



**Innovation Center**

- Spray foam insulation: R30
- Walls: R5 exterior, R19 fiberglass batts = R24
- Slab foundation: R10
- Insulated by Delkote Machine Finishing, Asheville
- Solar energy: 5.12-kilowatt solar photovoltaic
- HVAC system: cooling efficiency 30 SEER, heating efficiency 13 SEER
- HVAC system: Mitsubishi, installed by Gentry Heating & Air, Asheville
- Energy Recovery Ventilator installed by Green R Inc., Mars Hill
- Edible landscaping installed by Autrey Trees & Landscaping, Micaville
- ENERGY STAR appliances
- Electrical installation installed by A-American Electric, Asheville
- Low-voltage work/lighting controls provided by Harmony Interiors, Asheville

hovering around 1,500 square feet, something that plays into the modern mindset of simplification for younger families and retirees. The buildings combine the company's acclaimed structural integrity and 21st-century green technology, of which the models are built in their factory and prefabricated for their clients.

"It's a combination of old-school knowledge and new technology," Dickens said. "Passive solar is the backbone of the design, and we've known for a long time that solar works, and now we can pair that with all of these new energy-efficient gadgets – it's the best of both worlds in terms of human knowledge."

Within the Innovation Center, there is the passive solar design with a grid-tied 5.12-kilowatt solar photovoltaic array located on a two-pole mount in the yard. The high performance insulation includes R30 spray foam insulation, R24 walls and R10 insulated slab foundation, which ties into the south-facing windows in the open living space with limited glass on the east and west sides of the building.

The center also showcases a mini-split HVAC system and fresh air ventilation (ERV) or energy recovery ventilator (ERV). The ERV has a built-in heat exchanger that preheats incoming air which utilizes heating energy from the outgoing air. Add in a heat pump water heater, ENERGY STAR-certified appliances, efficient lighting, low-VOC paint finishes, and edible landscapes (of native plants and trees), and you

are just touching the tip of the iceberg as to what the model can and will do.

"With so many fancy gadgets on the market, it can be a real challenge for homeowners, as in what will go together well with what they want to do, what can they prioritize, and what is just a fancy gadget?" Dickens said. "And Deltec can build and find exactly what each home needs, and point our clients in the right direction of those technologies suitable for their specific project."

Of the key features in the center, one of the most important comes by way of the energy monitors and sensors. These tools provide Deltec with a vast resource of data that speaks to the unique weather of Western North Carolina, a region

with a large a spectrum of temperature and climate.

"One of our goals is to show the best features available, but also the ones that work the best for this particular climate," Dickens said. "We get to demonstrate what works in every climate without going too far into one climate. A lot of studies have been done on these technologies in colder climates, but our varied climate – really hot, really cold, and really humid – and our model center will play into those varying temperatures and elevations."

During the recent open house for the new center, several hundred folks attended, all in an effort to learn more about what could possibly someday become their cozy, sustainable abode.

"The market is looking for something smaller, and more affordable," Dickens said. "And, for me, it's just been fun to see all of this data roll in that will provide us with so much information on where we're at and where we're going with green technologies."

# Deltec's Innovation Center

## Modeling sustainability

Inside the Deltec Innovation Center. Deltec/Will Corkwright photos



By GARRET K. WOODWARD

When Leigha Dickens wanders around the Innovation Center, she can't help feel like she's in her own laboratory. "The data we're collecting here is not only for my own knowledge, but also for the knowledge of where the technology is at, and the way that technology affects everything else in the building," she said.

Green Building and Sustainability Manager for Deltec, a longtime Asheville-based company at the forefront of the green building movement, Dickens is excited about the endless possibilities of the firm's new center, which is a 1,500-square-foot model home that features the latest green technologies and innovations. The net-zero energy structure provides the company with a physical entity for clients and the curious alike to personally

explore and see firsthand just what they can do with their own housing projects and options.

"The most important thing is being able to have this tangible building to show clients just what we're all about," Dickens said. "We're able to demonstrate the passive solar advantages of the home, and show things like the water heater and how much energy each appliance is using just by pulling up the data on an iPad by the front door."

Though Deltec offers an array of its signature rounded-end homes of all sizes and features, the company was seeing the current market

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