Virtually *Handcrafted*

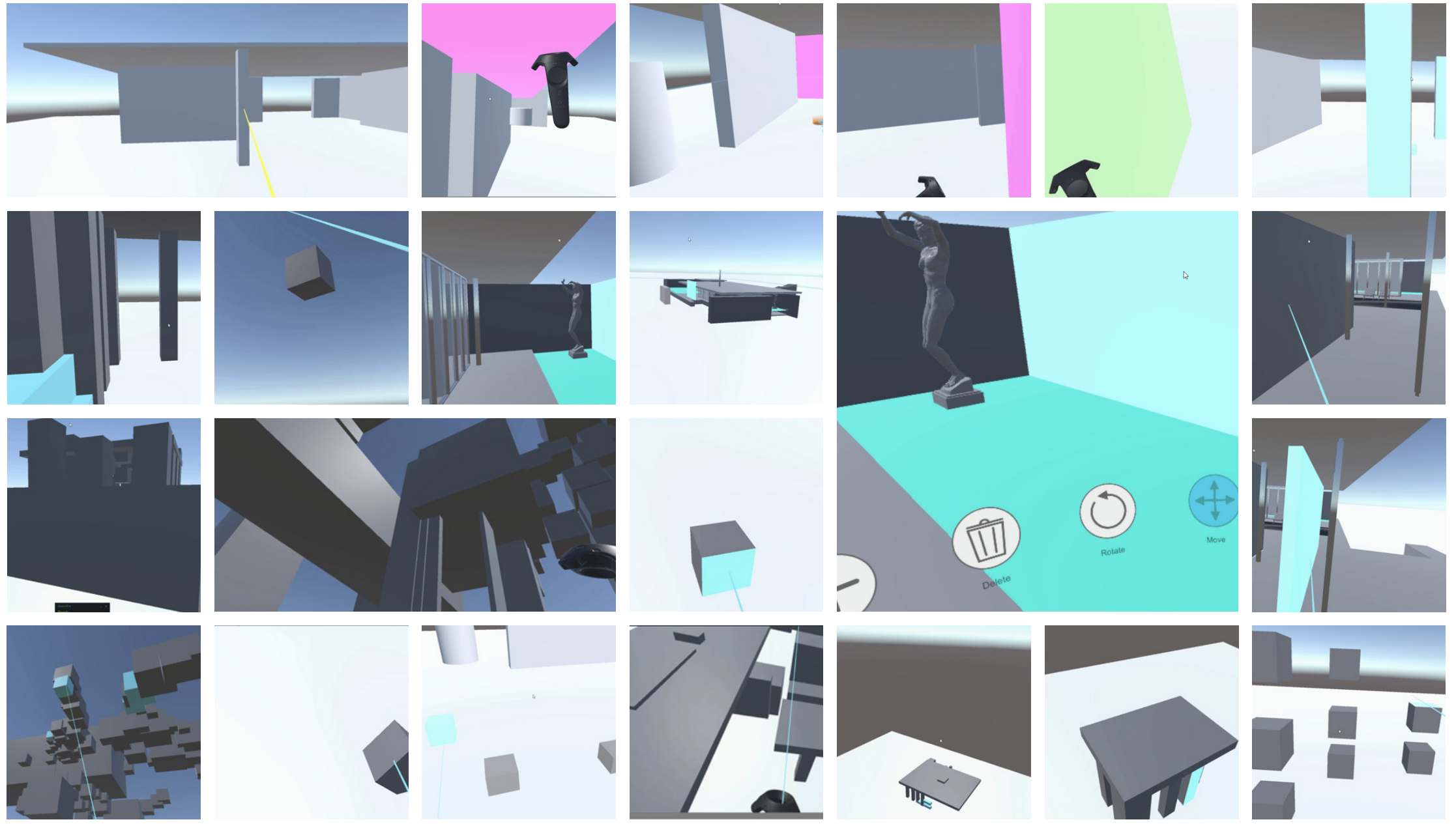## *An Investigation of Immersive Architectural Design Processes*
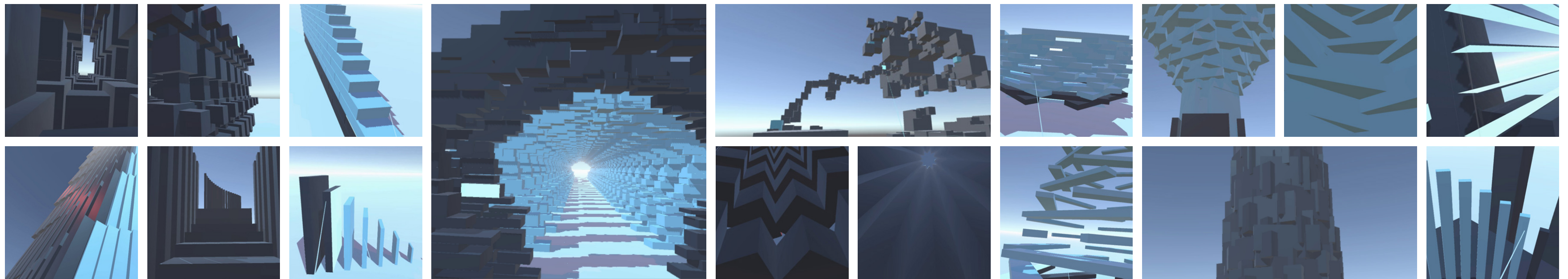
Daniel Innes - ARCI 593 MArch (Prof)

abstract

Architects use media such as drawings and models to test and better understand their designs. These media are frequently scaled for convenience and reduced to two dimensions for clarity; however, in relying on these methods, the direct and visceral experience of inhabiting space is neglected. Phenomenologists such as Juhani Pallasmaa point out that this problem is exacerbated by the picture plane. The flat page or screen acts as an impenetrable window, excluding the viewer from a truly embodied appreciation of the designed spatial qualities.

This research investigates the use of virtual reality (VR) as a tool for conceiving architecture without alienating the designer from the user's perspective. It is suggested that the holistic and subjective approach of immersive media is a necessary complement to the more abstracted and objective views of architectural tradition: plan, section, and elevation. The recent availability of consumer-grade VR allows the testing of this opportunity without many of the technological limitations of research done in the 1990's. This research aims to describe tendencies of VR design and thus guide the incorporation of immersive technologies into contemporary practice.
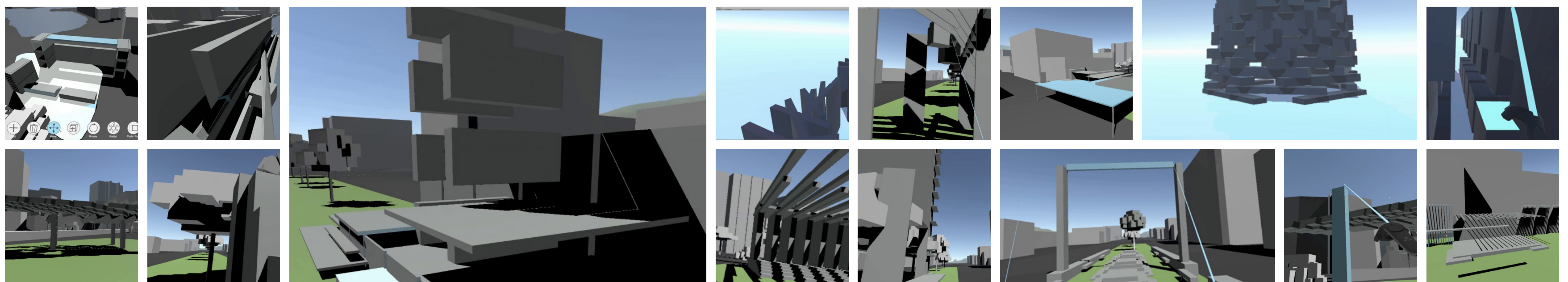
To study the impact of VR, a real-time engine is used to develop an interactive program which allows the modelling of conceptual designs while immersed within them. Its efficacy is studied with three groups (architecture students, architects, and members of the public) from which quantitative and qualitative data is collected. By identifying the unique benefits of such tools, it is proposed how each group could make good use of the technology and extend the abilities of their existing workflows.
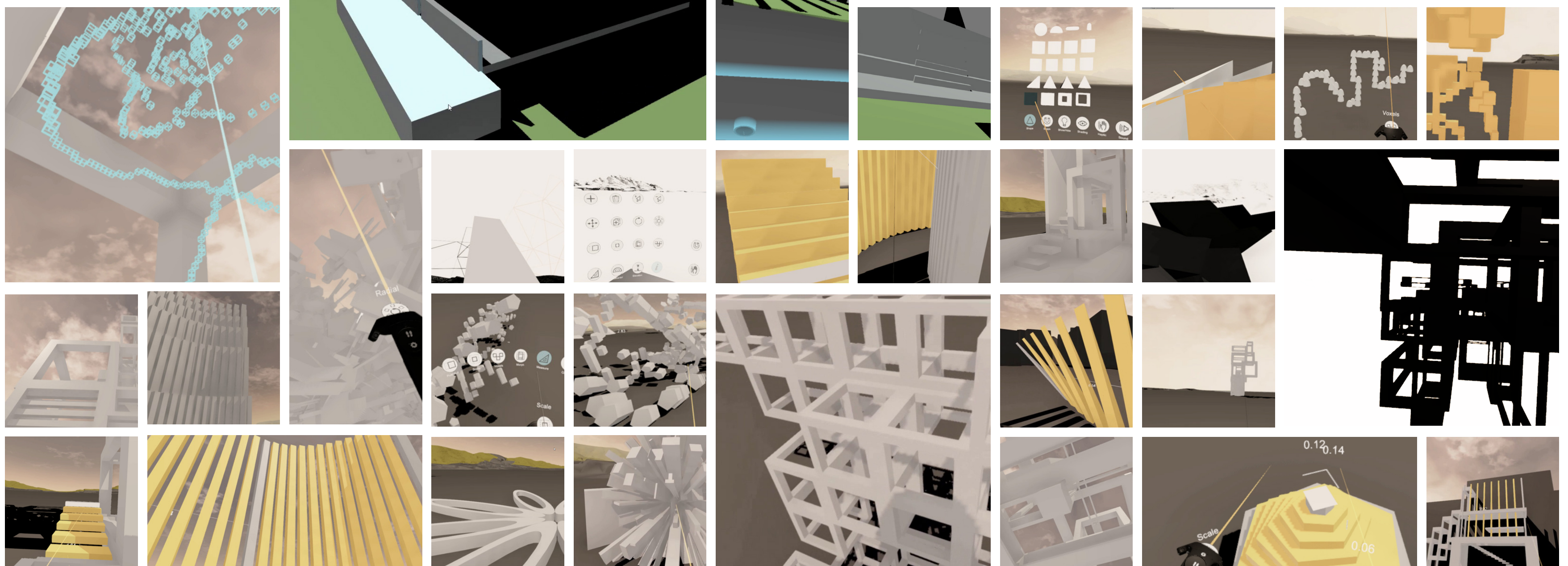
concept

test 01

development

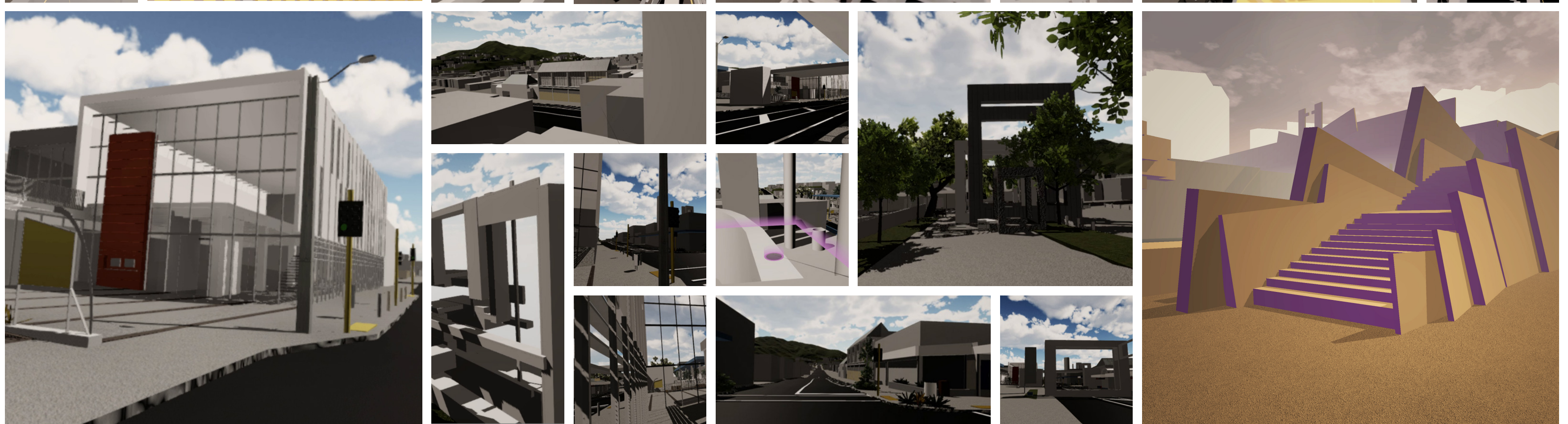## test 02

Watch the demo of 'Sketchspace' at: www.bit.ly/2EWt9FG