

By Bill Kirk , Business Editor

Eagle-Tribune

— LAWRENCE - From the outside, it looks like a typical New England home in a typical New England neighborhood.

And in many ways, it is.

It's 2 1/2 stories tall. It has a fireplace and wood siding. And it looks like most other houses on the street.

But looks can be deceiving. And in this case, they most certainly are.

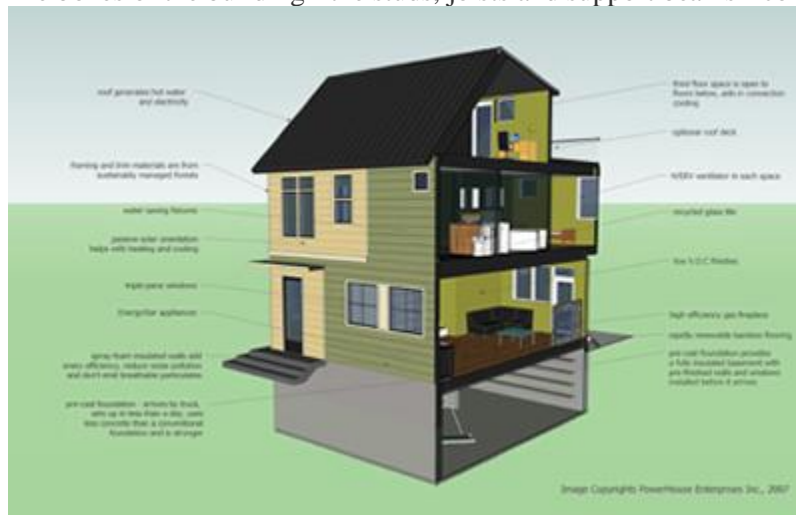
Almost everything about the house - from the way it's positioned on the lot to the wires inside the walls - is designed and built using cutting-edge technology to maximize energy efficiency, enhance the health of its inhabitants and minimize any impact on the environment.

"We don't want our houses to look like science projects," Quincy Vale, president of PowerHouse, said during a tour of the partially finished home at the corner of Market and Temple streets recently.

"We want it to look like it fits into an old, urban mill city."

And it does. But it also does a lot more: When it's complete, the house will have its own source of hot water, with solar panels on the roof providing the energy for its hot-water needs. On sunny days, photovoltaic roof panels will collect enough electricity to be sold back to National Grid, reducing the home's annual energy costs.

The bones of the building - the studs, joists and support beams - come from



forests that use sustainable harvesting methods, while the glue used to adhere the subfloor has reduced levels of cancer-causing volatile organic compounds.

Meanwhile, vented pipes in the basement provide a collection system to keep invisible, but carcinogenic, radon gas out of the building.

The house wrap under the clapboards is corrugated to wick moisture away from the structure.

An air-exchange system keeps humidity out of the building in the summer, all but eliminating the need

for costly and inefficient air conditioning.

The house faces south, taking advantage of warming winter rays, while certain design features minimize the sun's impact in midsummer.

And the list goes on and on.

"We call it invisible green," said John Rossi, a Newburyport resident who is design principal for PowerHouse. "There's a lot going on that you don't see."

Added Rossi, "This isn't like it used be, where you needed to live in a yurt and wear a hair shirt to be green."



For the most part, houses using this kind of technology have been the domain of the rich and famous - costing upward of \$1 million or more.

This house is on the market for a little over \$300,000, Vale said.

The main reason for the relatively low price, he said, is that it was built in a warehouse by modular home builder Epoch Corp. in Pembroke, N.H.

"The trick is in getting the house on the market at a price that is comparable in cost to other houses in the market area," said Vale. Despite the costly modern technology involved, "we can't be on the market at twice everything else."

PowerHouse is building a similar structure in Cambridge that is selling for triple the cost - in part because the cost of the lot was so high. *(See related story.)*

In Lawrence, that wasn't a problem. PowerHouse, which is based at 60 Island St. in Lawrence, got the land for \$11,000.

City Planner Michael Sweeney said the property had been taken under a tax lien. Officials then decided to

auction it off using a competitive bid process, and to write the specifications so that only a developer interested in erecting a green building could win it.

"The bid specifications were written to ensure this home would meet extremely high energy efficiency ratings," he said, adding that a number of bids came in, including the highest at \$70,000, which was eliminated from contention because it didn't meet the specifications.

PowerHouse got the property, even though it was one of the lowest bidders, in part because the city wanted to make a point - and history.

"We were trying to be creative and to move the city in a different direction," Sweeney said. "This is a landmark for the city. This city is closely associated with the industrial revolution - that's the old framework of doing business. Today, business is moving toward being greener.

"We viewed this as an opportunity to be on the cutting edge of a good product," he said. "It's good for business and it's good for whoever moves into that house."

Also, it's good for the city.

"This is the first time in the history of the state that a municipality has specifically offered and sold property with this type of energy or efficiency standards," he said.

Robert Keough of the state Executive Office of Energy and Environmental Affairs, was unable to confirm that claim, but he did say that the PowerHouse project and its aim of being certified at the highest level of environmental compliance are impressive.

Vale and Rossi explained that they designed the house using a set of criteria established by the U.S. Green Building Council, a quasi-governmental agency that has created standards known as LEED, for Leadership in Energy and Environmental Design.

The LEED rating system ranks buildings on an established list of attributes. The highest rating, platinum, would show that a building meets or exceeds all of the LEED criteria. That's the ranking PowerHouse is going for with this building.

Keough noted that if the Lawrence house gets that high rating, "it would be pretty significant" because the buildings that have achieved it around the country all have been commercial buildings.

Vale pointed out that the certification is as much a process as it is a punch-list of items that must be adhered to.

For example, once a buyer has moved in, part of the LEED certification is to teach the occupants some of the basics of home energy management.

"We get one point for teaching the occupants how to use the building and the systems, providing them with manuals, giving them a walk-through," Vale said. "We are also very interested in the energy bill."

He hopes to establish a home-energy monitoring system which will track energy usage to show "how our project has performed."

"We have to be able to prove it works," he said.
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