

## CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

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### 502.08 CONTROL SYSTEMS FOR HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEMS



#### INTENT

To achieve optimum comfort and energy savings by independently controlling HVAC system in each zone.

#### REQUIREMENT

For all new buildings other than villas, HVAC systems shall be equipped with efficient controls to reduce energy consumption. This shall be in accordance with latest edition of ASHRAE standard 90.1 or equivalent.

The following control specification must be included within the HVAC systems:

1. Divide control systems into sub-zones with independent controls for each area of the building zones. Controls for each zone can vary based on the zone's exposure to sun or cooling load levels or by nature of usage.
2. All independent control areas shall be able to:
  - Independently control temperature.
  - Turn off the system when the building or the controlled part of the building is not occupied.
3. Central systems shall operate only when required by zonal control systems.

#### SIGNIFICANCE

As HVAC systems consume largest energy in a building, it is important to incorporate efficient controls that can result in significant energy savings. In the absence of suitable controls, air conditioning and ventilation systems tend to be over-designed to compensate for the need to provide controlled environments for large areas with different thermal requirements.

One of the efficient ways to reduce energy consumption in a building is zonal control systems. By adopting zonal control systems, temperatures in each zone can be effectively managed which increases the energy efficiency of HVAC systems. It also helps in eliminating "cold" and "hot" spots thereby improving the overall thermal comfort for building occupants.