

what lies beneath

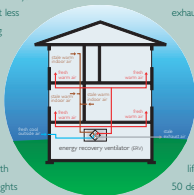


Most buildings may not have basements worth boasting about, but here at the Doyle Center, some of our most exciting green innovations are below ground.



One of the most important considerations when designing a building is the heating and cooling system. We've developed a system that maximizes efficiency; its simple design uses 40 percent less fuel than other buildings by following basic principles of thermodynamics.

Our energy recovery ventilator (ERV), located in the basement, adds efficiency to our heating and cooling system by capturing energy for reuse. A mechanism within the ERV, called a heat wheel, transfers excess energy from exhaust to fresh air.



We started with a tight "envelope" for the building, using insulation, vapor barriers, and triple-glazed windows to limit the amount of energy that can escape. We can also limit the amount of energy we use with automatic light sensors, which dim lights when they're not needed; and encourage conservation-minded practices like turning off lights and using screensavers on computers. These small steps make a big difference.

We heat and cool the entire building with a geothermal heat pump system. Rather than creating heat "from scratch," this type of system uses underground pipes to take advantage of the earth's natural temperatures. In every season, no matter what it feels like on the surface, life below the frost line is approximately 50 degrees Fahrenheit. In the winter, that warmth is transferred directly to the building's heat pump coils, creating a more cost-effective and energy-efficient starting point than colder air.



This is also where our recycling center is located, for collecting cans, bottles, and paper. Recycling is a priority for any green building—in fact, the US Green Building Council classifies it as a prerequisite under the Leadership in Energy and Environmental Design (LEED) guidelines. During construction, contractors were able to recycle over 50 percent of the building's scrap and waste rather than sending it to a landfill.



Another essential function in the basement is the Clivus Composter unit. For three decades, Clivus has installed its composting toilets around the world. These facilities create less pollution and use less water—about 80 percent less—than a "normal" flush toilet. The compost bin you see collects solid waste. Bacteria and fungi break the waste down until its volume is reduced by 90 percent. Once every four years, we will remove only one wheelbarrow's worth of compost.

did you know?

Installing a low-flow toilet can not only save water, it can save you money. The average American family uses 74 gallons of water a day—and nearly a third of it gets flushed. Low-flow models, which are required in all new homes, use 1.6 gallons per flush instead of the typical 3.5 to 7, and pay for themselves with the money you'll save on bills. Don't want to tear your bathroom apart? Place a large, plastic gallon jug filled with gravel in your toilet's tank. The space it takes up can save 1,000 gallons of water per person each year.



energy and atmosphere



materials and resources



sustainable sites



indoor air quality



water efficiency