has been eliminated completely in this building means the only role of wall is to create mere screens between two spaces. If there are 1 classroom here and another classroom there so we should not be able to hear what is happening onto that classroom into this. That has become the only function of the walls here. And of course on the outer side you need the curtain wall low kind of wall which means to keep out of rain, cold and noise of the exterior. So otherwise on the interior it was merely a partition between two spaces and partly noise barrier. That is all the walls need not take which means the walls could be ultra-thin. The top floor rooms where extremely Lite weight. Instead of pooky attics, which are darkened by dormers and sloping ceilings. Are almost unneutralisable corners in the sloping roofs all those things where avoided. If you wanted to know what else was avoided timber rafters was avoided because Timber was the chief cause of fires and termites. Ifthere is a moisture attack and a whole the building gets spoilt, termites and other insects attack. Completely Timber was avoided in the building. The possibility of turning that top of the house to a practical purpose you can have workshops discussions in the top floor you can turn it into a sun loggia, open air gymnasium, or children's playground. The top floor they made Asphalt it could actually be used. If you had done a simple intervention there, you could, removing the sloping Roche which was the norm of the day because top floors usually had sloping roofs at that point of time in all the buildings. So they removed the sloping roof which created unnecessary triangular space in the ends and corners totally not utilizable. So they removed the sloping roof and made a flat roof there it's meant that all the rafters timber materials can be removed plus the top of the roof can be used for some activity. So it was two or three mangoes from a single idea which was developed in that particular building. The structural provision was much easier because they could easily have been lot of successful subsequent additions and deletions. If they know they wanted to make an extra wing or an extra story it is still possible. They had put a slope roof, you have to remove roof and then build another floor. Now that there is a flat roof you can keep one building on top of that easily. So these were the advantages of making one small decision design there. This is the picture of the bridge which is connecting the school and the workshop on the opposite side over .Here is the road that this coming from the Dessau. Look at the clean straight lines and also not the amount of opening Gropius have made wide in the building. So look at the amount of sun and the light, the natural

light that can enter into the building by providing clean open glass facade so that a lot of what is happening inside the building is clearly visible from the outside. Totally increases that transparency. Here you can see that the administrative offices are all closed and there is interior lighting which means that there is late in the evening. There are people still working in the classroom and the people the heads of the institute are working even after the administrative people have gone. This kind of work environment was existing in Bauhaus. So what else did they do in this Bauhaus. They eliminated unnecessary surfaces which presented itself as an act of wind and weather. So all the surfaces which were unnecessary in the building everything was removed. What we have is only the thing that you really need. So all the hanging gutters they were suppressed inside so there were no hanging gutters. External rain pipes where put inside are often what happens is it may steal or chrome or any other type of external rain pipes they often get corroded or rusted easily. They can also get eroded easily because of weather actually. The pipes Are taken inside it's easy to maintain them.

Fagus Works

Let's take a look at other project which Gropius designed. This is called the fagus works. This building was done by Gropius even though he did it along with corporation of AdolfMeyer. Most of his early buildings have been end connection or end Corporation with architect of Mayor. Because he was his partner and a good friend in his early career. A fagus factoring was basically a shoe factory. It was a shoe factory which manufactured shoe laser. And in 1911 this building was supposed to be constructed like I explained in one of the early lecture is that Gropius Meyer, mies and le co base they all are studied under 1 great Master who is called Peter Behrens. And Peter Behrens designed AEG turbine factory. Fagus works if you look at the architecture of AEG turbine factory design by Peter Behrens few years ago and the fagus works which was designed by Gropius and Meyer, they have enormous amount of similarity feel, the mentor and the prodigy. You can see enormous amount of significance between those two buildings. You can see the same kind of architecture, same kind of symbolism which both Architects have introduced into this building. Show the starting point of this particular building, and there was an existing site plan which was designed by an architect called Edward warner. So all the ground plant and Constructions where already there. Gropius was supposed to work on those plans and make it better. That was the role given to Gropius. American United shoe machinery Corporation gave a loan and the construction started in 1911 and completed by 1912 step by step under the new concept was given by Walter Gropius. Why is fagus work very important, because it was a very important Landmark building of early modern architecture? This was commissioned by the owner Carl benscheidt who wanted to have a very unique structure that can say that the can no longer belongs to the past. The company belongs to the future. He wanted to say that and the building was a statement written by Walter Gropius and Adolf Meyer... Even though the building was completed by 1912, 1913 the interiors were not completed until 1925 because of the World War 1 which was happening between 1914 and 1918, bad economical conditions during and after the world war. First time in the history of architecture a complete facade is conceived in class. The supporting piers are reduced to narrow mullions of brick. Youcan see that the supporting piers are wearing very small narrow mullions of brick here and there. The corners are left without any support there is no support for the corner. Usually Architects or structural

engineers will go mad if there is no support provided in the corner. But there is structural element which are placed inside the building that can handle this kind of load here. This unprecedented sense of openness in the whole building and there is continuity between happening on the inside and outside created a sense of dramatic change in how we look at architecture in that particular time period. This is how the other side of the factory looks. You can see the chimney and the Logo type of the fagus marked on the chimney. Your you can see the kind of staircases the details which Gropius has worked out for this building. And there is another important quality that is there is large expenses of clear glass which means the usual hard material that takes to separate the interior and exterior is completely annihilated. Show all the people can clearly know what is happening on the on the inside, the people on the inside can clearly have a look at the exterior, a factory workspace which was totally confined to all the closed walls they didn't have any access to visual world outside, they were completely eliminated. Even the workers were happy to look at what is happening on the outside. Again like in the Bauhaus building the expression of the flat roof has changed. There was only one building before which hand the same kind of feeling before which was the Steiner house in Vienna. It was designed by AdolfLoos. We studied about Adolf Loos in previous lecture we remember the Steiner house he designed. He had a very similar feeling of pure cube which he had designed. Look at the sharp lines here. That doesn't have any support or so. All the support that they have are these little brick Mullins which they have it provides a large amount of visual Open Spaces from the factory. The client wanted very attractive facade was solved by Gropius in this special way. By means of a projected steel skeleton with pulled the function of support put to the inside thereby making possible broad dissolution of the exterior envelope into glass walls. The idea of curtain wall was at the first point expressed in a very assistant manager. Never before there was this amount of consistency well in a curtain wall in architecture. This is one of the sketch that Gropius had made for the building. You can see how close it is to the reality. The whole building construction procedure were a newly thought out which was perfectly in kind with inner functions and then it is articulated to a three dimensional form. The next important building which Gropius designed is house for himself at Massachusetts. It is one of the very beautiful interesting sites in New England. The site is beautiful on the crest of a hill amidst an apple orchid had more than 90 apple trees. Best part is it is only half an hour ride from Harvard School where he used to teach to his house. So from half an hour from his school he can reach this amazing spot you can see in the pictures here. Look how beautiful the spot is with more than 90 apple trees on the beautiful crest of a hill. Mrs. Storrow the land owner, the landlady of the entire area she left Gropius quite a few of you select, whatever you want to take and I can finance the building. So this building fitted beautifully weather landscape. At the same time over looking on its beautiful surroundings. The structure has a traditional light wood frame of New England, it had a painted clapboard siding. You can see the clapboard siding in the picture. Usually siding runs horizontally on all the buildings. But here Gropius has made it look vertical that makes difference in the building. You can see the club boards which are made vertical over here. Here are some drawings of the building and you can see the interiors of the building. The picture is taken in two different seasons. And here is a study room with modern furniture you can see the amount of Sun and few that this particular room has same as with the fair place sitting room. Look at the amount of openness this building offers to the people who are staying inside.