Culturally Responsive Built Environments
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Lecture – 35
Architecture without Architects

Welcome to the course Culturally Responsive Built Environments. Today we are going to cover the Architecture without Architects. So, initially as we have discussed in the vernacular architecture introduction, we did discussed about one of the prominent person's work of Bernard Rudofsky architecture without architects. So, in this lecture I am going to brief about what he has acknowledged and what are the varieties of contributions.

And how people started dwell people dwell in it and what are the various material factors into it environmental factors into it and then with having a brief discussion on Bernard Rudofsky's work. And I will also introduce you to in the contemporary practice how different agencies are working towards the material aspects into it and how they are able to engage from engage the community and as well as how they are moving from a singular vision to a shared vision of building. So, there are two stories which I will be presenting towards the end.

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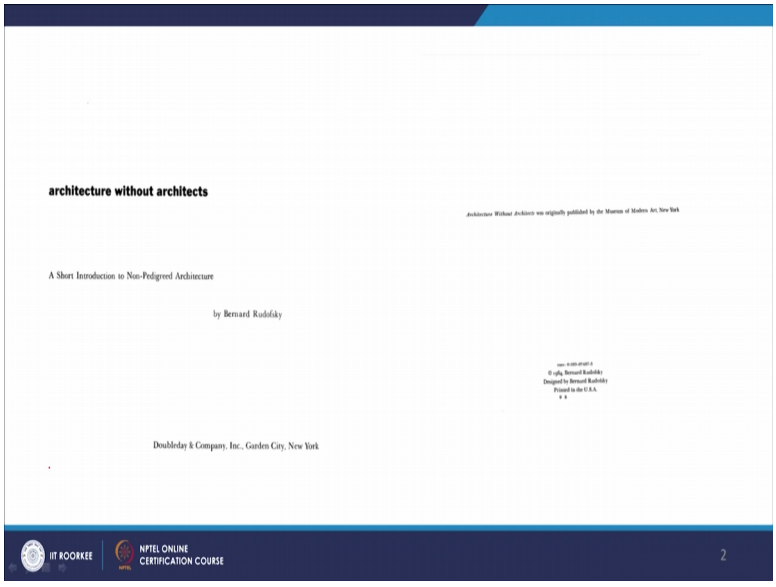

In fact, where he talks about this vernacular architecture as a kind of non pedigreed architecture and that is why this book is one of the important contributions of Bernard Rudofsky's work and it was originally published by the museum of modern art in New York. So, it actually covers a very wide range of the whole worlds pictures and the details of a small details of how starting from amphitheatres to burial grounds and the symmetries and to the dwelling places to the towns and to the engineering without engineers with the technology aspect of it. So, it covers a very wide range of the indigenous systems. So, I will present you a brief of few examples what Rudofsky have talked about.

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So, when we talk about a macro level understanding of a landscape you know how the Incas have understood the topography and the landscape nature of it. And how they made the amphitheatres we call it as a Muyu-uray which is Muyu means round or a circle and uray is below, or at the background.

So, that is how a name has been derived and you can see in the Incan Incas civilization in a Peru where we can find 4 amphitheatres, four of them are in a kind of round form and one is in a horse shoe form. So, these are actually built by the Inca tribe of the Maras and accommodates about 60000 people.

So, today if you are talking about a cricket stadium in open stadium which is talking about 30000 capacities just imagine in those days. They have visualized about 60000

capacities, they got still 12 terraces still exist and which about 6 feet high and 23 feet wide.

Whereas, the lowest circular platform which you see here is about 80 to 132 feet in dia, so that is about 80 feet to 132. So, that is how they vary, but ideally if you look at the present photograph the color photograph of this like you can easily get in the internet of easyperuadventures dot com.

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And so the idea is initially it was I mean there are different assumptions on it. One assumption which we talked about is kind of amphitheatre, but there are also other assumptions because gradually due to lack of maintenance and then the pastoral lands have developed on it.

So, one of the function which also been documented is about the it is a center of Inca agricultural research where experiments were conducted at different heights crop and the separation and position of this platforms produces a gradient of microclimates having the center of concentric circular terraces a higher temperature.

So, basically each level which provides you with different temperatures and with each platform that goes up the climate is changing and therefore, decreases the heat and temperatures are lower. So, basically the valley sort of thing from where you go up and it the climate the it changing and the heat and the temperatures becomes lower.

So, thus within this concentric there have been about 20 different types of microclimates. So, we can see how the from the center. So, there is a kind of research platform as well this is one of the understanding what different literature have talked about. So, it is a model of calculating the agricultural production not only in the Urubamba valley also from different parts of Tahuantinsuyu.

So, what we are saying is looking at the indigenous the traditional knowledge system and it served both as a kind of amphitheatre model and acoustically it has very well managed. And in fact, there are many stories which talk about acoustically it is a very superb calculations were done on it and from agricultural point of it how it actually also is a by the Muyu uray rising. And the it changes your temperature and how you can do conduct some kind of research.

So, what we learnt from the case study the previous example is the nature the geography itself provided a base for the humans to think about certain aspect of life it could be a social congregation, it could be an agricultural production and research life.

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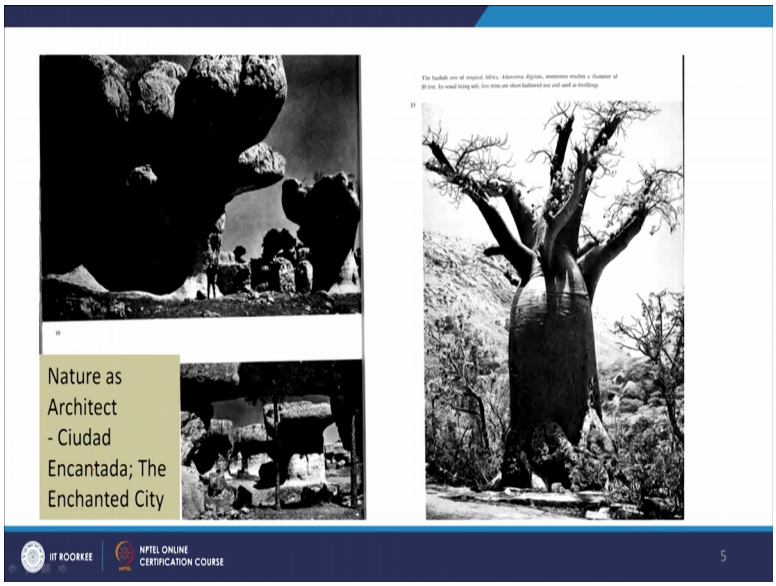

But one the important part of vernacular architecture is one is the nature itself as an architect like a good examples you can see here is the enchanted city where these stone forms itself that even they formed a kind of shelters. And even the cantilever stone from this one of the even today it was existing and this is referred as a kind of because it could

be because of volcanic erosions and how they have settle down or it could be the calcareous segments, how they have settled down?

So, this whole nature itself gives a particular form and people started dwelling in it. And you can see about a 500 acres of such settlements within Spain. And whereas, you can see some of the baobab tree of tropical Africa which is in the scientific name of Adansonia digitata, it is almost reaches a diameter of 30 feet, 30 feet and is quite a huge size and it is almost like one can because being of a soft nature soft nature.

So, one can actually make the things carve it and make a hollow thing and use it as a dwellings. So, this is which means the tree also a living tree also becomes a dwelling of human. Then the third example which I am trying to talk so till now we are talking about the architecture above ground. And I think in this lecture we are covering and aspects of below ground as well dwellings below fields and upstairs.

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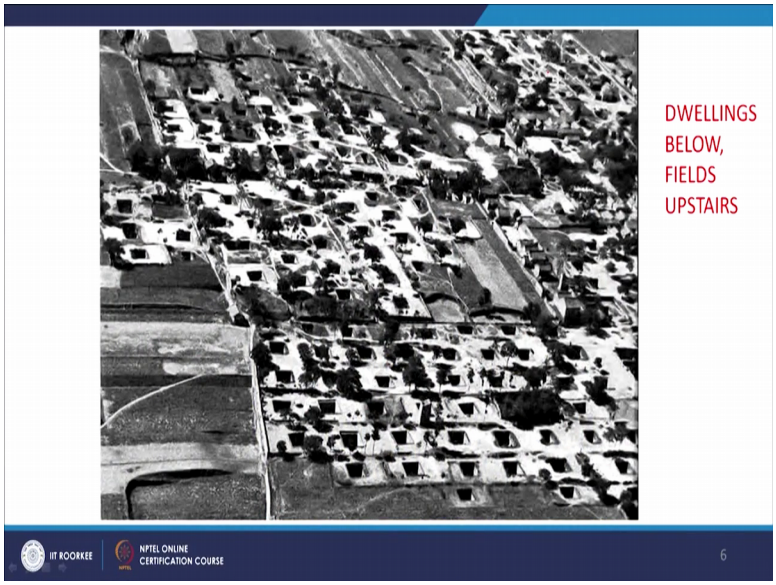

So, what you see is in a kind of a huge settlement which are actually made in the below ground this is in China. So, in Hunan near the Hunan province you can find these settlements of a huge settlements.

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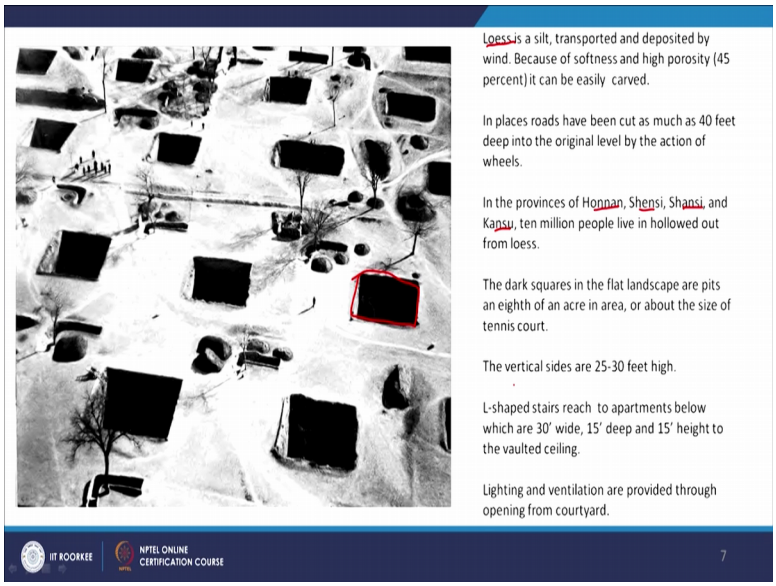

How these what are the why the settlements have gone below ground? Obviously, there is a nature of the soil that is why we call about the loess which is a silt and transported in deposited by the wind. And because of a softness and porosity which is about 45 percent so that it can be easily carved. So, one can actually carve it

So, similar thing we could also find in path find in parts of Africa and Morocco region as well. And in some places because of it is soft nature the places roads have been cut as much as 40 feet deep into the original level by the action of wheels and you can find these settlements in Honnan, Shensi, Shansi and Kansu. Almost 10 million people live in hollowed out from loess.

So obviously, man is making the best use of the natural form of the climate and as well as a geography. So, these pits what you are seeing it is about almost a size of a tennis court and eighth of an acre. And the vertical sides will be about you have 25 to 30 feet high and you have a L shaped stairs to the apartments below which are about 30 feet wide and 15 feet depth.

But whereas, the height you have a kind of a vaulted ceiling into the roof and that is about a 15 feet height. And mostly because it becomes a huge courtyard of it of a size of tennis court and lighting and ventilation are provided through the openings from the courtyard so that is how?

So, now, we have talked about architecture below the grounds right and now we go how architecture by subtraction. In fact, this is one that is where Bernard Rudofsky talks about there is no difference between the sculpture and architecture. And it is not that sculpture we encourage after the project and neither the landscaping as well.

So, we are all inseparable and what you see here is Goreme tacones in Anatolia. And again here because of the erosion and because of a volcanic activities in the past and you can see similar things in Cappadocia as well and in Anatolia.

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So, all these stone boulders you can see the man's dwelling you know these are some of the plans which someone else has done. And we can see 3 levels and such towers you can see at the size of a small tent till almost 16 storied heights, 16 storied height of these towers. And today's condition is now it is all and this is where one has to think about.

So, what we are looking at is these towers and surrounding it the whole modern atmosphere. The modern built environments the buildings have come up and which still it is dominating. But at the same time how these premises are maintained and how one can take care of these particular aspects. And at the same time the conservation aspect of it because these are a very good examples of how man has accommodated with nature.

And so, while we are doing a planning situation of any city of Anatolia or anything; obviously, what kind of care has to go into it? And how it is buffer zones could be

created? And because the whole set because even if any small disaster occurs, if any distraction happens; obviously, it is going to be a huge loss not only to the particular boulder, but the cone, but to it is adjacent areas who are residing there because is a huge boulder.

And then we talk about we talk about architecture without architects, but you need you see the indigenous systems of engineering without engineers that is what Rudofsky's calls.

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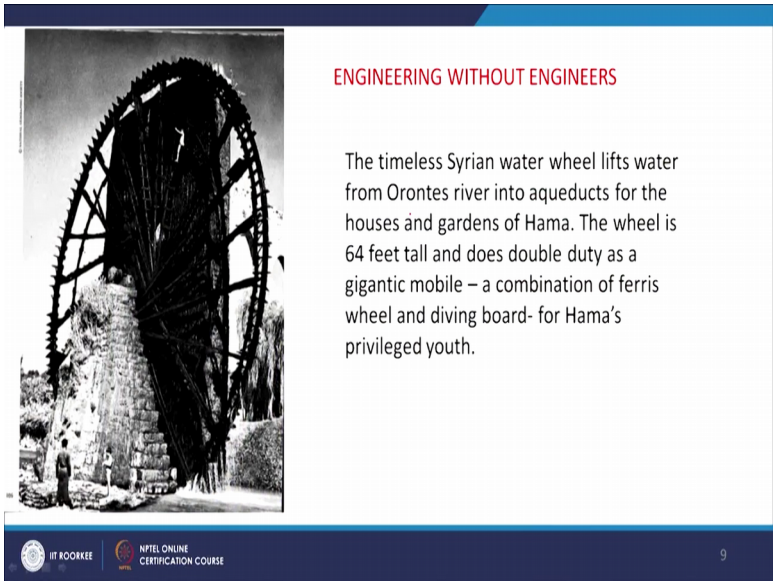

So, where he brings an example of a timeless Syrian water wheel how it is almost about 64 feet tall. And as you know it basically takes lifts the water from Orontes river into the aqueducts for both houses and gardens of Hama. And this actually does a duty both as a combination of Ferris wheel and as a diving board for Hama's privileged youth, so because this session we are talking about this material aspects.

So, we talked about the silt loose soil, kind of thing how it have been taken into form and we have taken the baroque the stones and how they have been accommodated and then we try to cover with a kind of timber which is a bamboo and the grass structures we talk about.

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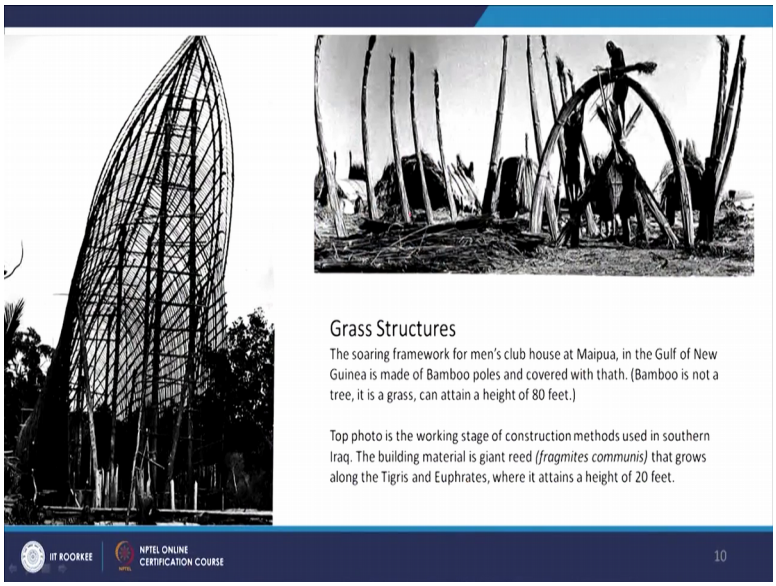

So, what we see here on the left hand side you can the kind of framework of men's club in Maipua, in the Gulf of New Guinea which is completely made of Bamboo poles and covered with that later on. So, it is on the right hand side what you see here is in Southern Iraq where a particular kind of grass is a giant reed which is called phragmites communis which is grown up about 20 feet height. Whereas, bamboo it can grow till it can attain a height of about 80 feet high and we always consider bamboo is a tree. But it is flexible it could be considered as a bamboo as a grass it is not a tree it is a grass that is what Rudofsky points out.

So, it can attain even at the size of 80 feet height. So; obviously, this whole and in today's current contemporary practices also the bamboo is very much especially in Vietnam. Vietnam and Papua, New Guinea and all these places you can see bamboo is extensively used and many famous architects they in the southeast Asia they have really contributed very much into the architecture using bamboo techniques.

And even in India we have many explorations stand using bamboo, bamboo machines and lot of work has been done. And in the right hand structure what they do is first they try to put the poles into the ground and then they try to bend it.

And once they bend it then they make the frame out of it and then they cover with the kind of grass sort of thing and we talked about grass, we talked about that timber aspect

of it. We talked about the stone, we talked about the soil and look at this a kind of Zambian herdsmen it is a small village.

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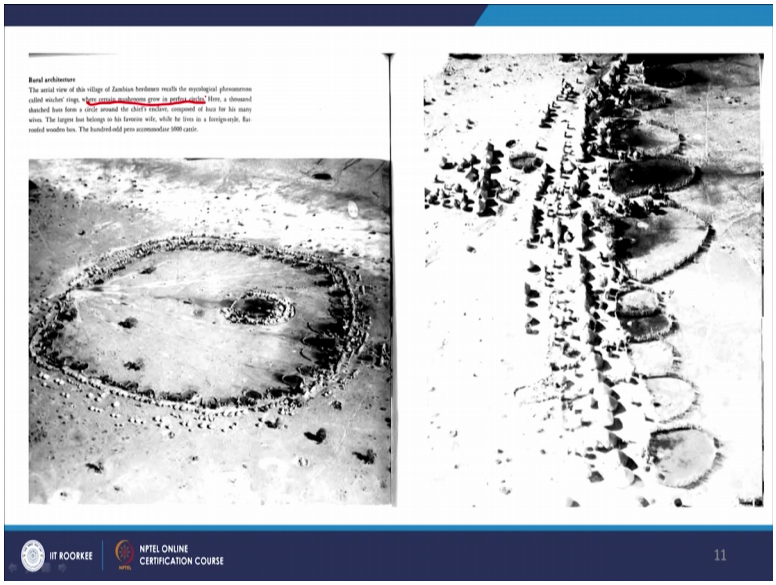

But what you see is a kind of garland sort of thing, but here these particular places why they have made into a circular shape? Why these dwellings are not in a linear or any other haphazard state? But why there is a reason behind there is an ecological reason and there is a biological reason into it. So, basically in this particular places you have the certain mushrooms grow in perfect circles.

So, what they do i? So they allow the mushrooms to grow and then their hamlets go around it and even here there is you can find thousands of huts which form a circle around the chief's enclave. So, you have a chief's enclave in the centre and he has many wives the polygamian, polygamy culture is there and the largest hut belongs to his favorite wife. And while he lives in a foreign style flat roofed wooden box and the 100 odd pens you have the small pens where it accommodated about 5000 cattle.

So, the whole stretch has a kind of nature of that is where rare mushrooms are grown. Even if you go in the forest of Chhattisgarh that is a sal under the sal trees how a specific mushrooms are grown and how people cultivate this is very amazing to see all these aspects. So, in a conclusion of what we discussed from the landscape point of it from the sculpture point of it and as well as how people have building the architecture aspect of it that is what Rudofsky talks about.

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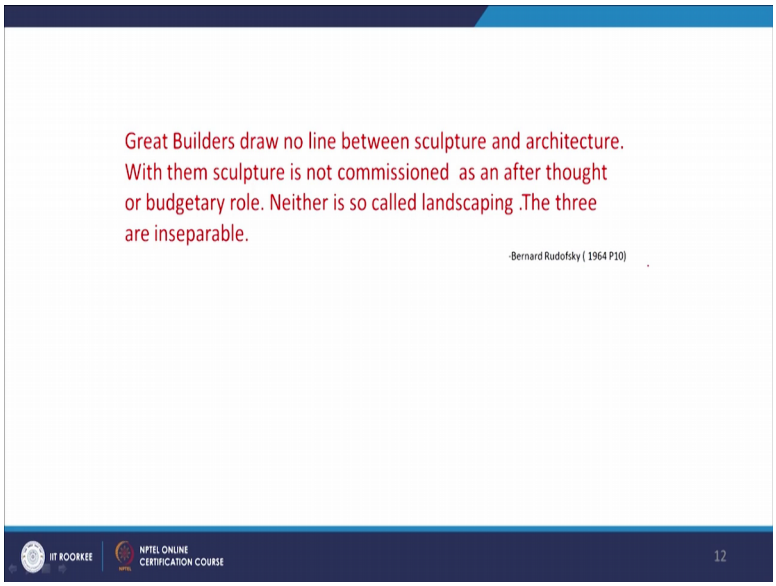

The great builders draw no line between sculpture and architecture with them sculpture is not commissioned as an afterthought, or budgetary role. So, neither is so called landscaping the three are inseparable. So, one has to understand you know being an architect one have so now, today as I said we briefly discussed about Bernard Rudofsky's work. But we what we are trying to understand is on one side it is the larger topography one has to and the geographical aspects of it. And how different cultures made interpret it in different way and how they accommodated themselves.

In Chinese context how they understood the geological aspects into it and how they accommodated that and whereas, in the Incan civilizations how they made a bigger communal structures like amphitheatres and as well as it could be a research platform for agriculture.

And whereas, in Anatolian range where we are talking at the kind of how they accommodated without disturbing much of the nature how they accommodated themselves within these boulders? And further up how they are using the locally grown grasses like bamboos and how the giant structures were built. And further up how looking at the ecological condition and how the source of income of the rear mushrooms? How the hamlet how we determine the form? And at the same time the cultural aspects also are embedded within it.

So, now till now we have learn about this documentation aspect of it, but in the practice how different agencies are working in the Verna field vernacular architecture, of course, there are many and many. So, the list is not limited it is a almost infinite many corners of the world people are working. But today for this lecture I am just showing you two examples one is a Hunnarshala initiative.

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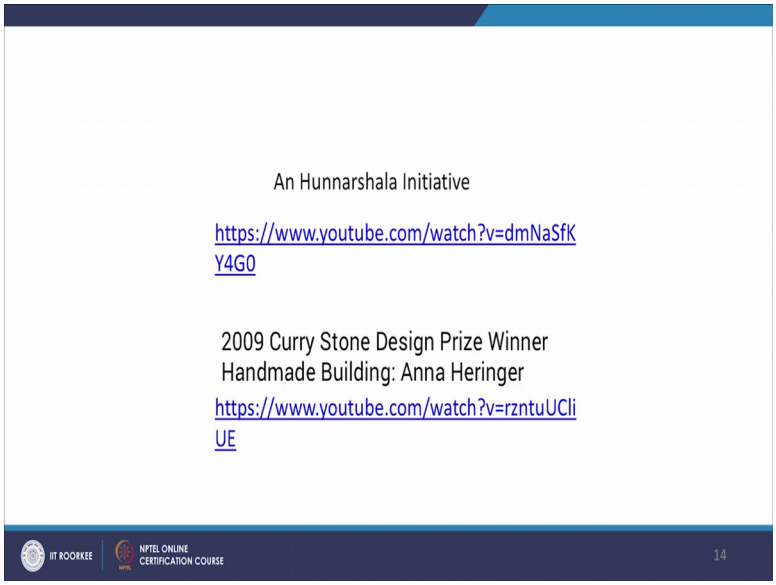

So, the first one actually talks about it is actually it was in Bhuj when after the Gujarat earthquake in 2001 and that is where it was a Kutch Nav Nirman Abhiyan later framed into the kind of Hunnarshala. And how they started engaging with the communities the local communities?

And because that is one big initiative where the public participation was made a huge effort and that is where they have shown a scope for the employment and also innovated new technologies and transfer of technologies from especially from the compressed stabilized earth blocks from Auroville and as well as some of the crafts. How are the decorative item, how we can learn from the locals how we can learn from the villages.

And how they can be engaged in the construction process how they can be trained and at the same time after a series of years; obviously, certain housing projects were carried out. Also they have also transferred the technologies from parts of Indonesia and how they can be accommodated within it. Obviously, the logistics aspect of it the transport logistics the material logistic the skilled labor logistics all has to be worked out.

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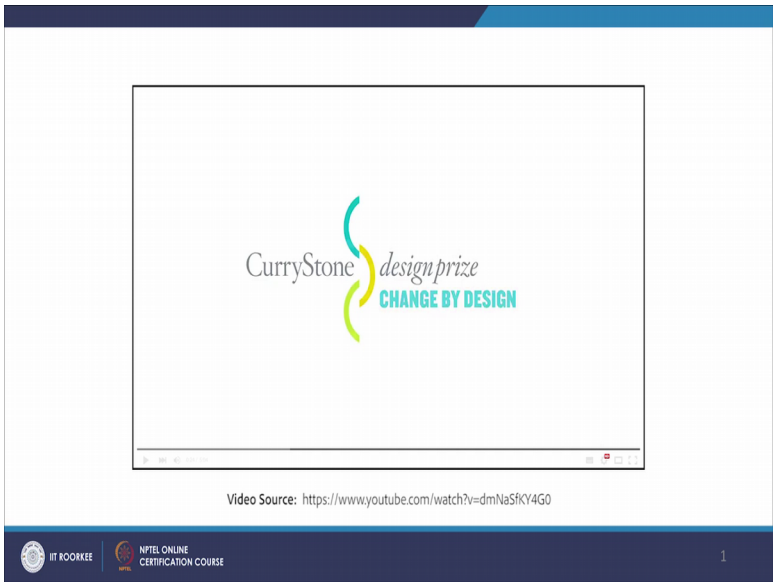

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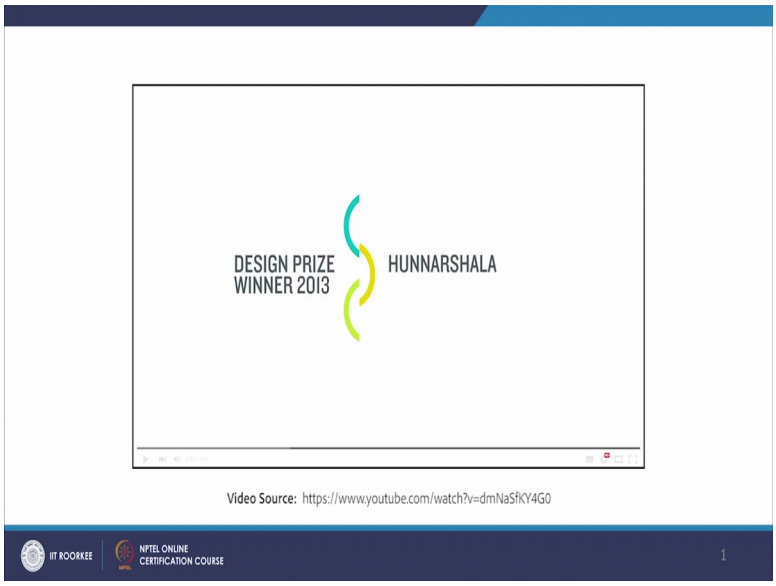

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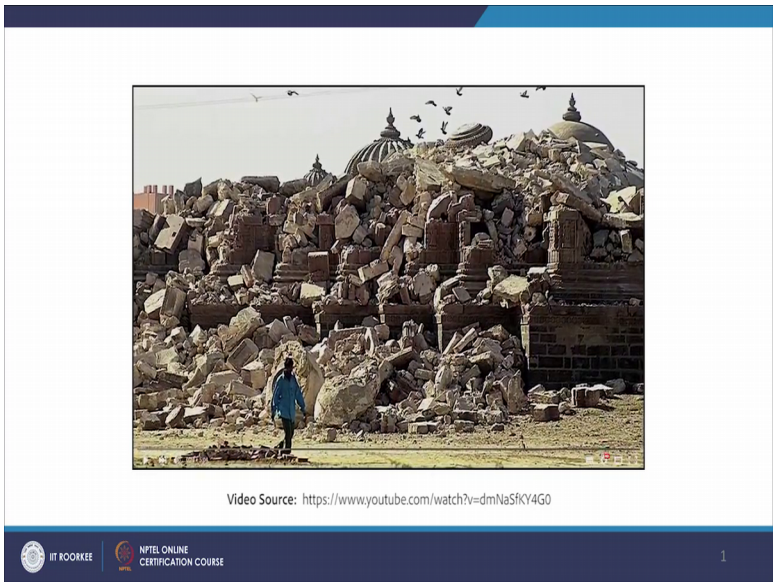

In 2001, a massive earthquake shook Gujarat a state in northern India centered around the city of Bhuj the quake killed 30000 people.

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And left half a million homeless to rebuild a group of local architects and engineers formed Hunnarshala.

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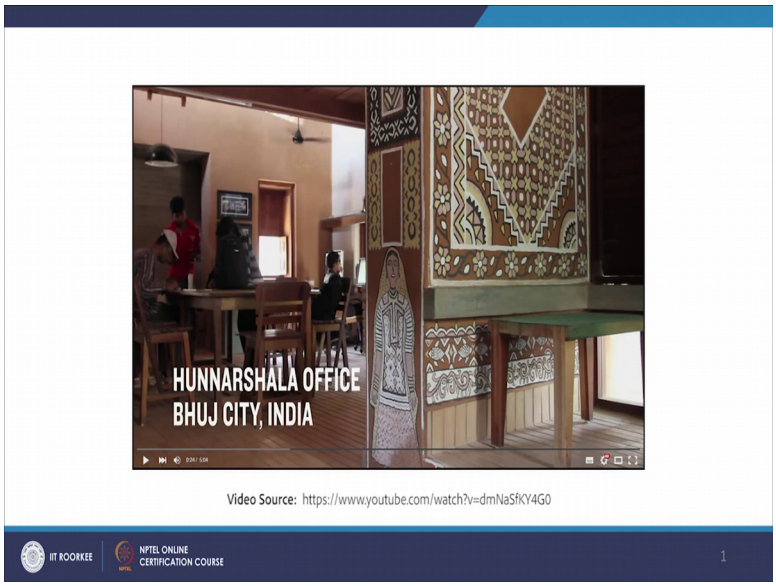

Amid the flood of international aid Hunnarshala took a unique approach emphasizing community participation traditional building designs and local know how.

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Our work is entirely based on legitimizing and giving dignity to the building artisan community that that has been the repository of so much of knowledge.

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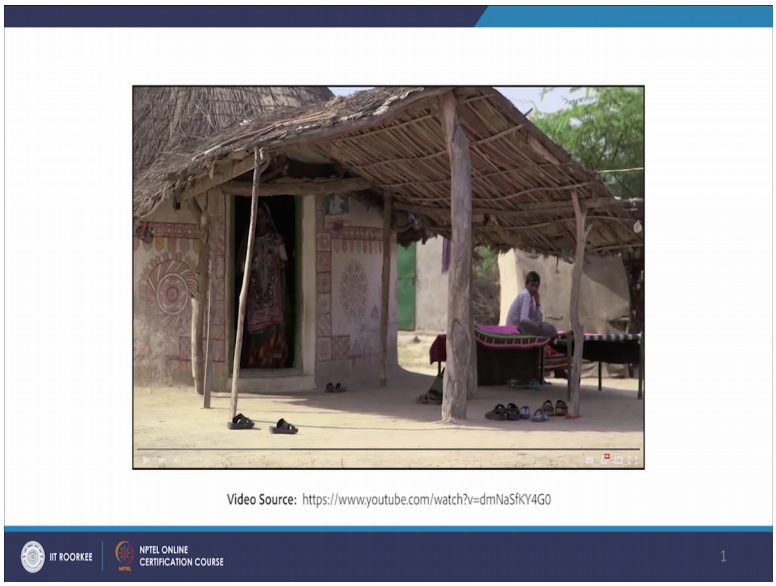

And the other is just the rural communities they have so much beauty. And so much knowledge related with their built forms.

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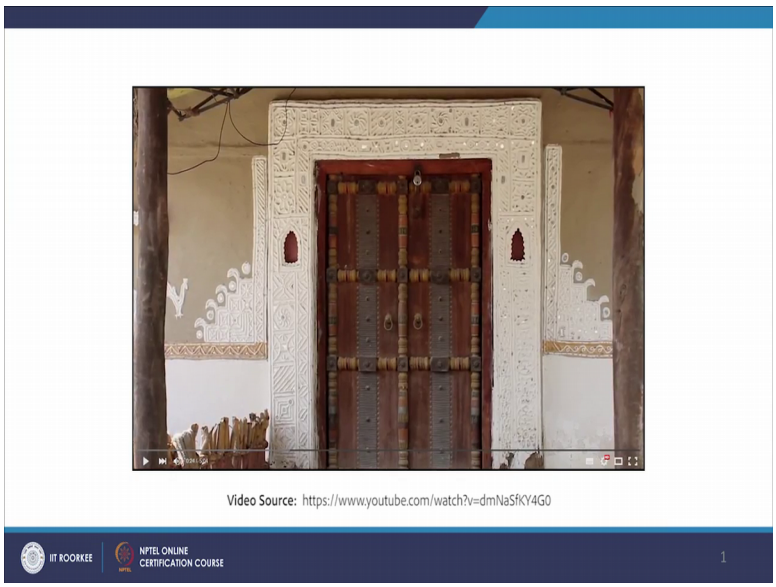

At a time when disaster relief was trending toward prefab housing.

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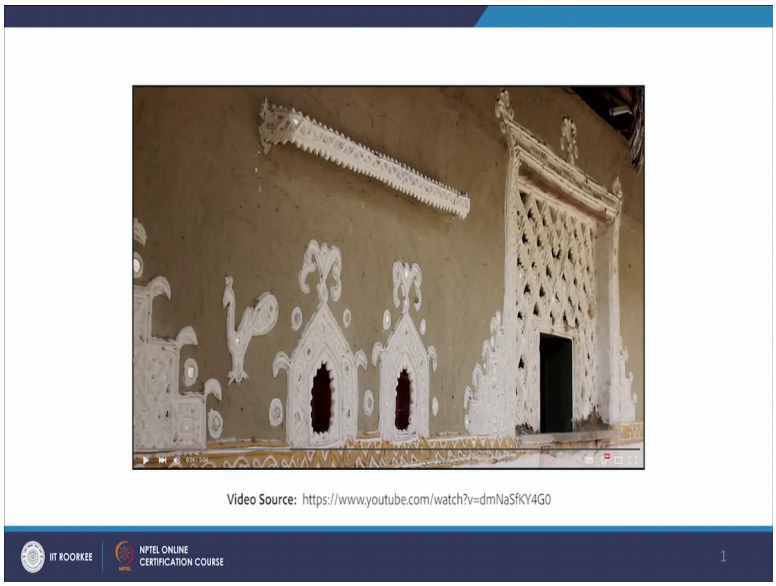

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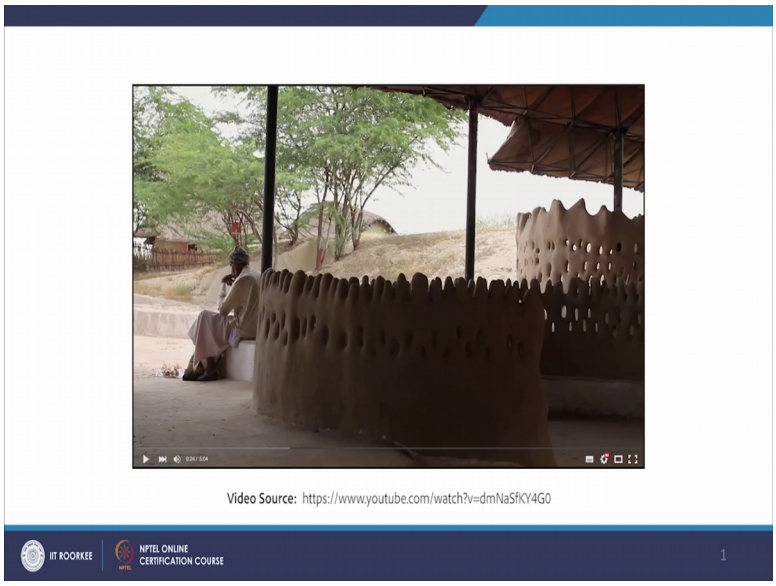

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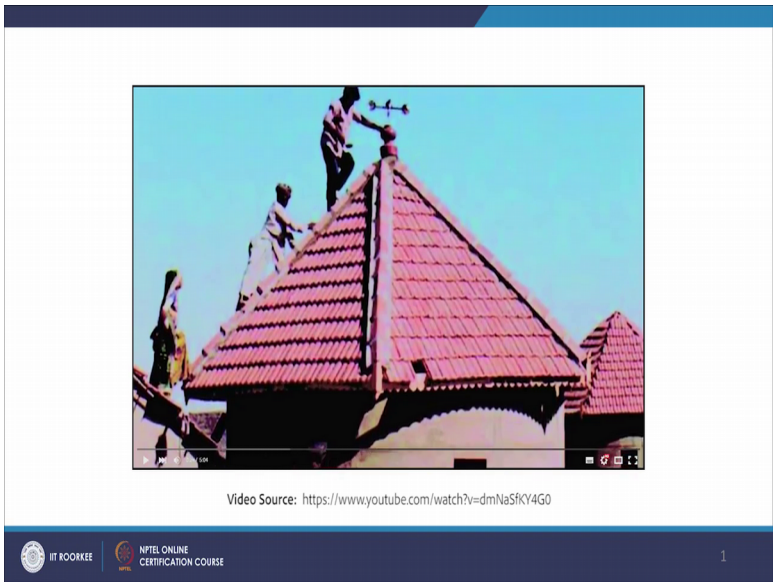

Hunnarshala went in the opposite direction helping local villagers build thousands of earthquake resistant homes with traditional technologies such as rammed earth.

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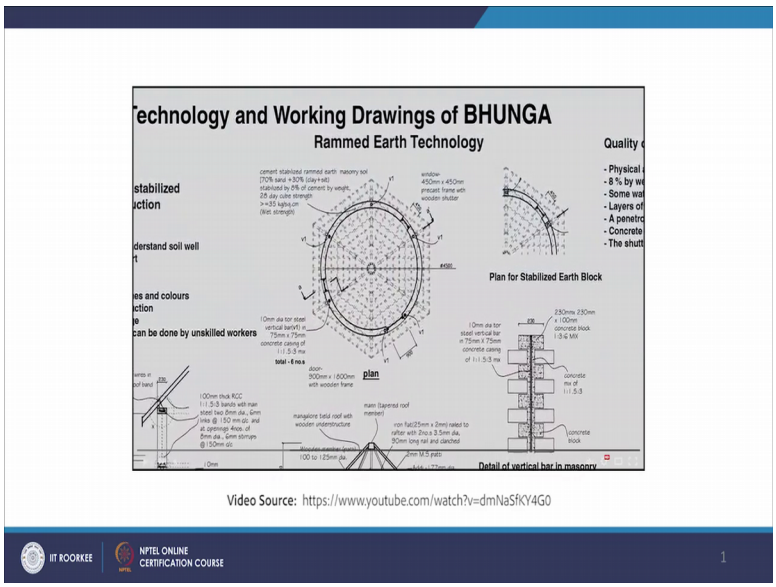

A lot of these materials like Earth or bamboo which are now being considered as environmentally good materials were not being given a lot of importance say 20 years ago.

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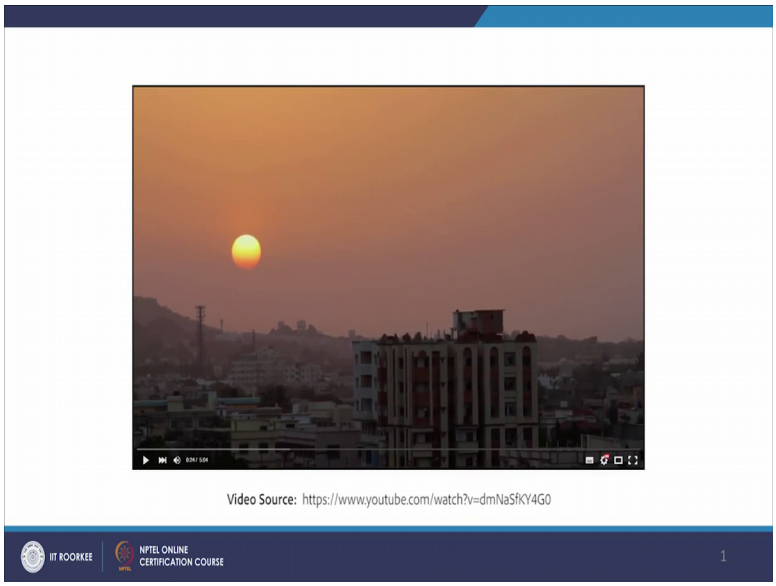

These knowledge systems in the villages were considered backward and modernizing India was looking at steel and concrete as their materials for construction. But we have a hot climate and temperatures vary so much between the night and the day and concrete cracks in such situations.

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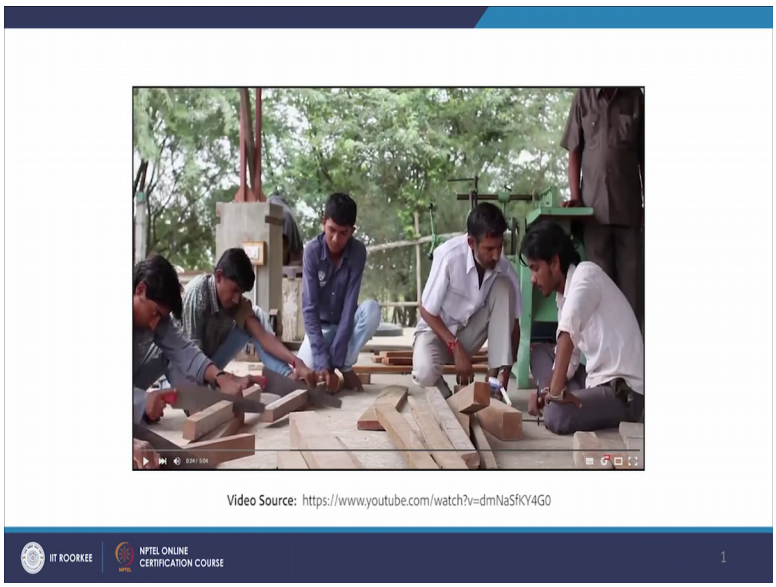

To create buildings right for the regions climate, Hunnarshala works with artisans whose craft has been shaped by those same local conditions.

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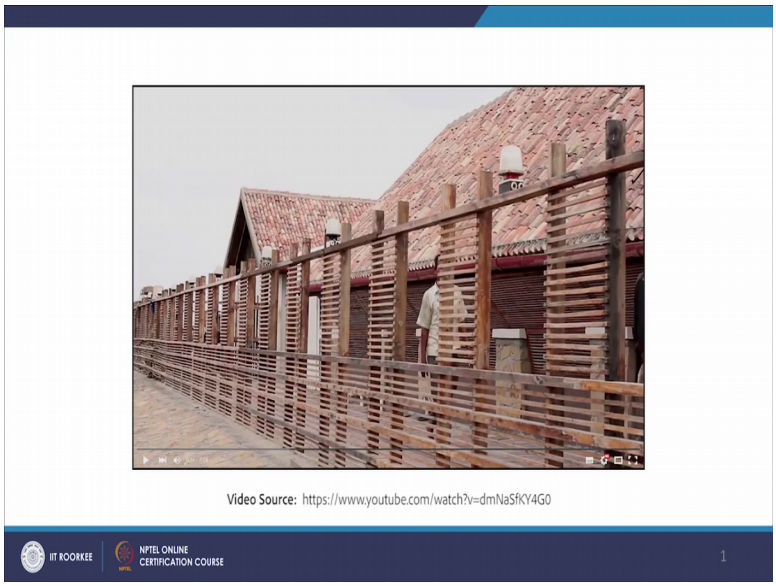

This workers canteen Designed by Hunnarshala uses slatted walls for light and ventilation. The structure was built from reclaimed wood by a group of local carpenters. The implementation of these programs is within the hands of the communities themselves and their artisans and not the juggernaut of contractors and developer lobbies.

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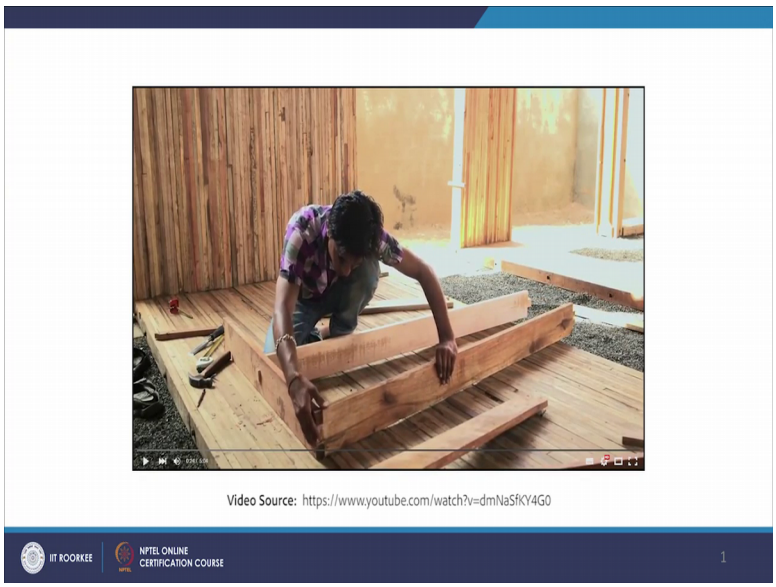

This entire building activity creates new artisans, new employment opportunities and the cultural expression of their own communities is expressed the way they would like it to be. Hunnarshalas emphasis on community participation also extends to advocacy work in

urban planning and low income housing development. Hunnarshala as members in citizens of the city decided that we must focus on how cities should develop. We help the government and the citizens create dialogues and develop a vision for the city.

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We also helped about 500 families build their homes and developed a master plan for drinking water in solid waste management. Each community can sit down together envision their future and see that this redevelopment actually helps them improve their economic conditions.

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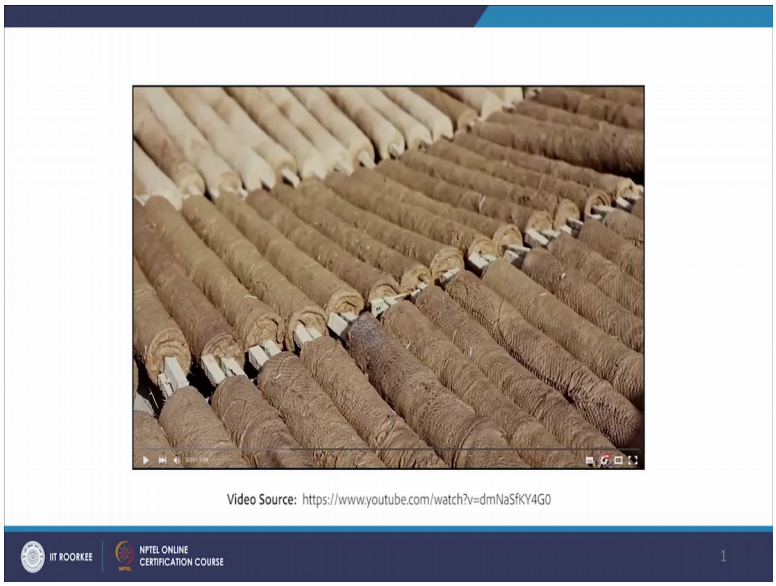

In the years after their earthquake, Hunnarshala began to work internationally on post disaster reconstruction, implementing traditional building techniques from other communities. It is also brought these techniques back to Gujarat and taught them to local artisans. As part of it is economic development work, Hunnarshala supports these artisans in starting their own businesses like this women's collective, specializing in thatched roof construction.

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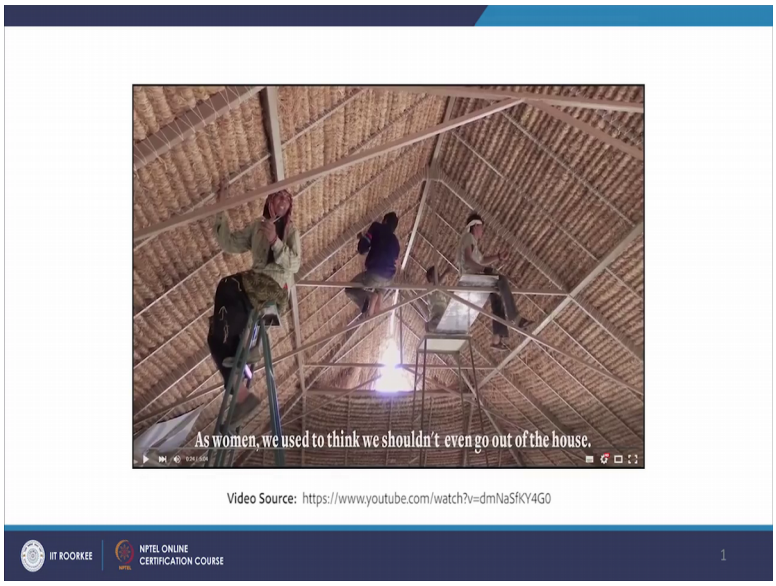

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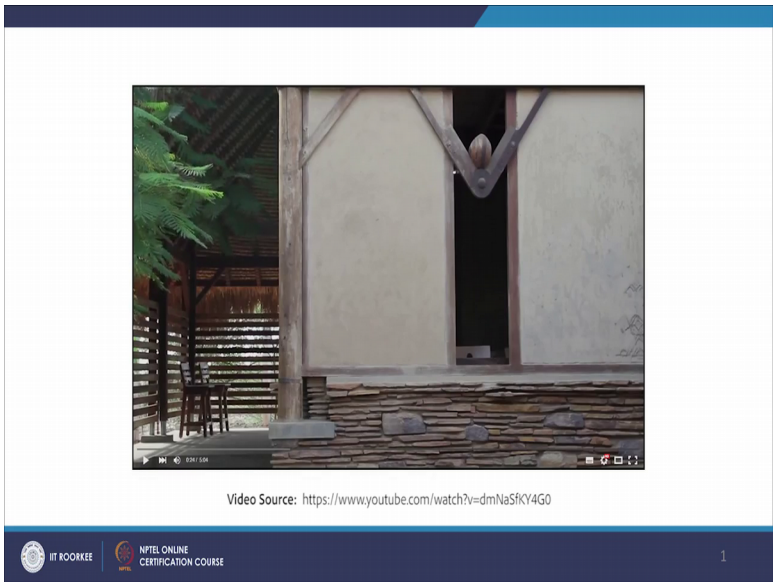

Bringing architects and engineers together with the building communities of this region gives rise to a lot of creative solutions.

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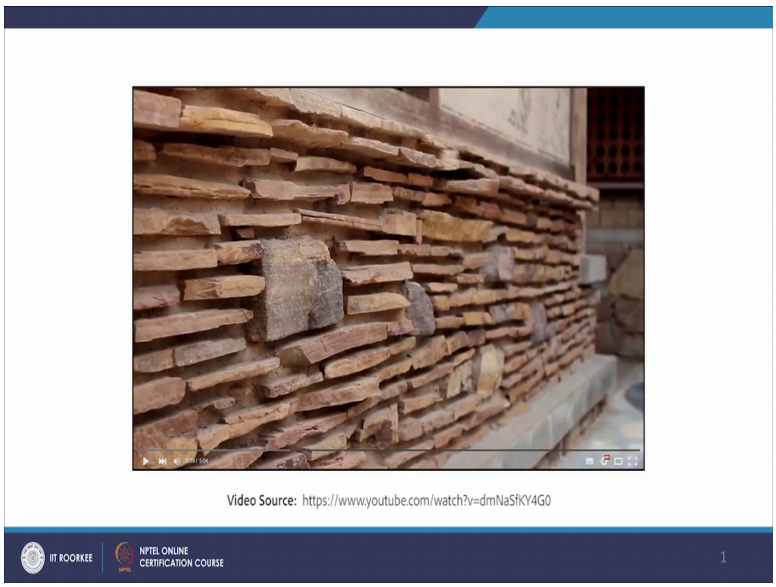

There is a huge knowledge system that exists in our cultures.

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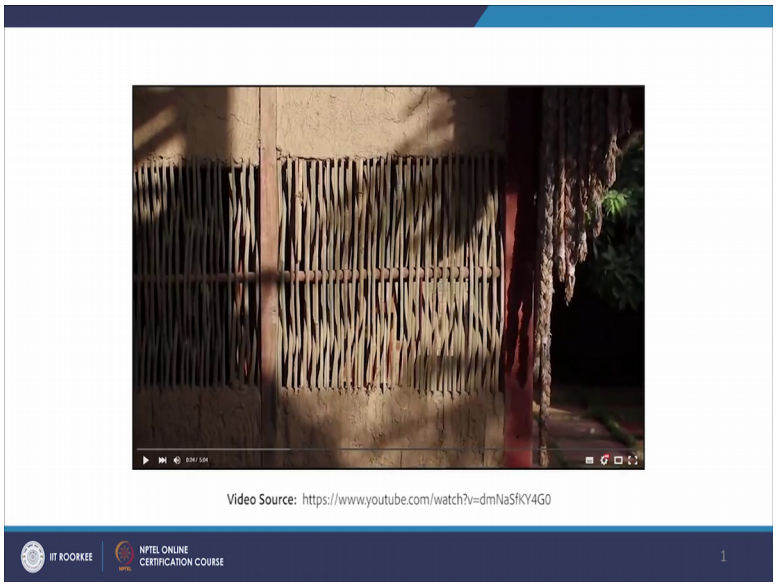

And when we sit down with them we take tradition forward that is what has been the engine of Hunnarshala.

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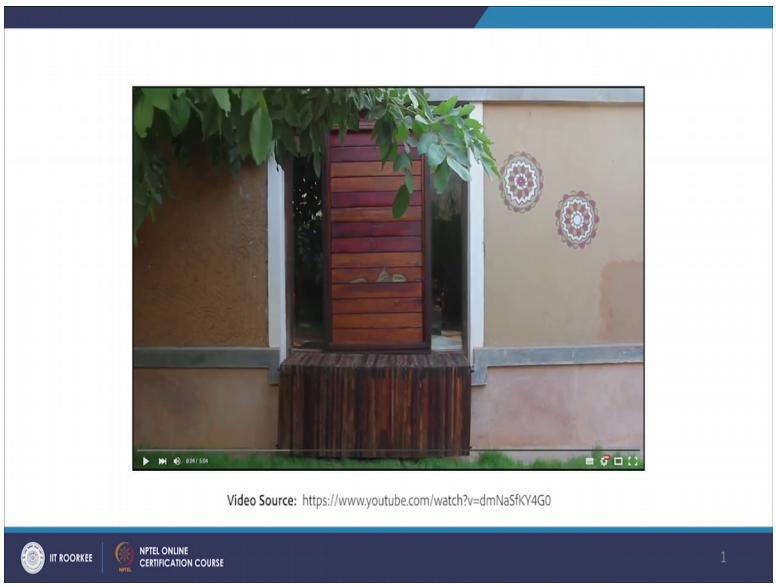

And similarly there is another video which you can see from the school project of handmade building in Bangladesh built by Anna Heringer.

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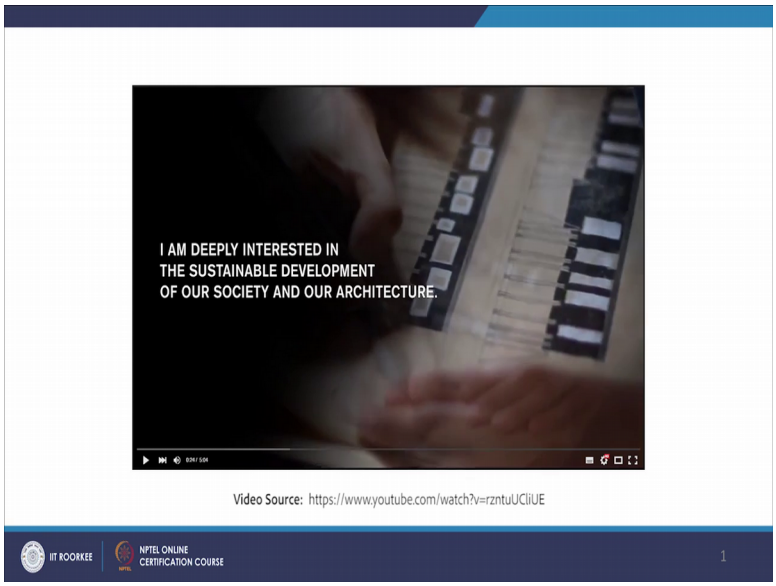

Oh what brought me that Bangladesh was actually a coincidence I wanted to go to Africa it was just right after school doing a volunteer a year. And just learn a culture from a different angle. I was kind in the crisis because I was really passionate about the development work I was passionate about architecture.

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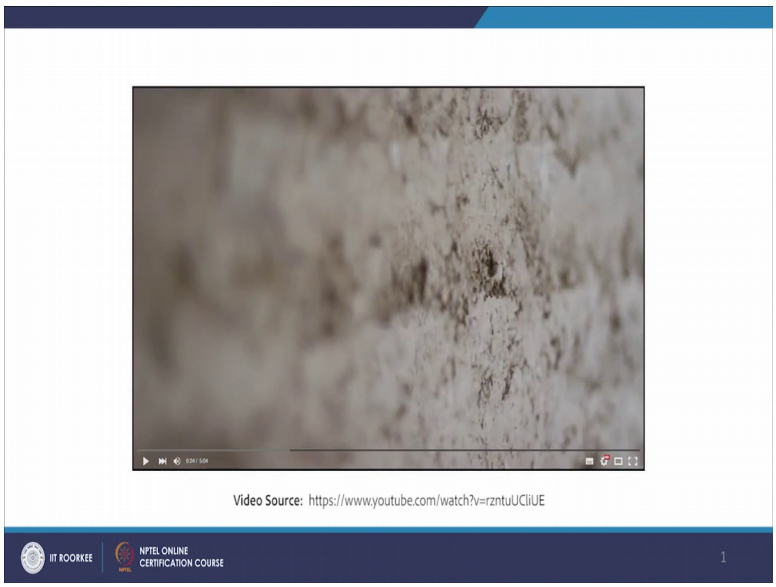

And somehow I did not know how to join the two things and then I had the chance to do a workshop on earthen structures. And I just had this material in my hand that is the thing

that is it I really want to work with this fantastic materials everywhere in the in the world it is its available.

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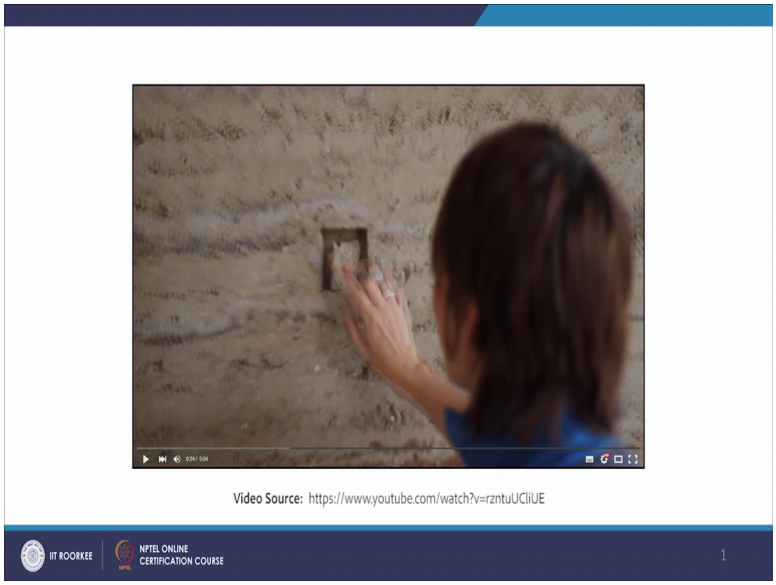

And it is many human labor that is invested human energy not from fossil fuels is absolutely environment friendly. And it has beautiful aesthetics and I really wanted to work with this material and then somehow it was very clear that that when I work with this material I would also like to do in Bangladesh. There are some manual buildings exists a lot in Bangladeshian part the technology is very basic.

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What is my responsibility is to trace the dream of the people again to build with their own materials. And to be able to feel be proud of what they reach with their own means and not with important technologies and materials.

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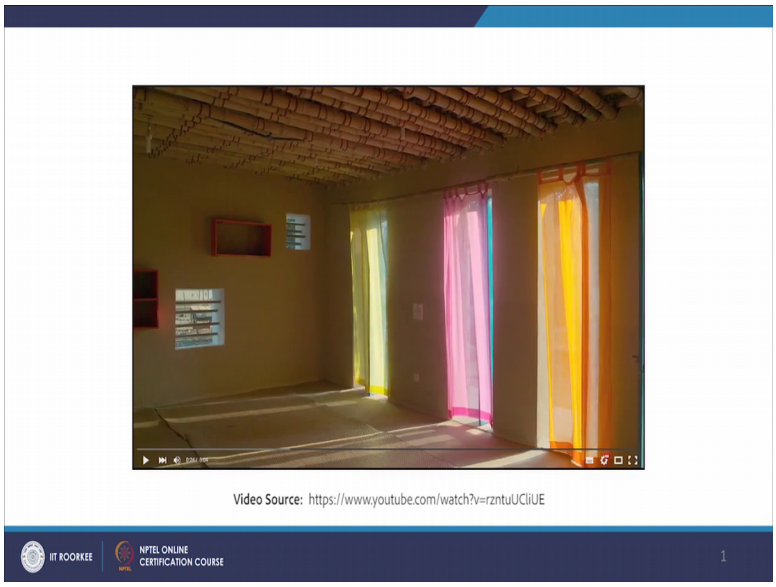

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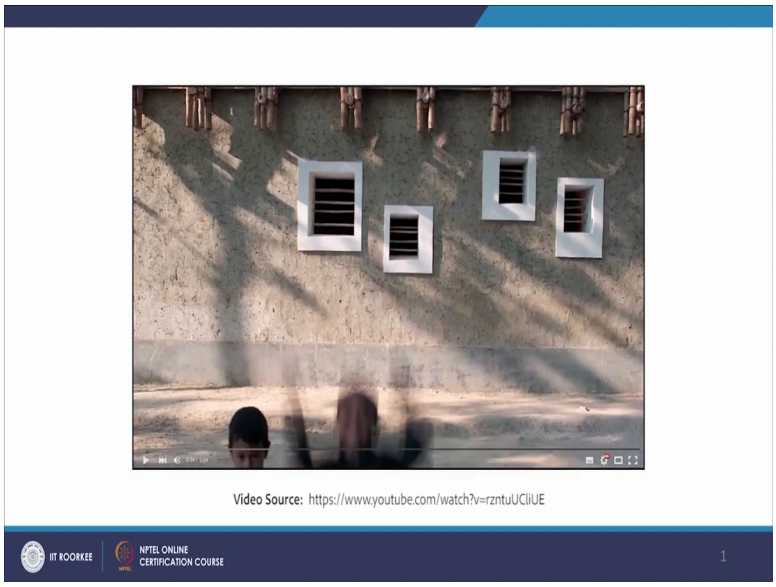

The whole project was design is having the school as a kind of representative public building, where we can really prove that these materials can also do big structures.

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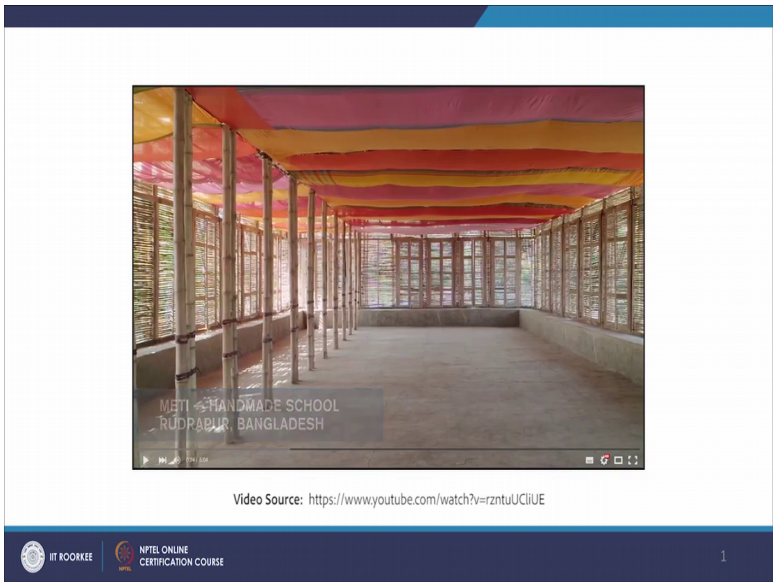

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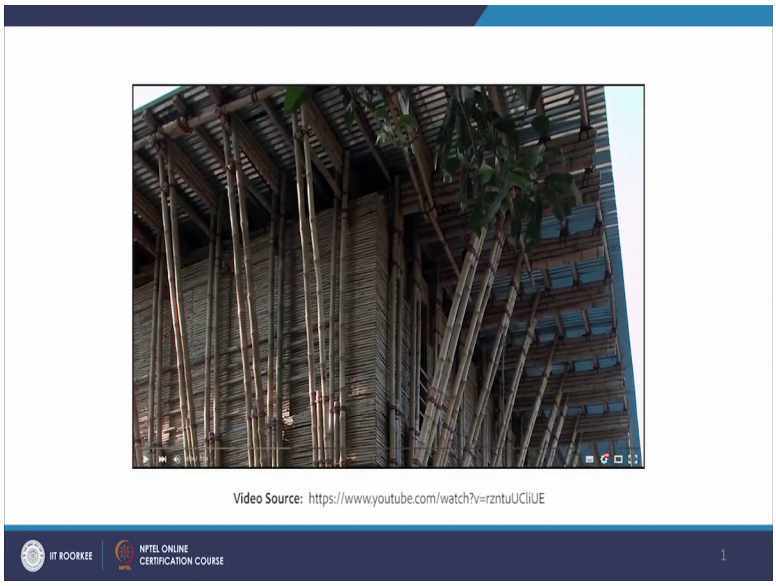

The name of the project is Meti handmade school handmade, because it is mainly built of human labor.

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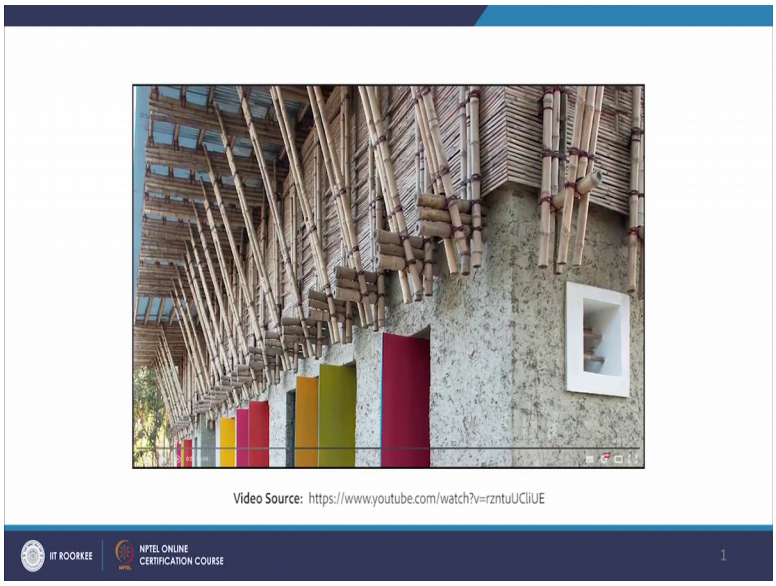

And well we had also 4 buffalos; it is about 200 kids that are going to school. There it was good to make a very transparent to see what materials are in the Vorlons nothing but earth and straw and water headed and nothing else and that is good that the people could touch the wall and see you or what is in it.

I think it is very easy to make some mouse clicks and make a 20 story buildings, but once you never build a wall you do not know how much energy is really in the wall.

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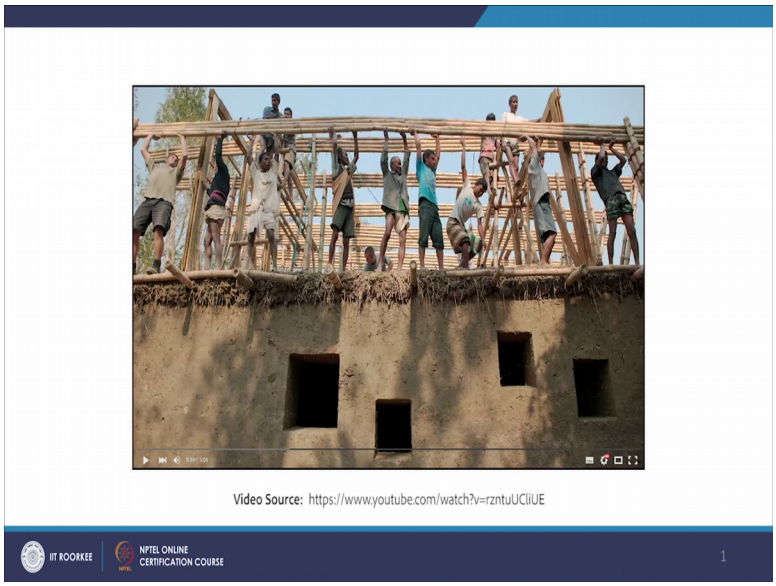

And I think then you have less feeling responsibility how to do with energy and I think was a really faced it you have a relationship towards energy. I always have to defend how earth buildings how long can they last better actually they can last a very long time for hundreds of years.

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If you maintain them and it is very easy to maintain them, because you just need time and water for fixing the problems.

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If you do not maintain them then there is no use to maintain them then they can decompose and go back to the ground again. And I think that is a very positive thing of these structures that they can go back without affecting the environment.

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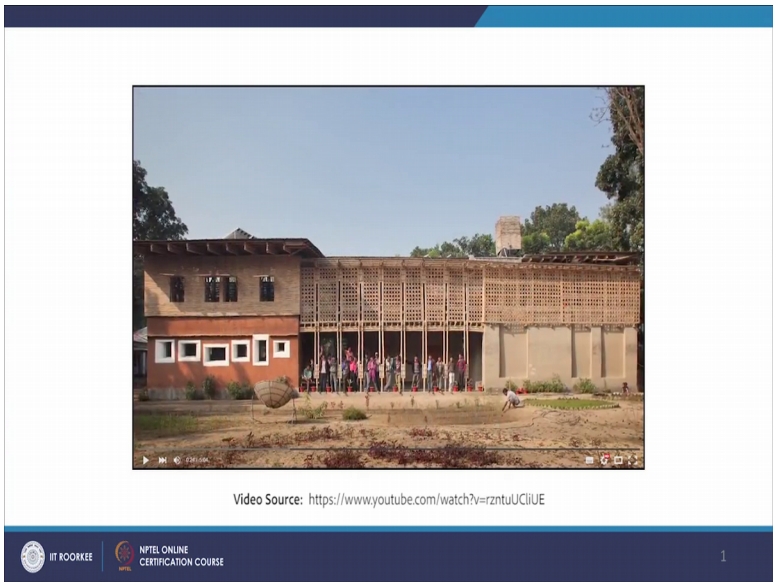

This is the training centers called Desi means local it includes the classrooms, the offices and also the residences of the teacher.

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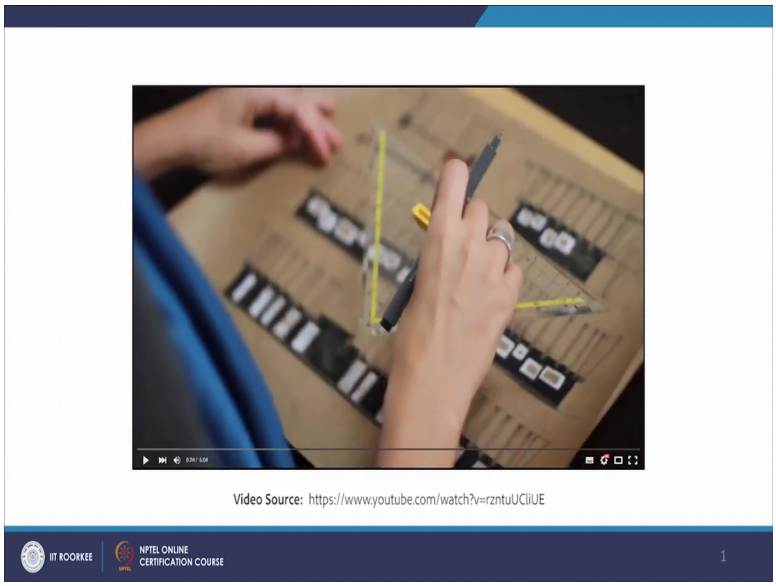

For the training center I had only the layout of the floor the (Refer Time: 30:36) and one elevation, no crosshair to section three elevations were missing. So, it was more like sculpturing than architecture. When the people go up there from the wellington seated space they really get the sparkling eyes and see well this is a totally new space for them a totally new atmosphere they have never seen it this is something they really they are touched.

But I think it is a basic rights of the people to know how to build with what they find under the feet and I think it is I mean it is a material that is it available everywhere in the world. And I think it is just something that is absolutely needed that people know how to use that material.

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This is the basis of development if you are proud of something, if you are confident of something.

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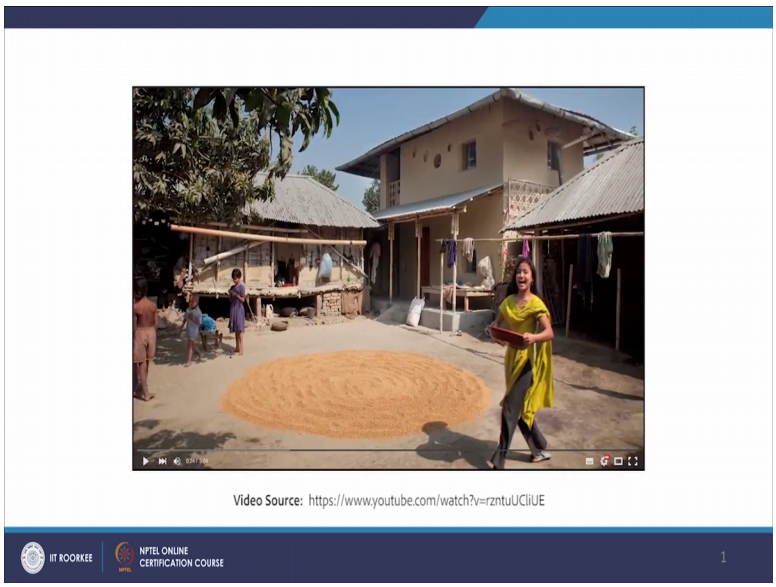

Then you have the energy to go on in development and this is what I am focusing now that I am really trying to encourage the people to do the best out of the existing potentials and to be proud of it.

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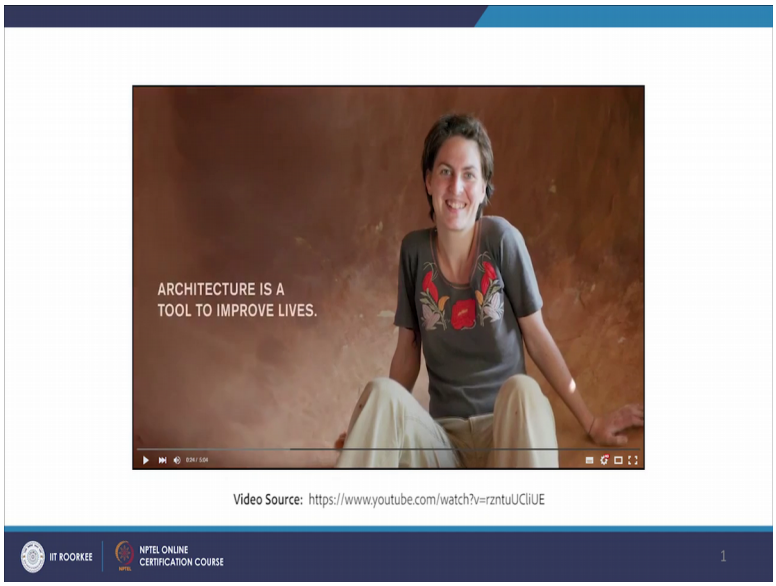

So, these two examples will actually show you that how important is to understand the local and how we can actually I mean it is very easy to build a building in an urban scenario. But it is very difficult to build the building in the rural scenario especially there are many challenges. One is the funding issues how we can get the funding? How we can because one of the solution if you the more you encourage the community to be part of it; obviously, it can show the scope of employment for the future also.

At the same time they get the self reliance and what they are doing? Because their homes are made by them and that whole process itself a big exercise. And so the architect from the how he is moving from a singular vision towards the shared vision. So, now, architect is not big jamb he plan everything. But now what he has to learn from what they want? And what they need? And what we have? And how we can plan with the existing resources is very important.

Thank you very much.