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Architecture as a Medium of Exchange

Michael Rotondi

The notion of universal order is ancient, but when the scientific method came into being four hundred years ago it led to theories that have proved revelatory in their uncovering of the hidden order in the universe—an order governed by a system of natural laws not able to be detected by the senses alone. The scientific method is a process of intuition directed by instrument-enhanced observation in which hypotheses can be formed and tested before being accepted as theories. Nothing discovered in this way is considered absolute, immutable or timeless and the eternal question “what is the nature of existence?” is a series of interlocked inquiries that are sharpened and deepened and re-directed in the light of new information.

How did the universe get to be this way? what are the forces that shape it? and what is our position in it? are questions that we can pose within the natural world at the magnitude of the cosmological scale, at the sub-atomic level and within the forces and events that make up the earth’s ecosystem. The questions can also be directed towards developing an understanding of the way our bodies work. The laws of the natural world are described in the abstract language of mathematics, reflected upon in the mythological order that conveys narrative information about the universe, and can also be used as analogs in the way of thinking and working that leads to the creation of the order that can be fathomed in the artificial constructs of society and culture.

I look to the natural world to uncover models that I can apply to situate myself in a greater context and help me to understand my relationship to everything else. I’m looking for analogical situations so that I can begin to understand what exists outside of myself that is similar to my condition and my particular way of looking at things. The sciences have always been my source material. Scientific information has no literal connection and translation into architecture but sinks deeply to operate as intuition. Science has inspired me and opened my mind and sustains my curiosity by always leading me to new things. As the freshest source of information outside of architecture it allows me to continually re-think all that I believe and the ways that I think about what I know, helping me to develop the confidence to act in the realm of the unknown.

In order to operate in the realm of the unknown, with information that is always changing, one must be an intellectual, spiritual and geographic nomad, relying upon intuition as a guide, moving lightly through the world and across the dissolving boundaries that have, until now, contained the different disciplines behind artificial constraints. Nomad is a conceptual as well as a physical state and the proliferation of new electronic communications systems allow one to roam experientially and intellectually, through fluid new communities, without needing to disconnect from home base.

My journey of discovery is based upon a system of thinking that acts as a guidance mechanism. I believe that it is necessary to surrender to the continual process of discovery, searching for order, coherence and wholeness in systems, but without deciding in advance what I will find. I track the paradigm shifts that continually alter and re-focus our understanding of the ways in which the universe works and our position in it, and believe in the value of the closing of the gap between when ideas that lead to the forming of new paradigms first appear and when they are taken into architecture. These individual beliefs are able to remain constant and absorb any alterations in new information, for what we know at any time is limited and we are always looking to move beyond what we currently know in order to arrive at the next place. Within the natural world one can have an inspiring voyage of discovery. Discovery is the gathering of first-hand experience that is the raw-material state of knowledge that can be transformed into insights. When insights are committed to cellular memory they are able to come out in one’s way of working, to be transferred into the work and read out of the work through physical intuition.

The first time I ever saw the Milky Way was in Death Valley, looking all the way out into the cosmos. It made me think about the body in space, the objects that make that space and how they are interconnected, all the way up from the micro to the macro scale. My curiosity

expanded at warp speed. Everything that one sees in the natural world carries within it a description, in some way, of how it got to be that way. These processes are dynamic, but come to a provisional closure that renders them coherent, and like an archaeologist, one can uncover clues about the process. Watching the events and processes unfold within the natural world teaches us the patience to develop slow reflexes, the ability to perceive connections between things, recognize patterns and calculate the consequences of actions over many time periods and at many scales. We can learn to think systematically with information that is in a dynamic state, and recognize the interconnectedness of systems and the reciprocity that is crucial in order for them to work together.

The laws of the natural world can be deciphered, decoded, demystified and made coherent when observations that have been enhanced by instruments are passed through the scientific method and given a conceptual structure. The body is the quintessential instrument and uses itself as a model and a metaphor for the devising and crafting of instruments that enhance and extend through direct and remote sensing our ability to see the inner (micro) space and outer (macro) space. The invisible world is made visible to us and we are helped in visualizing the unvisualizable.

In the sixteenth century the development of both the telescope and micro-

scope began to extend our ability to gaze out into the cosmos and to look minutely into the structure of things. We were able to observe natural processes that are cyclical, linear, or rhythmic and that tend towards equilibrium. In the twentieth century, the development of an entirely new instrument, the computer, has made it possible for us to process and synthesize the increasing fineness and density of our observations. Radio telescopes now probe the outer limits of our universe and we can manipulate individual atoms with the

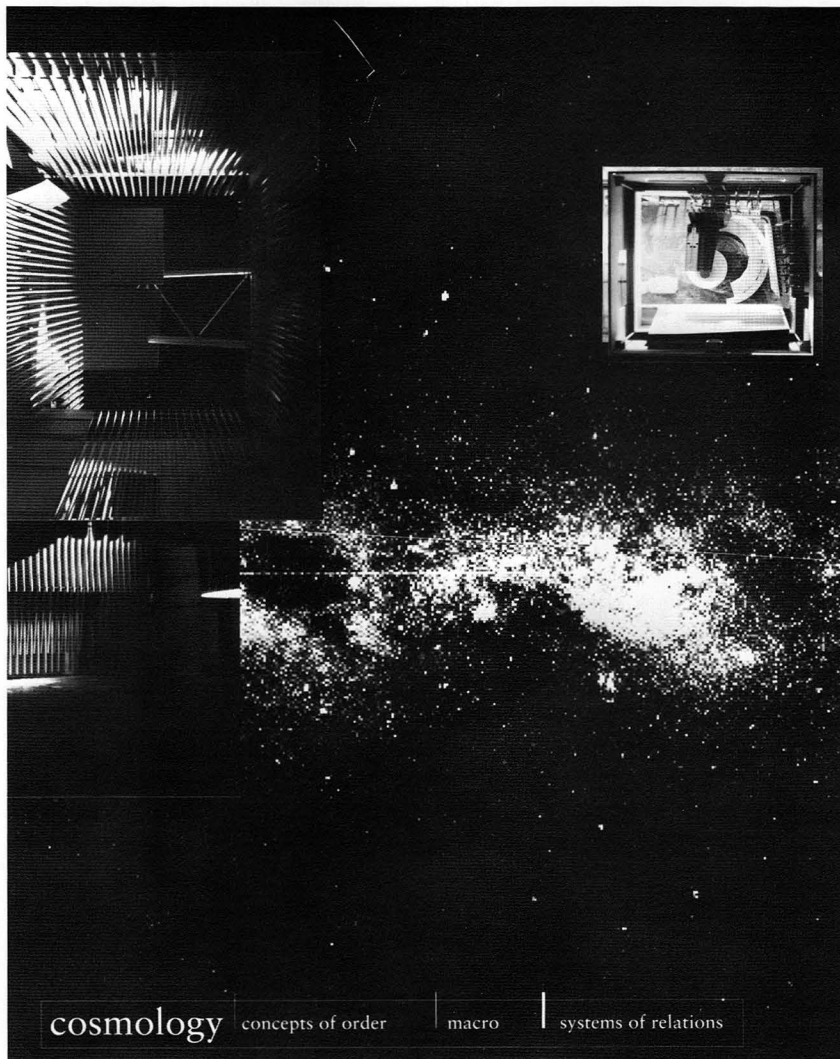
electron-probing microscope and the natural processes of the quantum world have been revealed to us. These processes are not cyclical, rhythmic, or linear, and tend towards dissipation. They are able to be visualized through the computer which is able to take measurements of light and sound and heat energy into two- and three-D visual images and transform these images fluidly and endlessly into other formats—sound, images, words, or mathematics—in ways that were previously only possible in the mind's eye.

The gathering and synthesizing of more information about the universe leads to increased knowledge and new insights that contribute to new systems of thinking. New systems of thinking build into new belief systems which alter the social, political, aesthetic, and cultural systems that come together as a new world view. New world views are eventually recognized as new paradigms, conceptual schemes around which new ideas about the workings of the universe are organized. The major scientific theories of the twentieth century are gathering

into a paradigm that has destroyed the Newtonian idea of the universe as a machine and destroyed common sense along with it. The physicist Paul Davies observes:

Matter has been demoted from its central role, to be replaced by concepts such as organization, complexity and information. This is already re-shaping our social priorities.

The absolute nature of space and time and controlled measurement were over-



RedRoto Yokohama Exhibit #1

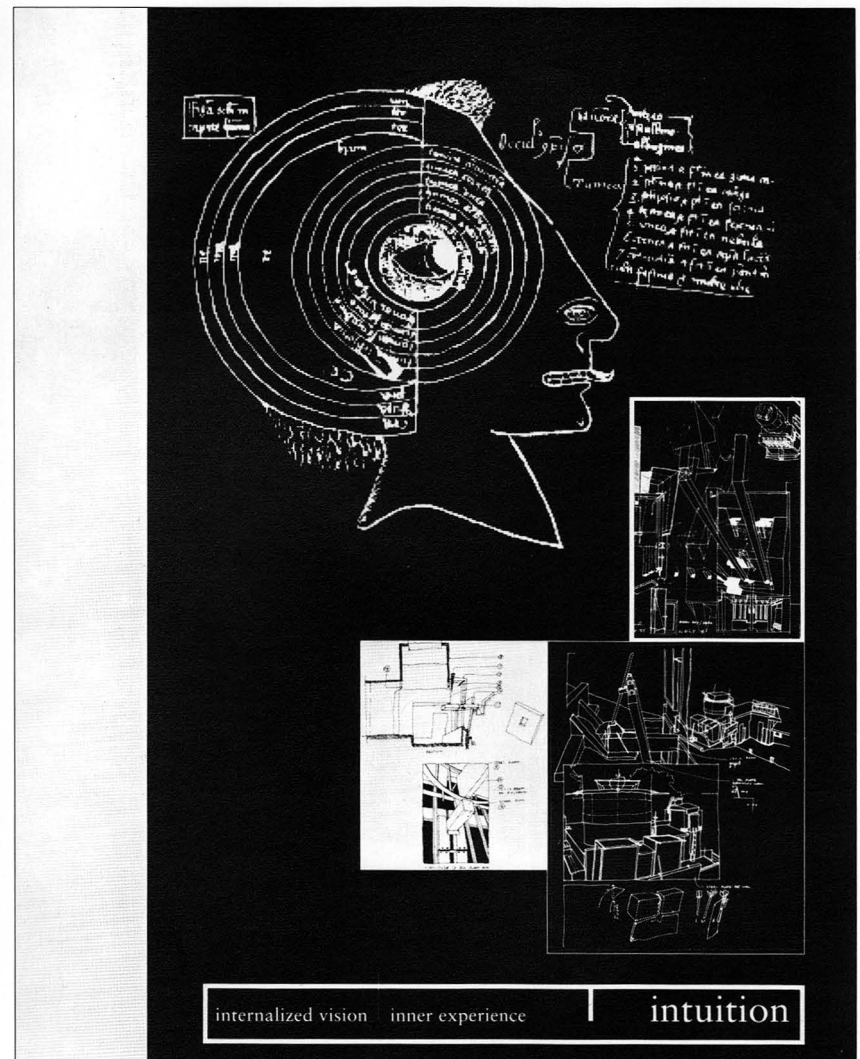


Exhibit #2

turned by the theories of relativity and quantum mechanics. Chaos theory determined that simple conditions lead to complex, unpredictable behavior and complexity finds organization within complicated systems by looking at them broadly and studying patterns of behavior and the interconnectedness of the parts at an expansive scale.

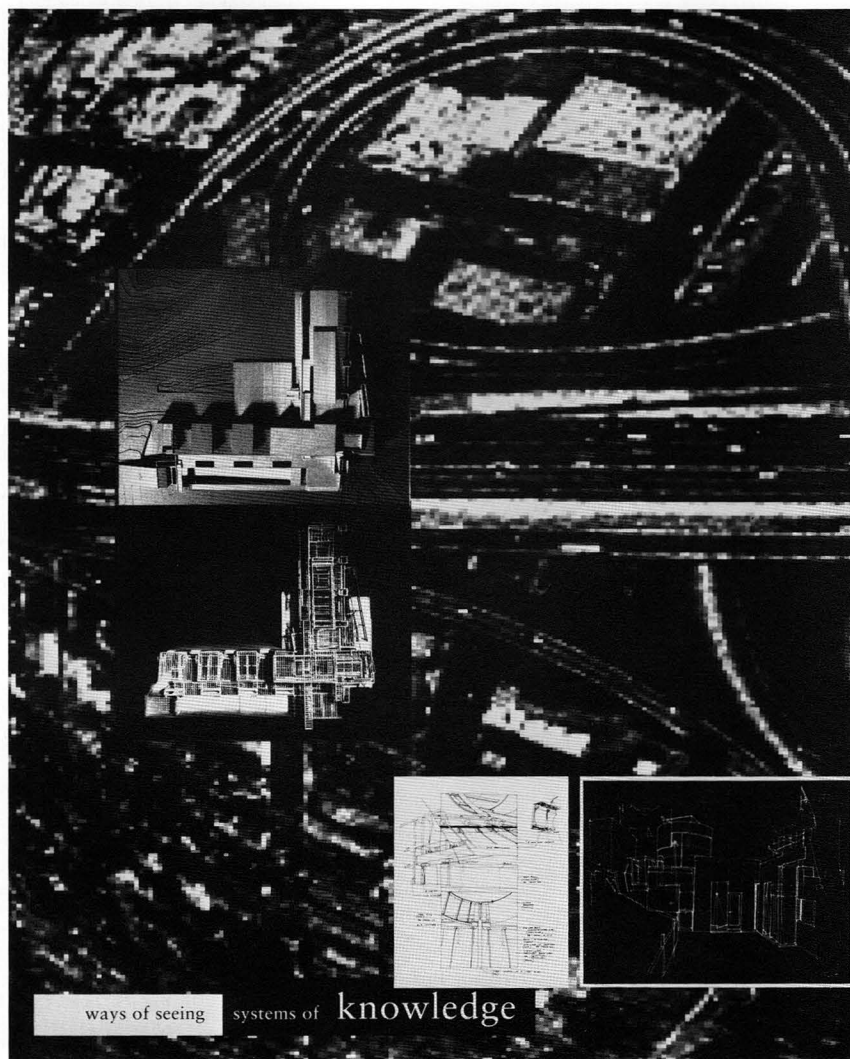
The new paradigm requires the re-integration of the mind and body and the re-integration of the sciences and the humanities in order for its central no-

tion—that of a whole system whose parts are not only indivisible but have no meaning except in their context to the whole—to be comprehended and worked with. The connection of the invisible, non-material world of computer and communications networks to the physical world reflects the new paradigm in operation and is altering the way in which we live, work, and the way in which our societies operate. Local, national, and global are concepts that are losing fixed meaning and space and time has effectively been collapsed.

Architecture, through each period of its development, has become a richer form of communication by incorporating the contemporary vectors that pass through it and define its territories. As the newest descriptions of reality are delivered through science, one way they can be moved quickly into architecture is through using the computer as a tool that expands the thinking processes, allowing for the continual questioning of the role of architecture and the role of the architect in a world where change is the only constant. The computer pro-

vides a common language that encourages collaboration and multi-disciplinary teamwork, but its most important function may well be as a device that helps us evolve mentally to the next level, to develop the slow reflexes that aid in pattern recognition and the forming of conceptual models. The film director Francis Ford Coppola says:

I have an almost spiritual belief that mankind evolves technology in order to accommodate the next level it is going into... I even believe that technology is



38 Exhibit #3

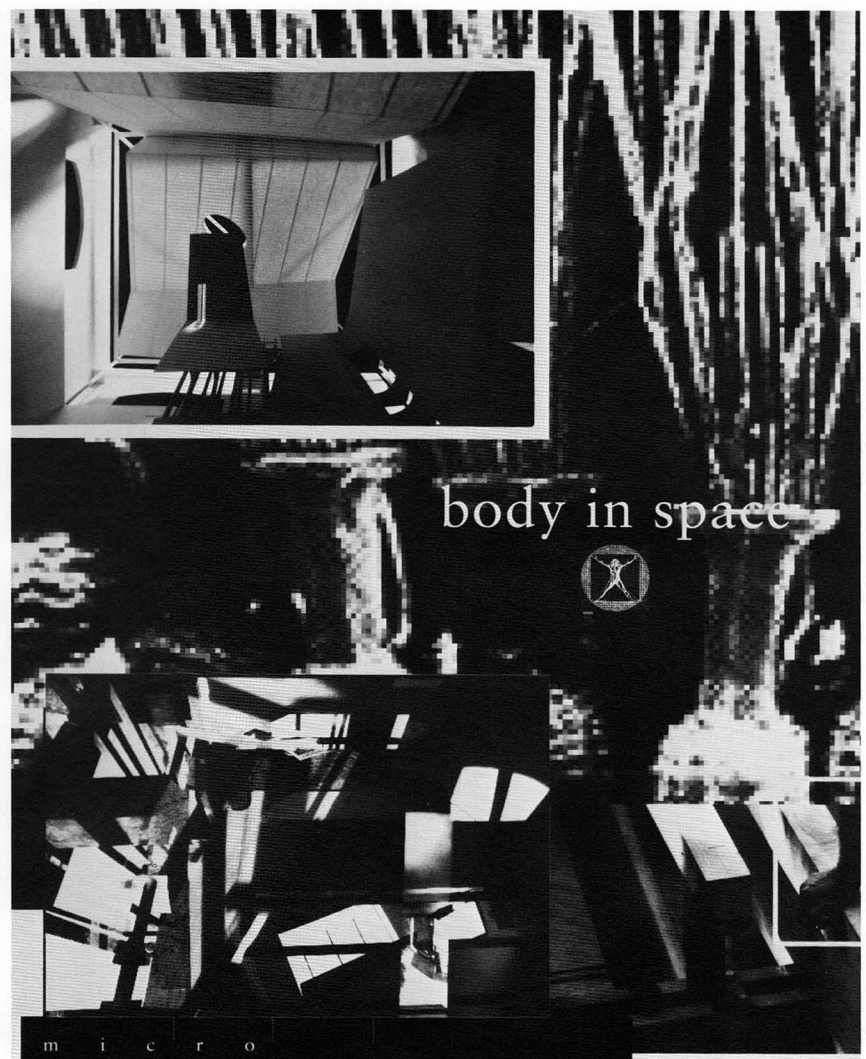


Exhibit #4

a temporary phenomenon, that laptop computers and tape recorders are to teach us how to organize our impressions. I believe that technology is teaching us the human phenomena of how to get into the next phase and the next decades will be much more of an artistic era and less technology based. Why not think of technology as something that teaches us to move in a non-material way, without hardware?

I consider architecture to be a research activity and the process of discovery to

be continual. The act of exploration is bigger than architecture but architecture just happens to be the medium that I am working with. I am concerned with expressing, through architecture, what constitutes humanity and what will help us evolve to the next place as a species. When something is made coherent, brought to closure and given a provisional order through architecture it is then that architecture can operate as a medium of exchange.



Exhibit #5



Exhibit #6