

## Demand booms in PDX for 'sound' engineering

Acoustic engineer Tobin Cooley fixes noisy problems

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When Tony whispers to Maria in "West Side Story," which is Portland Center Stage's debut production at the newly opened Bob and Diana Gerding Theater, every person in every seat will be able to hear what he says.

Credit goes not only to skillful actors, but to the sound engineers who labored to ensure every seat in the new theater is a winner.

The team that converted the historic Portland Armory into a new home for Center Stage made big demands of acoustic engineer Tobin Cooley: Ensure each of the three theaters could operate simultaneously.

"It's a huge order," said Cooley, president of Listen Acoustics, a Portland firm that plans — and abates — noise issues.

The Armory, which opened in late September with "West Side Story," was a dream project for Cooley, whose fascination with sound relates to his love of music. He entered acoustics with the ambition of designing theaters.

The Armory Theater, nee the Gerding Theater, contains three performance spaces — for rehearsals, for major productions and for intimate gatherings. The theaters sit one on top of the other.

In theory, dancers could rehearse on top of a concert taking place on top of another performance. Cooley's challenge: Isolate each from the others.

To make it work, Cooley and company designed a gap of more than seven feet between the main and studio theaters — a six-inch layer of concrete on top of three feet of air on top of another slab of concrete on top of another three feet of air on top of Sheetrock suspended from spring-like isolators to absorb vibrations.

Above the main theater, dancers can prance away atop two slabs of concrete separated by a system of isolators that keep vibrations from transferring to the concrete slab and being amplified into the theater below.

The Armory has already earned plenty of applause for its design and green features. As theater-lovers get a chance to attend performances, it is likely to win even more for getting



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Tobin Cooley and his team at Listen Acoustics worked to ensure quality sound at the new Gerding theater.

the basics right. Every seat is a good seat, acoustically speaking.

"You can't just meet [the building code standard] if you're selling for \$500 a square foot. You have to be significantly above that," he said.

Listen Acoustics has worked on some 100 condominium projects — getting its start providing after-the-fact fixes to hush noisy condominiums. Now, prominent developers call the company to help identify — and resolve — noise problems before they break ground.

"The good developers are very savvy about acoustics," said Cooley.

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With a client list of developers that includes Gerding/Edlen Development Co. LLC, Robert Ball, Hoyt Street Properties LLC, Williams and Dame, and John Carroll, Listen Acoustics is active in virtually every major project in the city.

For the Waterfront Pearl condominium project on property owned by Sam and Verne Naito near Albers Mill, Listen created an elaborate water feature to mask noise from the trains, grain ships and vehicles that pass nearby.

Layering one noise on top of another is a common solution, Cooley said.

It came in handy when a Portland megachurch discovered a problem with its new facility: The

sound of toilets flushing reverberating through the entrance.

The original designers created restrooms to handle a flood of people exiting from services without doors to impede traffic flow. The sound of flushing was one of the first things people heard when they entered the building — not quite the worshipful environment the church hoped to foster.

Listen Acoustics addressed the problem with a vestibule-type area around the restroom entrance and added speakers to pipe in the sound of waterfalls.

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As far as Cooley is concerned, the market for acoustic engineering is endless as privacy issues spread through offices, clinics, schools and close-quarters residences.

"Anywhere where sound is a problem, we're there," he said.

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