



the challenge:

The acoustics in Temple University's School of Architecture building were exhibiting excessively high reverberation times, negatively affecting students' ability to hear and understand their instructors. Originally built in 2009, the facility houses a myriad of lecture halls, classrooms, studios, and conference rooms. Acoustical testing confirmed that reverberation times averaged nearly 2.30 seconds; three times longer than the recommended 0.60 seconds for these types of spaces.

the solution:

Consultant Graham Everhart of Metropolitan Acoustics in Philadelphia explains his team created acoustical models to develop remedial acoustic recommendations. "Our recommendation was to incorporate acoustically absorptive materials on the available surfaces," he states, "and in most spaces, that was the ceiling."

The consultants worked in collaboration with NELSON, the architectural firm responsible for the project. "Considering the amount of hard surfaces, it was easy to see why sound bounced around so quickly, making it difficult for students to learn & work in the spaces," notes Scott Winger, AIA, Technical Director for NELSON.

Tectum® Direct-Attach acoustical panels were chosen for the classrooms and studios. "Tectum Direct-Attach and Capz panels perform in a similar manner acoustically. We went with the Tectum panels because they were rugged and better suited for these types of spaces," Winger states. 1-1/2" thick Tectum Direct-Attach panels have an NRC of 0.80 and were installed directly to the deck.

To reduce reverberation time and improve speech intelligibility, the design team chose Optima® Capz™ ceiling panels for the lecture halls and other presentation spaces. Featuring a Noise Reduction Coefficient (NRC) of 0.90, the panels were installed directly to the deck with a 4-to-6 inch offset.

Acoustical testing after the installation validated the choice of ceiling treatments. Reverberation time was reduced an average of 56% in the eight spaces that were tested.

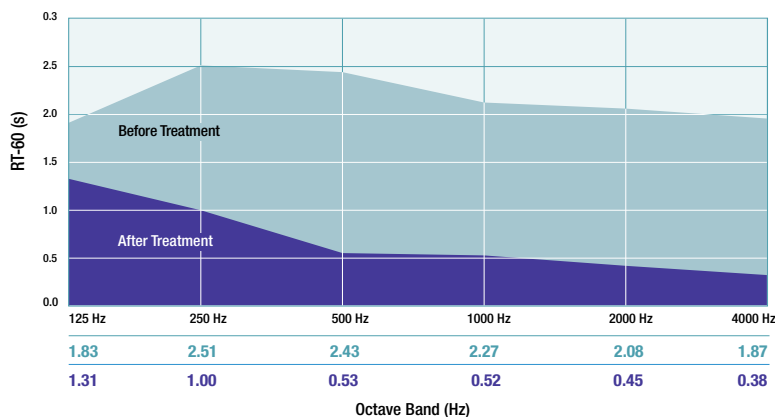
According to Winger, both the students and faculty have noticed the difference. "By installing the panels between the metal joists, we were able to maintain the intended look and feel of the exposed structure while dramatically reducing the reverberation time."

CASE STUDY

Project | Temple University, School of Architecture
 Location | Philadelphia, PA
 Architect | NELSON, Philadelphia, PA
 Product | Tectum® Direct-Attach & Optima® Capz™ acoustical panels

RT-60 Comparison Chart

Classroom 103 had an average reverberation time reduction of 77%



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