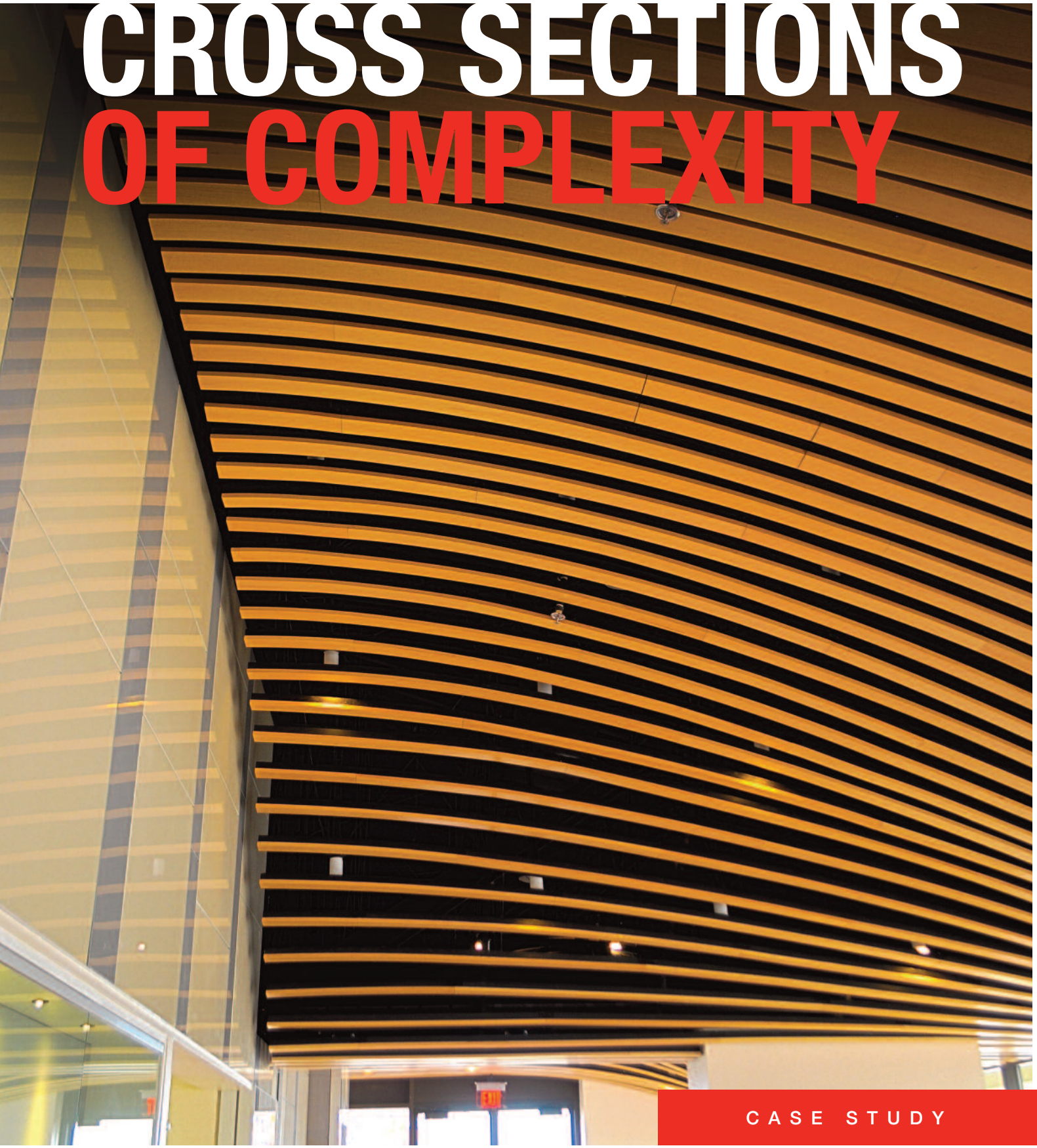
Pierce College Theater | Woodland Hills, California

CROSS SECTIONS OF COMPLEXITY



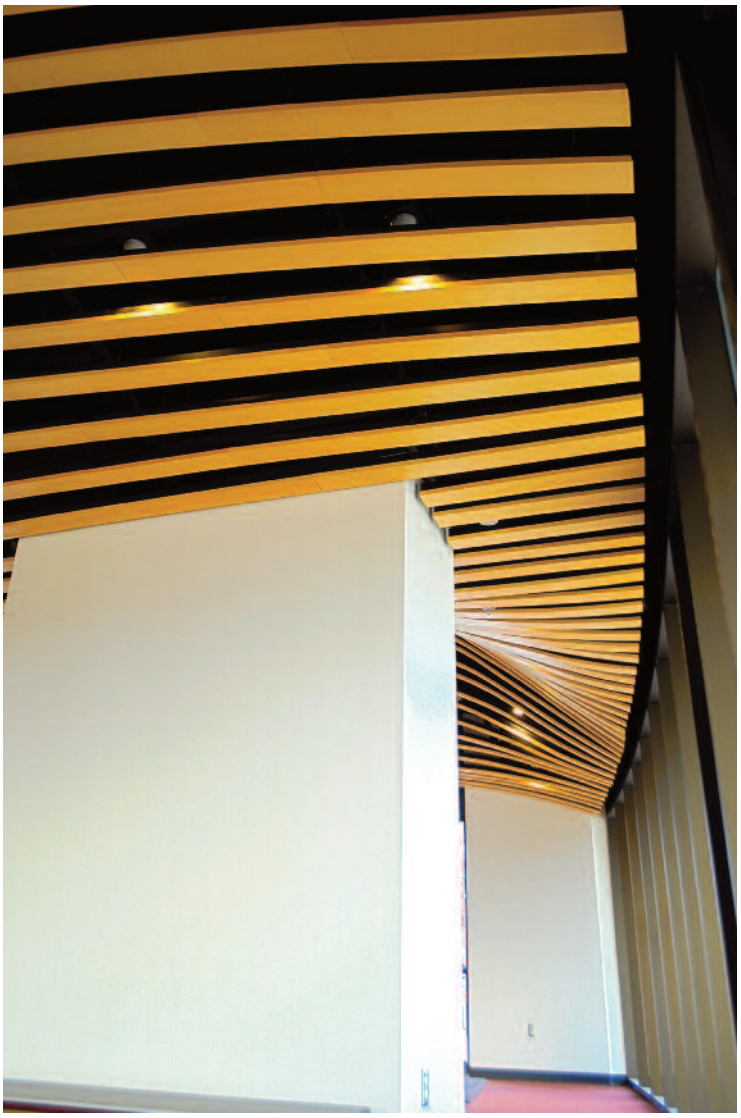
CASE STUDY

DIVISION 9 ENGINEERED-TO-ORDER WOOD CEILINGS

Cross Sections of Complexity

Pierce College Theater

Over 350 hours of drafting time were required to integrate all details, including field-dimension revisions, into a 3D model. Over 800 man hours of install time were required on the 1,623 SF ceiling.



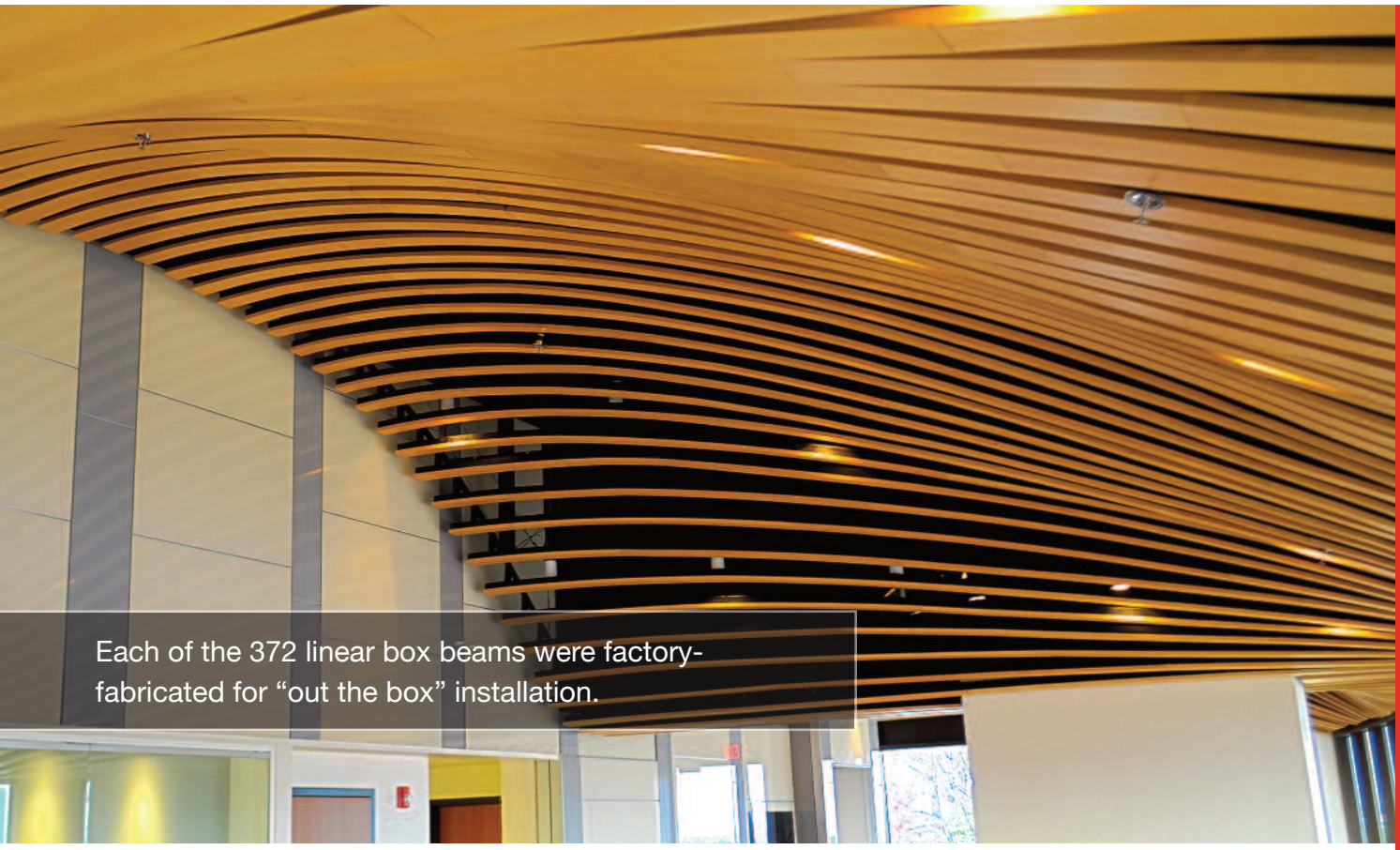
Walk into the lobby at the new Pierce College Theater and your eyes are drawn to the one-of-a-kind contoured wood ceiling. The uniquely curved white maple linear box beams create the feel of walking underneath hollowed-out hills. Such a one-of-a-kind, flowing ceiling was only made possible through the modeling, management, and execution of a design that had a "complexity per SF" rivaling anything previously attempted by 9Wood. It stands out as something special; part art installation, part wood ceiling at the highest technical level.

Architect Geoff Doorn of Steinberg reflected on the design intent: "We wanted a dynamic entry point for the new theater. We selected White Maple veneer for contoured 'ribs' as a clean, light and bright finish to highlight the [theater] entrances."

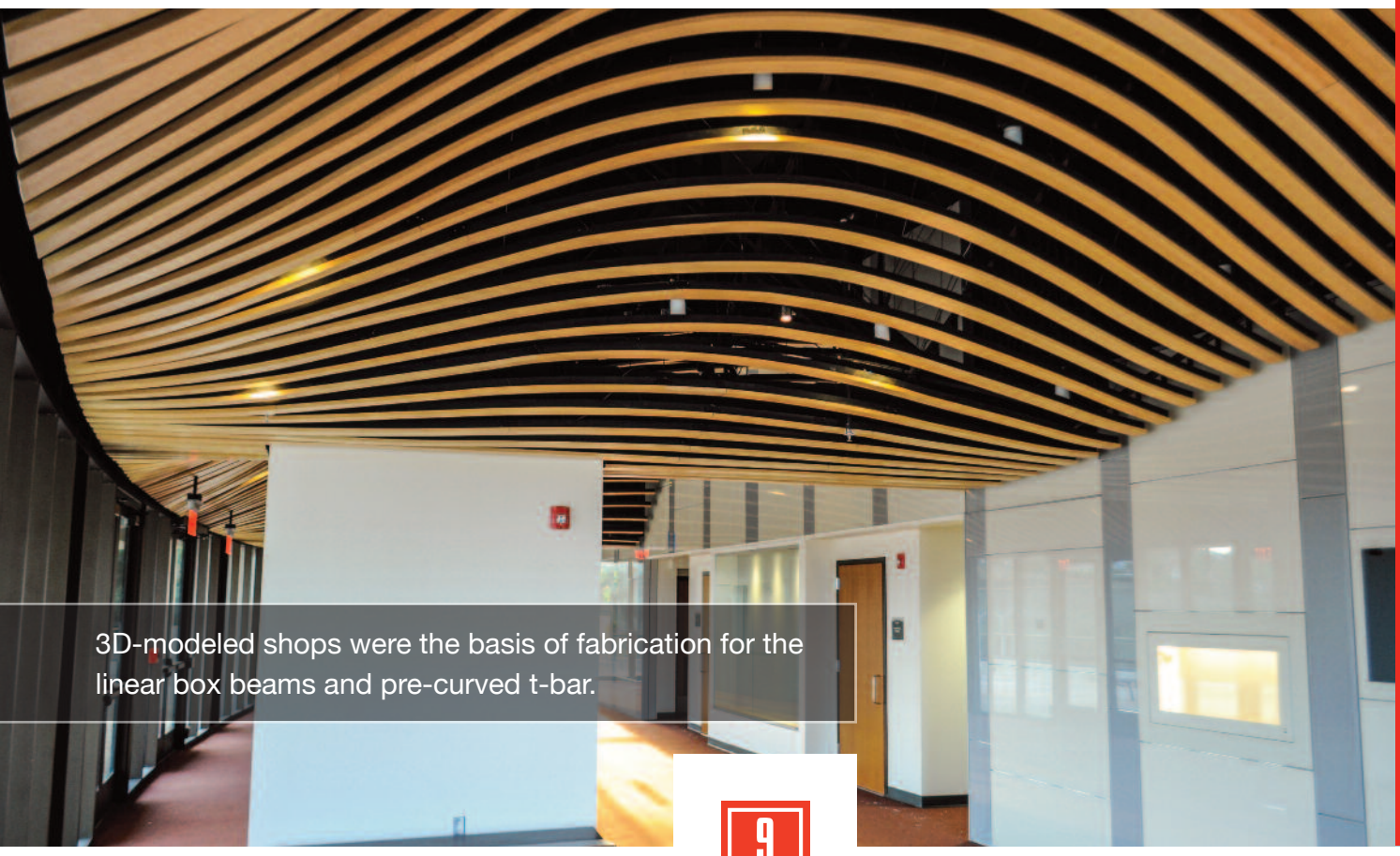
To plot out the complexity, 9Wood turned to 3D modeling. This model became the information hub and driver for multiple elements. First, it allowed HVAC "collision detection" so the factory-curved linear box beams would not interfere with other fixtures. Second, the 3-D models provided dimensions for the fabrication of (372) unique pieces stitched together to create (144) placement-specific 20' undulations. Third, the model drove the installation guide. And finally, the model conveniently guided the fabrication of the pre-curved t-bar, provided by a different manufacturer. "The 3-D model was the whole package for every aspect of the ceiling," commented PM Brad Leonard. 9Wood utilized two drafters totaling 350 hours to integrate all the details, including field-dimension revisions. This is ten times the amount required for a normal set of shop and fabrication drawings.

"In [our] history, we've done many curved wood projects, but this was like 372 curved wood projects in one!"

Production of each of the (372) beams was an exercise in technical woodworking, with a heavy *(continued on page 4)*



Each of the 372 linear box beams were factory-fabricated for “out the box” installation.



3D-modeled shops were the basis of fabrication for the linear box beams and pre-curved t-bar.

Pierce College Theater

dose of production floor administration and management. Three unique elements made up each beam: the White Maple veneered “face” planks, and two CNC’ed shaping ribs to set the radii of each beam. Clips, wood blocking, and glue held them together. A fourth custom element was the pre-curved t-bar, which was field-inserted between the shaping ribs. The beams were then bracketed to an interstitial layer of curved t-bar running along the other axis. Including overage and attic stock, over 1,100 individual pieces were labeled and tracked during fabrication to create the final box beam units.

Another detail that added fabrication and installation complexity was that all perimeters ends were required to be cut 90° perpendicular to the floor. Because of this, extremely slight variances in the angles of those ends had to be determined. To assure accuracy during install, each beam was numbered and indexed. The total install took over 800 man hours for a 1,623 SF ceiling. “9Wood did an outstanding job creating grid and coordination drawings, based on the elevations we provided. It’s a one-of-a-kind installation,” recalled Matt Paul of Elljay Acoustics.

PM Brad Leonard summarized the special project this way: “In 9Wood’s history, we’ve done many curved wood projects, but this was like 372 curved wood projects in one!” The process pushed the boundaries for coordination, fabrication, and installation and left a stunning visual statement.

Pierce College Theater

Project Details

Pierce College Theater
Woodland Hills, CA

Total Scope: **1,623 SF**

Product: **Custom Curved Linear Box Beams**

Architect: **Steinberg Architects**

Contractor: **Elljay Acoustics**

9WOOD
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