CG Mixed Reality Architectural Workspace

Solar Simulation, Sampling and virtual 3D-Walk-Through
For Single Familiy Detached Houses
using Unity in a Kommerz MRI Framework

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Outline and Content

CG Mixed Reality Architectural Workspace

**Collaborative Virtual Environments (CVE´s),
Integrative Workflow and Perspectives**

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01   Virtual Environments

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Virtual Environments | Time, Space and Organization

Requirements of CVE´s according to MAHER:

- Managing collaborative design processes
- What you see is what I see (WYSIWIS)
- Chance meetings
- Peripheral awareness
- Non-verbal communications
- Designing for two worlds (digital and physical)

MAHER, Mary Lou (2011):
Designers and Collaborative
Virtual Environments,
in: WANG, X. and TSAI, J.J.-H.(2011):
Collaborative Design in Virtual
Environments, Springer Science +
Business Media B.V., S. 3 – 15.

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01 Virtual Environments

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Virtual Environments | Time, Space and Organization

Basic Schemes of CVE´s:

- Single User Workspace
- Synchronous and local Group Workspace
- Asynchronous and non-local Group Workspace

Derived Versions up to a Multi User and Multi Data Base
CVE Network using multiple Interface Integration

DAVE, Bharat (2011):
Spaces of Design Collaboration,
in: WANG, X. and TSAI, J.J.-H.(2011):
Collaborative Design in Virtual
Environments, Springer Science +
Business Media B.V.,
S. 143 – 151.

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01   Virtual Environments

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Virtual Environments | Time, Space and Organization
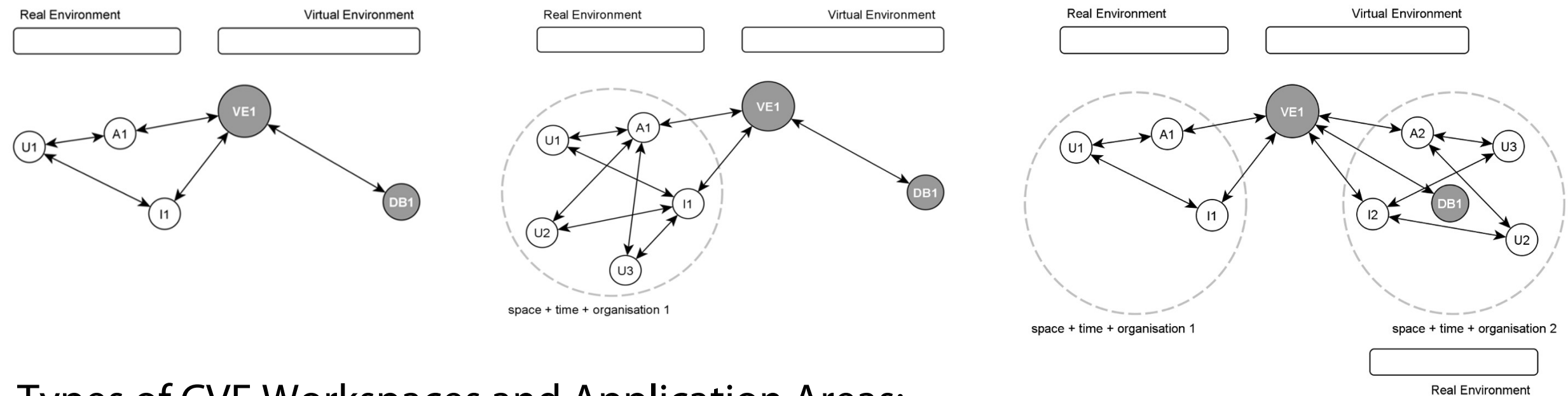
Types of CVE Workspaces and Application Areas:

- Indoor / Outdoor Visualization
- Architectural Design and Construction
- Energetic Optimization
- Design Collaboration and Shared Display
- Applications for Trainings

02   CG Mixed Reality Architectural Workspace

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Project Development | Task

Customer Interview Tool for "Haslerhaus"
Company from Upper Styria / Austria
Highly customizable wooden prefab houses

Benefit of the use of innovative
and immersive technology?

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Project Development | Motivation

Limitations of the traditional design process:

- Iterative, slow and non customer oriented
- Involves Several Steps by Different Professionals
- Specialized Computer Knowledge

Critical issues to overcome:

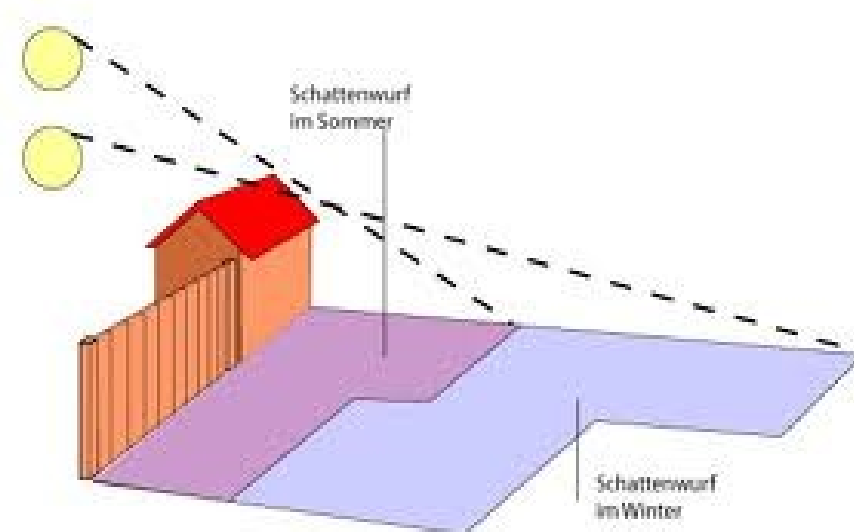- Intuitive Interaction Setup
- Optimized Software Pipeline

02 CG Mixed Reality Architectural Workspace

CG Mixed Reality Architectural Workspace

Project Development | System Description

- 3D-Walk-Through
- Virtual Sampling
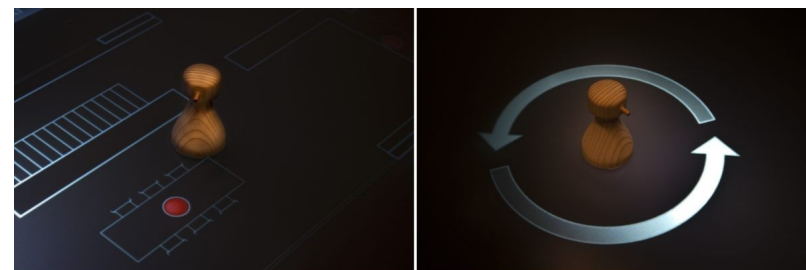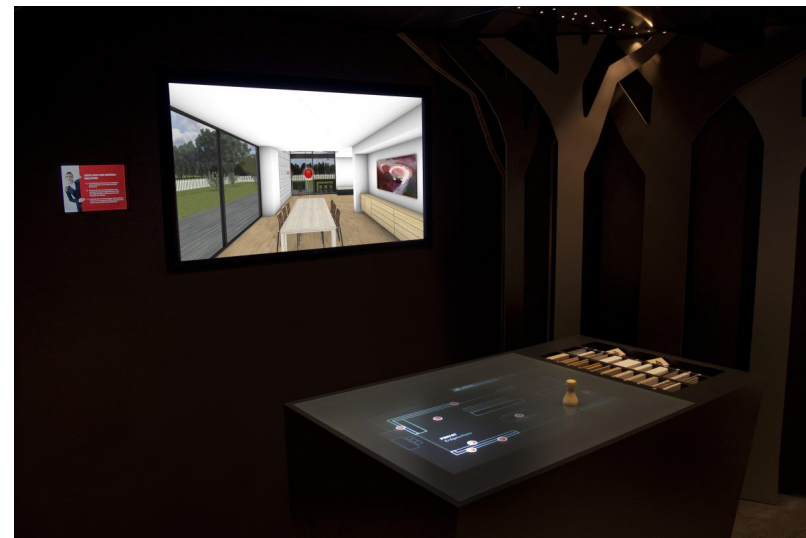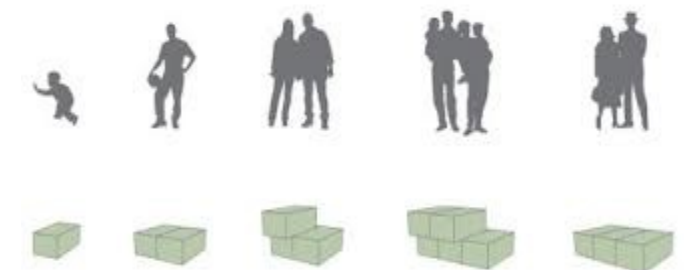- Solar Simulation
- Hot Spots and Details

03 Conclusion and Perspectives

CG Mixed Reality Architectural Workspace

Virtual Construction Kit and Further Integration

- Further Integration of Interfaces and Data Bases
  (Touch Table Device, e.g. MRI Projection, Desk or IPad)

- Virtual Construction Kit | Interactive Preliminary Drafting

- Integration of Environmental Conditions

- Workflow Integration respecting Standard Software
  and Design Processes

- Up to a new Design Process: Interactive and Playful

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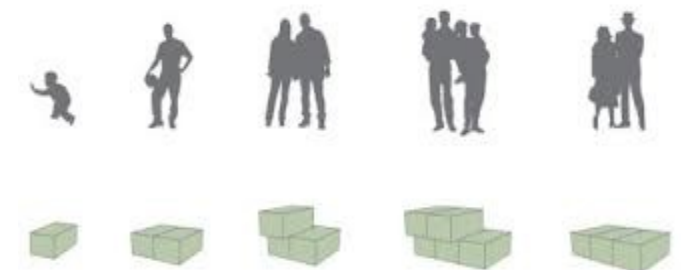
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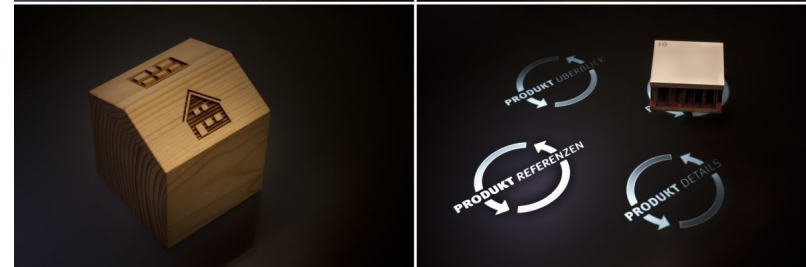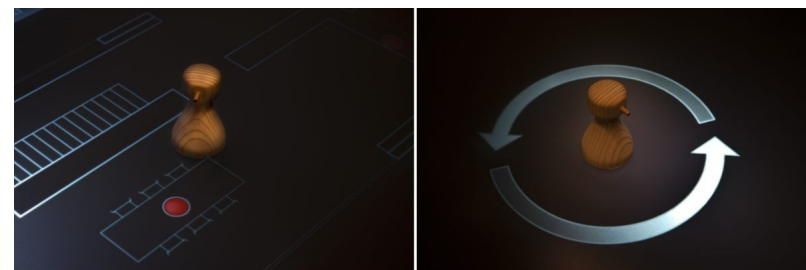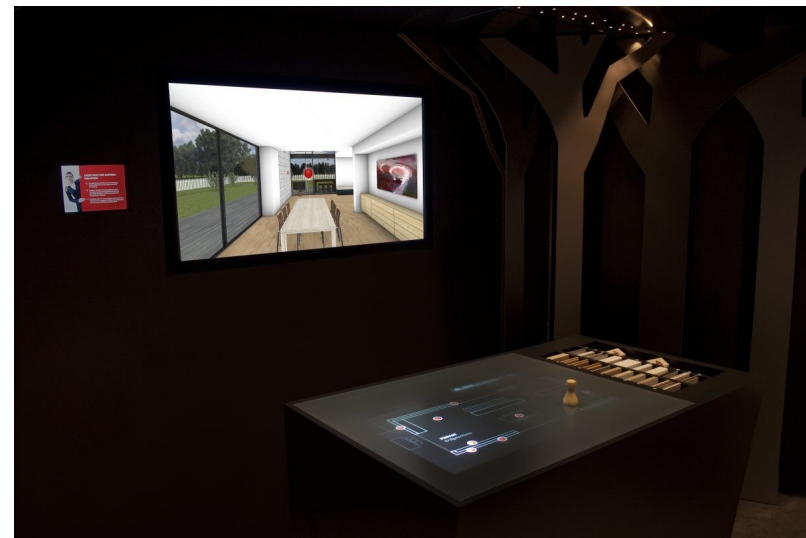
Thank you for your attention!

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