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In museums, no stodginess on display

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By Alan Joch

Once upon a time, the design of a museum or exhibition took a backseat to its content. Today, design is content, particularly when a museum's mission is to convey information, rather than show objects. "There is a blurring of distinction between object, experience, and story. Visitors are interacting with ideas that have no physical presence," says Deborah Sussman, principal of Sussman/Prejza & Company, exhibition consultants for the planned Museum of the African Diaspora in San Francisco, which will trace the dispersal of African peoples from the continent to other parts of the world.

For these projects, display technology has come to play a central role, and it has evolved to the point where its hardware can recede into the background so that visitors are not only immersed in content but can interact with it, as well. Two recent projects in Los Angeles and New York demonstrate different ways that designers are experimenting with these capabilities.

Small thinking, big ideas

The Los Angeles County Museum of Art (LACMA) taps the energy of artists to create experimental exhibitions in its Boone Children's Gallery. The latest effort, a 10-month exhibition called nano that opened in December, highlights the work of scientists who explore the world at the submicron level. "Our challenge was to convey the nano-scaled world without creating a corny version of Honey, I Shrunk the Kids," says Bob Sain, director of the LACMA Lab, the research and development arm of the museum.



The revamped Sony Wonder Technology Lab features a display wall (right in photo) that refracts and reflects light outside the lab so that it's visible to people in the adjacent atrium.

Photography: © Scott Gries

Although the subject is at the cutting edge of scientific research, the museum wanted the exhibition's technological underpinnings hidden from view. "The whole idea was to not have any keyboards or monitors that were visible," says Victoria Vesna, a media artist who chairs the department of design's media arts program at UCLA, and who led the creation of the show's installations. "Instead, through a series of projectors and embedded sensors, the exhibits would come alive as people moved through the spaces."

In conceiving nano, a core group of artists, architects, and nano scientists achieved a level of collaboration that "blurred, blended, and swirled together" their talents, Sain says. The architect, Johnston Marklee & Associates in Los Angeles, participated in the show's first development meetings. "This gave us insight into how to conceptualize a very complex subject," recalls firm principal Sharon Johnston, AIA. Her partner, Mark Lee, adds, "Rather than just listening to a client's set of demands, we found we had to be quite assertive architecturally. We started presenting tangible ideas that the artists and the client could respond to," he says.

Johnston and Lee say the amorphous nature of the project was sometimes frustrating, but a breakthrough came when team members discovered a shared interest in Buckminster Fuller, particularly his spherical domes, epitomized by his Dymaxion House (now restored at the Henry Ford Museum in Dearborn, Michigan) and by the geodesic dome that came to symbolize Montreal's Expo 67. "We discovered a wonderful synthesis of architecture, media art, and science," Vesna says. "The exhibition became a kind of sculpture," she adds, in which physical space and content were so well integrated as to be inseparable.

While the architects responded to the symmetry and geometry of the dymaxion structures, the scientists were drawn to the relationships among the triangles, Lee says. "That's very different from the architectural standpoint, and it opened our eyes up in terms of how this all came together," he says.

The 10,000-square-foot exhibition space is housed in a former department store erected in 1929. Instead of open interior spaces, Johnston and Lee were faced with concrete support columns scattered throughout the floor. "We had to try to make this forest of columns disappear," Johnston says. The design evolved into a 1,000-square-foot central "cell" with a series of smaller cells connected to it. "We kept going back to this dymaxion concept as a structural idea," Johnston says. "We ended up with a double-walled cylinder of sorts that gave us a series of spaces where things could be hidden. At the end of the day, you don't see any computers," and few columns.



Gaming terminals in Sony's Wonder Technology Lab have sophisticated lighting, sound, and floor-vibration systems that respond to players' actions.
Photography:© Scott Gries

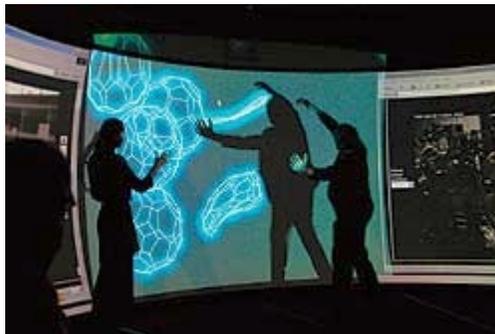
The central cell includes four projectors, suspended from the ceiling, that project images of the carbon molecule C₆₀, a denizen of the nano world that its discoverers dubbed the Buckyball because of its structural similarities to Fuller's designs. As visitors pass between the projectors and the floor, their movements reshape the digital Buckyball images to simulate the physical interactions that take place in the nano space.

Johnston and Lee believe the experience of designing this show will change their work in the future. "This project was very challenging, even frustrating at times, but it gave us confidence that this way of working is possible," Lee says. "It generated a lot of ideas that we may not have conceived otherwise."

Moving into the new century

What does an electronics company do when its showpiece technology lab starts to show its age? For Sony Corporation, the answer was to renovate, to the tune of \$4 million and months of brainstorming. Sony's four-story Wonder Technology Lab, designed by Ed Schlossberg, opened in New York City in 1994—an epoch ago measured in high-tech time. "We wanted to move from analog facility to digital facility," says Ann Morfogen, a Sony senior vice president. Sony also wanted to differentiate the renovation from a design perspective. "When the lab first opened, people were wowed by the physical language of technology—the wires, connections, and hardware," notes the project's architect, Lee H. Skolnick, FAIA, principal of Lee H. Skolnick Architecture + Design Partnership in New York. "It was a case of wearing technology on your sleeve."

In the renovation, which opened in October, the emphasis is instead on integrating technology into the physical design. "We wanted a look that was modern, cool, comfortable—and to forget about the hardware," Skolnick says. A team from Sony joined forces with Skolnick's group and an A/V systems integrator for six months of "creative interaction," Morfogen says. Josh Weisberg, principal of the systems integrator, Scharff Weisberg of Queens, joined the team early because the underlying A/V needs would be key to bringing the creative ideas to life. "We couldn't simply use consumer devices—we had to take the technology to the next level with sophisticated computer systems to handle all of this processing," Skolnick says. The majority of the computers run in a behind-the-scenes, 8-by-12-foot room where custom-designed controls automatically run digital-video servers and the lighting system.



Visitors to LACMA's nano play with supersize images of molecules called Buckyballs, named for their resemblance to Buckminster Fuller's domes.
Photography: Courtesy UCLA Academic Technology Services staff

Because it wanted to emphasize the “magic” of technology, the design group eschewed monitors and keyboards in favor of wall-size video projections, vibrating floors, and sensor-activated instruments that place visitors within the exhibits, Weisberg says.

For example, the games exhibit isn’t merely an arcade to display the latest and greatest video systems—instead, visitors find themselves immersed in a game thanks to A/V technology such as directional sound and large-screen monitors.

A related exhibit lets visitors create a racetrack and cars for their own auto racing game. This “activated environment,” Skolnick says, relies on modulated lighting and video images that move across the floors. A curved wall stretches throughout the renovated second-floor space to act as a common design element, tying the exhibits together. Made of a custom lenticular material, the wall’s surface ridges are molded at various angles that refract the changing color patterns shining through from behind the wall. “As you move through the lab, the visuals on the wall change,” Skolnick explains. “We developed a color palette for the entire space, and you see all of those colors on the wall.” Skolnick worked with a British supplier to produce the material in large, wall-size sheets, rather than the small panels typically manufactured for toys and advertising trinkets. “Using the material on this scale, as an environmental element, was a new thing,” Skolnick says.

Another challenge was how to use the open, skylit atrium space adjacent to the lab to attract attention. “We wanted people in the atrium to see how visitors in the lab were empowered to do exciting things,” says Skolnick. The design team created a video montage, using real-time, live-action scenes from inside the lab, and a bay window in the atrium as a large projection screen. To cut down on glare and reflections, they treated the window with a self-adhesive, high-gain acrylic film that provides a surface opaque enough to display the images, but translucent enough to let light pass through.

For Skolnick, whose company has been designing interactive exhibits for 20 years, the lesson of this project is that design and technology will continue to become ever more intertwined. “It’s not about people just pushing buttons, but rather, it’s creating more natural interfaces to bridge architecture and technology and make them one.”