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Trends in building envelope construction moving towards environmentally friendly building systems

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The use of sustainable materials and building practices has become embedded in the construction industry. Building envelope construction has been particularly affected by the movement towards environmentally friendly building systems. Modern building codes are being rewritten to require increased energy efficiency; in Connecticut, for example, the R-value requirements for wall and roof construction have recently been increased. “Building envelopes can no longer be passive,” said Ted Hathaway, CEO of Oldcastle building envelope division at the recent Building Envelope Contractors Conference in Las Vegas. This sentiment is being reflected in the latest technology that is available to owners, designers, and builders. New glass technology and framing systems can provide a highly energy efficient building skin. High performance glazing products can balance daylight and energy savings without compromising on building aesthetics or the quality of the interior environment. Another popular exterior skin material impacted by the green movement is metal paneling. Manufacturers of these products have embraced recycling, reuse, and reclamation practices in manufacturing their products. Metal panels are now frequently produced from recycled content and/or reclaimed scraps from the manufacturing process. Some manufacturers go as far as taking back used panels for reuse or recycling. Clearly, there are many levels to the sustainability of these products. More traditional skin materials also provide sustainable solutions. These include masonry products such as brick and CMU, concrete precast panels, and stone veneer. These materials reach their sustainability goals through recycled content by way of reclaimed process waste. Masonry structures inherently save energy due to their structural mass and overall wall composition. Roofing manufacturers also utilize a variety of sustainable materials from polyiso insulation to reflective membranes, which help to keep buildings cooler. Additionally, roofing manufacturers have developed recyclable products that reduce manufacturing waste and greenhouse gas emissions. Other available roofing systems include those that can support planted materials as well as “solar ready” systems that are specifically designed to easily accept photovoltaic installations. The use of sustainable building envelope systems offers a long list of benefits both to facility owners and the environment. Collaboration and coordination between building owners, designers, material manufacturers, and contractors are ushering in the next generation of environmentally friendly, energy-efficient structures. Phil Koeniger, AIA, LEED AP is the director of architecture for A/Z Corp., Hartford, Conn. and is a monthly contributing Construction Management author for the New England Real Estate Journal’s Green Building section.