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## A-B Tech building the high-tech home of the future

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Ken Czarnomski and his crew of student workers may be building the future inside an old warehouse at the former BASF plant.

In a few months, the Asheville-Buncombe Technical Community College students will literally roll out their creation, a 1,250-square-foot home in three separate parts that meets the demanding energy-saving standards of a NC HealthyBuilt Home and the pocketbook of a working family in Buncombe County.

“It’s like it’s on roller skates,” said Czarnomski, chairman of A-B Tech’s Construction Management Technology department.

The modular home rests on wheeled, steel I-beams, rising toward the sawtooth top of the old warehouse. This spring, the completed house will be trucked to its permanent foundation in Buncombe County.

With a hinged roof that can fold flat during delivery, and a host of different tricks as far as framing, insulation and energy-saving devices, this house has served as a laboratory for students like Sam Pedisich.

A full-time carpenter for a number of years, Pedisich took classes at A-B Tech to brush up on his skills in the burgeoning field of green building. “They can help keep me competitive in the years to come,” he said.

Carpentry classes at A-B Tech have built homes out in the field for years, many for Habitat for Humanity, but this is a first for the school — designing and building the modular house to be delivered to Neighborhood Housing Services of Asheville, a nonprofit promoting affordable housing.

The house will be priced at \$100,000 to \$120,000 and a site will be selected for the project in a few weeks, said Gary Verni-Lau, transition manager of Neighborhood Housing Services.

“We try to be as conscientious as possible about what we’re purchasing for the community,” he said. “We would like to move toward a product that is greener and affordable. The technology is starting to come around as people are using more recycled and composite construction materials.

### Green building boom

Green building is booming around Western North Carolina, said Matt Siegel of the WNC Green Council, which administers the NC Healthy Built Homes program.

“We have about 46 homes that are actually completed and certified NC Healthy Built. We have another 365 houses in progress,” Siegel said.

Green building is more about “attention to detail,” than fancy technology, Siegel said. “There is some alternative framing, but it’s about knowing how to flash around a window or how to air-seal or how to install ductwork that won’t leak.”

As more area builders start with green construction, they need experienced workers, and A-B Tech’s modular home program could help provide those skilled tradesmen, Siegel said. “They should be able to make a good living and serve this growing industry.”

Students in these traditional trades with the new technologies aren’t begging for jobs, Czarnomski said. While

untrained laborers can find work at an hourly wage of about \$9, skilled workers can earn \$14 an hour and up to \$18 to \$20. "Those aren't bad wages," he said. "And many of the larger construction companies are offering benefits. This is a wide open field."

### Tricky technology

Students working on the house have gained hands-on experience about quality control and cutting back on construction waste by manufacturing indoors, rather than outdoors in the elements. Along with carpentry classes, students in welding, electrical technology, air conditioning and heating, civil engineering and computer-assisted drawing technology have practiced their skills on the home.

They also had to master tricky problems such as a roof that could fold flat on the modular unit during the delivery by truck. "That was a real learning curve for us," said Czarnomski.

Once they deliver this house, students will start another modular home, perhaps practicing with a different floor plan, next fall at the warehouse rented from Colbond Inc.

The house comes with a little more quality built in, thanks to the hard work of the students. Pedisich, for example, employed his skills as a boat-builder as well, creating a curved ceiling in the central hall.

"I would love to live in it," said Pedisich.

The NC HealthyBuilt Homes Program is a voluntary statewide program offered locally through the WNC Green Building Council and the Asheville Area Home Builders Association.

HealthyBuilt certified homes offer environmentally friendly design and construction in these areas:

- Site and landscape: healthy outdoors by using erosion control and saving existing trees.
- Water efficiency: lower water bills by using high efficiency irrigation and plumbing fixtures.
- Building envelope: lower utility bills by using high efficiency windows and insulation.
- Heating and cooling systems: higher comfort with efficiency equipment and sealed air ducts.
- Appliances and lighting: lower utility bills by using Energy Star appliances and lighting.
- Indoor air quality: a healthy interior with nontoxic finishes and minimizing mold.
- Materials: a low maintenance home using durable, local, and recycled content materials.

Owners of a HealthyBuilt home can expect lower energy bills, including a 5 percent discount. from Progress Energy, and state and federal tax credits for renewable energy and energy efficiency.

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