

AEDG Implementation Recommendations: Cooling and Heating Loads

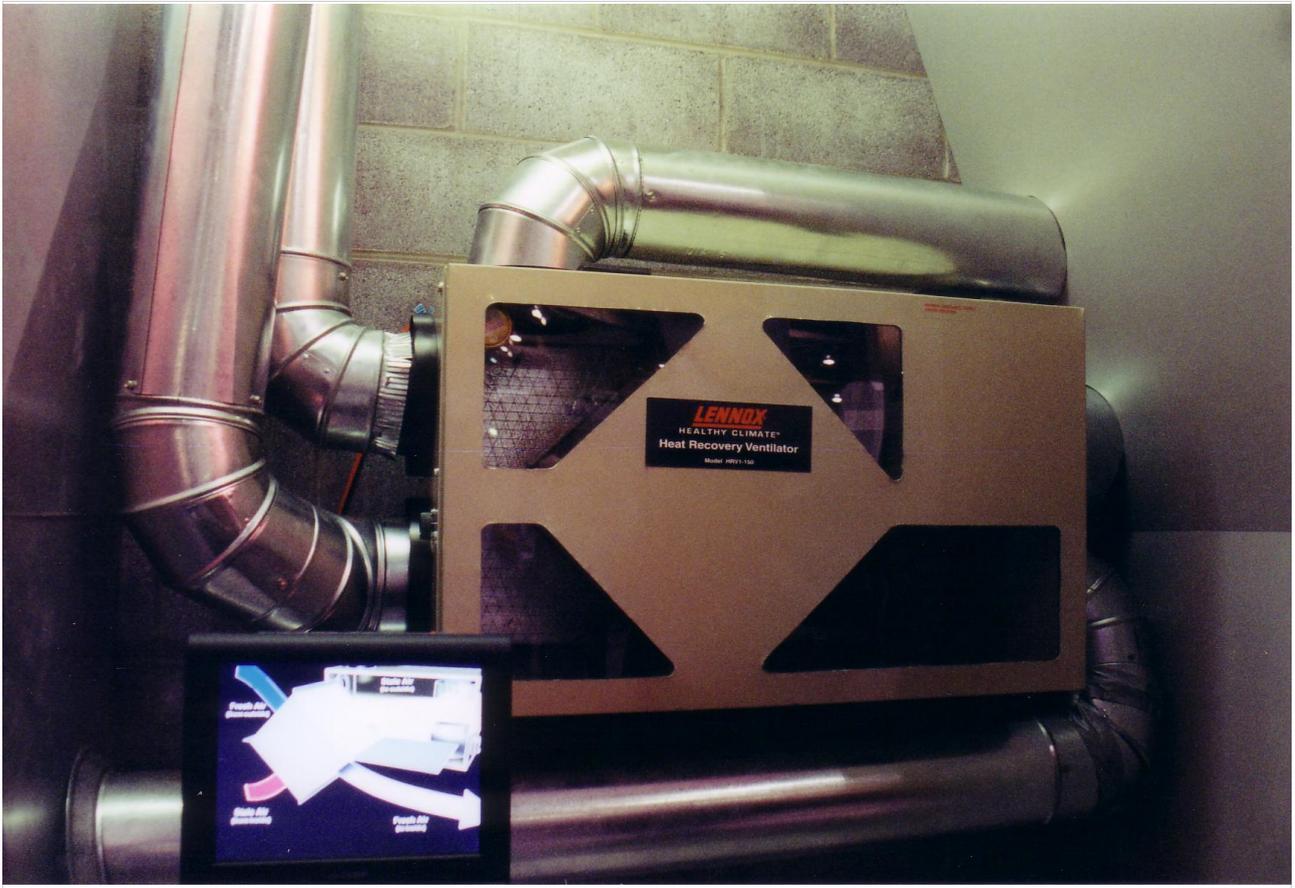
The Advanced Energy Design Guide (AEDG) seeks to achieve 30 percent savings over Standard 90.1-1999. This guide focuses on improvements to small office buildings, less than 20,000 square feet. The recommendations below are adapted from the implementation section of the guide, and should be used in cooperation with the whole document.* The full design guide is available from the ASHRAE website, [Advanced Energy Design Guide for Small Office Buildings](#) .

Heating and cooling system design loads for the purpose of sizing systems and equipment should be calculated in accordance with generally accepted engineering standards and handbooks such as ASHRAE Handbook--Fundamentals. Any safety factor applied should be done cautiously and applied only to a building's internal loads to prevent oversizing of equipment. If the unit is oversized and the cooling capacity reduction is limited, short cycling of compressors could occur and the system may not have the ability to dehumidify the building properly.

Humidity Control

The sensible load in the building does not decrease proportionately with the latent load, and as a result, the space relative humidity can increase under cooling part-load conditions. Examine the system performance at part load to ensure that the space relative humidity remains below 60 percent when the sensible load is at 50 percent of peak design.

Energy Recovery



Total energy recovery equipment can provide an energy-efficient means to deal with the latent and sensible outdoor air cooling loads during peak summer conditions.

Equipment Efficiency

The cooling equipment should meet or exceed the listed SEER (seasonal energy efficiency ratio) or EER (energy efficiency ratio) for the required capacity. The cooling equipment should also meet or exceed the IPLV (integrated part-load value) where shown.

Heating Supply Air Temperatures

The heating supply air temperature of heat pump units is generally 90 degrees F to 100 degrees F. Ducts and supply registers should be selected to control air velocity and throw in order to minimize any perception of cool drafts.

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