

SITE SEEING ZOOM

The concept developed for Site Seeing Zoom reveals the aesthetic as well as the technical concerns that unite the members of Crosscross. The occasion to create at all levels of the realisation has been an opportunity for Crosscross to refine these interests and their investigation. Site Seeing Zoom presents a navigational system, a stage and a technical implementation never used before.

Site Seeing Zoom is the result of a long collaboration between Crosscross and Kirsten Dehlholm, Hotel Pro Forma. The project has also involved collaborators like the poet Morten Søndergaard, author of the text, Lorenzo Pastrana, developer of the 3D software Ultraflat Sphere, and the architects Richard Stampton and Caroline Bordel, designers of the stage.

Hotel Pro Forma:
<http://www.hotelproforma.dk>

[navigation as narration]

Site Seeing Zoom is a performance with access to the world of memory. It uses the digital medium as tool and as artistic idiom.

The principles of navigation, installed very early in the concept, and the text, based on four defined characters, create a dialogue leading to a digital construction of 32 scenes of 'memory-screens' distributed on four levels. The characters are: a boy, a young man, a brain-injured man and an old man. The four levels represent four general topics of human conditions: body, childhood, surroundings and death. They appear as an architectural zoom through four floors in a 'memory palace'.

A path through the digital architecture in the virtual space is recorded and then projected on screens in the physical space. Thus, the navigation becomes the narration of the performance.

[set up]

In a big room two projection screens are erected as a cross 1,45 m above the ground. The projections are visible on both sides of the semi-translucent screens, half of them as mirrored images. The screens are supported by a sculptural wooden structure, which constitutes the stage on which an actor moves in front of the screens.

The actor is the link between the two worlds: the virtual space and the physical space.

The navigation system in the virtual space makes up the exact opposite of the projection system in the physical space. Two cameras in the virtual space correspond to the projectors in the physical space. The fields of vision of the two virtual cameras constrained in their perpendicular crossing, create a mobile cross, a cursor.

[virtual space]

The virtual architecture is composed of different elements: still images, videos and 3D objects, which represent traces of memories of the four characters. 32 scenes create 32 spaces distributed on four levels to construct the digital palace of memory. The cameras (the cursor) move through the fixed traces in order to reveal each character's memory and to link them together. The path becomes the composition of the performance.

[physical space]

The audience moves around the stage and is constantly changing its point of view. Each screen is a portal to the digital palace. The traces from the virtual world are slowly printed on the memory of the spectators as they choose their individual path in the room.

The complexity generated by the crossed semi-translucent screens gives the audience a feeling of being at the gateway of a labyrinth of endless mirrors. The repetition of the virtual world makes the spectator doubt as to which side of the mirror he or she is positioned.

The actor on the stage supports this sense of confusion, when he disappears from the sight of some spectators - and, to others, appears as a shadow in the projected image. He is the guide and the human scale.

[sound environment]

The sound installation is essential to the physical dimension of the projections. The soundtrack illustrates the feeling of the virtual space and the layered memories. To emphasise the movement in space, the diffusion is worked out spatially to trigger separated outputs to twelve loudspeakers.

The sound landscape uses the different levels of architecture, the traces of the memories of the four characters and their voices in a fragmented orchestration. The musical memories are treated as samples and repetitions that reflect the visual expressions. The zoom-concept of the performance is a leitmotif of the composition. The music is composed in layers, textures and harmonies that reflect the mood and state of mind of the characters.

The four characters of the performance are heard as pre-recorded voices. Their voices have been selected with reference to African 'griots' (storytellers), whose function is to pass on the collective memory. The voices reveal the characters' age and personality. Like archetypal memory processes the voice reveals difficulty and ease at the same time. The four voices can also be heard as different facets of memory in perpetual revolution through the various ages of a person's life.

[work process]

The art of memory clarified by the English historian Frances Yates in *The Art of Memory* has been an inspiration for the creative process and result of Site Seeing Zoom.

The foundations of this art was elaborated by the Ancient Greeks in order to be able to remember their speeches. It consists of building mental architectures in which objects or 'striking images' are placed. These elements represent the keystones of the speech. Therefore, as one virtually walks through this 'imaginary palace', the details of the speech are supposed to be revealed.

Following the technological progress this individual method of memorising has gradually been integrated as a model for our information systems. Computers linked together in networks are increasingly supporting a collective memory. Today the Internet symbolises a collective memory in a constant change. The digital architecture of Site Seeing Zoom is a reflection of how the individual memory is absorbed by the collective memory.

The principle of navigation as narration was established right from the beginning. The scenographic concept generated by the navigation principle contained the entries for four characters. These four characters were defined to represent various memory processes. Four human conditions were conceived as different levels of zoom in human life. By superposing the selected conditions and the chosen characters it was possible to compare and link the stories of the four characters.

Inspired by the poems written for each character a database of images was created. A selection of keywords - some picked straight from the poems (e.g. swan, tree, table, milk), others referring to memory processes of the computer (e.g. compression, detection, video 360 degrees) - resulted in a search of images on the Internet. The images served as components or inspiration for each scene.

A mathematical pattern was developed to create 32 scenes and a rhythm with equal importance in time to each character. In order to be integrated in the scenes the poems were decomposed and reduced.

Four voices, each representing a character, were recorded to create the raw material for the soundtrack. The voices were used as leading vocals and voice overs in the composition process.

The course of the 32 scenes was considered as a path. Combined with the disposition of the scenes on the four levels it determined the complete architecture.

The digital architecture was worked out in the 3D interface system, Sphere, which was adapted to the definite needs of the project. Working in real time it imposed itself as the most flexible working tool. However, it has also generated interesting perspectives.

Thanks to real time technology the digital architecture is now ready to be explored individually and even without a predetermined path. Hence, the concept of the navigation has great potential of being adapted to other supports of diffusion, in particular for the Internet. The possibility of diffusing the performance in other ways fits the theme of the memory: a tissue of links interconnected by various stimuli in constant transformation.

[Ultraflat Sphere]

The idea of the 3D interface system Sphere has existed since 1998. It is developed by Lorenzo Pastrana.

The 3D interface system Sphere is unique with its semantic and abstract approach to 3D. «Most 3D engines only compare how realistic the rendering is. But it is more interesting to have real virtuality than virtual reality», says Lorenzo Pastrana.

The Sphere system uses OpenGL to achieve optimal portability. It is especially adapted to help content to be quickly manipulated during production, editing and navigation. Sphere is based upon an XML subset called IdML and a standard browser, which provide a simple and intuitive way to assemble geometric primitives, text, and event-driven interaction, into meaningful real time 3D interactive documents.

The documents contain mechanisms such as:

- the inclusion of external documents (increased factorisation),
- the duplication of objects by reference (resource saving),
- links between documents (navigation),
- the possibility of creating multiple spaces of rendering in the same document (functional effectiveness)

The Sphere system also provides a complete object-oriented SDK to build custom 3D applications or extend the IdML objects set.

The customised 3D sequencer used to produce the imagery of Site Seeing Zoom was developed with the Sphere SDK. Special care was taken in order to make the sequencer handle the building steps of the performance in the most intuitive way.

In order to market the technology Lorenzo Pastrana has created the company Ultraflat. A free browser will soon be available.

For further information:
<http://www.ultraflat.net>

OpenGL

A 3-D graphics language developed by Silicon Graphics. There are two main implementations: Microsoft OpenGL, developed by Microsoft Cosmo, and OpenGL, developed by Silicon Graphics.

Microsoft OpenGL is built into Windows NT and is designed to improve performance on hardware that supports the OpenGL standard. Cosmo OpenGL, on the other hand, is a software-only implementation specifically designed for machines that do not have a graphics accelerator.

Another standard that is popular for rendering 3-D images is Direct3D.

Lorenzo Pastrana:

Since OpenGL is the only multiplatform standard for 3D graphics it is the most appropriate choice of technology for me.

HTML

Short for HyperText Markup Language, the authoring language used to create documents on the World Wide Web. HTML is similar to SGML, although it is not a strict subset.

HTML defines the structure and layout of a Web document by using a variety of tags and attributes. The correct structure for an HTML document starts with <HTML><HEAD>(enter here what document is about)</HEAD><BODY> and ends with </BODY></HTML>. All the information you'd like to include in your Web page fits in between the <BODY> and </BODY> tags.

There are hundreds of other tags used to format and layout the information in a Web page. For instance, <P> is used to make paragraphs and <I> ... </I> is used to italicize fonts. Tags are also used to specify hypertext links. These allow Web developers to direct users to other Web pages with only a click of the mouse on either an image or word(s).

Lorenzo Pastrana:

I would like to use the habits of people. HTML is like a permeability factor for me. Everybody involved in web development knows HTML. HTML has already been refined and has proved to work well. It is very simple to handle and easy to learn.

XML

Short for Extensible Markup Language, a specification developed by the W3C. XML is a pared-down version of SGML, designed especially for Web documents. It allows designers to their own customized tags, enabling the definition, transmission, validation, and interpretation of data between applications and between organisations.

Whether XML eventually supplants HTML as the standard Web formatting specification depends a lot on whether it is supported by future Web browsers. Microsoft Internet Explorer version 5 handles XML, but renders it as CSS, and Mozilla (Netscape) is still in experimenting with XML support.

Lorenzo Pastrana:

IdML uses the simple mechanism of tags similar to the ones in XML.

IdML

Language copyrighted by Lorenzo Pastrana. The name has a semantic origin:

Id

Idea

I Dimension (self centered)

Eye Dimension (phonetic)

Markup Language

Primitives

A low-level object or operation from which higher-level, more complex objects and operations can be constructed. In graphics, primitives are basic elements, such as lines, curves, and polygons, which you can combine to create more complex graphical images. In programming, primitives are the basic operations supported by the programming language. A programmer combines these primitives to create more complex operations, which are packaged as functions, procedures, and methods.

SDK

Software Development Kit

Webopedia: Online Computer Dictionary for Internet Terms and Technical Support
<http://pcwebopaedia.com>

[credits]

concept: HOTEL PRO FORMA & CROSSCROSS

direction: Kirsten Dehlholm

text: Morten Søndergaard

sound: tal

image: Dorothee Marot, Eva Lange, Guil Hadad, Kirsten Dehlholm

3D software: Ultraflat Sphere by Lorenzo Pastrana

stage architecture: rts+ccb

light design: Jesper Kongshaug

performer: Morten Nielsen

Kirsten Dehlholm:

Artistic Director of Hotel Pro Forma, Copenhagen.

Crosscross:

Dorothee Marot, Eva Lange, Guil Hadad and Tal Hadad
working with digital media, Paris.

Morten Søndergaard:

Danish poet, Italy.

Ultraflat:

Lorenzo Pastrana, software developer, Paris.

rts+ccb:

Richard Stampton and Caroline Bordel, architects, Paris.

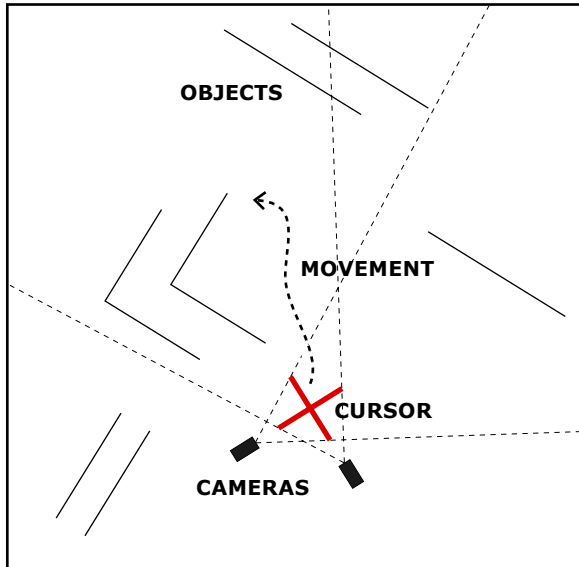
special thanks:

to Laurent Simonini, former member of CROSSCROSS, for his participation
in the development of the concept.

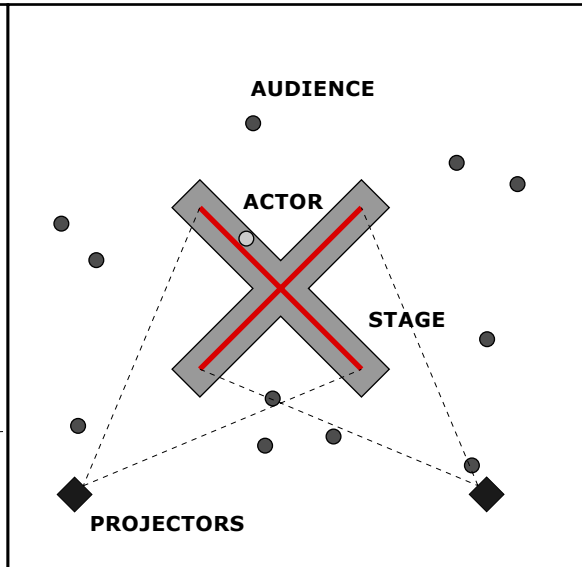
The performance is supported by the Danish Ministry of Culture Development Fund,
The Danish Theatre Council a.o.

Navigation as narration

VIRTUAL SPACE



PHYSICAL SPACE



OBJECTS

Still images, videos or 3D objects are placed to construct an architecture, which represent the memory of four fictive characters.

AUDIENCE

The audience moves around the stage, chooses its own point of view and a new memory.

CURSOR

The cursor is a cross, which moves with two constrained cameras.

STAGE

The physical stage is a fixed cross, which represents the virtual cross.

CAMERAS

The constrained cameras record in real time the path of the cursor.

PROJECTORS

The projectors reveal the path on the semi-transparent screens.

MOVEMENT

The movement of the cursor creates the stories of the performance.

ACTOR

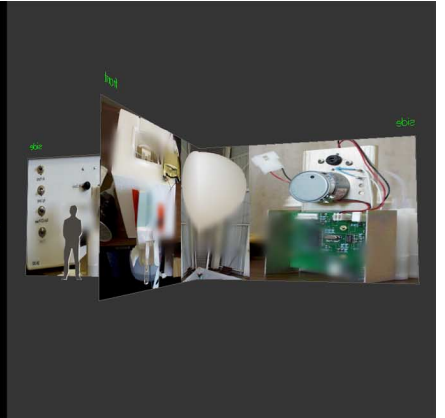
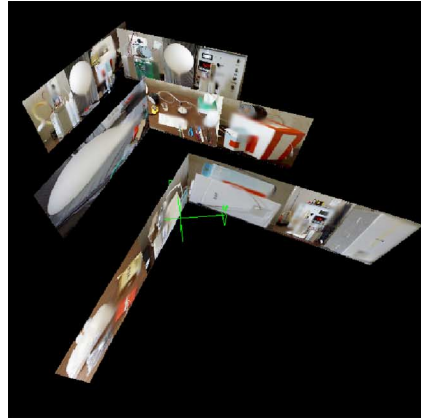
The actor reflects the movements and guides the public through the stories.

Two parallel worlds

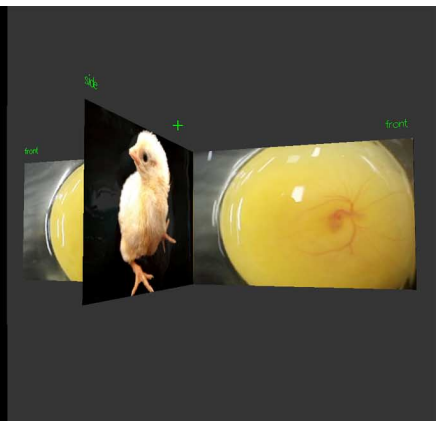
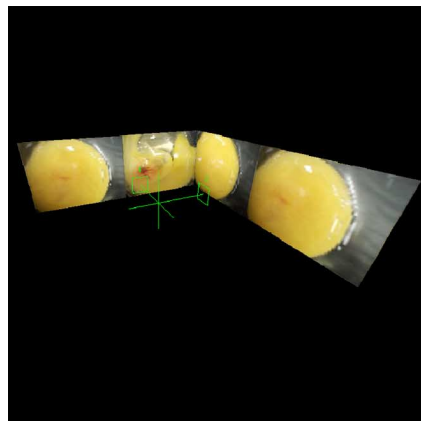
VIRTUAL SPACE

PHYSICAL SPACE

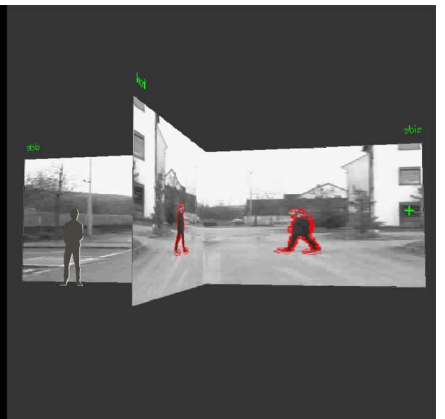
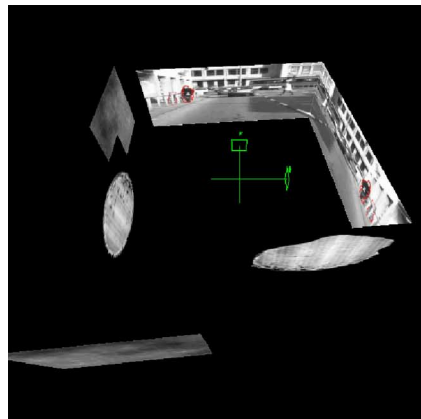
Scene 4, old man



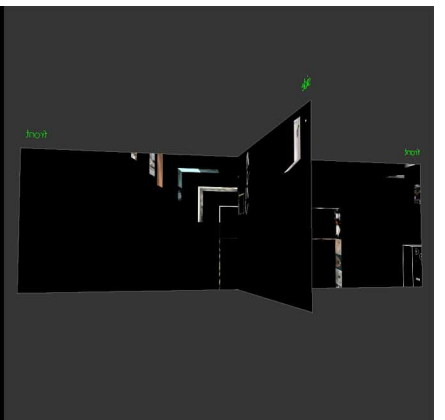
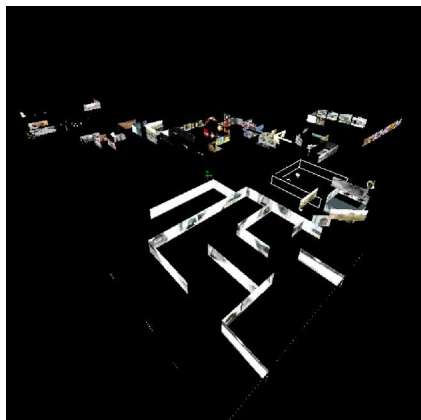
Scene 6, boy



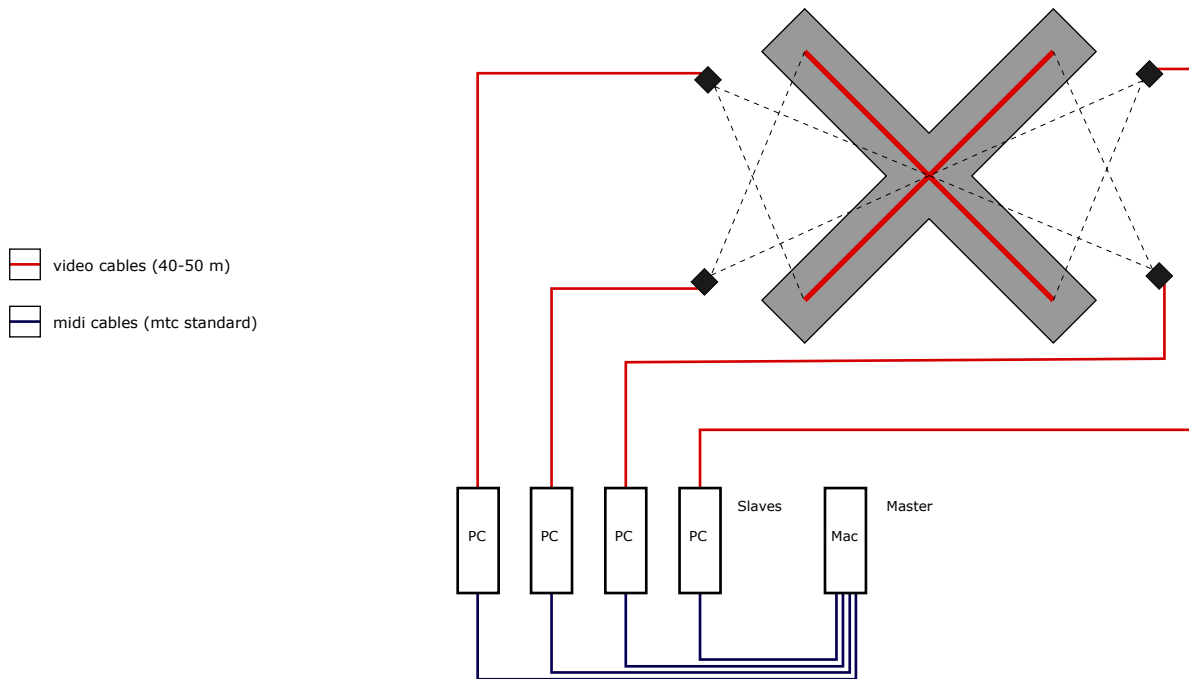
Scene 14, brain-injured man



Scene 26, young man



Real time solution



The Mac computer is the master sending midi (mtc) to four PCs, each one running the Site Seeing Zoom software and sending a video signal of 1280x1024 pixels to each projector.

In case one of the PCs crashes, the projector piloted by this PC displays the last image (before the crash) as a still. When the software and/or the PC restarts, it automatically displays the image at the right time following the timecode.

Hardware specifications:

4 x P III 800mhz, midi wired
3D graphic card
Windows 2000 Pro

4 x projectors, minimum 5000 ansi lumens + lenses