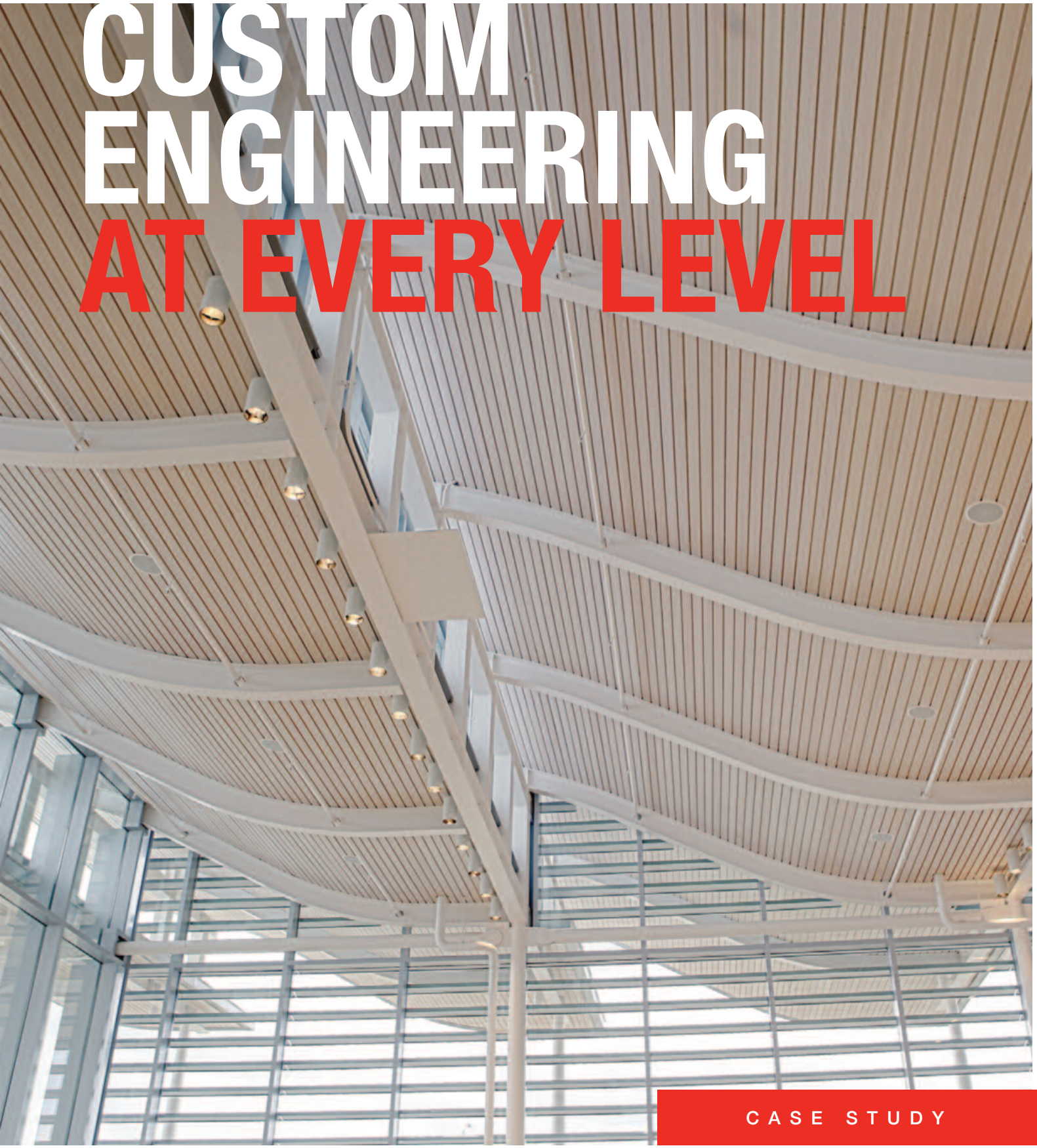
Newport Beach Civic Center | Newport Beach, California

CUSTOM ENGINEERING AT EVERY LEVEL



CASE STUDY

9 WOOD

Custom Engineering at Every Level

Newport Beach Civic Center

Like shimmering sails overlooking the nearby marina, the 150 by 30 foot curved ceilings bays conceived by the architect continue from the interior through the glass curtain wall to the exterior soffit.

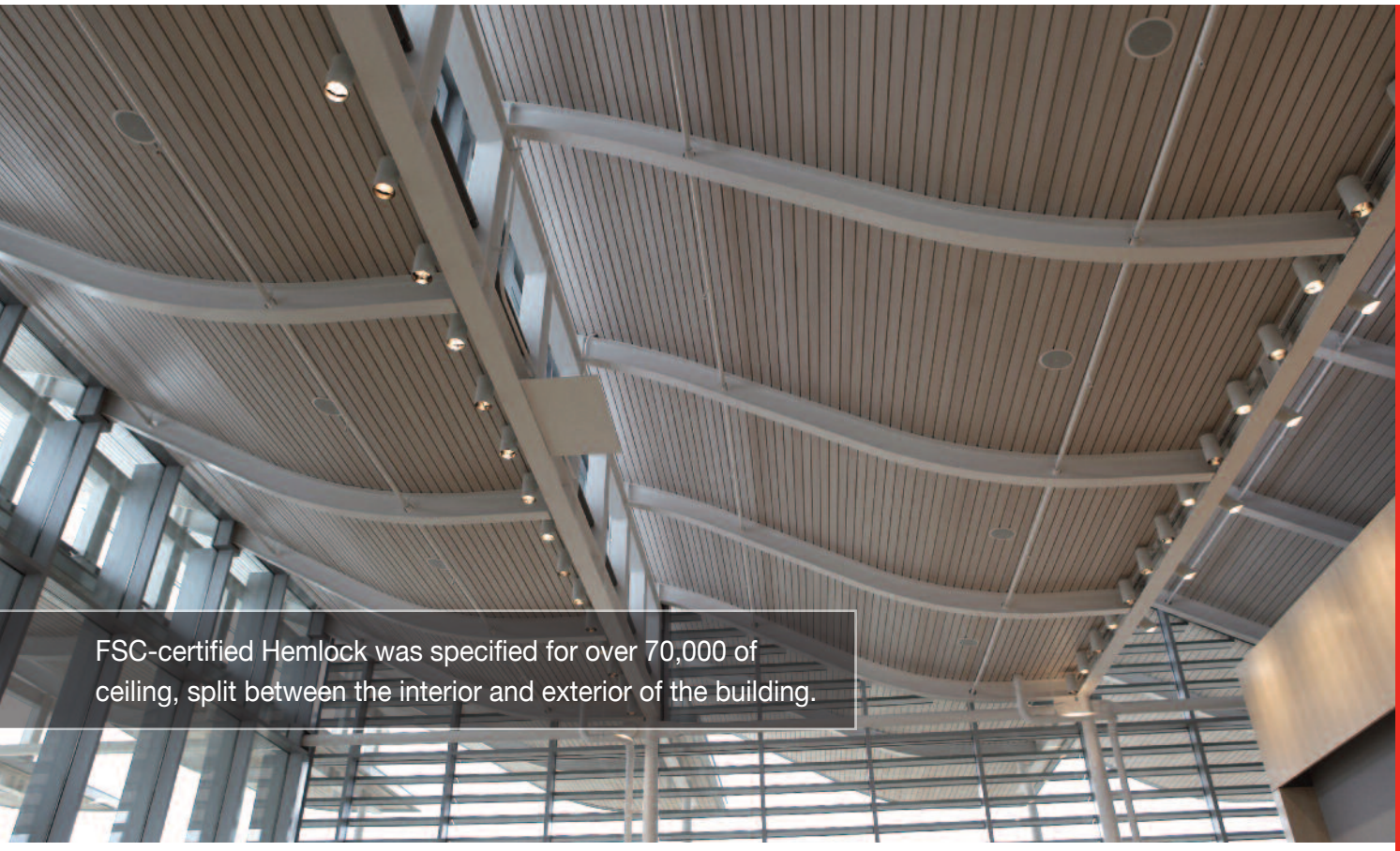
This ceiling design tested the experience of both installer and manufacturer. Two wood products were specified: over 70,000 square feet of linear wood ceiling panels and 5,400 square feet of microperf wood wall and ceiling panels. Between them, it would be one of 9Wood's largest projects ever.

Architect firm Bohlin Cywinski Jackson conceived a design with S-curved ceiling bays. Like shimmering sails overlooking the nearby marina, the bays spanned 150 feet long by 30 feet wide. Each bay's S-geometry continued from the interior through the glass curtain wall to the exterior soffit. FSC-certified Hemlock planks, some as long as 17 feet, were panelized to fit the curves using flexible backers. A white scrim was sandwiched between the backers and planks.

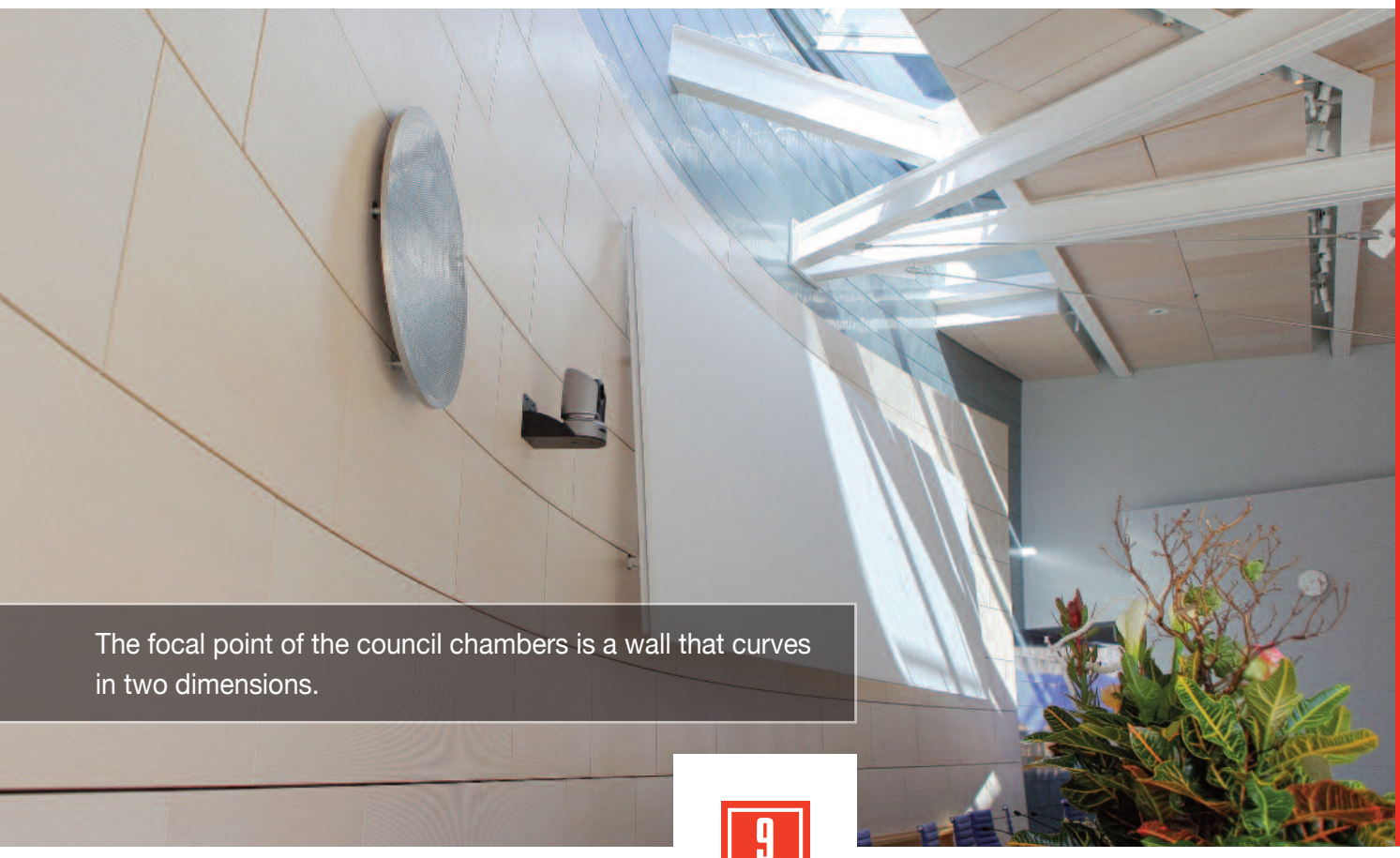
The design team specified a low VOC, water-based semi-transparent ("pickled") finish for the interior and exterior ceilings. At first glance, such a finish may not sound especially difficult to work with, but achieving a consistent aesthetic across 210,000 linear feet of wood planks proved a challenge. Water based finishes cure over 30 days, making installation and field cutting a challenge for the installers. Handling and touch-ups, if not done just right, read through the finish when the afternoon sun reaches its critical angle.

"9Wood worked with us to adapt a flat-panel product as a cost-effective way to treat the surface that curved in two dimensions."

As for the council chambers, "the doubly curved wall was an important focal point of the meeting room," recalled the architects. "The exciting aspect was that the manufacturer worked with us to adapt a flat-panel product as a cost-effective way to treat the surface that curved in two dimensions. *(continued on page 4)*



FSC-certified Hemlock was specified for over 70,000 of ceiling, split between the interior and exterior of the building.



The focal point of the council chambers is a wall that curves in two dimensions.

Newport Beach Civic Center

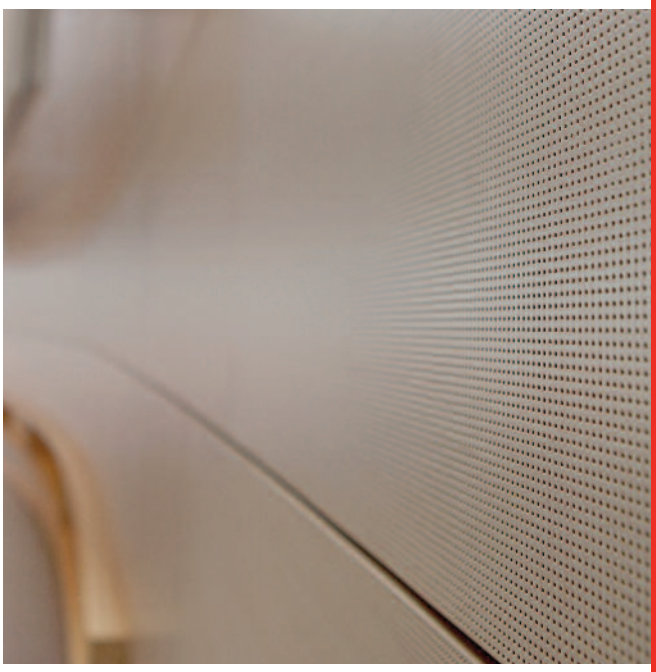
The curved wood wall beautifully captured the softened daylight coming from the skylight above, while providing warmth, as well as good acoustics." This room's complex geometry required over 100 unique panels, which were 100% FSC-certified and NAUF. In addition, the microperf panels had to achieve an NRC of greater than 0.80, while minimizing the perforation's visual impact. The room's natural sunlight made this task very challenging.

Structurally, the microperf panels had to flex to the spherical wall, yet maintain dimensional stability. Part of the problem was that a pioneering HVAC system, which utilized ocean air much of the year, had the unintended consequence of pushing wood stability to its limits — limits requiring creative engineering to resolve. This engineering was achieved in partnership between 9Wood and the Wood Science department at Oregon State University. Through a collaborative student research practicum program, students provided extensive climate testing, as well as advice on the performance criteria of the various composite wood products.

The microperforations were achieved using a unique and custom machining process. Combined with an innovative approach to the panel fabrication, it allowed for a range of unique panel types, while leveraging the acoustical absorption of each panel.

In terms of species, the room's microperf ceiling panels are Douglas Fir, which emulated the software graining in the Hemlock linear ceilings. The wall panels are White Maple, which complement other finishes and furnishings. Two different tones of pickled finish were applied to bring the overall color of the panels together. The semi-transparent nature of the finish allows the subtle natural graining of each surface to come through.

The results are a beautiful and functional acoustical surface; a striking feature of the council chambers. The natural wood veneers combine with full spectrum sunlight to generate warmth that compliments the clean, contemporary space, and connects the curved meeting room to the flowing interior and exterior linear wood ceilings throughout the civic center.



Newport Beach Civic Center

Project Details

Newport Beach Civic Center
Newport Beach, CA

Total Scope: **78,777 SF**

Product: **2100 Panelized Linear**

Architect: **Bohlin Cywinski Jackson**

Contractor: **Preferred Ceilings**

9 WOOD
DIVISION 9 ENGINEERED-TO-ORDER WOOD CEILINGS

9Wood
999 South A Street
Springfield, OR 97477
Tel: 888-767-9990
sales@9wood.com

www.9wood.com