

THE AMERICAN INTERNATIONAL SCHOOL OF MUSCAT

OMAN

PROJECT PROFILE

Wenger



DIVA® FULL-STAGE ACOUSTICAL SHELL

“The Diva shell surrounds you with a natural warmth...it’s a very fulfilling experience. As a performer, projection requires less effort; your energy starts going toward being more musical. Pianissimos are truly pianissimos, and fortes truly are fortes.”

– Kevin Schafer
Director



DIVA® FULL-STAGE ACOUSTICAL SHELL

CHALLENGE

Create custom acoustical solution for theatre/performing arts center in K-12 international school.

WENGER SOLUTION

Collaborating with owner and project team to design and manufacture full-stage acoustical shell and auditorium wall panels.

BENEFITS

- Enhances acoustical environment
- Complements theatre architecture
- Provides easy setup and handling
- Inspires excellent musicianship
- Facilitates different shell configurations

HIGHLIGHTS

"When planning our new theatre, our first call was to Wenger," recalls Tim Willson, Instrumental Music Teacher at the American International School of Muscat (TAISM) in Muscat, Oman, located near Saudi Arabia and the Persian Gulf.

Confidence in Wenger was rooted in a long history. "I've purchased Wenger equipment for over thirty years for music programs around the world," Willson explains. "I've learned to trust the quality and durability of the products and the professionalism and integrity of the people at Wenger."

Willson, who served as TAISM's project manager for the theatre construction, said acoustics were a top priority, in part because they knew changes would be difficult later. Wenger agreed to supply the full-stage acoustical shell and recommended the involvement of an acoustical consultant and theatre designer. After evaluation, TAISM selected Threshold Acoustics and Schuler Shook.

The theatre and its interior were designed by architect Navjit Singh Matharu, the Principal Designer and Owner of A+D Canada in Toronto. His history with TAISM began with developing the school's master plan in 2000; he is also the design architect for entire school campus development. The overall vision for the TAISM campus, which currently enrolls 725 students from over 50 nationalities, called for an architectural style blending local Arabic influences with modern elements.

The 522-seat theatre, called the Bosch Center for the Performing Arts, includes interior finishes of wood, stone, fabric and glass, designed for acoustical support, visual interest and low maintenance.

Building Teamwork

From the start, successful teamwork was a hallmark of this project. Michael DiBlasi, Partner with Schuler Shook Minneapolis, praised the working relationship between his firm and both Tim Willson and Kevin Schafer, TAISM's Director.

"We all had a lot of confidence in each other, and we challenged each other on different ideas and options," DiBlasi states.

"The school wanted a great facility that could really nurture students, while also serving as a community asset," he says. Together with Threshold Acoustics, Schuler Shook designed a multipurpose theatre particularly suited for TAISM's musical ensembles. Schuler Shook's services included both architectural lighting design and theatre planning – from stage lighting and rigging to dressing rooms and shell storage.

"Acoustical shells require a number of coordinated elements, including the acoustician's criteria and client's expectations," explains Jody Kovalick, Project Theatre Consultant with Schuler Shook Minneapolis. Ceiling panels must hang from the rigging properly, along with moving and storing easily. Built-in lighting is coordinated with the theatrical dimming system.

The TAISM theatre's shallow fly loft incorporates rigging with a safety interlock mechanism to prevent the shell's ceiling panels, in their performance position, from contacting the catwalks that provide lighting access above the stage.

"Wenger does a fantastic job providing all the information we need to design and develop a shell's support system," declares Kovalick. During the shop drawing and construction process, he says Wenger coordinates everyone's information to ensure everything works as designed, while also being very responsive when something needs attention or tweaking.

DiBlasi believes an experienced project team can often anticipate – and avoid – potential problems. "Whether differences in culture, material procurement or construction methods, asking the right questions can help minimize surprises."

These skills were particularly important on the TAISM project because local contractors and suppliers were largely unfamiliar with theatre construction techniques and procedures. Contributions from local firms were blended with outsourced elements from companies like Wenger to achieve a successful result.

Hitting 'Sweet Spot'

Acoustician Carl Giegold, Partner with Threshold Acoustics of Chicago, Ill., says his firm has worked with Wenger for at least 15 years. "I appreciate talking through ideas with Wenger and the value they add to the design process," Giegold remarks.

On the TAISM project, he says some simple suggestions from Wenger helped manage the budget while meeting the desired acoustical performance and the architect's requirements.

Giegold requested a double layer surrounding the Diva tower's honeycomb core – more mass to enhance the bass response. "The heavier shell design gives a warmer sound off the stage," he explains. The ceiling panels were standard to avoid overloading the rigging's manual counterweighted system.

He describes the TAISM Diva shell's configuration as "fairly typical" – three pairs of sidewall towers, four upstage towers and three ceiling panels. The option of multiple shell configurations was very important to accommodate a wide range of performances.

For choral concerts, the common setup would be a short shell consisting of one pair of sidewall towers with the rear wall towers located 10' (3 m) upstage of the proscenium. Giegold prefers to keep smaller ensembles far downstage, with the upstage wall as near to the ensemble as possible. "This is very important for clarity and communication between the musicians onstage," he notes.

Most instrumental ensembles will use the mid-sized configuration, consisting of two pairs of sidewall towers and all four upstage towers. Joint concerts or large festival ensembles will use the full shell.

"The Diva shell hits a sweet spot," comments Giegold. "It's lightweight enough to be maneuverable, but heavy enough to speak with authority and support the musical efforts on stage."

Uniting Interior

To enhance the theatre's acoustic response, Giegold wanted an "acoustic device" to narrow the upper volume of the audience chamber. The narrowed volume creates soffits along the side walls that emphasize acoustic intimacy. Because the soffits are cantilevered from the side walls, they can support only limited weight.

Finding a material heavy enough to serve acoustically without overtaxing the structure was a challenge. Masonry would have been too heavy. Giegold says they considered having the local millwork contractor create auditorium panels from a stick-built framework covered with veneered plywood.

"For a number of reasons, we ultimately decided the best solution was asking Wenger to adapt their laminated Diva-panel technology," he recalls. The custom panels were constructed of 3/4" (19 mm) plywood on each side of a 3" (7.62 cm) honeycomb core, with panels incorporating slight curvature on a 20' or 30' (6 m or 9 m) radius.

Overall, Wenger supplied auditorium panels totaling 2,340 square feet (217.4 square meters) – approximately half the combined square footage of the Diva shell's towers and ceilings. Additionally, Wenger provided more than 1,800 square feet (167.2 square meters) of veneer for other theatre surfaces.

"I appreciate Wenger's contributions to this project," explains Matharu. "I was very particular about coordinating the color of the Diva shell with the wall panels and other finishes." He adds that Wenger patiently supplied numerous samples until he was satisfied. "Wenger helped achieve a harmonious interior in the theatre," Matharu notes.

Fulfilling Experience

Kevin Schafer, TAISM's Director, is equally enthusiastic about the outcome. "We feel like we're completely surrounded by a Wenger shell," exclaims Schafer, who plays with Tim Willson in a brass quintet. "There's a natural warmth that is a very different feeling than in many places I've played," comments Schafer. "It's a very fulfilling experience."

As a performer, Schafer says projection requires less effort. "Your energy starts going toward being more musical and your expectations are immediately raised." He thinks student musicians also sense this and are going to start working harder to play more musically.

Schafer also appreciates how the Diva shell's functionality makes setup work easy. "It's really important we can handle the shell ourselves because we're a K-12 school, not a university with a large operations staff," he remarks, adding it's "amazing" they can move such a massive shell on their own. Concludes Schafer, "That's the joy of working with Wenger products that are so well-engineered."



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