"Reflecting" On A Museum's Special Effects

Statue shown standing in pond. Water effect — plastic. Temporary exhibit

As the third largest museum in the country, the Natural History Museum of Los Angeles County serves hundreds of thousands of visitors of all ages each year. It is superseded in size only by the Smithsonian Institution in Washington, DC, and the American Museum of Natural History in New York City. The L.A. Museum encompasses two branches, the William S. Hart Park, the former residence of the western movie actor, and the George C. Page Museum, which houses Ice Age fossils from the La Brea Tar Pits. The Museum is home to more than 15 million specimens and artifacts representing 4.5 billion years of the earth's history. Maintaining, displaying and preserving its exhibits is not only a monumental task, but one that requires great care.

To that end, a staff of more than 30 curators explores, maintains catalogs and augments the massive collection. And, because so much of the L.A. Museum's collection is constantly on tour or is exposed to the outstretched hands of 250,000 school children each year, the in-house design and exhibit construction departments must create displays that best highlight the artifacts, while supplying ample protection for them as well.

The Natural History Museum of Los Angeles County features the perennial favorite, the dinosaur exhibit, which includes one of the finest Tyrannosaurus Rex skulls on view anywhere. Over 2,000 gems and minerals, as well as a list of mammals, reptiles, amphibians and more.

The museum also chronicles the accomplishments of mankind in North America, including Walt Disney's first animation camera and a bell cast by Paul Revere and Sons. The transportation and communication section documents the history of photography, radio, television and film, as well as all types of vehicles — buggies, wagons, cars, motorcycles and airplanes. The history of the earth and man come together in a collection of more than 500 works of art by such artists as Edwin Deakin, Currier and Ives, Theodore Wores, Lemuel Wiles, John J. Audubon and Maynard Dixon.

Through its "moveable museum" program, the Natural History Museum's staff makes an extensive effort to expose the wonder, beauty and history of the Museum's offerings to the occupants of classrooms, libraries, special education programs and nursing homes. The staff gives tours on more than 22 different subjects to 140,000 elementary school students every year, and the moveable museum brings science and history to another 15,000 people annually.

However, if it was not for the expertise of the Museum's exhibit and display staffs, these wonders would not be available to everyone.

Selecting the exhibits and executing the designs is the responsibility of James D. Olson, chief of exhibits, and his staff. One of the designers, Jane Herwegh, has handled many historical and archeological design projects, including those in the Pre-Columbian permanent hall.

To create the "special effects" the museum is known for, many of the museum's exhibits feature acrylic sheets to add dimension and illusion to the displays. For example, Herwegh and her staff add special designs to traveling exhibits, originating from other museums, for their stay at the L.A. Museum. Some of Herwegh's more intricate designs call for the depiction of water in the exhibit.

"It's not possible to actually have water in some exhibits," she says, "so we have to simulate the environment." The material she favors for this visual illusion is ACRYLITE® acrylic sheet from CYRO Industries of Parsippany, NJ.

In an archeological exhibit, for example, Herwegh specified two products made from ACRYLITE sheet to create the illusion of water. In the first display, blue ACRYLITE® GP acrylic sheet was covered with a colorless ACRYLITE® FF P-99 acrylic sheet. "I've also used a turquoise tinted sheet to create the illusion of water," she says, "and I'm quite pleased with how these products work for this purpose."

When seeking to protect treasures in pedestal cases from ultraviolet light filtration, Herwegh specifies ACRYLITE® OP-2 acrylic sheet, which filters out 98% of the sun's harmful rays. ACRYLITE OP-2 is frequently used by the museum to protect old documents, paintings and artifacts that might be harmed by the sun's ultraviolet rays.

When an exhibit design is approved by Olson and his staff, the plans are turned over to the Museum's in-house construction staff or to an outside exhibit builder for fabrication. The Museum's head of construction and maintenance for buildings and exhibits is Bob Janeck, who directs a staff of 25 spread out over several shops in the Museum's three facilities. "We have more than 4,000 square feet in carpenter shops alone, and we're enlarging one right now," Janeck says.

The Museum has literally thousands of exhibit display cases on view and more than 150 in stor age, waiting to be used for the next show. Even so, Janeck and his staff build 20 to 60 new cases each year, depending on the number of new shows and the requirements of each show.

Janeck's staff builds and maintains both the permanent and traveling exhibits. "Permanent" is something of a misnomer, because the exhibit selection is not static.

"Permanent exhibits are changed to bring something new, a fresh look, to the museum," Janeck says. "We also have a gallery for special shows, which change four to five times a year." In addition, the department builds exhibit shows, which are sent on loan to museums throughout the country and around the world.

Approximately 80% of the fabrication is done in-house. "We like to do almost all our own work, wherever we have the capability," Janeck says. "We've been doing it this way for three years."

Before the museum converted to inside sources, it used many contractors around the country. However, Janeck says it was sometimes difficult to keep shipping displays back and forth when corrections or revisions were required.

"When we fabricate in-house, we spec out all the materials. With outside contractors, the exhibits department specifies the materials, and sometimes the vendors will ask for recommendations," Janeck explains.

But not all vendors follow the Museum's specifications. He quotes one recent example where "...a vendor built cases without using ACRYLITE acrylic sheet, which we prefer, and we had to ship them back."

In constructing exhibits and display cases, Janeck and the L.A. Museum construction department have definite preferences for materials to be used.

Janeck prefers to employ extruded aluminum for framing and birch plywood for the case construction. "We like the wood," Janeck says, "because it fits in with the overall look of the museum, which dates back to 1913." The original museum building was declared a national historic landmark in 1975. When it comes to glazing materials, Janeck is very clear in his choice. "I like ACRYLITE acrylic sheet in all thicknesses. The thickness is usually specified by the exhibits department. ACRYLITE acrylic sheet is available in thicknesses ranging from .049" to 1.5", and in lengths up to 150".

When Janeck is overloaded or the design requirements are beyond his department's capabilities, the museum goes to outside sources, including Oregon-based Promotion Products Inc. The L.A. County Museum assigned Promotion Products the task of building what designers call a "Pepper's ghost", a unique display that relies on lighting and mirrors to combine two distinct images into one.

This particular exhibit features the cassowary, a large, flightless bird native to New Guinea and adjacent areas. One section of the case shows the full bird with feathers, while an adjacent case contains the bird's articulated skeleton. The Pepper's ghost, composed of a translucent, black acrylic sheet, mirrors and lighting, blends the skeleton into the mounted bird as the light changes, so it appears as if the flesh evaporates.

"Translucent ACRYLITE sheet provides an excellent way to manipulate images of what a viewer perceives," says Brad Miller of Promotion Products. "The acrylic shows up dark if it is not backlighted. When the enclosure is dimmed and the acrylic is backlighted, images appear as if from nowhere."

Another display case in the new Bird Hall portrays how eye placement affects bird vision. A dome fabricated from an acrylic sheet provides a disk-like image that allows museum patrons to see the difference between front-facing eyes, like ours, and birds' eyes, which are on the side of the head, while providing for a 360-degree view.

"The thermal properties of ACRYLITE acrylic sheet allowed us to form a dome with the necessary arc and a porthole that people could look through to experience the effect," Miller says. "The sheet also lends itself to being readily formed into right angle bends, and stays transparent in the corners, far better than a glass-silicone or framed corner."

With the knowledge and skills of vendors like Promotion Products, and the proficiency of Janeck's in-house crew, the Natural History Museum of Los Angeles County can be assured its vast collection is properly displayed and protected in well-made exhibit cases. □