Reframing Community

SIPA & Timber Framers Unite High Performance Construction and Public Service to Make Virginia Woman's Shelter Expansion Possible

Lisa's House is a domestic violence shelter run by the nonprofit Project Horizon in Lexington, Virginia. It was constructed in 1999 and expanded by ~3,600 sq. ft. in 2015 using Structural Insulated Panels (SIPs) and timber framing methods by a vast consortium of volunteers, manufactures, builders, students and associations.

According to Jack Armstrong, Executive Director of the Structural Insulated Panel Association (SIPA), the organization was eager to participate in the project alongside SIPA members, including BASF, Insulspan Panels and PanelWrights.

The Heart of High Performance:
SIPS made with BASF's NEOPOR®
Graphite Polystyrene (GPS) insulation

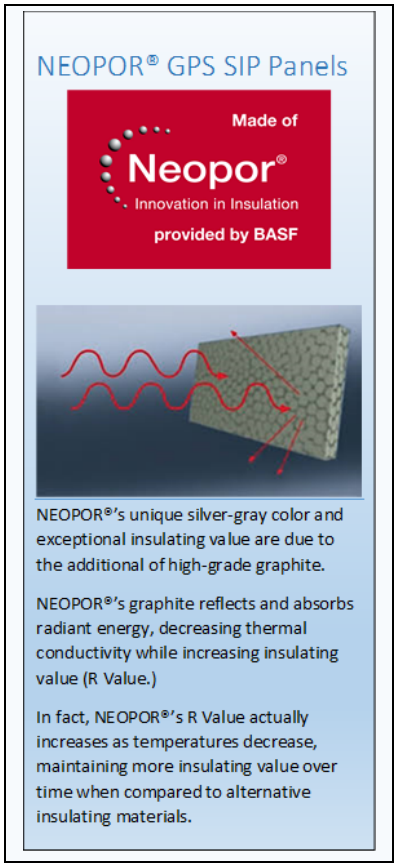
"We want to demonstrate the benefits of SIP-based construction as a way for non-profits to save money on energy so that they can use their resources to provide critical, life-saving services. Homeowners that incorporate other energy-efficient features into a SIP home can see utility savings of 50 percent or more," says Armstrong.

"At the same time, the marriage between SIPs and timber framing is a favorite among many high-end home builders because it combines SIP's energy-efficiency, ease-of-installation and thermal comfort with the handcrafted, home spun aesthetic unique to timber-framed homes," he adds.

Josh McMichael, the project's general contractor agrees. "Even before we added this ultra-energy efficient addition, the energy bills were only about $60 a month including natural gas and hot water. Not only that, the time we saved on installing SIPS over the timer framing instead of adding traditional insulating materials, helped us stay on time and

within budget. And at the end of the day, the home is also beautiful and comforting." said McMichael.

And Armstrong points out that there are a number of other ways SIPs save money during the construction process.



He point to an RS Means Study that compared SIP versus stick construction and found that SIPS resulted in significant time and labor savings. The study found that erecting SIPs walls, roof, and dormers takes only ~45% of the labor hours expected for conventional construction; ~89% less labor hours for rough wiring than a conventional house; and eliminates the separate steps usually needed to install exterior sheathing, insulation, and house wrap. Lastly, SIPs' precut openings translate into faster door and window installation.

For this project, SIPs' energy and cost savings were further optimized with the inclusion of BASF's NEOPOR® Graphite PolyStyrene (GPS) insulation. The project's SIP builder, Al Cobb of PanelWrights, points out that, "using NEOPOR GPS insulation in the Insulspan panels allowed us to value engineer the SIP package to achieve the same energy performance with less material and upfront costs," said Cobb.

Cobb further explains that these high-performance SIP panels provide a virtually seamless thermal blanket of energy-saving protection that keeps environmental allergens and noise out while allowing the timber frames to steal the show with maximum visual impact.

Building Public Service from the Ground Up: The Timber Framers Guild

RAISING HOPE

According to Jeff Arvin, The Timber Framers Guild Executive Director, "Public service is a hallmark of the timber framing community. *Lisa's House* is one of more than 75 community building projects we have participated in by since 1985."

Certainly, this ethic of social responsibility was seen during the original 1999 *Lisa's House* construction and again for the 2015 expansion when more than one hundred students and instructors from Timber Framers Guild, Fanshawe College, Carpenters Fellowship (UK), Colonial Williamsburg University, the American College of the Building Arts and the Virginia Military Institute converged in Lexington to participate.

"Partnering with the SIPs community on this project was important not only for the success of the project but, also to help the student and builders learn more about how SIPs helps homes perform better, in a repeatable, profitable fashion," adds COL Grigg Mullen, professor of civil engineering at Virginia Military Institute who spearheaded the project with his wife Cindy and numerous Lexington community members.

COL Grigg Mullen Jr., professor of civil engineering at Virginia Military Institute, recruited and coordinated 45 cadets who signed up to help build Lisa's House to learn about timber framing and help the community.

Grigg Mullen, discusses timber framing with local highschool student Corey Taylor

A Visible Contribution Sheds Beacon of Hope

The 2015 *Lisa's House* expansion includes added sleeping, dining and bathroom facilities as well as much needed counseling and meeting space. Moreover, *Lisa's House* serves as, "a daily visible reminder that the work we're doing is valued and we're not doing it alone," said Judy Casteele, Project Horizon's executive director.

To learn more about SIPs and many other case studies of commercial, agricultural, and multi-family projects go to www.sips.org.