

Bridging the Knowledge Gap About Sustainable Housing Using Virtual Reality

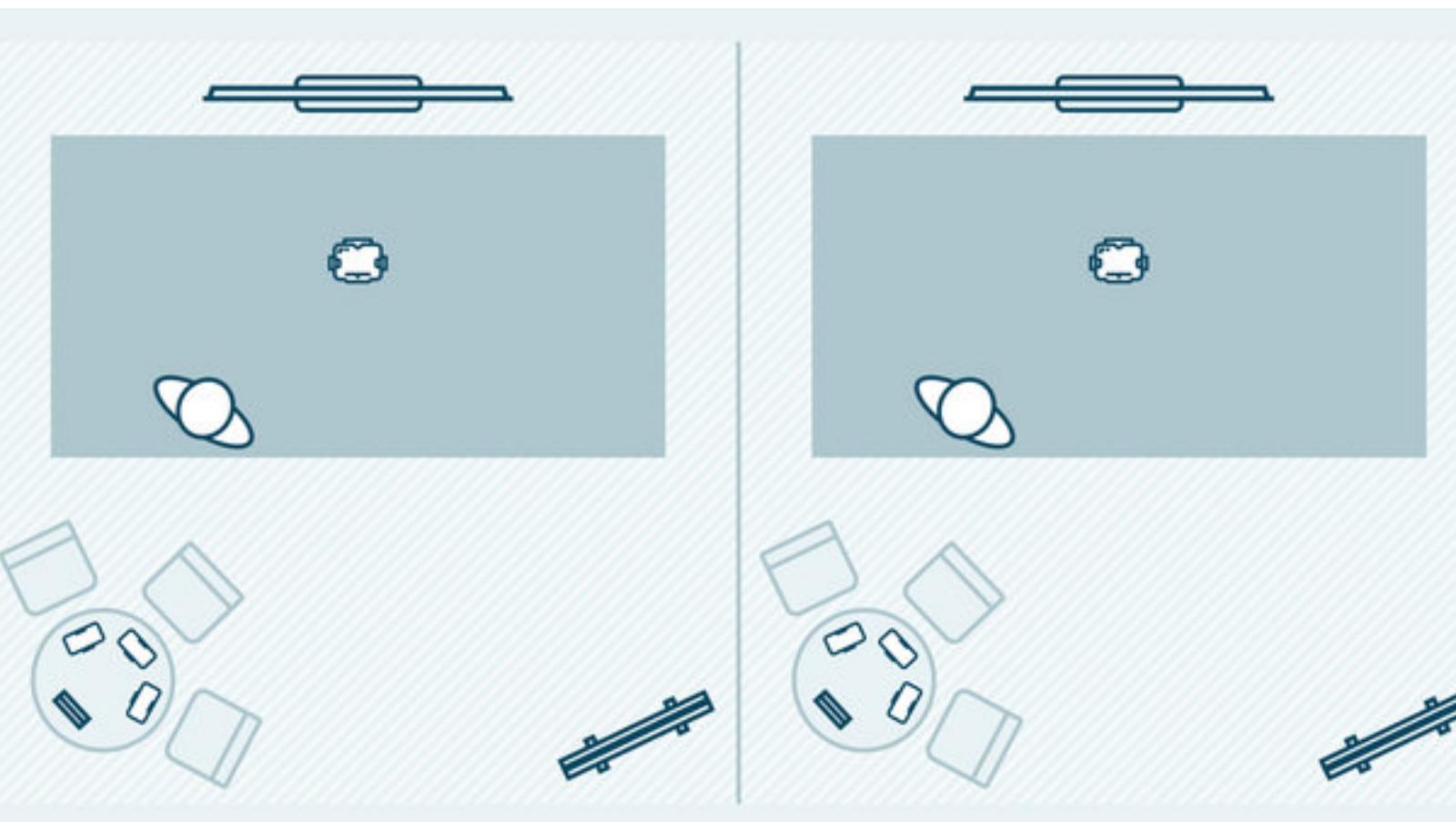
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As a child, I became fascinated at virtually living in a house. Even though it would seem mundane to most, games like The Sims and Minecraft are among the most popular franchises in the gaming industry among audiences of all ages. Additionally, stores with open layouts of living spaces like those found in IKEA generate plenty of interest that captivates young buyers to explore the possibilities while their parents spend money on furniture for their dream place of living.

Why are children in particular so fascinated by this idea of living in imaginary spaces? People (especially children) envision a future that they desire, and thinking about where they're going to live in the near future is one of the many aspects displayed in their thoughts. That being said, many external influences determine how the child understands what the idea of a "nice house" is: they might look at the media, where lavish mansions are heavily associated with good living. Even a child's parents, basing their knowledge on the ideals of prior generations, encourage them to pursue the same suburban, white picket fence single family home with a sprawling, grass-covered backyard that has been a staple of the American Dream.

These perspectives, however, do not encompass the broader idea of what a living space entails, limiting how children perceive what a house "should" look like. On the other side of the coin, homes in virtual or imaginary space can take on a vast assortment of shapes and sizes, giving near limitless creative freedom to design a place of living that can achieve their specific goals, including sustainability, that may not be achievable otherwise if implementing existing housing structures and standards of a typical house.

While respecting every child's freedom of thought and individuality, providing the tools to let kids design the house that they would want to live in can help generate innovative home designs that adults just wouldn't be able to come up with. Giving them specific challenges like limiting the size of the house to build can give us new perspectives on methods of building compact, environmentally-friendly housing that reduces the footprint of constructing homes and potentially solve more far-reaching issues such as homelessness and energy conservation.



Existing spaces like classrooms can create the setting for VR headsets to be demonstrated to children. Open areas will be key to preventing injury and the freedom of movement necessary to build in virtual space.



Using existing software like Autodesk Redshift (pictured here, fictionally) will allow for children to envision their ideas in a virtual realm to help their creativity flourish.

A four step process for implementing these ideas:



Create accessible spaces for children, regardless of their background, that allow for usage of extended reality devices



Using newly developed software or piggyback off of existing tools, kids develop virtual housing in a sandbox-like area



After verifying their house design, kids are given physical materials and tools to model their ideas in a small-scale mockup



Architects and house designers take influence in the innovations from mockups and revise them into blueprints for a full-scale house



Because the kids had the ability to plan everything out in a 3D space, they are more spatially aware as to where everything should go and can more easily create a model.



Given challenges for building like reduced housing size and limited resources, kids will give adult architects new ideas to develop sustainable housing that can take from both new and existing perspectives.