

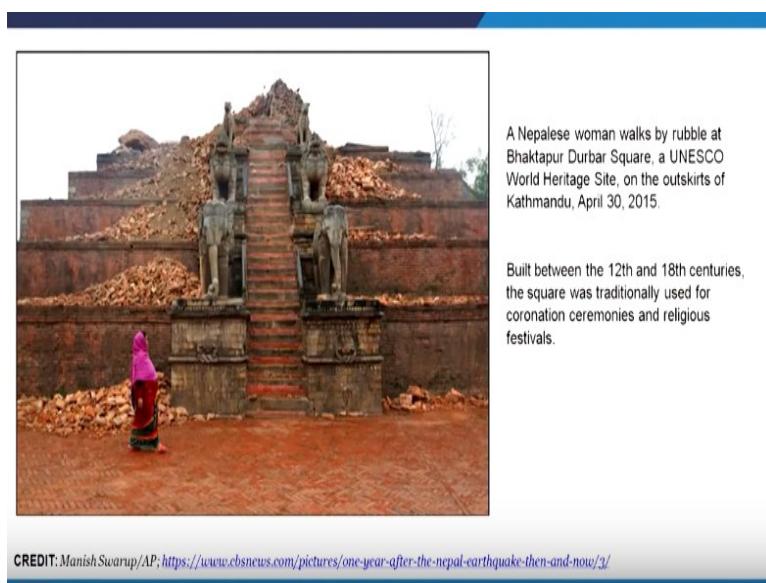
**Disaster Recovery And Build Back Better**  
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**Lecture – 05**  
**Architecture at Risk**

Welcome to the course, Disaster Recovery and Build Back better. My name is Ram Sateesh, I am a faculty from department of architecture and planning, Indian Institute of Technology Roorkee. Today, we are going to talk about architecture at risk, so today we are going to discuss about the theoretical component along with the implications, the practical implications with various variety of examples and how architecture as a domain it contemplates with the theory. And especially in the post-disaster recovery practice.

Whenever a disaster happens, we encounter a huge loss not only to the lives of people but to their properties, to the civic buildings, to the religious buildings, to the cultural heritage of the communities.

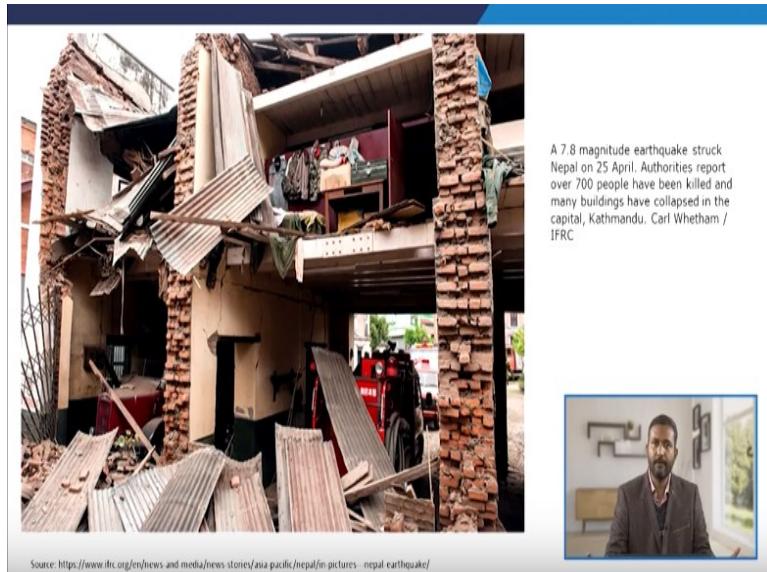
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For instance, in this photograph what you are seeing is the Durbar square in the Nepal, the recent Nepal earthquake. And many of the historic buildings which are under the UNESCO heritage have been demolished. Now a lot of efforts have been taken up in the reconstruction of these historic buildings. This place is known as Bhaktapur which is listed under the UNESCO world heritage site in Kathmandu.

It goes back to the 12th and 18th centuries where this particular square was traditionally used for the coronation ceremonies and the religious festivals and many of the residential buildings got damaged.

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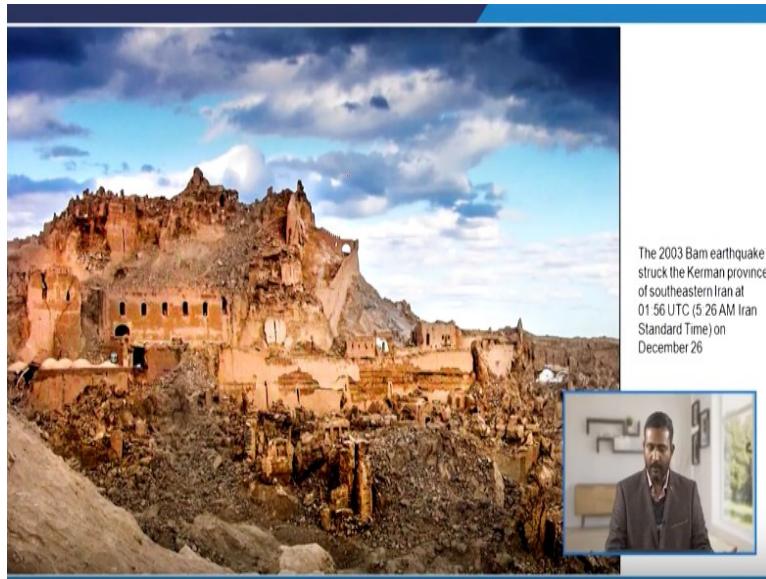
So there was obviously a need of reconstruction not only from the shelter point of it but also to rebuild the lost heritage. Similarly in 2003, Bam earthquake in Iran what you can see here is, before and after the earthquake.

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What you can see here is a huge demolitions happened you can see the rubble masonry, I mean the whole rubble fallen on the historical site. And it took almost more than a decade to rebuild the whole process you know the each and every monument is worth or each and every building of its whether it is a merchants owner I mean merchants house or it is any civic building or it is any fort.

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So it needs a very longer time to actually understand its historical significance, understand its materiality and then reflect back with its historic integrity and within its historic context. This is one of the biggest challenge when an architects work in a cultural settings, especially in the post-disaster recover. Like here you can see a list of properties.

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Site Name	Nation al Reg. No	Owner	Date of Reg.	Historical period	The area of core zone (Ha)
Bam Citadel (Arg-e Bam)	519	S.P	03/1966	Sassanid	73.16
Ansari Residence	1495	P.P	10/1977	Qajar	0.35
Naderi House	1496	P.P	10/1977	Qajar	0.567
Vakil Ensemble	1729	S.P	06/1987	Qajar	0.76
Ameri House	1835	S.P	02/1997	Zand	0.66
Kushk Rahimabad	2099	S.P	08/1998	Ilkhani	0.115
Vakil Mosque	3508	S.P	2001/03	17-18 Century	P. V. E
Hazrat-e Rasul Mosque	3508	S.P	03/2001	Islamic	0.3867
Shrine of Mirza Ebrahim	3509	S.P	03/2001	Safavid and Zand	0.0308
Bam old Bazaar	4602	P.P	01/2002	Safavid and Qajar	1.08
Soroush Zabolestani House	6136	P.P	08/2002	Pahlavi	0.1068
Ice-House (Yakhdan)	6759	S.P	12/2002	Safavid- Qajar	P. A. B
Stable	9565	S.P	08/2003	Ilkhani to Safavid	P. A. B
Qal'eh Dokhtar	9566	S.P	08/2003	Sassanid	3.71
Emid School	9567	S.P	08/2003	The late of Qajar	0.1785
Jewish Hose (West Sabat House)	9568	S.P	2003/08	Ilkhani to Qajar	P. A. B
Ahmadiyeh School	9570	S.P	08/2003	First Pahlavi	0.09
Friday Mosque of Bam Citadel	9571	S.P	2003/08	Islamic to Qajar	P. A. B
Mirza Naem School	9572	S.P	2003/08	Qajar	P. A. B
Bam Old Hospital	9588	S.P	2003/08	First Pahlavi	1.9300
Hana sui	14309	P.P	03/2006	early of Pahlavi	0.4

P.A.B: Part of Arg-e Bam - P.V.E: Part of Vakil Ensemble -S.P: State Property -P.P: Private Property

Some of main Bam's national heritage damaged by earthquake

Jafar Rouhi  
The Seismicity of Iran and Its Effect on Iranian Adobe Cultural Heritage: The Case Study of Bam City  
<December 2016  
<Conference: The 4th International Congress on Civil Engineering, Architecture & Urban Development Tehran, Iran, 27-29 December 2016

Which are the state properties or the private properties and whether it is a citadel, whether it is a residential, whether it is a mosque, or religious buildings and which are listed under the national heritage have been damaged by this earthquake. And then the recent efforts by various organizations from the German NGOs came forward to reconstruction and there is a kind of collaboration between the Iran government and as well as the German parts.

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And that is how they started working on like a few examples where a merchants house has been rebuilt by the clay brickwork and they also use a kind of the fiber-reinforcements and looking at the alternative materials which can sustain the earthquake in future as well. So how they are

actually rebuilding these walls and also the archer, walls these are because you need to regain the same form you know what kind of alternative materials one has to procure first of all.

And the skilled labour, how we can train them and conservation it is not just only the preservation or the reconstruction or the restoration process. We can call it as a kind of conservation project which is a bigger umbrella of all these components which can go into restoration, the reconstruction aspects and that is where we deal with the authenticity of the product you know what this particular heritage structure belongs to.

And how it has an outstanding value so how we can actually reflect that back when we are doing such kind of conservation works. So these are some of the challenges apart from our regular shelter and housing programs which we deal with normally in the disaster-affected areas. We also deal with the identity the place and identity issue the space and place. Let us talk a little bit of the in parallel I would like to discuss about the concepts of place and its identity.

When we talk about place many of the theories geographers, anthropologists, sociologists they argue as place is a territorial instinct, it is a boundary which where a person feels safe comfortable delivered. It is also a kind of survival instinct.

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