



Laminated Glass News

DINING UNDERWATER AT THE
SANTA MONICA PUBLIC LIBRARY

Seven circular disk skylights, made using DuPont™ SentryGlas® Expressions™ technology, float over the indoor and outdoor area of the Santa Monica Public Library's cafeteria, evoking an “underwater forest” ambience. Photo © Carl Cheng.



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SentryGlas® Expressions™ used for 'marine' canopy

Marine life in California's Santa Monica Bay provided the inspiration for artist Carl Cheng to design a striking laminated glass canopy for the Santa Monica Public Library, which features seven circular 'disk' skylights varying from 0.6 m to 1.83 m (2 ft to 6 ft) in diameter, made using DuPont™ SentryGlas® Expressions™ technology, floating over the indoor and outdoor area of the library's cafeteria and evoking the 'underwater forest' ambience that Cheng wanted to create for this public space. The entire steel and glass structure, named 'Underwater Canopy' by the artist and completed in 2006, measures 9.1 m (30 ft) in diameter and is 3.3 m (11 ft) above ground.

Cheng, who lives in Santa Monica and has several public art commissions in the United States, was chosen from more than 50 California artists by the Santa Monica Arts Commission to create site-specific artwork for the outdoor garden courtyard of the city's public library.

Santa Monica sits on the edge of a bay between the Pacific Ocean and Los Angeles. It is a city of palm trees and golden beaches, and boasts 340 days of sunshine a year. With 3.5 miles of beach coastline, the city, its culture and citizens are very much influenced by the sea.

Said Cheng: "I wanted to give the impression of looking out of a submarine skylight window - including all the distortion you have in that situation. The illusion created by the panels of laminated glass with SentryGlas® Expressions™ when you look up is as though you are experiencing fish swimming above and moving around you."



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"We've had bronzes and tints but we've been waiting for a really exciting decorative glass technology that can maximize the full color palette."

Kelly Green, President
California Glass Bending
Wilmington, California

Thus in creating this piece, Cheng said he focused on where the art would be located: "We're on the edge of a very big kelp forest in the Santa Monica Bay. It's a 30.5 m- (100-ft-) long vertical forest, which floats to the top of the water."

In the 1990s, Cheng said that the entire area was



plotted with sonar photography - in fact, one small disk shows a sonar map of the actual Bay topography. These images gave him an idea of what it may be like to walk in this underwater forest. He said: "There has been a lot of effort to restore the marine life of the Bay, and it is now filled with native fish as well as migrating ones such as sharks, porpoises and whales." He added that the concept of an outdoor café to the Library made him imagine what it may be like to sit in a watery forest, reading a book.

In preparation for the artwork, Cheng, who chose photography as his medium, researched what kind of fish might appear in his work. While he originally wanted to take photographs in the water, the task was problematic because of the difficulty of capturing the darting fish on film. Instead, he visited aquariums on the West Coast of the USA and took photographs from varying angles. He then manipulated the photography digitally to obtain the vibrant colors and 3D effects he wanted.

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Using SentryGlas® Expressions™ technology made sense to Cheng: "Being a sculptor/ photographer who works in public art I found it an excellent medium to work with. One can do a lot with laminated glass in general but the color-fast technology and the ability to laminate digitally-manipulated photos or any type of artwork digitally in glass that SentryGlas® Expressions™ brings did not exist before.

"I sent images to DuPont and talked to several people there who gave me technical advice on formatting. I'd give them a test strip and they'd send back a proof. It was a very good professional relationship. I could actually talk to someone who is familiar with the process to make things work the way I wanted as an artist - and the results were exactly what I wanted!"

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'Underwater Canopy' focuses on the effects of shadows thrown by the canopy as the sun moves across the sky, with the patterns reflecting the topography, landscape and sea life of the nearby Santa Monica Bay.

Cheng's artwork was engineered to comply with certain building codes. The laminated glass disks, in this application, have to be able to support the weight of a person for cleaning and maintenance purposes. Also, seismic strength criteria had to be applied and passed since California lies on a major earthquake fault, and frequently experiences tremors.

Kelly Green, president of California Glass Bending, the Wilmington, CA-based firm that handled the laminating process, echoed Cheng's observations regarding SentryGlas® Expressions™ technology: "We've had bronzes and tints but we've been waiting for a really exciting decorative glass technology that can maximize the full color palette. Now DuPont comes with its vast knowledge of ink-jet printing technology and the ability to place color-fast imagery within laminated glass in the form of SentryGlas® Expressions™ technology - so the sky's the limit for designers!"

When the building was completed in early 2006, the Santa Monica Library press materials said: "The interplay of materials, natural processes and physical phenomena are hallmarks of Cheng's public art. In addition to the intricate design of the piece, 'Underwater Canopy' focuses on the effects of shadows thrown by the canopy as the sun moves across the sky, with the patterns reflecting the topography, landscape and sea life of the nearby Santa Monica Bay. This constantly changing artwork will be enjoyed by Library visitors of all ages."

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