Energy efficiency and indoor air quality have made great strides in the past decade, but the average home is still far from the standard of zero energy. A zero energy home is one that produces as much energy as it uses over the course of a year. These homes are designed to be both energy-efficient and highly comfortable for their occupants.

Efficiency Versus Cost

The efficiency of a HRV or ERV depends on the core material and size. A HRV can take advantage of the energy contained in the water vapor during the recycling process. Both types of systems have merits, but the cost can be a concern, and choosing the right equipment is important. For example, homes under 1,000 square feet may not need a large system.

Location

HRVs and ERVs have two duct runs. One system removes air from high moisture areas, such as bathrooms, kitchens, and laundry rooms. The other system delivers air to the conditioned space, which reduces energy use. Because all ventilation systems make a modest amount of noise, take care not to place the unit near bedrooms or minimize potential disturbance by using sound-abatement methods.

Managing Moisture

To maintain indoor relative humidity between 30% and 50%, most climates will benefit from removing small amounts of indoor water vapor with a HRV or ERV. However, in dry climates, the home will benefit from HRVs that remove more water vapor in the long run. In some humid climates, HRVs can help reduce humidity and control mold growth. In the winter months, when the air is dry, you should replace the air regularly with different types of ventilation systems to maintain a comfortable and healthy environment.

Replacing Exhaust Fans

Traditional exhaust fans can use several hundred dollars each when installed on a single fan. The addition of ERVs can greatly improve the health of the indoor environment. The exhaust fan removes stale air from the room and introduces fresh air, which can be a significant benefit in reducing energy consumption and improving the indoor air quality. However, the efficiency of ERVs is not as high as traditional exhaust fans, so consider less efficient, lower cost units such as the Zehnder Connect ERV or the Zehnder ComfoAir..

Maneuver Ventilation

While an ERV can never be “too efficient”, the efficiency of ERVs is not as high as traditional exhaust fans, so consider less efficient, lower cost units such as the Zehnder Connect ERV or the Zehnder ComfoAir.

End-User Test Building Materials

When choosing exhaust fans, choose the most efficient unit available. The exhaust fan must be able to handle the volume of air required to maintain the desired indoor air quality. The exhaust fan will help ensure that the indoor air quality is maintained, and reduce energy consumption and improve the indoor air quality.