

## **History of Architecture and Culture – 5**

### **Lecture - 11**

#### **Chicago School of Architecture**

We have first kalifate today which is the world tallest building stands about 600m tall in height.

And people planned to build a kilometer tall building right now and all these are possible only because the rise of skyscrapers which happen tried after Chicago school. So that is the important school I am just telling you before we start on so that while you understand the important you studying that. So let's take look at what Chicago school look like and before that I am goanna showing you a picture. Just take a look at picture and guess what happened here there was a great fire in Chicago. This picture was taken at most prominent place the junction of state and Madison Street right after Chicago fire. If you look at that buildings there are nothing but plain trouble nothing could be used. There nothing but trouble for kilometers together this is the very sad thing happened in the city. But from every ash they rises new beginning every hand is beginning of new tomorrow. So this fire was reason why entirely Chicago city was completely redesign and rebuild from where it start.

From here Chicago became like this when they conducted the expo. I am goanna showing you series of buildings here and 1882 Montauk building was design this is one of the first building that had large number of floors its G+9 building. It has main entrance arch and it had freeze on the top again it was steel structure. This skeleton was made of steel this is the auditorium building to design in 1889. People look at the complex section they were able to develop that particular point of time. In this auditorium you can see all the complex structure and complex systems that merges in the auditorium system. From it look like a grand auditorium but look at amount of space to go behind the auditorium so that the auditorium can function properly. This is the hall and to make this hall function you need whole amount of spaces to make this thing

work that is how architecture works. For one space to function you need so many other function pair of function which make this one function happen? This is the one of the famous building Chicago stock exchange building this was designed in 1894. Here if you take a closer look note windows and the space between the windows. I tell you what it in coming slides.

The entrance of the building was designed in an arch like fashion. Like how traditional classical entrance were usually designed. If you saw the previous picture during the fire we are talking about bus were pulled by horses in the earlier industrial era. This was the late industrial era were buses are being pulled by horses. Here also you can see buses are pulled by horses and after the fire if you look at these buildings here you can actually see motorized car that travel to the city. So between these 20 years look at how Chicago has developed so much. This is another famous building which called the home insurance building. This also called the first modern skyscraper because of its huge height of the same time. The ingenuity of the architect have design such huge building with such huge openings. Then we have another famous called the wainwright building this is not actually in Chicago it follows Chicago school of architecture. But it actually in New York this is wainwrights building. Look at the complex decoration motives this building has. But the decoration limited to very small area like the ease and the freeze on top.

This is the most beautiful building most predominant building in Chicago school of architecture. In 1899 Carson Pirie Scott and co was established and this is the building how looks. Here again you can see the horse drawn carts are replaced with trams and also see some cars moving along, now you can see the development so far this is the entrance to the Carson Pirie Scott and co building. The entrance happens on the junction between Madison and state. The same place we saw the burned Chicago this is the same junction there was designed in after 20

years. This was the departmental store a shopping mall building this is another very interesting building it's called Chicago building this is built in 1904-1905. Here again it interesting to note the windows and the space between the windows. I am goanna explain that while.

Let's talk about how Chicago school of buildings barely started this is the kind of building. They started the Chicago school of moment these are the kind of buildings this is the Carson Pirie Scott building this is an extended version building. If you compare these two buildings you can clearly say that this is like big brother to this building. So what are the key characteristic here let take look at what is happening over here. If you see the base this is white the classical columns and it looks a very antique and there is another level over here. Which follows the same language and there is another thing over here each has three floor. But still these three floor has the same language and these three floor has the same language and top floor has its own language and there is a big wide para pit and freeze on top of it.

If you take a classical column there always three part to a column. There is base this is a shaft and there is a capital. This similar concept taken in Chicago school of architecture and they have done is. They thought that building also should have three main parts the base the shaft and the column call the capital. So in this building if you see this is the base the white part is the base this six floor over here is shaft of the column and final floor the top is the capital. So if you transfer the same to the big brother this is a base not as elaborate as this. But little more different on the version of that and this is the shaft little longer than the shaft. But he has shaft finally the capital with the top story.

The skyscraper or high rise building facilitated by the introduction of the electric elevator which was invented that particular point of time and sudden abundance of steel production in the country. So that was the reason why skyscraper started develop. Let take a look at few prominent architects who key proponent of Chicago school of architecture are

Henry Hobson Richardson, Daniel Burnham, William Holabird, William LeBaron Jenney, Martin Roche, John Root, Louis Sullivan. Here if you see Adler and Sullivan were together they were partners in an architecture firm. Burnham and Root were partners, Holabird and Roche were partners. Let's take a look at some of the key character of Chicago school of architecture. What gives that building belongs to Chicago school.

So the main distinguish features are use of steel frame building with masonry cladding usually terra cotta. So they build the building with steel like from a cage and in between the steel frames were ever they space they clad with terra cotta or masonry. In they are allowed large plate glass window areas because if you allow allowed large plate glass window areas they are many advantages. One primary advantage is reduce the load of the building because you don't have to build it. You have to leave open or glass window to it. So the load decrease number one. Number two is the view to the exterior of the building increase. Number three you get large amount of light inside the building, no four you can use that spaces to display your products to the exterior to the crowd below. So if you keep the product right next to the window people can see through the window to the product and then. When they see their product they get inspired to buy. So that was another famous characters of this school of architecture and that is the reason one of this why the Chicago school of architecture is commercial style.

The also limit the amount of exterior ornamentation for obvious reasons they thought ornamentation thing of the past. Then ornamentation is not necessary thing any more what was necessary was to build taller buildings get work better visibility. To gain more people to look at your product buy your product those are important things back then and the ornamentation were was used. The three part of the classical column was used in the construction of building like expand before the base the shaft and capital. The use of Chicago window I explain what Chicago window

is in a bit. Let's take look at some of the most famous buildings that were designed in the particular period of time which belongs to Chicago school of architecture. We saw certain some of these buildings were earlier slides some of the buildings are little known auditorium building, Sullivan building, reliance building, gage group building, Chicago building, brooks building, fisher building, Heyworth building, leiter 1 building, leiter 2 building, Marquette building, monadnock building, Montauk building, rookery building these were some of the famous building that were in Chicago that follow Chicago school of architecture.

But there were also buildings which were outside Chicago which also followed Chicago school of architecture. One or two buildings were even in Melbourne follow Chicago school of architecture. So like a promised I tell you what Chicago window. Chicago window is a typical three part window were in the first part is this second part and the third part. The second part is usually large fixed glass window which means it allow only for light from the exterior. Also you display some of the products on the interior so the people can look at it. These two parts of similar smaller than the central part but they are sash windows. Sash windows are window that open from bottom so you open window like this like a bush window are something. You don't open window like this or like this or horizontal slide. You open the window from bottom to top like a bus. So the sash window with central large open fixed glass sash windows on either side was the famous Chicago window. Sometime windows always placed in little projected way in which the small trapezoidal bay which created the window placed over the bay. That also another way of doing Chicago window.

The Chicago architect Louis Sullivan gave new expressive form to urban commercial buildings. Wainwright building which he designed in 1890 to 1891 in St Louis Missouri the guaranty building in buffalo New York which is designed in 1895. Carson Pirie Scott department store 1899 in Chicago.

## **Carson Pirie, Scott Building**

Like I said Carson Pirie Scott is in Chicago were as a guaranty building in New York and wainwright building in St Louis Missouri. So Chicago school of architecture doesn't necessarily have to been in Chicago itself. Let's take a look at Carson Pirie Scott building in detail it is a landmark department store building at state street and Madison Chicago Illinois designed by the famed Louis Sullivan famous architecture. Louis Sullivan was the person whom we attribute famous saying to. When he say form follows function this was actually said by Louis Sullivan. So that was the famous word which even now being followed most of the architecture schools being thought in lot of architecture schools and that he famous saying attribute to louis Sullivan.

The famous parishkar architecture prize like the noble prize of architecture also has Louis Sullivan engraving on the back side on the river side of the medal along with commodity form in the light. So I just told as to tell about to inform you about the fame of Louis Sullivan. The Carson Pirie Scott buildings is remarkable for its steel structure which allowed a dramatic increase in window area. It's like a steel structure and steel network the space between the steel columns and beams is your window space. So it had dramatic increase in windows area. Which in turn allowed far more daylight into the building's interior and far more display of merchandise to outside pedestrian traffic. The lavish cast iron ornamental work above the rounded tower in the bottom portion which entrance was also meant to be functional just thing not an ornamental motive. This what we talking about entrance it has tremendous ornamentation detail which also designed a function element to make sure look outside.

Sullivan designed the corner entry to be seen from both state and Madison and that the ornamentation situated above the main entrance would be literally attractive. The building is one of the classic structure of Chicago school. The state and Madison these two roads are very

important in Chicago and when this building is situated in corner of the street. Sullivan made the entry from either of his sides are the Madison or state. But he didn't do that he made the entrance right of the corner in both of the streets and he make sure the people passing through Madison or state. Both people have look at the entrance and take a look at the building look at the genius of building. Now you realize the Chicago school of architecture also called as the commercial style. This is the plan of the building very straight forward building. Were you can see stair cases wherever necessary and huge space for display for all your things toilets on one corner and the entrance. These are the two roads Madison and state here along these two roads the corner thing which he design.

### **Wainwright Building**

Let's take a quick look at another famous building called wainwright building. It is a 10 story red brick landmark office building in downtown Missouri designed by Adler and Louis Sullivan. Sullivan used a steel frame and intricate terracotta ornament in vertical bands to emphasize the height of the building. It is only a 10 story building which not a very tall building but still Sullivan was able to make the building look very tall. And this was the specialty of the building Sullivan even though the building was a 10 story building. He make sure that the building show the verticality so what he did was even in the little space he could find he made vertical structure and he intricate terracotta ornament which form vertical band. So that the verticality can be expressed in every single thing. Aesthetically the wainwright buildings exemplifies Sullivan theories about the tall building which include a tripartite composition. Tripartite is the column shaft and beam the composition which are talking about earlier. Tripartite composition based on the structure of the classical column and his desire to emphasize the height of the building. This is the plan of the building which is very straight forward corridors right in the middle and the office along the windows. Sullivan use to

write the skyscraper must be tall every inch of it tall. The force in the power of altitude must be in the glory pride of exaltation must be in it.

It says that the verticality the power of altitude must be in its glory pride exaltation must be in verticality. It must be every inch a proud and soaring thing rising in sheer exaltation that from bottom to top it is a unit without a single dissenting line. Despite the classical column concept the building design was deliberately modern featuring none of the neo classical style elements which Sullivan thought. This is the inside courtyard of the building which you can see over here is this space. These are the sum of sketch which the architect made and take the interior of the space it look like this. Double story building with lot of light vase in even the interior look at the amount of daylight which the building can brim. The ornamentation of the building includes wide frieze below the deep corners which expresses the formalized yet naturalistic celery leaf foliage typical of Sullivan and published in his system of architectural ornament decorated spandrels between the windows on the different floors and an elaborate door surround at the main entrance. Apart from the slender brick piers the only solids of the wall surface are the spandrel panels between the windows.

So those are the basis where he needs to have certain ornamentation of the building. Ornamentation is not necessity of the building it is just that when there is a solid space of the walls why not ornamented to make it attract. Even the ornamentation must have a meaning according to Sullivan in here the meaning is to attract the people to make look at the building. In such a way that when look at the building they look at the product which are inside the building and then the economies grows up. So even though the ornamentation detail is the result of economics. If you take a look at Wainwright building started analyzing with respect to principles of architecture. This is the structure of the building and if you take a section this is the plan and this the section of building you can see how they are comparable. If you see the circulation which is in white



color and usage space in dark color can clearly see that very minimal circulation and lot of usage spaces which happen.

You can see that the elevation geometry the rectangle and diagonal geometry can be reflected in the plan elements as well. Even in the planning the same kind of geometry still exists even in the miniature versions of the rectangle still the geometry exists. And he try to use the additive and subtractive forms here a small additive form over here and subtractive form over here which gives twist the building. If you take the section of the building gets a natural light from the outside on the courtyard and almost all levels. So the building is based with natural light at all times. If you take a look at massing look at one huge building and with little slides on corners of the top which gives a classical look. Compare the different unit whole these are the two rectangle unit with another rectangle here together forms the whole building. If you look at the geometry and balance it almost symmetrical along the axis similar to this.

If you take a look at vertical bands there are hierarchy bands are here similarly you keep counting end number of architectural principles that can be denied from this one single building. This is in the architecture book itself this building. That is why ladies and gentle Louis Sullivan is one of the most important architect to study about in her architecture carrier. Taking closer look at architectural motive decorative motive that he has design. This is that decorative motive and if you see that there is a motive are being manufacture in different thing but still the continuity keeps then going.

This is the actual color of motive in terracotta this is how it looks. The wainwright building is considered the first skyscraper to forgo the normal ornamentation used on skyscraper at the particular time. They used different kind of ornamentation to bring in crowd and bring in boost economic of the space. Some architectural elements from the

building have been removed in renovation and taken to the saugnet  
Illinois storage site of the St Louis building arts foundation.