



Minisplit heating and cooling. The line sets are run and the head units are installed before insulation takes place.

COMFORT DICTATES HEATING AND COOLING

Like many high-performance houses, the ProHOME relies on a minisplit system for heating and cooling. In this case, the Biebels chose a Mitsubishi M-Series unit designed with an emphasis on the heating mode. The heat pump works at outdoor temperatures as low as -13°F , which will get the homeowners through the Vermont winter.

Often, case studies of net-zero homes discuss the problem of sizing heating systems for the low demand of an extremely airtight and highly insulated house. With minisplits, the solution is often to rely on just a single indoor head unit per floor. This approach works in a custom home where the homeowners can weigh in on the tradeoffs. They can decide if they'll be happy keeping bedroom doors open when the room is not in use and if they're willing to accept the few-degree temperature variation from the set point when doors are closed.

Because the ProHOME is a spec house, Tim is especially concerned about homeowner comfort. Complaints of

discomfort from new owners who are used to heating and cooling sources in every room could impact sales of homes in the development. To head off any issues, he wanted each of the three bedrooms to have its own head unit. The great room also needs a head unit, so the house needs at least four head units. Connecting four indoor units to a single compressor requires a branch box, which adds material and labor costs. Instead, Tim chose to use two compressors and add an additional indoor unit in the kitchen. He freely admits that the capacity of the two 24,000-Btu compressor units installed in the ProHOME is overkill, but the cost of the additional capacity was less than \$800 more than installing a single compressor with a branch box. Now, every room except the bathrooms has its own heating and cooling unit, so homeowners can adjust the temperature in any room, and the second compressor ensures there is still heating and cooling on each floor (enough to keep the house comfortable) if one compressor fails.

ELEVATING THE STANDARD

Dryerbox

Dryerbox components work together for a safer, more efficient dryer. The DB-480 Dryerbox creates a protected space for the flexible duct connector, allowing the dryer to be pushed up against the wall without crushing the ducting.

This model accepts connections from both free-standing dryers and pedestal-mounted dryers—handy in a spec house where the appliances aren't yet chosen. Using the long-radius 90° Dryer-El to make the duct turn in the wall maintains dryer efficiency because it counts as its actual length (only 18 in.) toward

overall duct run, unlike standard segmented 90° elbows that count as 5 ft. of duct length. Finally, at the exterior termination of the duct run, the low-profile, powder-coated, galvanized-steel Dryer Vent has zero airflow constriction and a magnetic closure to keep birds and squirrels out.

