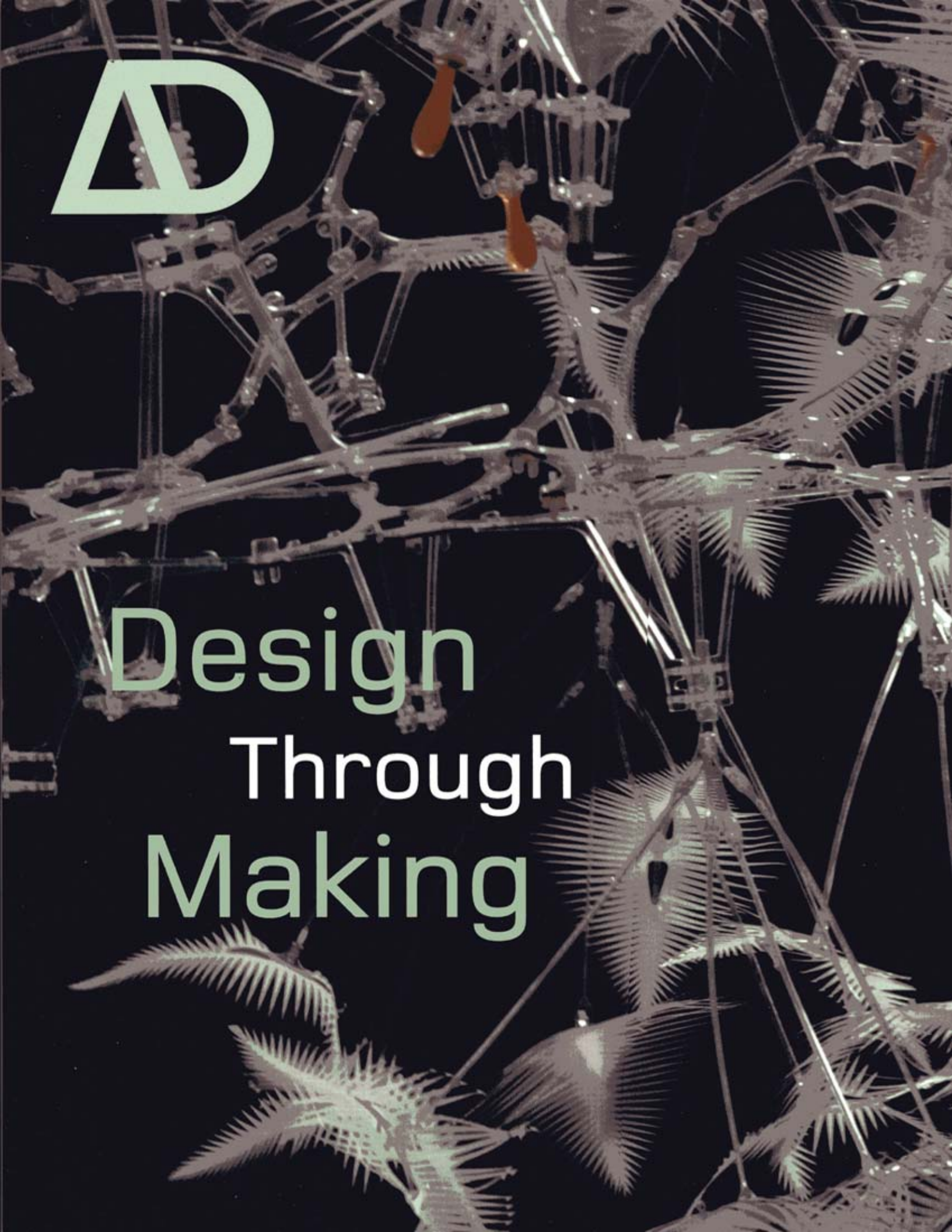

AD
Design
Through
Making

ORGONE REEF

Making architecture may be considered a conscious endeavour to imagine and investigate the physical and psychological aspects of human experience. Fed by an insatiable urge to understand and explore his environment, Philip Beesley constructs exquisite thresholds that mediate between craft and manufacture, meaning and behaviour, physicality and psychology. His works Orgone Reef and Orpheus Filter invite us to imagine and touch the extraordinary.

London Building Centre installation: view of composite membrane layer. Organising system is derived from Penrose tessellation.

Panoramic view of Orgone Reef, showing exposed layer of whisker actuators positioned below upper injection and collector matrix. The pillowed structure is derived from isolated vertical bonding between layers.

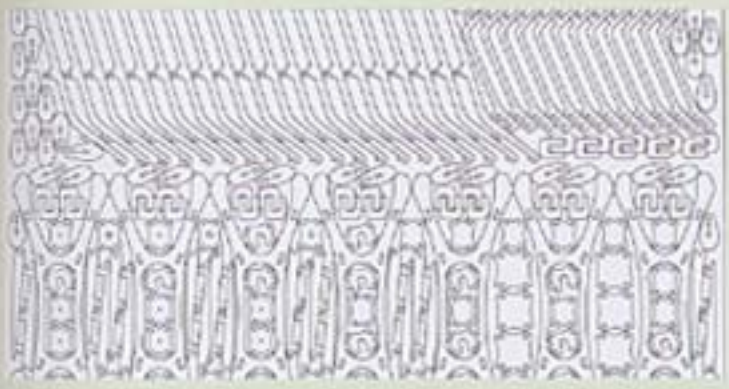
Penelope was stained darkest moss-green and black-red. Artemis bubbling with one thousand flowing breasts. Her bodice a garland cover of countless more: tangled fields of pendant vires cut from ripe fathers, overflowing testicles making a cornucopia. Remus had skin the same colour, black-blood crust that rimmed the pit inside the sanctuary on the hill. Bull after bull, bleeding into the earth.[1]

The Orgone Reef series of installations are speculations of what the surface of a building could be like. In 2004 projects in Birmingham and London, and most recently in Cambridge, near Toronto, Canada, lightweight expanded meshworks are installed within large rooms making an immersive lining. The structure in the gallery responds to the viewer, hovering and vibrating in response to air currents within the room. This structure acts like an artificial reef that could support a turf-like surface of natural material. The project probes the possibilities of combining artificial and natural processes to form an uncanny, hybrid ecology.

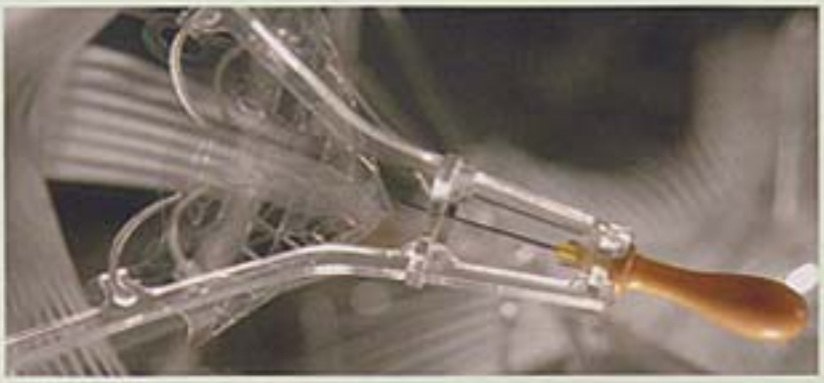
Orgone Reef is in part a technical exercise in construction and fabrication. The project is a hybrid geotextile, a new class of materials used for reinforcing landscapes and buildings.

Cupped filters and valve-forms in this collection array derive from selective warping of flat-sheet fabrications. One-way passive valve details induce transfers through the assembly.

Penrose tessellation assembly rules: alternate configurations for rhombic structural units with corresponding decagonal membrane tiles.

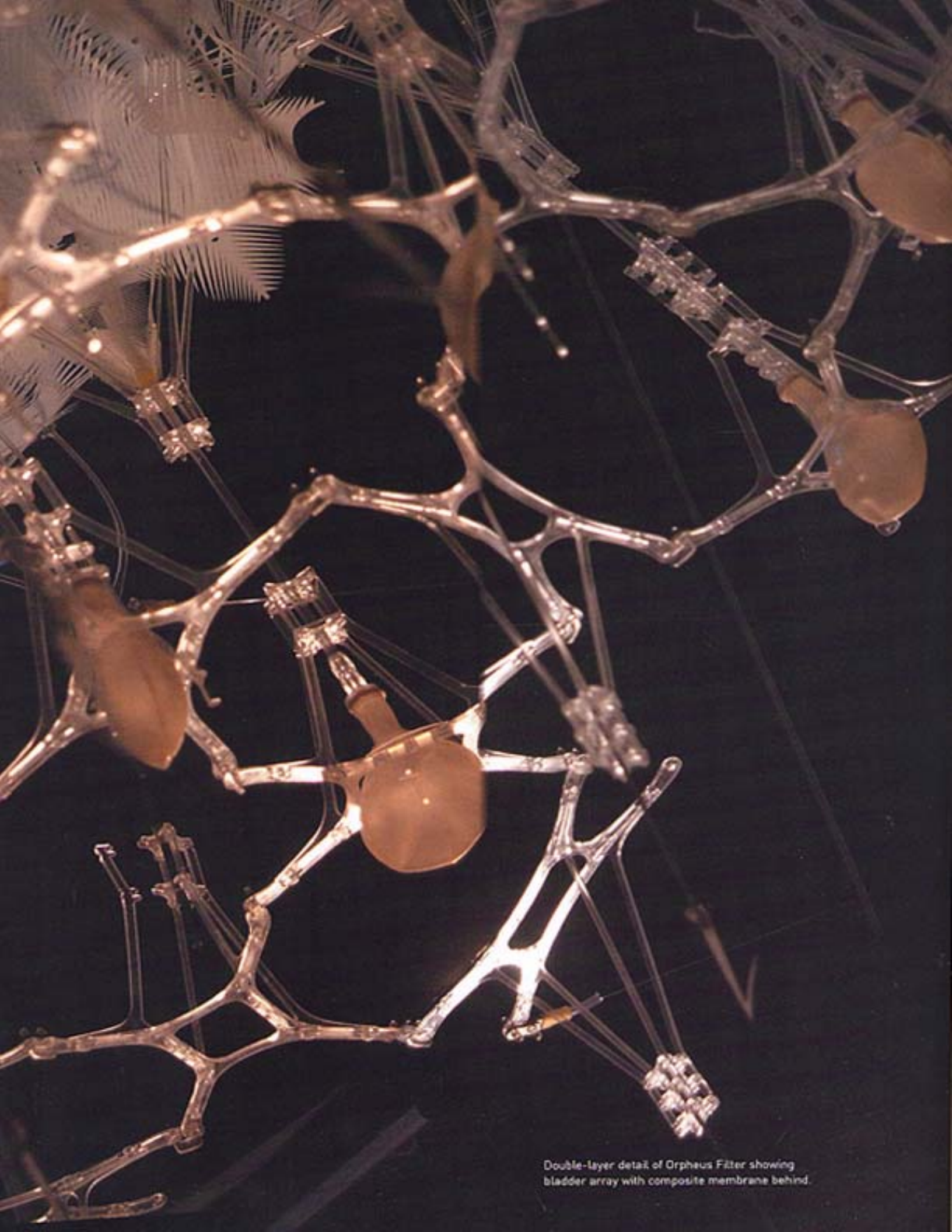


Nested laser-cutting production layout, showing cutting paths for snap-fit assembly elements.



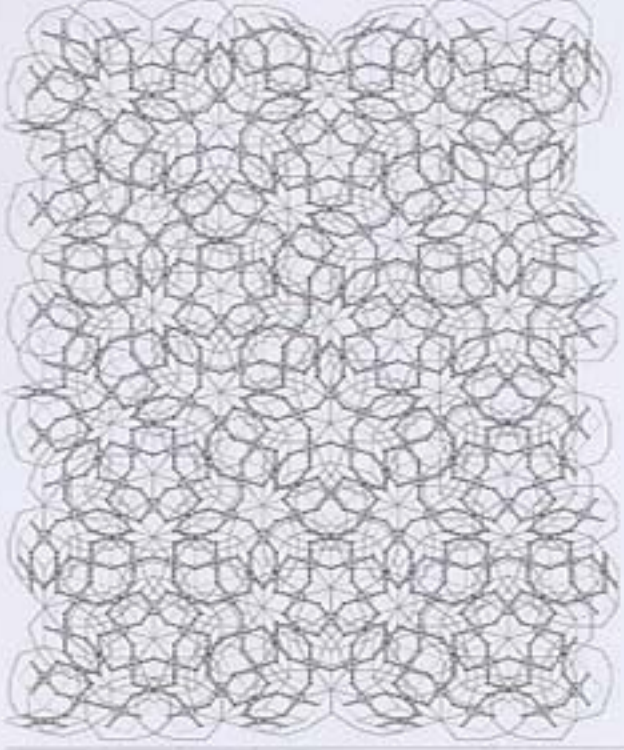
Orgone Reef injection-unit needle with bladder reservoir fitted to growth-matrix clamping cone. Units are positioned within the membrane filter layer.

Microprocessor nodes in the upper layer of Orgone Reef control clusters of sensing whiskers suspended from the lower layer. When proximity is sensed, oscillating waves transmit throughout the assembly.



Double-layer detail of Orpheus Filter showing bladder array with composite membrane behind.

The installations are dense interlinking matrices made of thousands of plastic and latex pieces manufactured using automated laser-cutters working directly from digital models. Individual elements can be produced at low cost and with quick cycles of refinement. The small scale of the production suggests the possibility of a new cottage-industry-based economy.



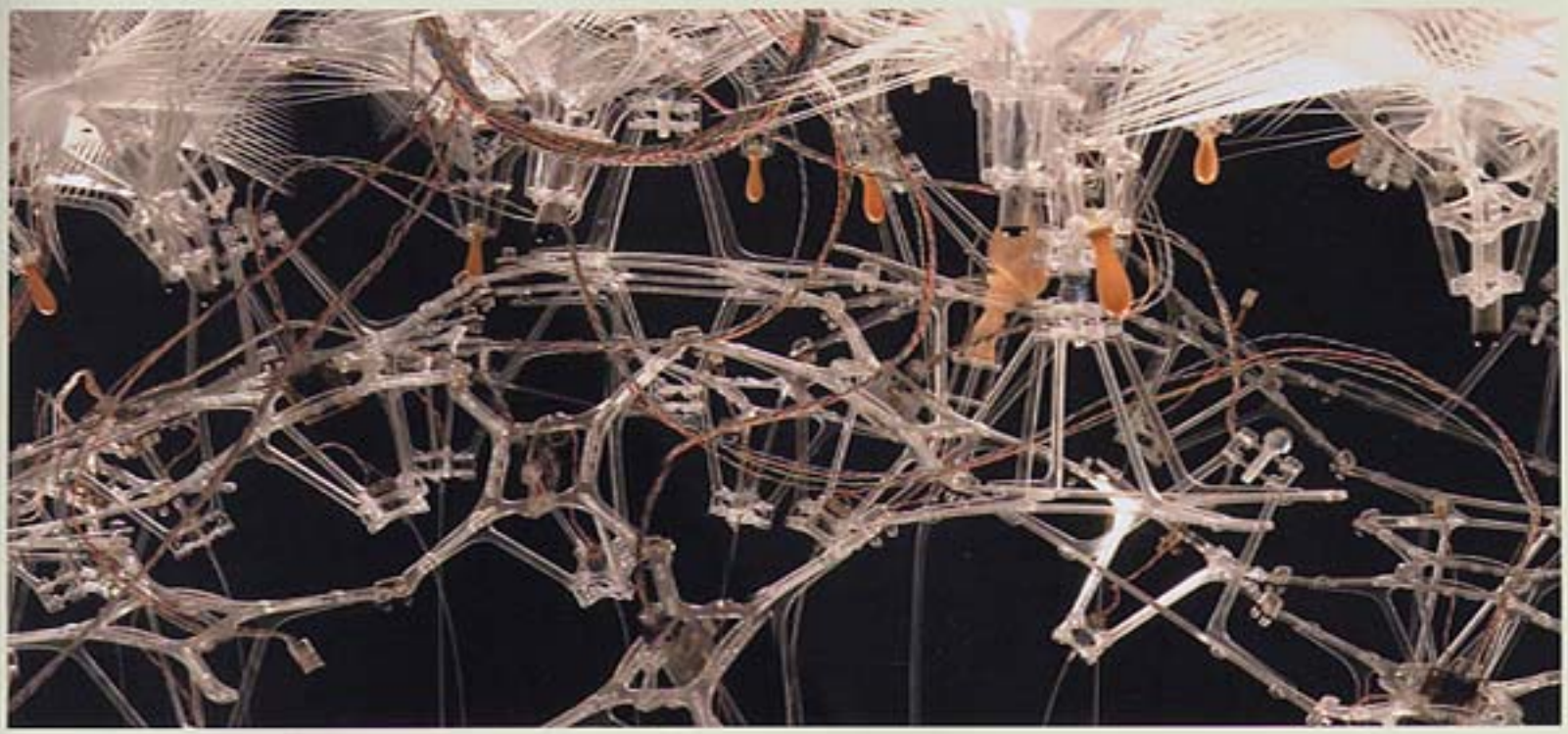
Unfolded layout for Orpheus Filter meshwork structure showing a self-generating pattern of interlinked rhombic units.

Orgone Reef is in part a technical exercise in construction and fabrication. A minimal amount of raw material is expanded to form a network, producing a large, porous volume. A Penrose tessellation, a nonrepeating geometrical system, is used to organise this fabric. The installations are dense interlinking matrices made of thousands of plastic and latex pieces manufactured using automated laser-cutters working directly from digital models. Individual elements can be produced at low cost and with quick cycles of refinement. The small scale of the production suggests the possibility of a new cottage-industry-based economy.

The project invites us to question our own relationship with the world. The actions in this project are subtle and occur over long stretches of time. Trembling vibrations and visual oscillation provide a general undercurrent. Osmotic action that pulls moisture and floating matter through the pores of outer membranes is created within intermeshing valves detailed into the outer surfaces. Clamping, injection and digestion functions would occur in reaction to the intrusion of larger organisms within the structure. These processes would encourage a living turf to accumulate, intermeshed within the lightweight matrix. The structure would eventually decay and be replaced by this growth.

Each link of the fabric net receives special details. Inside is an anatomy of bladders cushioned by sprung tendons and terminated

Side view of Orgone Reef strata with collection layer above, and activation meshwork fitted with microprocessor controls below.



Detail of Cambridge installation showing lower strata with activation system suspended below membrane assembly. Microprocessor clusters control whisker sensors and actuators, interspersed with clamping units.

by hollow needles to puncture and drain. Towards the outside, angled crampons bent back for springing and grasping are set up with hair-trigger antennae. Around, a spread of open joints with outflung guides to catch and link with neighbours. Each of these protozoan cells is thin and meagre, but by linking and clumping together they make mass and thickness. At first a bare latticework controlled by the geometry of its elements, then increasingly formless and growing darker as it ingests decomposing matter. Thicker, and fertile, enveloping the implants and making a complete turf. This cover is finally dense, redolent with growth. And within that vital new earth, a convulsion glimmers – a poise telegraphing through from the sprung armature deep within.

Implication

The term 'Orgone' was coined by Wilhelm Reich, a psychologist working alongside Freud, to suggest a fertile life force encircling the world. Reich, whose work was tinged by obsession, saw the world as an evolving entity dominated by primordial energies.[2] His visions offer a poignant alternative to the Modern version of progress.

The physical nets constructed in these projects are a class of geotextiles, structural materials developed to reinforce and sustain natural landscapes. Engineered fabric systems are a common technology for shaping terrain. These nets use physical detailing, encouraging self-assembly. Their pursuit of artificial life is an extension of modern landscape architecture.

At the same time, the projects tend to question boundaries of psyche. Their large-scale field structures offer immersion, rendering our physical bodies porous and offering wide-flung dispersal of identity. Two prevailing qualities root this within a Romantic tradition. First is a vertigo that comes with immersion within the

fluctuating hollow ground of the installation; a lurching release from ordinary gravity. A second quality is a version of the oceanic. Teilhard de Chardin, writing in the past century, described this in optimistic terms as 'a stage of active sympathy in which each separate human element, breaking out of its insulated state under the impulse of the high tensions generated in the Noosphere, will emerge into a field of prodigious affinities ... Humanity, as I have said, is building its composite brain beneath our eyes.'[3]

I acknowledge de Chardin's confidence in tangible ways: the caress of this installation induces little bundles of sensation – in the joints of my elbows, at the backs of knees; between eyebrows, in sternum; in whole-skin reactions – projecting and hesitantly encountering things that lie outside. The caress of Orgone Reef offers a mechanical empathy.

Notes

1 Author's journal entry, conception of Orgone Reef installation 2004.

2 Wilhelm Reich, *Selected Writings: An Introduction to Orgonomy*, Farrar, Straus and Giroux (New York), 1961.

3 Pierre Teilhard de Chardin, *The Future of Man*, Fontana Religious Books, 1964, p 184.

Credits

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Prototyping: Integrated Centre for Visualization, Design and Manufacturing, University of Waterloo, Ontario

Consultants: Thomas Seebohm, Diane Willow

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