

Greenbridge Team Builds a Prototype for Eco-Friendly Urban Development

ELLISON CLARY
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“I would be willing to make a very large bet that this structure is going to set a complete new standard for green building in North Carolina,” says Markus Wilhelm, pointing to the Greenbridge mixed-use development in downtown Chapel Hill.

Wilhelm is chief executive of newly named Strata Solar, formerly Solar Tech South. His firm installed the solar thermal system on the environmentally friendly development in its headquarters town.

Greenbridge is a pair of residential towers that replaced three rundown structures on West Rosemary Street. It encompasses 1.5 acres and includes 33,000 square feet of commercial and office space, plus two levels of underground parking.

Everything about the complex that houses 97 condominiums in towers of seven and 10 floors is designed to win gold certification from the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program.

“There’s no way this is not going to make gold,” says Wilhelm of the rating that would be a first for a mixed-use project in North Carolina. “It has had better management than any other green building that I have come across.”

The management Wilhelm refers to is the six Chapel Hill families, led by Tim Toben, who banded together in 2006 to form Greenbridge Developments LLC to



redevelop the infill property.

Now chair of Gov. Beverly Perdue’s Energy Policy Council, Toben tuned into environmentally friendly projects after selling his Internet marketing business. During an August 2004 fishing trip to Iceland with thinker, designer and architect William McDonough, Toben bought into McDonough’s passion for building in harmony with nature.

Toben became managing partner for Greenbridge Developments LLC and that begat Greenbridge, which will cost “just north of \$60 million,” he says.

“It is all that I thought it would be,” Toben adds. “This is going to be a national model, we think, and others have told us, for sustainability in buildings.”

Toben’s group selected William McDonough + Partners of Charlottesville, VA, as design architect. The architect of record is GGA Architects of Chapel Hill. Also participating was Clearscapes Architecture of Raleigh.

Features that the McDonough team designed include vegetated roofs to mitigate rainwater runoff and reduce the heat island effect, shaping and situating the buildings to optimize daylight, and filtered outside air for all units.

Seventy-five percent of demolition and

construction waste went for recycling.

“There were very high aspirations on the part of the client and on the part of the design team,” says San Francisco-based Kira Gould, communications director for McDonough. “But in sustainability, we always set the aspirations high. When you have a committed client like Greenbridge, you go a long way toward getting there.”

Design started in 2006 and selling in 2007. Construction commenced in 2008. With an official opening in mid-2010, the project has taken just more than two years.

Mark Vevele, marketing manager for

Greenbridge Developments, outlines what initial residents see.

“There is one big base that is split at the second floor,” Vevele says. “It’s two towers. Of the 97 units, there are 15 that we call affordable; they’re part of inclusionary zoning for the town of Chapel Hill. Then we’ve got market rate units that range from 1,000 to 2,600 square feet. We have 38 units left. They range from 1,100 square feet at \$425,000 to the penthouse, which is 2,600 square feet at \$1.4 million.”

Amenities include centers for fitness, events and media, an entertainment lounge with bar and service kitchen and full-service concierge. There is a fleet of zipcars, environmentally friendly vehicles shared by homeowners for short trips.

The entry and lobby are public space where residents and visitors can see sustainability exhibits, starting with Greenbridge details. Future displays might come from the town water works, Duke Energy and others.

Leading the actual building effort was general contractor Weaver Cooke Wilson, a joint venture of Greensboro-based Weaver Cooke Construction and C.T. Wilson Construction of Durham.

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Majority partner Weaver Cooke Construction has built a strong record in sustainable structures. It was the general contractor on Greensboro's Proximity Hotel, which garnered LEED's highest rating of platinum. The firm has completed six projects that are LEED certified, including its headquarters. C.T. Wilson also has completed LEED projects.

The unique design of Greenbridge impresses David Drewry, senior vice president at Weaver Cooke. None of the units line up with each other from floor to floor, he says. That meant a multitude of logistics issues.

"What on a normal building where things stack would have been a 10-week process wound up being about an eight-month process," Drewry says. "We've had a time extension of about 45 days, but given all the challenges, I'd say we've done a pretty good job."

A challenge was working with and coordinating input from the large number of architects and engineers involved, Drewry adds. And that's not to mention the 40 sub-contractors. For some, this was their biggest project ever.

"If I had it to do over again, I would have done a lot of the mock ups that we built on the job site sooner," Drewry says. "I might go off site somewhere and just mock up a whole unit."

Also recognizing a need for better visualizing was Warco Enterprises, Inc., a Winston-Salem firm that performed plumbing tasks.



"The biggest lesson learned is the importance of three-dimensional modeling," says Britt Patterson, Warco's director of Business Development. "As difficult as this installation was, it could have used building information modeling, which would have drastically saved everyone involved a lot of money."

The Greenbridge experience led Warco to create its own 3-D preconstruction department. "Our engineers have used PipeDesigner 3-D since September 2009," Patterson says.

Patterson marvels at the finished product. "Everything is low flow," he says. "Most of the water closet units are dual flush. The faucets and shower heads use low-flow aerators. We also used low volatile organic compound cements, sol-

vents and thread sealants."

Having worked with Weaver Cooke extensively, Johnson's Modern Electric of East Bend took the project in stride. But the hard-sought LEED gold rating meant more time devoted to planning energy efficient fixtures.

"This is the first project for which we did mainstream LED lighting," says John Dixon, project manager for Johnson's, which had about 35 employees on site. Previously, LED had been a luxury item that was used only in selected areas.

Another complication was integrating electric features with the HVAC system. As recently as five years ago, Dixon explains, "HVAC, the lighting and everything else didn't really integrate and act as one system working efficiently."

Raleigh-based David Allen Company is the tile contractor for the project. The firm had to meet a challenging schedule to install custom tiles for some 83 condo units. Project Manager Ron Whitt said the tile installation satisfied several LEED standards such as offering products composed of recycled materials and use of setting materials comprised of zero VOC materials. "The porcelain tile (Stonepeak) was manufactured within the 500 mile radius required for LEED credits," Whitt said. "We recently visited the plant to see how material was recycled to make this product."

Hamlin Roofing Company of Garner handled the green surfaces on three roof levels where it installed organic carpets de-



signed for low growth. Hamlin crews also performed ground-level waterproofing at the entrance. Another task was putting in recycled rubber pavers on 19,000 square feet of terraces.

"The green roofing was something that I had not personally done before," says David Panella, Hamlin's project manager. "The experience with that was great. The market's going that way. That will definitely be beneficial to us."

Wilhelm of Strata Solar agrees about momentum.

"It was an honor to work on this project because it has very high visibility and you dealt with some of the most professional building experts," says the leader of the company that mainly deals with large commercial accounts. "We can benchmark the Greenbridge management team against the very best we have come across in our industry and they would still stand out."



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