There are exactly 2,747 places to sit in Stephens Auditorium—from front and center to the very back row, from high in a dramatic loge to the precise center of the auditorium (row 14, seat 1, in case you’re curious). The hall’s soaring architecture earned it Iowa’s “Building of the Century” award from the American Institute of Architects in 2004.

But the number of seats and the award-winning architecture are not what’s most remarkable about Stephens. Rather, it’s the exceptional acoustics that surround you no matter where you sit. From any spot in the hall, you experience a performance as if it was intended for you alone, hearing every nuance and crescendo with clarity.

This amazing sound quality has delighted visitors to Stephens—performers as well as members of the audience—since its opening in 1969. But perhaps no audience member enjoys it more than Howard Heemstra, Professor Emeritus of architecture at Iowa State University. Heemstra was the project architect for Stephens and worked closely with acoustical consultants to create the rich, enveloping sound quality that distinguishes the auditorium.

In 1964, Heemstra was an architect with Crites & McConnell, headed by Ray Crites. That firm, along with Brooks Borg, took on the enormous task of designing and creating a performance hall for Iowa State University that offered not only exceptional beauty, but also promised unrivaled sound quality.

Exceptional acoustics were a priority for the new performing arts hall, and Crites and Heemstra went to great lengths to make them a reality, traveling to Los Angeles to meet with renowned acoustical consultant Paul Veneklasen and his associates. Veneklasen showed Heemstra a method which used lights and mirrors to develop the preliminary surface contours for optimal acoustic results.

“I calculated all the dimensions, or patterns, for every aspect of the preliminary shaping of the auditorium using a mechanical calculator,” recalls Heemstra. “It was long before the digital calculators and computers of today, but we were able to achieve the desired results.”

Working with Crites and Veneklasen, Heemstra created a scale model of the auditorium, which was tested with special electronic equipment and high-frequency sound waves. Those tests allowed Veneklasen’s team to make final adjustments that helped create an acoustical marvel. Heemstra also developed a system of geometric equations to assist the contractor in building the auditorium.

“We designed the building to be purely functional, which is why people like it,” says Heemstra. “It was exciting to work on this specialized kind of architecture and with renowned architects including Ray Crites, who is in my opinion the finest architectural designer the state of Iowa has ever known.”

Following the completion of the architectural drawings in 1966, Heemstra was asked to join the faculty of the Iowa State University architecture department. “I thought I’d try teaching for a few years, and I stayed on until I retired in 2003,” he says.

Upon his retirement, the architecture department gave Heemstra season tickets to the Season at Stephens. He continues to enjoy the phenomenal acoustics made possible through his own hard work and that of many others—architects, engineers, builders and more—who all helped make Stephens Auditorium a reality.

From all of us who have shared so many thrilling experiences over the years, our heartfelt thanks to Howard Heemstra and all the dedicated professionals who helped create Stephens Auditorium. Your work will continue to inspire performing arts audiences (and artists!) for generations to come!

Acoustics: a science that deals with the production, control, transmission, reception, and effects of sound; the qualities that determine the ability of an enclosure (as an auditorium) to reflect sound waves in such a way as to produce distinct hearing.\[\text{ə-’kü-stiks}\]