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Penn State Engineering Students Tackle Ceiling Tile Recovery Challenge



Content: In February 2024, AWI's Tech-Innovation team invited four Penn State engineering students to the Lancaster campus for a challenge aimed at developing a more efficient method for recovering acoustical ceiling tiles from construction and renovation projects. This is part of Penn State's Capstone Project Program, a collaborative industry-university initiative that gives fourth-year engineering students the opportunity to tackle real-world design challenges and contribute innovative solutions.

Sr. Principal Scientist Bill Frantz will mentor the students through their 15-week design project. In April, the team will present their solution at the Design Showcase event at University Park, Pa.



The project aims to address key challenges associated with the recovery process of used acoustical ceiling tiles, estimated to be over 600 million square feet annually, from renovation projects and construction sites across the U.S. These challenges encompass reducing removal time and costs, enhancing job site safety, minimizing contamination of recovered materials, and optimizing material processing and packaging for transportation and subsequent use.

Swentner, circularity coordinator – Sustainability, and Mike Hehnl, Quality Installation specialist. They also gained hands-on experience by participating in the existing tile removal process and experimenting with an early prototype tool they developed for removing tiles from the grid.

Armstrong's collaboration with Penn State on Capstone projects dates back to 2009, with numerous successful initiatives completed over the years. Previous challenges have included developing an automated tile scrim and facing removal machine, using production planning SIMIO software for optimizing wood blade fabrication steps at our ACGI facility in Marshfield, Mo., creating portable sales tools for demonstrating acoustic and light reflectance properties of ceilings, and optimizing coating placement to reduce sag in ceiling tiles.

