

# HOTEL & HOSPITALITY HVAC GUIDE

If you own or operate a hotel, bed and breakfast, or resort in the NY metro area, one of your most important focuses should be on maintaining comfortable accommodations for your guests. To meet this goal, you must have dependable heating and air conditioning. There are many options for accomplishing this while keeping operating and maintenance costs down. We've put together this guide to help you determine the best HVAC solutions for your hospitality business.



## Types of Hospitality HVAC Systems

The intricate layouts of hotels and other lodgings make HVAC systems a complex consideration. Here are the pros and cons of the three most commonly used in the HVAC industry.

### Vertical Terminal Air Conditioners (VTAC)

These systems are usually installed in a hidden space, such as a closet, and provide climate control for one or more rooms at a time.

Vertical terminal air conditioners are cost-effective and have a direct ventilation air intake for versatility. Their location inside a closet also makes them an aesthetically pleasing option.

However, a large exterior louver is required to facilitate air intake. VTACs also operate more loudly than more expensive options.

### Water-Source Heat Pumps (WSHPs)

This commercial HVAC system uses electricity to heat and cool the building, similar to an air-source heat pump commonly found in residential applications.

Water-source heat pumps are incredibly efficient because water is better at carrying away heat than air. Also, multiple air handling units can be attached to a single evaporative cooling tower or dry cooler located on the ground or roof. The air handlers themselves can be installed in dropped ceilings or closets where they are hidden from view. Simultaneous heating and cooling in different parts of the building is also possible.

However, WSHPs aren't ideal in every climate and lose efficiency in cold weather. The complex copper piping required for simultaneous heating and cooling also introduces increased safety risks and maintenance requirements. WSHPs are also more expensive up front.

### Hydronic Fan Coil Units (FCU)

Fan coil units consist of a fan, chilled water-cooling coil, hot water heating coil, and air filter. They work by circulating the air in the hotel room over the coils. They can also introduce outdoor air to aid in ventilation purposes.

Hydronic FCUs require minimal in-room maintenance and offer quiet operation. Also, because central air systems are only required for outdoor air ventilation, less floor space is needed for air handling equipment and vertical duct risers.

However, FCUs require a complex four-pipe installation (compared to a two-pipe installation for water-source heat pumps). Plus, to accommodate smaller in-room equipment, an extensive central mechanical system is needed.

## Maintenance Requirements for Hotel HVAC

It's vital to keep your heating and cooling equipment functioning all year-round. This means scheduling preventive maintenance with a licensed HVAC professional in New York. The purpose of maintenance is to clean, lubricate, test, and tune up your system to ensure safe, efficient operation in the coming season.

Plan to maintain your heating equipment in the fall and cooling system in the spring. If you have combination systems, have them inspected twice a year. When you make preventive maintenance a priority, you can expect to reduce system breakdowns, decrease operating costs, and prolong the lifespan of your HVAC equipment.

## Hospitality HVAC Design Considerations

Commercial heating and cooling systems last between 10 and 20 years, so the design decisions you make today could affect you for decades to come. Keep the following considerations in mind as you design your hotel's HVAC system.

### Brand Standards

Your hotel brand should guide the design. For instance, if your brand standard requires ventilation rates above the minimum code requirements, your HVAC and control equipment must be designed to address this.

### High-Rise Installations

If your building is classified as a high-rise, your HVAC design must include smoke control systems. Begin designing this solution as early as possible because it could affect the building layout and other aspects of the design.

### Project Schedule & Budget

You undoubtedly have a timetable and investment estimate in mind for completing your HVAC installation project. Open communication is vital to keeping all design phases on schedule and within budget.

## Improving the Efficiency of Your Hotel HVAC System

The average American hotel spends nearly \$2,200 per room per year on energy costs, the majority of which are heating and cooling bills. To help lower your expenses, follow these tips:

- Measure and track energy performance
- Assign a team to pursue energy-efficient improvements.
- Install high-efficiency HVAC equipment.
- Keep up with preventive maintenance.
- Tactfully convey to your guests your desire to save energy so they can do their part when setting the room's thermostat.

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