Suburban Star
"Kimmswick 1" Is A Super-High Performance Home

By Jean Ponzi

Take the winding road to Kimmswick, a Mississippi River town where history and character hold sway. Make a quick left across the boundary line of Imperial, MO, past the big new elementary school, and you're into The Parc at Kimmswick, a brand-new suburban circle where each house wears Victorian airs.

The blue house across from a patch of woods seems to blend right in with all its neighbors, but this home is built with features that outshine all the rest.

"We wanted to show that doing it right doesn't cost more," says energy consultant Tim Michels, partner in the homebuilding firm Applied Energy Solutions LLC.

"Our Kimmswick house demonstrates that it's a question of *when* you pay. Putting the 'pay now' into your mortgage to build a high-performance home is good for you and for the environment. When you let the 'pay later' be your utility bills, you'll recoup your investment and continue saving as long as you own the home. It's a more sustainable, more energy-efficient, more cost-effective way to buy a home."

Michels' senior partner, retired engineer Jordan Heiman, adds, "The universal design features of this house – barrier-free entrance, doorway widths, accessible bathroom dimensions with walls reinforced to hold grab bars – will provide lifestyle quality for all of your life."

This single-family residence has 2,015 square feet of living space on two floors. An insulated, drywalled basement offers another 960 square feet suitable for finishing as additional bedroom and living space, including a roughed-in bath. It has an attached two-car garage.

Front porch gingerbread matches this new development's period aesthetic, but Victorian details transform into expansive, flexible space when you enter the house.

Architect partner Greg Polanik is fluent in open floor plan and passive solar design. The spacious master suite is visible down a short hall, right off the vestibule, keeping all key living areas accessible to occupants no matter their age or physical ability. You step to the left into brightly daylit dining space that flows on into the kitchen, welcoming visitors into the convivial heart of the home.

Handsome cabinets and a dining counter unobtrusively separate eating from central living areas, located at the back of the house so a southern exposure floods the space with energy-saving natural light. Screened glass doors give access to the back deck and yard.

"This is a relatively compact house," notes Polanik, "so giving the family both connective and private areas is a key design factor." An upstairs play alcove offers a getaway space for kids, and conventional bedrooms contrast the open space of main floor living areas.

Natural gas service was not available in this development, so Kimmswick 1 is an all-electric home. Normally, this setup could mean higher monthly energy costs. This home's combination of super-efficient building materials - insulated concrete forms (ICFs) - coupled with a ground-source (or geothermal) heating and cooling system, ENERGY STAR lighting package, and innovative heat-recovery production of domestic hot water are projected to limit electric bills to about $960 per year (about $80 a month). A

conventional home in the same development will operate at about $2800 in annual utility costs. In addition, wiring is in place to install a photovoltaic (solar) power system, at the homeowner's discretion.

Resource efficiency also surrounds the house. Landscaper Cindy Collins has built three rain gardens, designed to catch runoff from the roof, sidewalks and driveway. "A rain garden becomes a temporary pond during a rainstorm," explains Collins, "and the water gradually percolates into the ground." Two rain barrels, positioned beneath downspouts, provide backup to the rain gardens during storms, collecting reserves to water plants during drought periods. Low-maintenance native plants will minimize water bills.

This home is on track to earn top-level LEED-Platinum and ENERGY STAR Five Plus ratings, attesting to superior quality in construction processes and building performance. Energy rater Ed Fieser has inspected Kimmswick 1 throughout the building process, verifying documentation the builder partners submit to the U.S. Green Building Council and the U.S. EPA.

"These are demanding, point-based rating systems," says Fieser. "With ENERGY STAR, the lower the point value the better the home's energy features. This home scores 46 out of 500. A standard home of comparable size will score 120-150. But the score alone doesn't tell the story of this home's efficiency, because as you get those point values down, they get much harder to achieve!"

Project facilitator Marianne Austin notes with pride the diligence necessary to achieve these Green ratings – and the training opportunity her company has generated by building Green in a standard-practice housing development. "We tracked factors ranging from recycling of construction waste to sourcing products regionally and using materials that off-gas no harmful emissions into living space.

"We learned a lot about making our rating requirements work efficiently for the contractors," says Austin, "and we are proud to have built a house in a rural area, where young people who learned their trade from their fathers and grandfathers can update their skills to high levels of Green."

For more information on Kimmswick 1 features, and to schedule an appointment to see this home, visit www.appliedenergysolutionsllc.com.

Jean Ponzi promotes residential Green building for the EarthWays Center of Missouri Botanical Garden.