VRBANISM

Assessing Virtual Reality as an Urban Design Method

July 6, 2017
Ruben Hanssen - 4253930
VRBANISM

MSc. Architecture, Urbanism and the Built Environment

Design of the Urban Fabric

Supervisors:
Dr. Ir. S.C. van der Spek
Ir. P. de Ruiter
Ing. P. de Jong

TU Delft
Ruben Hanssen
4253930
Introduction video
| Urbanisation | Population growth | Climate change |
Vision: 1925

Transbay Transit Center: 2017
Hand sketches

Illustration software

CAD software
Section, elevation, plan

... still used today
We ervaren steden in 3D (animatie ?)
3d modelling programs
2d screen (video)
“An artificial environment which is experienced through sensory stimuli (such as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment” (Merriam Webster dictionary, s.d.)
VR today vs. 10 years ago (images)
WHY VR?

For urbanists?
immerse

Example video / picture
Interact

Example video / picture
Employ software possibilities

Example video / picture
Many questions: new technology!
PROBLEM STATEMENT

Gap of knowledge about the benefits, disadvantages and potential of using Virtual Reality as an urban design tool
Research Question

“How could VR be applied in an urban design process in regard to visual and spatial aspects of urban design?”
1st Urban Design Project Using State of the Art VR
Luchtfoto Sloterdijk I
Pictures of area: industrial
Video of
requirements design
HOW?
3 phases

Virtual Environment From location

create Design system

Design
image
PHASE 2
image
PHASE 3
image
Design variants
3 video’s
RESULTS
Virtual environment aspects

3 video’s
Advantages connected to experience from various perspective

2 video’s
Modular system benefits & disadvantages

video
APPLICATION IN URBANISM
Example 1
Example 2
Example 3
Approach was limited
RESULTS

essential to urbanism?
CONCLUSION

gain additional spatial overview and insight at multiple perspectives, such as eye level perspective or bird’s eye view, direct feedback on morphological and appearance based design choices. The enhanced spatial overview and insight of VR is enabled by its immersiveness, but dependent on correct scale, a sufficient level of detail and a sense of context in the virtual environment.
Future research

AR in VR
AR in physical environment
Procedural design
Video data layers in VR
Video AR
Video procedural design
THANK YOU