

## Kansas City's New Concert Hall – The First Subscription Concerts of Its Inaugural Season

By Motoo Komoda

As we reported in the December, 2011 issue of this newsletter, the gala opening of Kansas City's new performing arts center included the first subscription concerts in the center's 1,600-seat concert hall (named Helzberg Hall). On September 23 - 25, Kansas City Symphony Orchestra performed these first subscription concerts under the direction of Maestro Michael Stern, the orchestra's musical director and principal conductor.



Figure 1: Kansas City Symphony Orchestra

### Inaugural Subscription Concerts' Program

The orchestra selected a fine choice of works for the hall's opening performances:

- Stravinsky's "Fireworks"
- Beethoven's Piano Concerto No. 5 "Emperor" with guest artist Emanuel Ax
- Chen Yi's "Fountains of Kansas" (world premiere)
- Respighi's "Pines of Rome"

The orchestra performed the program in the same order on all three evenings, starting with the short Stravinsky piece and continuing immediately with the "Emperor" concerto featuring the hugely popular pianist Emanuel Ax. Then came the intermission followed by the commissioned world premiere. A wonderfully colorful orchestration of "The Pines of Rome" concluded the evenings. The program's diverse musical content offered subscription patrons an appropriately eclectic sampling of compositions and sound for their first experience in the new hall.

### Helzberg Hall's Elliptical Shape and Room Acoustical Design

A defining aspect of Nagata Acoustics' design of Helzberg Hall is our use of blocks of audience seating surrounding the orchestra's stage in a vineyard configuration. We strategically positioned the height of each block of seats independently of the other blocks so that partial wall surfaces between the blocks serve as effective sound reflecting surfaces. We strategically determined the angles and other properties of these surfaces to maximize the surfaces' acoustical effectiveness.

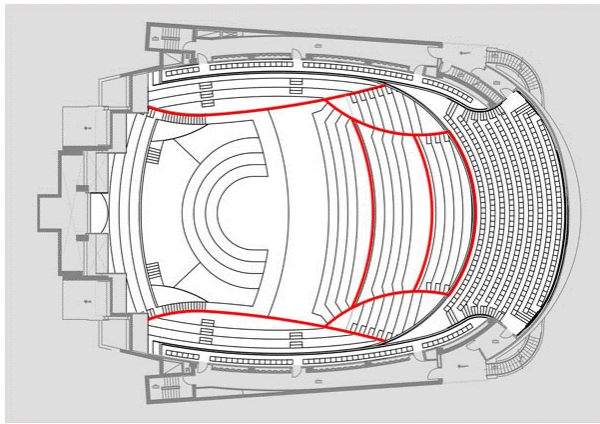


Figure 2: Plane view of Helzberg Hall

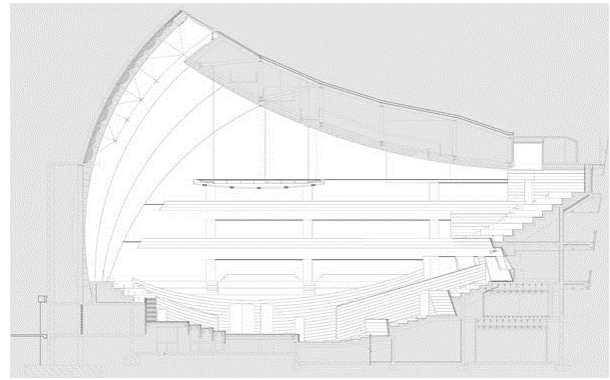


Figure 3: Section view of Helzberg Hall

Overall, the hall interior has a nearly elliptical shape. Using an elliptical shape for a hall’s basic footprint creates a very difficult starting point for acoustical room design. In the case of Helzberg Hall, we installed acoustically transparent slats on the long walls that run alongside the blocks of audience seating and behind the slats we placed convex or stepped protrusions to prevent undesirable sound focusing while retaining the appearance of walls with smooth lines.

The slats installed on both side walls of the audience seating area are constructed of a combination of wood slat sections and plastic netting. Behind the slats we arranged the protrusions continuously along the walls. We also employed a similar treatment at the eye-catching rear wall of the stage, which is draped in fine metal slats that bear some visual affinity to the performing arts center’s exterior. The material of the metal slats is so fine that some call it a mesh. This rear wall forms a very large concave surface and we placed stepped protrusions behind the metal slats (except for the center portion of the wall where the pipe organ is installed).

We used the 1/10 scale model discussed in our newsletter’s December, 2007 issue as well as full-size models of the protrusions to carefully and iteratively test, confirm and reassess portions of the hall’s design. As a result, in the completed Helzberg Hall the acoustics are free of echoes and undesirable sound focusing phenomena.

At midrange frequency (500 Hz), we measured a reverberation time of 2.3 seconds in the empty Helzberg Hall. The calculated reverberation time for the full hall is 2.1 seconds. We intentionally achieved a relatively long reverberation time for low frequencies to give an overall sense of warmth to the acoustics.

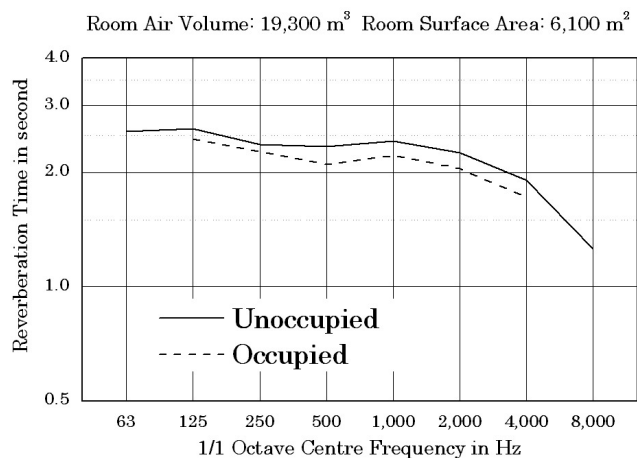


Figure 4: Reverberation time of Helzberg Hall

### **Attending the Inaugural Subscription Concerts and Highlights of “The Pines of Rome” Performance**

I had the pleasure of listening to the superb performances of all three nights of the inaugural subscription concerts. On one evening, I sat in the middle of the Parterre section of the main floor, on another night in the Lower Grand Tier and on the third night in one of the side mezzanine seats. Beyond the enjoyment of the totally satisfying performances, I also derived huge delight from the rare opportunity to experience, on consecutive nights, three views of the stage from three different angles and the intimacy of being enveloped in and among three full-house audiences of subscription patrons.

Performances of Respighi’s “The Pines of Rome” typically locate the composition’s “banda” musicians away from the orchestra on stage. For Helzberg Hall’s inaugural concerts, the trumpet and the trombone were separated, with one playing from the right Lower Grand Terrace and one from the left Lower Grand Terrace, while the French horn was creatively placed above the stage rear at the organ player’s seat. This staging added special visual appeal to the performance.

Another especially well-produced moment of Respighi’s “The Pines of Rome” was the nightingale’s voice which was reproduced from a loudspeaker set behind the wood slats at the stage rear. When the first notes of the nightingale’s call began, the originating location of the nightingale’s voice was not obvious, increasing the illusion of a real nightingale singing somewhere and enhancing the effect of this unique part of the composition. This work and the concerts’ entire program showcased to good advantage the new hall’s acoustical characteristics.

After the great success of the inaugural concerts, the hall’s calendar continues to be booked with performance after performance. I hope that the spectacular interior of the hall and its beautiful acoustics will be enjoyed by music patrons for many years to come.

The Kauffman Center for the Performing Arts home page can be found at <http://www.kauffmancenter.org/>.