**Room 23-20240430 160708-Meeting Recording - Trim**

**Transcribed by** [**TurboScribe.ai**](https://turboscribe.ai/?ref=docx_export_upsell)**.** [**Go Unlimited**](https://turboscribe.ai/subscribed?ref=docx_export_upsell) **to remove this message.**

design in the space, and there are zones, I assume, that are numbered. Let's continue to the next step. Are you sure you want to continue? Yes.

Performing zoning, I assume that, this takes a minute, okay. I assume now that AI will perform some zoning on the structure that I just saw in the viewport. Oh, I see, okay.

I am now reading through the assignment paper that I was given, which explains what exactly ABSD is and what zoning means. So, zoning is a method for searching for geometrically relevant shapes that represent the bigger picture of a building. Zone designs can be used to create better structural designs.

Some important definitions, building spatial design, which is a collection of spaces, an abbreviation is BSD, okay. A space could either be a corridor or a room. A zone is a combination of spaces, and zoning means the search for individual zones and combining these into a zone design.

A zone design is a combination of zones. There's a lot of zones. Rules for zoning.

Zones should be as large as possible, so a zone can never be a subset of another larger zone. And a zone, again, was a combination of spaces, and a space is either a corridor or a room, okay. I also see now that the program has finished the zoning.

I assume that it has created various designs with different zones for the different spaces and rooms. Let me continue reading the assignment. Zones should maintain spatial continuity.

Therefore, zones can only be cuboid, or otherwise known as 3D rectangular. Zones may not intersect or divide spaces, so only combine spaces. Okay, so that makes sense.

I assume that the rectangular boxes in the viewport are a space, and then the numbers correspond to the same zone, the collection, or the combination of spaces. A zone design consists of a BSD's whole volume. That means that in a zone design, every space in the BSD should be included in one of the zones.

And the BSD is, of course, the whole design or space, I would assume. Yeah, a collection of spaces. Example of zone design solutions in 2D.

A BSD consisting of three spaces is zoned. The spaces are grouped into zones represented by different colors. Thus, for this BSD, two zone designs exist.

Space 2 could either could never be a zone by itself, since combining it either with one or three always lead to a bigger zone. Our structural design is made from a zone design. Flat shelves, roofs, or no, floors or walls are placed at the boundaries of zones, resulting in stiff connections.

Compliance can be used as a measure for a structural design. It is essentially a measure of stiffness, where a lower compliance equals higher stiffness. So, I assume this means this also corresponds to deflection of the shelves of the walls and floors.

Example of zoning from spaces to zones to a zone design. I think I understand. Note how a zone can also consist of a single space if needed to complete a zone design.

Yes. Okay, let's continue with the software. Step two, pick one zone design you would like to continue with.

Say aloud what you think. I'm not sure what the building will represent. Oh, so it represents an office building.

So, I assume I would have to pick one of the zone designs that has a layout of zones that best corresponds or best fits the function of an office building. So, usually for an office building, you need office spaces, and office spaces could either be in large open space with individual desks or separated meeting rooms, for example. So, if I were to look at these zone designs, and I assume that the building has multiple floors because of the stacked rectangular cubes.

So, for the best zone design for an office building could be, I see that in design four and design five, there are two zones on the second floor, which is zone two and zone eight. And I assume zone eight could be used either for a staircase, stairwell, or maybe elevators, or that type, other type of function. And then the zones that are number two could either be, could be used for the open office tables and desks.

And then I, and then on the bottom floor, I cannot, oh, I can rotate the design. And I'm also not sure now which way is up or down. But let me see at the first picture, I assume the local axis starts at the bottom floor.

So, this is indeed how you would orientate the building. So, let me see if, which one would I pick? I mean, my reasoning still remains the same. I think that you could use one floor for all the offices, all the desks, and then maybe a separate floor above for either a canteen or another function.

Maybe like a recreational space. So, for example, this design, zone 10 could be used for that. So, I will go for design five.

Are you sure you want to continue? Yes. From every zone design, a structural design can be made. This time, pick one zone design based on the expected structural performance of the corresponding structural design.

Say aloud what the reasoning is. Based on the structural performance. I think you can do a little trick.

I'm not sure what you're talking about. I see. Okay.

So, I assume that if you were to design a structure for each of these zone designs, if you have multiple zones connected to each other, you would have a large open space. And that would cause, of course, a very large structure that has a large span, leading also to no use of columns in the structural design. And more material use in the design of the beams, for example.

So, which is usually not efficient. So, from a structural performance, I would pick a design that has zones which are not too much connected to each other and which are maybe also stacked on top of each other. Like, for example, in zone design 2, you can see that zone 9 and 4 are exactly above each other.

So, you could use the same, perhaps, structural design for this type or this part of the building. So, my choice would go to probably design 2. Step 4. Pick one of the zone designs and say aloud what your reasoning is. If you want, you can use the given structural mass and compliance of the structural design.

That would result from each zone design. Okay. So, for each zone design, it has already given a structural mass and compliance.

So, if I remember, I first picked design 4 for the large open space that could be created on the bottom floor. And then, for structural performance, I picked design 2. Now, if I look at the different values for the structural mass and compliance of all of the zones or zone designs, then I see that the design with least compliance is zone design 1. But, yeah, it also has the least structural mass. So, usually, you would want the least amount of compliance because you want the least amount of deformation in your structure.

Or, in other words, you want the different structure possible. Is that right? Let me check. Compliance can be used as a measure for a structural design.

It is essentially a measure of stiffness where a lower compliance equals higher stiffness. Yes. So, indeed, for zone design 1, you would have the highest stiffness of all of these zone designs.

And the least amount of structural mass. So, with regards to those variables, I would pick zone design 1, just purely based on the least amount of deformation that you would get and the least amount of material that you would have to use for the structure. So, zone design 1. Step 5. Adapt the BSD to create a new BSD you desire with maximum 10 modifications.

You can do this by adding, deleting, moving, and resizing spaces. In the next step, AI will create zone designs for your new BSD. Say aloud everything you think and do.

Okay. So, a new BSD. BSD was a collection, right, of spaces.

Yeah. Yeah. So, of course, this whole design.

Then I have the ability to move, delete, and add spaces, but also resize spaces. Okay. Okay.

Let me think about this. It also keeps resetting the view every time I click on the window, which is a bit annoying, but I will have to make do. Yeah.

The dimensions are also given. I see. So, on the bottom floor, there are, let me see, there are five, no, four spaces.

One, two, seven, ten, and three. I don't think I would change much to this layout, per se. I also, I don't know where the entrance of the building will be, for example.

So, I would assume for the entrance, you would need a big space. So, okay. Let's say, for example, we pick ten as our entrance of our office building.

Then this could be a separate space, which is now, I believe, how much? 120 by 60. Well, maybe from a structural point of view, it would probably be useful to have another separation wall in zone three, right below the edge of zone nine, because I think maybe this is too big of a span to carry the loads, with just the wall. So, if we put another wall underneath there, so I assume I can resize space number three with the new size being, okay, so the location of zone three is a 0.120.0, which I assume this would be the origin.

I don't know if my mouse is visible, but this would be the origin point of the rectangle box. Okay, then the size of the box is currently 240, so that should be 120 by 120 again, and then 30 meter, or I don't know the units of this, but let's say three meters. So, this would be in decimeters forming zoning.

I assume it's now gonna adjust all the other zones, maybe based on the change I made, or maybe just the change to the one zone that I selected. It takes quite some time. In the meantime, I'm reading through the assignment paper again, just to make sure that I understood the different terms correctly.

Ah, it finished. I see, so AI found some new designs based on my change. I see that I wanted to resize zone three, and it has made or divided um, yeah, it has divided the space into three different zones now, which are labeled eight.

AI found all zone designs for the modified BSD, however, only the two most diverse zone designs are shown. Pick one zone design you would like to continue with, say aloud what you think. Okay, so I think both designs are quite similar, in that the cubes have the same size for both zone design one and zone design two, but the zone labels are different.

So for zone design one, I see that zone three takes up a lot of space, which might not be helpful in creation of the design. Because if I remember, it was 120 by 240, maybe. So that's quite a large span if this whole section will be one open space.

So we'll go for design two. Step seven, AI found all zone designs for the modified BSD. From all these designs, pick one zone design you would like to continue with.

Um, let me look at the different options. So if I look at all these designs, I think that either design four or design five might be the best. Um, no, no wait.

Because if I look at the design four and design five, I see that zone two takes up a large space, which is probably not efficient when you want to design a structure. So I think zone design two or zone design three might be a better option looking at the zones above each other. So both designs are similar on the bottom floor.

The only difference between zone design two and zone design three is, I believe, in the zone six and ten in design three and nine and five in design two. Yeah, and I don't really see a difference in in, in maybe the structural performance of either. Um, so I will just go with design two.

I'm just plugging in my charger, otherwise my laptop will die. Step eight, AI found all zone designs for the modified BSD. From every zone design, a structural design can be made.

Pick one zone design based on the expected structural performance of the corresponding structural design. From every zone design, a structural design can be made. Pick one zone design based on the expected structural performance of the corresponding structural design.

Um, okay. So I assume I, if the software is going to make a structural design of the zone designs, I assume that it's going to place walls and floors around the uh, zones. So for example, for zone seven, it will place the walls along the yellow boundaries of the rectangle.

Yeah. So based on that assumption, I think, again, either zone design two or zone design three would be the best um, option because there in those designs, you will not have um, a wall on the top floor that is not supported, um, underneath. Maybe in design two or three, um, you have, you don't have a support wall under this.