

BUILDING & CONSTRUCTION

NORTHEAST

BUILDING A STRONGER REGION

Seaside Superiority

The Carlyle Group has leveraged the local insight of its investors to succeed with The Grand at Diamond Beach. *Page 69*

Staying on Track

Fast Track Construction thrives on completing tough projects in and around New York City. *Page 128*

Next-Generation Trend

Younger, tech-savvy homebuyers are ready to embrace today's prefabricated houses. *Page 10*





Let LCA Be the Judge

➤ When it comes to the environmental impact of exterior cladding options, vinyl siding is a smart choice for green building.

For many builders today, market forces and a personal commitment to protecting the environment make using green products and practices a growing priority. Despite this commitment, making the “green choice” is not a simple matter. For example, when it comes to a home’s exterior cladding, builders are faced with numerous options and the mass of sometimes-conflicting information can complicate decision-making.

Fortunately, there is readily available information based on data and thorough analysis. At the same time, there is a large amount of information available that is based on an incomplete picture, erroneous assumptions and misinformation.

Many marketers make green claims based on individual measures or factors, but a growing number of people in the building industry are recognizing a more comprehensive, accurate approach. Life Cycle Assessment (LCA) identifies the environmental impacts of a product, process or activity over its lifespan. It considers extraction and processing of raw materials; manufacturing; transportation and distribution; use, reuse and maintenance; and recycling and disposal.

Because of its comprehensiveness, LCA is becoming an increasingly popular methodology for evaluating exterior cladding and other building product options. The National Renewable Energy Laboratory Life-Cycle Inventory (NREL LCI) Database and Environmental Product Declarations (EPD) are using the technique. The ANSI-approved ICC-700-2008 National Green Building Standard also is providing credit for selecting materials using LCA. In addition, LEED has developed a pilot LCA credit, and future LEED standards are expected to integrate credits for product selections based on LCA. Even *Fortune* 500 companies such as Procter & Gamble are using LCA as a tool to analyze products, packaging and processes.

Vinyl Siding Performance

In particular, the National Institute of Standards and Technology (NIST) developed sustainability software – Building for Environmental and Economic Sustainability (BEES) – to analyze LCA. BEES was established per ISO 14040 and ASTM standards and is recognized by green building professionals as an accurate way to select environmentally preferable materials.

In recognition of this fact, the Vinyl Siding Institute Inc. (VSI) sought the expertise of Sustainable Solutions Corp., an independent consulting firm that assists companies in developing programs to improve their economic and environmental performance. Sustainable Solutions Corporation used BEES software to analyze available LCA data related to exterior cladding options.

For energy use, LCA takes into account manufacturing, use phase and transport energy. Vinyl siding scores well in this category because its manufacturing process is extremely efficient. The ability to immediately return scrap and off-specification materials – regrind – directly into the manufacturing process results in virtually no manufacturing waste. As for the use phase, no energy is required because painting, caulking or staining of

vinyl siding is unnecessary. In addition, vinyl siding is lighter in weight compared to other exterior cladding, providing a reduced transportation energy impact.

LCA also examines carbon dioxide and other greenhouse gas emissions during the manufacture of different types of exterior cladding. Analysis shows that vinyl siding produces less than half the energy and fuel consumed in the manufacturing process when specifically compared to bricks and mortar, thereby contributing less to global warming. Vinyl siding is responsible for the emissions of significantly lower levels of toxic chemicals, including mercury and silver.

Overall, the analysis shows that vinyl siding scores well on tough environmental measures through all lifecycle stages, outperforming other exterior cladding. Evidence indicates that vinyl siding is a sustainable choice compared to other exterior cladding.

Considering the comprehensive science of LCA, and its recognition by experts in the building industry, there are a dozen reasons why vinyl siding is a green choice:

- » It can contribute to points in leading green building programs;
- » Boosts a home’s R-value;
- » Generates less manufacturing waste;
- » Produces little waste when installed;
- » Requires fewer resources to maintain;
- » Is engineered to last;
- » Performs better environmentally;
- » Balances economic with environmental performance;
- » Contributes less to global warming than brick;
- » Releases fewer toxic chemicals than other exterior cladding through its lifecycle;
- » Emits less dioxin than other exterior cladding; and
- » Installs safely. ☺

Jery Y. Huntley is the president and CEO of the Vinyl Siding Institute (VSI) Inc. Located in Washington, D.C., VSI is the trade association for manufacturers of vinyl and other polymeric siding and suppliers to the industry (www.vinylsiding.org).