

Auditoria

Annual 2015

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DESIGN

DIAMOND SCHMITT ARCHITECTS
FISHER DACHS ASSOCIATES / MÜLLER-BBM

Theater studies

The design team behind the Mariinsky II Theatre in St Petersburg set out to create a contemporary venue that harks back to the prestigious days of its predecessor

The first new Russian opera house since the time of the czars, the Mariinsky II Theatre – which opened in St Petersburg in May 2013 – is a contemporary hall based on the principles of the opera houses of the 18th and 19th centuries. This homage is particularly appropriate given the new venue's location. It is adjacent to the original Mariinsky Theatre, which opened in 1860 and whose neoclassical façade is reflected in the welcoming bay window transparency of the lobbies of the new theater.

To meet the demands of the Mariinsky Theatre Company and its artistic and general director Valery Gergiev, the 2,000-seat auditorium had to succeed in ways the former theater could not – providing an exceptional experience for audience and performers alike. The company's production aspirations had badly outgrown the 19th century hall.

Gergiev selected his architect after a visit to Toronto's Four Seasons Centre for the Performing Arts, the first purpose-built opera house in Canada. "I was struck by its beauty, its practicality and friendliness with neighboring buildings and its superb acoustics," he explains.

Toronto's Diamond Schmitt Architects and New York-based theater consultant Fisher Dachs Associates (FDA) joined with German acoustician Müller-BBM, which had previously



Above: Open stairways in the lobby surround a floating bridge enclosed in glass

Right: The main hall features convex elements and a pattern of horizontal grooves on the walls to counter the scattering of sound that results from its concave horseshoe shape

Below: The original Mariinsky Theatre's neoclassical façade is reflected in the transparent bay window of the new theater



Photos: Tim Griffith

been part of an unrealized scheme for Mariinsky II. The three firms, together with Gergiev, shared a common goal – to deliver first-rate acoustics in a room that resonated with the history of the art form and its rich Russian traditions.

Sound effects

"The essential ingredient of good acoustics is good sightlines," says architect Jack Diamond, a belief echoed by FDA's Joshua Dachs: "You hear with your eyes." The acousticians' role was to give their partners the freedom to create a customized room and support them and the architectural design. "We leave the design to the architects and then create excellent acoustics within the spaces they design," says Müller-BBM's Andreas Wagner.

A traditional horseshoe shape was selected for the auditorium, to create a rich, vibrant space wallpapered with viewers' faces. The trio of theater specialists set about optimizing the performance of the room – the configuration of the walls, their sound reflection or absorption qualities, their strategic disposition, and the volume and shape of the auditorium.

The ideal volume per listener in terms of acoustics led to the determination of the required ceiling height. "With a height of more than 18m (60ft) above the orchestra pit, the acoustic requirements for a sufficient volume and Gergiev's wish for 'breathing space' above the musicians are fulfilled," says Müller-BBM's Jürgen Reinhold.

Since the concave curve of the horseshoe focuses sound, the acousticians provided for the scattering of sound by means of convex elements and a pattern of horizontal grooves on the walls. The material itself offers additional functionality, with a special plaster prepared on-site and applied to the wall surfaces adding to the sound diffusion. The sculptured shape of the solid beech wood balcony fronts augments the reflective properties of the room.

Unlike many large classical theaters, which often include five balconies, the Mariinsky II features only three. With greater height between





Above: With fixed acoustics, the auditorium conforms to the demands of ballet and opera. However, the orchestra pit, which can accommodate up to 120 musicians, is flexible in size and depth to balance orchestral-vocal demands

each level, more sound energy reaches into them, allowing the audience to enjoy perfect acoustics even in the rear rows of balcony seats.

Seeing is believing

To further enhance the audience experience, computer modeling of the view from every seat ensured that proper sightlines were established. Architecturally, this is accomplished by varying the elevation of balcony floors. Though it is relatively simple to produce such a design on the computer, it is more difficult to realize in construction. It was therefore essential to integrate FDA's geometric calculations for good sightlines, and for Diamond Schmitt to translate those specifications into constructible solutions.

When Gergiev expressed his preference for fixed rather than variable acoustics in the auditorium, the design team shared his belief that a designated opera/ballet house should conform to the specific demands of those musical genres. To accommodate the wide Mariinsky repertoire, the orchestra pit is flexible in size and depth to balance many orchestral-vocal demands. "Up to 120 musicians can be arranged in the pit, and by means of mobile partitions its total area of 150m² [1,600ft²] can be reduced to 110m² [1,180ft²]," says Reinhold.

In a further nod to classical European theaters, the auditorium has a wooden floor that rests on a wooden substructure. The light structure enhances the orchestra's fortissimo with subtle floor vibrations, which can be felt in the orchestra seating as well as the balconies.

One unusual feature of Mariinsky II stems from traditional Russian venues – the sumptuous czar's box, or VIP box. This exotic design

element posed a challenge. "How would the intimacy we were striving for be affected by an enormous break in the loge and balcony-level seating?" explains Dachs. Diamond Schmitt and the group devised a clever solution – a double-height room with a seamless transition, whose finishes would be the same as the rest of the hall. Only a chandelier indicates its relative pomp. Secure access was achieved with a floating bridge enclosed in glass, snaking in full view among the lobby's open stairways and lookout points.

At the venue's opening, something magical happened. Diana Vishneva, star of the Mariinsky Ballet, had just finished dancing the Bolero, choreographed by Maurice Béjart. As Vishneva took a bow, the audience stood, turned, and began clapping toward the back of the hall, raising their eyes and hands toward the czar's box. A slender woman in green stood, greeted Vishneva with a wave and a kiss, and bowed. The woman was Maya Plisetskaya, for whom the piece was originally choreographed. The audience turned back to the stage and applauded with even more gusto toward Vishneva, who was waving at Plisetskaya. "The moment brought the house alive," says Dachs. "The box turned out to be a second stage in the room and the combination of the two was wonderful."

The Mariinsky design team has created a dynamic theater, an inner sanctum of effective sound isolation surrounded by engaging public spaces. The curved auditorium walls in the lobbies feature backlit onyx and animate not only the theater space but are also a visible beacon from the street. ■

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“I feel certain 25 years from now, **Mariinsky II** will be seen as a St. Petersburg landmark in its own right, recognized for its superb acoustics, dazzling production facilities and unsurpassed level of audience comfort.”

Valery Gergiev, Artistic & General Director of the Mariinsky Theatre
Reuters, May 2013

**Diamond
Schmitt
Architects**

FDA
Fisher Dachs Associates
Theatre Planning & Design

MBBM
MÜLLER-BBM GROUP

photo © Tim Griffith

Mariinsky II

St. Petersburg, Russia

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