





# 12.09.1997

## [Ray] tracing the virtual

The real, the virtual and the construction of conditions. Michael Trudgeon

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“Architecture is not to fulfil the conditions of construction but to achieve the construction of conditions”.<sup>1</sup>

Paul Virilio

In his Disney classic *Notre Dame of Paris* [1831] Victor Hugo takes time out to discourse on the roll of architecture as a cultural text.<sup>2</sup> He observes that up until Gutenberg, architecture was the chief, the universal form of writing. Every popular idea and every religious law had it's monument. The human race inscribed in stone every important idea in order to perpetuate it. If it has moved one generation, they will want to move others. The material and intellectual forces of society converged on architecture. By this means, primarily on the pretext of building churches to God, architecture grew into a magnificent art.

Architecture began like any other form of writing. It was first of all an alphabet. A stone was set upright, creating a pillar, forming a letter, the arcade was a syllable, the temple a word. Orchestrated and set in motion these letters were combined and amalgamated. They rose and fell, they were juxtaposed in plan form, and superimposed in the sky, until, at the dictate of the general idea of an epoch, they had written extraordinary books which were also extraordinary buildings: the pagoda of Eklinga, the Ramesseum of Egypt and the Temple of Solomon.

It was in the middle ages, with Gothic architecture, that the final page in the book of granite was written. In the fifteenth century, everything changed. With the arrival of the printing press, architecture ceased to be the essential expression of a society, the sovereign and tyrannical art with the strength to hold the other arts in its yoke. The human mind had discovered another means of perpetuating itself which was not only more lasting and resistant than architecture, but also simpler and easier. Architecture is also vastly more expensive. Hugo observed that in, 1830's currency, every cathedral cost a billion Francs.

In printed form, thought is more imperishable than ever. It is volatile, elusive and indestructible. Before it was solid, now it is alive. The printed book killed architecture as the pre-eminent forum for promulgating ideas. Architecture turned from the vitality of contemporary culture toward the splendid pseudo-antique decadence of the Renaissance, to produce the first great age of revisionism. The other arts broke free to find independent expression; statuary into sculpture, frescos into easel painting etc.

With it's power to proclaim and broadcast, the printing press turned the reformation from a schism into a revolution. The unforeseen consequences of the printing press would have shocked it's inventor Gutenberg. A devout Catholic, he would have been horrified to hear that accursed heretic Luther describe print as “God's highest act of grace”, for Luther understood, as Gutenberg did not, that the mass-produced book, by placing the Word of God on every kitchen table, makes each Christian his own theologian. In so doing the centralised control of information by the mother church was lost.

The revolution begun by Gutenberg has not finished. Printing has given birth to the microchip. Microchip circuits are mechanically printed and then etched onto a silicon substrate using photolithography. Printing has now moved to creating the circuits which support the text rather than the text itself.

Language, the source of this text, is our most powerful representational technology. It is symbolic in nature. Symbols, each having only an arbitrary relationship with its signified, are our dominant form of representation. Within this representational system everything becomes a text; products, buildings, cities and ultimately, reality itself. Structuralists argue that reality can be said to reside in language.

In *Virtual Worlds* Benjamin Woolley describes the computer interface as mnemonic; representational and symbolic, like the memory theatre of the classical orators.<sup>3</sup> The computer screen becomes a metaphorical space, room or desktop accessed by gesture and voice to track and activate virtual objects. The creation of a user illusion or virtual world on the screen, full of metaphorical tools was developed by the Palo Alto research laboratories in the early 1970's based on the ideas of Ivan Sutherland in 1968. An on-screen pointer becomes your doppelganger, roaming through the virtual space. The space is filled with a system of signs, another text, another language.

A computer is a virtual entity or process. It is a simulation but not necessarily a simulation of anything that physically exists or that we could have physical access to. In this virtual world we are permitted telepresence. The Martian rover *Sojourner* is controlled by telepresence, the extension and projection of the driver's senses through a wrap around technological cocoon that allows him to be virtually present on mars. This simulation package provides a total immersion in media. This procedure manifests Marshall McLuhan's limitless sensorium, where all that appears solid has melted completely into air. With our predisposition for simulation and representation, Paul Virillio argues that this representation of events has outstripped the existence and presentation of the facts.

Images of war become the war, images of an air disaster become the air disaster. What is created by the matrix of media is a hyper reality of more pervasive density and logic than the actual events, in fact bearing no relationship to the purported originating event. The 'live' TV simulation of the event is a mise en scene of information, manipulated and massaged. The images become the event in the greater public consciousness. The authentic event is no more to be found at the scene of its occurrence than the authentic version of a film is to be found on the studio set.

This methodology pervades our media environment. In advertising a product, like a fruit juice or a car, it is presented in association with an exotic or desirable, idealised environment which usually does not actually exist. The product becomes a signifier for this environment, this web of associations. This then becomes the meaning of the product, a manufactured hyper reality.

Retro design products embody this process in their very appearance referencing a non existent or spurious history or lineage, just as the Renaissance did for architecture. Baudrillard argues that Disneyland is the perfect model for this complex layering of meaning and simulation. Computer systems add to this, to provide an interactive technology, like drama; a platform for creating coherent artificial realities that are cognitively, emotionally and aesthetically enhanced.

Woolley observes that as the industrial revolution produced a mass migration from the farm to the factory, so the post industrial revolution is producing a mass migration from the factory to fantasy. Reality is now a theme park. It has left the physical world and is moving into the virtual one. Luckily the modernist concern with epistemology [ sequential, concrete and ordered ] has been replaced by a post modern concern with ways of being and experience, in a denser, chaotic environment, where data classification gives way to pattern recognition.

Using the language of information technology, architecture can be defined as a control system for our experiences of the world, filtering out the unwelcome and celebrating the desired. Architecture creates an artificial reality. Computer driven virtual reality

achieves instant environmental transformation, substituting mass and structure for electronic simulation. Architecture can be seen as a subset of a wider field of artificial reality.<sup>4</sup>

In *Theory and design in the second machine age* Martin Pawley describes Gothic cathedrals as 12th century hi-tech information machines; an outriggered backlit superscreen cinema displaying “proto-photographic colour slides in huge solar-lit projectors.”<sup>5</sup> These buildings transmitted information, transmitted texts. Howard Rheingold even claims that the great Neanderthal cave paintings may be viewed as a primitive but effective form of cyberspace.

Today’s office atria and shopping malls are inconceivable without the electric worm of security, lighting and climatic intelligence. They can be viewed as primitive rehearsals for the mass transformation of experience into the artificial. This is an electronically induced collapse of physical space as the principal arena of human action. Some argue it is the death of the physical public realm and the city itself.

Randal Walser, working on a cyberspace project for the software company Autodesk has proposed a new category of artist: the spacemaker. The spacemaker does not create narratives but rather the virtual space in which the audience can create a narrative for themselves. The spacemaker sets up a world for the audience to act within, a kind of experience engine. So far these have been mainly realised as realtime, multiplayer, interactive simulators for gaming arcades and for military battle simulation.

In *Architecture and Disjunction* Bernard Tschumi observes that architecture has always been as much about the event that takes place in a space as the space itself.<sup>6</sup> There is no architecture without event, without action, without activities, without functions. In today’s world function is no longer fixed. Purpose, program and event change rapidly. There is a contamination of categories, substitution, superimposition and confusion of genres. Railway stations become museums and churches become nightclubs.

A single location can also give rise to many *simultaneous* events. This combination of events and spaces is charged with subversive capabilities, for it challenges both the function and the space. We find it in Tokyo, with its multiple programs scattered throughout the floors of the high-rise buildings: department-store, museum, health-club, railway-station and putting greens on the roof. And we will find it in the programs of the future, where airports are also simultaneously amusement-arcades, athletic-facilities, cinemas and shopping centres. Tschumi notes “Not only is there no simple relation between the building of spaces and the programs within them, but in our contemporary society, programs are by definition unstable. Few can decide what a school or a library should be or how electronic it should be, and perhaps fewer can agree on what a park in the twenty-first century should consist of.”

We must come to terms with an extraordinary interchangeability of form and function, the loss of traditional or canonical cause and effect relationships as sanctified by modernism. A constantly shifting function can not give rise to a fixed, physical generative form.

Within a *physical* framework the response is to express multiple, fragmented and dislocated terrains and to separate the structure and facade or interface.

There has been some history to the evolving schism between the appearance of a building and its structure. “The triumph of the superficial”, as Stuart Ewen calls it in his recent book on the poetics of style, *All Consuming Images*, is not a new phenomenon, but architects have yet to understand the consequences of this separation of skin [surface] and structure.<sup>7</sup> Until the nineteenth century, architecture made use of load-bearing walls that held the building up. Although it was common to apply decorations of various styles to these surfaces, the walls performed a key structural function. Often there was a connection between the type of image used and the structure of the wall. By the 1830s the connection between image, structure, and construction method was gone. New construction methods employed an inner structural frame that supported the building. Whether in the form of “balloon frame” structures covered by a skin or of “structural frames” covered by curtain walls, these new building techniques meant that walls no longer played a structural role: they became increasingly ornamental. A multiplicity of styles became possible due to the development of prefabricated panels,

ready to be shaped, painted, or printed to reflect any image, any period. With a disembodied skin, the roles of engineer and architect became increasingly separate: the engineer took care of the frame, the architect the skin. Architecture was becoming a matter of appearances. Indeed, if most of architecture has become surface, applied decoration, superficial, a paper architecture [decorated shed], what distinguishes architecture from other forms of billboard design or more ambitiously, what distinguishes architecture from editions, layouts, graphics? In fact the new debate for the quest for truth in the use of materials in architecture has slipped to the facade alone.

In an attempt to deal with today's culture of the dis-appearance, of unstable images [ twenty-four-images-per-second cinema, video and computer-generated images ] architecture may reveal the transience of unstable images by the use of such devices as the digital facade, both internally and externally. In the digital facade there is no cause and effect relationship between the building and its use. Electronic facades can be both enclosure and spectacle. Tschumi argues that there can be no new Bauhaus.<sup>8</sup> We are not dealing with coherent, well defined disciplines but with the disparate multiplicity of performance art, cinema, video and film production. A facade might be a media strip, a flow of projections and people, a city event, no longer a static event, but a momentary and constantly moving one. Ironically, as the ever enthusiastic Nicholas Negroponte has observed, the field of Multimedia, from which are emerging the technologies and strategies to generate the digital landscape, is very like architecture in the way it bridges the perceived polarities between technology and the humanities and draws together many disciplines.<sup>9</sup>

In our highly nomadic society it is the event that has become the temporal anchor. In *Television at the Crossroads* Francesco Morace maintains that within the home all rooms have become living rooms, where distinctions in terms of use are time based, not made by the provision of dedicated space.<sup>10</sup> The furniture is now used to define boundaries, to create and distinguish zones in domestic space. The remote control and the evolution of channel surfing have turned television into a continual source of stimuli and moving images, beginning a process of dematerialisation of the object-TV that will reach its conclusion in the tele-wall.

K. Eric Drexler in *Engines of Creation, the coming era of Nanotechnology* maintains that nanotechnology will make possible high resolution wall sized screens that can project different images to each eye; resulting in a 3-D television so real that the screen will seem like a window into another world. "Why shouldn't walls look like what ever we want, and transmit only the sound we want to hear?"<sup>11</sup>

Environments are not passive wrappings. They are active processes. They can now be formed using active and interactive technologies. In *Possible Palladian Villas* George Hersey and Richard Freedman propose a generative program for designing and decorating buildings based on a computer simulation that uses a mathematical compression algorithm to mimic the strategies, biases and poetics of Palladio.<sup>12</sup> Here a text, albeit one compressed to a mathematical code, informs and orders the plan, organises the facade while also referencing another, in this case historical, cultural text. Such computer programs employing other algorithms have been used to write Mozart's 42nd symphony, a rather beautiful piece of music.<sup>13</sup> The potential for the implementation of deep organising strategies that simultaneously inform the appearance and program of an environment in a dynamic and evolutionary way has yet to be addressed. In *Scientific American*, April 1996, Alex Pentland of the Media Laboratory at MIT describes Smart Rooms, computer controlled environments that react 'intelligently' to the occupants, able to identify people, differentiate different facial expressions, capable of speech recognition and able to track and interpret their actions.<sup>14</sup> This research is forming the basis for designing responsive interactive environments. Such environments would integrate a sensory network and the electronic communications mesh along with all the electronic appliances to feed back appropriate responses including the overall presentation of the digital and virtual environment via wall sized TV screens and a sound system. This system is driven by a network of small computers that form part of the environment, integrated into it, no longer apart from it. Such will be the power and ubiquity of networked computers, it has been argued they will

have a social impact on a par with the impact that the personally owned book had in shaping the Renaissance notion of the individual.<sup>15</sup>

#### Footnotes

- 1 Tschumi, Bernard. 1991. "Event Architecture." In *Architecture in Transition. Between Deconstruction and New Modernism*, Noever, Peter, ed. 1991. Munich: Prestel, 130.
- 2 Hugo, Victor. 1831. *Notre-Dame of Paris*. London: Penguin Books: 188-202.
- 3 Woolley, Benjamin. 1992. *Virtual Worlds, A journey in hype and hypereality*. London: Penguin.
- 4 Gilbert, Nigel. 1993. "Condition Zero." *World Architecture* number 26: 78-81
- 5 Pawley, Martin. 1990 *Theory and Design in the Second Machine Age*. London: Blackwell.
- 6 Tschumi, Bernard. 1994. *Architecture and Disjunction*. Cambridge, Massachusetts: The MIT Press.
- 7 Ewen, Stuart. 1988. *All consuming images: the politics of style in contemporary culture*. New York: Basic Books.
- 8 Tschumi, Bernard. 1994. *Event Cities [Praxis]*. Cambridge, Massachusetts: The MIT Press.
- 9 Negroponte, Nicholas. 1995. *Being Digital*. New York: Alfred A. Knopf.
- 10 Mendini, Alessandro et al. 1995. *Television at the Crossroads*. London: Academy Editions.
- 11 Drexler, K. Eric. 1986. *Engines of Creation, the coming era of Nanotechnology*. New York: Doubleday.
- 12 Hersey, George and Freedman, Richard. 1992 *Possible Palladian Villas [Plus a few instructively impossible ones]*. Cambridge, Massachusetts: The MIT Press.
- 13 Holmes, Bob. 1997. "Requiem for the soul." *New Scientist* number 2094 [9 August 1997]: 23-27
- 14 Pentland, Alex P. 1996. "Smart rooms. In creating computer systems that can identify people and interpret their actions, researchers have come one step closer to building helpful home and work environments." *Scientific American* volume 274 number 4 [April 1996]: 54-62.
- 15 Kay, Alan C. 1992. "Computers, networks and education." *Scientific American* volume 265 number 3 [September 1991]: 100-107