

Architectural Conservation and Historic Preservation
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Lecture – 24
Causes of Decay in Cultural Property (Contd.)

We have been discussing about the causes of decay of cultural property and in the last lecture we have been discussing about the natural causes of decay. Today we will continue with the.

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The slide is titled "Man made causes of decay" and lists the following factors:

- Alterations and inappropriate repairs
- Neglect
- Poor Construction
- Vibration damage
- Atmospheric Pollution
- Changes to ground water level
- Theft vandalism and arson
- Wars
- Tourism

The slide includes a photograph of a terracotta figure that has been damaged and marked with blue graffiti. The figure is a seated female figure with a serene expression, but it shows signs of wear and tear, particularly on the face and torso. The background of the slide is yellow, and the text is in black. The slide also features the IIT Kharagpur and NPTEL logos at the bottom.

Man made causes of decay and as you can see is that this beautiful terracotta figure 9. It actually has been destroyed by people and the visitors who have broken it and who have marked the things on there.

So, this is the insensitive nature and many of the causes which can cause damage and they can be listed as alteration and inappropriate repairs even if the intention is good it may cause some far reaching problem. A neglect, poor construction, vibration damage, atmospheric pollution, changes to groundwater level and theft vandalism and arson wars and conflict and tourism.

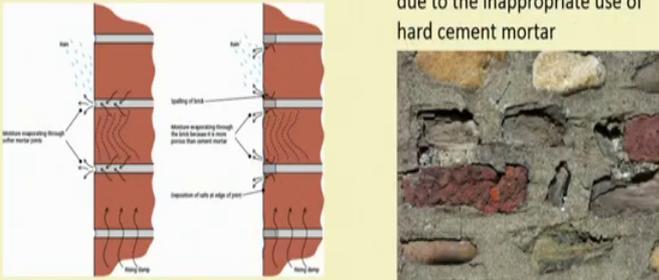
So, we will take one by one and briefly we will discuss with the examples that what are these man made causes of decay.

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Man made causes of decay Inappropriate Repairs

- Using modern cement mortar to repoint old walls

Spalling of stone in a historic wall due to the inappropriate use of hard cement mortar



<http://www.pro-tech.ie/wp-content/uploads/2017/04/moisture.jpg>

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One of the very prevalent cause of historic structure is that the use of wrong mortar. In most of the earlier structure the lime mortar has been used and when in such cases cement mortar is applied what happens cement is much stronger. So, as you can see that when the cement is much stronger it causes the spoiling of stone in a historic wall. So, the mortar has remained safe, but it has really caused the problem to that.

Why it happened? So, you can see in this diagram that if there is a cement mortar and brick or stone which are the porous building materials the water would like to come out. We have discuss about the penetration of water, we would like to come out it may be due to the rain or the rising dampness. They would like to come out through the pore and generally what happens is that they would like to come out through the joints and if the lime mortar is used it is possible.

In case of the cement mortar it is much stronger and much more impervious. So, what happens is that they cannot come out through that. So, they try to come out through the evaporating and other thing, they would like to come out through the bricks and in that process they it causes the spoiling of the bricks and the you can see that the mortar has remained safe.

So, it is absolutely very important to use a mortar which is less of lesser strength than actually the building fabric and this is a very common damage which happens because of the using a modern cement mortar to repoint the old walls.

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Man made causes of decay Inappropriate Repairs

- Using modern cement mortar to repoint old walls
- Chemically injected damp proof courses

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Sometimes the chemically injected damp proof courses which are again sometimes of a stronger material or impervious material, it also can cause a problem.

(Refer Slide Time: 03:11)

Man made causes of decay Inappropriate Repairs

- Using modern cement mortar to repoint old walls
- Chemically injected damp proof courses
- Application of water repellent coverings to exterior walls (and renders)
- Use of modern emulsion paints on internal walls

Moyna Garh - an island within an island, East Medinipur

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Application of water repellent covering to the exterior because, a building fabric the old historic waters they have to breath and if is not possible then what happens is that they it causes for the damage to the historic fabric. And sometimes the modern emulsion paint also used to cover it all and then it causes further damage.

I will talk about some of the examples here, this beautiful structure in Medinipur which is actually a fort which is the Moyna Garh fort it is a very historic structure is protected by the west Bengal heritage commission.

There are 2 sort of moves around the structure and this beautiful temple here is here it is not intentionally because the owners are very concerned about the historic structure. They wanted to repair it, but because of the lack of knowledge of the craftsman or the artisans who sort of advise them they used stronger materially martial paint another to cover that. And it actually eventually which called further damage to the historic fabric and they are covering with an impervious layer.

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Man made causes of decay

Inappropriate Repairs

- Using modern cement mortar to repoint old walls
- Chemically injected damp proof courses
- **Application of water repellent coverings to exterior walls (and renders)**
- Use of modern emulsion paints on internal walls

*Terracotta temple
Alangiri, Pingla ,
East Medinipur*

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This is another structure of a similar nature it is again a beautiful structure owned by a private property. They have the resources and they are beautiful sculptures which are there all over from our epics and other. And what they did is that because there was a problem and they want you to repair it and keep it in a well preserved state. They covered that and they asked the help of the craftsmen who would did not we are not aware of the proper restoration techniques so, they used.

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Man made causes of decay
Inappropriate Repairs

- Using modern cement mortar to repoint old walls
- Chemically injected damp proof courses
- Application of water repellent coverings to exterior walls (and renders)
- Use of modern emulsion paints on internal walls

Terracotta temple Alangiri, Pingla, East Medinipur



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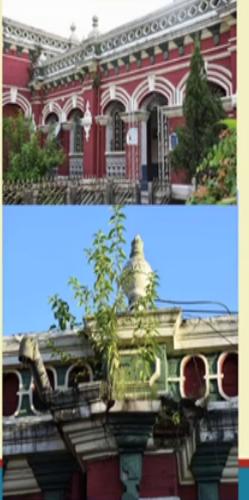
Modern emulsion paint and as you can see that this is falling off. So, a beautiful which may look for a short time it may look good, colorful, well preserved, but in a long run it will cause further damage it. You can see that it is falling off and it is also bringing out the original material. So, these type of repair methods are very dangerous for the historic fabrics.

(Refer Slide Time: 05:14)

Man made causes of decay **Neglect**

- Blocked rainwater goods, broken grills and plants growing in gutters and walls
– Encourages moisture to penetrate the fabric
- Slipped and missing roofing tiles
- Rusting metal windows
- Exposed woodwork
- Algae and fungal growths
- Excessive moisture inside the building
etc, etc, etc!!!

*Jenkins School
Cooch Behar*



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The neglect is another things, this is a beautiful school building in Coach Bihar in northern Bengal Jenkins school um. As you can see that is quite well preserve, it is used.

This is the front portion and they paint it regularly, but due to the neglect as you can see that in this portion there is not proper, it is a flat roof structure though there is not proper drainage is happening on the flat roof. And actually eventually there are saplings which are growing up and this is causing further damage to this structure and it is also in a very precarious state.

So, this type of neglect what happened there is a very simple reason which are really easy to take care of like blocked rainwater goods so, broken grills and plants growing in the gutters and walls. They encourage the moisture to penetrate the fabric or also sometimes the slipped roofing tiles which can cause which is very easy to repair. But, due to neglect probably the rusting of the metal windows, expose woodwork, algae and the fungal growths which you have all discussed of the natural causes of decay and excessive moisture inside the building etcetera, etcetera. These are all due to the neglect which can be taken care of as I told very easily.

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This is another beautiful structure, these are old in immutable structures in our smaller towns or villages and other things this is again a private property. The beautiful structures you can see that multiple art and it is a influence of the across cultural influence.

Again it is flat roof structure and so, that you can see that there are planned grows of vegetable growth on the roof. And as a result what is happening is that some of the

portions are very well preserved like the decorations and others as you can see a clear picture. But what has happened because there is a not proper care has been taken to remove the vegetative growth and there is a huge sort of a vegetative growth on the roof the and there is a water logging. So, it is actually causing a crack to the structure and that is a very severe cracking so, I can see that.

And this is just a minor problem which could have been tackled very easily, just a regular maintenance policy is more than enough to take care of that. And these man made causes of decay or the neglect is actually a very very prevalent cause of damage to the many many our historic structure.

(Refer Slide Time: 07:53)

Man made causes of decay

Vibration Damage

Vibration is one of the main factors for fatigue in structure

1. Vibrations produced by different sources propagate from one medium to another.
2. **Long term exposure** to vibrations can cause damages in buildings leading to minor effect such as cracks.
3. These minor damages in critical cases could result in collapse, especially in historic buildings

THE TIMES OF INDIA
Heritage building falls to Delhi Metro's tunnel work
NEW DELHI: Delhi Metro's heritage line seems to have chipped away a slice of history. The underground tunnelling work for the Central Secretariat-Kashmere Gate line has led to the partial collapse of a 130-year-old heritage building in Kashmere Gate, within the complex that houses the Ambedkar University. Part of the masonry structure, one of the most architecturally important buildings in the area, collapsed late last month after Metro's tunnelling work below the building had weakened the foundation, experts said. The complex has other historically important structures such as the Dada Bhaasa Library. Delhi Metro has pledged to reconstruct the collapsed portions of the building, built in 1902. An area resident said it came down in a huge cloud of dust one evening. No one was hurt.

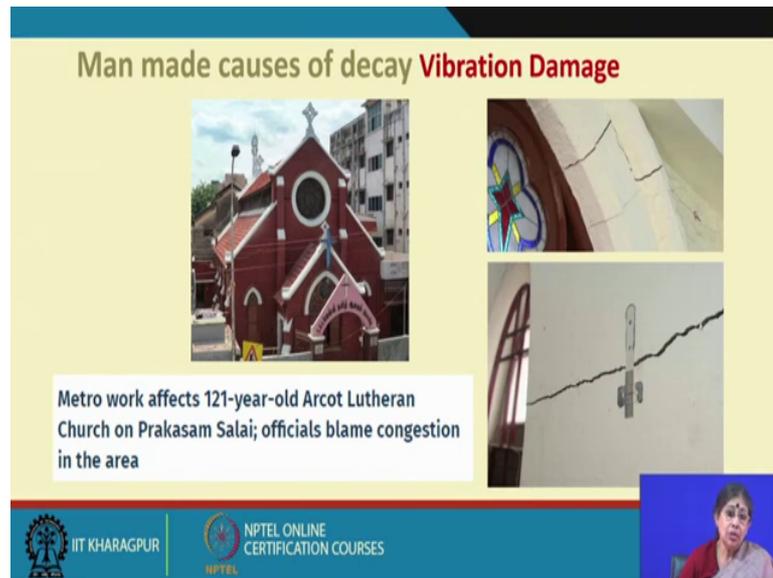
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Another is the vibration damages, vibration damages one of the main factors for fatigue structure. The vibration even the slow vibration produced by different sources propagate from one medium to another. It can be the continuous movement of the cars or that the heavy traffic or it may be the railway lines which are causing there. So, long term exposure to that can cause damage and effect the cracks, there can be the minor damage also in critical cases which can result in cool especially in the historic buildings.

We will see that some of the examples specially because when the historic structures are located in an urban area or even in distant area where railway lines, highway or even nowadays the metro rails are happening they have to. In many cases the damage as you can see that heritage building, falls due to Delhi's metro tunnel work and this is a

repairable damage do I mean a lot of precautions are taken. I believe that by the authority, but I these problematic and the monitoring is required and some of the cases it is a very important structure then probably we have to rethink about the we have to think about rerouting the thing the course of that.

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You know that the metro digging for the metro corridors are very important and it is happening in most of our city. This is you see the metro railway work in Chennai; it has affected a 121 year old Lutheran church.

And you can see how the cracks have been developed and the experts have been called, they are trying to sort of monitor the cracks. and these are the problems which probably it if people concerned about that then precaution can be taken beforehand or again I say in extreme cases even the re aligning the corridors the things is important.

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Man made causes of decay Vibration Damage

Mumbai Metro III: HC stays tunnelling work near heritage building

The stay follows apprehensions that the tunnelling work was damaging the foundations of several heritage and iconic buildings in the area, including the 119-year-old JN Petit building.

WADIJJI ATASH BEHRAM

MUMBAI METRO LINE 3: TUNNEL CROSS-SECTION

Impact Assessment

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This is a very because even in you can see that Mumbai metro also that tunneling work near the heritage building is really causing because they go very close to the heritage structures and. So, as you say that what is important here it is not we are not saying that the no development work can be done (Refer Time: 10:25).

What is important is the impact assessment through the proper expertise and precautions and others. So, to see the proper section what is the foundation, whatever precautions should be taken or can be taken. So, you can see that there is a property impact assessment to see actually where the tunneling is happened, where is the foundation of the structure and what is the likely impact of that digging.

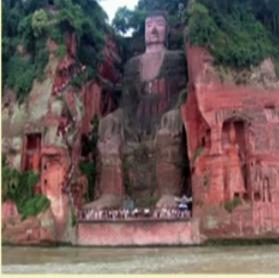
And again not only during the initial construction one has to remember that there will be a regular vibration when the metro we will start working there and that can cause to the further damage. So, proper precaution has to be taken, proper monitoring, regular monitoring there are many cases all over the world that the heritage buildings are there where the metro corridors or underground corridors are happening. Underneath the structure it is possible, but one has to be very careful proper expertise has to be sought, proper precaution has to be taken and as I say in extreme cases one can also rethink of realigning the corridors or the highways or the railway.

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Man made causes of decay
Atmospheric Pollution

Atmospheric Pollutants Can Attack:

- Stone
- Bricks, roofing tiles and terracotta
- Mortars, renders, cement and concrete
- Glass
- Ferrous metals
- Non-ferrous metals



Leshan Buddha in China, 2005, sandstone blackened and corroding from acid rain.
Photo by
<ahref="http://commons.wikimedia.org/wiki/File:Leshan_Buddha_Statue_View.JPG"> Ariel Steiner

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13

And this brings us to the another thing because it is not only the vibration done because of the traffic or because of the railways or heavy traffic the atmospheric pollution which is caused either by traffic or many other factors are there. which also is a cause of a problem like you can see in this Buddha here with the sandstone is entirely blacken and corroding from the acid rain.

That acid rain is again another very important aspect which is happening nowadays because of the pollution. Then atmospheric pollutions can attack the stone, they can attack the brick and the roofing tiles and terracotta, mortars, renders, cement and concrete, glass, ferrous metals and non ferrous metals. And one has to also see that; what is the proper alternative solution, what is the balance, what are the precautions one can take about that.

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Man made causes of decay
Atmospheric Pollution

Natural weathering will cause stone to deteriorate over many thousands of years and bricks over several hundred

- This process is accelerated by pollutants released into the atmosphere
 - Oxides from the burning of coal and oil
 - Nitrogen from vehicle exhausts
- These combine with moisture in the atmosphere to produce a corrosive mixture
 - Typically sulphuric and nitric acids

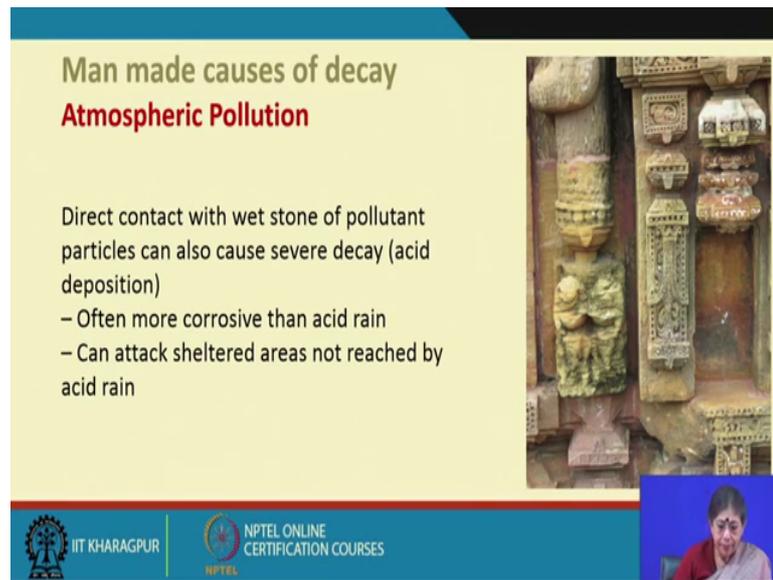
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Now, why does atmospheric pollution happen? What is this acid rain which must understand? Natural weathering will cause stone to deteriorate over the many thousands of years and break over several hundred years.

So, as you can see that this is small element from Assam, where you can see the weathering effect actually has the say Durga idol and which has been deteriorated because of weathering and the pollution effect is a stone one. And this is accelerated by that, it can take many years, but it is accelerated by the oxide from the burning coal and oil and nitrogen from the vehicle exhaust. So, as I said that no one can see that; what are the mitigation measures one can take to sort of reduce the impact?

Now, when this type of pollutants they combined with the moisture in the atmosphere, they produce a corrosive mixture and definite and most of the time there is typically sulfuric and the nitric acids and these when come with the rain because the acid rain.

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Man made causes of decay
Atmospheric Pollution

Direct contact with wet stone of pollutant particles can also cause severe decay (acid deposition)

- Often more corrosive than acid rain
- Can attack sheltered areas not reached by acid rain

The slide features a photograph of a stone structure, likely a temple or historical monument, showing significant weathering and decay. The structure is composed of various types of stone, some of which appear heavily eroded and discolored. The slide also includes the IIT Kharagpur logo and the NPTEL Online Certification Courses logo.

And that rain deposit on the surface of the historic structure they can cause problem.

Now, one must understand is not that all types of material affected similarly by the acid rain. It depends on which type of material, what material this also is important as you can see this is from Bhuvaneshwar that it is made out of different types of stone and how the pollution has really affected.

So, direct contact with the wet stone to a pollutant particle can cause severe decay or the acid deposition often more corrosive than the acid rain. And sometimes what happens is that if 2 or 3 types of stones are used and these are differently affected by the rain and they can also have a different impact on the subsequent layers of stone. So, one has to be very rare and see or investigate very clearly what is the material and what type of pollutant is happening.

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The slide features a title "Man made causes of decay Atmospheric Pollution" in red and black text. Below the title are two images: on the left, a hazy, discolored view of the Taj Mahal; on the right, a clear, bright view of the same monument. Text between the images states: "A recent Indo-US study found that dust and carbon-containing particles are settling on the Taj Mahal and causing discoloration." Below the clear image is the caption "'yellowing' of Taj mahal". At the bottom left are logos for IIT KHARAGPUR and NPTEL ONLINE CERTIFICATION COURSES. At the bottom right is a small video inset showing a woman speaking.

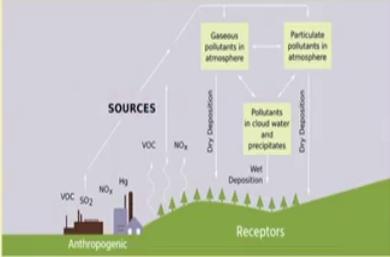
One of the very well known case is Tajmahal, one very concerned about all of us are very concerned about Tajmahal and because of the yellowing of the Tajmahal the because of this acid rain where the marble is getting affected. And recently US indo study found the dust and carbon containing particles are settling on Tajmahal and causing discoloration and a massive discoloration was going on in the case of Tajmahal to remove that discoloration.

And in case of Tajmahal because it is a world heritage site, there were more stringent measures were taken. It was it is known now that the Mathura refinery and many other industrial development which is happening within the close vicinity of Tajmahal this is causing further damage.

There are severe mitigation measures which can be in this case the it was stopped for some time and there the height of the chimney, the treating of the pollutant, the source these are some of the measures which can be taken, but one must know that which are the cause of this deterioration and how to mitigate that.

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Man made causes of decay **Atmospheric Pollution**



When atmospheric pollutants like oxides of nitrogen and sulphur react with rainwater and come down with the rain, then this results in **Acid Rain**.

The formation of calcium sulphate results in the corrosion of this beautiful monument.
$$\text{CaCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + \text{H}_2\text{O} + \text{CO}_2$$

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17

This is a sort of picture that how the acid rain is forming, the gaseous pollution pollutant in the air and dry deposited particles and these pollutants in cloud and other precipitates. And they sort of then they go from the various industry, the sulfuric acid and this with the rain they come down and deposit on the surface and they cause a corrosion of this beautiful monument.

So, one must understand that what is the reason, what is the process and what type of mitigation measures; as I said the height of the chimney or totally removing those type of pollutant industry from the close vicinity at certain distance where it cannot cause this type of problem.

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Man made causes of decay Tourism

- The biggest threat to the Taj is the unregulated number of visitors, which on some days is over 50,000.
- Constant treading wears down the marble floors.
- Presence of visitors increases humidity inside the building and the grease from their palms causes deposition of grime on the walls.



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Now, when we are talking about Tajmahal, a biggest threat of Tamahal is not only the atmospheric pollution for which certain mitigation measures have been already taken. But, another threat is the unregulated number of visitors, every day almost 50,000 visitors visit Tajmahal. It is very popular site and definitely we cannot stop the visitors from coming, but, recently there was a high court ruling that only 30 percent per day of the visitors can so, it is a controlling the number of visitors which is the visitors management.

Which is again is a very important part because a constant treading wears down the marble floors and they also we have a habit of touching the surface. So, the presence of visitors also increases the humidity inside the buildings and the grease from their palms cause deposition of the grime on the walls.

Now, as you see so, this is also again some of the problems which is the visitors management one has to take care of and. So, tourism, this is one of the very challenging thing specially in case of world heritage sites another popular heritage site that the number of visitors and tourism their behavior is becoming a threat to the heritage site and specially the world heritage sites.

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Man made causes of decay Tourism

Tourism development can have adverse impacts on a place if it does not take account of the aesthetic, social and cultural dimensions, natural and cultural landscapes, bio-diversity characteristics and the broader visual context of heritage places.

Further reference for tourism Impact
<https://www.slideshare.net/ejaysamson/socio-cultural-impacts-of-tourism>



Venice



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This you can see in Venice, which is very popular. Now, tourism development as I say this is that you can see that how the gondola is. So, many people's are coming there and we definitely cannot say no because it is also a source of economy for the for that place. And definitely people who would like to come and see this beautiful place and historic places and historic structure.

Now, in general what has been found that the tourism development can have adverse impact on a place if it does not take account of the aesthetic, social and cultural dimensions, natural and cultural landscape, the bio diversity characteristics and broader visual context of the heritage places.

Now, let us see what is this, because itself goes out of the hand it is not cannot be controlled. Let us take it can there is an important a lot of important work or being done on the tourism impact. So, I have given a reference one can visit and see that what are the policy formulations can be done to mitigate that.

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Man made causes of decay Tourism

“A rapacious tourist monoculture threatens Venice's existence, decimating the historic city and turning the Queen of the Adriatic into a Disneyfied shopping mall.”
-Salvatore Settis

Cruise Ship in Venice

The slide features a yellow background with a blue header and footer. The main content is divided into two columns. The left column contains a quote in a white box and a photograph of a crowded canal in Venice. The right column contains a photograph of a large cruise ship docked in Venice. The footer includes the IIT Kharagpur logo and the NPTEL Online Certification Courses logo.

Now, let us come back to Venice, as I said that Venice as you can see in the tourist time in the tourism season that it is actually so crowded. And there is a code a rapacious tourists monoculture threatened Venice existent decimating the historic city and turning the queen of that Adriatic into a Disneyland shopping mall disneyfide shopping mall.

Now, what is this disneyfide shopping mall? Visa via historic site. So, a commodification of the heritage visibly the preservation of the heritage site and presenting it to the tourists is a very important debate which is going on and it requires a lot of attention and policy decision.

This in Venice you can see that what is happening is that is a cruise ship, which is happening in the Venice such a huge tourism which are coming and right up to the saint marks square Venice. And they have to come there I mean one cannot imagine that how this is happening and this is what is really happening, this should not happen, there should be a control, there should be a carrying capacity understanding that how to manage the tourism. It should not become a commodification of heritage on the historic sites. So, that it becomes a stage show and as he said rightly the disneyfied shopping mall.

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Man made causes of decay **Tourism**

Sustainable Tourism

#EnjoyRespectVenezia

Alcuni dei Regolamenti di Polizia Urbana
in vigore dal settembre 2014 al 31/12/2018
Urban Police Regulation, Great Venice 2014-2018

TOURIST GO HOME

Venice residents protest against tourist influx

Venice residents on the march. Photo Venezia Authentica

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so, what is happening, it goes beyond a certain thing like as we can see in Venice the residents are protesting against the tourists influx, they are saying tourists go home. So, what happens because when it goes beyond a certain control what happens is that there is a rift between the local community though I mean as I say that they earn their income from that, but beyond a certain thing is also a living city they cannot take the tourism and a lot of social problem happens due to that.

So, what is we have to understand that sustainable tourism, then how to manage, what are to have a proper awareness for the visitors the management control and other. So, that it we it what is written here enjoy, respect Venetia. It is not a disneyfication it is not a community that you can come and enjoy there has to be some sort of a responsibility in the behavior. Why should the cruise ship should come into Venice which is already had problem of flooding and other thing. This is a too much of greed and too much of pleasure loving thing not respect respecting the conservation area leads to that.

Now, this is another major threat to the tourism area which definitely can be tackled managed with a proper management policy, awareness, promotion and integration of the local community. And it needs involvement from all the touristic tourism promotion people, tourists people, tourism, the comment, the local community and other.

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Another man made cause of decay is the theft vandalism and arson, you can see that this is an Ontario a church. There was a discussion happening that there was a decision to destroy the church, demolish the church. Then the local community holders were meeting the government to stop it and that day they were meeting that and that night it was put on fire with an arson. And it happens everywhere that in terms to give place to the new development, a lot of heritage structures are being demolished rather than looking into that what can be the other alternative solution.

And as you see in Paris that this is a very common site in the heritage places or heritage structure people feel like writing use of gravity and other; this it is a very irresponsible behavior not showing proper respect to the historical and heritage structure.

It cannot be stopped only by policing on putting CCTV camera; it needs a lot of awareness and responsible action from the visitors and the visitors management.

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Man-made Causes of Decay Wars

Historic Centre Warsaw August 1944

St Michael's Cathedral, Coventry, UK November 1940

Before-and-After Images of Aleppo, Syria, 2016

Syria's six Unesco World Heritage Sites all damaged or destroyed during civil war

Aleppo's famous Umayyad Mosque complex badly hit, with 11th century minaret now ruined

Enna Henderson | Wednesday 10 March 2016 10:59 GMT | C11 | unesco

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We have talked about wars, we have talked about Warsaw, we have talked about Coventry cathedral and we have also seen that how they were demolished in the Second World War. And now both of these cases and many more cases have sort of redefine their role and trying to come out and show a sort of a path towards peace this we have discuss in detail.

But has it stopped? No, you can see the Aleppo Syria the before image it is a beautiful world heritage sites, a beautiful city it was with a lot of heritage rock here. And you can see that because of the civil war, after the war that what has happened to that structure and it is now a goes down. It is written here in one of the news the serious 6 Unesco world heritage sites all damaged or destroyed during the civil war and this is we are not going to get back them.

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Man-made Causes of Decay Wars



The ancient city of Palmyra
located in war-torn Syria, flourished as a Roman trading outpost around A.D. 200. Destroyed by ISIS militants

Conflict & Terrorism

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24

Now, it is not only the war, we must understand that these heritage sites which are symbol of unity peace this also becomes a symbol or something to attack. And this is what we can we have recently seen in Palmyra that located in the war torn Syria which flourished is a roman trading outpost A.D. 200. It was destroyed by the ISIS militant, it was purposely destroyed because it was sort of a likely saying a symbolic value.

So, it was a symbol of something which they destroyed and this is something we must understand and one of that type of symbol that where it was it was the Bamiyan Buddha. You probably know that how Bamiyan Buddha was destroyed by the talibanian (Refer Time: 25:22), it took 23-26 days to demolish the Bamiyan Buddha.

So, it is not only the war, it is the conflict and total terrorism which is taking this heritage sites from ancient era as a symbol to attack. But what is we had? Why we are going from this? Let us talk about Bamiyan Buddha.

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Man-made Causes of Decay Wars

Built in 507 CE (smaller) and 554 CE (larger), the statues represented the classic blended style of Gandhara art.

Conflict and Post-conflict Situations:
Restoring the Buddhas using the process of **anastylosis**?

ANASTYLOSIS
reconstruction technique whereby a ruined building or monument is restored using the original architectural elements to the greatest degree possible.

Buddhas of Bamiyan
Taller Buddha in 1963 and after destruction that took place in 2001

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The Bamiyan Buddha actually was located on the silk route and it was the tallest Buddha structures. And in seventies India government, archaeological survey of India a there was a sort of understanding the then there and help to restored that and it was restored.

And it was actually a monastery there like there are a lot of monks that done is to stay in the ancient time and this Bamiyan Buddha a really very sort of exemplary structure, there lot of documents which happened there. And this was altered by so, it was built in sixth centuries, there are 2 Buddhs they are small and other and represent in the classic of the Gandhara art and which is quite unique.

Now, what happened is that it has been demolished, it was taken as a symbol. Now, as I say the conservation theory is a very dynamic approach. Now, one has to understand where we go from here how to do it as so, that. So, now the international because it is a world eater site now the international community is talking about what to do with the Bamiyan Buddhas.

So, let us see that we have talked about the second world war of what happened to Coventry cathedral or war; so another now today we are in a different era, we have a different technology and it is quite interesting to see that. Now a (Refer Time: 27:18) government with the international collaboration, a lot of countries with expertise are coming including India to talk about that what can happen to this Buddha.

So, one is the anastylosis, process of anastylosis, anastylosis is a process of reconstruction or whereby ruined building materials or monument is restored using the original architectural elements to the greatest degree possible. Probably I do not remember, I talked about Konorak is a very good example where anastylosis is happened, where the debris from the sites we are taken and restored put together.

So, one of the option people are talking about is the restoration through anastylosis because for the smaller Buddha many of the debris are still there on the site, but as we see that we have come a long way.

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And now what is happening is the there is a different technology is happening. So, virtual reality technologies are helping a lot of work going on to actually reconstruct and help in reconstructing the Bamiyan Buddha that to what degree it is happening. So, you are using the new technology to in the reconstruction process.

. So, should it go into anastomosis, should be sort of put together or is there any other way of reinterpretation or the discovering this Bamiyan Buddha are bringing back bringing back not physically, but concept wise what are the other ways.

So, this is very interesting what is happening that this is what is that that this was the past this is the past what happened and this is what is present it is sort of a Hollywood structure. And the future we are talking about the virtual reality technologies and how it

can help and as I say that these are also acceptable and people are exploring the different ways of doing that.

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Man-made Causes of Decay Wars

Virtual Reality Technologies

Conflict and Post-conflict Situations:

Virtual Reality Technologies

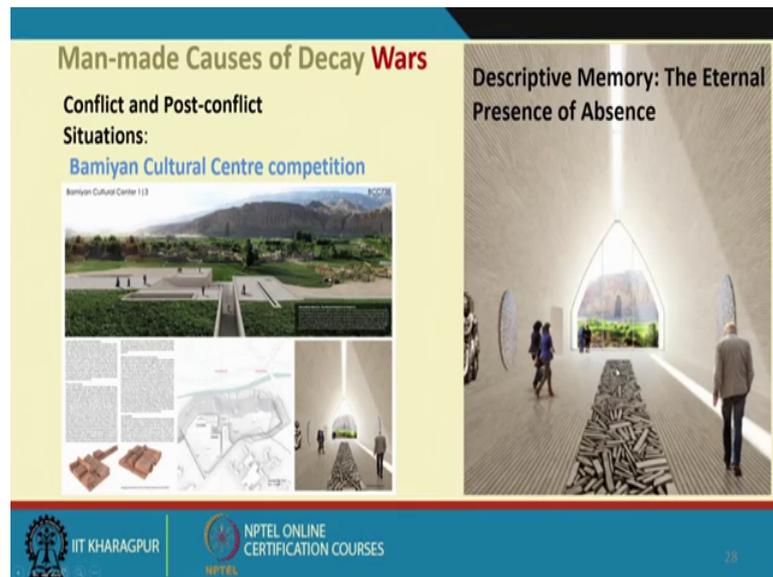
Buddhas of Bamiyan

The many ancient statues recreated in a laser light art by Hiro Yamagata (lope.ca/artrenewable).

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And a very interesting thing in that this you see in this case that the there is a hero Yamagata, who is Japanese is trying to find that how the statues can be recreated through a laser light and rather than really reconstructing. So, as I say the technology can help to reinterpret a lot of things and we are exploring more and more, the use of virtual reality virtual technology or by actually the reconstruction process or sort of putting the images. So, that people can understand what it was there also another thing we must understand.

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That like is the Bamiyan cultural center competition is there in an international competition. So, they are now talking about. So, let us see from where how we go that so, recently 117 countries participated in this international competition to build something there an interpretation center to for the future generation to see that what has happened and another very interesting thing as you can see that in one of the concept from the museum there is a vista so, they can see that holly structure and we will talk about that.

So, this is again various ways how and it all comes under conservation. So, from the conflict again with the new technologies, new interpretation, new thoughts and new philosophy we are going and trying to overcome that what is happening to our ancient cultural heritage.

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Man-made Causes of Decay Wars Conflict and Post-conflict Situations

Reconstruction of Mostar Bridge
Mostar, Bosnia and Herzegovina

- The 16th-century Mostar bridge blown up during the bitter fighting in the Bosnian war in 1993.
- **reconstruction**
symbolic healing of divisions between communities
- The single-arch masonry bridge and related structures were **rebuilt** using the original methods and materials



1 2 9 November, 1993 3 After the War 4

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Another example or I must I mean I have talked about a lot of this is the monster bridge it will happen in it was a 1670 bridge and due to a bit of fighting, it was destroyed. As you can see that this was the old bridge and this is in November 1993 this was damaged due to the war it was destroyed and this is after the war there was nothing there.

Now, it is a world heritage site now it has been reconstructed and while reconstructing. So, it is a totally new one, but again why it is a world heritage site, because, this reconstruction is a symbolic healing of the division between the communities which are part of that settlement and that area. So, it is becoming a symbolic to the healing process of this community after the war.

So, that single arch masonry bridge and related structures were rebuilt using the original methods and materials and it has. So, as I say it is a reconstruction, but it is actually a symbolic value. So, that going back to the original metal other so, if we talk about the so, if we are talk about the monster bridge they are all world heritage sites.

But, they are all trying to reinterpret and continue the past and accepting the present what is happening, which is unfortunate and going to the future. Using sometimes the traditional materials and method and sometimes the modern technology each and every case is different depending on what is the thought process behind that and what the community is trying to talk about that.

So, these are some of the causes of the man made causes which cause damage to the heritage structures to the different degree. So, we have seen the damages, the process of decay either due to the natural causes or the manmade causes. we have some sort of brief idea about that.

Now, what will happen is that once we have a good idea about this, now the next stage is that how to document a historic structure. So, in our next lecture we will talk about how to document historic structures.

Thank you.