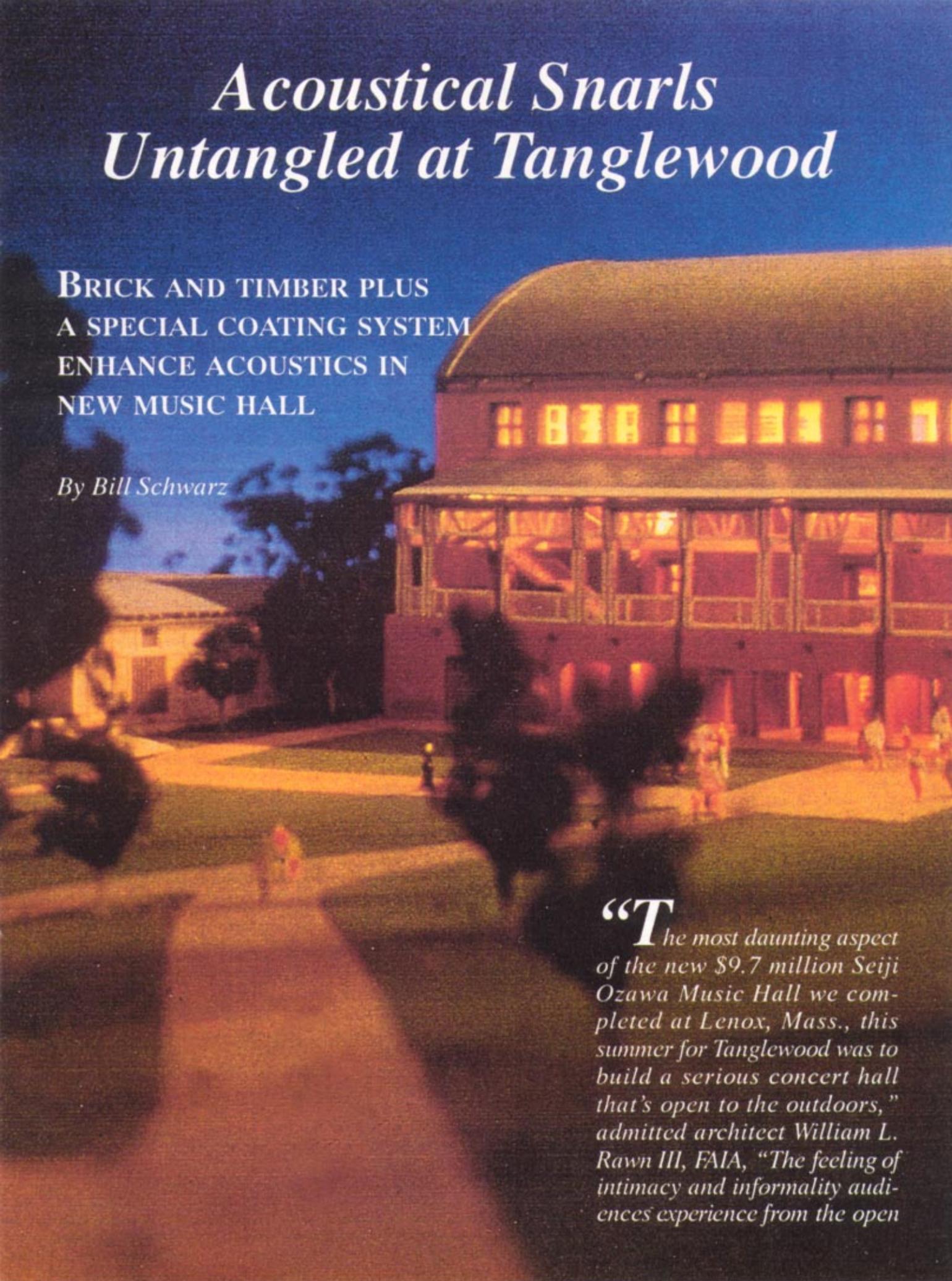


Acoustical Snarls Untangled at Tanglewood

BRICK AND TIMBER PLUS
A SPECIAL COATING SYSTEM
ENHANCE ACOUSTICS IN
NEW MUSIC HALL

By Bill Schwarz



“The most daunting aspect of the new \$9.7 million Seiji Ozawa Music Hall we completed at Lenox, Mass., this summer for Tanglewood was to build a serious concert hall that’s open to the outdoors,” admitted architect William L. Rawn III, FAIA, “The feeling of intimacy and informality audiences experience from the open

Berkshire Mountain lawns had to be interlocked with the integrity of the Boston Symphony Orchestra's world-class intensity."

Combining atmosphere with audience, William Rawn Associates, Architects, Inc., Boston, designed a 200-foot-long, brick-faced block shell with timbered interior to seat 1,180 concert-goers, and huge barn doors at the western end to provide sightlines for 2,000 people on the

lawn outside. To maintain the informal quality the sponsors sought, Rawn and the project's acoustician, Lawrence Kirkegaard, translated the ornate decor of the European concert halls they visited into the more rural feeling that wood and timber elements would provide. Under the direction of general contractor Suffolk Construction, Boston, teams installed grain Douglas fir plank for the general floors, balconies, arcade

structures, stairs and rails; maple plank for the stage floors; and plantation-grown teak for the balcony interior grills. Also in the styles of the world's major music halls, Tanglewood's new structure has thick side walls to keep the orchestra's notes focused on the audience. Here the walls are of concrete block grouted to super density, "which will keep the bass notes in the hall," assured Rawn.

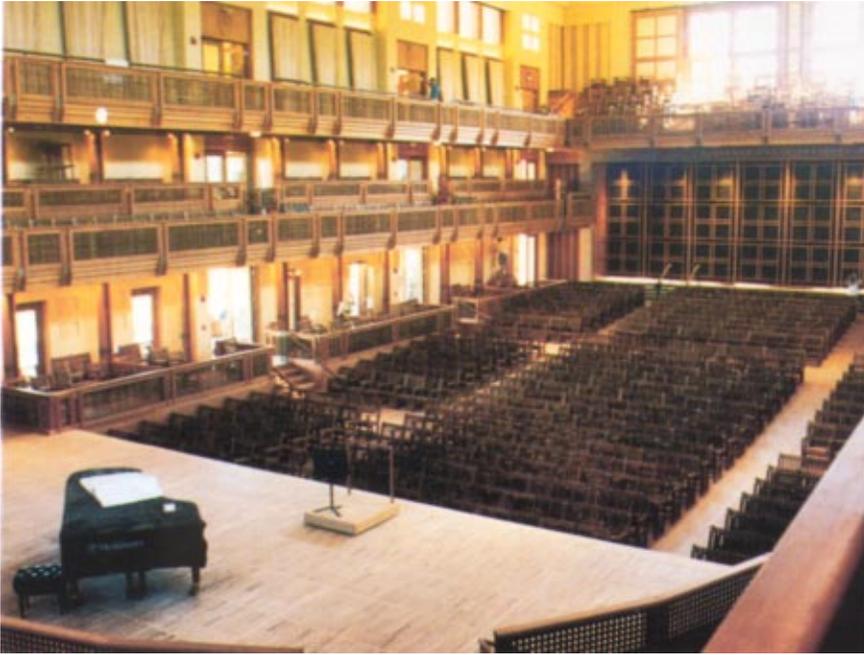
"Once my masons had installed the concrete block walls," said Anthony Satrape, president of Satrape Masonry, "the next step was an interior finish for the block. The specs called for stucco. But with a system varying in depth from 1 to 3 inches thick, somebody's asking for trouble.

"In my opinion," he told Suffolk's project manager David Teixeira, "a 3-inch-thick application of stucco would have neither the adhesion nor the flexibility to handle the average freeze/thaw conditions common to the Berkshire Mountains."

Teixeira, considering that stucco not only takes longer to apply and longer to dry, proposed to Alan Joslin, AIA, Rawn's senior associate and project architect, that he investigate manufactured systems with proven workability, faster cure and inherent freeze/thawability. Among the suppliers contacted was Dennis Pinelle, technical director of Conpro Coatings, Hooksett, N.H.

"I asked George Boisvert, our senior field service technician, how we would provide a dense and tight flex-

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The new 200-foot-long Ozawa hall seats 1,180 music enthusiasts. Barn doors at rear give access to another 2,000 listeners on the lawn. (Photo by Christopher Brown.)

ible finishing system for the concrete block,” said Pinelle. “George used trowel applications of a polymer-modified cement concentrate, followed by a fiber-reinforced cement coating and topped with a flexible-stucco finish for durability, color-fastness, and excellent freeze/thaw stability.

“To conform to the acoustician’s specifications, our samples tapered from a 1-inch-thick coating at the top to a 3-inch-thick finish at the base. And that detail was one of the important ones,” Pinelle said.

After watching his team practice with the materials, Suffolk’s subcontractor John Flanagan, president of Tri-County Construction, Bronx, N.Y., supported the substitution of the Conproco tri-coat system to finish the block wall. And, when the Chicago lab that Rawn Architects uses to evaluate the acoustic quality of its various construction materials



Far left: Build-up of the three-ply system accommodates uniform recesses near the ceiling and patterned baffles at mid-wall.

Left: Stucco-like in appearance, the finish provides flexibility, durability and freeze/thaw benefits to the walls.

(Photos by Christopher Brown.)

gave its okay to the trio of products, Flanagan climbed the scaffold and personally supervised his crews during the application of each of the three products.

Typical of the special effort required to obtain the maximum in acoustics were the demands the designer put on the carpenters. Their job was to shoot cleated wooden screeds into the block to “panelize” the areas and guide the depth of ap-



Amid the mass of timbered elements inside the hall, a synthetic stucco in “Tanglewod Yellow” delicately masks the concrete block. (Photo by Christopher Brown.)

plication for the Conproco materials. The screeds were tapered from a 3-inch thickness at the floor to a 1-inch depth at the 10-foot mark. Then, this 1-inch dimension was maintained in screed-divided 10-foot increments to the hall’s ceiling.

For the base coat, Tri-County mixed 50-pound units of Conpro-one Coat with 1 10-pound plaster sand. The polymer-modified, fiberglass-reinforced cement needed only 10 quarts of water before the mechanical mixing. They then built up the wall taper by troweling on a 3/16-inch scratch coat of One Coat, let thumbprint set and applied a ‘brown’ coat to achieve the gradual cant. Over this went a skim coat of fiber-reinforced structural skin to add strength, boost waterproofing and increase durability.

To achieve the stucco finish originally specified, Tri-County steel-troweled, then plastic-floated, Conpro-Lex to create the required texture. The flexible stucco finish provides freeze/thaw stability and U.V. resistance.

“Our people liked this system.

The three are user-friendly, they mixed easily, contoured well and finished nicely,” Flanagan remarked. “And the special ‘Tanglewod Yellow’ the color-matchers formulated for the final coating complemented the wood and timber and added a subtle architectural look to the hall’s interior.

“Though the depth of conventional cement plaster is usually a maximum of a half inch to three-quarters of an inch, the three-step system gave the architect an unheard of 3-inch stucco-like finish!”

“The Ozawa Hall fosters a sense of informality and communality in keeping with the traditions of the Boston Symphony’s summer home,” wrote Edward Rothstein, a music critic of The New York Times, following the classical inaugural at Tanglewood. “Their acoustic and visual models are indeed interwoven to resemble a symphony hall as intimate as a Quaker meetinghouse.” □

About the Author

Bill Schwarz is a consultant with Berkeley Associates, Glen Rock, N.J.