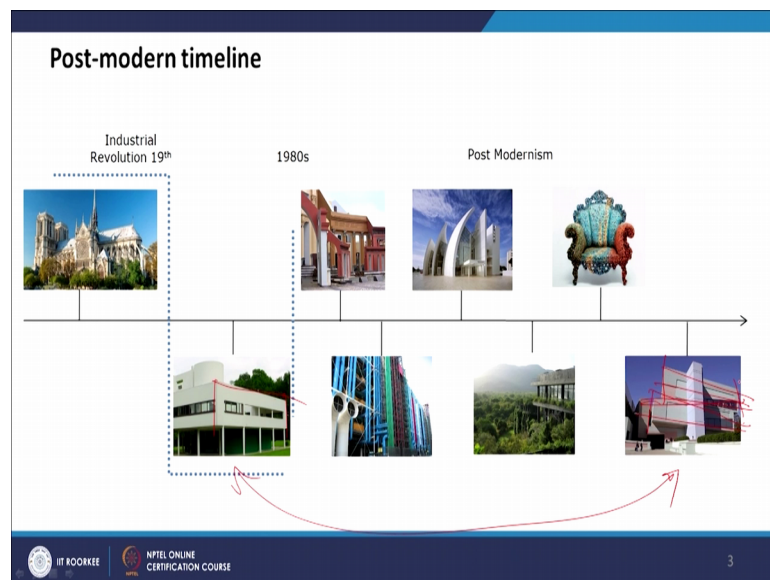


**Contemporary Architecture and Design**  
**Prof. Saptarshi Kolay**  
**Department of Architecture & Planning**  
**Indian Institute of Technology, Roorkee**

**Lecture - 37**  
**Phases of Post Modern Architecture - Deconstructivism Part-II**

Welcome students to the online NPTEL course Contemporary Architecture and Design. In the previous class we started discussing about the deconstructive architecture style and today we will continue that, so we have already discussed how deconstructive style of architecture was against the style of moderns purity of design.

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So, you can see the difference and there was lot of elements and which was which was against the minimalist idea of modernity and this angularity which is going and going on with the which is going for the purity and of the of the design even for the colour and then also it is creating a duality of this its heighting what is how the construction and the function of the building is going on.

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## Deconstructivism

ARCHITECTURAL FEATURES

- Opposite to ordered rationality of Modernism
- Complexity and contradiction argues against the purity, clarity and simplicity of modern design
- Ornamentation: complexity of geometry and structural imbalance  
(Ornaments of Post Modern Historicism: illusions of historic richness, depiction of classical design elements)
- Post Modern Cubism in architecture (cubism in art: modernist movement)

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So, the function of the building is its has the straight horizontal plate, but from outside this inclined building. So these are the architectural features we have discussed so it is opposing the ordered rationality of modernism it is complex and in the contradiction of the in the contradiction of the purity, clarity and simplicity of modern internationalist movement.

So, its ornamentation is the complexity of geometry and structural imbalance and it has a connection with the post with the modern cubist art and the Russian structuralism .

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## Deconstructivism

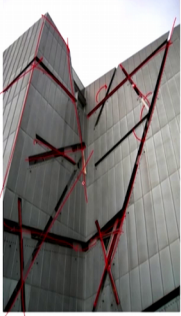
- Jewish Museum, Berlin, 2001; Daniel Libeskind

Juxtaposed with old Kollegienhaus (a Baroque building): connected only via underground passage with Barlin Museum Baroque wing

Designed as a symbol of reunion of east and west Germany.

Radical zigzag design (nick name 'Blitz'), like David's Star

Zinc cladding



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ah So the another example of the deconstructive style is Jewish museum Berlin which is designed in two thousand one by Daniel Libeskind of one of the deconstructive designer ah

He have also designed the 1 world trade centre of New York after the demolition of the after the demolition of the attack of world trade centre. So the new world trade centre the way he have designed first was has a more deconstructive style, but finally, it constructed also in deconstructive style after some alteration of the design.

Ah so his design Jewish museum of Berlin talks about the Jewish Jewish history in the Germany. So it talks about the Germany how Jewish were there in the Germany and then the holocaust of the World War 2 what happened to them during the world war and then the how 2 Germany again east and west Germany broke and then again they came together.

So, all these were there in the Jewish museum and this is the sad story of what happened to the Jewish of this Germany of Germany and that got depicted by the aesthetics and design of this museum .

So, it got its juxtaposed with the old baroque style building so you can see the baroque style building and its juxtaposition of this building and it is continuation of the museum which is there in the baroque style building and all these building together is the is creating the deconstructive style of the design.

So, you can see a deconstructive part of this of design is added also in the baroque style building in the courtyard of this baroque style building to connect this building with this already existing baroque building. So you can see similar style of this kind of thing has happened with the museum of Louvre when I. M. Pei is designing the glass pyramid of in front of this old the historic building.

And most of the I. M. Pei design of the Louvre was underground of this plaza in front of the old Louvre. So you just see the glass pyramid which also has a post modern deconstructive style building because pyramid which has a very strong visual cube which is stone and robust and totally opaque and when I. M. Pei is designing a glass pyramid in front of that and which is which looks very fragile and then there is a skylight underneath the pyramid which is which gives the light from outside.

And this is what is there in inside the plaza of this Louvre old style Louvre museum and so that is also similar concept over here, so to connect the old style building with the new deconstructive building. So this building has a underground passage with the Berlin museum of the baroque wing which this is the baroque wing of the Berlin museum and then there is a underground passage with connects this building and this is designed as the symbol of the reunion of east and west Germany through the through the journey of this Jews.

And you can see there is a void which is passing through this building which is central axis of this building and there is a void and which also symbolizes the this wall of eastern wall between east and west Germany and this structure creates a link or like a jigsaw puzzle of this wall around this and which teaches the east and west Germany and so this radical zigzag design which is which nickname the local name is Blitz.

ah Like David's Star is as a deconstructive building and you can see the fenestrations has a totally different inclination and then there lot of angular lines which this fenestration does not have any visual any sequence sequential link with the other lines and that is why it creates a very complex design form and that is the visual style of this building.

And here also you can see this structural members which comes out like a and gives a very graunch look and also through the zinc cladding which is giving a very greyish look and which goes with the sorrow and this of the holocaust and the history of the Jews.

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**Deconstructivism**

- Jewish Museum, Berlin, 2001; **Daniel Libeskind**

For Libeskind, "The new design, which was created a year before the Berlin Wall came down was based on three conception that formed the museum's foundation: first, the impossibility of understanding the history of Berlin without understanding the enormous intellectual, economic and cultural contribution made by the Jewish citizens of Berlin, second, the necessity to integrate physically and spiritually the meaning of the Holocaust into the consciousness and memory of the city of Berlin. Third, that only through the acknowledgement and incorporation of this erasure and void of Jewish life in Berlin, can the history of Berlin and Europe have a human future." A line of "Voids," empty spaces about 66 feet (20 m) tall, slices linearly through the entire building. Such voids represent "That which can never be exhibited when it comes to Jewish Berlin history: Humanity reduced to ashes."

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So Daniel Libeskind explain this design in his words so it talks about the creation and Berlin wall Berlin walls on the history of the Berlin wall and then how it went the Germany was divided and then again they came out came together.

And this the things which he is depicting through the design is the first it is what he say this to understand the history of Berlin and their intellectual and the Jewish impact of the Berlin and then there is another thing is the holocaust which this building is talks about the holocaust.

And the another thing is the acknowledgement and incorporation of this the void which is there in the Jews life in the Berlin, so that central void so which also is kind of wall and also this is a void from outside from inside this is this is skylight and that creates as a act as a void in the building.

So, this also within the building many of the spaces as very claustrophobic and has a higher degree of inertia with lines which is coming act in a different angle which creates a very claustrophobic situation. So, there are 3 spaces in the basement floor so in the 3 intersecting axes which symbolizes 3 events of Jewish history in the Germany.

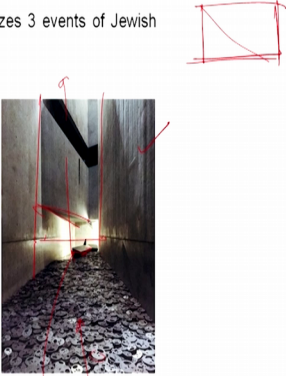
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**Deconstructivism**

- Jewish Museum, Berlin, 2001; **Daniel Libeskind**

3 Spaces in the basement floor: 3 intersecting axes: symbolizes 3 events of Jewish history in Germany

- a) Continuity with German History
- b) Immigration from Germany
- c) Holocaust of Godenkbuch



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So this is a continuity first there was a continuity with the German history, so the germanise are the Christians and the Jewish were there was a continuity, so they were there in the history, but after that they immigrated from the Germany and then the

holocaust or the Godenkbuch in Germany, so that was that event which was the Jewish got mass murdered.

So, you can see the interior space of this museum, so this space does not have a very balanced proportion I or ideal proportion driven from the golden mean. So the proportion is creating claustrophobia, so this distance verses this height is disproportionate and that is what he have intentionally created. And when you start walking so this is the space this is the passage so you have to walk on this passage and then this metal faces are there as a floor and you have to walk on the faces and these faces has a very sad and crying expression which depicts the death and the sorrows and the death of the Jews and you have to walk over this faces.

So, that gives the feeling of this the pain of this Jewish people and all these angularity and lines which is coming so that gives that creates the ambience of this phobia in the in the design.


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**Deconstructivism**

- Jewish Museum, Berlin, 2001; **Daniel Libeskind**

Garden of Exile: Exposed concrete tomb-like structures , Oleaster (wild olive's) planter-box

claustrophobic circulation spaces, use of acute angles



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So within that a passage also in this a staircase there are lot of lines these are not beams because in this within this passage you do not need so much of structural elements, so these are just for the visual aesthetics and this kind of elements are there. So and this is a outside facade and this is also going an different line, so you cannot see the link of this fenestration with the floor so that all together gives a very claustrophobics and spaces and then the phobia will be created within the design.

And also there is a garden of exile, so this garden of exile has a series of concrete planter box and then there is a olive old olive trees which also has goes with the grey tint and this is exposed concrete which also goes with the grey tint of the zinc cladding and within the building this most the elements are all in grey to depict the sorrow.

And also these olive trees the colour are is greyish olive is the grace sap green is the colour which also depicts sorrow of this which is the theme of this museum and also if you look at this planter box this looks like a series of tomb which depicts the death of the Jews people.

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Now another design of this deconstructive style is the CCTV headquarter this is designed by Rem Koolhaas mainly with another architect and Rem Koolhaas many other design which is also within the deconstructive style. So Rem Koolhaas is a deconstructive architect so most of his design is in deconstructive style.

ah So we will just discuss one of his design so this is the 44 storey sky scraper and also Daniel Libeskind has many other design which follows which is on the deconstructive style and if you look at that Daniel Libeskind's and Rem Koolhaas other designs, so you can understand their visual pattern and how they are dealing with the deconstructive architecture style.

So it is a 44 storey sky scraper headquarter in China of this China central television and so you can see this is the form of this building so this is the base of the building and then again it is leaning towards this and then it is hanging then another part is just a mirror so it is going from other side and then it is again goes down and then it is getting joined by with this floor.

So, you can see from this courtyard if you look at so this is the photograph from the courtyard so these two are this elements and this is the ground is the base element which comes out of the ground and then these two part are the leaning part and then this part is a cantilever which is this part.

So you can see this building is structurally looks like it will fall apart and then this because of this leaning part and this cantilever part it has a higher kind of inertia to it is looks like it will topple in this sides, so that is what its showing the other construction like it has a higher degree of inertia.

And that is what deconstructive architecture style talks about like a this (Refer Time: 13:33) building which is like tilted so it is also giving a signs of tilted lines and then also you can look at if you look at this lines which gives the clue of the fenestration on these are just a line because this totally this is clad with a glass curtain wall and so these lines are just a aesthetic lines which comes from outside, but these are not the fenestration line.

So, these lines are created creating pattern on the glass skin so these lines are also not following not totally following a very rhythmic patterns. So it is like zigzag patterns which is creating a giving a deconstructive fill of this building. And yeah so this total in totality so this talks about deconstructive style, but in structure so this load is getting carried by this cantilever and then getting supported by this part which is on the ground , but this has a very like this tilted this over hang gives a very deconstructive filling of this building.



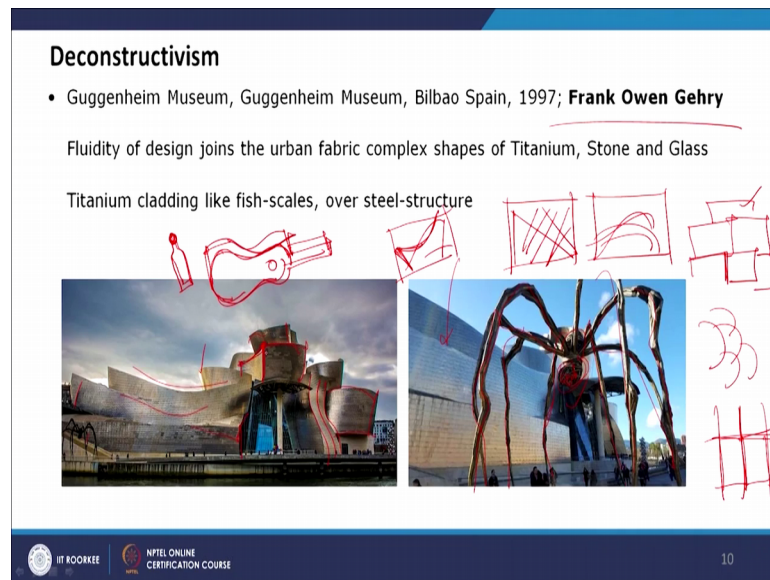
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**Deconstructivism**

- Guggenheim Museum, Guggenheim Museum, Bilbao Spain, 1997; **Frank Owen Gehry**

Fluidity of design joins the urban fabric complex shapes of Titanium, Stone and Glass

Titanium cladding like fish-scales, over steel-structure



The slide contains two photographs of the Guggenheim Museum Bilbao. The left photo shows the building's exterior with its characteristic curved, metallic surfaces. The right photo shows a large, abstract sculpture in front of the building, resembling a spider or a complex organic form. Red hand-drawn sketches are overlaid on the images, showing various geometric and organic shapes, including lines and curves that suggest the building's complex geometry and the overlapping nature of the titanium cladding.

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Now, another example of deconstructive architecture style is Frank Gehry's design. So, Frank Gehry is most all of the designs are deconstructive style and this is the Frank Gehry style of design and he have designed Walt Disney's some concert hall and then he have many other designs of Frank Gehry's work is huge.

And so, but this is the a style of his design so there will be titanium cladding, which is also grey in colour like the zinc cladding of Daniel Libeskind's museum and most of his building has a titanium cladding even his own house which is the mixture of which is renovated by him and then there is a deconstructive style added to it has also a titanium cladding.

And this cladding is like a fish scale so one cladding will overlap with the other cladding parts so you can see this its looks like a fish, scale like fish scale overlaps with each other it gives that kind of feelings. So one part will be on top of the other part so it will go in and then it will be the cladding is like that is not a linear cladding just like flushed with the other so it is not like that.

So this is his style of architecture and he uses this titanium cladding from outside and all this line if you look at so this is not following each other and this is a very complex kind of lines which are coming out of this thing.

This design and if you look at so he is using rectilinear line with the curvilinear style, so we have seen the Rem Koolhaass design and Daniel Libeskind's design. So Daniel Libeskind's design has all together in totality it is all rectilinear, so there is no curvilinearity added in to the design, but in Frank Gehry's design it will be curves and the rectilinear.

So, very difficult it is it is very difficult to deal with curve and as well as the rectilinear, so you are adding two different things in the visual palette either if it can be either rectilinear lines or it can be totally curvilinear lines so then there is a visual it's easy and there is one particular style.

But when there is two things added like one part is curvilinear and then one is rectilinear and then there is a curve and another curve under rectilinearity. So this is quite this is difficult to achieve and in a and create complete visual composition.

This is the this installation is called memun which is a the meaning of this is mother. So this is the mother of mother spider which has eggs inside the inside her belly and it can be visible and it also has a deconstructive style it is designed by one of the famous sculptor and this is made out of a metal casting.

And you can see this scale and which is there in the in front of this building for many of the it generally it is there so it memun also goes because it is installation it can go it goes to other museum, but mostly it is there in front of this Bilbao Guggenheim museum .

Now, Bilbao Guggenheim museum also as we were discussing that it has some difficulty during the construction because of it came from a very complex way of creating the facade and the fluidity the concept of the fluidity came from this.


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**Deconstructivism**

- Guggenheim Museum, Guggenheim Museum, Bilbao Spain, 1997; **Frank Owen Gehry**

Fluidity of design joins the urban fabric complex shapes of Titanium, Stone and Glass

Titanium cladding like fish-scales, over steel-structure



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Concept of creating a dynamic form, so it also comes from a cubist concept so it is broken all these lines are broken into cubes and you can see the lines which is there in the Guggenheim museum has quite similarity with the work of cubist paintings.

And so the concept of this facades of in Frank Gehry's facades were the way he tilts and creates it so its it is like one particular facade is flowing in different directions and it is like a space time continuity and it is like getting curved. So that was also there in the concept of cubist and movement and if you look at some of the cubist movements like even like Le Corbusier painting Le Corbusier painting was cubist.

So, if you look at his paintings of guitar and other things so he will paint the guitar from in plan and then he will show the elevation of the guitar even though bottle will be shown in the elevation and then bottle neck will be in the plan. So it is like the element which is visible in the different which is has the most identifiable thing from a particular visual angle that will be shown.

Like we all know that the bottle neck is circular , so he will paint that as a circular and then the bottle shape is a visible in elevation so that is on the elevation again the guitar and other elements which is the front part of the guitar which is most visible in plan so he will draw it in plan and then he will show the depth of in the elevation.

So, there is no particular angle from one particular angle when we are pursuing it is not like a photograph, it is like an experience. So whatever the from which side the experiences the best that will be shown and so as in the Picassos painting like Las Meninas and Guernica, so are the experience of that particular facade which is most strong in our mind that will be visible.

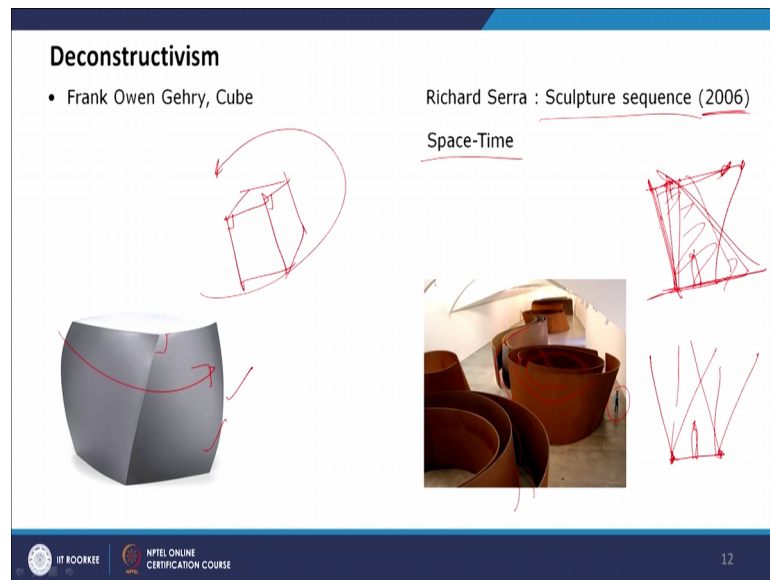
So, here what Gehry and other deconstructive architects do is its experience of a facade so if you click a photograph of a particular from a particular site, so this facade will give you experience in the fourth dimension which is the time so this facades are like turning and twisting though you are clicking a particular photograph which is 2D, but the facades are turning.

So, I will show you Gehry's cube and then I will explain it in a in a again with his things so here this facades are turning like a cubist painting. So you can see this was difficult during that time when he was designed this in 1997, but still that time it was creating the structure was quite difficult and you can see the amount of construction element was though it is steel and the amount of structural elements was there to take the load and of this facade.

Because it came from visual perspective and if you look at Gehry's way of design so he creates a form with the with a cut pieces of papers and then he after creating the form he fits into the function. So it is form driven so form function follows form that is that is the principle and that is why this is the building is aesthetically so beautiful.

And, but the in inside the building there is a the functions and the structures are fitted after the form is generated. So you can see the structural elements which comes within and then holds different facades like the glass curtain wall and as well as the other structural members together.

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Now this is the Gehry's cube and this Gehry's cube so it could have been just a cube and then we can only see few surfaces, but this is turning and twisted so this is an experience of a cube. So cube is like which has a 90 degree, so it is also a 90 degree in actual perspective, but because when we see cube in time dimension we can rotate and we can experience the cube and all the surfaces of the cube.

So, that is why we are not rotating, but the cube is getting rotated to cube is rotated and that is that is why this is the truncated this is torque applied on the top ad that is why this is rotating and so actually like it is a experience the way you see the cube and you rotate the cube in front of you as a you just see the cube from all the direction and that is what he is trying to capture.

So, this is like a particular facade which is that is why his each and every facade is getting rotated. So you can see all this facades which is turning and twisting in different direction, so which is which the principle can be understood from this cubes. So this is actually having a time dimension in the 3D so architecture which is a 3D is having a dynamic its capturing the time which is has to create a more dynamic form. So this is Richard Serra's sculpture, so this is called sculpture sequence design in 2006 which is there in the Bilbao museum in the installation here, in this installation is there in this is the installation gallery of this for this Richard Serra's work.

So, Richard Serra's work is there within the Bilbao museum Guggenheim museum so this talks about the space time continuity. So these installations are these are these are made out of plywood and you can see the scale and so you have to experience this and work through this and you can understand the relationship between the space and the enclosure and the time. So in one installation the bottom part which is like the foot print is constant and this goes up and then it goes tilted and then it takes different form.

In one installation the this shape which is the cross section of the sectional space is this area is constant and then it can be like this it can it can turn and twist in some cases the upper part is constant and then you experience different the relationship with the space and time.

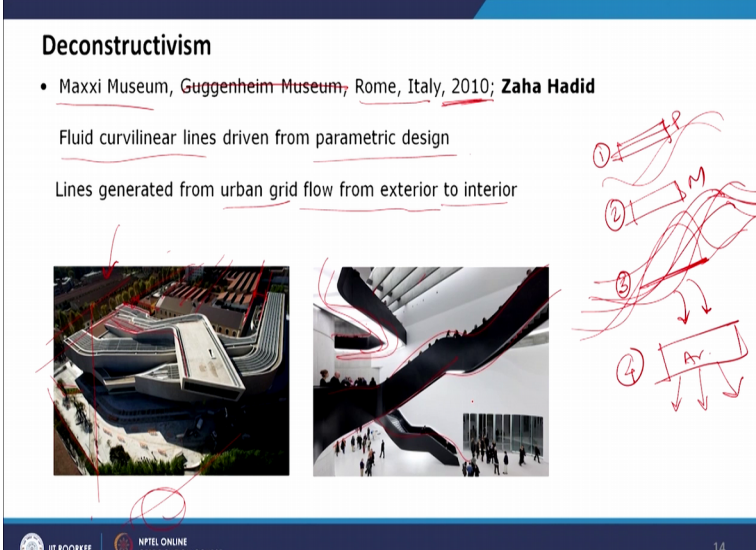
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**Deconstructivism**

- Maxxi Museum, Guggenheim-Museum, Rome, Italy, 2010; Zaha Hadid

Fluid curvilinear lines driven from parametric design

Lines generated from urban grid flow from exterior to interior



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Now this is another example by great deconstructive architect Zaha Hadid, but Zaha Hadid design has more curvilinearity than rectilinear form of Gehry and Rem Koolhaas, but Zaha Hadid's forms are mostly curvilinear and she was a mathematician before joining AAF UK and so most of the design which she designs is driven from the mathematical formula, so it is mostly parametric architecture. So in parametric architecture so mathematical parameters are driven first and then mathematically all these lines are created through mathematical formula.

And through this formula- through these lines the design is evolved, so all these lines which are created first and then these lines will take form of a structure or the

interior spaces of the fenestration and these lines will be there in the design. So and so first the formula or the parameters come first the parameters come then the formula of mathematical derivation and then the design elements which is the lines come and then from this line it will be translated into the architectural element.

And in this architectural element it can be interior element, it can be the construction element, it can be the fenestration and other element which is there in the architecture. So you can see first so it has a, but these lines which is coming mostly in Zaha Hadid style it is very curvilinear.

But they are some examples of Zaha Hadid works where she is using very rectilinear and crisp lines as well. So this fluid curvilinear lines are driven from the parametric design and the lines are generated in this case the line is a in the case of Maxxi museum of Rome, Italy which is design in 2010 was designed through the urban grid.

The urban grid line which is coming from this pathways and the nodes and the other built form the line which she is taking that line like you can see this is a parallel line starting as a parallel line and then it flows and ends as a parallel line of the other building. So this is taking its contextually responding to the other line which is there in the building.

And also from other areas this nodes node of the road is helping to derive this line which is there in throughout this building, so it is flowing this urban grid which is generated from this urban lines are flowing in the exterior as well as the interior of this building .

So all these lines which is getting generated it sometimes this is the skylights and then this changes to the also in the in the illumination these lines are there in the illumination of the interior spaces and also the walk way and this walk way is also getting converted into the staircases and all these lines there in the interior as well as in the outside of this building.

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**Deconstructivism**

- **Zaha Hadid**

Other works

Heydar Aliyev centre, Baku, Azerbaijan, 2012



Beko masterplan



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Now other designs of Zaha Hadid is like this centre in Baku. So you can see this line which is like mobius strip, so mobius strip is a continuous strip which changes its direction like it can be in this direction and then changes and turns and then merges with the other side.

You can see mobius strips different example on the Google, so it is not a strip which is like this so it turns and then changes the direction. So if you start from this side you will go and to the go to the other side of this strip so it works as a mobius strip and which flows its starts with the wall and then it becomes a roof and again it comes as a wall and this another lines which flows from this roof to wall and this its blended.

And here also this is a Beko's masterplan and so here this landscape lines which is coming from a landscape starts with a building and then goes on top of the building and the same landscape lines are acting as a fenestration. So all this lines are combined from the landscape and which is coming from the road to the landscape and then to the building and all this lines are emerging from and blending with the others.

So, that is her style of design and in many cases so there many other urban design city planning or in Zaha Hadids design so all this lines are coming in urban design scale or as well the lines are coming from the parametric style and they are flowing into the roads to the building and then they are all into twine and combined together.



And also she has designed master plan as well as she have designed micro scale like product design, but the same kind of visual style is also there .

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So, there are some examples of product design and fashion design. So it is product is also a ranging from different scale so it is like a wall cabinet to the table and this is another table design by her.

So, you can see the fluid line which is coming as the table so this is just one line which is giving the form of the table and again in this table also this is a very curved porcelain as a material of the table- table is design like that.

Now these are the shoes designed by Zaha Hadid or also you can see the shoes for the girls has the same kind of continuous strips and the void which you can see in the her design in architecture is the same kind of visual style and visual qualities are maintained in the fashion design as well as the product design.

So, this is the yurt designed by this contextual design by Zaha Hadid, so in the yurt as well so you can see all this fenestration and the structural members of this yurt is again has the same kind of lines by Zaha Hadid. So in the next class we will discuss few of the examples from industrial design and product design and art, so architectural part of this post modern style is indeed over here. So few other examples we will see in the final class, but mostly we will discuss right now onwards on the product design and fine arts.