

Role of Craft & Technology in Interior-Architecture

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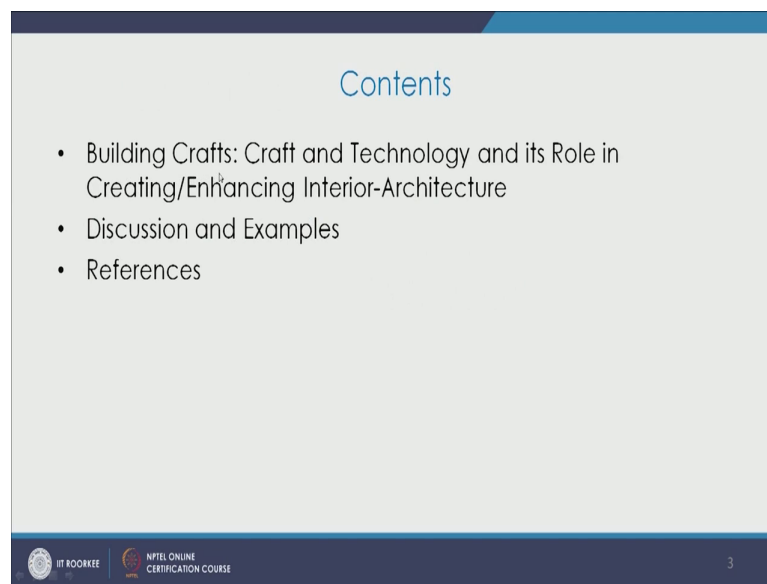
Indian Institute of Technology, Roorkee

Lecture – 13

Building Crafts: Craft and Technology and its Role in Creating/Enhancing Interior-Architecture

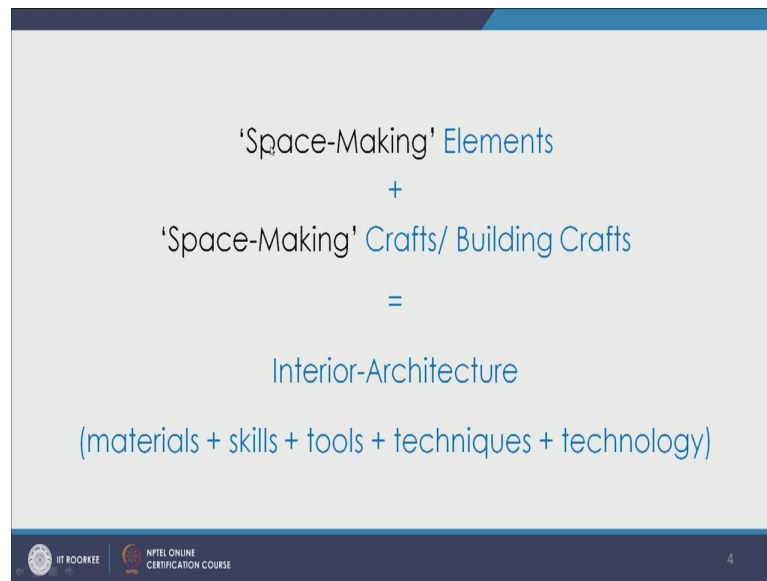
Namaste! Hello everyone welcome to the NPTEL course Role of Craft and Technology in Interior-Architecture. Today we are going to discuss module 13. So, module 13 is about Building Crafts and within that we discuss Craft and Technology and its Role in Creating or Enhancing Interior-Architecture.

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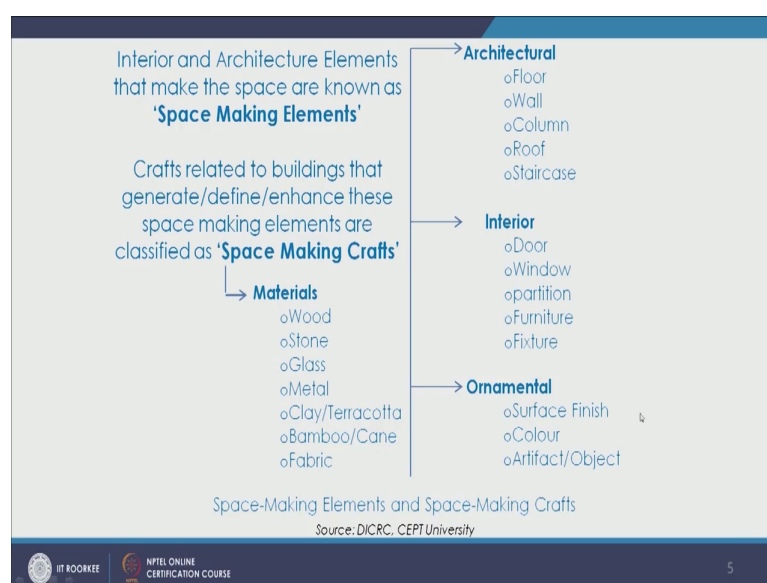
Broader contents; Building Crafts: Craft and Technology and its role in creating or enhancing interior architecture, we will have some examples and we will discuss them and we will see references towards the end.

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Now, again before actually starting to talk about this interrelationship between craft and technology and interior architecture, I would like to go back to the slide from our initial modules where we discussed space making elements and how space making elements and space making crafts contribute interior architecture and there is a profound role of materials, skills, tools, techniques, technology and of course, the craft persons. So, we discussed the space making elements and the craft.

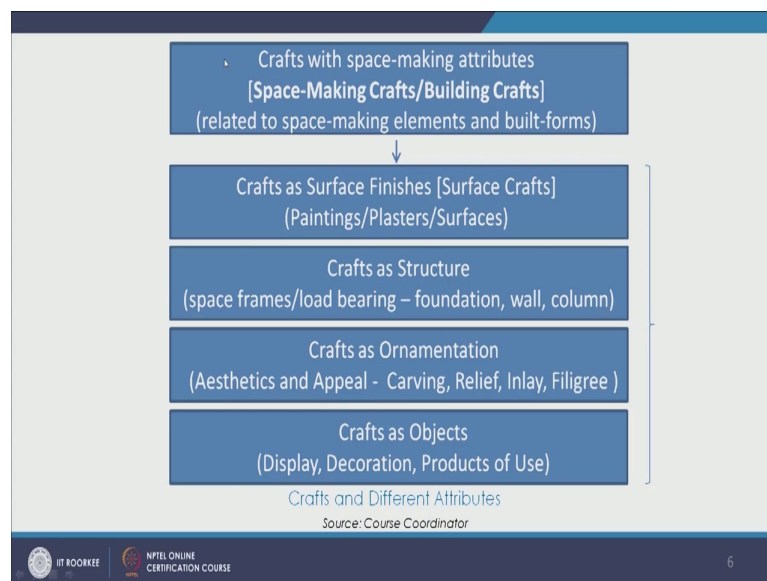
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And this slide again I would like to just revisit this, so we talked about space making elements the interior and architecture elements that create the space and they could be architectural like a floor, wall, column, roof, staircase. They could be interior elements like door, window, partition, furniture, fixture, or they could be ornamental surface, finish, color, artifact or objects.

Now, crafts which are related to buildings that generate, define, enhance these space making elements, they are classified as space making crafts and we discuss how they also define through materials. Varied materials like this wood, stone, glass, metal, clay or terracotta, bamboo or cane, fabric and they are even more the list could be like really extensive.

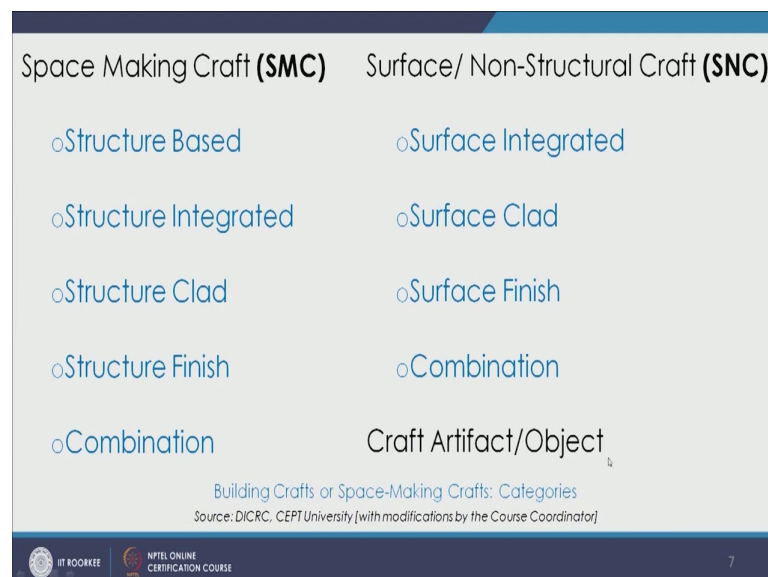
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We also try to understand in the previous few modules how craft could have different attributes. So, craft with space making attribute we have now understood and establish that we are calling them space making crafts or building crafts, they are related to space making elements in built-forms. Now, within this largest gamut of space making attributes within the craft, craft could be looked at as surface finishes or surface crafts like paintings, plasters, surfaces, we can see craft as structure.

So, we see the load bearing part the space frames, wall, column, craft we could be looked that as ornamentation. So, they have visual appeal and they are aesthetics, so carving relief, inlay, filigree all of these we discuss in one of our previous modules. And we could look at craft as objects, decorative objects or utilitarian objects. Now, keeping in mind these space making elements space making crafts or building crafts what are these what are the different materials which define the crafts, what could be the different attributes and how could we see craft in different with different nuances and then this categorisation that we saw

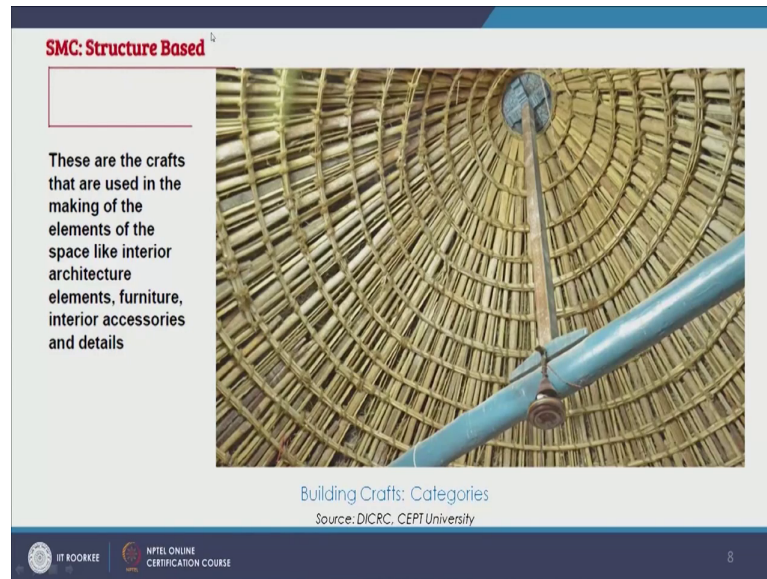
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in the last module there we were talking about the space making craft which is largely structural and we are talking about non-structural or surface crafts. Now, once we have brushed up with these it would become easier for us to see some projects and interior architecture related examples through which we can understand them in detail, that's what we are trying to do now.

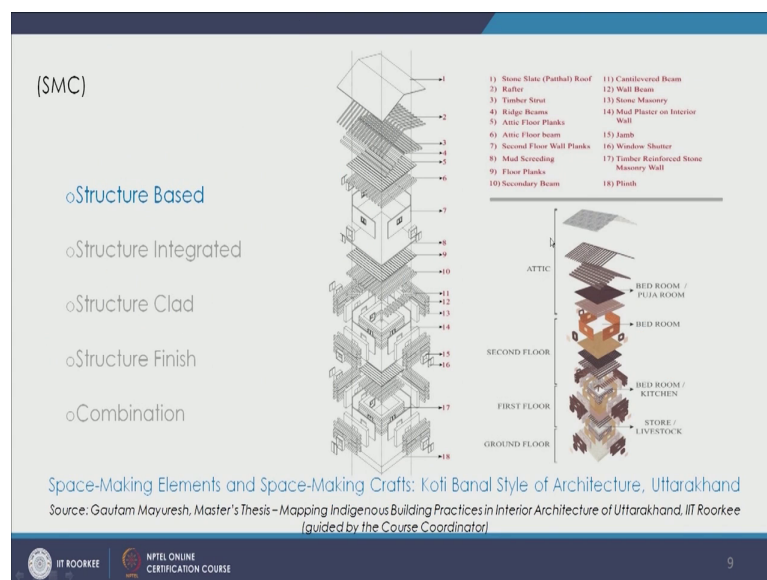
So, we discussed in the previous module that space making crafts which are structural could be structure based structure integrated they could be just cladding, structure finish or a combination or a permutation of these. We could have surface integrated, surface clad, surface finish and again a permutation and combination of these and then we see craft just as an artifact or an object, so here if we see the structure based

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building crafts these are the crafts that are used in the making of the elements of the space like interior architecture elements, furniture, interior accessories and details. So, here if we see the use of bamboo here this is structural this is completely a structure which is created out of it and its not any ornamentation or surface treatment.

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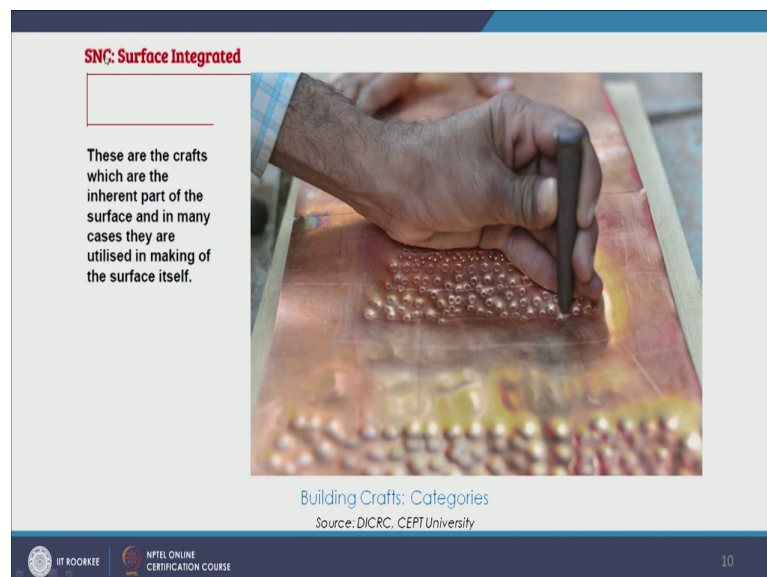


Here if we see this drawing this is the exploded view of *Koti Banal* style of architecture from Uttarakhand, and these are drawings one of the residences the dwelling unit. And

we see here a lot of different space making elements which have been listed down, I will not get into the details of understanding *Koti Banal* right now that we will see in the case studies in Uttarakhand in the subsequent module. So, there are different space making elements and there are different skills that go into the making this residence or dwelling unit.

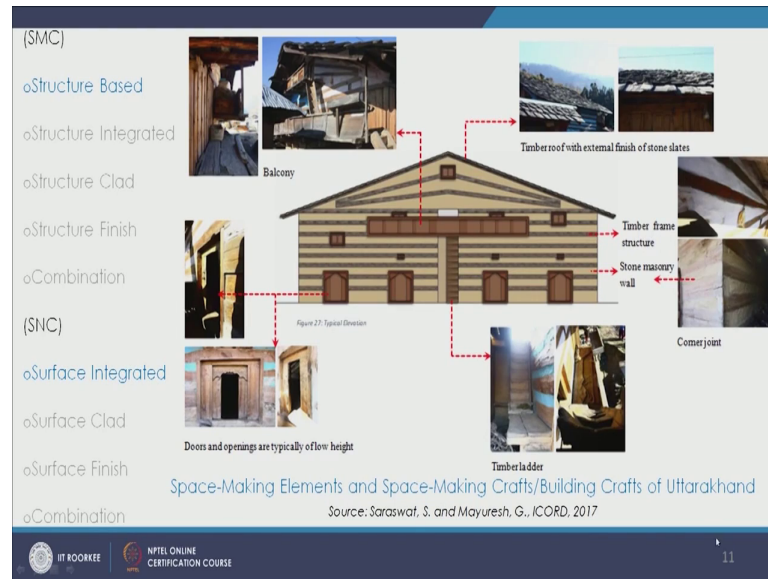
So, here this is majorly structure based and *Koti Banal* style of architecture is known for its earthquake resistant and structure structural stability. So, here if you talking about structure based this is one example where we see the structural implication of the making of the space.

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Surface integrated; the craft which are the inherit part of the surface and in many cases they are utilised in making of the surface itself. So, here working on the copper the surface modulation that are happening they are a part of this base surface and they enhance the surface they create depth and designs on it and alters the meaning of this plane surface. So, these are surface integrated as defined by the DICRC, now again few drawings and examples.

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If we see this example from Uttarakhand this is from a village Gechuan, and here we see you know in the drawing so timber roof with external finish of stones slates we see here alternative bands of timber and stone. So, stone masonry and timber frame structure over here we see the corner joints over here stone and timber. And this is a timber ladder which is chiseled out from single piece of wood and it is usually like very you know unfinished done with hands itself, then we see over here openings and doors and we see some of over here some carving and relive work also.

So, in these drawings what we see is structure based, craft and we see surface integrated when we see the carving over here which could be structural also. So, we have structure based and surface integrated in this example this is another inventory.

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S. No.	Material	Origin	Type	Regional Variations	Local Particular	Applications				Properties	
						structural		Non structural		Structural properties	Physical / Surface properties
1	Stone	Hills, Rocks	Metamorphic (Slate, gneiss, (low grade)) Sedimentary (sandstone, granite) Igneous (granite, gneiss)	No variations observed	Partial	Walls	Walls	Roofing		Strong in compression, tensile strength capacity	Toured surfaces due to weathering or erosion (granite, sandstone), High density (Black work), (unpolished) (sandstone), Polished (granite)
2	Timber	Forests	Hard wood (teak, sal, deodar, etc.) Soft wood (fir, pine, etc.)	Variations observed with changing place and altitude		Joists, Rafters, Purlins, A/Roof	Walls	Door / Window	Surface Carving	Strong in tension and flexure, Weak in tension	Carved, Shaped, Colours, textures and grain, weathering, etc.
3	Earth	Hills, Rocks	Clay soil, Rock soil	Variations observed with changing altitude	Ukhim, Mith, Khar	Blackwork (stone wall) construction	Columns, Beams, Ladders	Plastering, Floor, Staircase & Mosaic		Strong in compression, Poor tensile strength	Grain, size, Clay and texture, weathering, etc.

Building Crafts and Interior-Architecture of Uttarakhand

Source: Gautam Mayuresh, Master's Thesis - Mapping Indigenous Building Practices in Interior Architecture of Uttarakhand, IIT Roorkee (guided by the Course Coordinator)

And this is an extensive research done by one of my students during his master thesis and we have also published a paper together if you have to understand *Koti Banal* in more details maybe you could go and have a reading. So, here also we see lot of structure based craft and surface integrated.


So, we see here you know the elements like walls, foundation, columns; they are largely structural the entire creation of space or the interior architecture is structure based. We also see some surface carvings and some work done in the interiors which is not visible here so that is mostly surface integrated.



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SMC: Structure integrated

These are the crafts that are employed to generate a character to the surface of the elements of the space during its making. They are integral in nature.



Building Crafts: Categories
Source: DICRC, CEPT University

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Then another category is structure integrated these are the crafts that are employed to generate a character to the surface of the elements of the space during its making, they are integral in nature they are the part of the structure.

So, here if we see this *Jharokha* it is very much the part of the structure and during its making and the kind of detailing that goes within it, its very much integrated within the structural system of this design of this interior architecture, so this is structure integrated.



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(SMC)

- Structure Based
- Structure Integrated
- Structure Clad
- Structure Finish
- Combination

(SNC)

- Surface Integrated
- Surface Clad
- Surface Finish
- Combination



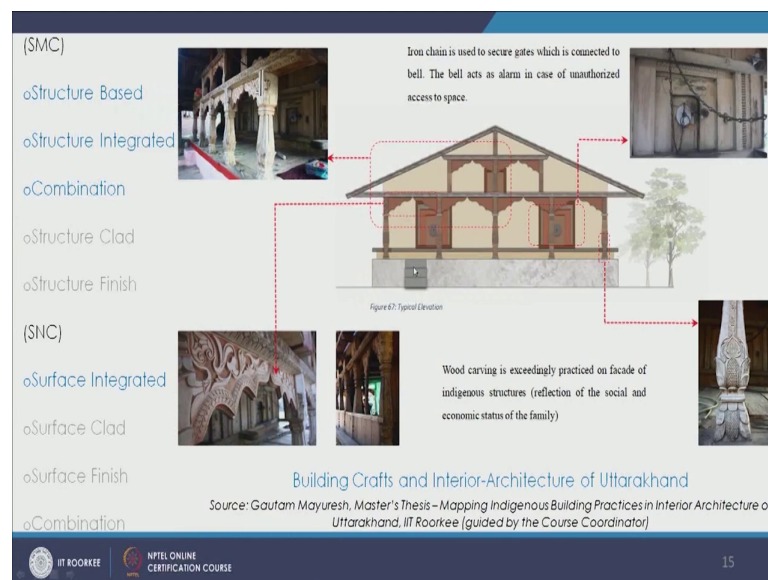
Building Crafts and Interior-Architecture of Uttarakhand
Source: Course Coordinator, project Dharohar, IIT Roorkee (left); Dr. Yashodhar Mathpal (right)

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Here if we see some examples again from Uttarakhand this is a very famous painting by Dr. Yashodhar Mathpal, and it shows a Kumauni residence and its beautiful doors which have intricate carvings and it is very much structural you know we see the structural parts to its ok. So, there are brackets there are door frames there is jamb and we have all the details over here.

So, we again have structure integrated, so this may not be the structure of the structural system of the space or the residence, but the door also is structurally integrated it has structural parts to it. So, it is structure integrated also we see certain carvings which are just surface integrated. So, again these two categories we are trying to understand now it will be very difficult to understand just through one module all these categories and examples so we will continue this further during the next module also and will try to understand the building crafts and its varied attribute slowly we will get a gist of it. So, again we see here the surface integrated craft and the structure integrated craft, which are not completely structure based, but they are definitely structure integrated.

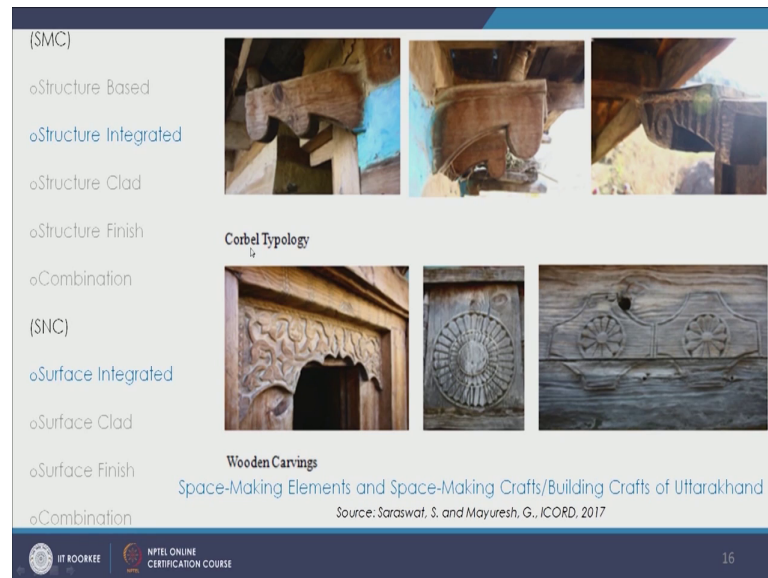
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Few other examples this is a granary again in Uttarakhand and this is the typical elevation and we see here some images. So, we see lot of carvings done in stone we see this detail in the on the column over here and we see the categories over here so, structure based structure integrated and we see a combination of both in these cases. So,

this is the structural system where we see this arcade which is supported by the columns over here and we also see the surface integrated carving and we see the combination of both these. So, different kinds of crafts and their different categories could be seen in the interior architecture and we will slowly understand how crucially

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the craft and the craft practices have contributed in creation of spaces. Another example we see here different typology of corbels so, here these are different pictures we see lot of wood carvings over here. So, here again we see structure integrated craft which is like you know is an important part of the structure may not be structure based.

But definitely helps in the strengthening of the structure and it is also beautiful and aesthetic with all the mouldings and here the forms that we get. And then we have the surface integrated carvings which are on the surface and they are part of the surface they are for ornamentation, they have aesthetic value also the meanings that the community follows.

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SMC: Structure clad

These are the crafts that are used in cladding of any material (raw or processed) to the surface of the elements of the space of the space like interior architecture elements, furniture and interior accessories.



Building Crafts: Categories
Source: DICRC, CEPT University

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Here we see the structure clad these are the crafts that are used in cladding of any material to the surface of the elements of the space of the space like interior architecture elements, furniture and interior accessories. So, being architects most of us would know what cladding means. So, here we see this cladding over here on the floor which is definitely a part of the structure because floor is also a structural element.

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(SMC)

- oStructure Based
- oStructure Integrated
- oStructure Clad
- oStructure Finish
- oCombination

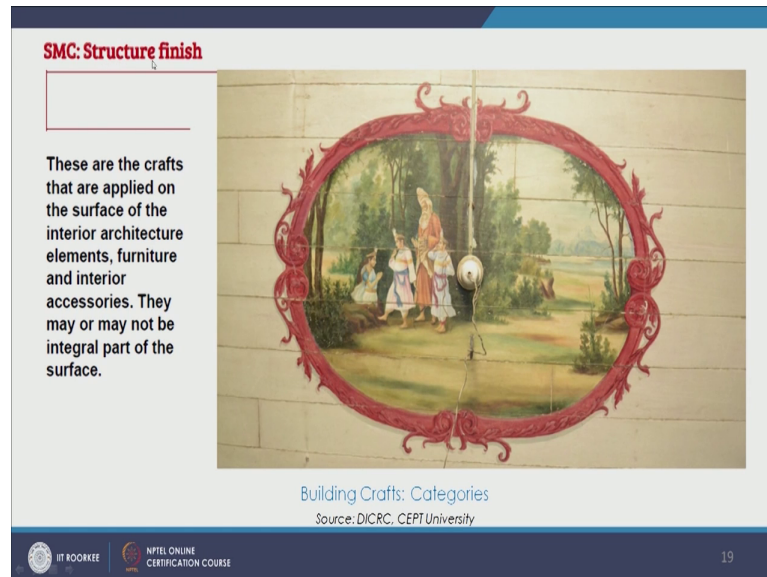


Building Crafts and Interior-Architecture of Uttarakhand
Source: Course Coordinator

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Here we see in one of the old residences of Kumaon region of Uttarakhand this from Almora, here the timber plants that we see over here on the floor again they are structural clad craft practices.

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When we see structure finish these are the crafts that are applied on the surface of the interior architecture elements, furniture and interior accessories they may or may not be integral part of the surface. So, they could be a part of the structure, but they are largely finish they are not embedded within the structural system they may not be the integral part of the surface on which they are attached.

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SNC: Surface Clad

These are the crafts in which smaller components (or modules) are cladded to any surface. This may be for the aesthetic or socio-cultural or decorative reasons.



Building Crafts: Categories
Source: DICRC, CEPT University


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Then there is surface clad these are the crafts in which smaller component or modules are cladded to any surface this may be for aesthetic or socio culture or decorative reasons. So, here we see this cladding these are the tiles and they have these beautiful motifs and colour palette and they enhance the surface on which they go this is an example of surface cladding.

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(SNC)

- oSurface Integrated
- oSurface Clad
- oSurface Finish
- oCombination

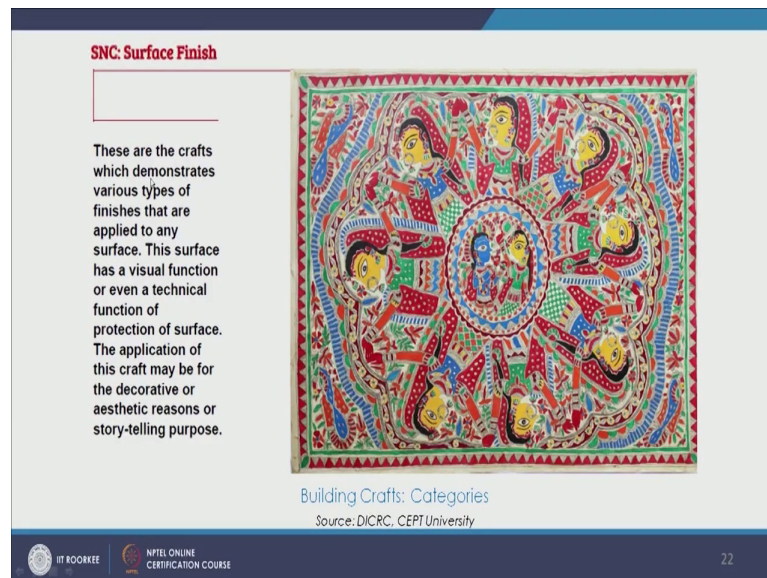


Building Crafts and Interior-Architecture of Uttarakhand
Source: Course Coordinator

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This is *Ringal* which is the indigenous material of Uttarakhand and here we see the cladding of *Ringal* in this picture then there is surface finish.

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So, these are the crafts which demonstrate various types of finishes that are applied to any surface, we see a beautiful *Madhubani* over here this surfaces is a visual function or even a technical function of protection of surface. So, going back to the slide now *Ringal* has damp proofing properties and usually it was used on floors, but now people are also using it on partition screens on walls as cladding on surfaces again it helps in protection of the surface underneath it from water specifically in this case.

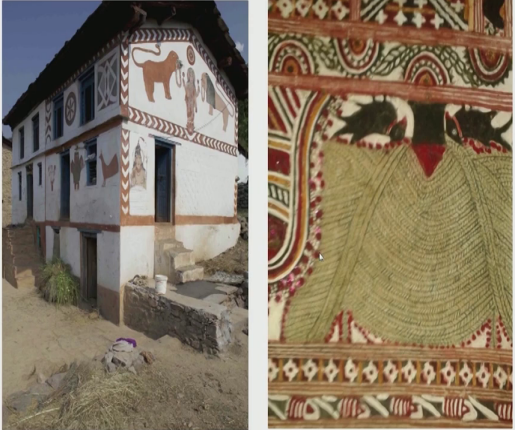
So, even a technical function of protection of surface the application of this craft may be for the decorative or aesthetic reasons or story telling purpose. So, they are very rich craft forms and they have strong story telling values they have rich narratives about the society and culture to which they belong. So, that way it is a surface finish as well as a technically helps protect the surface also there are stories which are embedded within them which you know we have some legends and stories and which talk about certain situations prevalent in the society certain meaning, certain religious connotation.

So, that way it is very important to understand surface finishes and craft practices that have carried forward the narratives of our tradition.

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(SNC)

- oSurface Integrated
- oSurface Clad
- oSurface Finish
- oCombination



Building Crafts and Interior-Architecture of Uttarakhand
Source: Course Coordinator

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So, here on the slide we again see the picture this is from Almora, The interior of a very old house and this is another picture from another village and we see here on the external facade also there are paintings and motives. So, these are the examples of surface finishes that we are taking about in the previous slide.


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(SMC)

- oStructure Based
- oStructure Integrated
- oStructure Clad
- oStructure Finish
- oCombination

(SNC)

- oSurface Integrated
- oSurface Clad
- oSurface Finish
- oCombination



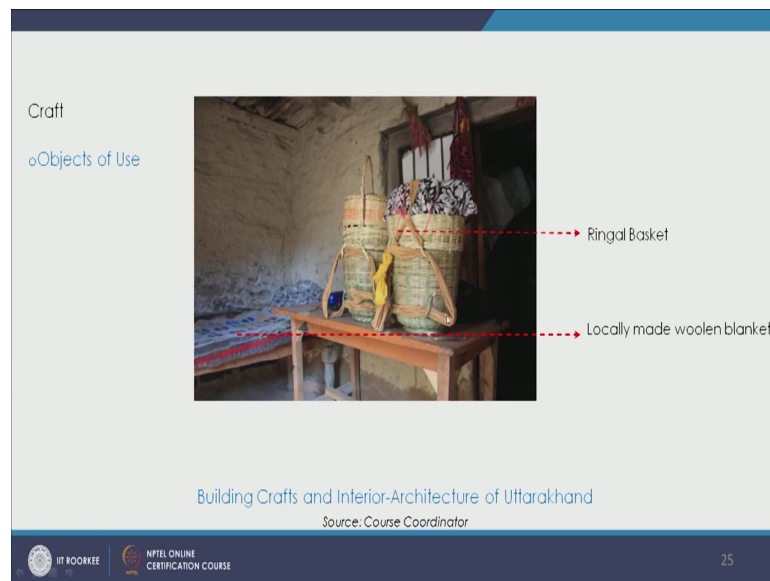
Building Crafts and Interior-Architecture of Uttarakhand
Source: Course Coordinator

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Again few examples from Uttarakhand we see this famous *Aepan* and this is done on threshold. And we see this very extensively and intricately carved this timber door over

here this is the zoom-in. So, here we see the structure integrated craft and we see the surface finish. So, these are different categories and we are trying to understand craft in terms of space making what goes on surface what goes on the main structure and what goes on the structurally integrated practices. So, different examples. We also discussed one more category where we are trying to classify craft as objects of use.

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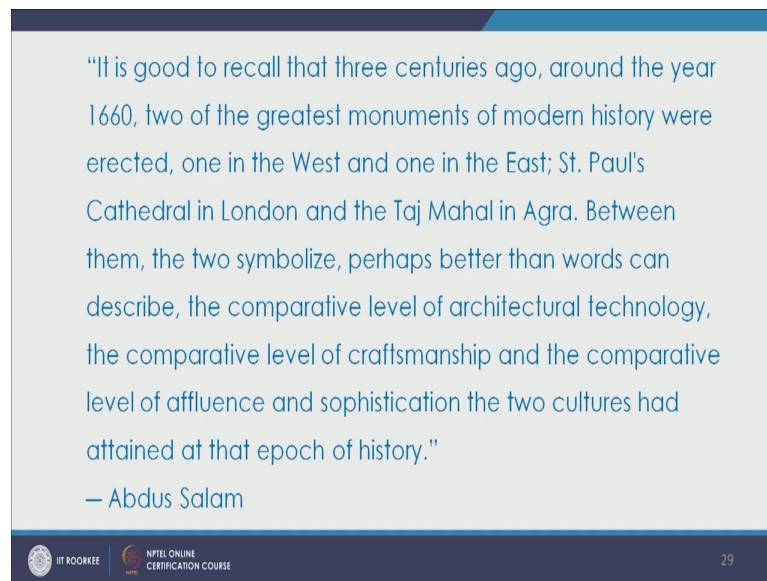


Here we see this *Ringal* baskets the same material we saw on the surfaces cladding here they have made the community has the women themselves have made this basket and its used for varied purposes then we also see here this on the bed locally made Woollen blanket.

So, these are all again the craft practices which embrace the skills sets of communities indigenous materials and then there utilitarian they are used for a daily needs and they also largely contribute in the creation of spaces in which we live. So, this was another category just to give an overview of what we discussed today we discuss the slides but I am just putting it as an overview so that it becomes easier for us to take the summary forward in the next module and see more examples and try to understand these categories more clearly. So, we today we try to understand the attributes of craft.

So, it has space making crafts we can see craft as surfaces finishes, as structure, as ornamentation or simply as objects which are utilitarian or decorative. We also see different categories of craft here on the left hand side these are structural these ones are non structural or surface based and we also classified craft as objects or artefacts which does lie either here or here, I would like to end with this extremely beautiful quote.

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“It is good to recall that three centuries ago around the year 1660, two of the greatest monument of the modern history were erected, one in the West, and one in the East; Saint Paul’s Cathedral in London and the Taj Mahal in Agra. Between them two symbolise, perhaps better than words can describe, the comparative level of architectural technology the comparative level of craftsmanship and the comparative level of affluence and sophistication the two cultures had attained at the epoch of history.”

So, this clearly explains you know how these craft they carry the narrative they talk about a certain area and they also talk about achievements and significance of you know these hands-on practices and the monuments which are being mentioned here, I mean there is no parallel even till now they were extensively done by hand with great knowledge of materials, skills, techniques, tools, and they were all done by hands.

So, it is very crucial to learn from the past and it is not that which has romanticise about it I keep saying our focus is tradition and continuity we have to protect these craft practices these skill sets and knowledge systems from languishing.

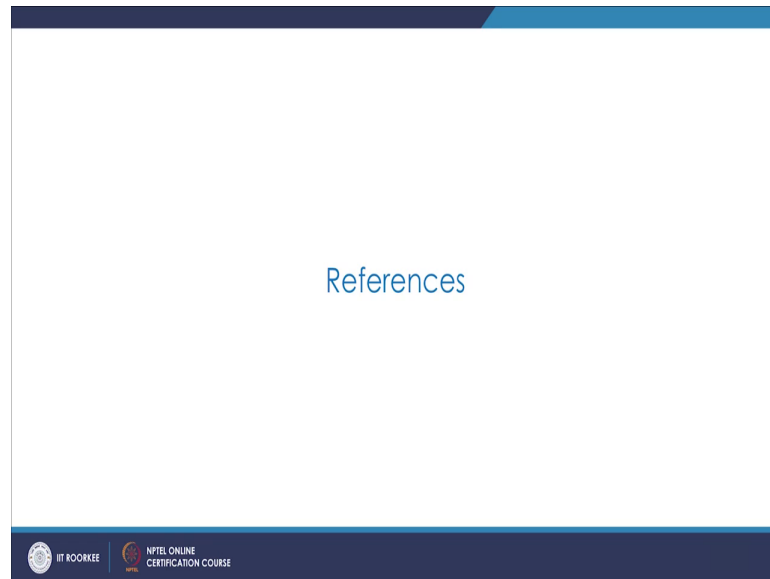
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Next module is same as this one as I told it is important to take more examples and to try to understand these categories and the interrelationship between interior architecture and craft and technology to understand it in a better way so we will be repeating and we will be seeing more different examples.

Some references.

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As always again these are some core ones which are specifically important as far as this module is concerned, all of them concentrate on space making and building crafts, and then we have the other set.

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