

# IN:SHOP

## Using Telepresence and Immersive VR for a New Shopping Experience

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Within blue-c we develop new architecturally biased applications that employ the technology. We focus on new information technologies, which are used in combination with common presentation media. We investigate ways to employ these approaches in designing new technologically enhanced environments.

IN:SHOP is the first example application to investigate and analyze the possibilities to integrate the blue-c technology in built architecture. Today, multimedia elements such as large projection walls and information terminals form an integral aspect of the architecture of modern shops. IN:SHOP takes this trend one step further by integrating the latest information and communication technology, including spatially immersive displays and telepresence. As opposed to current one-way communication media, interaction and remote collaboration form an integral part of the concept.

We designed IN:SHOP with a focus on the user experience and the architectural design of a virtual space and the possible integration into real shopping locations. With IN:SHOP, we demonstrate a shop-in-the-shop concept with geographically disparate customers and sales clerks who interact with 3D representations of real objects in real-time. IN:SHOP is designed to bring distant physical shops together in a virtual space, providing a strong sense of corporate identity that goes beyond unified appearance and architecture. We implemented the concept for an haute couture fashion shop and a car seller.

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**blue-c**

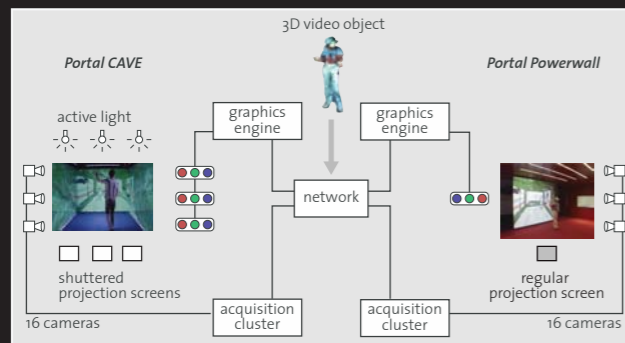
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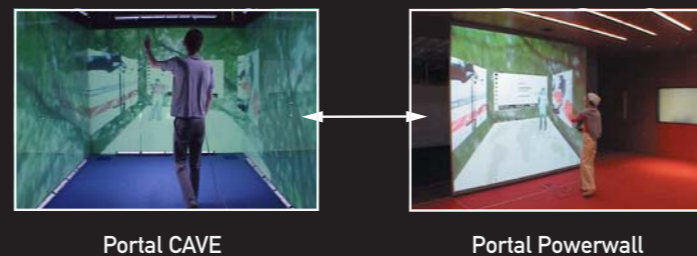
<http://blue-c.ethz.ch>

### System Overview



The core hardware components being involved to accomplish simultaneous immersive projection and acquisition are displayed at the left hand side. This includes 16 cameras, three shuttered projection screens, an active lighting system, and an actively shuttered projection system with 6 projectors. The portal on the right hand side consists of 16 cameras, a regular projection screen and a stereo projector. The cameras transfer 2D video frames to a PC cluster which computes a 3D video inlay of the user in real-time.

### Bi-directional Communication



The use of a fully 3D remote user representation greatly enhances the sense of presence and allows for a natural interaction between the users. The users can communicate in a natural and intuitive way, comparable to the traditional situation where all participants are physically present. They see and interact with each other at the same time. This combination of these technologies allows for a much better sense of reality within the immersive experience.

### Publications

Gross Markus, Wuermlin Stephan, Naef Martin, Lamboray Edouard, Spagno Christian, Kunz Andreas, Koller-Meier Esther, Svoboda Tomas, Van Gool Luc, Lang Silke, Strehlke Kai, Vande Moere Andrew, Staadt Oliver, "blue-c: A Spatially Immersive Display and 3D Video Portal for Telepresence", in Proc. of ACM SIGGRAPH 2003, San Diego, July 2003.

Lang Silke, Hovestadt Ludger, "An Architectural Framework within a Spatially Immersive Environment for Advanced Communication", in Proc. of DIGITAL DESIGN - 22th International eCAADe Conference, Graz, September 2003.

Lang Silke, Naef Martin, Gross Markus, Hovestadt Ludger, "IN:SHOP - Using Telepresence and Immersive VR for a New Shopping Experience", in Proc. Vision, Modeling, Visualization VMV'03, Munich, November 2003.

Lang Silke, IN:SHOP - Virtuelle Shopping Räume, in archithese, vol 06.2003, Dezember 2003.

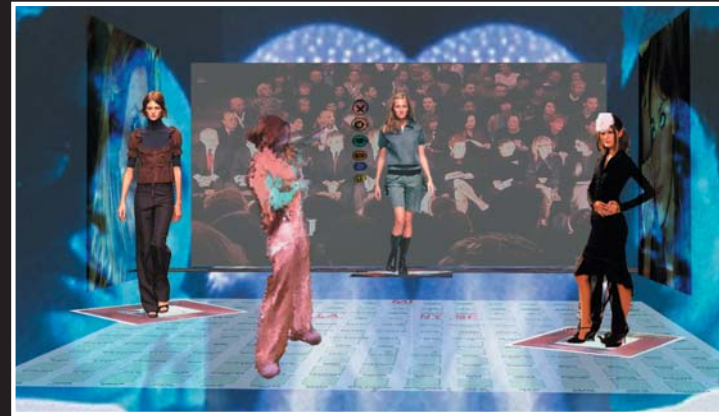
## FashionShop



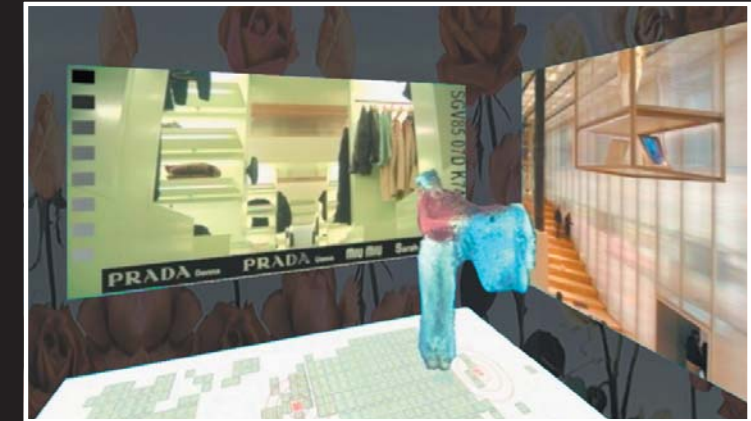
Panoramic picture of the unfolded portal cave showing the three projection screens running FashionShop.



Panoramic picture of the portal powerwall showing the projection screen integrated into the building.

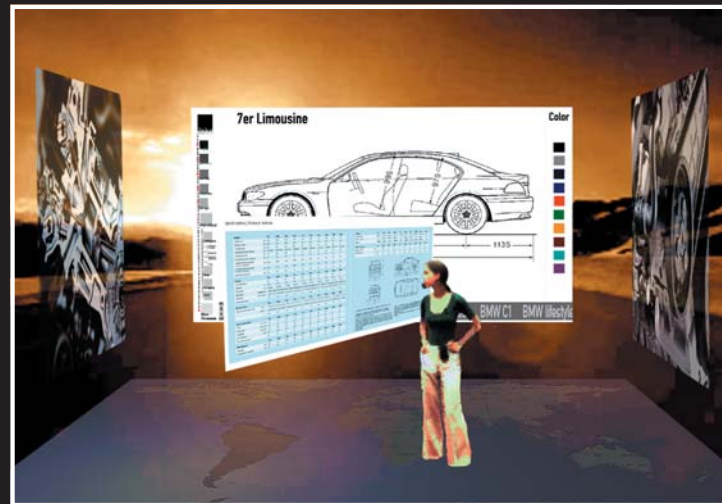


The customer is immersed in her personal fashion show. 3D video recordings of mannequins are used to present selected items. She selects some base models for further customization.



Product presentation using 3D video technology. A prime example where model-based 3D video approaches typically fail.

## CarShop



CarShop allows potential buyers to interactively configure a representation of the car they are purchasing. The customer gets further technical details such as measurements and engine configurations using text sheets.



The 3D representation of the personalized car is presented on a rotating platform. CarShop allows presenting a wide range of models and accouterment variety in small showrooms.

## Future



In a next step we plan to cover larger areas with new 3D reconstruction approaches, enabling us to reconstruct a complete physical shop environment.