

Dan Nuttall and Philip Beesley

A correspondence regarding Orgone Reef

The following email correspondence between Mr. Dan Nuttall, Ph.D. and Mr. Philip Beesley took place between February and June of 2003.

Mr. Philip Beesley's "Orgone Reef" was exhibited in the Architecture II Gallery, University of Manitoba, January 2003.

Correspondence kindly submitted by Mr. Nuttall.

Nuttall: You have taken inanimate objects and animated them, made them responsive through external inputs of energy. These animated objects function for periods of time with this energy but, ultimately, cannot be sustained because there is no true inter-relationship with the environment. By this I mean that the entities are not situated in connection with the natural laws that provide energy flow and nutrient cycling. Are these entities, with their disconnected ecologies, merely prosthetics?

Beesley: The animation that characterizes the current work is certainly limited and far from fully integrated. Like ill-fitting clothes, the work is an uncomfortable relationship with its natural host. In fact the relationship of these object-assemblies contains layers of violence: the violence of a foreign colony imposed on a living host; the forces of dismembering and consuming; the force of will, violating the ethical boundaries that maintain the nature as an untouched sanctuary.

I would say, however, that the physical assembly in this project does employ a series of natural laws involving energy flow and nutrient cycling: while the motion of each element is simple, the accumulation of the individual elements produces turbulent wave-like motions, like the peristalsis of a gut. Similarly the primitive cycles of opening, clamping, filtering and digesting in the artificial as-



sembly is inflected by some of the same natural laws that make a coral reef work. This is the result of integration of systems.

Yes, at the same time the relationship is prosthetic. Some of my other installations have been inserted into natural environments. In those situations they act as sculptural instruments. As instruments, they work directly to catch and inject matter, accumulating density and eventually forming into a hybrid turf. In spite of this the relationship remains a prosthetic one, an alien appendage to nature's body. Prosthetics are always accompanied by some tinge of revulsion. An artificial heart causes the host body to recoil and attempt to reject the intruder, no matter how 'good' the addition is for the host's health.

New burn technologies, which involve extremely delicate nutrient-infused lattices that strengthen the skin and allow new skin to grow, depend on drugs to mute the rejection impulses that we react with. Orgone Reef functions by being quite aggressive, clamping and cutting into its neighbours, draining and digesting the things that it contacts while at the same time converting this material into fertile soil. It is a catalyst. This structure would be good for a scarified landscape, and would help it to heal and grow new layers. However the relationship is tense. It might never be comfortable.

Nuttall: Given the above, it seemed to me that the general direction of your work is a movement toward greater integration, responsiveness and inter-relationship between entity and environment. Ultimately, your work suggests to me that we might envision entities that would be self-sustaining and self-perpetuating. In this future these entities would be more "intelligent", meaning they could have the ability to adapt over time to their surroundings. In your work, do you foresee the possibility of creating entities that evolve?

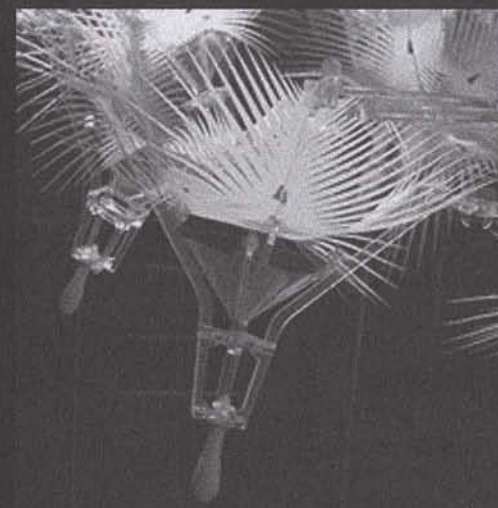
Beesley: It is true that I am working for greater integration and inter-relationship. Vernadsky, who conceived the word 'biosphere' nearly one hundred years ago, and Teilhard de Chardin, who saw a subtle, conscious skin emerging over the earth, the Noosphere, are fundamental references for me. Those thinkers offer a vision that is far from the polarized systems of light and dark, firmament and heavens that still guides much collective thought. Instead they suggest an unimaginably complex world where individuals are infused with each other, utterly riddled. The things that inhabit this kind of world have lost the definition and clarity that comes from fixed boundaries. Instead the things that act in this kind of world are characterized by flux. Growth and evolution are fundamentals for this redefined world.

On a practical level, while many generations of revisions and adjustments characterize the work I do, I would not say I have achieved much that is close to an evolving system. Some design routines akin to genetic evolution are used in the digital generation of components in this work. However the constructed work remains rather static and monumental, only evoking the possibility of complex growth through iconic representation.

A new direction is planned that might come closer. A lab at MIT is helping me with development of a network of 'cricket' microprocessors that will be mounted into a new set of lattice elements, activated by sensor arrays and operating miniature motors. These elements are fitted with infrared transmitters and receivers, allowing them

to communicate with each other and adjust their operating codes progressively. In this way, the new work might demonstrate learned reactions.

Nuttall: Your work is meticulous and almost fetishistic its desire to establish perfected forms at every scale. At first glance this seems to echo the 'perfection' of nature. And yet this perfection of nature is really an illusion. While each hummingbird may be the product of a perfect "fate map" or genetically based blueprint, the components that are the product of this map are imperfect and variable. Both the imperfection of the component and its fit with other components is the result of the dialogue between 'specific' blueprint instructions and 'general' environmental conditions. In



other words, each whole and perfect hummingbird is based upon imperfect sub-units that engage in a dialogue with each other and with the environment while following the fate map. Is it possible that your design approach to sub-units is too "perfect" and that your future direction may lie in creating "proximate fate flexible" units that will engage in dialogue with each other and the environment and synergistically tend towards "ultimate whole entity perfection"?

Beesley: I see things rather differently.

I agree that many of the components of the work are refined, but I don't see them as perfected. The things in this project have to be refined to function: for example, the snap-fit of a plastic tongue into a mating socket needs just enough friction to grip its mate while staying flexible enough to avoid collapsing the whole surface.

These qualities are gained through concentrated design and testing. At the same time the textile strategies I use make intensive labour for individual parts impossible. There are tens of thousands of parts, so every tooling and fabrication motion used in making each piece gets exponentially compounded. This requires an economy of means and wide tolerances in the quality and form of each element. I would say the design approach to sub-units is in pursuit of a balance of refinement and economy. This approach sounds rather circumstantial and dominated by quite flexible, practical judgement instead of the picture of perfection suggested by your question.

I agree that perfection is a value that accompanies thinking of nature. The nineteenth-century biologist and artist Haeckel, for example, in documenting radically new dimensions of natural life, arranged species on his illustration pages in glorious, radiant symmetries, giving a picture of confidence in a balanced, integrated universe even while he recorded very strange, disturbing details. I wonder if your 'fate map' description of the action of DNA contains a similar confidence in fundamental underlying orders.

Sometimes, when I am in places that are thriving, I do feel full of this kind of confidence. I remember a long walk through the Puskaskqua wilderness on the north shore of Lake Superior where humidity-thickened atmosphere was shot through with hanging moss and butterflies and where the ground was a succulent sponge composed of layer upon living layer. In such a setting, my urban anxiety about adulterating nature seemed self-obsessed, adolescent. The living world sweeps over me there and renders me tiny. More often, though, when I contemplate the world that we are losing, I feel a vertigo. A revolting knowledge of causing death. This is a far cry from ultimate whole-entirety perfection.

However, the idea of creating 'proximate fate flexible units' rings true and it may very well become a guiding strategy in the future. This could involve designing a set of simple elements which could function in a host of different situations, guided by a set of master codes. In that case, the degree of flexibility in the individual units becomes a critical issue, but just as fundamental would be the master codes: who creates them? Can they get repaired? How do they respond to problems? Systems of refreshing and transforming the codes would be needed.

My project currently concentrates on making potent units and combining them into a complex. The potency of the individual units tends to be achieved by specialization. While there are some traces of overall pattern (the non-recursive Penrose geometry system that guides orienta-

tions of individual structural units in Orgone Reef, for example) the specific nature of the complex is relatively open. It is an aggregate result determined by the accretion of its members, not by an overarching plan. I recognize that this approach is prone to making bloody messes.

In short, I suspect we are imagining opposite approaches; mine is bottom-up, suffering from the rigid specialization of each of its members but yielding a complex with promising hybrid qualities, with the possibility of viability; your description seems top-down, offering the advantage of great flexibility and economy in its members but requiring a troubling level of central control. With benign, inspired direction the second approach can be very effective. But I have little confidence in good leadership.

Nuttall: If the goal of creating self-sustaining, reproducing and evolving entities is never manifested will this ultimately suggest that there is a larger 'force' that rejects these attempts? What are the implications of this conclusion?

Beesley: An answer might envision nature as a territory whose boundaries are automatically defended by natural laws. If a system is not effective, it dies. But this begs the question of the origins of the laws. In a diplomatic way, then, you may be asking about God. God, maker and defender; and modern science, where theatres of large forces ruling the behaviour of systems show themselves in a host of ways. First, can life be created? Second, if it cannot, is something larger stopping us?

I am able to set fires that spread and sustain themselves by feeding on their surroundings. I am able to insert corruptions into existing systems that cause hybrid behaviours. But these are only temporary arrangements, inflecting existing mortal things.

Perhaps closer to the question, I am able to arrange gardens and guide marriages of species- and a host of simple things can come together into a living body. In his personal philosophy of 'Orgonomy', the heretic scientist Wilhelm Reich says:

"All plasmatic matter perceives, with or without sensory nerves. The amoeba has no sensory or motor nerves, and still it perceives. Each organ has its own mode of expression, its own specific language, so to speak. Each organ answers to irritation in its own specific way: the heart with change in heart beat, the gland with secretion, the eye with visual impressions and the ear with sound impressions. The specific expressive language of an organ belongs to the organ and is not a function of any 'center in the nervous system'...milliards of organisms functioned for countless thousands of years before there was a brain. The terror of the total

convulsion, of involuntary movement and spontaneous excitation is joined to the splitting up of organs and organ sensations. This terror is the real stumbling block. For the reasons described above, classical biology remained stuck in the cell and did not find the simple path to the demonstration of the cell's organization from bions and its disintegration into bions after death." [Orgonomic Functionalism, 1949]

Reich defines a bion as a vesicle charged with 'orgone' life energy representing a transitional stage between non-living and living substance, constantly forming in nature by a process of disintegration of inorganic and organic matter.

The contemporary biologist Manuel DeLanda speaks even more directly to living systems arising from inert matter in his 1992 essay 'Nonorganic Life'. He describes some elements as catalysts "interacting with various other elements and thereby allowing them to transform each other chemically. They enable inert matter to explore the space of possible chemical combinations, in a non-conscious search for new machinelike solutions to problems of matter and energy flow. It is as though catalysts were the Earth's own 'probe heads', its own built-in device for exploration, and indeed, to the extent that autocatalytic loops and hypercycles were part of the machinery involved in the 'discovery' of life, these probe heads allowed physicochemical strata to transform themselves and their milieus into completely new worlds."

Seen this way, 'larger forces' in the question are created by the complex interactions of the ingredients. The forces are precarious. They may well work for the defence of an existing system and the exclusion of new systems. Alternately, they may work as catalysts that transform an existing world, in turn either speeding its extinction or opening the possibility of hybrid survival.

Dan Nuttall, Ph.D. is an assistant professor at the Faculty of Architecture at the University of Manitoba.

Philip Beesley, Architect
MRAIC OAA B. Arch. Dip. Tech. B. F. A. Prix de Rome

Philip Beesley practices architecture and art in Waterloo and Toronto, Canada. Work within the practice of Philip Beesley Architect concentrates on textile lattices in architecture, a class of experimental structures. He teaches first-year and graduate design studios at the University of Waterloo School of Architecture. He is co-director of the Integrated Centre for Manufacturing, Visualization and Design at the University of Waterloo, a facility combining high performance computing and automated manufacturing of architectural components.

About "Orgone Reef"

Orgone Reef is a speculation of what the skin of a building could be like in the future. The project is an interlinking matrix manufactured by a computer-controlled laser cutter. The project probes the possibilities of combining artificial and natural processes to form a hybrid ecology.

Orgone Reef is a technical exercise in construction and fabrication. The project relates to geotextiles, a new class of materials used for reinforcing landscapes and buildings. A minimal amount of raw material is expanded to form a network forming a porous volume. A Penrose tessellation, a non-repeating geometrical system, is used to create the hybrid fabric. This structure acts like an artificial reef that could support a living skin.

At the same time, the project invites questioning our own relationship with the world. The structure in the gallery has reflexive qualities that respond to the viewer, pushing back. The large-scale field structures offer bodily immersion and create a wide-flung dispersal of perception. The details of this structure are designed to catch and hold the things they contact, collecting and digesting material and building themselves. The result is an altered psychology that changes our relationship with the things we build.

Sources for this work include nineteenth and twentieth-century spiritualist texts that dwell on uncanny mixtures of anxiety and hope. The project title Orgone Reef is derived from this tradition. The term 'Orgone' was coined by Wilhelm Reich, a student of Freud, to suggest a subtle life force encircling the world. Reich, tinged by obsession, saw the world as an intelligent, evolving entity. His visions offer a poignant alternative to Modern progress.