

Going GREEN

Reaps Unexpected Rewards for Upstate Forever

BY JERRY SALLEY

There's nothing that would immediately strike a pedestrian walking down Pettigru Street as unusual about the house at number 507. The one-and-one-half story frame building, built in 1916, fits right in with the other houses in Greenville's Pettigru Street Historic District. If you're not looking carefully, you might miss the solar panels perched on the roof — and that's okay with the people working inside the building, the Upstate Forever team.

"I've had to point out the solar panels to every person that I have taken around the property," says Nancy Fitzer, Education Director at Upstate Forever, an organization that works to promote responsible development and protect special places in the Upstate through their land trust, sustainable communities, and clean air and water programs. "Even though they are on the front of the

building, they're really not obvious or obtrusive at all."

Since Upstate Forever remodeled the building and took it over as its headquarters in 2008, these unobtrusive solar panels have provided over a fourth of the energy used in the office, as well as heating all of its hot water. The staff stays comfortable even on a steamy 90-degree summer day, thanks to high-performance spray foam insulation and an energy-efficient HVAC system, as well as a "green roof" that provides additional protection against the weather. They work under natural light, thanks to added windows and "sunlight tunnels." And the landscaping, all native, non-invasive species, is irrigated solely with rain water, collected from the green roof and stored in two 150-gallon rainbarrels.

That was all part of the vision in 2007 when Upstate Forever Executive Director Brad Wyche and his staff

decided it was time to move from their old offices around the corner on Manly Street. They had recently finished work on the Upstate House, a new home (also in the Pettigru District) constructed using the EarthCraft green building standard. Wyche and company, collaborating with Upstate House architects Scott Johnston and David Anderssen, saw an opportunity to "walk the talk" of Upstate Forever. "The goal was always to have it be a demonstration project as well as a functioning office space," explains Fitzer.

But why renovate a 90-year-old house, instead of building a new green building from the ground up? It's the ultimate in recycling, explains Wyche. "The big missing piece in the green building movement in the Upstate and elsewhere continues to be on the renovation side," he says. "We're constructing some wonderful new green buildings, and that's great. But we have a long way to go in improving the performance of existing buildings, and that's the key to making real progress in conserving energy and reducing impacts."

After getting a "very attractive" price on the property from the previous owners (admirers of the Upstate Forever mission), and evaluating the house's potential with the architects, the crew started work on the "greenovation." But the project was not without its challenges. The house had been vacant (although "not vacant of critters," Fitzer laughs) for about 20 years, and was in severe disrepair.

"Probably 25 percent of the structure had to be completely replaced," Johnston recalls. "The house was literally rotting into its foundations. We had to take the building down to the studs to remove asbestos-laden plaster. But as we did that, we preserved the wood trim and other features of the home, and re-installed all of those historic features back into the permanent structure."



Photo by Oliver Yu



Nancy Fitzer. Photo by Oliver Yu

Over 40 companies and contractors joined the Upstate Forever “Green Team,” led by architects Johnston and Anderssen and builders Brett Southerland and Kayne London with Southerland Construction, Inc., to offer materials, services and labor. All of them either donated their products and services or provided them at steep discounts, says Wyche. A capital campaign also helped raise funds for the renovation. After 14 months of hard work by the “Green Team,” the Upstate Forever staff moved into their new home in October 2008.

The benefits were immediate. “The comfort level is huge,” Fitzer says.

“Anyone who’s had experience in older homes knows that they’re drafty — cold in the winter, hot in the summer. But it’s just so comfortable in here, we really are able to be more productive.” With the ability to set different temperatures in nine distinct zones in the building, the 17 members of the staff (plus interns and frequent visitors) don’t have to battle over raising or lowering the heat.

In addition to the highly efficient zone-based HVAC system and the roof-mounted solar panels, the builders installed Icynene spray foam insulation, which contains no ozone-depleting substances. The green benefits are

impressive, but the practical benefits surprised even those at Upstate Forever.

“We knew the energy savings would be substantial, but they’re even better than we predicted,” Wyche says. “We’re using 80 percent less energy than a comparable traditional building.”

The staff also enjoys a much healthier interior than traditional building methods would have provided. “When I learned that the first consideration in this project is indoor air quality, that was a surprise to me,” says Fitzer. The builders used non-toxic finishes, including low-VOC (volatile organic chemical) paint, and avoided any materials that off-gas toxic chemicals. And that wasn’t all. “When the whole thing was finished, they put a giant fan in the front door and blew air through for three days to pull out any noxious substance that might still be lingering in the air,” Fitzer recalls. “That was the equivalent of about a year of fresh air blowing through, so when you move in it’s like you’re not moving into a brand new building. It did not have that new building smell.”

The team’s commitment to recycling extends to most of the details of the house. Books rest on shelves made from wheat and sunflower boards recycled from farm waste, and bathroom floors are made of recycled glass. Visitors in the reception area step on a floor made of reclaimed heart pine from three closed Upstate textile

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Solar panels. Photo provided by Upstate Forever



Rooftop garden. Photo provided by Upstate Forever



Pallet wood floors. Photo provided by Upstate Forever

mills, and the floor in Wyche's office is made of old shipping pallets.

Upstate Forever was even able to recycle an entire outbuilding that the builders were tearing down on the property. "One of our contractors said he could use the boards," Fitzer recalls, "and he was able to cart those away and give them a second life as a chicken coop on his farm."

"The project by itself is great because people can see, touch and feel all of the green features and technologies that we've put in and consider putting in some of these things in their own office or home," Wyche says. "But there's a broader dimension to the project. It illustrates the important principle of reuse and shows why we shouldn't give up on what we've already constructed, whether it's a single building, a Main Street, or an entire community. Reuse, broadly applied, conserves resources and reduces both the rate of sprawl and the cost of providing services to far-flung developments."

Since 2008, Fitzer estimates that over 1,000 people have toured the offices to learn about green building practices. "We have had architects, we have had builders, we have had engineers, we have had historic preservation groups, and we have had just interested citizens," she says. One of the first things those visitors see in the reception area, near the display showing the power generated by the photovoltaic panels, is the certificate from Leadership in Energy & Environmental Design (LEED), awarding Upstate Forever Platinum status, their highest award.

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"We weren't sure we would make it, and I'm really proud that we did," agrees Wyche. "It's a very rigorous standard, but that's the way it should be. I now fully understand why there are so few LEED Platinum projects."

With all of the state-of-the-art green features Upstate Forever incorporated in 2008, what new technology would Johnston like to include today? "We're doing a lot of geothermal heating and air conditioning now," he says. Using geothermal energy (thermal energy created and stored in the Earth) to run an HVAC system "is not by any means new technology overall, but it's something that really has emerged within the last two or three years in the Upstate," he says.

But even without geothermal HVAC, "it's a wonderful workspace," Fitzer says. "We all really appreciate being here."

"We had very ambitious goals for this project in 2008, and I can proudly say we've met all of them," says Wyche. "We've provided a wonderful, healthy place for our staff to work. We achieved LEED Platinum. We've dramatically reduced our energy costs. We've had many hundreds of people come see the office, and we've shown them first-hand what green renovation is all about." **GBM**



Sun tube. Photo provided by Upstate Forever



Recycled shelving. Photo provided by Upstate Forever



Blown insulation. Photo provided by Upstate Forever