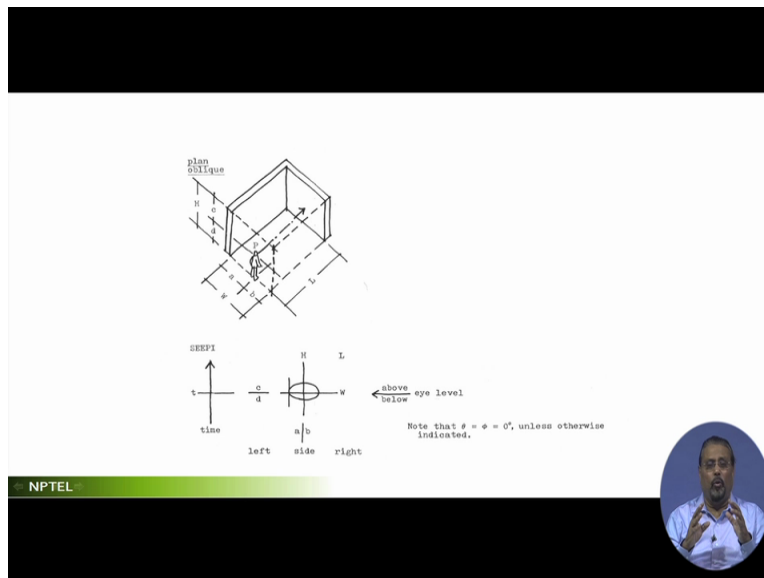


Landscape Architecture and Site Planning – Basic Fundamentals
Professor Uttam Banerjee
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Indian Institute of Technology, Kharagpur
Module-04 Lecture-19
Behavioral Principle

Hello. Did you enjoy my last lecture about the spatial form where I discussed about base plane, vertical plane and overhead plane? Very interesting phenomena. And in fact, in your projects of landscapes, you are basically creating a space for others to enjoy with the help of these forms. So the next one where I would like to focus is explicitness of the space. What is that?

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Look at this illustration. What you will find is see, basically if I draw my points and your attention to this, you are standing at this particular point, okay? And there is a vertical plane here, here. And there is say you are standing at this particular point, so all references are with respect to your eye point. If you recall that in initial stage I said that where are you viewing from, what you were looking at, what is your experience, recall that. In the initial lecture, I have said that.

Where are you viewing from? If you are, in this case, for this example, we are viewing it from at this height which is corresponding to my eye height. This is a space. Essentially what happens is for this discussion, I always draw my examples from the architectural space which you can

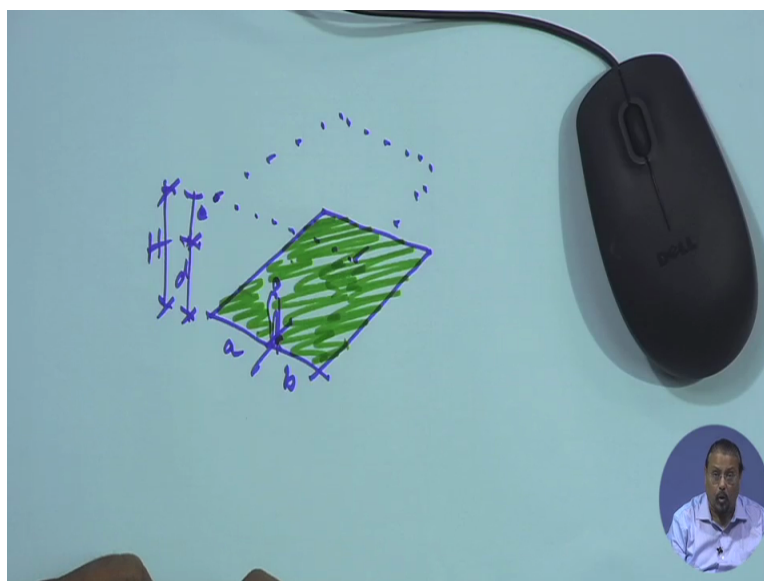
comprehend better because that is very, very definite. At first, do not draw examples from the landscape space because that become slightly volatile, slightly open, slightly sporadic.

So here in this case what happens is, take a human height, normal human height in which the full height is the height of the room and this height, the top height is the height from your eye level to the (upper) upmost level. And the lower height is from your eye level to the floor. So it is basically H is the room space height and the c is the height from the eye level to the above and d is the height from eye level to the base, to the base plane.

Similarly, that means this H is of the position of the overhead plane. Similarly, if you look at it from the sides, on the sides, you are standing somewhere here and the next overhead plane is on left hand side which at a distance of A and the other, sorry, next vertical plane is on the left hand side which is at a distance of A and the next vertical plane is on the right hand side which is at a distance of B . Altogether A plus B makes it width of the space on which you are standing.

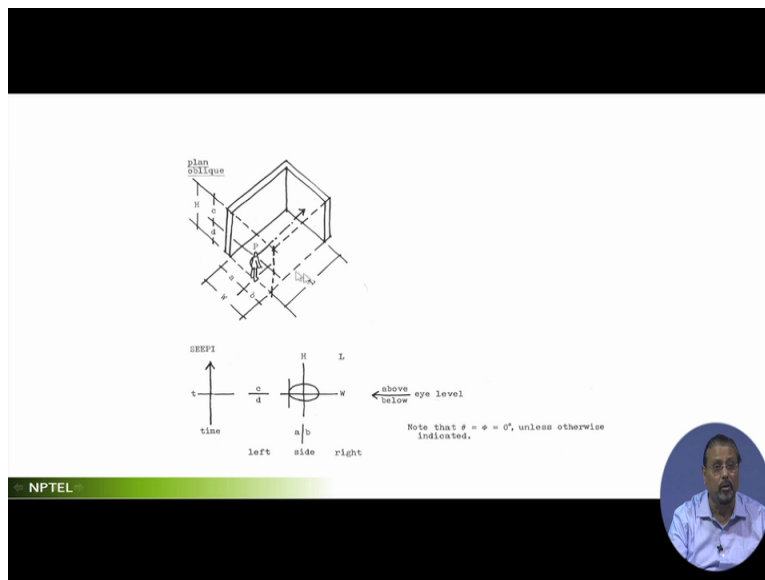
And when you are looking at it, then you are looking forward with an L is being the distance of the next vertical plane. This is based on this concept, a nice research has been done which has really impressed me, I will share with you that, on that. But essentially what happens is you are standing like this looking at a space. I would suggest that if you replace all these elements with landscape elements, so for which I am now taking from here to my sketch.

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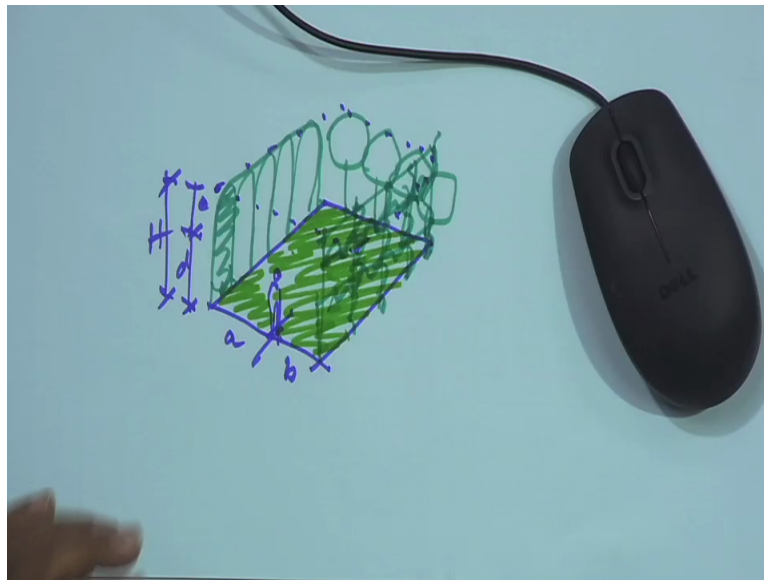
A space on which you are standing. Correspond to this, this is the distance of a, this is the distance of b and at this, you have a height of d and you have a height of c. And above, you have, I am drawing with a dotted line because later on I will complete it and you have a height. So if I now consider this as a landscape space, contrary to what I have shown earlier, let me put some colors to indicate what is what. Say I have a green lawn on which I am standing. What is this plane? Base plane. On the side, I had wall. If you recall, just go back to the earlier picture.

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This is wall, wall and a screen. Now, you again look at my this particular sketch.

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It is here that wall is being replaced by series of say trees. In the front, you have another wall which is being replaced by, let us say this series of trees are low (can), say low height, say low foliage clear trunk height and this makes a wall.

And on the other side, I have the trees which are of this type. Basically what I have done, I have only replaced the architectural elements with the landscape elements for the vertical plane. So nothing changed much except the material but there is a big change in the perception of the user, in the whole mental process of the user. When it was a wall, people saw it following the same mental process, sensation, perception, intellection.

Looking at this, people say it is yes, seeing it wall, wall and a screen, and then perceiving it as wall, wall and a screen, and then conceiving this through the process of intellection is it is architectural space. That is what it is. I have just replaced those elements with my landscape elements. The vertical elements here is a green, the base is also green. The front is also green. And what is in here? The screen that we are talking about. Let us say I have made a trellis in which there are some bit of vegetation, so it is perforated. Only that much change I have done. Okay?

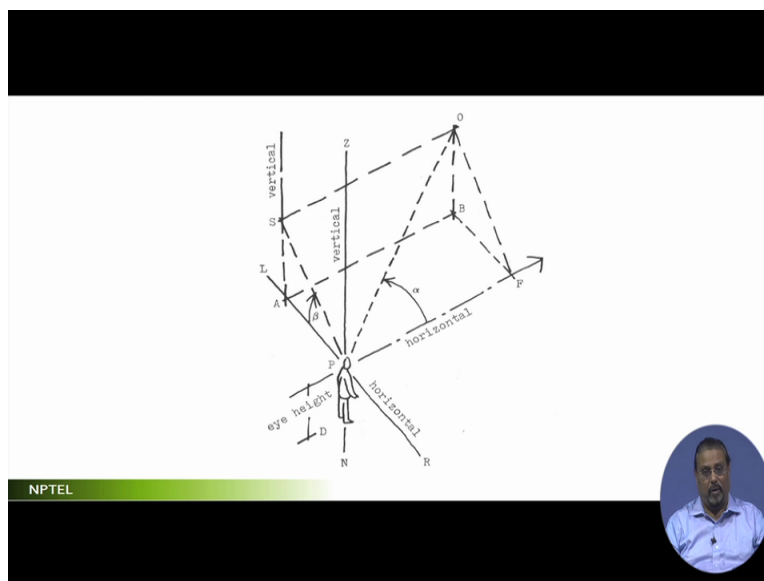
What will be the sensation? Sensation is seeing trees, green. Sensation of seeing scale of the objects; green is the color, shape, form, texture, everything, seeing. And then I am hearing some birds chirping, so hearing is there. Okay. I am also smelling some fragrant flowers or the leaves.

And I am standing at this particular point, touching on the grass not a pavement and of course I am not tasting anything, so these.

What is a perception? Perception is immediately somebody who knows what is called grass, he will say it is grass. Who knows which is this tree, will say it is that tree. Suppose it is ashoka, suppose this is gulmohar. People will say it is ashoka and gulmohar but I will tell you not everybody's perception will be same. I may say it is ashoka and gulmohar but if you do not know what ashoka looks like and gulmohar looks like, at least one thing is common in our perception, you will not be able to which tell me which name but at least one thing is common that you will say it is a tree. You will not say it is a wall.

So that means in the perception, the degree of perception of, if you have not seen what is called ashoka and gulmohar, your degree of perception is less. But to me who knows about the in and out of all these trees, my degree of perception is higher. And then intellection-wise, let us see. It is basically green dominated a space which is not architectural, it is landscape. This is how the whole intellection process comes in the whole thing here. Okay.

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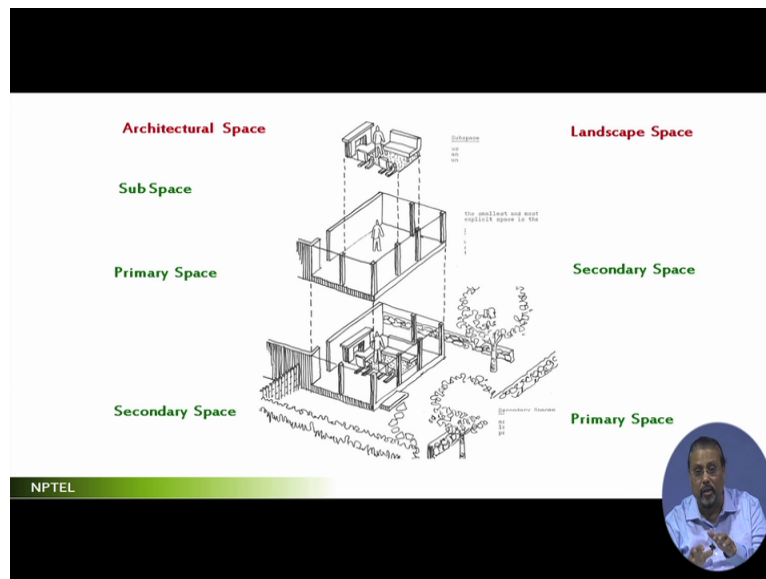


Now the next point is how you view it. When you view, interestingly, anybody who views something, a space, never remains static, he may be movement-wise static but nobody can control your movement of the head. So what happens is technically let me tell you that if you are standing at a particular point and then you are trying to look at, just watch my head, I am moving

my head from here to this like this. Watch my head, it is moving from here to here. This is what is called panning.

And if I am moving my head from this to this, lower to higher, lower to higher, this is called tilt. And what happens is when somebody is viewing it in terms of panning or tilting, there may be a position usually at the corner and he is trying to see that. So what happens is his focal point at which he is focusing with his eyes, it has two angles created in between, one is the azimuthal angle we see, another is altitude angle that we see. So these two angles become very important even if you are static. I will discuss this phenomena again when I will be talking about the circulation, kinesthetic effects. But if you are experiencing certain area, mind it, even if you do not allow anybody to step further but you cannot control the roving of eyes, roving of or moving of heads in wider spans or in vertical spans. This is what it is. Okay.

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Then the next point, the space. What happens is if a landscape is clear of any other elements, it is fine. But here I am trying to draw up a relation with architectural space and the landscape space. An illustration which is given over here, this is also a borrowed illustration but one of the finest illustration I found. If I see, these spaces will also have an identity, the identity in terms of saying what is a primary space, what is a secondary space and what is a subspace. Let me first clarify in terms of architecture. Follow this. This is one project in which there is a room within which there is a set of furnitures.

If we disintegrate this the way it has been shown in this particular picture, then whatever is contained within, if you look at the whole stuff then the whole landscape project contains a building or a room and the room which contains the furniture, so that has been now separated. Okay. Then this particular, this is one, there could be many other small small spaces within, they are all called subspace architecturally. Okay. Subspace, with respect to this example I am saying. Then I will correlate with the landscape. If this is a subspace, then this particular space will be called primary space and anything beyond this will be called the secondary space. I am repeating it. A space, a building which also has a garden in front or at the back and within the building, there are certain enclosures, small small sets. The small sets within or I would say subsets within that set of building will be called subspaces and architecturally.

And that particular building will be called primary space. And beyond this, we have gardens, they will be called secondary space. Things will just get reversed in landscape. In landscape what happens, in landscape that space which is the house becomes a secondary space and the garden becomes a primary space. There is a big difference, mind it. What is the difference? Difference in the reference domain.

Reference domain is something like this, you see from here. In terms of landscape, let us see. You are standing in the garden and this is designed for you. The garden also contains a building or a room, so the primary space is the garden. So anything how you look at it, how you say it is primary or secondary? It is from the reference domain. If you are within a house and trying to see the garden from there, then the house is the primary space and the garden is a secondary space.

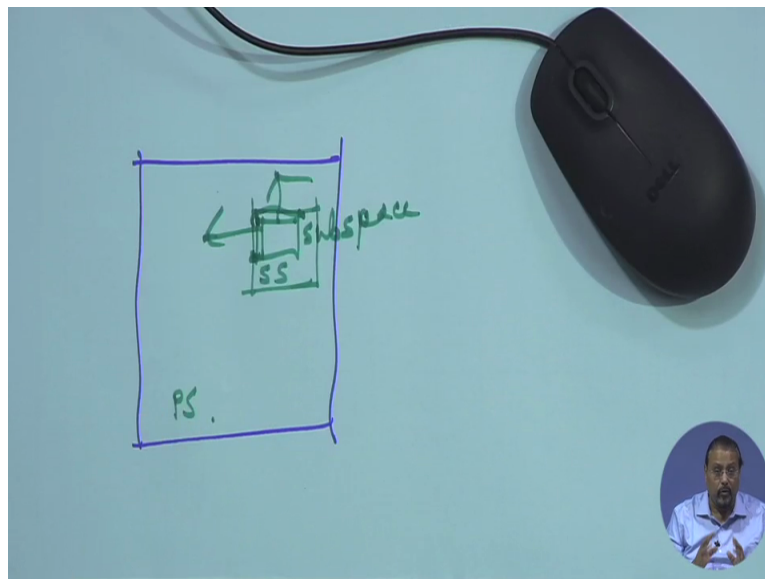
And if you are standing on the garden and trying to look at the house, then the garden is a primary space and the building is a secondary space. Is that clear? I think this would be, this makes sense. And subspaces, now let me come to the subspaces of the landscape. I did not write anything here because this is not the subspace of the landscape. What is a subspace of a landscape?

You take a landscape project's example, any project that you pick up. You remember in English garden we have said that there is, there are rolling meadows and the water bodies and then we have a gazebo or a retreat, okay? In that, the whole garden is a primary space and the retreat is a

secondary space. And within the retreat, you have an enclosure in which we have some tables, chairs; they are subspace. Okay?

Or if this, if you say no, this is architectural, let me think in terms of landscape, then I would say again that the garden is a primary space within which you have some gazebos which are secondary space and within gazebos you have some clusters of potted plants, they are now subspace. So let me try to illustrate through my quick sketches.

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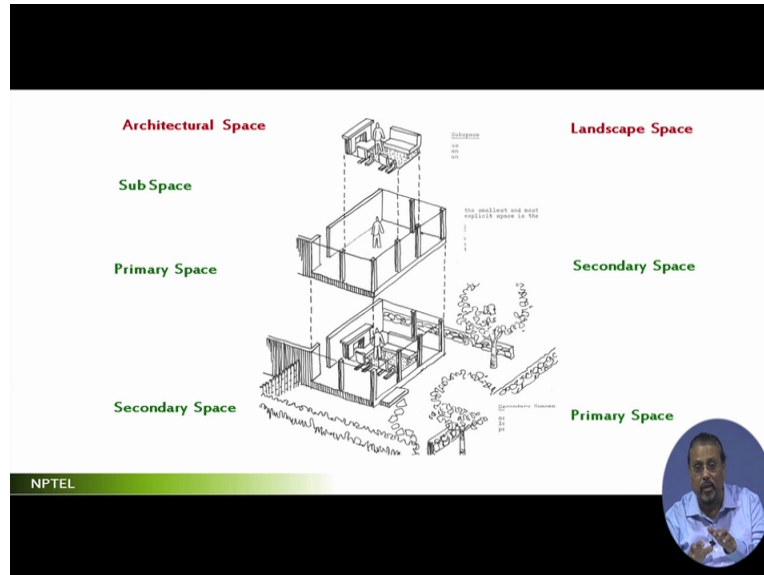


In the garden, this is the primary space, okay? And inside, we have a structure or a pavilion, I think best example you to pick up from your Chinese landscape that I have shown earlier, the garden within which you have a pavilion. The garden is a primary space, so I would write it is a PS, primary space. And the pavilion is now secondary space. And within the pavilion, you have a place where you can sit and then watch outwardly, and this is now the subspace. I hope this is, this makes it clear to you.

What is important to note is whenever you are playing with the spaces, they become very critical. Never design a landscape where your landscape becomes a secondary space. If you have done it, then your landscape is not created properly. In fact, by mistake probably you have created an architectural space because landscape and architectural spaces when they are side by side, it happens is they keep on changing the positions. So your primary space is the landscape and then

the secondary space is the architectural space and within that a small landscape space within the building also can be a subspace. So subspace need not be necessarily an architectural space.

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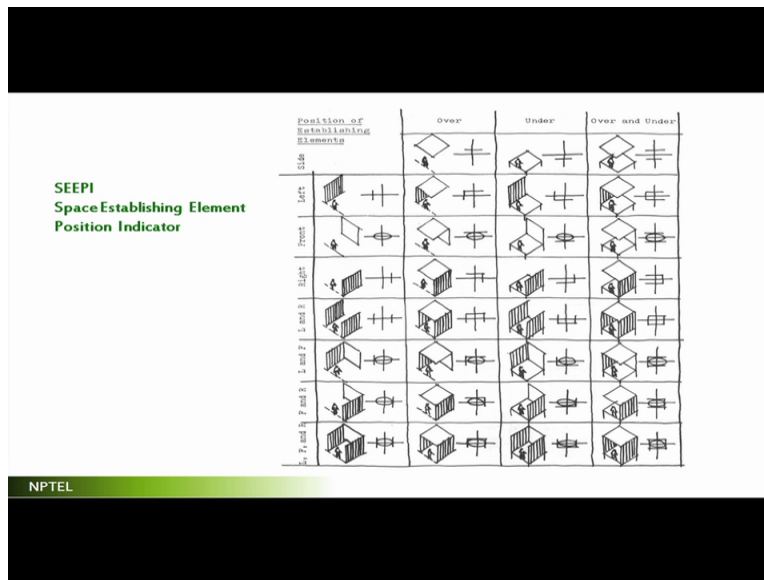


Here, in this case what we are doing, here it is like this. This illustration which I have on the screen, in this illustration of course since we are taking an example of an architectural space, and this is architecture and this your architectural space.

Imagine, if suppose I would have designed within this a small garden enclosure. Imagine, this is the garden and then there is a structure. Within that, there is a small enclosure with a garden enclosure. Then how would you call it? What would you call this? This is primary space in terms of landscape, viewing it in the landscape. Here if you think in terms of landscape terms, this is primary, this is secondary and the garden enclosure within is a subspace.

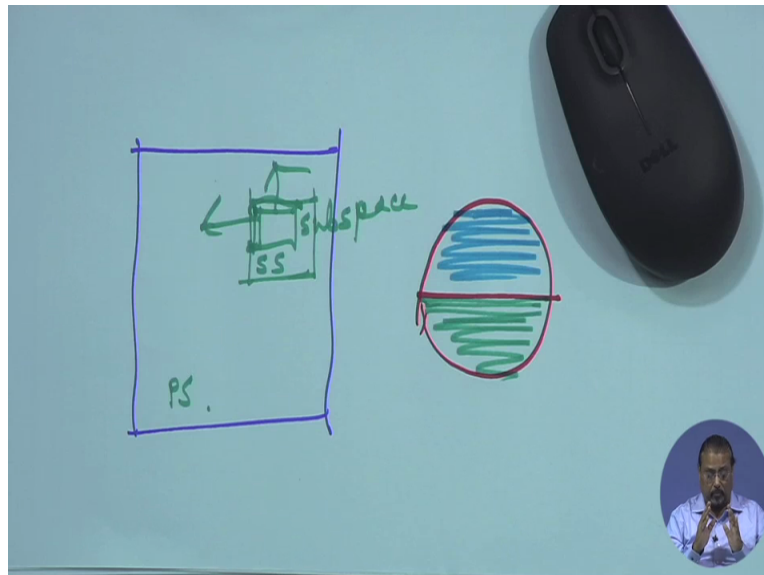
Let us look at it in the eyes of architectural space. This is primary, this is secondary and what is the character of the subspace? Also landscape. This is where indoor landscaping becomes a subspace in the midst of a or within an architectural space. At the same time, a gazebo or a structure or a building becomes a subspace in the landscape also. This, we have to be very, very clear. I hope it is clear. In case not, please feel free to write for further clarifications.

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Another thing which is important we noted is the establishment of the space.

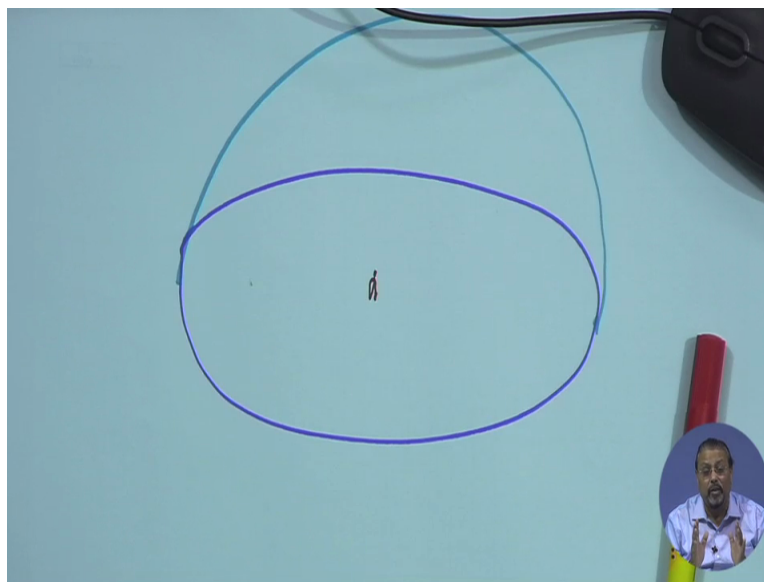
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If you do not do anything, my earlier sketch that I have shown that you have the, in plan let me show you. In plan, sorry, not in plan, in viewing it, if you view it like this and you have green here and you have sky here. Okay. The sky here when you are looking at, why it is circular? I will clarify in the next set of lectures. The point is when you are viewing it, you are establishing. I will give one example which I generally draw from the reality. You have to follow through very carefully. Listen to me very carefully when I am giving this example.

Imagine, because see, everything cannot be illustrated, so much of phenomenal examples we have, everything cannot be illustrated. So I am depending on your imagination and visualization of what I am saying in words but still I will try to illustrate some. Have you ever have experienced to stand in the middle of a absolute open meadow, absolute open meadow? You see the horizon get the sky, goes up, have do you have any experience of that? If you do, then you will realize my this point. Clear, flat green, you are standing in the center and then all around is a sky, I am trying to replicate that in the sketch, not very easy I will tell you.

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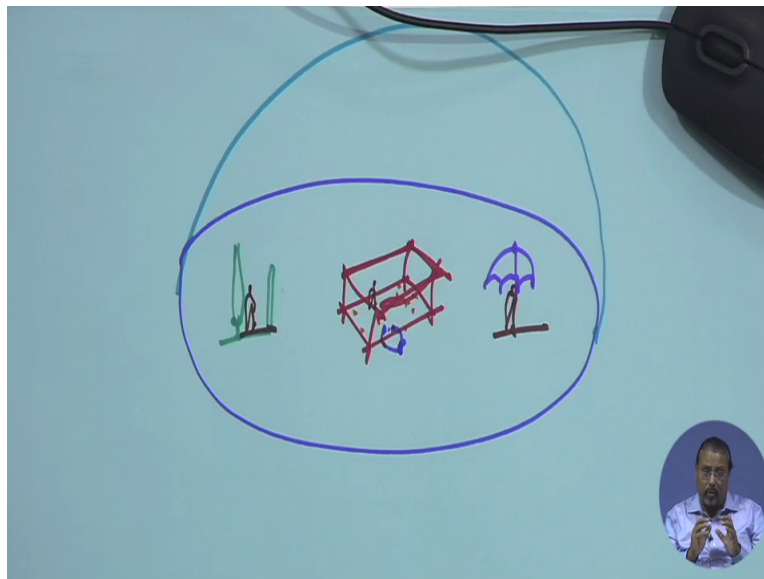
Suppose this is that base that you are seeing and this is a horizon line over which, okay, before that, in this you are standing here as a small miniscule, in this. What you have as a base plane? The entire space as a base plane. What you have a vertical plane? You do not have anything. Suppose there is no tree, no hill on the sides, then what you have a vertical plane? Nothing. But is it, can it, can the space be free of vertical plane? Theoretically, no.

So what happens, your sky starts from the horizon and then where is your overhead plane? The sky. Let me try to draw that, a sky. You are in the midst, center. I can assure you, trust me if you are alone and there is not a single soul, no animal, no human being around, you will feel scared. You will feel scared in this kind of space because what happens is the space is such a thing that it gives us a feeling of comfort, feeling of shelter, feeling of protection, feeling of openness, feeling of lost.

This is a kind of situation which I have created for you where you will feel lost. And you will, if you feel lost, then you will feel threatened psychologically, emotionally. If you feel threatened, then you will be very happy to see any one soul starts walking from this particular end and you will be very unhappy to see the soul ultimately vanishes in the horizon and not coming towards you. You will be the happiest if the soul comes towards you. This is human phenomena, psychological phenomena.

But this is very important in terms of space creation, space establishment in a landscape. Here, I will draw reference to your own personal experience, then you will understand. So you are here at this particular point. What is the (territorial) territory of yours? At this point, your territory is entirely bounded by the horizon line. What next is required? You want to have a bounded space. Where do you limit? You limit with a base plane, first.

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Have you ever gone for picnic with your friends in the open meadow? Then I am sure and you will agree, the first thing what you have done is you have spreaded a carpet. First thing, you have done that. Why you have done that? That, you have defined that particular base plane for your activity. Then what you have done is on this you started putting all your food items and other things, all things that you brought.

I can assure you if any of your this item has fallen off this particular boundary line, came to this, any one of your team member will first make a immediate attempt to bring this within this. That

means anything that has rolled out of your carpet, you will try to bring it in. What is that? Basically, it is a sense of territory that you have created. This is what is a territoriality. Every individual or a group, they always try to create a territory and here what have you created with? Only base plane. What is that base plane?

Over the entire green grass, a carpet is a base plane. What you would have preferred? Imagine that if suppose you have been given such a big land and then you are asked to make your own house, what you would do? You have made this as your base and then you have tried to make wall all around and then you try to make a roof, makes you a house. So basically what you have done is you have established the space, first deciding about the base, then the vertical and the overhead element. This is phenomenally true and fundamentally irrefutable. Only correlate this with your landscape.

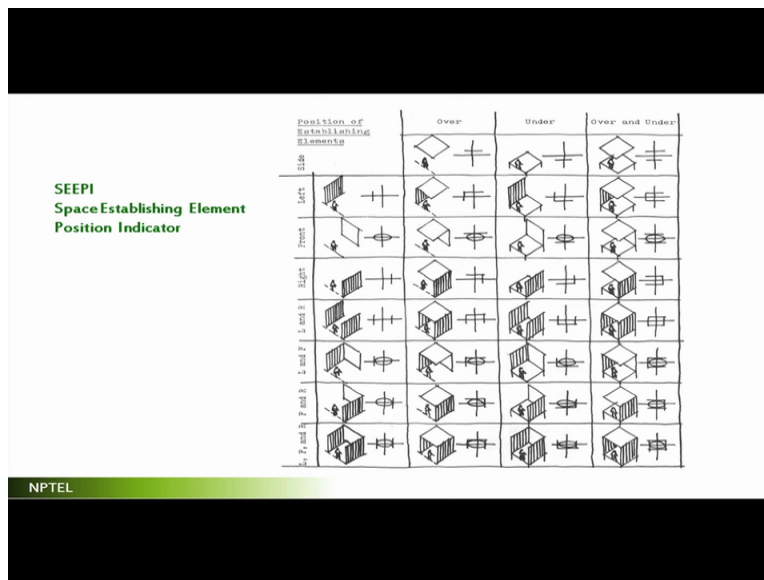
Another example, let me give you. Suppose, go back to the same example where I said that you are standing alone without making any space. Imagine, forget this. Do not look at this, you are standing here alone. What will be the first reaction that you will have is how would you make your space defined. If you have an umbrella, then open it. As soon as you have opened the umbrella above your head, immediately space got established. You start thinking that okay, you are slightly protected. And with what? Overhead plane.

Another example. If suppose you are standing here. What will make your space establishment very concrete? Even one small stick will make it or else a tree will make it. Basically what happens is this is what is a space establishment that everybody commits. And that is psychological, you cannot help it. If you ever recollect this, your overhead plane is this.

I will cite another example. You are standing in the midst of a center without anybody's presence, nothing is around. You do not even have a carpet to make it base plane. Your entire base plane is rolling down to the horizon and the clear sky. You are having some kind psychophysical reaction. Imagine, the gradually the cloud is forming. That means your overhead plane is not changing in its character. And imagine then the cloud is forming to become (()) (23:41) nimbus kind, absolutely dark. Then, your space establishment has become stronger, nothing changed except the cloud.

So what happened is if you really look at the clear sky and look at the cloudy sky, basically the cloud in the whole clear sky, the cloud becomes another element which comes down at the lower level. If the cloud comes to the lower elevation, then you start feeling that you are being claustrophobic with the cloud and you become more threatened. This is the kind of reactions every user has. And what you have to do is as a planner, as a landscape designer, you play with this. You play with this in such intricacy that you can always make use of it. Okay.

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Now the example that I have given here in this picture is basically establishing, establishing how? Very quick example that you are at this particular base level, overhead plane you have created. Under level, you have created base, and over and under you have created this. Okay. Another one is that you are standing here. There is a vertical plane here. Over that, is overhead plane. You have a base plane here and a vertical plane. All these combinations are possible and ultimately leading to a combination where you have all those levels. Just before this, if you see this, base plane is created, just focusing on this because there are so many illustrations.

So I will tell you that after this lecture you have attended, you reopen it, reopen it and see this in detail because I did not spend that much time for just deliberating on each one of them but starts with either overhead plane or a base plane or a vertical plane. That is a beginning and ultimately leading to just pre-final is the three sides vertical plane and then base plane. And over here, three sides vertical plane and the overhead plane altogether makes a space.

But you may be having a very serious question. I am always saying three vertical planes and the overhead plane. This I will clarify in my next set of lectures but the point is you try to understand this that this space which I have created here has to be very, very explicit. Okay? This explicitness which we are creating is better represented with assigning a notional value. Okay.

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The slide displays a table with the following data:

	Solid	Perforated Screen	Vegetation
Base Plane 0.5	Floor 1	Metal Grating 0.9	Grass

The slide also features the NPTEL logo and a circular inset image of a man in a light blue shirt.

What is a notional value? It is a plane, base, vertical and overhead. How do we measure called what is the quantum of the space that has been created? How do we measure? For measuring this quantum, what you have to do is that you assign a value. How do you assign a value? This assignment of the value is done by research. I will show you an example in my next lecture in detail because I have to deal with this in detail. That, assignment of the value given which is a statistical inference of asking several people about the existence of that particular plane.

Example is like this, how it is done, how it could be done? Suppose you take 50 respondents and you let them experience a space where one can only comprehend purely base plane. Means take a big hanger of aircraft, of course then negate mentally. You tell the respondents that negate mentally the overhead and vertical planes and then ask the person to stand on a podium. Does the person have a feeling of base plane? If yes, then ask him to assign a value to the spatial expression, means the explicitness of the space. Okay. Establishment of the space. Then put another condition, a vertical plane, you will find that people feel more spatially established in

mind when the vertical plane is replacing the base plane. So automatically what happens is the vertical plane gains a higher notional value than the base plane.

Take out these two. Put one above. It has been found from the research that people have given higher value to the overhead plane. It is because of this whenever you are in the midst of a field and if there is a inclement weather or bad weather, you always rush towards something which has some overhead plane. You do not care if there is no vertical plane or base plane. Base plane is always there in some form or the other, only thing is if it has a good value to be assigned to it.

Okay. So what happens is research has shown that different respondents as best they could express and then statistically compute it, it has been found that a notional value can be given in terms of space establishment or explicitness of that particular space contributed by each of these elements like base, vertical, overhead. And they are given a value 1 for base, 2 for vertical and 3 for overhead. Okay. Now in this, if you see base plane, solid in nature, perforated screen or vegetation. The base plane is a floor which has a value of 1 and if it is perforated, then it will have, it will be negated or discounted with the perforation levels. Okay?

I think let me explain this in my next lecture more clearly so that I can have a continuity. Thank you very much till now. Wait for my next lecture. Thank you.