

Contemporary Architecture and Design
Prof. Saptarshi Kolay
Department of Architecture & Planning
Indian Institute of Technology, Roorkee

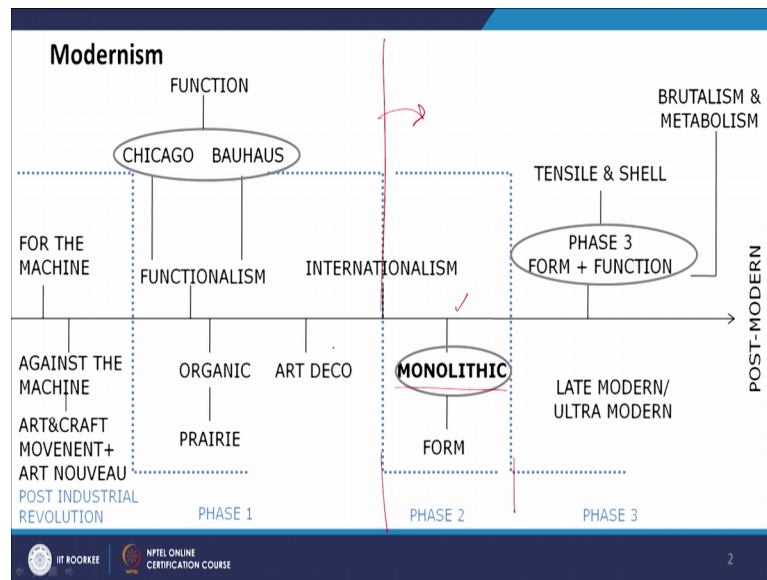
Lecture - 21
Phases of Modern Architecture- Monolithic Style

Welcome students to the online NPTEL course Contemporary Architecture and Design. In the previous class we were discussing about expressionism, before that we start we discussed inter internationalist movement.

So, internationalist movement was almost at the end of the first phase and the next phases started next phases of modernism started evolving. So, in internationalism we have seen that a particular design style was there which is like the material should have its own texture and color so, they it would not be painted. And then it will the building will be will look light weight so, there will be a long cantilever and the color which will be used which is mostly will come in the neutral color palette which is mostly white and black and sometimes grey. And steel was used and the it will be expressed from outside through the pilotis and the structure members.

Now in the internationalist movement was as we were discussing earlier it got carried forward in the later modernist movements, but with some alternations. Now, we will discuss in the we are coming towards the next phase which is as we were see seeing it as a monolithic which is form.

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Here if you look at, so we have covered this and now we will discuss this second phase. So, second phase if you see this just only one style which is I am calling it monolithic, but it can also be an extension of internationalism. But in internationalism as we have seen at this is the free flowing amalgamation of different kind of cuboids and the form will be fusion of cuboids, like we have seen in the Farnsworth house and Johnson house and, but in monolithic there is a particular form.

So, form is again having a little bit more emphasis than internationalism. And based on the form these internationally style can be broken into a micro category which is like a cylindrical form and then cuboidal form and which also can be something modulus so, modularity also started coming. So, we were discussing that in internationalist movement like George Nelson in his concept of metadesign how modular furniture's and interior designs came in internationalist movement.

So, with an modular approach so, one particular form can be repeated and it can create a grape bunch like form, but particular unit or the module will be same and that will be repeated. And there can be a particular proportion in the form or the rhythm in that rhythm that particular module can be scaled up or scaled down that is also there in different kind of. So, all these experimentations happened with the international style in this phase 2.

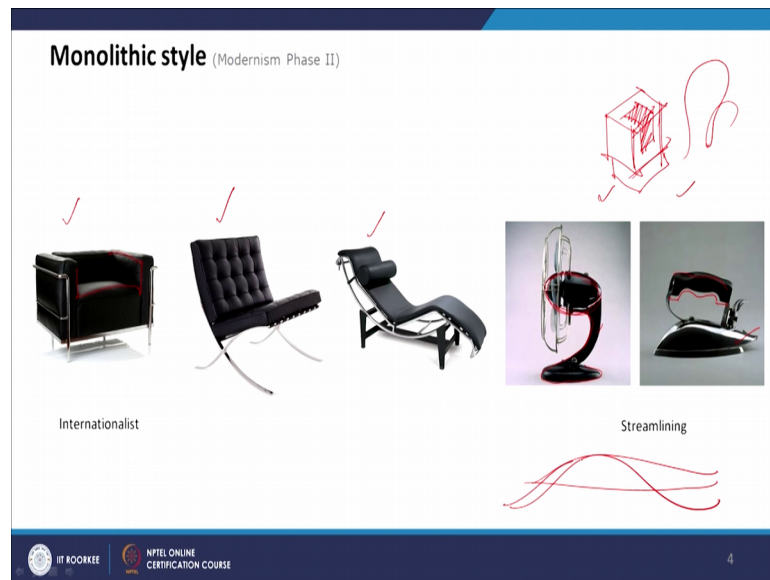
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So, in the phase 2 as if you look as so, this is the building from this phase 2 which is also kind of internationalist and this is the building from the pre internationalist movement which is villa Savoye Corbusier. So if you look at this form of this is designed by Oscar Niemeyer, we will discuss this building in today itself. So, here if you look at so, two different dome a part of dome is one upside down and one is like a proper dome is there and two exactly similar volume of cuboid is creating as a acting as a mirror of two different domes.

So, we will discuss this and this is in Brazilian how Oscar Niemeyer have developed this concept. And so we have, but also we can see some similarity on the visual look and feel. So, it was also has similar kind of color tones so, no other different kind different colors has flashed on top of this and the form is very simple and geometric and no curves and other punctuations were added here.

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Now, if when we were discussing internationalism we have also seen the furnitures how furnitures were there. Even when we were discussing Nobuchis furniture and how Nobuchis furniture got influenced from the stream lining. Now if you look at this go back and let us look at this so, this also came after this after the phase 2, where Eurosimeis experimenting more with the form with the shell structure and also there is experimentations with the tensile structure which is mostly with the steel.

So, this steel and concrete concretes power of construction power was used as well as the aesthetics they have also explode the aesthetics of the form. So, it was not just the cuboid which was there in the internationalist movement so, gradually they gain from the internationalist style we were the form is getting its more emphasis in these phases.

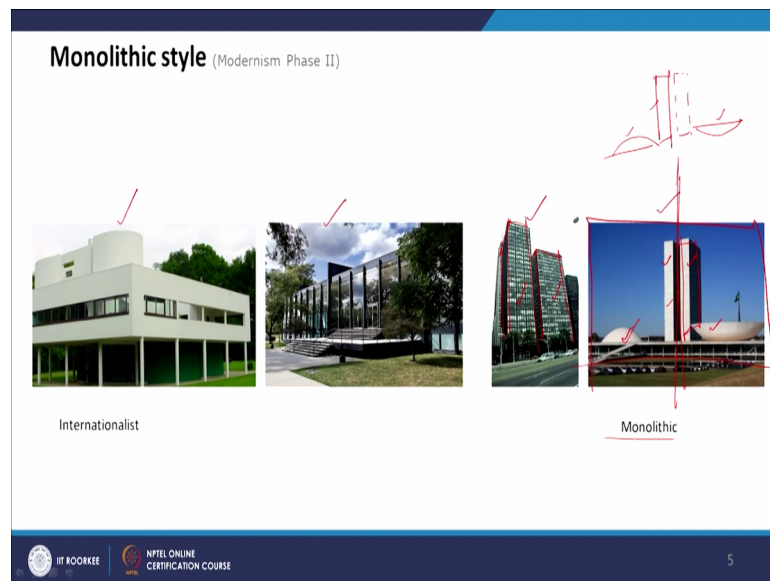
Now, if you look at the furniture designs so, this is Le Corbusier chair this is Van der Rohe Barcelona chair and this is also Le Corbusier chair and then these two are the examples from stream lining in product design so, stream lining in product design also has a similarity with the internationalist movement. So, here also we see the similar kind of color tone which is black and white and the materials own color which is a stainless steel will be used and it is functional the way it is functioning it will be visible. But in stream lining we will see a particular curve which is passing through and that will create the form and which will blend with each other. So, it is not a pure geometric box or

cylindrical structure which was there earlier and you scoop out some volume from this box and the product is designed it is not like that.

Instead of that there is a curvilinear form which is passing through the throughout the product that will create the form and here the ergonomics is having more emphasis than the pure geometry here in this so, far the geometry is more emphasized, but here if you look at the way it will the handle of this iron is designed so, its evolved from the ergonomics

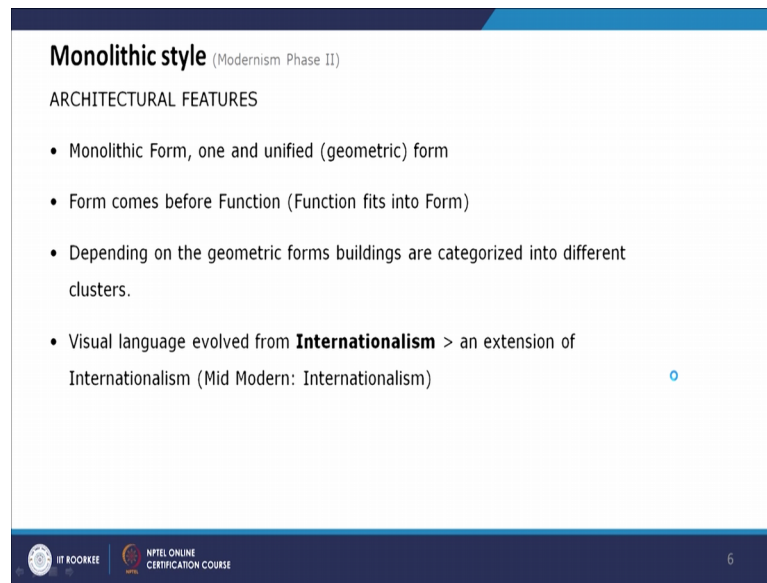
And many of the streams lining products are also in automobile. The aerodynamics aerodynamic principles of were also followed and those have given birth of this automobiles the curvilinearity of the automobile.

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Now, if you look at the architectures so, this is the internationalist building which is villa le Lac by Le Corbusier this is the villa Savoye Corbusier building this is also Miz Barnardos building in monolithic style and this is Oscar Niemeyers building. So, here in this building we will see two of this building which is Seagram buildings are complementing each other. And this is we have discussed how this is acting as a fulcrum, there is a bilateral symmetry visual symmetry between this buildings.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- Monolithic Form, one and unified (geometric) form
- Form comes before Function (Function fits into Form)
- Depending on the geometric forms buildings are categorized into different clusters.
- Visual language evolved from **Internationalism** > an extension of Internationalism (Mid Modern: Internationalism)

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Now the architecture if we talk about the architectural features monolithic form is one and unified geometric form. Now if we look at these compositions so, these forms might look and these are not one form these are four different forms, but if you look at composition together if we just delete this part. So, this form few of the forms will lose its emphasis so, this central line will be shifted to the other side.

So, if we are deleting this volume and then these two volumes are there so, the composition will be disrupted again if you delete these or any other volume so, the composition will again be disrupted so, this is acting as a whole and so, as this building in Seagram building; so, this is in this twin box is kind of complementing each other.

Now, the form comes before functions, so function fits into form. So, there is other connotation like function follows form so that was not this was not connoted over here. So, form so, I am not saying function follows form because as that is that will come in the other different design movements in post modern style.

So, this is form is important because if you look at the form so, the form from outside is very rigid and that is the pure form and if you add something from the form in the form or delete something from it so, it will the balance total visual balance will be disrupted; so, the form is very very important in this style.

And then depending on the geometric forms of these buildings are categorized into different clusters. So, they were just experimenting with different kinds of forms, different kinds of geometric forms. So, it is not biomorphic or something like expressionism like cave-like structure or some other kind of forms like inorganic organic or prairie those kinds of forms were not there. So, it is like pure geometric forms were there.

So, visual language evolved from internationalism an extension of internationalism with in mid modern era.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- Depending on the geometric forms buildings are categorized into different clusters.

- Box ✓
- Twins ✓
- Circle ✓
- Grape-bunch ✓
- Metastasis ✓

The slide includes two hand-drawn diagrams in red ink. The left diagram shows a cluster of rectangular boxes of varying sizes and orientations, some overlapping, representing the 'Grape-bunch' style. The right diagram shows two rectangular boxes stacked vertically, representing the 'Twins' style.

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So, based on this different kind of forms so, these are the we can categorize this buildings into different styles which is box like then twin box like so, box is will be cuboid and twin box be two cuboids which are complementing each other or twin cuboids or twin cylinders can also be there in marina city we will see some examples are there.

Then it can be circle or in dome like structure then grape bunch as I was talking about that the concept of modularity also was there so, one particular module will be repeated it can be a form based module or it can be a structural canopy like module which can which will be repeated and will create the design and metastasis we will discuss that so, this metastasis is based on the particular proportion so, in grape bunch we are having a particular module which are getting added in different direction and then creating the final design, but in metastasis one. So, this modules are getting just repeated.

But in metastasis it can be scaled up and rotated in different direction. So, that is the difference between metastasis and grape bunch.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- BOX
 - MoMA, New York, 1932; Edward Durell Stone, Philip Goodwin
 - Huntington Hartford Museum, 2 Columbus Circle; E. Durell Stone

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So, first is box in box we have MoMA New York which is in 1932. So, this is also parallel to some of the modern Phase 2. So, this is designed by Edward Durell Stone and Philip Goodwin. And then Huntington Hartford museum this is also by Edward Durell Stone. This is later this term this buildings name is converted into 2 Columbus Circle because of its address.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- BOX
 - MoMA, New York, 1932; Edward Durell Stone, Philip Goodwin



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Now, if you look at the MoMA or museum of modern art of New York which is designed completed in 1932, which is designed by Edward Durell Stone and Philip Goodwin, you will see some influence of internationalism. So, if you look at this elevation from this side so, this part is protruded outwards to give that elevated and floating look which we have seen in Farnsworth house.

So, in the Farnsworth house was also elevated and then there was this platform almost over there. So, this also if you look from this side it has an elevated and floating look because of this there is a cantilever. So, if you look create a section from this side so, it will be something like this and the canopy will be protruded like this.

So, this is giving the space for the pedestrian as well and also following the philosophy which is taken from the internationalist movement. Now if you look at this part there also is cantilever roof; overhang on top of this top floor. So, this is also giving another anti gravity look and this also a very thin member which looks from this side from this elevation which looks like this is again floating.

And if you look from this side the material palette and everything is also matching with the internationalist movement and the punctuations in this roofs are also circular and going to a proper rhythm which is an international style. From the inside there is a courtyard even in the landscape if you if you look at this juxtaposition and play with the different kind of squares and rectangles so, there is no curvilinearity added and this squares and rectangles are one sometime this is coming this is becoming a water body, sometimes this is becoming a green patch, sometimes it is becoming some seating area. So, this is also this landscape is also blending with the visual language of the building.

And if you look this from this side also the materials are again the glass curtain wall which is which is direct which has a direct connection from internationalist movement and also if you look at this part so, there is again solid and void is there and it is also giving you anti gravity look and very light it looks very light and not so bulky though the mass is big, but still it has an anti gravity look.

Now this is another example by Edward Durell Stone, this is Huntington Hartford Museum or later it was it is called a 2 Columbus Circle.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- BOX
 - Huntington Hartford Museum, 2 Columbus Circle; E. Durell Stone



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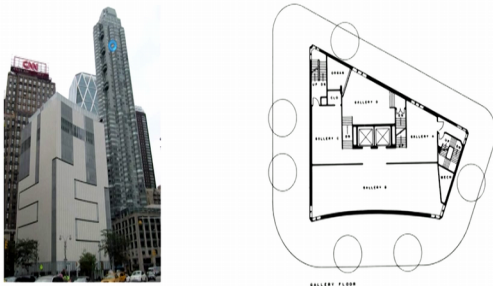
If you look at from outside this is also again some it is like a box. And this if you look at the facade treatment it is quite blank and then these kind of dots and kind of fenestrations were added, and on top you would see a little lighter punctuation on top of this part.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- BOX
 - Huntington Hartford Museum, 2 Columbus Circle; E. Durell Stone



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But later this got modified and it is totally a different and cladded with a different kind of cladding. And so, this changed the look when it got redesigned or the facade got redesigned.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - ✓ Old World Trade Centre, 1963; Minoru Yamasaki
 - ✓ Lake shore drive apartments; 1956; Mies Van Der Rohe
 - ✓ Marina City; Chicago, 1960; Bartrand Goldberg

The slide includes a hand-drawn diagram in red ink on the right side, showing three vertical rectangular towers of varying heights. The tallest tower is on the right, with a red arrow pointing to its top. The two shorter towers are on the left, with red checkmarks next to them. A red arrow also points from the text 'Old World Trade Centre' to the diagram.

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Now, there is another typology which is twin. So, in twins it can be the twins can be two different cuboids it can also be two different cylinders. So, in twins we have few examples to discuss; so, this is one Old World Trade Centre which got destroyed in 9-11 attack. So, it was designed in 1963 by Minoru Yamasaki was a Japanese architect and the Old World Trade Centre was two different towers which was of a same volume.

Now, the new world trade centre which is called one world trade centre. So, there is just one tower which is designed by Daniel Libeskind. So, this comes in complete different style approach which got designed recently. This is a post modern building which comes under deconstructive style, but this is this was earlier the earlier one world trade centre which was the twin towers twin world trade centre was in this style so, this was designed by Minoru Yamasaki where there were two identical towers were there.

Now, those functions of two different towers were now recently combined together and taller world trade centre was designed recently. So, in the next example is lake shore drive apartment which is again designed by Van Der Rohe and the marina city by Bartrand Goldberg which is in Chicago.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - Old World Trade Centre, 1963; Minoru Yamasaki



The image shows architectural models and a photograph of the Old World Trade Centre. On the left, a physical model of the twin towers is shown with red lines highlighting their verticality and staggered positions. In the center, a 2D architectural drawing of the towers is shown with red lines. On the right, a photograph of the towers is shown with red lines. A red line connects the bottom of the photograph to the bottom of the 2D drawing.

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So, this is the old world trade centre where we have we can see that twin towers were there which is almost of a same height and the same volume and just one is just protruding outside and one is staggered inside.

So, now in these this was the first design of the new world trade centre which is designed in the deconstructive style. So, this is clearly not pure geometric form so, this is that is why it is not a modern building its a post modern building later the same architect Daniel Libeskind designed this which is now we can see this world trade centre which is also a deconstructive style, so here if you see, so this is not a cuboid.


So, these corners are truncated and this is distorted form of a cuboid. So, this is this does not come under the same stylistic movements and this was much new and recent design movement. So, this was the earlier world trade centre falls under this twin monolithic style.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - Lake shore drive apartments; 1956; Mies Van Der Rohe



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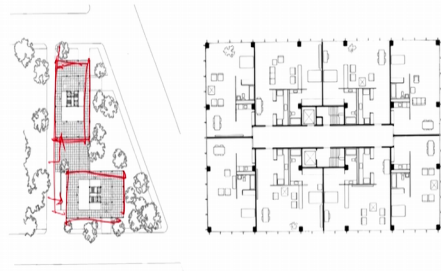
Now, this is lake shore drive apartment which we were discussing little ago so, this is again designed by Mies Van Der Rohe.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - Lake shore drive apartments; 1956; Mies Van Der Rohe



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So, if you look at the plan so, two of this apartments has a podium which has a common entrance approach and this is one cuboid and this is the other cuboid has almost a similar looking plan, but the they are they are in a 90 degree angle. So, these so, from this service service course so, there is this corridor which is serving 6 apartments in each and

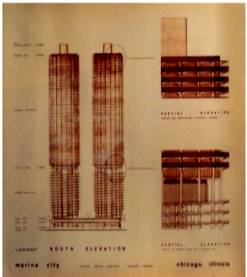

every tower. So, if you look at this tower is going a little higher than this tower, but they are almost of a similar design.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - Marina City; Chicago, 1960; Bertrand Goldberg



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Now, Marina City in Chicago which is designed in 1960 is Bertrand Goldberg's design again this is the same two same structure which is acting as a twin because of its similar look it has cylindrical volume.

So, in from this from ground to this area this is for the parking. So, there is a ramp for the car parking and from this part this is apartment.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWINS
 - Marina City; Chicago, 1960; Bertrand Goldberg



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If you look at so, this building is facing a sea but if you look at we can see this part of this car parking which is the lower volume.

And again this two buildings are combined together with a podium so, this twins are not just two different things. So, when the structure and the composition is mind is binded with the platform or the structure, so they come as a they play as a single composition.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- TWIN'S
 - Marina City; Chicago, 1960; Bertrand Goldberg

The slide contains two architectural diagrams. The left diagram is a circular floor plan with a central core and multiple concentric rings of rooms. The right diagram is a heart-shaped floor plan with a central core and two curved wings. Red lines are drawn over both diagrams, highlighting the central cores and the curved edges of the buildings.

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Now, if you look at the apartments design so, all these apartments are designed in a same way around the service central service core. Now one side of this marina city is the Legfront of Chicago. So, these, but this Legfronts view did not change the marina cities design from of the leg front side or the other side.

So, this is how the internationalist movement is also influencing it. So, wherever the context the context change is in the lake side apartments and the other apartments, but this still design is the same thing. And the form which has to which was maintained was a rigidly maintained it was not changed in the lake side apartments was versus the other which is not facing the lake.

So, there was no difference between them in the from outside also from the form related planning related thing.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- CIRCLE
 - Olympic Games Stadium, Rome, Pier Luigi Nervi
 - Borodino Panorama Building, Moscow, 1957
 - Govt. Centre Brazil; 1957; Oscar Niemeyer (twins and circles)
 - Roofless-Church, Indiana, 1060's; Philip Johnson

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Now, if you look at the circles the few examples will be Olympic Games Stadium by P L Nervi then panorama building in Moscow then Government of Brasilia which was we were discussing Oscar Niemeyers design.

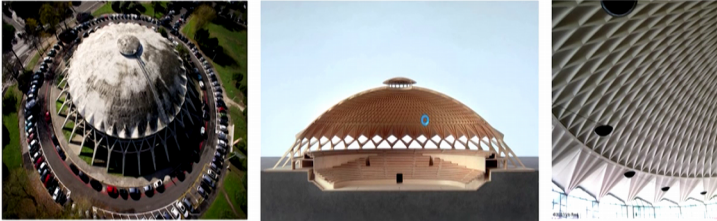
So, this can also be in circle also it can be considered as twin because of its form and then roofless church by Philip Johnson.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- CIRCLE
 - Olympic Games Stadium, Rome, Pier Luigi Nervi



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So, this is Pier Luigi Nervis design which is olympic stadium in a Rome so, you can see the structural members and this structural elements are strengthening the roof and Pier

Luigi Nervi was Pier Luigi Nervi's other designs are also design emphasize the structure and how structure the structural loads are flowing through the roof and coming as this columns and passing through to the ground.


So, this later these kind of experiments were also done in the shell structure and tensile structure which came later after these movement. Now this is another example on the on the same domain and then this is the centre of Brasilia by Oscar Niemeyer which is the Brazils National Congress building.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- CIRCLE
 - Govt. Centre Brazil (National Congress); 1957; Oscar Niemeyer (twins and circles)



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So, this is has a twin circles which is one is a upside down and one is in the in the normal fashion. So, it is his philosophy was the way so, one side it is capturing the wishes from the God and then its pouring in the field. So, it is like capturing the everything good from the nature and then feeding it in the earth.

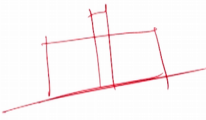

And also we were discussing that it can be bilateral because of the bilateral symmetry it can also be considered as twin.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- CIRCLE
 - Roofless-Church, Indiana, 1960's; Philip Johnson (Shell Structure)



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Now the Roofless-Church this is small structure by Philip Johnson. Now Philip Johnson have also designed that Johnson house which we have discussed earlier. This Roofless-Church is can also be considered as a shell structure movement in later phases, but this also has circular forms so, and it is very simplistic.


So, it can also be considered as in this domain. So, and because of this shell the formation of the shell structure these which got evolved from this monolithic style this got carried forward in the later phases as well.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- GRAPE-BUNCH
 - U.S. Pavilion, new Delhi, 1959 world agriculture fair, Minoru Yamasaki
 - Itamaraty Palace (1960, inaugurated 1970), Brasilia, Brazil; Oscar Niemeyer
 - Kimbell Art Museum, 1972, Fort Worth, Texas, Louis I. Kahn



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Now in the grape bunch as I was telling you that there will be an particular module will be will get repeated and then create the final form. So, few examples of grape bunch is us pavilion in New Delhi which is designed as temporary pavilion by Minoru Yamasaki which got demolished after this after the usage.

And Itamaraty Palace which is like palace of arches which is again designed by Oscar Niemeyer which is in again Brasilia Brazil and Kimbell Art Museum by Louis I Kahn is few example of grape bunch.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- GRAPE-BUNCH
 - U.S. Pavilion, new Delhi, 1959 world agriculture fair, Minoru Yamasaki

The slide contains two photographs of the U.S. Pavilion in New Delhi, 1959, designed by Minoru Yamasaki. The left image shows the exterior of the pavilion with a red circle highlighting the central dome and red arrows pointing to the vertical columns. The right image shows the interior of the pavilion with a red circle highlighting the central dome and red arrows pointing to the columns. To the right of the photographs is a red schematic diagram of the pavilion's structure, showing a central circular dome supported by four columns, with red arrows indicating the direction of the columns and the dome's curve.

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And if you look at the first example which is us pavilion so, this is the unit of a pavilion. So, this got repeated in different direction and the pavilion got formed. So, this was designed in 1959 for world agricultural fair in Delhi. So, so, if you look at this pavilion so, this was one unit and then in different direction if you repeat this unit so, the the pavilions space got increased.

So, and this if you look carefully as is depicting the indo saracenic style of Delhi and like the Taj mMahals top or the Humayuns Tomb top this onion shaped dome is simplified in much modern way and this, but this onion shaped domes curve is there. And its position on top of the structure elements which are exposed from outside and can be seen from outside.

So, this is the fusion between the traditional architecture how traditional architecture got the was the inspiration to design this kind of pavilion. So, from outside so, this looks like a grape bunch and cease of similar looking modules are cluster together.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- GRAPE-BUNCH
 - Itamaraty Palace (1960, inaugurated 1970), Brasilia, Brazil; Oscar Niemeyer



Now, this is Itamaraty Palace which is there in the Brasilia which is again designed by Oscar Niemeyer if you look from outside. So, this roof of this structure has a particular module which got which is getting repeated. So, this arch like volume is the module and which is getting repeated in the repeated in this direction and so, it get so, the roof is getting elongated.

So, this main building is there inside this canopy like structure. So, this canopy is actually the coming within the grape bunch structure.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- GRAPE-BUNCH
 - Kimbell Art Museum, 1972, Fort Worth, Texas, Louis I. Kahn



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Now, this is Kimbell Art Museum by Louis I Kahn. Louis I Kahn has used this form of grape bunch in many different places, like for example, IIM Ahmadabad also has a particular module which is getting repeated, but that comes under different era which is brutalism and we will discuss that later.

But here if you look at the Kimbell Art Museum a particular vaulted structure is getting repeated in different form and this vaulted structure sometimes is getting squeezed to create a courtyard, sometimes it is getting added with another volume of vault and sometimes some parts are getting punctuated to take the sunlight from outside as a sky light and, but together all a particular unit which is a vault is acting as a the one unit of this particular design.

So, from outside also if you look at this vaults are added and that is creating the design of this building, but always the vault is not used in a on the similar fashion because the function within the vault are getting changed. So, that is why this vault is does not have any facades from three sides; So, it kind of a its ending part and when people approach from this side so, this is becoming welcoming form from outside and gives a canopy like structure and the other walls are used as a interior as a space for activity, but within these walls are also the activities are different.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- GRAPE-BUNCH
 - Kimbell Art Museum, 1972, Fort Worth, Texas, Louis I. Kahn



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So, within this one particular vault can also be used in one particular module can also be used in a different function. For example, in this vault part of this vault is transformed into a courtyard and so, that within the museum ample amount of light comes. And sometimes 2 vaults so, this is 1 vault is using is getting used and then sometimes there are 2 vaults are getting merged together and on top of this vault if you look at so, these part act acts as a sky light. So, from top the light the illumination will come from top and that is the better way of lighting the art objects which are getting showed.

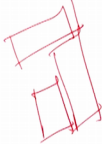
So, if there is the fenestration from here so, these objects which are there on the wall will not be illuminated because light is coming from behind these objects. So, if it comes from top so, they will be properly illuminated and if you look in the elevation in the section different usage within the spaces also can be seen so here also the vaults are used in the different way.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- METASTASIS
 - Sainte Marie de La Tourette, 1956-60; Le Corbusier



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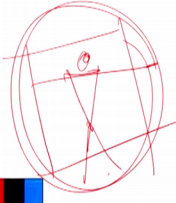
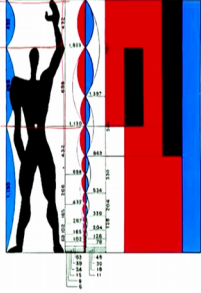

Now, in metastasis: so, metastasis as we were discussing so, this will have a particular proportion and within that proportion some element or the facade treatment will be augmented in that proportion.

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Monolithic style (Modernism Phase II)

ARCHITECTURAL FEATURES

- METASTASIS
 - Sainte Marie de La Tourette, 1956-60; Le Corbusier



Le Modulor

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So, this is this proportion is designed by a Le Corbusier in his Le Modulor. So, this is called Le Modulor by Le Corbusier. This is the French term because Le Corbusier is was a famous French architect and he derived this module which is like Leonardo da Vinci have painted vitruvian man and derived the derived the perfect proportion. So, vitruvian

man was is there in a in a square or also in a circle and he developed the fibonacci the proportion of fibanocci series or golden mean proportion.

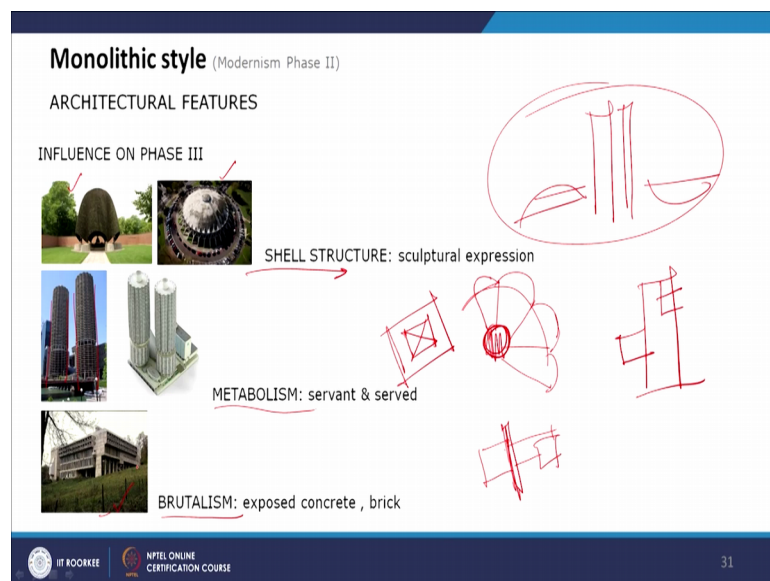
And Le Corbusier developed this proportion called Le Modulor which is has a has a particular proportion within that and he have followed this proportion in his sculptures and in his architecture in his building as well. So, this is the Sainte Marie de La Tourette, which were in this facade you will see the all this facade treatments and the fenestrations has a particular proportion which is developed from Le Modulor.

So, all these particular proportion where these lines horizontal and vertical lines are going has the proportions and the lines are coming from these lines of Le Modulor.

So, this architectural style of the phase 2 which is the derivative of internationalist movement got carried forward in phase 3. So, in phase 3 we will discuss few architectural styles in the next classes and you will see how these styles and this features of phase two internationalism which can be called as monolithic style is transferred.

So, monolithic in the in the in architecture or civil engineering term is connoted like one stone or one particular cement molded structure. So, in here it is not the same meaning it is the monolithic here, is absolutely visual term so, look like a one single form.

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So, when we were discussing this Oscar Niemeyer structure, so they are four different structures, but together they look as a one particular monolithic form. So, here the term

monolithic does not mean that this is derived from a particular one stone or one it is not casted together a concrete casted together. So, it is like one particular form which is which if you delete something from here or add something from here so, it the form will be disrupted. So, that is what the monolithic term depicts over here. So, it is absolutely visual term.

Now, if you look at the influence so, these roofless church by Philip Johnson and Pier Luigi Nervi on Pier Luigi Nervi stadium is later translated in the shell structure of (Refer Time: 34:37) and other (Refer Time: 34:39) tower shell structure and tensile structure and then these kind of marina city later marina city and the lake shore drive apartment we have seen there is the service core in the center and the soft spaces are on the outside.

Even in the marina city we have seen the service core is in the center which is designed in a circular way and then these different apartments were designed around it so, these are the served space which has a same module. So, later in the metabolism movement so, this service cores were designed in a separate way and then served spaces will be designed in a which will be amalgamated around the served spaces servant spaces.

Now, in brutalism we will see in metastasis in Le Corbusier Le Corbusier work we have seen exposed concrete because its Le Corbusier was have used this material of Le exposed concrete in many places even in Chandigarh's buildings he have used exposed concrete which comes under brutalism.

So, that is also there in the metastasis movement. So, that kind of material which was there started evolving from metastasis also there in the brutalistic architecture. So, these few architectural features which were there evolving from the monolithic or the later phases of internationalist movement will be carried forward in the next movements of phase 3.

Thank you.