# Tips for VR Design

At Yulio, we know the most important tip for designing with VR is that VR doesn't hid poor design. We know it because we've seen it many times. There's an element of novelty in the technology that designers may be tempted to leverage right now, where the VR experiences creates a novelty factor that may wow clients. But that won't last long. Weak design elements are all the more evident in a VR view, and good VR experiences come from good design.

VR design is about leveraging the design skills and storytelling you already use. There are just a few new elements to think about as you consider wrapping the design around you. In Yulio, you're inserting your viewer inside a stereoscopic cube map. Picture being surrounded by the cube maps you already create in various software and design tools. If you're beginning your first VR design, focus on the design elements, then apply the tips we've outlined here.

YULIO VR
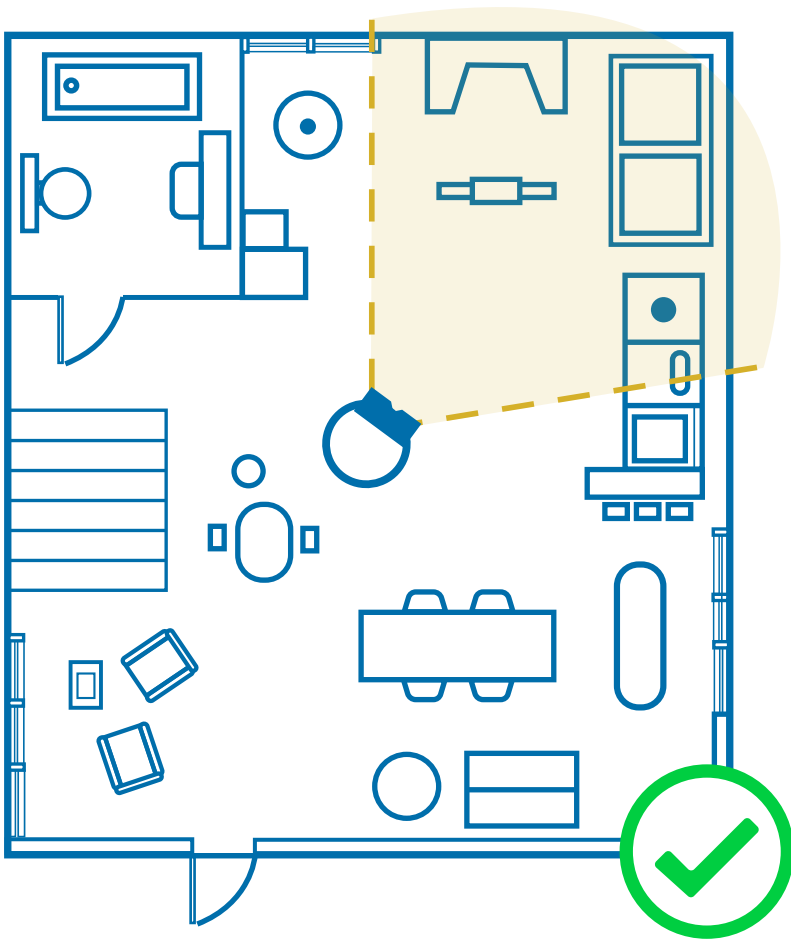
1

Look behind you

There's a fundamental shift happening in design. Where artists once had full control over the design story, and were able to set a viewpoint into a scene, and control that scene inside a 'framed' view, viewers are now able to focus on any element they wish. That's why you can't just force a 2D design concept into 3D space – your viewer won't be staring straight ahead at all times, and can focus on any element they wish. You need to adapt your thinking for this, or your designs won't meet the new expectations of your clients to fully investigate your design in any order and from any viewpoint they may choose. It may seem obvious, but remember that in the VR experience, users can turn their heads and of course, look behind themselves. If viewers turn around to be confronted with a blank abyss, you've lost the sense of immersion. That doesn't mean you need to take the time to
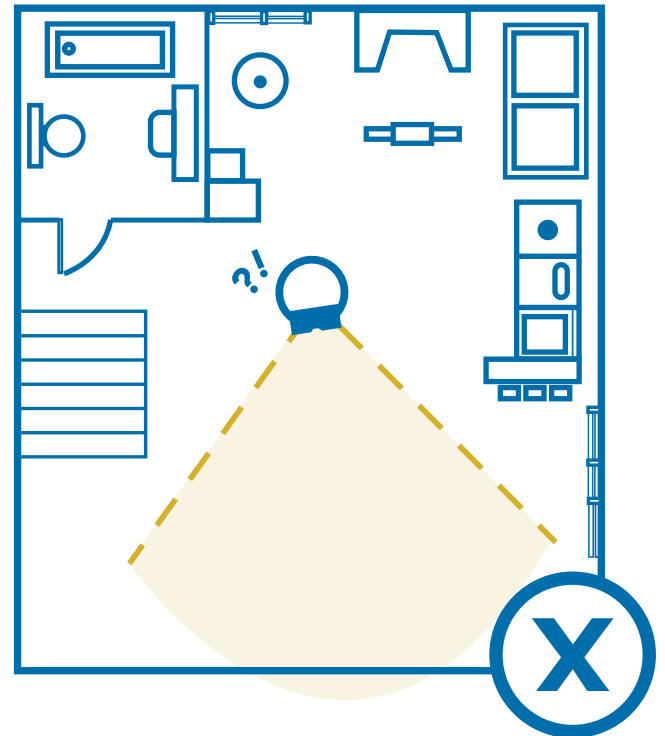
create everything in the scene at the same level of fidelity as your primary view, but you should plan for what viewers will see behind them.

By extension, this means you have to think about what happens when viewers look up or down as well. We have seen some designers submit their first VR concepts with ceilings or floors, which of course are important elements of design - many viewers will stare at the ceiling and work their way down to see how a space is built. And flooring is key as it visually guides a viewer through the space. When building our own boardroom at Yulio, we added bulkheads to our boardroom ceiling to help concentrate light and add formality to the space - all while designing it in VR.
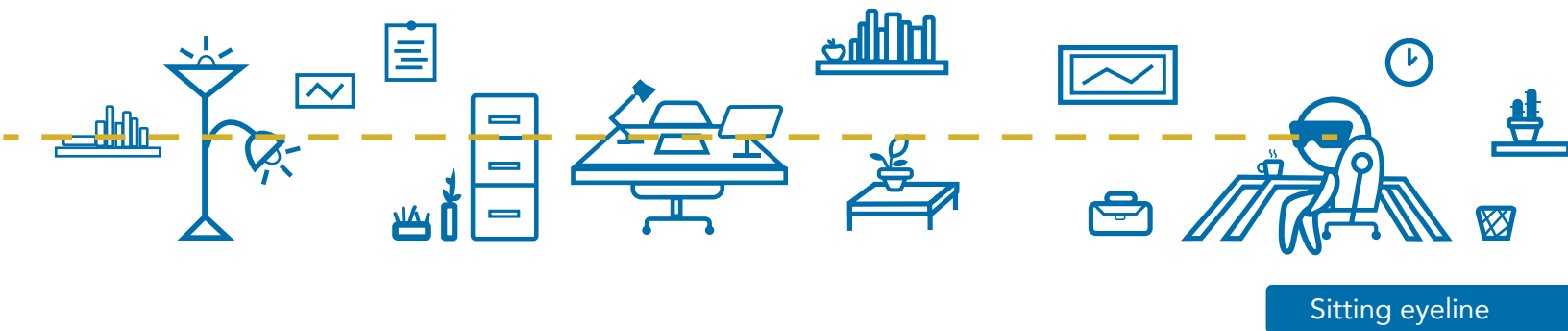
Sitting eyeline

Standing eyeline

2

Measure up

Make your VR experience as pure an abstraction of the real world as possible. Users will see everything in real-world scale and should feel like they're occupying the space. Having door knobs, windows and kitchen surfaces appear either too high or too low disrupts the experience. Mixing up heights can also make a design disorientating.

Many articles will suggest you set your camera height around 5'6" to create a simulation of 'average height' in North America. Many of our designers prefer 5'4" as 'eye height' but you can experiment with the viewpoint.

Think about the height of the viewer, and their perspective - How tall is your viewer? Will they be seated? This can impact the perspective at which you show your design, and while you can't necessarily control this, you will want to think about the impact it could have and make your design of best fit. When our interior designers recently showed off a restaurant design, they did so from the perspective both of someone seated in a table, and in a separate scene, from the perspective of a server who would need to navigate the space to tell the story from both views.

3

Let it Shine

Every model you create will need to demonstrate the impact of light, and the plan for creating it is critical to your design plan. Lighting controls vary significantly by render engine that you are using, but if you have limited control you can represent the play of light through things like shadow length to help demonstrate the mood of a space. We recommend you try manipulating the shadow rays and light multiplier controls, and adjust them incrementally as you check your design. Our designers set their shadow rays at 100, then render, and then adjust them or the light multipliers by 0.1, 0.2 etc. until they have the desired effect. Checking on lighting in this incremental way speaks to a larger issue as well, about the importance of checking the VR experience as you go - you'll notice far more by popping in and out of a headset to experience your designs.
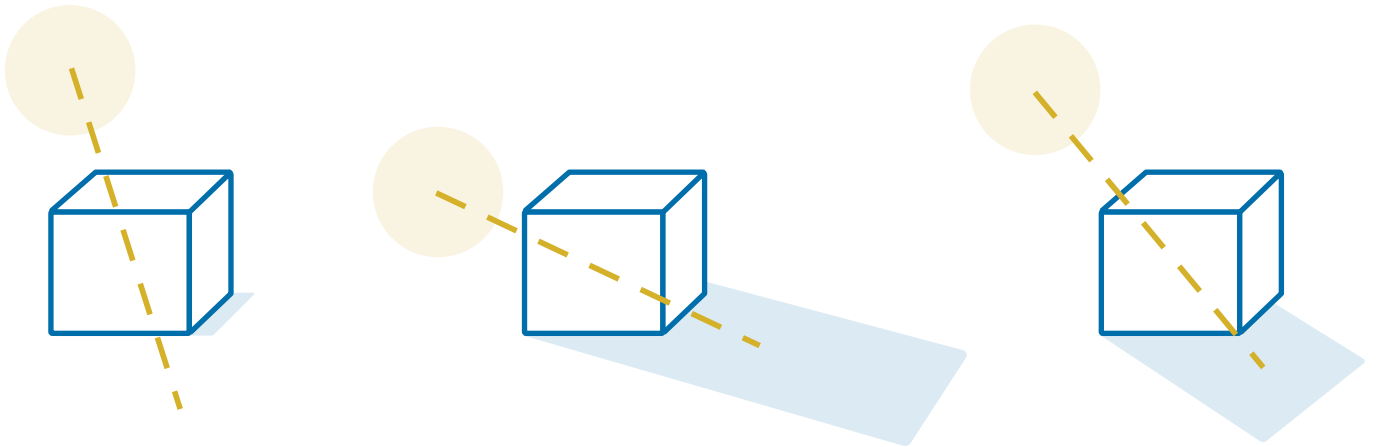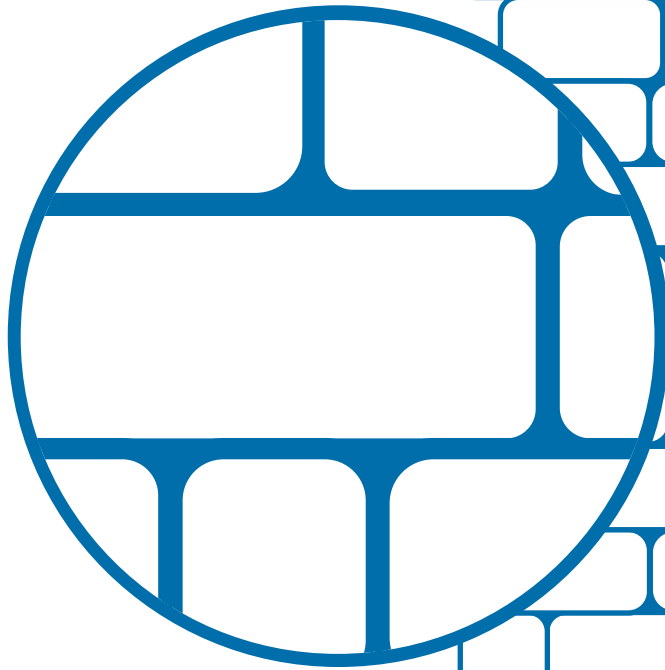
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Add Texture

Textures, and significant or sudden changes to them can also be jarring in VR. In typical design, you might be used to repeating tiles of swatches, but the repetition and rotation of them will be more obvious and jarring in VR. Use the largest swatch that you can and understand the implications of rotating it - if it's wood grain or natural stone etc. rotating the swatch can create harsh lines that will be more noticeable in VR. Consider stretching swatches to cover a whole surface or placing swatches in places where there are natural breaks etc, but know that how you create visual texture in 2D will show up in VR and either contribute or break the level of immersion.
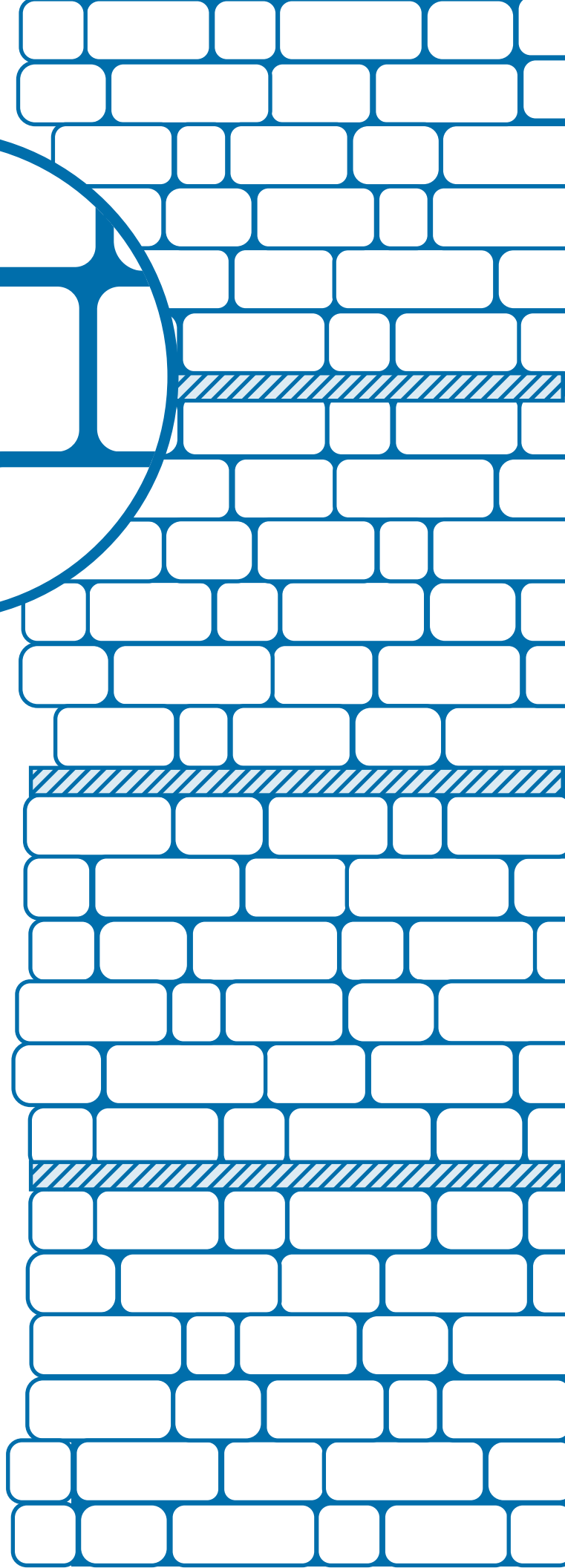
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Think about the narrative

Most design stories have a flow and multiple scenes. VR software with linkable hotspots, or other methods of connecting scenes, make it possible to link multiple FPRs into a single experience. Consider the way you want to take the viewer through the story when you're designing, and be selective about the viewpoint you set to start the experience. Since your viewer will likely begin looking around almost immediately, set your starting camera position at something that will anchor them, and allow them to move. For an office space, this might be a branded area, or for a residential project, often it's a kitchen.

If it's a room within a space, position the viewer at the entrance. Don't place the camera too close to a wall - you don't want your viewer to turn and see a solid wall or corner immediately.
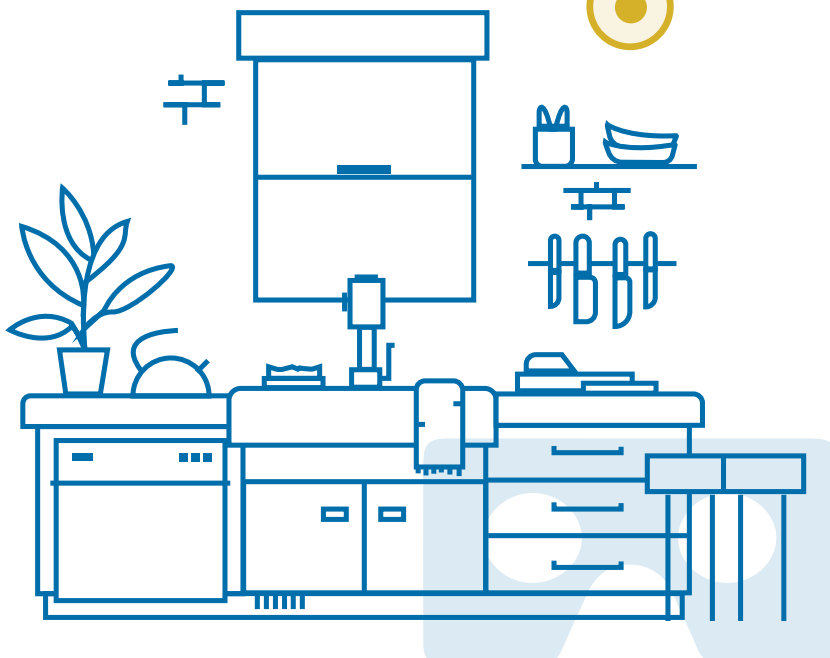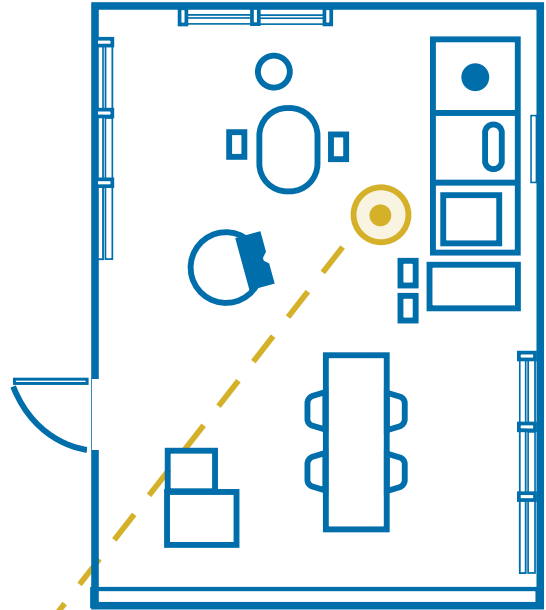
And, when you connect your scenes through hotspots or links, make sure they can be part of your VR world. Consider how someone would logically move around the space and place the links there. Give the links/hotspots logical depth or locations. Sticking them on top as 2-D objects can be jarring to the immersion of your VRE and interrupt your design flow.

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Stay immersed

Think about making the viewing experience as positive as you can. We humans have a thing about our eyes - taking away vision makes people feel vulnerable. Wearing a VR headset essentially blindfolds someone, potentially in front of their colleagues or even managers. And there are some concerns about the headsets interfering with hair, makeup and whether or not they are hygienic. All these things can take people out of the immersive experience and diminish their attention to your design. At Yulio, we remove the straps from all our headsets to help overcome these frictions. And, if your VR navigation requires a controller, you'll want to make sure it's easy to use and you have clear instructions

prepared. No one wants to feel foolish about not being able to understand your instructions about which button to push. You'll want to ensure your viewers are set up to experience your design in the most positive way possible, and consider workarounds for any potential negative viewing experiences, so that they are not associated with your design.

Understanding these key areas will help you with your first designs. If you'll be making those with Yulio, visit our knowledge base for information on how to create a VRE with each of our plugins.