

MEDIATION

AUTHORS

Ben Van Berkel
UN STUDIO
Stadshouderkade 113
1073 AX Amsterdam
The Netherlands
info@unstudio.com

MEDIATION

New media have been successfully taken up in music, films, car design, fashion, magazine and book publishing, the sex industry, and education. Only architecture and urban design are slow to incorporate new media technologies. To some extent, architecture and mediation are locked into a conflicting, for the most part mutually excluding, relationship. At first sight this looks logical; architecture is a place, a real, once-only place, which you experience by visiting it. You do not experience architecture through dissolving a building and electronically replicating it a billion times in the air. But all technology is social before it becomes a technique; the technology of mediation needs to be more deeply incorporated within the practice of architecture, and to be more widely understood and supported before it can be fully exploited as a tool. This process is just beginning; as yet there is no fully evolved ideological scope which incorporates the new mediated position as an essential part of architecture. New mediation technologies have taken over some of the functions of buildings, such as security, surveillance, and communication with the outside, but these are not the most relevant aspects for the practice of architecture itself.

The three most important architectural potentials of the new mediation techniques are: the expansion of the spatial imagination, the radical break with a hierarchical design approach, and the introduction of different disciplines into the design process, relating the design immediately to its final execution. To begin with the first: the tantalizing new spatial modes suggested on every computer screen result in a general familiarity with the potential of a multi-dimensional spatial experience. Computer-generated special effects express a delight in explorative spatial situations, leading to a rapid increase in the capacity for spatial conceptualization. The artificial world of the computer rendering, with its flat light shaving as sharp as a razor over planes so smooth that not a single molecule is out of line, is appalling and exciting at the same time. Gradually, we are beginning to see that this new computer-generated fantasy is being transformed into reality. The rendering becomes real; the artificiality of the image is actively reproduced in the constructed realm.

The digitalization of architectural practice takes various forms. The choice of computer software is an important factor in the procedure of the technique as different applications contain their own rules and instrumentalizing qualities. All mediation techniques have in common that they abandon the hierarchical way of building up the architectural body, which starts with the ground plan. Not the object itself, but the sets of relationships between the component parts are articulated and defined.

At the moment, there are four dominant approaches to computational and mediation techniques: the first sees the new techniques as a way to realize a virtual reality, which is related to the radical physiological interventions, disenfranchising social, political and economic powers, and inanimate environment of cyberspace. This thinking relates to a tradition of visionary architecture. Fantasies of imaginary cities and buildings are connected to cybernetics, the science of communication and automatic control systems. As with all fantasies, it is to a large extent the current reality that directs these

visions. The mediated world implies that the communicative powers of architecture have been massively overshadowed by new media. Accelerators such as motorways and airports have destabilized the public domain in which the architectural body is embedded. In this world of potentially limitless freedom of movement through geographical, social, economic and cultural strata, the old dream of transcending materiality begins to approach realization. A substantial virtual control of human bodies, and urban and architectural spaces already exists.

For now, architecture cannot be fully virtual and at the same time be a real, solid place which can be physically entered. It is only possible to extend and enrich architecture with virtual means. This entails a specific use of mediation techniques, to some extent overlapping with the process of hybridization. The most important consequence of this interpretation of computer architecture is that it explores the inventive and utopian potential of the new media techniques and expands boundaries.

A second application of the introduction of computational techniques centres on the intensification of the connectivity between the partners in the architectural process. The line between design phase and construction has shortened and has unravelled into different, non-simultaneous strands. The traditional order of the design stages has broken down, with reality checks on money and feasibility being worked into the process at the earliest moment. Traditionally, the period of preliminary design would be a quiet, concentrated stage, during which architects would happily prepare their designs in relative isolation. After this, a trying series of cutbacks would proceed to frustrate everyone and kill the project. Now, the architectural process may be organized in many different ways, with the widely used new methods such as 'design & construct', and 'definitive design plus'.

Designing with computational techniques involves abandoning the traditional hierarchy of a design approach which begins with the plan. Today, we begin with a point. A point in three-dimensional space. The architectural drawing, a scaled-down, two-dimensional representation of an aspect of a building, is obsolete. A project is built up in three dimensions and with its real measurements in the infinite mediation space. Having captured this space within a personal computer station, that is, having confined it to proportions which enable us to manipulate, divide and layer this space, it goes ahead to generate its own small technologies like extrusions, and rotating sections, little tricks which simply let us see more than before.

While the software programmes compatible for engineers and contractors have not been written for architects and are far from user-friendly, the up-side of connectivity is that more can be achieved. Complex projects, assembled from components of many different shapes and sizes, are realized thanks to computational techniques. Constructions that deviate from the mainstream are becoming accessible to architects, because along with everything else, the knowledge that belonged exclusively to engineers is also being injected into the design process at an earlier stage. Digital calculating enables more complex geometrical structuring. Meanwhile, production methods have also changed under the influence of the development of new mediation technologies. Computerized laser-cutting mills execute complex shapes with

the same ease as rectangular ones, so that non-standardized profiles and details become cheaper.

This, in combination with the changing, and in some ways diminishing, role of the architect informs the third approach to computer architecture. This third adaptation revolves around the objective, pragmatic properties of techniques. The techniques offer an opportunity to hang on to a belief in reason, in there being a right choice to make. Otherwise, it has become difficult to rationalize design choices. If any form is possible, and all are equally functional in an economic sense, the pragmatic, standardized language of Modernism has lost its imperative. A simple, self-evident reasoning no longer justifies any specific form. With the criteria for functionalism changing, and the co-operative design process rendering uncertain the position of the architect, new digital techniques are exploited to shake off traditional architectural pretensions. The third adaptation of new techniques implies that new models of organization are developed in order to proportion and structure digital information. Parameters are formulated, once again expressing architectural values in rational, functional, and objective terms. As the evolution of the chosen parameters is traced over time, the project emerges as if of its own accord. The techniques are used as a direct and transparent medium to uncover the neutral values forming the basis of the project. This approach has some similarities to the rationalist and structuralist architecture of the 1960-s. Both share a conviction that a neutral, business-like architecture can emanate directly out of underlying data, uncontaminated by the personality of the architect or by aesthetic conventions.

While this approach already begins to incorporate moveable criteria, parameter design is primarily a static summing up. Only when the data begin to interact, do the elements of time and movement enter the process. At that point, the fourth important adaptation of new media techniques enter the equation: animation. This approach entails a different choice of software, focusing on time-based animation software environments such as Silicon Graphics, which are no more designed for architects than CAD systems, but which take the design process in a new direction. Three-dimensional modelling already dispenses with the idea of the designed object as the construction of outlines and instead begins with a point; animation abandons even the network of points, and focuses on the interrelations of parameters and forces. The object is formed as the result of this process; it is the solidification of energies acting on each other, as in a chemical experiment. The animation technique involves setting up a path. The end result is subject to change as long as the project follows its course.

In a controlled experiment the choice of ingredients is vital to the outcome. Therefore, it would be an exaggeration to see the project as the passive product of a self-organizing process, but this technique still involves greater openness with reference to the end product than any other technique. The fact that objects are modelled by means of a dynamic process implies that changes in the organizational patterns taking place during the process are also evaluated, enabling a complete acknowledgement of complexity.

Animation as a technique could not have been developed without virtual architecture and parameter-based strategies; in a way, animation hybridizes

the two and optimizes certain potentials. There is a tendency for architects, probably because of the large investments of time and money required to become digital, to focus almost exclusively on one specific usage and heavily integrate it into their design approach. This total identification of practices with specific techniques is now the factor which most inhibits the successful integration of mediation technology in architecture. Let's put an end to digital sectarianism. The potentials of mediation, the expansion of the imagination, the break with a hierarchical design approach, and the introduction of different disciplines into the design process, go beyond the small technologies. Architecture needs the varied and free use of new mediation techniques in order to keep its relevance as a public science with tentacles in areas such as design, art, film, computer technology, engineering, and infrastructure.