

Contemporary Architecture and Design
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Lecture - 26

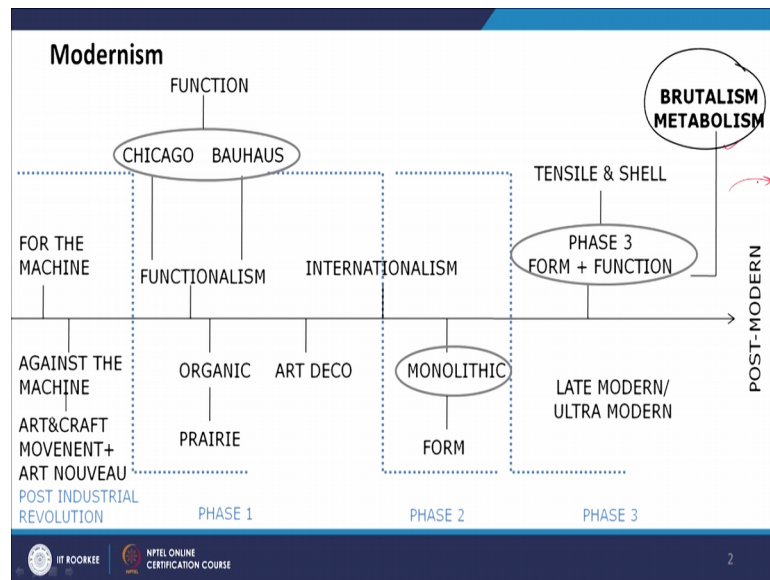
Phases of Modern Architecture- Brutalism and Metabolism in India

Welcome students to the online NPTEL course Contemporary Architecture and Design. In the previous 2 classes we have we are discussing Brutalism and Metabolism and in this class as we was talking about before that metabolism and brutalism sometimes fuses. In some cases metabolism and brutalism can be an isolated example the building can only fall under brutalism where there is only architecture the style of the architecture was derived from the aesthetics of the Brutalist principle or it can only be within the metabolist style where the functional principle are coming from only serve and served.

But sometimes it can this 2 can blend with each other and today we will talk about of this new design where metabolism design style by metabolism and brutalism are together and specially with the example of Indian context, because many of the Indian architect Indian master architect they have followed this architecture style, where they have followed brutalism and metabolism together. And actually this also falls under the critical regionalism when we discuss that we will talk about that these examples can also fall under that critical regionalist style. As we were discussing that this an art and very the subjective way of looking at it, so placing a particular building in a particular one particular architectural style might sometimes may not be a right idea.

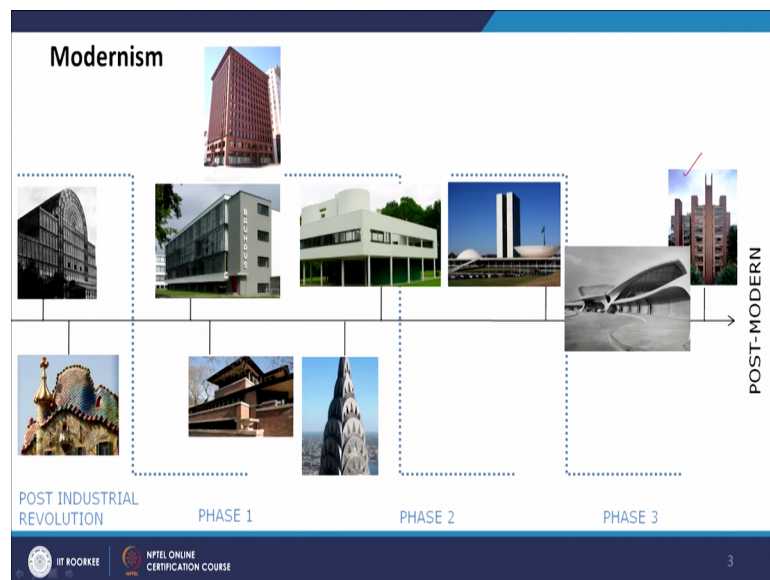
So, the concept can come from a particular movement, then the visual can come from a particular movement and which confuse with the other architectural movement and because its architects own perception and own idea, so it can also fuse so also we have discuss that how brutalism the visual aesthetics from brutalism can have a critical regionalist approach, which was the post modern movement.

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So, here if you look at so brutalism and metabolism are together in this last phase of this movement of modern movement and which is just before the post modern era.

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And here in this example Richard medical lab, when we were discussing the this in the metabolist movement we also see from outside this is only brick, so it can also be consider as a brick Brutalist movement as well.

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Brutalism (Modernism Phase III)

ARCHITECTURAL FEATURES

- Flourished between 1950's and 70's
- French word 'Brut' means concrete. Exposed concrete construction: British architects Alison & Peter Smithson (1957). 'Beton Brut' (raw concrete)- used by Le Corbusier to describe his material preference > exposed concrete with marks of form-work
- Brick Brutalism: Exposed brick work along with exposed concrete.

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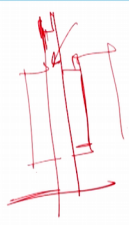
So, as we just we can just look at what was brutalism? So, it came from brut which means concrete and it is 195's to 1970's which is similar time line of metabolism and brick brutalism is also there, where brick is used instead of concrete.

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Brutalism (Modernism Phase III)

ARCHITECTURAL FEATURES

- Features derived from pure Materials & process of Construction
- visually Heavy structure
- New Brutalism: CIAM (Congrès International d'Architecture Moderne: International Congress of Modern Architecture) | "The New Brutalism: Ethics or Aesthetics" by Alison & Smithson | ideology of Brutalism & Metabolism: Truth of Material & Truth of Design : exposed material & concept of servant & Served



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And visually heavy and less fenestration and much more robust in structure and also we see in this Richard medical lab the robustness is there used in the service course, where the which was converted at the serve as servant. Whose servant looks very robust and they take the load and visually they take the load of this serve spaces because of this

Richard medical lab because of this corner were chamfered from this service serve spaces it looks like this is holding on to the servant spaces and this was this becomes module of a Richard medical lab design by Louis Kahn.

So, that robustness was added here in this service spaces so as in the Yale art arts art and architecture centre by Paul Rudolph was design in the similar way. In the new brutalism this is the new things, so here in CIAM it was connoted that ideology of brutalism and metabolism are fused together where the truth to the material was coming from the brutalism and truth to the design is coming from the metabolism. What is the truth to the material, because brutalism is talking about the pure concretes texture and colours there was no plaster. Similarly if we if it goes for brick brutalism there was no plaster and then the stone work in B. V. Doshi's work in IIM Bangalore there was no plaster.

So, the material will be shown as its own a or an own a values and own visual qualities. And the truth to the design is the process of the design is divided in the servant and serves, so when we create the bubble diagram we think about that how this services will go where the servant spaces will be there.

But generally in the previous design we use to height the architect use to height the service course because there was a notion that service course of the servant spaces they do not look good. The aesthetically served spaces are much more higher in value, but that was not added there, so there was true emphasis was given to the both the thing and both the element which is servant was given its visual emphasis, services were also serve spaces were also given the visual emphasis and they were design in a different way.

So there were that is why the truth to the design was there and it also follows a design principle where the service course or the servants will be designed and they would not change and modularity will only come within the within the serve spaces. So that that was also philosophy of the design comes from the metabolism.

So, together it comes when in a building then it will be the a new brutalism or the new brutalism which will be exposed material and concept of servants and served will be there together. So the ethics of the new brutalism will have ethics and aesthetics of this thing, so ethics will come from the metabolism and aesthetics will come from the brutalism.

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Now, in this we have also seen this the servant and served course spaces are visible from outside and then treated in different way. So as the in the Richard medical lab so and also all the fenestration are there, but if this is there in the served spaces in the servant spaces they are very robust and they are they visually robust and they are going procuring out of this served spaces.

So, as in the Yamanashi press centre which is in the metabolism and has a similar concept and this looks visually very heavy and robust and if you we also have shown you the section where it looks like this.

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Metabolism (Modernism Phase III)



Office spaces for three separate company share common service-cores(16 reinforced concrete 5meter dia. towers, containing toilets, elevators, stairs-cases)



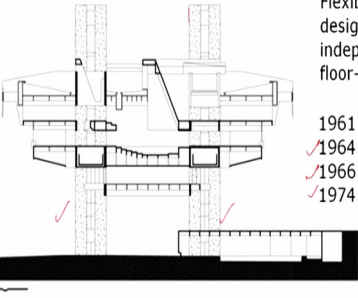

Yamanashi Press and Broadcasting Centre (1961), Kofu, Kenzo Tange

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This is served space are floating and hanging around this servant spaces and they are treated in a different way because this is curvilinear in nature and this is rectilinear this has more visual weight and the there is no opacity and there is opacity is much more in this because of this linear voids are added. This is also flexible because you can see this elements where individually fuse its modular flow plates can be structurally independent modular flow plate can be added fitted with the their 16 service course.

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Metabolism (Modernism Phase III)



Flexible served spaces designed as structurally independent concrete floor-plates

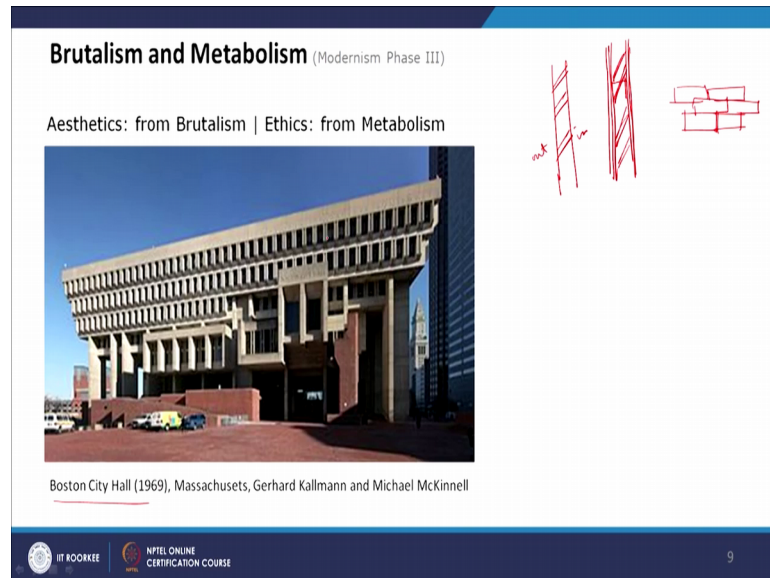
- 1961: creation
- ✓1964: alteration
- ✓1966: alteration
- ✓1974: alteration

Yamanashi Press and Broadcasting Centre (1961), Kofu, Kenzo Tange

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So, here the section is also there, so we can see this visually it also looks like it can it is taking the load and it can be added and it can also be subtracted from each other based on the need of the requirement and it got modified because of this thing and it also imbibes the users need. And also if you look from outside the material is concrete so it can also be called as brutalism, so this there both the things are there together.

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Now, the aesthetics from brutalism and ethics from metabolism fixed are fused in many of the cases, but if you look at the Yamanashi press. If you look at the Nakagin capsule tower, Nakagin capsule tower is definitely not Brutalist it is only metabolist, because from outside it is only the formwork is not the concrete or brick if you see the steel structure it is not it does not fall under brutalism. So it is just shipping containers, so brutalism you only if it is brutalism it can only be concrete, brick or stone, it cannot be steel if it is made out of steel, so it is not brutalism it will be it is only metabolist in nature.

So, so as this other press centre which we were showing and which are by the formwork was kept from outside, so this is the cladding. So that when there was a cladding the truth to the material was not shown, from within there is a concrete work, but the formwork was left from the outside and which works as a cladding so that is not that is not following the principle of brutalism.

Then brutalism there cannot be any cladding, in the many of the architecture example you can see that from outside the building looks like made out of a made out of brick the exposed brick, but if you go near the building you will see this those are the brick claddings see many of the cases, So if there brick tiles cladded on top of the buildings, so that will not be brutalism.

Because cladding will be brutalism will only have if there is a section, so it will be a brick work so will be visible from outside so there would not be any plaster, but in this case so brutalism will have only brick works so this is the brick hatch from section. So I am seeing from this is may be outside and this is inside, but this is just brick material we will see.

But if this is we were seeing a plaster from outside of the brick and then the another layer of brick cladding which from outside looks like brick, but these are tiles, so that would not be a brutalism because that is not becoming true to the materials, so material is hidden and then you are applying plaster and then you are applying another tiles which looks like brick that would not be a brutalism because that is not that is going against the concept of brutalism.

So there is another other few examples of new brutalism where brutalism and metabolism fuses with each other which is Boston City Hall, which is designed by Michael Mc Connell and Gerhard Kallmann where you can see the served spaces are like canopy of the tree and grows on top of the servant spaces and another example now in Indian context many of the famous Indian architects of modernist late modern era are following this architecture style.

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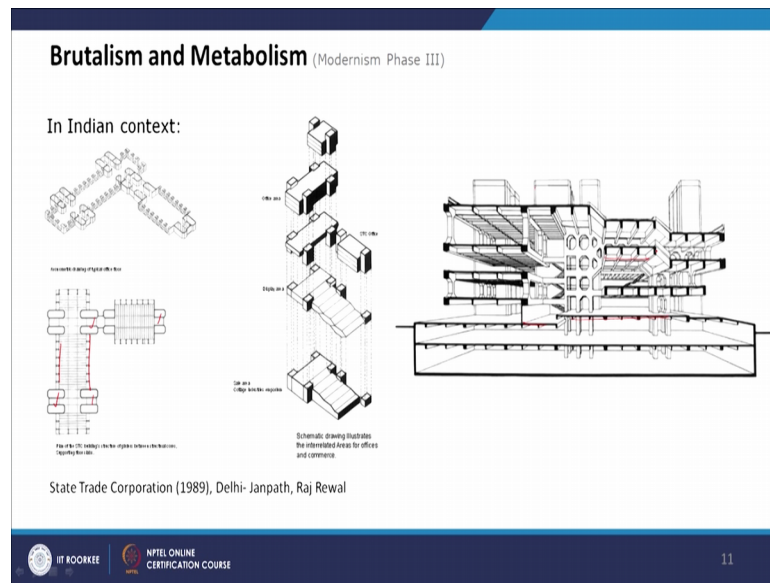


So, Raj Rewal is one example is one of them, so you might have seen in this building this is state trade corporation in new Delhi-Janpath which is design in 1989.

So, it is you can say this the post modern era started, but in Indian context so we still followed particular Indian architecture style, so here in post modern era this kind of architecture style follow was there in India and it can also be connoted and placed within the critical regionalist style of many other architect architect work, but not specially this building other building which was followed this architecture style can also be critical regionalist and continued within the post modern era.

But this is the pure new neo Brutalist architecture style, because from outside if you look at so this looks like conceptually it has a similarity with the other Nakgin capsule tower or Yamanashin press centre and here you can see these are the service course from outside. If you if you just look at it you can understand this is the service course and which is going this is treated in different way and these are the served spaces which you can see that this is a floating and hanging from these service course and so there is a cantilever and there is a space and there is a gap and through and through the punctuations, so you can see the sky from this side. So that gives a feeling of this units are hanging from this servant course and these are actually if you look at.

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So, this is the construction was like that so these are the three service are the servant spaces and this plates are added in between them and if you look at they are also changing in nature. So if this plates are smaller and then the 2 there was a gap and 2 plates are bigger, so that also adds to the modularity of the of the building, but this is not modular and this cannot be changed and this was designed by this has a visual feel of that it can it can changed and this the concept of servant and served is there.

But it always might not be modular for example, Richard medical lab which is designed by Louis Kahn it is not modular, because you can change it and you cannot demolish the building, but it has the concept of servant and served and they have he have used the visual style in a different and they are treated in a different way as serve servant spaces are given the due emphasis on the aesthetics.

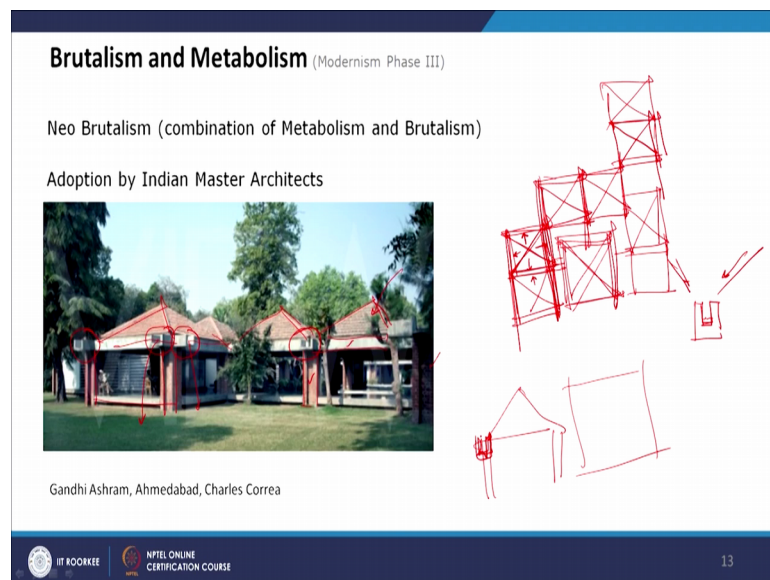
So, it was also there in this Raj Rewals building and also if you look at so this has much more visually robust and heavy look rather than this served spaces. So in the section you can see these service course are there and this plates of served plates are inserted between these building.

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So you can also see the visual connection and the relation between the Yamanashi press centre by Kenzo Tange and Raj Rewals building in Delhi.

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And another thing of neo brutalism and ah, but putting this example in neo brutalism will not be very correct, but the all the elements of neo brutalism are is there in this building.

But also this is the building the majority this building is a critical regionalist building, when we will discuss that we will talk about that how this is critical regionalist building. This is by Charles Correa's Gandhi ashram in Ahmadabad so if you look at the building,

so building also shows the exposed brick work, exposed concrete work and the material which is covering the roof which is the terracotta tiles and which is there was no paint and no other elements are added.

Because of the terracotta tiles are borrowed from the Indian vernacular architectural architecture by terracotta tiles are used in vernacular hearts of village. So this was borrowed from there so this has a critical this has a regional connection of India.

But if you look at so this from material side this is Brutalist because exposed concrete exposed brick are used with without any cladding or without any different ornamentation added on top of it, but if you look at all these services so from the plan of this building these are the module this is has a modular plan so this square plans of 1 1 modules are added on top of around each other around a kund, which is a water kund which is if you look at the plan it is available on it.

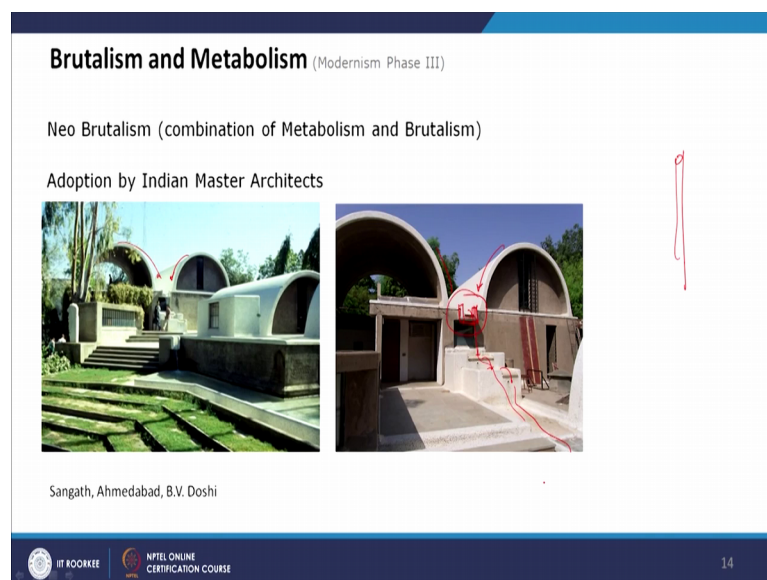
So, water kund is there on the centre and different seemed elements of modules are added with each other. So that is a following the concept of metabolism where the concept of modularity will be there, so it can be it is not changed because its design by Charles Correa and all the functions are function requirements were failed, but it can be changed and it can be added it can be few modules can add can be added without destroying the philosophy of the building. Because it does not have a particular form of it is not ending up with a pure form that it can you cannot add anything or subtract anything, so it can be added, but it was not done and but if you look at the plan it has a fluidity in the in the design.

Now, again another thing is when this building is there, so is if around this roof the water will pass because this this pitched roof or the slop is there so water will flow in these direction from each and every module. So from between these module there is this water rain water will be carried in this shaft which is running through out and between these module which is creating the structural grid or the beam on top of this beam are actually this rain water modules will be there. And you can see this section of the beam is like this, so from here rain water will flow from here rain water will flow. So from here the water will be carried and every water will flow from here it is like water spout and in the water kund most of this water will go in the water kund and it will be there in the central Acutrim of the court yard which is in the actually a water kund.

So, all this water will be these are the water channels and water will be there, so this is these water channels are actually the servant or the providing the services to flow to for the rain water will pass through this water channels and these are visible from outside. So these water spouts are actually a visual element which is actually a servant, so this is in this form of this particular module this sloping roof and this column plus this water spout has a lot of usual element emphasis in this design that is why this design has lot of has all the attributes of metabolism as well.

Now, another example of Sangaths is in Ahmadabad by B. V. Doshi this is the office working office of by B. V. Doshi.

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So, here also this is exposed concrete and here you can see the roof will flow the water and the runoff of the water will be kept from this water spout and this will go as a as a cascading fountain and it will go. So this is exaggerate this water rain water the way rain water is flowing that is creating a element of design.

So, generally in the rest of the other design, so rain water pipelines will be just a pipeline which will be hidden in the building which might be even covered and clad with some kind of material, it can be a glass curtain wall or it can be like metal cladding, but it will be hidden. Generally or it does not otherwise it was just a pipeline which will not be exaggerate and augmented with the design element, but this here in this design, it has augmented and that is a design element and you can clearly see how the water will go

and how the water is flowing from the and it is creating a cascade which just a rain water rain water which is generally in the other design other building it will be hidden.

Now in the other example of CEPT Ahmadabad it is also a mixture of big brutalism and pure brutalism this also done design by B. V. Doshi.

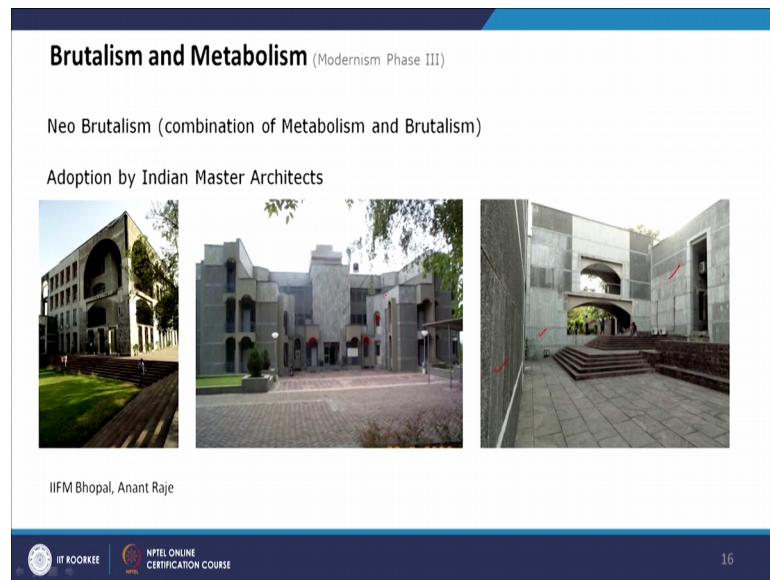
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Here we can see same the material of brick and concrete which is visible from outside and so this is this is Brutalist in from aesthetics, but conceptually if you look at the building has this elements and this water spouts are very big and from outside this is the ornamentation of this building. And this comes like a in the in the previous era in the traditional and the classical age of European architecture there was gargoyle or in Indian temples also there was a the faces of different animals from the from the animals mouth the water will come and that is also a accentuation of this of how the water flows and people will see that in the this kind of design is there in the many of the temples of India.

So, from mouth of cow or other animal the water will come out, so that is a rain water which comes out and, but that is beautified and from that it has been translated into much more modern element and many of the Indian architect use that water spout as the element how the water will go from the sky to the earth and that was exaggerate in the design element so here also in this clean and pure square cuboidal building these elements creates visual emphasis in the design so that is so that is why this concept of metabolism is also there.

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Now another example of Raj Rewals, so this is the particular style, which evolved from its followed in many of the architects of India. So IIFM Bhopal also has a Brutalist style, so this is more of a Brutalist movement because of a style which is there in the building and brutalism is followed in this building and also similarly this arch series of arches was translated into modernist style. So the connection of again the Moghal Saracenic arch was there in the building and the building also has a pure exposed concrete work which shows the brutalism. So in this building it was I am just discussing about the architects work and their visuals palette, so some times in some of the building it will be a more metabolist for example, this is more the manifestation of metabolism is more here the its blend and then it is more of critical regionalist building.

Then this is a blend of both and then this is also blend of both, but here this is the pure Brutalist movement because we Brutalist architecture with definitely it can also be converted as critical regionalist building, but metabolist influence is not there.

But here in this building this is Kanvinde's this design IIT Kanpur and IIT Kanpur is many of the buildings are which was been designed by the A. P. Kanvinde is falling under brick brutalism brick brutalism and metabolism mixture and also this is a it can also be called as critical regionalist building as well.

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So, if you look at the this is the library building of Kanpur. If you look at the building from outside the structural manifestation of the building is clearly visible, so here in this buildings all these columns and beams are visible through and through or none of the building is hiding the column in the most of the cases if you look at so columns and brick work will blend with each other.

But brick work is not blending with the column, so there was a gap and there was a fenestration, so that the you can see the column from top to bottom and it becomes an individual pillar structure. So nothing is hitting this pillar, so this has a particular emphasis on this. So in the corner column also the corner is chamfered, so from the plan if you see so this is the brick and then there will be a fenestration, so the column becomes individually has its individual aesthetics and then the brick will go like this.

So brick will never touch the column so that the column has its own identity and in the corner the column is the one which is visible there is no break which is covering it and then the brick will go like this. That is why from bottom to top the columns are becoming a very important visual element and this columns are here are hanging with a little amount of beam from this side, so the beam is also not crossing here joining this.

So, this is protruding out and then the beam is passing through, so the column is become very the structural element column is becoming a very important element and from this

part to just hold this there was a column which is just hanging from going from passing through two floors and joining this.

So, and from here you can see the series of columns which creates that structural which is taking the load from this bottom to top and this shows how the load structure is followed. So this is column is here acting as a serve served which is serving as a structurally this is actually servant serving this actually served places which is the library spaces and other spaces of the building. Now this is also a sky light which is visible from outside and this is an element which is shown from outside, so this sky light is also an element of design which is just taking the light from the top and this is getting an emphasis in the visual emphasis in the design, but this is also served spaces and this served spaces is as it is getting an emphasis this also become can be a concept of the metabolism.

And also if you look at so this from here none of this windows are windows does not have much emphasis because windows are just here to just create visual gap between this brick and this concrete work and in between there is linear vertical window, so here you just see the volume of brick work and that is getting the emphasis and windows are just creating between as a punctuation between concrete and brick.

So, there is a redeem concrete brick concrete brick this is going like that and brick window slits are just acting as a punctuation between them. So that is not becoming the protagonist and that is not coming as a main emphasis, so together this building looks very robust and visually heavy. This is the faculty building of this IIT Kanpur and here also the stair case is has a lot of visual emphasis and this is treated in a different way with robust concrete work and very light slits so that it has the robustness of a served servant space so it has the has that element.

So it has lot of concrete and very light slit between this concrete in the stair cases and also this is more dynamic element in the design all this lines vertical and horizontal, but here because the alignment of the stair cases and such way this has a dynamic line which is slant line slant line are more dynamic line then vertical and horizontal line which we know principle of principle of design. If the orientation of this stair case this stair case orientation in the plan is in this way, that is why in in this way that is why this slant were visible if the orientation was in this side then the slant wont have been invisible.

So, it will lose the visual emphasis and also this is not the stair cases not on the same line, so the stair cases resist so it has a different treatment. From outside if you cannot see it from here clearly, but if you look at this photograph this is as a working as a water pipeline, open water pipeline working constructed with the concrete. So from here the rain water will come and this is channelizing the rain water and all over IIT Kanpur's design, so this kind of rain water pipelines are there so these all are rain water pipelines from outside and that creates the visual emphasis.

So, this is the rain water pipeline which is going from top to bottom, so all over this building has this rain water pipeline which is the visual element even in this building also there rain water pipeline around in many places which are visible from outside and when the rain rain comes this water will flow from here. This is also a metabolist approach where services, so this is a service served space which is having its own design its acting as a aesthetic element.

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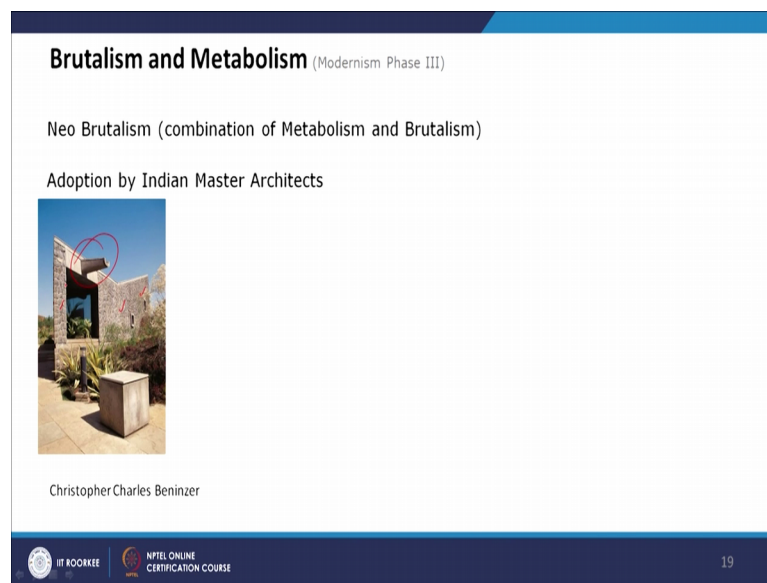
And some of other examples by architects were not from India, but has they work in India so Joseph Allen stein has 2 of the famous buildings in Delhi.

Which is India habitat centre and India international centre in Delhi this is also has a Brutalist approach, so this is the brick and then there was a stone cladding as well, but main protagonist of this building is brick and also there is this same approach of rain

water pipeline which is acting as a punctuation and creating the redeem of the building is there and acting as a visual element ah.

So, this is a fusion of metabolism and brutalism and here in this building this is brutalism and which is shown from outside and this exposed brick work is used and in this building as well.

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And some other architect like Christopher Charles Beninzer also used this element of which came from Doshi's work and which was Charles Correa's and has been percolated in other architect work as well and here also we see the local material which this is in Pune, this is a educational building of stone work is used to blend with the local stones which is available in the hilly terrain which blends with that. So this is also can be critical regionalist approach is there in the Brutalist because sometimes it can also be stone which we have seen in IIM Bangalore's work is there in this design.

So, many of the Indian architect architects are working in Indian context has followed a particular style, which show works with the exposed material which is concrete brick or sometimes stone and uses few of the architecture elements like water spouts or the elements, which first access a rain water pipeline may out of concrete in for in the cases of long taller building like Kanpur has been used in the Indian context.

Thank you.