

PROJECT PROFILE: **SIMULATOR NOISE**



PROJECT: NORTHWEST COLLEGE
CRIMINAL JUSTICE LABORATORY
Powell, WY

Northwest College offers a criminal justice program where students acquire knowledge of the police, courts and correctional systems in America. The program uses a VirTra Systems Firearms Training Simulator, which generates high noise levels due to gunshots, explosions, yelling and other sound effects during various training scenarios. The lab is being relocated to the new Yellowstone Academic Building, and BSA was hired for acoustical design services to isolate the simulation noise.

BSA's SERVICES AND SOLUTIONS:

- Measured the noise levels of 11 military and law enforcement scenarios, with average noise levels of 93 to 96 dBA, and maximum impulsive noise levels of 103 to 104 dBA (gunshot noise).
- Predicted the noise of gunshots from the simulator transmitted through several wall and ceiling constructions, and compared the results to typical classroom background noise levels.
- Evaluated wall constructions to isolate the lab from the adjacent public corridor and gathering areas.

- Assessed door configurations, including vestibules and sound-rated door assemblies, to reduce noise in the adjacent De-Brief Room and corridor.
- Calculated gunshot noise through several resiliently suspended ceiling options to determine the audibility in the classroom above.

Completing the Sound Isolation Analysis during the design gave the Architect and College confidence to construct the building, knowing the simulator noise would not cause alarm or panic in the adjacent areas.

