

Multifamily Development

By Susan Ciaverelli Net Zero is a Net Positive

It has been 51 years since the first Earth Day on April 22, 1970. Since then, the percentage of Americans concerned about climate change has climbed to two-thirds, with sentiment especially strong among millennials and Gen Z.



Susan Ciaverelli

Some developers see this as an opportunity to appeal to a younger demographic. Net zero buildings can be attractive



East of Market is redefining apartments in Frederick, MD

to tenants because they offer lower energy costs and appeal to those who are concerned about climate change. The question remains, how feasible is it to build to net zero and still turn a profit?

Net zero means a project site produces as much energy as it consumes. This can be accomplished through a combination of energy efficient construction and by generating energy on site through sources such as solar, geothermal, or wind.

Jim Riviello of Martin Architectural Group explains, "There are a number of ways to design a building to achieve net zero. We start with a tight building envelope and less thermal bridging to eliminate drafts and greatly reduce the exchange of heat and cold. To achieve that, we use continuous insulation,

thermally broken triple glazed windows, and reduce exterior wall penetrations."

Residences built this way are more comfortable in winter and summer months and cost less to heat and cool. These are obvious benefits for tenants, but there are savings on maintenance for owners, too.

"When we reduce the air flow through an exterior wall, we reduce the potential for humidity in the wall assembly," says Riviello. "Humidity is the enemy of buildings, and when you reduce moisture in the wall, you also reduce the opportunity

for mold."

Another way to reduce humidity is to build all-electric residences. This eliminates burning fuel in the unit, which produces moisture and requires greater ventilation.

"To keep the ventilation efficient, we provide ERVs or HRVs," says Riviello. "This equipment allows the ventilation air to be preheated or pre-cooled by recovering energy from conditioned exhaust air. With a tighter envelope and fewer air changes per hour, electric heat pumps can work in colder or hotter climates than previously possible. We are also seeing the use of heat pump water heaters, which use warm corridor air to heat water."

"One other advantage of controlled ventilation is that we can filter the air being exchanged, a selling point for people with allergies," adds Riviello.

You might think this all sounds more expensive to build, and it has been, however, with products becoming more available and widely used, prices are coming down. When you take into account the long-term savings in maintenance for owners and energy costs for tenants, net zero becomes a more cost-effective choice. It also gives developers an advantage when applying for HUD financing.

"Overall," says Riviello, "We are designing better buildings with fewer potential problems."

The Martin Architectural Group is currently working with The Duffie Companies to design a net-zero multi-family apartment community in the city of Frederick, Maryland. The project includes five buildings and a clubhouse with 260 market-rate one, two and three-bedroom units. Each building also has 14 individual garages for rent and a rooftop amenity.

It is worth noting that three apartments in each building are designed for multigenerational families. There is increased demand for multi-generational living among Americans, with 20 to 30 percent considering it for their extended families or live-in employees.

Tim Kamas, vice president of development and construction for Duffie, explains, "In our market, prospective tenants are looking for communities with proximity to shopping and entertainment, but building owners still need to set

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