5 QUESTIONS

Greg Murray

Charles and Ray Eames' *Mathematica*, one of the most popular exhibits at the Museum of Science, has been refurbished over the past two years; the exhibit, a visually arresting immersion in mathematical concepts with seven freestanding displays set in a rectangular image-clad gallery, is now on view in a new location. Marie S.A. Sorensen AIA, a Cambridge-based architect specializing in learning environments and modern-period conservation, spoke with Greg Murray, project manager of exhibit conservation and development at the museum, about how the finely detailed artifacts and their modular setting have remained materially robust and intellectually relevant 54 years after they were built.

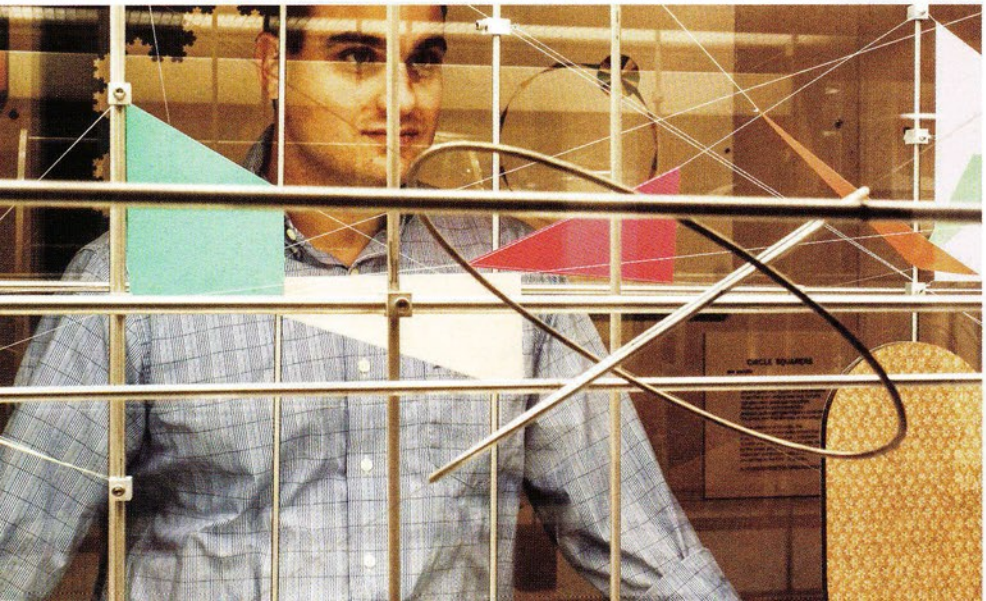
Did you treat the exhibit as a significant work of Modernist design and popular culture?
It's part of the museum's permanent collection. We treated it the same way we would treat a dinosaur fossil or a piece of [a] space shuttle. We were handling hundred-pound steel beams with gloves because we didn't want to scratch the paint.

How was the decision made to move it, and is there concern the exhibit will be unavailable during electricity shows?
For us, the Theater of Electricity was a natural fit. You can look at it in two ways: One, we took this beautiful exhibit and tucked it in the back of the museum; two, we put it in the most popular gallery in the museum that has 500 people at every show.

***Mathematica's* exhibits are considered some of the first interactive exhibits ever created in science museums. What did they do that was innovative at the time?**
Probability is a good example in that it's able to illustrate an abstract concept beyond just a line drawn in a textbook. There's something tangible about a 12-foot-high machine dropping a stream of balls and laying them out in a curve. Before people had computers at home, they would come to the Museum of Science to interact with something called the Internet. Whether it's today or 30 years ago, the museum provides experiences you can't get at home.

What do you think of the quality of the materials and hardware that the Eameses chose, and what have you had to replace?
All the major visual parts of the exhibition have not been replaced. The Eameses worked quite a bit in wood and metal. We did not refinish the wood; we just cleaned and preserved it. The iconic high-polish high-luster chrome around the Mobius strip interactive has held up well; there are only a few nicks in it. We kept the Masonite panels that the graphics are mounted on: They're 10 by 4 feet and weigh 100 pounds each. In the *Minimal Surfaces* exhibit, the string that moves the loops up and down is literally monofilament fishing line—and how long does that last? Ten years? So that's been replaced. On *Probability*, we replaced the chain drive and some of the aluminum baskets that lift the balls. They're big claws, and they dip down into the balls and lift them up and then flip them over the top. There are about 25 baskets mounted on a double chain drive. They start to wear out and get bent every once in a while.

Today, exhibit designers talk about getting visitors to collaborate. Some curators believe simpler content is best. The Eameses had a two-part approach: Some content is complex; other content is visually very simple. Do you think they were successful?
Mathematica does a good job of creating both "quick-hit" and "active prolonged engagement" experiences. You see people run up and look in the eyepiece of *Projective Geometry* and say: "Oh, that's cool. I can read the words, but I couldn't read them on the cone"—and then move on. Other times you see people starting to have a discussion over an exhibit, and sometimes that discussion changes so that it's not even related to the exhibit anymore, but they've taken the content and extrapolated it to another point.



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Greg Murray, pictured with the Projective Geometry exhibit at *Mathematica*, Museum of Science, Boston. Photo: Marie S.A. Sorensen

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