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CITY SIGHTS: The National Academy of Sciences

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CITY SIGHTS: Finding the science-art in New York area art exhibitions
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The National Academy of Sciences
Washington D.C.
Sentient Chamber by Philip Beesley
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Since artists began to seriously engage with technology and engineering in the 60s, evidenced in a number of cross-disciplinary collaborations including Robert Rauschenberg, Jean Tinguely, and Billy Klüver's infamous *Homage to New York*, creating art that can move on its own and interact with the audience has become an increasingly popular practice. Interactive art, as opposed to more traditional still art objects like paintings and sculptures, demands something from the viewer before fully revealing itself. There is a small thrill in waving your arm in front of a piece and seeing what programmed response it has for you – for a second it feels like, "Hey, I made it move, I did that!"

But the thrill of interactive art is often short-lived and cheap-feeling. After the first interaction, you can predict how it will respond when you wave your arm again, and the magic is gone. I have always felt a certain sadness after seeing this type of work, because unlike a really good painting or sculpture that can keep you engaged for minutes on end while you explore the complexity of composition and concepts and aesthetics, the mechanisms in interactive art are often obvious and the piece doesn't usually have much else in the way of depth to offer. I'm left feeling aesthetically ripped off.

Last week I went to see Philip Beesley's *Sentient Chamber*, currently installed at the National Academy of Sciences. This piece, an interactive sculptural/architectural installation, not only single-handedly renewed my belief in the potential of interactive art but was one of the best pieces of contemporary visual art I've seen in the past year.

Beesely is a visual artist, architect, Professor of Architecture at the University of Waterloo, Professor of Digital Design and Architecture & Urbanism at the European Graduate School, and the Director of Living Architecture Systems Group. Based in Toronto, Beesley's pieces, which all straddle the disciplines of sculpture and architecture, have names like *Epiphyte Membrane, Radiant Soil, Protocell Cloud, Hylozoic Soil, Epithelium*, and *Cloud Brocade*.

Upon entering the space where *Sentient Chamber* is installed I was immediately struck with three words: beautiful, strange, pristine. I felt like I was approaching something I didn't quite understand. Walking around, and through the metal and acrylic infrastructure of the piece, elements resembling Venus fly traps would whir as I passed by, while test-tubular clusters, hanging like laboratory fruit, would light up and darken again. The upper canopy slowly buzzed and rustled, prompted by unknowable forces.

Every centimeter of *Sentient Chamber* is exact in construction and organic in feeling. The main columnar regions are made from webbed stainless steel and acrylic that are laser cut in a hexagonal pattern optimized for strength, flexibility, and lightness. Nested throughout the Mylar 'fronds' are proximity sensors supported by a network of microprocessors. There are hanging glass bulbs, called 'protocells', which contain a mixture of substances trapped in a continuous chemical reaction. Playing through nested speakers are tonal sounds that are derived from the interacting code.

Beesley is a modern day Renaissance Man; flitting between language from the fields of biology, neuroscience, engineering, complexity science, architecture, sculpture, abstract expressionism, and philosophy, I had the pleasure of picking Beesley's brain for a few hours while standing with the piece. Among the whirring, tonal sounds, blinking lights, and waves of subtle sculpture-wide movement, I came to understand why it was that *Sentient Chamber* works so well; true to its name, *Sentient Chamber* has an awareness of its audience (via motion sensors), awareness of itself

(it reacts to its own reactions via the same motion sensors), all the while being semi-conducted behind the scenes by ‘background’ programming. This layering of code, controlling both the whole and distinct portions of the installation, creates a piece whose behavior never repeats itself.

As our conversation continued, I realized that I was naturally inclined - as was Beesley - to discuss the piece in anthropomorphic terms. I am a hard AI skeptic, and have too much training in neuroscience to ever really be in total awe of computational power (no current technology comes close to the synaptic power of the brain). Standing with *Sentient Chamber*, however, I realized I had never been in the presence of something so mechanical that felt so alive. Far surpassing Furbies and Chat Bots and the like in the quality of engineered organic behaviors, I started to think okay, maybe this piece is a *little* bit alive. Indeed, this is one of Beesley’s goals: to create architectural elements and spaces that engage in mutual exchange with its inhabitants, that are responsive and interactive, that have distributed intelligences, and have their own metabolisms and growths and energy renewal cycles. Beesly, speaking on his work that evening at the Cultural Program of the National Academy of Sciences’ DASER (D.C. Art Science Evening Rendezvous) event, noted that yes, as architects we can aim to reduce energy and material use and go ‘green’, but what about creating buildings which mimic the life forces of transformation, that can naturally grow and expand according to our needs? In Beesley’s vision, architecture would act like a pluripotent cell, not yet determined, the embodiment of potential. This conversation was particularly poignant given our location in the neoclassical-monumental architecture capital of the country; beautiful as it is, one couldn’t help but wonder what the world would be like if those grand columns’ function went beyond aesthetics.

Sentient Chamber is the kind of piece you could spend all day with. It goes about its business, whirring and sounding and trembling, reacting to itself, any draft that may come through, any visitor that may walk by. Beesley told me that with this piece, he and his team made some hardware and software breakthroughs which allowed for the level of complexity seen here, and that this was just the beginning. I laughed and told him that if this was just the beginning, I can’t wait to see what he has next in store.

Visit *Sentient Chamber* at the National Academy of Sciences in Washington D.C. through May 31st. Visit Beesley’s website at http://www.philipbeesleyarchitect.com/

All photos taken by Julia Buntaine. Videos courtesy of Living Architecture Systems Group.