

Case Study: Theater in Sheikh Khalifa Hospital Fujairah, UAE

Challenges

- A/C noise must stay below 35 dBA inside the theater.
- A/C machinery is located directly above the theater on the rooftop.
- Noisy adjacent spaces required high STC-rated walls.
- Large volume caused echo, with untreated RT60 up to 3.2s.

Solutions

- Installed roof-mounted vibration and sound isolators for A/C units.
- Used sound attenuators and acoustic cladding on ducts.
- Reinforced walls, ceiling, and floor to boost STC.
- Applied acoustic panels to absorb sound and reduce echo.

Results

- Achieved 35 dBA background noise at medium fan speed.
- STC > 58 ensured strong sound isolation and privacy.
- RT60 reduced to 0.7s, improving clarity.
- Even sound distribution and high speech intelligibility throughout the theater.

