Innovation by Design
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Module - 06
Start of section 4
Lecture - 38
Concept clusters: Generating and slotting ideas

We have a very interesting method where you actually bunch the ideas within affinity. This can happen in any of your projects too.

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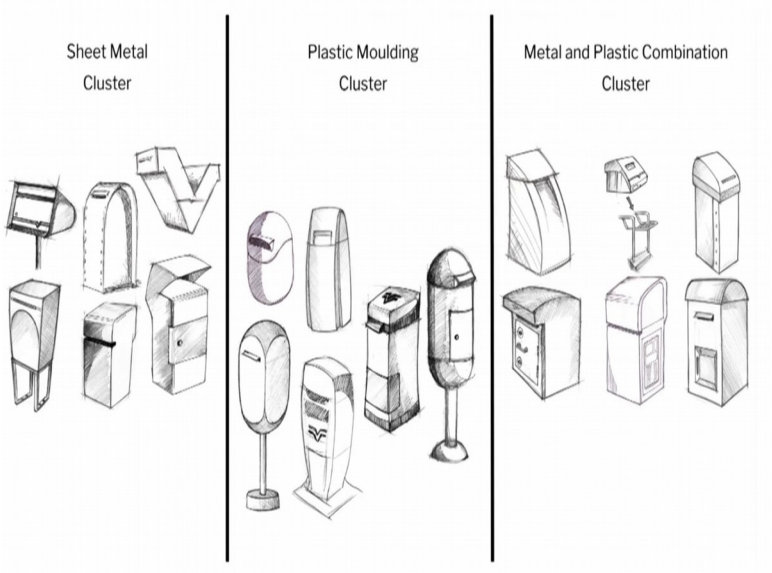

If you have a lot of ideas you put them together and once you put together are because of affinity to each other. And this is a card sorting method where you to, you know, use cards and do it and it is based on the objective of the project. What is the objective of our project?

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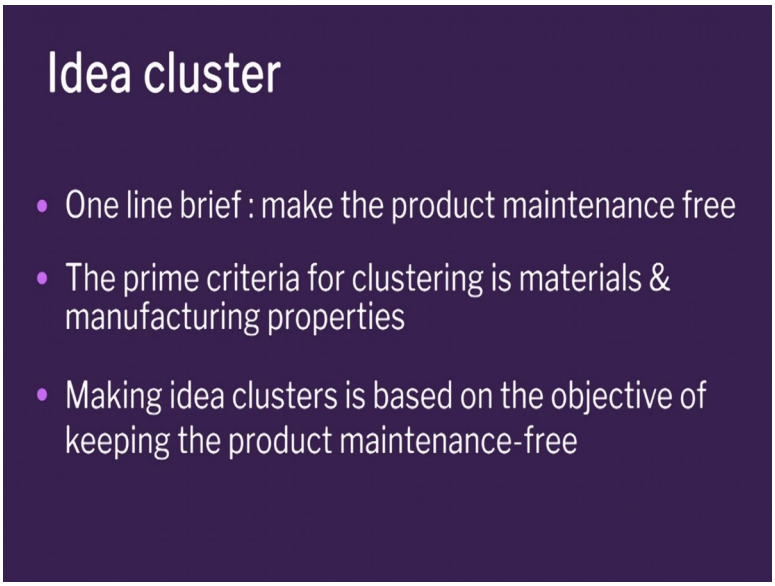

The one line brief.

Student: Maintenance free.

Maintenance free; so, maintenance free was objective. How do you achieve maintenance free generally? By having good manufacturing and good materials. So, your objective will become your clusters will be based on material properties and manufacturing properties.

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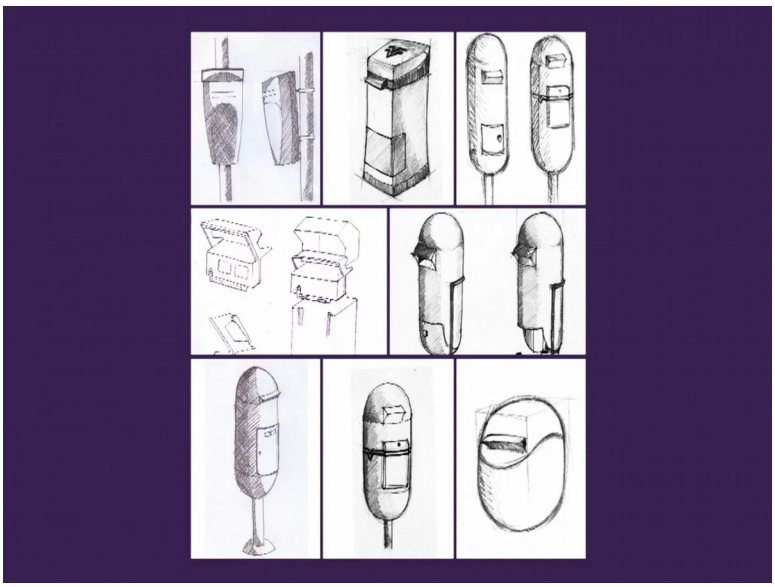

So, that is what we decided in this case.

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In this case the type of material

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and the method of manufacture was used as the basis for the grouping. And we also, you know, found out that the prime criteria for grouping like is in such a way that we see to that we satisfy all the aspects of the brief. So, you put in a lot of things interesting ideas to put together.

So, let us now see how the grouping happens. So, all the ideas were there we had some 100 ideas. What is the method of doing this sorting out? You have to make small cards of all the ideas is not the method unfortunately.

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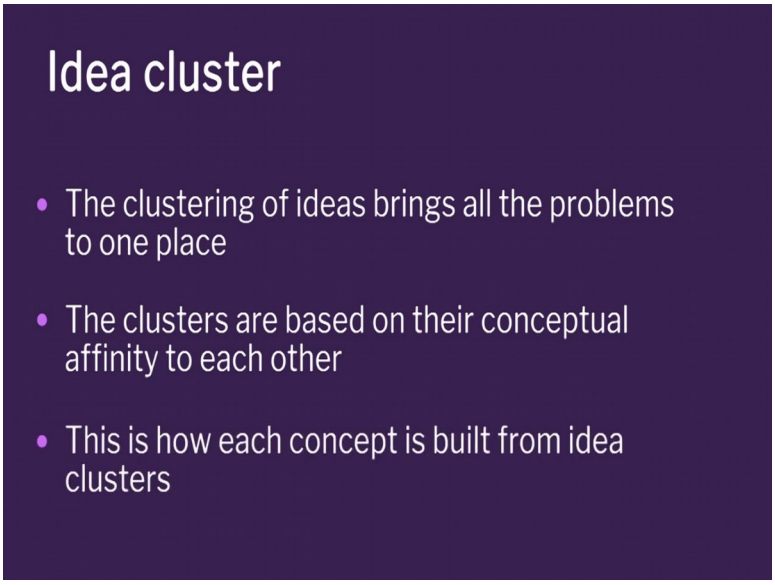

And you start allotting them, you make three groups, you know, and you start allotting these ideas. So, I just showing you one, you know, small cluster. So, this is called the sheet metal cluster. Why is it called the sheet metal cluster? It is got flat surfaces, it is amicable to designing by sheet, you know, designing in sheet metal. So, this was, you know, one cluster which we be generated.

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Reference for metal cluster

And in the sheet metal cluster what are the advantages and disadvantages?

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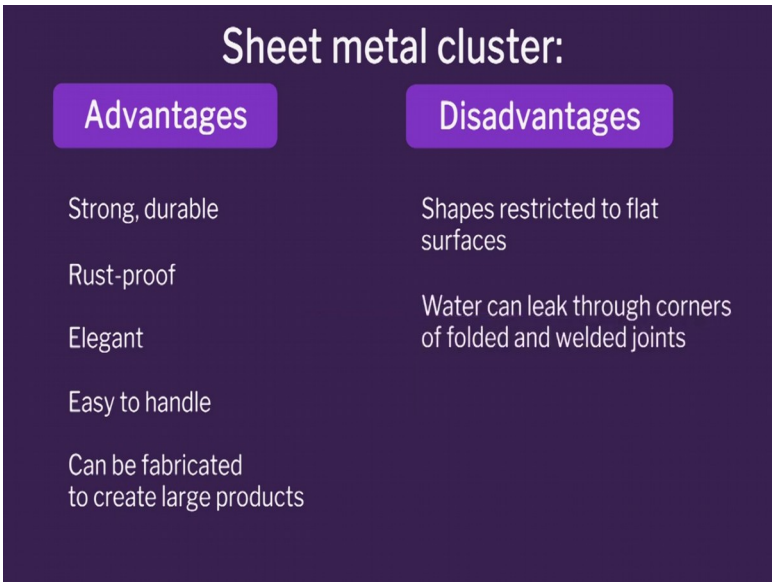

This cluster for example, use your, you know, the product is very strong, it is durable, it can be rust proof if you use, you can also make it elegant it because of the large surfaces, it is easy to handle because its lightweight and it can be fabricated in large numbers.

What are the disadvantages? It has restricted shapes. It has to be always flat because you can't use car shape, because you can't have the type of tooling. It also has drop possibility of leaking through joints, which was a serious problem for our earlier boxes.

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So, leakages of water could be a potential problem. And it will have welded joints which could be really problematic.

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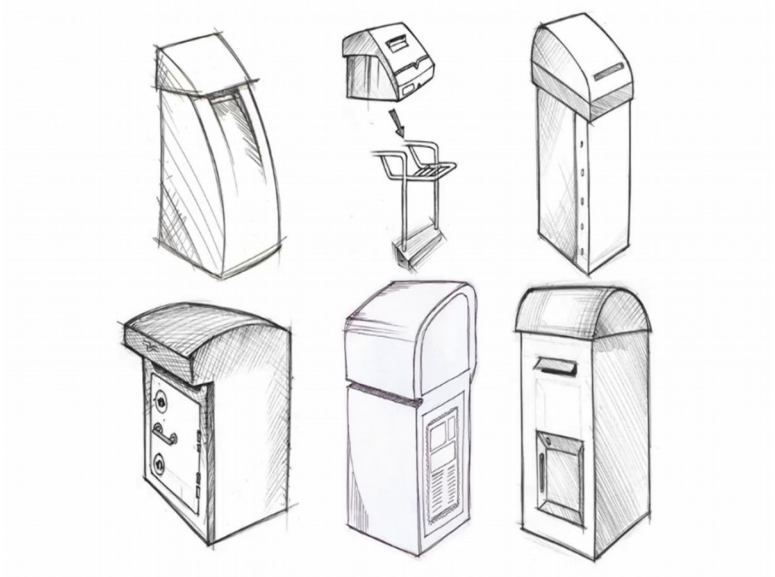

And look at this cluster, which is the plastic molding cluster. You see all of them are rounded because its moulded, it i made out of plastic, so there is less rusting on the box and it also has very interesting shapes. But the somehow I see some little difference there is one in the centre, which doesn't really match the cluster very well.

But it is put it in this cluster. There is no hard and fast rule. This is coming to the cluster may be, you know, the designer thought that we could put, you know, plastic folding and we can use this for this purpose. So, that is the reason why he is got into this cluster.

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So, interestingly, the clusters only giving you creative ideas to go and make concepts; so, it is not really very, you know, hard and fast that why something should go in and why something should not go in.

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So, here we have the plastic moulding cluster; advantages, it is elegant, its rust proof, rounded shapes, multiple colors you can mould in. And the disadvantages are, you know, not strong, people can, you know, hit with a rock or a stone and it can break, so vandalism and color can fade in the sunlight and in a product like a national level public product you can't have things which are made of plastic.

So, you have to really, you know, work out and check how to go about doing all these. So, the next cluster is the combination cluster. You remember all these ideas. So, the combination of plastic and metal; so, here the top is made out of plastic and the bottom is made out of metal. So, you have advantages of both you have good smooth surface on the top for your water to go out you have all the body which is, you know, flat which can store large letters, so best of both worlds. So, this was a cluster which was a combination.

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And it use the advantages of both the metal because a strong body. But still if somebody hits on the top it can break, so you need to work out on materials which are engineering plastics. So, the top moulded part will not break, you will have very good strong tops design and the, you know, like a disadvantage can be reduced and the cost is very high; because, you have both the plastic and the metal in coming up.

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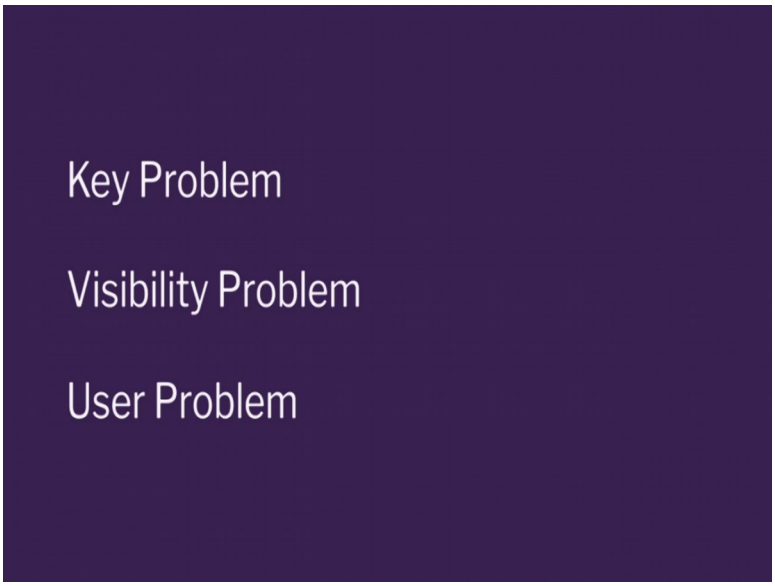

And did you remember, in the cluster, we have ideas for one-one problem, right; keys problem, visibility problem, user problem and all the ideas are put together now. So, the put together ideas so, you have to combine them and make concepts and you need to at least have three concepts. So, we will see how we you know sort of isolated the solutions and came up with the, there is a very, you know, rigid structure which we followed. So, when you have a cluster of ideas, what do you do? So, what we do is, we generally take one champion idea.

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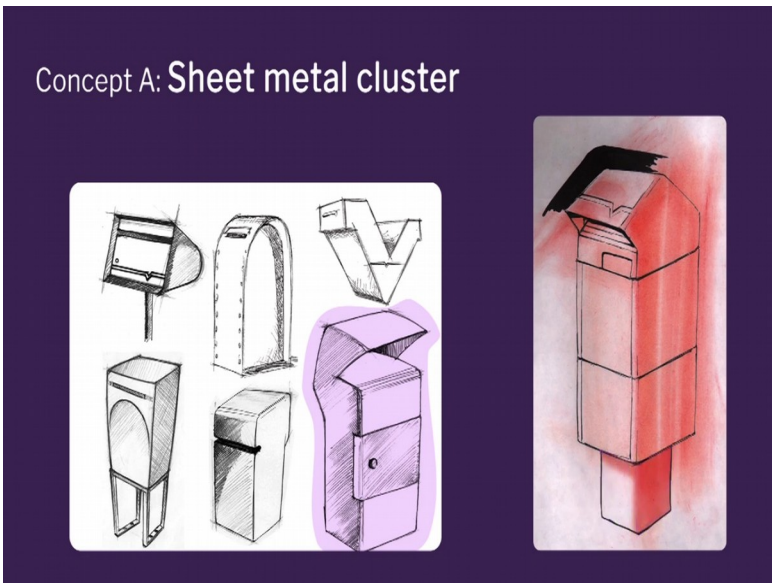

I am just showing you 6 ideas there and there is one champion on the right; and invite all the qualities of the other ideas in the champion. So, it totally depends upon the designers perceptions is now is going about. For example, look at that the idea which was there for making the product look important. That seesaw, how did you capture that idea into your final concept? By having large sloping roof, so it is an emotive contribution; it is not a direct contribution.

So, you have to understand that the ideas will not get into the concept, you know, directly they will come through essence and through emotion. So, look at the other idea of those flat surface, look at that half round flat surface, the concept of that second idea was that is flat surface that easy to clean.

So, what have you done with your box? It is got flat sides. So, its ready to clean. So, it has less problem of rusting, as well as, you know, corners being dented. So, those are the ideas which are brought out into the main concept. And look at those legs for the second row in the first and then basic advantages of how, you know, this particular concept has, you know, sloping roof, so water will not stay, it has a large flat body for easy to manufacture.

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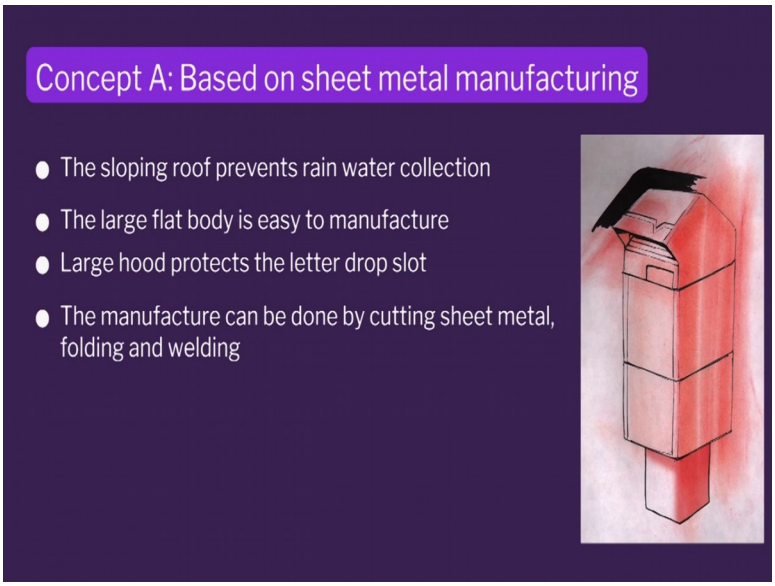

It has large hood helps in protective letters when you are dropping the, you know, letters inside. The manufacturing can be done by cutting sheet metal or stainless steel and

folding them and, you know, welding only the corners, so a much better sort of design with you.

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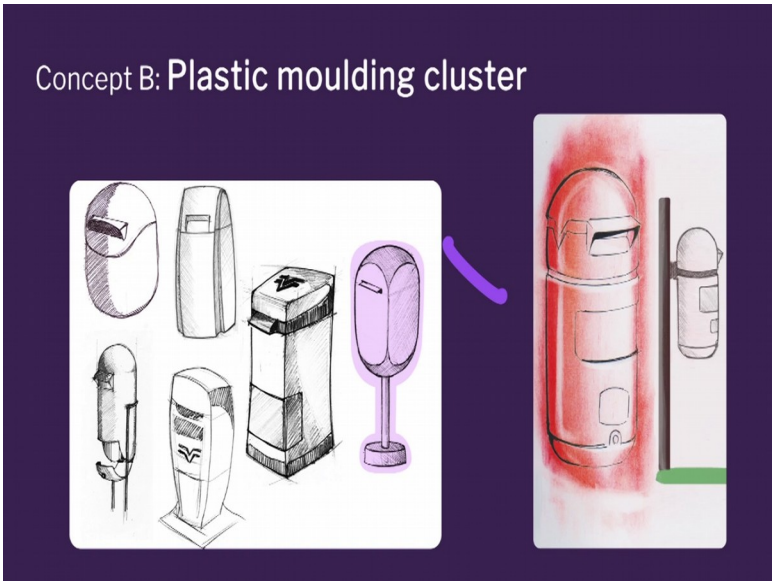

Look at the next cluster and the representative. Inspired by all the other aspects, but it is very very close to the one which is the champion, you know, and there is opening for the bottom in this design, which has still been retained over here.

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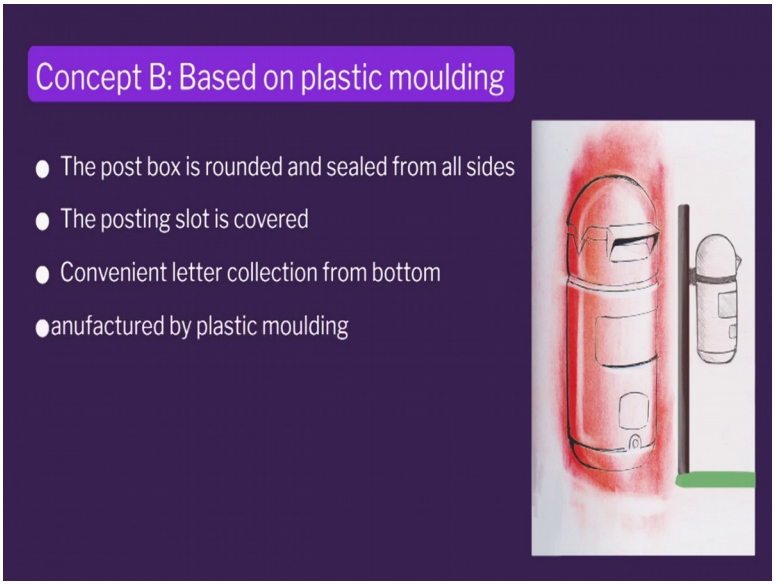

Rounded shapes, so no rusting, completely sealed boxes. So, letter collection is very convenient from the bottom. It can be manufactured using plastic moulding process and

it is very rounded, so looks very new and innovative at the same time, you know, has this, you know, issue of vandalism which is not solved in this.

And look at the concept C, which is very good for maintenance. If I put 100 marks for maintenance and not bother about vandalism, this gets selected. You have to give some weightages to all the aspects. So, it is a very complex amalgamation of your brief that you can come up and select. Where you have an, you know, amalgamation of a plastic top and a metal bottom and that is the combination you have a rounded top, you know, inspired by anti, you know, diwali bomb feature in the design where you have a, you know, very nice chute inside, so, that it is very difficult to put stones or, you know, like or play with it. And you have a large door, so with the whole door opens all your letters are with you so, a lot of conveniences and advantages.

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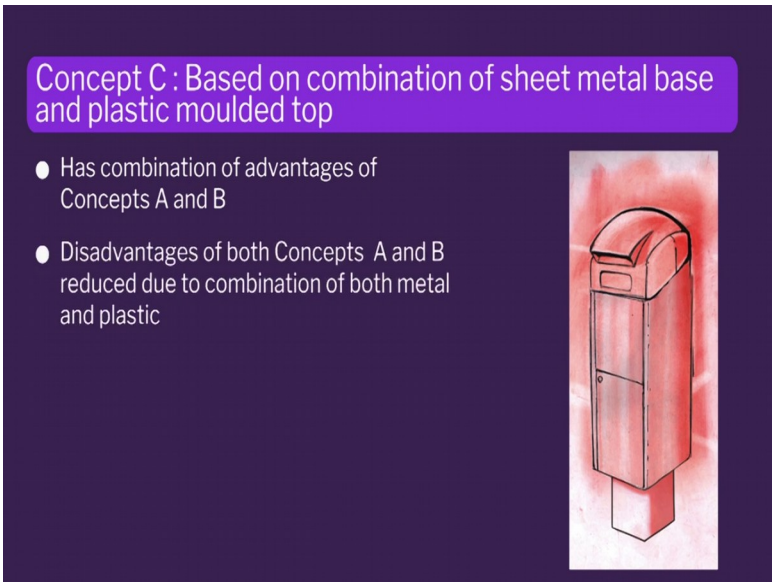

And it is the combination of both A and B gives you the combination of advantages at the same time the disadvantages reduced because your half metal and half plastic.

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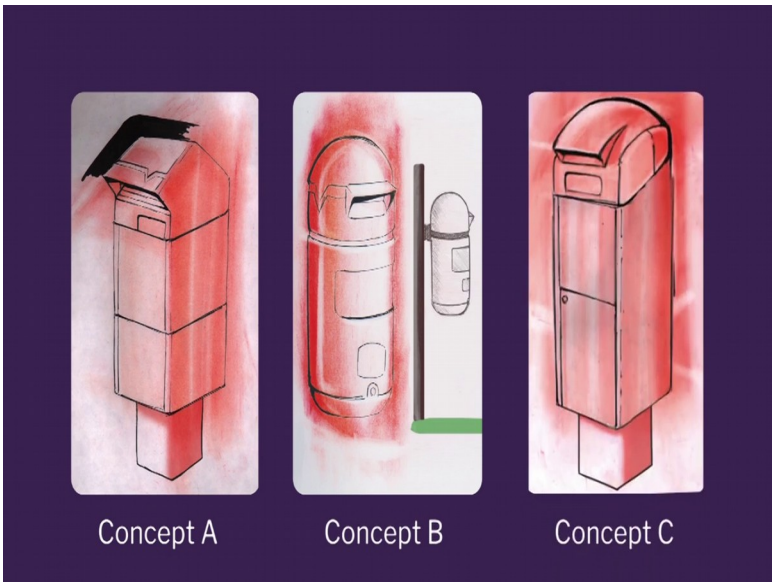

So, we have now three, you know, concepts and you have to choose one of them to go forward. And all the three concepts satisfy all the aspects of our brief. The first one, you know, also satisfies all the points, but maybe it is not very high on maintenance, ease of maintenance. But it is very very high on ease of fabrication, robust manufacturing, you know, aesthetic, you know, aspects all those things are very good. See all of them have good user features finally; large doors or door opening from the bottom. So, user convenience is equal in all of them. So, you can really look at those checkpoints very carefully to see how we go about doing this.