



PHINNEY
DESIGN GROUP

Little Green Houses

Building a responsible, resource-conscious residential environment, one project at a time

By Ashley Hahn

The walls are stuffed with old newspapers, the stones are from a nearby lake, and the floor is grass. No, this isn't the vision of Willy Wonka's crunchy cousin; it's high-end residential construction with a focus on environmental responsibility. And it's happening here.

Frank Laskey's company, Capital Construction, had been building commercial properties, like car dealerships and hotels, around Saratoga Springs when he met Michael Phinney four years ago. Phinney, an RPI graduate, is an architect with expertise in green building. He was the architect in charge of the new Department of Environmental Conservation building in downtown Albany, the first building in-state to be certified by the U.S. Green Building Council's Leadership in Energy & Environmental Design program.

Phinney says he and Laskey each wanted to design "houses that were green that didn't look like eco-ships, but beautiful homes, responsive to the environment, built out of environmentally responsible materials," and agreed to partner up for a project in the future. That time came a year and a half ago when a homeowner approached them wanting to build a green house. Not a greenhouse, but a green house. The man's wife had chemical sensitivities, which meant many conventional building materials could not be used due to the strong chemicals present in them, so they wanted to go green in Greenfield.

"As the project evolved, I realized that this is the direction I really want to go in," Laskey says, because this principled building method shares what he calls his "core values." Phinney started his own company to concentrate on environmental design work while Laskey restructured his business to focus more on green residential construction.

Laskey then bought 95 rural acres in Wilton to build a green residential housing development. Last month, he and Phinney got the green light to start construction on the flagship house of "Loudon Ridge," a planned (though not yet fully approved) subdivision of 22 new homes to be built on those acres, with conservation in mind. Subdivisions may not seem like the height of conservation, but this is not an ordinary subdivision. Each of the prospective homes will be custom-designed and built of local resources and manufactured materials from the land where soda bottles become coats.

Working with a land-use planning group in Saratoga, Phinney and Laskey identified features of the site they wanted to preserve and found ways to develop homes while trying to "protect the rural character of the land, protect open space, protect existing ecosystems and minimize [the houses'] footprint on the land," says Laskey. "By doing that we design a house that fits the site and respects the site—which is probably the most important part—as opposed to the conventional way of doing a subdivision which is, you take your 95 acres, cut it up, see how many houses you can get."

They've set aside 35 acres of land as "forever wild," and are building trails for hiking and horseback riding through the property so it can connect to county forest land bordering it on two sides. Initially the acreage preserved would have been 70, but zoning rules regarding communal septic systems did not make this possible. In that plan there would have also been a cluster development with smaller lots around a common green where a versatile barnlike community

building would have stood. They hope to be able to do more community-oriented development on projects in the future, pending zoning changes that will accommodate them.

Construction can produce enormous waste and accounts for 30 percent of raw materials used in America, according to the Green Building Council. Our buildings also use 65 percent of the electricity and 12 percent of the drinkable water that are consumed. But through creative thinking and environmentally-friendly products, those numbers can improve.

“Part of building green is building houses that are durable, long-lasting, low-maintenance and energy-efficient,” Laskey says.

In their building endeavors, Laskey and Phinney try to use materials and paints that are either nontoxic or have very low amounts of volatile organic compounds. For instance, instead of plywood treated with formaldehyde, they use one without it. “Typically the formaldehyde and other building materials out-gas for five years,” says Laskey. That’s what people pick up when taking a whiff of “new house smell.”

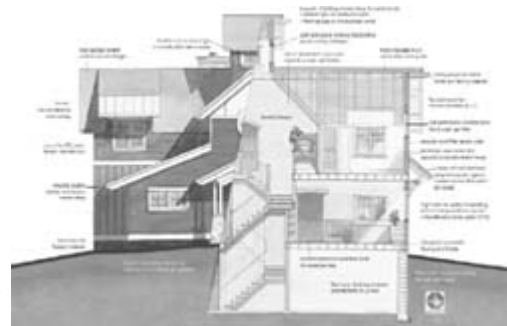
They also use a vast amount of recycled products ranging from Styrofoam to cement to metal to newspaper. Using recycled and long-lasting products means a lower-maintenance house, which saves the homeowner money and means less building material will end up in landfills. Furthermore, many of these products can be re-recycled.

The exterior of the demonstration house will be almost all recycled materials: finger-jointed wood trim and window frames, clapboards made of wood-lookalike fiber-cement board, and metal roofing and window sashes. These materials are also surprisingly durable. The clapboard has a 50-year warranty and is guaranteed to hold paint for 25 years. All told, Laskey says, because of these features the house “far surpasses the standards for normal construction.”

All of these recycled building materials get Laskey and Phinney pretty excited. Laskey’s interested in using an insulation made of soybeans—they currently use one made of recycled newspaper—and Phinney is looking at a countertop material made from pressed paper that’s a bit like Corian, minus the epoxies.

Phinney’s creative juices *really* get flowing when he can use local materials, such as timber and stone, especially if they’re from on-site. (He built one house out of “pin-straight pine” that was on the property that they milled and dried on-site.) “Those are the opportunities I get most excited about because then the buildings speak of the environment that they come directly from,” he says. In the case of the subdivision, they will be using timber (which is never old-growth) from Canada and New York, some from as close as 30 miles away, and stone from a quarry near lakes Champlain and George. Using local materials helps the local economy and cuts down on fuel consumption: Their supplies are coming from within a 500-mile radius.

A home’s embodied energy-efficiency is a priority from the early drafting phases. They place the home’s longest side on the east-west axis and put most of the glass facing south to maximize light. They also “build with large overhangs that are 2-feet deep, which protects the glass from the summer sun, but in the winter when the sun is lower it allows the sun to come in,” Laskey says. Their designs use an open floor plan that helps create a thermal chimney in the house for air flow. This lets excess moisture and heat cycle out, and in warm weather will reduce the need for air conditioning to a few times a year. There is also a special ventilation system, costing about \$1.50 per day, which cycles fresh air through the house continually.



The demonstration home will feature a boiler with 94.2 percent efficiency, far above the standard. As a result, heating and electricity costs are about half that of the average standard house of the

same size. Their demonstration house, at 3700 square feet, is estimated to cost \$1600 per year for heat and electricity.

For water efficiency, the new homes will feature various indigenous flora that don't require much watering, and big lawns are discouraged. They're also looking at a water system which can cut consumption by 52 percent.

The demonstration house will also have smart-home technology courtesy of Ambiance Systems in Clifton Park. By touching a screen, a homeowner can control the lighting, temperature, security and entertainment. It also flickers the lights at a rate imperceptible to the eye but which doubles the lifespan of light bulbs. Homeowners can, at the push of a button, lower the heat and lights upon leaving the house and call from a distance to turn the heat on if they've been away. The whole system costs between \$25,000-50,000, but is more about lifestyle, to Laskey, than relatively short-term pay-off.

The demonstration house is being built in part with grants from the American Lung Association and the National Association of Home Builders Research Center. It is one of five projects chosen by the NAHBRC to demonstrate green building practices, and as a result of that grant the builders will hold a workshop at the demonstration house in October to help people learn about the methods they employed. They are the only builders in the Northeast chosen by ALA to build a "healthy house," a designation they earned from their concentration on using nontoxics and a smart ventilation system.

The somewhat painful part of green building is the price. At the low end, Loudon Ridge homes will be selling for around \$500,000; at the high end, the demonstration house has a price tag of just under \$1 million, but that's because it's got all of the bells and whistles and a nice 5-acre lot.

"When we talk to people about green and about sustainability, people really tend to get lost because it's another language," Laskey notes. "I tend to talk more about durability and low-maintenance and energy-efficiency, everyone understands that." And they also understand that budgeting can affect how green a buyer can be.

"Frank is not looking to build mass-produced houses that are all the same design with cheap building materials," Phinney explains. "So when you start to do custom-design things that are also environmentally friendly materials that are high-quality, there starts to become a cost that's associated with it." Phinney says he tries to present clients with plans that allow for flexible, efficient, and open-feeling homes, and "ultimately smaller houses that feel bigger." This, he adds, can also help control costs.

Laskey believes the public needs to be given green options and to learn that "built to code" means built to minimum standards. While a green home might cost 5-10 percent more up front, the investment, the builders estimate, will likely be paid off in about 10 years. Laskey says, "since [a home is] most people's largest investment, I think there's some wisdom in that."