Spaces Speak, Are You listening?
Experiencing aural architecture

By Dr. Barry Blesser & Dr. Linda-Ruth Salter
Cambridge, MA, The MIT Press, 2006, 436 pp.
Cloth, $39.95

Reviewed by Dave Tosti-Lane

I was excited to have the opportunity to read and review this book, because I have long been fascinated with spatial acoustics. That fascination is based partly in my work as a sound designer, but it also arises from endless battles (infrequently won) to include the aural behavior of rooms into the early design phase of structures - even for rooms such as classrooms and lecture halls whose very purpose implies unassisted verbal communication. Administrators and facilities managers seem convinced that the laws of physics can be easily suspended when they conflict with aesthetic or financial concerns.

Dr. Barry Blesser, a Fellow and past President of the Audio Engineering Society, is legendary in the field of digital audio as the inventor and developer of the first commercially produced digital audio reverberation system, the EMT-250, released in 1976. Blesser served on the faculty of MIT for more than a decade, teaching both Electrical Engineering and Computer Science courses. Dr. Linda-Ruth Salter has focused 25 years of study on the interdisciplinary relationship of art, space, culture and technology. Together, they bring an astonishing level of experience and study to the topic.

I found much of the book to be fascinating and informative reading, and with over 35 pages of references it is clearly grounded in a remarkable level of research. As you will see below, there are some portions that I found less immediately engaging, but I would like to emphasize that I consider this an important addition to the literature for sound designers, and for those considering renovation or construction of a performance facility. In the introduction to the book, Barry Blesser notes that the authors have "...chosen to explore the *broad phenomenon* of auditory spatial awareness without regard to specific discipline, culture, or time period." For much of the book, I believe they succeed in this

endeavor. It begins with an engaging definition of the term "aural architecture", and then launches into an extended discussion of auditory spatial awareness. In that discussion, sound designers will meet many old friends, ranging from R. Murray Shafer's "soundscape" and "soundmarks" (think aural equivalent to "landscape" and "landmark") to the precedence effect, to the notion of the acoustic arena and acoustic horizon. Sound designers, along with other readers, will also discover unfamiliar but useful and fascinating ideas, such as the use of echo-location for navigation by the visually impaired.

Next, the authors turn to a review and tour of the aural aspects of spaces ranging as the chapter title suggests "...from Prehistory to the Present". This is something of a tall order to manage in around 60 pages, but I think they do a good job of hitting the high points. As noted above, there are an unusually large number of references sprinkled (in some places liberally poured) throughout the text, so the reader wishing to dig deeper will have a well defined path to follow.

Moving on to what seems to me the central focus of the work, the chapter on "Aural Arts and Musical Spaces" gets down to the brass tacks of how spaces influence perception and performance of music. This chapter was somewhat slow reading for me, but not because of disinterest - quite the contrary -I found myself reading and re-reading paragraphs because of the density of information. Most interesting was the notion that placing an instrument in an enclosure (i.e. a room) essentially transforms the instrument-enclosure pair into what the authors refer to as a "meta-instrument", with properties that are essentially different than those of the instrument alone.

From this point, the authors launch into a chapter titled "Inventing Virtual Spaces for Music". There is much discussion of experimental music and experimental performance spaces that is quite fascinating. Less fascinating for me, though still engaging was the discussion of the creation of virtual performance spaces - spaces that are not modeled on "real" locations, and that the authors suggest need not behave as real spaces as long as their behavior is designed to fit an artistic purpose. It is an interesting discussion, but I must confess a preference for spaces I can physically experience without the need for virtual reality hardware.

"Scientific Perspectives on Spatial Acoustics" is the next chapter, and the title should give warning that we are entering somewhat denser waters. As with the chapter on music spaces, this is not light reading. There is a great deal here that is useful, and some that I found less useful. I suspect I will return to this chapter as a reference work at various points in years to come, and I know I will be following up some of the references listed in order to better understand the thrust.

The final two chapters of the book I found both difficult going and less engaging. Perhaps that is because they seem to turn more to the nature of the research than to the actual experience of auditory space. "Spatial Innovators and Their Private Agendas" sounds a bit more controversial than it turns out to be. There is some historical discussion of groups working in the trenches of acoustics and experimental music and spaces, and much discussion of the nature of research into perceptions in general and auditory perception in specific. "Auditory Spatial Awareness as Evolutionary Artifact" seems to me to depart the most from the general thrust of the book. It wanders from the subject, and it spends considerable time in discussion of research not particularly related to auditory topics. This discussion is intended to illustrate research approaches that are similar to those used in acoustics, it is interesting in its own right, but I think it could have been considerably condensed.

In contrast, the final chapter, "Concluding Comments" seems less than it could be. Perhaps that impression is partly because the chapter it follows has drifted so far a-field. But I hasten to say that these are minor quibbles with the last few chapters. They do influence my thoughts as to whether or not I would use this book as a text. I would (and will) use it as supporting material in my undergraduate sound design courses. I think I would consider it important reading for a graduate sound design student, and I seriously wish I could force certain administrators I know to read it and take a test. I recommend it highly to theater consultants, sound designers, and musicians.

__Dave Tosti-Lane__ is a sound and lighting designer, and Chair of the Performance Production Department at Cornish College of the Arts in Seattle, Washington. He is active in the USITT Sound Commission, and the Audio Engineering Society, and particularly appreciates the contributions of his two cats, Cele and Tiny to his efforts to type this review.