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Alan Joslin · lead architect of the Conrad Prebys Performing Arts Center



An artist's rendering of the interior of the La Jolla Music Society's planned Conrad Prebys Performing Arts Center. DENNIS ALLAIN

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JAMES CHUTE · U-T

Getting the acoustics right is a tricky, crucial aspect of designing the La Jolla Music Society's new concert hall

Acoustician Yasuhisa Toyota doesn't like the word compromise.

The U.S. representative of the Tokyo-based Nagata Acoustics, Toyota has strong ideas about what he wants. He's been responsible for the acoustics in a number of high-profile, successful concert halls around the world, including Tokyo's renowned Suntory Hall and Los Angeles'

acoustically superb Disney Hall.

The La Jolla Music Society is hoping Toyota can work his magic in its planned \$50 million Conrad Prebys Performing Arts Center and has engaged him to collaborate with its architect, Epstein Joslin Architects.

"I don't think it is a good term for us to use," Toyota said, seated at a conference table in his Los Angeles office. "Rather than saying

'compromise,' we should say, 'We have to discuss all the time to find the best balance.'"

In conversations with the Music Society and the architect, however, Toyota's views carry enormous weight. The purpose of a concert hall is to create an environment to listen to music, and if that environment turns out not to be conducive to music, then what's the point?

“Acoustics is the paramount feature,” said Alan Joslin, the lead architect for what the Music Society is calling The Conrad. “We don’t want to do anything in the design that is not carefully evaluated in regards to its acoustic performance or effect.”

Still, the outcome is never a sure thing. When a hall like Lincoln Center’s Avery Fisher Hall, the home of the New York Philharmonic, turns out to be a sonic disaster, as it did when it opened in 1962, it’s a civic embarrassment and carries huge ramifications, financial and otherwise.

“There is some theory, acoustical theory, acoustical textbook,” said the Japanese-born and trained Toyota, who tends to speak more like a philosopher than an engineer. “But not for actual design for classical halls. No theory.”

“If there was some sort of theory which is working not only for a particular acoustician, but for many people, then it means everyone can do acoustical design in a successful way. But this is not the case.”



Yasuhisa Toyota, the acoustician working on the new concert hall.

Shaping the sound

Despite a considerable body of research analyzing the way sound operates, predicting the way sound will move through a specific space and interact with various surfaces remains dizzyingly complex.

Still, one element has become



A rendering of the exterior of the concert hall. DENNIS ALLAIN

obvious in more than a century of concert hall design: The most acoustically successful halls in the world are in the shape of a shoe box, whether the Musikverein in Vienna or Symphony Hall in Boston.

“Those halls were good teachers for us,” Toyota said. “We studied the dimensions carefully (and made computer simulations). We found out, ‘OK, this size and this dimension is giving us the wonderful acoustics, the reason why the sound is going or coming in this way.’ So we can analyze, we can study those historic halls. Then we are applying that acoustical theory to a new hall.”

Unfortunately, however, designing a hall in the shape of a shoe box has practical disadvantages, primarily for the audience.

“All the finest halls are in that geometry,” said Joslin, the architect. “But from the stand point of audience comfort—and the generosity of being able to focus on the stage and feel like (you are) coming around and embracing the musicians—and creating a stronger sense of intimacy, the shoe box has a bit of a problem in regards to that.”

In some of his other halls, Toyota has been a proponent of what’s commonly called the “vineyard” style, where the audience surrounds the stage and is enveloped by the sound. But the vineyard style wouldn’t work

at The Conrad. The Music Society expects to do more than just chamber music concerts; it needs the hall to be versatile enough to present lectures or even film.

“From the start, we have been committed to designing The Conrad as a music hall, internationally recognized for its excellent acoustics,” said Music Society president and artistic director Christopher Beach. “At the same time, we also want to make certain that it is as flexible a hall as we can design so that many of San Diego’s other cultural institutions, civic organizations and community groups will find it a great place to hold events.”

Warmth and clarity

Toyota and Joslin have arrived at what seems an ingenious solution. It allows the 500-seat concert hall, which will be the heart of The Conrad, to both have the shoe box shape so important for the acoustics and bring the audience closer to the stage.

“What we are seeking to do feels almost like European halls that are more lyric in form, kind of rounder forms, where the audience feels like they are quite focused on the stage and there is a sense of wrapping around, rather than the harsher organization of the long shoe box,” Joslin said.

“And yet to maintain the acoustic needs, we have built a hall within a hall. We have the curvaceous and

embracing hall, which will feel like a wood structure, almost like a lattice, in which the sound can go through the surrounding walls and meet a shoe box volume outside of it.”

In perfecting that design, Toyota has run numerous computer simulations of the hall’s acoustics, which can then be compared to simulations made in similarly shaped, acoustically superior halls like Vienna. One of Toyota’s primary concerns is the clarity of the sound, an aspect that may not have been especially significant when the Musikverein was opened in 1870 but is critical in the digital age.

“Thinking about the modern world, you have to think about the recent circumstances of how many people are hearing wonderful, high-quality sound from, what do you call it? (Headphones? Earbuds?) Whatever. Detailed sound. Everything is so clear.

“And so the sound we hear in a natural hall is not clear. This is quite often happening.”

Toyota points out that in digital recordings, we are hearing the music from the close perspective of the microphone; and if we could be in the position of the microphone in a concert hall, we could hear everything.

“This is the clear sound which many (in the) audience expect to hear,” he said. “So keeping that quality is very important. But at the same time, we expect a rich sound. It’s a very simple discussion, but rich sound and clear sound is sometimes contradictory.

“If we request more richness, more sound, more reverberance, then the clarity will be lost, right?”

So you sacrifice one for the other?

“No, no, no” Toyota said. “We have to achieve both. This is our target.”

He won’t compromise. He’ll find the best balance.

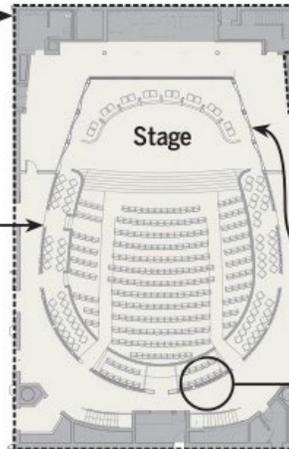
Measuring acoustics

Even with modern technology, measuring acoustics is as much an art form as it is a science. Factors like shape and size affect how a room will sound. From the earliest stages, an acoustician works with the architect to ensure that the room’s characteristics achieve the best sound.

Shaping the room

The rectangular shape known as the “shoe box” has been used in well-regarded concert halls like Boston’s Symphony Hall.

The orientation of the seating in the Conrad Prebys Performing Arts Center will be in the shape of a horseshoe, but uses latticework to allow for better acoustics.



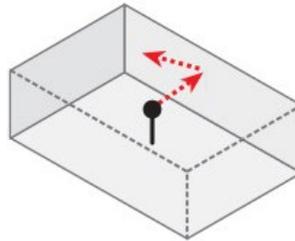
If the sound quality is not desirable, changes to the design are made to better disperse the sound.

Walls can be angled to change the sound reflection.

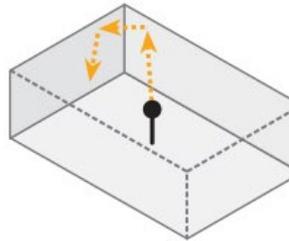
Surfaces can be manipulated to allow the sound to dissipate more naturally.

Both reflective and absorbant material can be used to alter sound reflection.

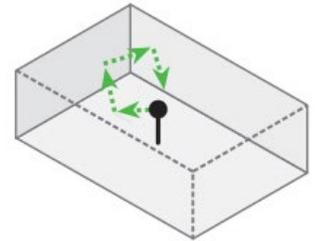
As part of the Conrad Prebys Performing Arts Center project, digital simulations were created from every position in the room, showing how sound waves reflect off various surfaces. The proprietary software uses colored arrows to show how many times the soundwaves have reflected:



Red: One reflection



Yellow: Two reflections



Green: Three reflections

Source: Nagata Acoustics

BETO ALVAREZ • U-T

Status report

On Thursday, the La Jolla Music Society made a presentation to the La Jolla Community Planning Association that included showing renderings of the proposed Conrad Prebys Performing Arts Center for the first time. And it announced its intention to start the formal submission of plans to the city for approval within the next two weeks.

“We’re at the end of what we call schematic design,” said Alan Joslin, principal-in-charge at Epstein Joslin Architects, which is designing the center. “The La Jolla Music Society has embraced the layout of the building, the look of the building and the organization of the building.... Now we move into design development, where we work out the nuts and bolts.” The complex at 7600 Fay Ave. will cost an estimated \$50 million (including the land, which the Music Society has already acquired), plus an additional \$12.5 million for an operating endowment. The Music Society has already raised approximately \$57.5 million toward the total \$62.5 million needed for the project.

Gaining city approval and the necessary permits for the complex is expected to take between 12 to 18 months. With construction taking an additional 18 months, the La Jolla Music Society hopes to have The Conrad open for SummerFest in August 2018.