

**BONN CONFERENCE: KUNST UND AUSTELLUNGSHALLE  
TELEMATIC ARCHITECTURE (SYNOPSIS)  
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**IAN RITCHIE**

## "THE MUSEUM OF CONTEMPORARY ART BETWEEN EAST & WEST" TELEMATIC ARCHITECTURE

I feel best able to describe what I mean by the title through five different projects we have created, each quite different and expressing different aspects of Telematic Architecture. The first example looks at the Boves Pharmacy, a project built in France in 1989, whose design, approvals and construction control was realised through the sole use of telecommunications.

The second example describes our Poi esis Generator Ring combining architectural hardware and communications software as our submission to the Monument to Communications competition which took place in France in 1988.

The third example, the Light Memory Tunnel explores the nature of photoluminescence as the only ingredient of the internal architectural space.

The fourth example, the Ecology Gallery Quadrscope is a more literal example of "screen environment", where we exploit the ubiquitous television monitor to convey information but also to transform its spatial presence. The last example is The Greenwich Meridian Spheriscope, an idea we developed in 1985, which explores the use of projected and telecommunicated visual information about the universe and from space. It aims to create a "total" illusion of space internally; and externally at night, to create an illuminated information surface as its architecture.

### **The Boves Pharmacy**

In this instance the telephone and the telefax were the only systems to be employed between us, as the authors of the project's design based in London, the client based in northern France and the principle fabricator, Viry, based in Alsace, France.

There is an historical precedent which comes to mind. In 1922, Maholy Nagy, made three telephone paintings. He dictated his paintings to a sign factory, over the telephone, using a colour chart and an ordered graph paper to locate the elements of the painting and their hue. However, whilst it is clear that we both sought delight in using an unconventional means to realise our art, there the similarities of the situation diverge.

Our client for this small pharmacy first had to accept that he would not see us again until he was actually open for business. Bearing in mind that he was making, probably for the only time in his life, such a significant investment (£ 100,000), and that his future career and livelihood hung on its successful outcome, the attitude of his architect, me, could be considered extreme.

I had several reasons for approaching the project in this way:

- here was an opportunity to find out what could go wrong when there is no eyeball to eyeball contact, first with the client, and then similarly with the contractors who would be fabricating and erecting the building.
- the selected main contractor was a specialist steel fabrication company who had already realised some of our work at La Villette and elsewhere. I felt therefore, that I would be able to identify the differences of working with him only using telecommunications.
- the fee available could not justify more than a couple of trips to France, particularly down to Alsace where the main contractor was based.
- the project was small, which meant that the risks to us were not great, although for the client they were clearly much greater.

The communications worked well with the main contractor, with a continuous exchange of faxes. Sometimes these became quite dense with the overlapping of comments on the same document. With this contractor, I learnt that the lack of direct physical contact enabled him to amend, late on in the process, the odd detail without informing us, but more importantly it was very difficult to put pressure on him to produce the documents for our approval on time. This meant that, as time ran out, he took some decisions during fabrication without telling us. This demonstrated my underlying feeling that the fax does not so much improve communications as allow people to delay their communications until the last minute. Apart from this, and the absence of factory visits during fabrication, the process was not very different from normal. In contrast, faxes to site were sent via the only locally available fax in the village- summer 1989) to the other French contractors, who were small local firms concerned with decorating and small services installations. For these contractors the fax was treated exactly like a letter - formal and contractual, and not a substitute for round table discussions and information exchange. This meant that the advantages of fast telecommunications were very often wasted. For the client, the absence of the architect was psychologically more unnerving. We could never really reassure him, from London, that the project was progressing satisfactorily. It was only when the 2 long transporters arrived in the village with the structure and building envelope, just 6 weeks before he was required by French law to be trading, that he felt any sense of certainty. In this sense, telecommunications failed to replace the "holding the hand" aspect of the architect's rôle, which is particularly required when it is the client's first experience with building.

In the end, the site construction took only 26 days, and the client opened his pharmacy with quite a few days to spare. I then went to see him, inspected the building, bought a bottle of aspirins, pocketed the receipt and left, leaving a reasonably contented client still somewhat bemused by the whole process.

### **The Poïesis Generator Ring**

This project was selected as one of seven finalists, and subsequently was the runner up, in an open competition conceived by Philippe Quéau, Director of the Institut de l'Audiovisuel, Paris, to design a communications monument which France wished to give to the people of Japan. It would celebrate both the 200th anniversary of the French Revolution (1789) and the 100th anniversary of the gift of the Statue of Liberty to the American people. It was organised under the patronage of President Mitterrand.

Originally, the chosen site was based in the Bay of Osaka sea (cf Statue of Liberty), but during the second stage of the competition it was moved to the top of a hill on nearby Awaji Island, in Hyogo Prefecture.

The France-Japan Ring and the Poïesis Generator create a very unique combination of architectural hardware and communications software. It integrates a real-time interactive communication painting, within an annular vessel, constructed of carbon fibre and titanium wire, floating slightly but completely off the ground. It is 365 metres in diameter, and the constructed ring, including the imaging surface and cabling, would weigh about 220 tonnes, with an additional visitor load of 200 tonnes. It is "levitated" about 20cm off the ground by 45 square metres of supermagnets developed in France by the Centre National de Recherche Scientifique. The Ring 'straddles' three summits on the site and is restrained by very small diameter titanium rods anchored back to the magnet foundations. The woven carbon fibre/titanium wire structural ring enables a very light yet very stiff structure to be constructed, transported and erected on the site without creating too much environmental disturbance to the ground and its surroundings.

Its "active skin" responds in colour to the very original global network game - the "poïesis generator" (copyright Olivier Auber).

By telemetry, in this instance telephone and PC, or Minitel, any world inhabitant with access to this equipment, composes his/her individual coloured sign (hieroglyph), and sends it through the international telephone network to the poietic generator - creating with others interactively an endless virtual painting within the ring. He/she also sees the overall image composition on his/her own screen, being able to zoom in and out, and to move his/her hieroglyphic anywhere within the painting. A subsequent development by Olivier Auber allows any of the edges of adjacent hieroglyphs to open up direct sound transmission between them.

The architecture is monumental in scale, yet through its structure, essentially a fine grain matrix of spirally woven material, reflects the pixel scale and nature of its communications image content.

*Poiesis is the cause which makes, whatever one considers, change from non-being to being'*  
[Plato]

### **Light Memory Tunnel 1992**

We were invited together with 30 internationally renowned architects to take part in a "Light and Architecture" exhibition as part of the Bavarian Garden Festival '92 in Ingolstadt. In one of the wonderful white vaulted rooms of the "Triva Tower by von Klenze, we chose to create an interactive installation rather than exhibit some of our past work.

It consisted of an all glass tunnel, clad externally with black glass (negating light) and internally with a prototype coated glass, which Pilkington Glass asked us to help assess. This coating has the characteristic of "light memory". Visitors could write and draw on the glass using light pens, a flashlight periodically created slowly fading shadows of the visitors, and architectural images were projected onto the coated glass floor. The installation was completed with a sunflower trapped in a circular glass table placed in front of a window, and by an artificially illuminated circular glass table inscribed with future ideas about the use of light. It was the only interactive exhibit and particularly enjoyed by children.

This installation about light could be seen as metaphor of the VDU/TV "screen environment" which pervades most people's everyday life.

### **The Ecology Gallery Quadrscope 1991**

The new gallery's spaces have been created by two low-iron content white glass walls, one straight (fire + energy) the other curved (water) which are transparent, translucent, printed, and lit with coloured light, arranged to form an apparently fragile yet dynamic chasm down the length of the exhibition. Vision slots, philosophical texts and small quadrascopes introduce the context of ecology to the visitor. The design theme of this space is earth, air, fire and water with man at the centre of the fragile environment. (The glass panels are structurally glued to glass ears which are held invisibly by bolts to the supporting frame). This introductory walk leads the visitor to the 'East Room' and a large quadrscope made of four inclined mirrored glass surfaces - a truncated horizontal pyramid, which creates the illusion of a 30m diameter spherical image from a flat array of video monitors at its end. There is much banality in the use of video monitors in exhibition design and the presentation of the water cycle could have used a wide screen single video image instead of the video monitor array. However, it was decided that there was an opportunity to manipulate the image/information content. Perhaps a commentary on the "medium is the message" is being made?

## **The Greenwich Meridian Spheriscope® (1985) 1990's**

Greenwich has established a pre-eminent position as the origin and reference point for global navigation.

To celebrate Greenwich's unique position in space and time, we have designed on behalf of The Society for Meridian Planetarium at Greenwich, an educational charity, a new planetarium on the edge of the river Thames. The Greenwich Meridian runs through the original observatory, and meets the River Thames about 1km to the north. At this point a site is available on the river bank at a bend in the river with spectacular views up and down river. Planning permission was granted in 1992 and we envisage its realisation in time for the Millennium celebrations.

The main visible part of the planetarium will be the spheriscope®: a smooth translucent glass-skinned sphere supported above the river bank and set in a landscaped garden. The sphere houses a circular viewing and exhibition gallery at its equator, reached by a pair of escalators and a lift from the supporting accommodation which has spaces for exhibitions and seminars, reference library, restaurant, bar, members room, offices, workshops and studios.

The structure of the sphere is envisaged as a steel shell on which inner and outer skins will be mounted. From the inside outwards will be:

- 1.a perforated projection surface (of medium reflectance to maximize contrast and reduce inter-reflected scattering of light from projected images)
- 2.an accessible air space providing conditioned air to the spheriscope® audience, and housing multi-channel sound system
- 3.an acoustic absorbing layer
- 4.the thermally insulated structural steel shell
- 5.an air space, and finally
- 6.the external weatherproof glass skin : doubly-curved panels of laminated translucent glass, with a smooth outer surface to reduce the requirement for periodic cleaning.

The computer controlled array of light sources a grid of electroluminescent diodes (red, yellow, green and blue) housed in a small linear square section polymer set behind the glass. They will visualise through the translucent glass skin, animated displays, images, or information - for example, they may trace the course of significant astronomical bodies or a newly launched communications satellite. They may also simulate of the earth's surface, showing, for example, the locations of the world's high energy using areas, war zones or whale movement.

Co-ordinated images will be projected onto upper and lower hemispherical surfaces. These will combine to produce a total illusion of floating in space or moving through space, with the possibility of upper and lower star field and planetary object images moving together to reinforce a three-dimensional effect of movement in any direction.

The audience will sit on a "non-reflective" transparent glass floor with minimal structure supporting it, each person having enough space to see down in all directions. We have yet to decide whether the glass floor will incorporate liquid crystal to switch the floor between opaque and transparent states. 150 reclining seats around the perimeter will be available for those preferring not to sit on the floor. The glass surface and cleanliness will be preserved by issuing "space slippers" to each visitor.

We have examined a range of currently available imaging systems, including:

- traditional optical projectors - starball and image - or planet - projectors with wide angle movie projector such as Imax and Omnimax-
- computer generated systems. These include:
  - hyperbrilliant cathode ray tube star field image-generators, which project through a fish-eye lens
  - interactive flight-simulator types. In these the image can be interacted with and manipulated in "real time" - the operator can fly through virtual 3-D space. The images are projected using multiple TV projectors.
  - large scale laser scan imaging
  - multi-gun video panorama system

All of these systems are undergoing constant development and are currently limited in one or other aspect of their performance. There is, for example, a difficulty in matching brightness levels and image quality, if some of these systems are to be combined.

The growth of virtual reality simulators should be viewed as a parallel and complementary development, rather than one in competition with this larger-scale experience. Individual or small group simulators could be incorporated into the planetarium complex as appropriate, as a further attraction, complementary to the spheriscope®.

For the starfield we plan to use a twinned optical projector system for their superior image quality and brightness, combined with multi-gun video and computer generated or laser disc images projected a by laser scan projection system; but the selection of hard- and soft-ware systems for image creation and projection will be kept under review, both in the run up to actual construction and equipping of the planetarium.

The Meridian Spheriscope® creates, through projected artificial light, a continuous information screen both internally and externally.

These five selected projects show the different ways in which our architecture is increasingly influenced by global telecommunication, and the opportunities this technology offers.

In the first it is clearly in the process, while in the next three commentaries have been made on the nature of the "telescreen" environment, while in the last, global telecommunications is clearly represented in the physical architecture of the end product.

During the initial appraisal of any architectural project we assess the rôle of telemetry. It will always be present to a certain degree during the design and communication stages, (CAD, fax, phone) i.e. through the process. It would be interesting to reflect on the extent to which the media in which architects create and communicate their intuitions, influence the end product. For example, the increasing use of computer graphics and the growing trend to present fly-through renderings as a medium to both create and communicate ideas, have so far produced a predictably uniform type of architectural image. Even with software able to re-render computer generated images à la Picasso or Seurat for example, does not really alter the "sanitised" impression they convey.

Architecture has historically always responded to technical development and there is no doubt that the art, science and technology of architecture will increasingly present formal expression to society's ongoing conviction in a scientific culture. Equally architecture is likely to become more dynamic in the sense that its physical characteristics will more and more visualise time as a dimension in its spatial construct.

Ian Ritchie 12 01 94

POSTSCRIPT  
ARCHITECTURE  
AND THE MUSEUM OF CONTEMPORARY MODERN ART BETWEEN EAST AND WEST

An area which I find particularly interesting is the collaborative art works being conducted through network transmission and in cybernetic space. I feel that the evolution in telematic art is now very tangible, with more and more cross-continent ventures in telecommunication art.

Some of these are geopolitical, such as Line of the Horizon project for the Mediterranean Biennale in 1986, initiated by Mit Mitropoulos and involving a network of 27 artists. Here the art is not traditional but, to quote Mitropoulos, "our goal has been to go beyond the 'cultural phenomenon' interest that current communications technology presents us with - to consider art-science-technology as an interactive relationship." The author of the project imagined a wider context, a proposal for the Mediterranean Electronic Museum (Electronic Interconnection) - "a 'museum' of live archaeology, adult education and contemporary arts." Another geopolitical example is News Room - publicly-accessible sites where telecast information is recorded and ready for review, analysis and attack. New York Dutch based artists take up the right and obligation of assuring open discussion, backed with evidence, of what goes out over the TV as news, in response to television as the key medium for political power today.

We have seen the re-absorption of artwork into galleries by artists who, during the 60's and 70's rejected the gallery (e.g. Walter de Maria, Richard Long.) and exhibitions of video art. I believe that only when there is a body of a particular art form, i.e. when a 'collection' exists, that it is possible to move it into museum galleries. So, my present understanding of a New Museology of Contemporary Art is that concerned with electronic space; whether it is to do with virtual realities or that which is increasingly happening now among artists - telematic art. This art has yet to be 'collected', perhaps because much of this art is, or is in the process.

How do you design new gallery space for 'uncollected' art of a contemporary medium?  
Today's dominant technology utilises invisible waves transmitted through the air and space. The 'end' results are often screen based, or as printouts from them, or archived on disc. The real art happens live as an interactive collaboration between artists on the screen.

So there may be a clear distinction between a Museum of Telematic Art, and a Contemporary Gallery of Telematic Art. The former could be described as a Telematic Art Library, where one can select a disc to watch a particular process, rather than a collection of art objects; while the latter would involve real-time live performance experienced through different communication formats. Of course these two performance characteristics may be combined to create a Museum and Gallery of Collaborative Telematic Art.

"The Global Net", for years the dream of cyberpunks and techno-barons - the idea of a seamless high speed data, voice and image transfer network enveloping the Earth is now beginning to be realised, although as yet no single country can boast of a completed "National Net".

Ian Ritchie 14 01 94

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