Hosting Spaces

Encoding and Decoding Spatial Experiences

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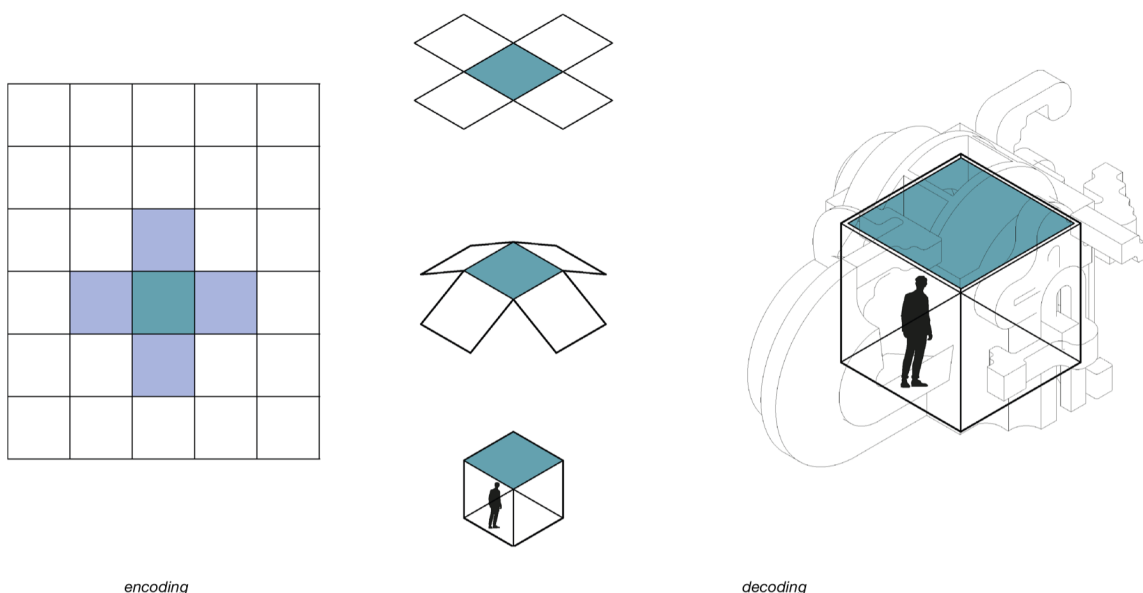
ABSTRACT: We are living in the age of digitalization and augmentation. Equipped with computers in our pockets, digital information is influencing our behaviour and enhancing our capabilities in previously unimaginable ways. With the arrival of spatial computing which enables digital interfaces to inhabit our physical environments, there is now an opportunity to rethink the framework for how design and architecture interact with tomorrow's digital realities. The thesis focuses on the use of Mixed Reality as both design driver and design tool for socially and culturally meaningful hybrid spaces. The objective of the dissertation is to explore how architecture, as an integral part of our physical environment, can contribute to our digital future as a "hosting space", and create holistic experiences, where the physical space's qualities grow together with the digital enhancements.

The contribution "Phygital Space. An Interface-Enabled Augmentation" explores the connection between the physical relief and the digital 3D content, allowing for various spatial experiences. Developed as a case study of the dissertation, the installation, which is also a collaborative project, investigates possible relationships between physical and digital, human and machine, in a time of ever-increasing cohabitation between the latter. As the physics of perception and sensing differs between humans and machines, the physical space becomes a negotiated middle ground - it is both hosting and being hosted. In our project, the two sides constantly inform one another in a shared choreography.

Throughout the installation, users become participants in space-making. By collaborating with the robot arm through an augmented layer, the users enable a feedback-loop between the robotically-assembled relief and the corresponding 3-dimensional, digital layer.
Every position on the relief wall can turn into a unique, unfolded, augmented space. Every virtual wall interaction results in a displacement and update of the physical wall, which in turn enacts change in the augmented experience - it is a virtual, to physical, to virtual "perpetuum mobile".

The installation mediates space and vision between human and machine, and speculates on the role that spatial computing can play in architecture and feature design. It seeks to explore encoding and decoding using the physical relief wall as a medium to encode and transfer data. It is an investigation into how our environments can become embedded with augmented information and experiences and what domains of use-value and social value such environments can bring.

encoding

decoding