

HVAC SYSTEMS FOR MOVIE THEATERS & MUSEUMS

Movie theaters and museums are venues focused on customer comfort and satisfaction. Maintaining a steady indoor temperature is a significant part of ensuring a pleasant guest experience. You have a few options for keeping your movie theater or museum cool in the summer and warm in the winter.



Types of Movie Theater & Museum HVAC Systems

Packaged Rooftop Systems

- Multiple unitary roof-mounted heat pumps serve different areas of the building.
- This economical option offers affordable, zoned heating and cooling.

VRF/VRV Systems

- The terms variant refrigerant flow (VRF) and variable refrigerant volume (VRV) are used interchangeably.
- These systems are ideal for keeping every room in your museum or movie theater the same comfortable temperature.

Water-Cooled Systems

- Central chilled/hot water systems are often found in large, old theaters and museums.
- If you choose this system, it may be necessary to install a cooling tower.

Central Forced-Air HVAC Systems

- Smaller buildings may be able to use a single forced-air system.
- Zoning is required to meet the varying temperature needs from room to room.

HVAC Services Required for Movie Theaters & Museums

Because guests visit all year round, it's imperative to keep both the heating and cooling systems in top working order. The best way to accomplish this is with scheduled preventive maintenance performed by a licensed HVAC professional.

Maintenance visits focus on cleaning, correcting, and tuning up your system to help it operate smoothly in the coming months. Plan to maintain your cooling system in the spring and your heating system in the fall.

Challenges of Heating & Cooling Movie Theaters & Museums

Problem: Heat-Producing Projection Booths

In movie theaters, the projector light, sound system, and dimming equipment are all significant heat sources.

- Supply exhausted theater air into projection booths and out through the projector housing.
- Ensure a filtered air supply to prevent soiling the lenses.

Problem: Loud HVAC Systems

An immersive theater or museum experience relies on minimal background noise.

- Select heating and cooling systems with low decibel levels.
- Keep the HVAC unit properly maintained to ensure quiet operation.

Problem: Changes in Heating and Cooling Load

Occupancy levels can change suddenly and dramatically as movies and exhibitions begin and end.

- Ensure adequate ventilation with on-demand abilities to meet changing load requirements quickly.
- Install zoning systems and heat recovery devices for independent control of individual rooms.
- Use energy management software to analyze and anticipate your building's temperature needs.

Problem: Costly Equipment Breakdowns

When climate control systems fail, repair costs can skyrocket.

- Keep up with preventive maintenance to reduce the frequency of breakdowns.
- Install redundant systems to pick up the slack when needed so you don't have to shut down your business entirely.

The Cost of Installing an HVAC System in a Movie Theater or Museum

Movie theaters were the first venues to feature air conditioning back in 1925, so the ideal of a cool, comfortable movie theater experience is well established in your patrons' minds. Today's commercial-grade HVAC systems last 10 to 20 years. If you're due for a replacement soon, consider the factors that affect the cost of a new system:

- Building size
- Specialized heating and cooling requirements
- Installation complexity
- Upgrades needed to the ductwork and related systems
- Quality and efficiency of replacement equipment

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