



# DIGITAL ARCHITECTURE NOW

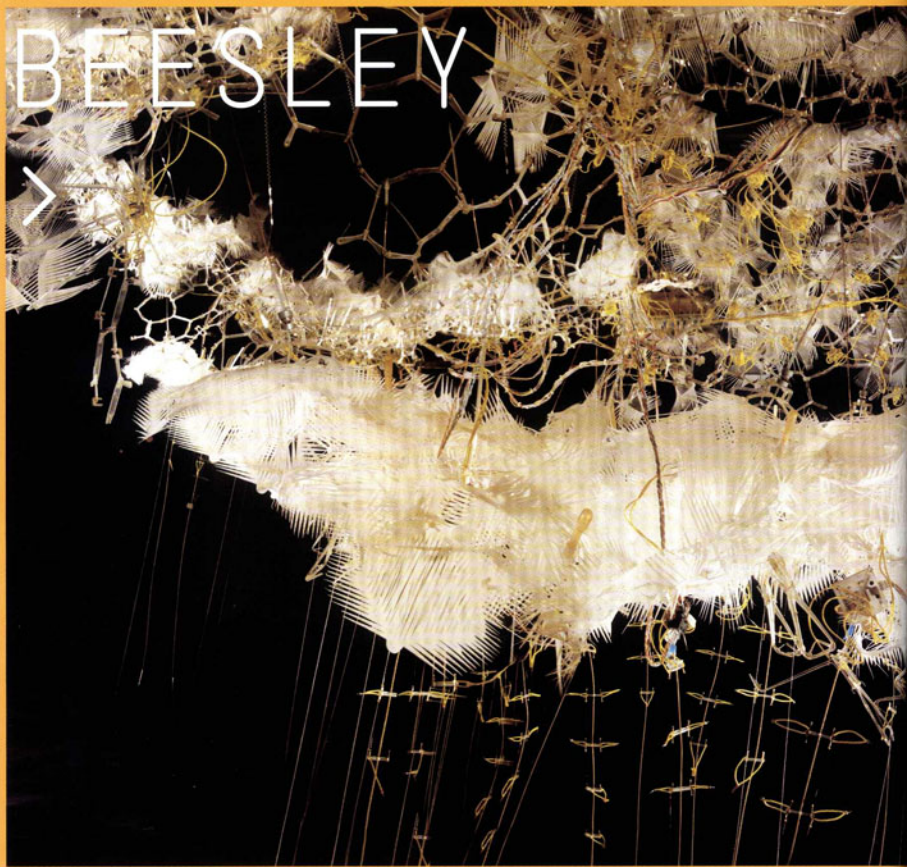
> A GLOBAL SURVEY  
OF EMERGING TALENT

NEIL  
SPILLER

Thames & Hudson

PHILIP

BEESELEY



The Canadian academic, architect and artist Philip Beesley creates architecture that concentrates on vital, seething qualities built up from intensive repetition of miniature parts. His early landscape-based work employed flexible draping that sought to create a subtle skin for the land. Other examples tend towards porous, ephemeral spaces in which living functions are implied.

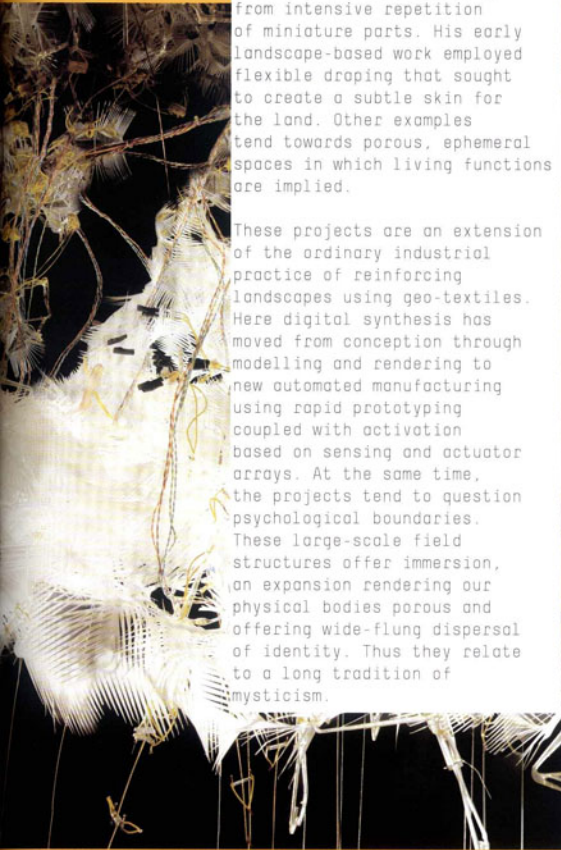
These projects are an extension of the ordinary industrial practice of reinforcing landscapes using geo-textiles. Here digital synthesis has moved from conception through modelling and rendering to new automated manufacturing using rapid prototyping coupled with activation based on sensing and actuator arrays. At the same time, the projects tend to question psychological boundaries. These large-scale field structures offer immersion, an expansion rendering our physical bodies porous and offering wide-flung dispersal of identity. Thus they relate to a long tradition of mysticism.

## TORONTO



Beesley's current work has an ethereal quality; it moves almost as slowly as a plant, changing its micro-orientation with the nuance of intent of a Venus flytrap. But not for Beesley the final snap shut. His work is an ongoing quest for a composite architecture, an architecture of delicate parts, trembling, ever so subtly, in their ecstatic inhalation of the world and its minute constitutions and micro-climates.

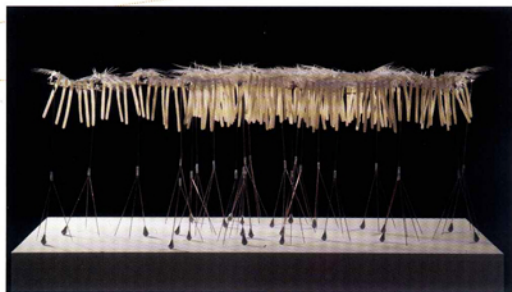
To make these fragile pieces, paradoxically, he uses large machines that laser-cut and depose beautiful and natural-seeming elements, which he places and interlinks with the care of a twenty-first-century demiurge.



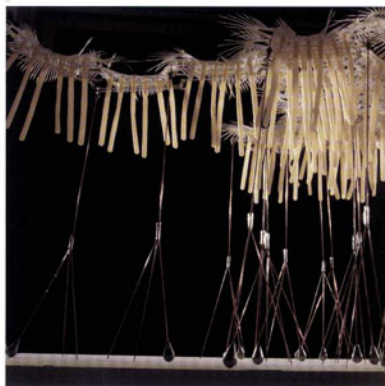
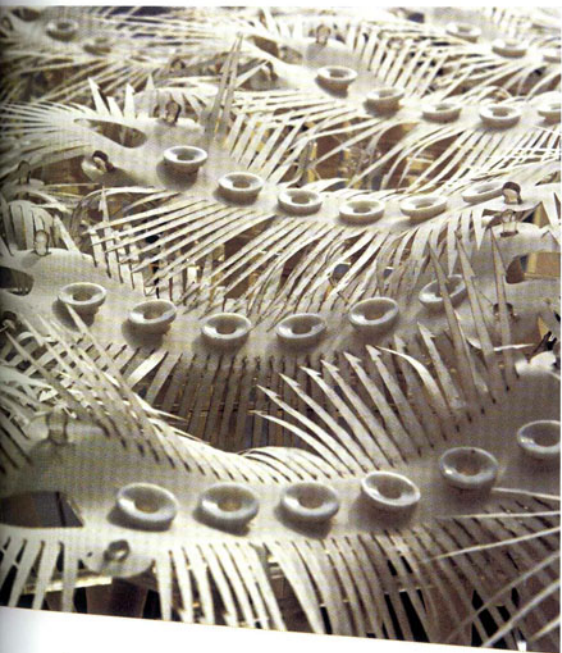
# Cybele

## University of Waterloo, Canada

Cybele is a self-assembling structural framework made of extremely delicate laser-cut components connected and oriented by powerful rare-earth magnets. A barbed cellulose membrane covers the structure; through flex and movement in the system, it knits itself together. The sculpture was installed at the University of Waterloo in 2005.



- 1\_Elevation showing laser-cut canopy and magnets
- 2\_Canopy detail
- 3\_View below canopy
- 4\_Detail within canopy

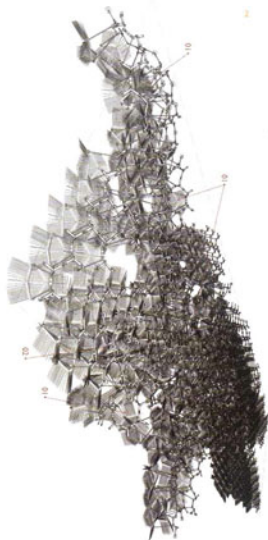


# Implant Matrix InterAccess Media Arts Centre, Toronto

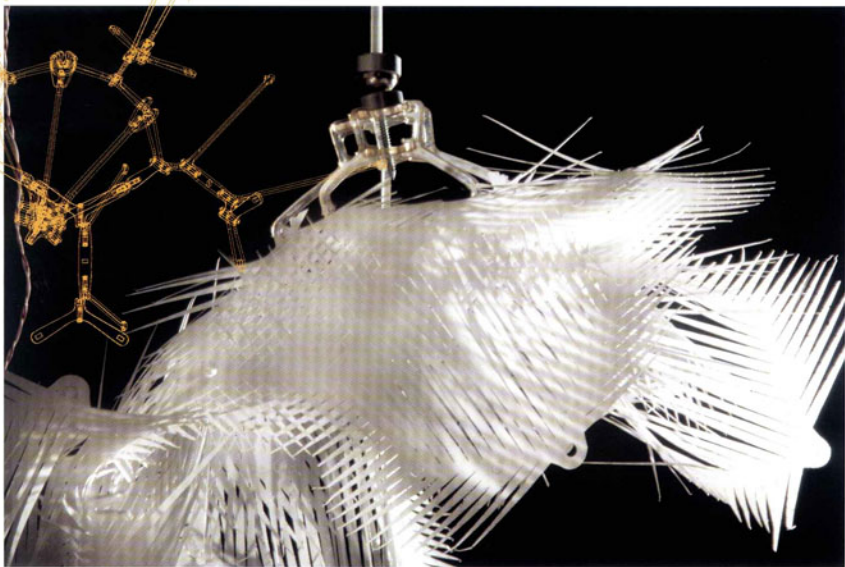
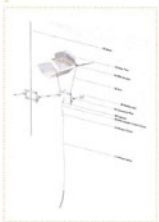
Implant Matrix is an interactive geo-textile that could be used for reinforcing landscapes and buildings of the future. The matrix – fabricated by laser-cutting direct from digital models – is capable of mechanical empathy. A network of mechanisms reacts to human occupants as erotic prey. The structure responds to the human presence with subtle grasping and sucking motions, ingesting organic materials and incorporating them into a new hybrid entity.

Implant Matrix is composed of interlinking filtering 'pores' within a polymer structural system. Primitive interactive controls employ distributed microprocessors with capacitance sensors and shape-memory alloy-wire actuators.

Implant Matrix was installed at the InterAccess Media Arts Centre in Toronto in 2006.



- 1\_2\_Plans
- 3\_Correspond details
- 4\_Canopy
- 5\_Under canopy
- 6\_Exterior detail
- 7\_Detail view

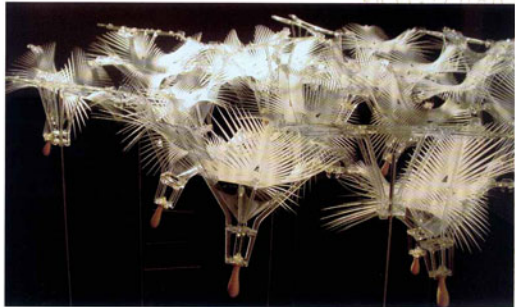


## Orgone Reef Travelling architectural installation

Orgone Reef is a hybrid geo-textile equipped with layers of miniature valves and clamping mechanisms that slowly digest and convert surrounding material into a fertile living wall. A minimal amount of raw material is expanded to form a porous network. The array is organized into a cohesive structure using shifting patterns of non-repeating geometry. The work was installed at the Royal British Architects Pavilion at Birmingham and the Building Centre in London in 2004.



> Beesley's creations have a quivering eroticism seldom seen within the architectural profession.

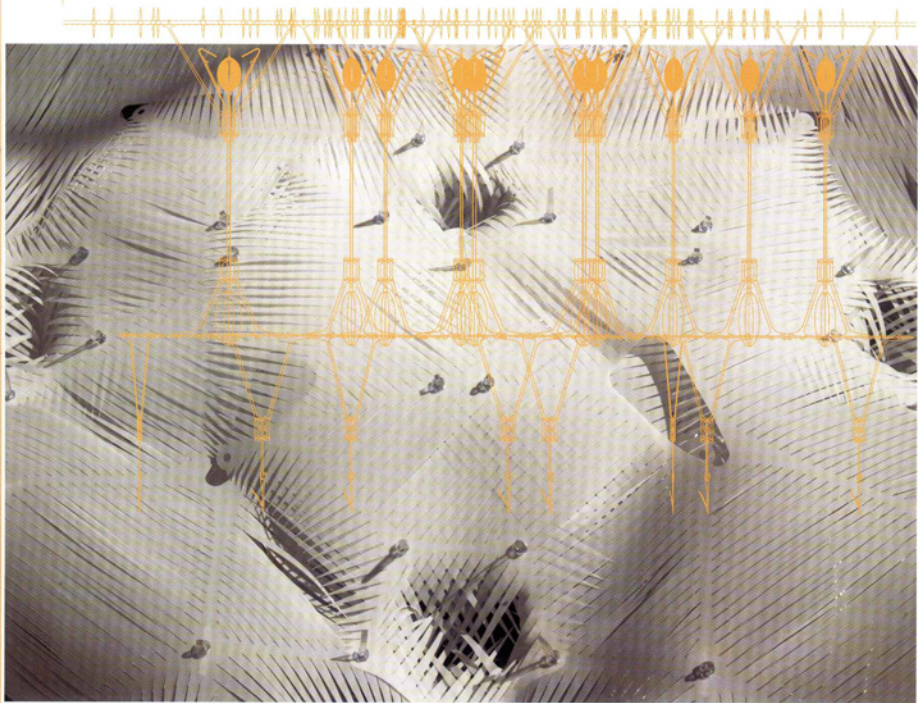




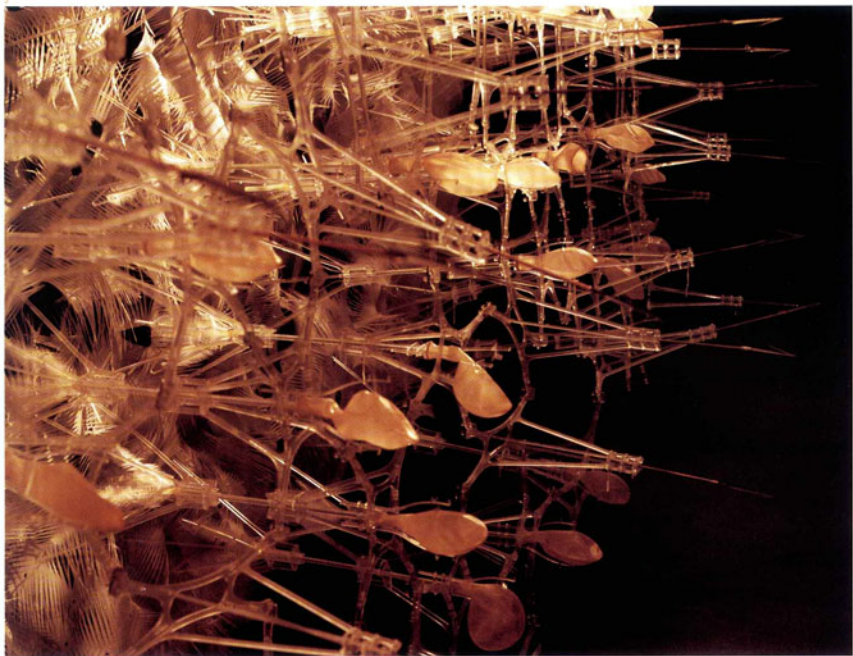
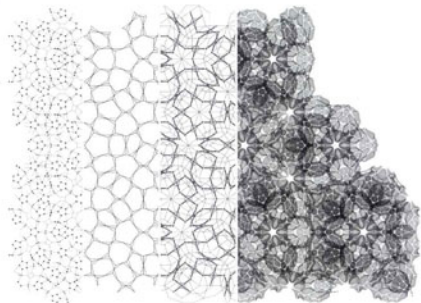


- 1\_General arrangement view
- 2\_Reflected canopy
- 3\_Component detail
- 4\_Detail of heads
- 5\_Laser-cutting patterns

# Orpheus Filter Travelling installation

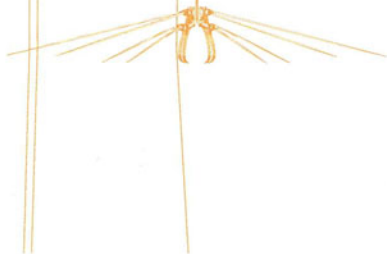


Orpheus Filter is an artificial reef designed to collect and digest organic material. The work attempts to create an immersive experience of a volatile, fertile earth, offering dissociation and absorption and resulting in waves of hybrid behaviour. The structure employs reflexive functions involving arrays of sensors and actuators operating valves and 'whisker' sensors. The work was developed in association with the Media Lab at the Massachusetts Institute of Technology in Cambridge, Massachusetts and the Daniel Langlois Foundation for Art and Technology in Montreal.

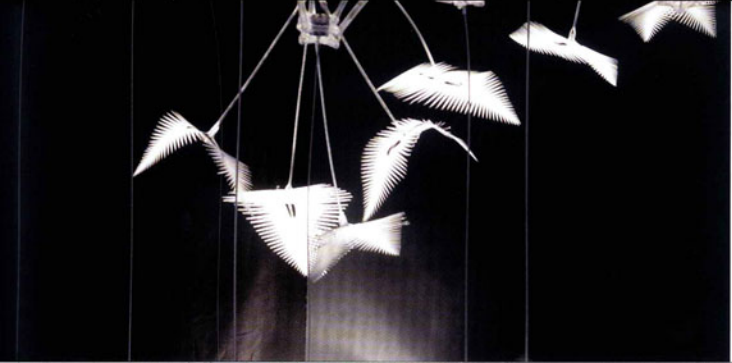
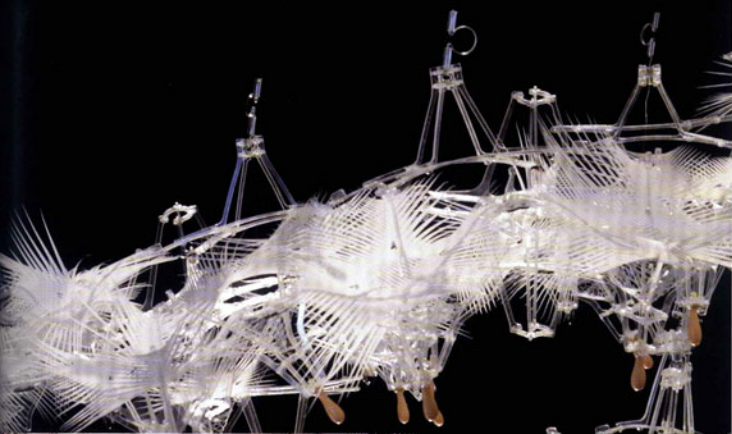


# Reflexive Membranes

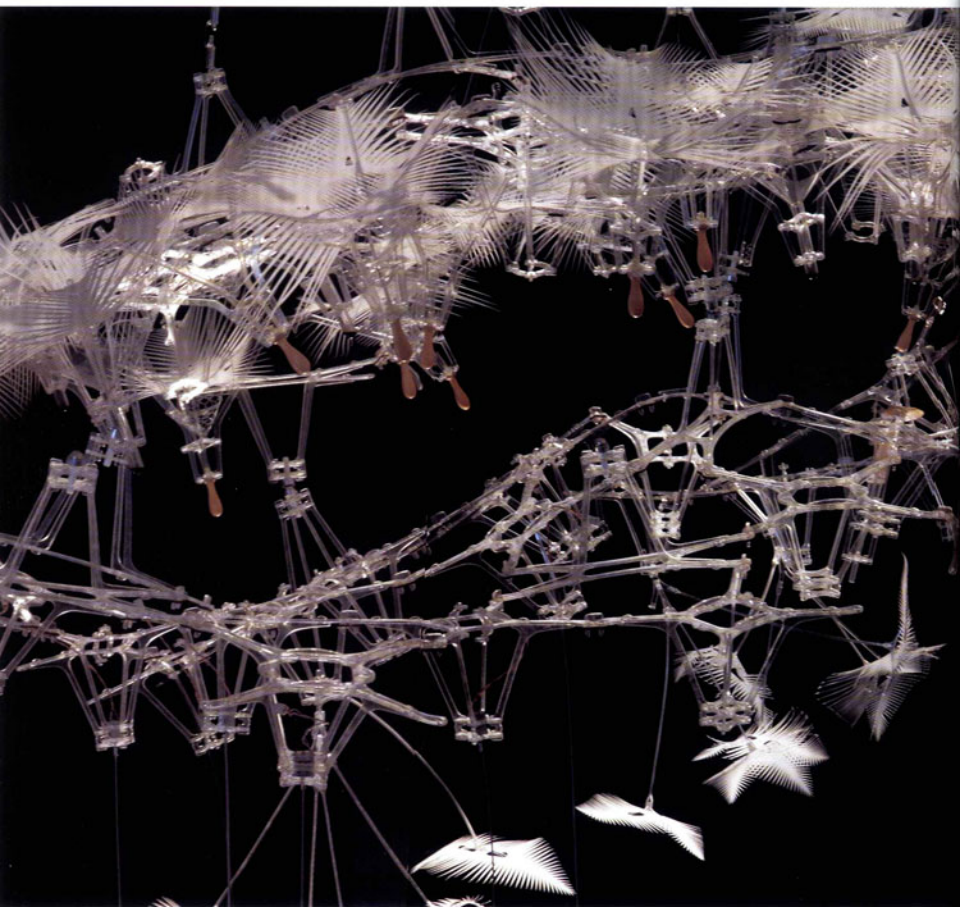
Cambridge, Ontario,  
Canada



Reflexive Membranes is an extended sculpture series of porous interlinking matrices manufactured by computer-controlled rapid-prototyping equipment and activated by arrays of sensors and actuators. These lightweight structures are made of an aggregate of smaller impulse-based reactions and a 'neural' network of microprocessor-controlled responses. The integration of arrayed microprocessing and activation systems into the structural lattices creates a physically responsive, adaptive and self-organizing sculpture system.



1\_General arrangement section  
2\_Detail view  
3\_General arrangement views



4\_General arrangement views

