

GSA 2003 Facilities Standards (P100)

5.5 HVAC Baseline Systems

Baseline Selection

Unless otherwise directed in design programming documents, a combination of the following perimeter and interior HVAC systems shall be used to set a base reference for comparison.

Perimeter Systems. Perimeter zones shall have 100-percent outside air dedicated ventilation systems sized to meet the ventilation requirements of the specified zone. These systems shall provide tempered dehumidified air and shall be completely independent of any other air distribution system. In addition to the dedicated 100-percent outside air ventilation system(s), the perimeter zones shall also have a baseline perimeter heating and cooling system selected from the following:

- For new construction spaces with significant latent loads and/or for alterations to existing space with ceiling distribution, use a ducted overhead variable air volume (VAV) air distribution system with VAV shutoff boxes for cooling and hot water fin-tube systems for heating.
- A ducted overhead variable air volume (VAV) air distribution system with fan-powered VAV boxes with hot water heating coils for cooling and heating.¹
- For new construction office type loads and other spaces with low latent loads, use an underfloor, variable air volume (VAV) air distribution system, for cooling, supplemented with two-pipe, above floor perimeter hot water fin-tube systems for heating.
- For alteration projects with high skin loads use a standard four-pipe fan coil unit system for heating and cooling.

Interior Systems. Interior zone(s) shall have 100 percent outside air ventilation system(s) to meet the ventilation requirements of the interior zone. The ventilation system(s) shall operate independently of any other air distribution system but shall connect to the return side of the VAV air-handling unit(s) serving the interior zone(s). The interior zone(s) shall also have a baseline interior heating and cooling system selected from the following:

- A ducted overhead variable air volume (VAV) system with VAV boxes.
- A ducted overhead variable air volume (VAV) system with fan-powered VAV boxes.²
- An underfloor variable air volume (VAV) air distribution system.

¹ Electric heating coils will be permitted for nominal heating requirements. Requests for use of electric heating coils must be submitted directly to and subsequently authorized by the office of the Chief Architect. No reheat is permitted.

² Hot water heating coils in the fan-powered VAV boxes may be used on the top floor of a building for heating.

General

- **Enthalpy heat recovery shall be used for interior zones and other special areas where the outside air exceeds 30 percent of the total supply air quantity.**
- **Special areas such as auditoriums, atriums, and cafeterias shall have a dedicated air-handling unit with individual controls to condition these spaces as required.**
- **A dedicated air-handling unit shall be provided for maintaining positive pressure in the main entry lobby.**
- **Air-handling units with a capacity over 1,416 LPS (3,000 CFM) shall have an enthalpy economizer cycle. Systems dedicated to serving only unoccupied spaces with intermittent operation, such as elevator machine rooms, telephone equipment rooms and similar spaces would be exempt from the requirements of having an economizer cycle.**
- **Waterside economizer system shall be employed where airside enthalpy economizer is not practical or feasible. Systems dedicated to serving only unoccupied spaces with intermittent operation, such as elevator machine rooms, telephone equipment rooms and similar spaces would be exempt from the requirements of having an economizer cycle.**