

# Murus SIPs and Mechanical Ventilation

## THE PANELIST

### Infiltration and Insulation

We are all acutely aware of the skyrocketing cost of living comfort these days. Heating and cooling a home has become a major portion of a monthly household budget, and we're always trying to find new ways to minimize this expense. Many people who are considering building a new home want to incorporate products and systems into their designs that will give them the utmost in living comfort while reducing their monthly household budget. If this is an issue that concerns you as you plan your new home, Murus can help.

Ever hold your hand next to a wall outlet and feel cold (or hot, humid) air seeping in? Ever have condensation build up on the interior surface of a window pane? How about cold floors, but uncomfortably warm air at ceiling level? Did you ever notice in the cold weather that you could see where the rafters are located if you look at a frost- or snow-covered roof?

These are just some examples of energy robbing air infiltration and heat transfer. In conventional framing, thermal bridges, gaps, and insulation breaks are inherently present. For example, there is a thermal bridge about every 16" in a conventionally built wall because of the wooden or metal studs. The stud bridges the thickness of the wall because it is in direct contact with the exterior and interior of the wall section, thus transferring energy (heat or cold) from one side to the other. Gaps can be present wherever materials join together, as in corners, sheathing joints, top and bottom plates, window and door openings, etc. Insulation breaks are present wherever you have cavity interference such as switch and receptacle locations, around wiring runs, and in corners. All of these conditions allow air and moisture to travel in and out of a home; a process sometimes called "breathing."

Breathing is good and bad. Conceptually it's good because the air inside your home gets circulated and replaced by fresh air from outside several times a day through the air leaks or gaps in the walls and roof

of your home. But practically speaking it's bad, because the air takes with it the heat or cold, humidity or dryness your house has mechanically generated (and you have paid for) through its furnace, air conditioner, humidifier or dehumidifier, depending on the time of year. Today's homes are built with concern for reducing or eliminating this "breathing" process in order to conserve valuable heating and cooling energy.

Murus Structural Insulating Panels (SIPs) aren't a new concept; the first homes were built with SIPs in the 1950's. Murus has been producing SIPs since 1987. Our SIPs are structural and are proven to be even stronger than conventional stick framing. And because our SIPs are structural, you may enjoy more design freedom using Murus SIPs, such as open floor plans and cathedral or vaulted ceilings. But the best part is, because of the higher R-values and solid foam-core insulation, you can enjoy a living environment that is unsurpassed in comfort and quality. Air gaps, thermal bridging, and moisture transfer are virtually eliminated. The outside comes in only when you want it to. You are protected from the winter cold and summer heat in comfortable and harmonious surroundings. The Murus SIP shell of your home gives you the structure and continuity of insulation you need to experience the optimum in living comfort.

### Mechanical Ventilation

Let's assume you've decided to build your home with Murus SIPs, and the plans are being drawn up. Now is the time to plan to properly ventilate and care for your new Murus home. Because Murus SIPs are so efficient and because, when properly installed, they will create an atmosphere that is virtually impervious to undesirable infiltration by the outside environment, your new Murus home will require mechanical ventilation in order to give you the utmost in indoor air quality and living comfort.

What is mechanical ventilation? It is a two-way air pump that draws fresh air from the outside of your home while it

simultaneously exhausts stale air from the inside of your home. As this process occurs, the two air streams pass by each other through a central energy exchanger core, but do not mingle. In the colder months, the heat from the interior air is transferred to the incoming outside air even though the two air streams remain separate. In this way, you recover the majority of your heating energy. The reverse occurs in the warmer months. The result is a constant supply of fresh, circulating air within your home that has been acclimated to insure minimal loss of heating or air conditioning energy. You are surrounded by exceptional indoor air quality, giving you the utmost in living comfort.

There are several manufacturers of mechanical ventilation systems, called Heat Recovery Ventilators (HRV) or Energy Recovery Ventilators (ERV). An HRV is recommended for colder, four season climates; an ERV is used in warmer, more humid two season climates. Both types are available in different capacities depending upon the square footage of your home. Murus doesn't endorse or recommend any specific mechanical ventilation manufacturer; however, we do insist that you plan on making an HRV unit part of your Murus SIP building project. We've listed just some of the manufacturers and their contact information on the reverse of this newsletter.

# Mechanical Ventilation Manufacturers

Nutech Energy Systems, Inc.  
Lifebreath Ventilators  
511 McCormick Blvd.  
London, ON N5W 4C8  
Canada  
(519) 457-1904 Canada  
(937) 439-6676 Dayton, OH  
[www.lifebreath.com](http://www.lifebreath.com)

Venmar Ventilation, Inc.  
550 Lemire Blvd.  
Drummondville, QC J2C 7W9  
Canada  
(800) 567-3855 (US)  
[www.venmar.ca](http://www.venmar.ca) (residential)  
[www.venmarvent.com](http://www.venmarvent.com) (commercial)

Broan Manufacturing Company  
926 West State Street  
Hartford, WI 53027  
(800) 558-1711  
[www.broan-nutone.com](http://www.broan-nutone.com)

Honeywell International, Inc.  
101 Columbia Road  
Morristown, NJ 07962  
(800) 328-5111  
<http://yourhome.honeywell.com>

Bryant Heating & Air Conditioning  
Division of Carrier Corporation  
[www.bryant.com](http://www.bryant.com)

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