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FACT SHEET: BUILDING TRENDS

Founded in 2008, Bautex Systems, LLC is focused on providing builders and architects with better materials for building safer and more energy efficient building envelope solutions. The Bautex Wall System with Bautex Block delivers energy efficiency, sound reduction, and resistance to fire and windstorm debris that exceeds most industry standards.

Several trends are affecting the construction market's interest in and demand for products such as the Bautex Block and Bautex Wall System. The following sources provide additional information on the key drivers and trends causing innovation in building products and changes to commercial and residential construction.

PRIVATE AND PUBLIC DEMAND FOR ENERGY EFFICIENCY

Office buildings are the biggest energy users in the United States. The average office building in the U.S. uses \$1.34/SF annually in electricity and \$0.18/SF annually in gas for a total of \$1.52/SF. In an effort to reduce both environmental impact and energy costs, interest in more efficient buildings is on the rise. An example of one worldwide architectural industry initiative is The 2030 Challenge whose aims include reducing global fossil fuel consumption and emissions from the built environment.

There is no single best design or technique for achieving optimal energy efficiency, as builders now have at their disposal a vast array of materials, building systems and construction techniques. **Energy efficiency can be improved through installation of continuous insulation systems, thermal mass walls, high performance windows, air-tight construction of the building envelope, and efficient heating and cooling equipment.**

More city and county governments are applying energy efficiency standards set by the International Code Council (ICC), namely the International Energy Conservation Code (IECC), to new construction in their jurisdictions. For example, residential buildings constructed under the 2012 IECC are estimated to be 34 percent more energy efficient than buildings constructed to the 2006 IECC.

ICC published its 2015 codes in November 2014. These new standards will be adopted locally over the next several years. The impact of the new energy efficiency requirements on building design and construction will be significant, requiring architects and builders to make many changes to the way they design and construct buildings.

How Bautex impacts energy efficiency: As part of the building envelope, the Bautex Wall System is air-tight, has a high R-value, and provides thermal mass wall benefits. When installed as part of an energy efficient building envelope – including window glazing, exterior doors, air/moisture barriers and roof – a building using the Bautex Wall System will use significantly less energy – as much as 59 percent less -- for heating and cooling. The Bautex Systems' headquarters office building in San Marcos, Texas, is 3,882 square feet and should cost \$491.72 per month to operate. Its average monthly costs have been about \$200 per month, a 59 percent reduction in energy use.

Sources:

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SUSTAINABLE CONSTRUCTION STRATEGIES ARE BECOMING THE NORM

LEED (Leadership in Energy & Environmental Design) is a green building certification program that recognizes best-in-class building strategies and practices. LEED certification is recognized across the globe as the premier mark of achievement in green building.

How Bautex impacts LEED certification: To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Bautex Block and its Wall System may help satisfy several project requirements for LEED certification, based on its energy efficiency (measured by R-value and insulating performance) and the percentage of its recycled and regionally sourced materials. When part of the Bautex Wall System, products such as Bautex Block and Bautex Air & Moisture Barrier can contribute to earning “LEED credits” relating to energy & atmosphere; materials & resources; indoor environmental quality; and innovation in design.

Source: <http://www.usgbc.org/leed>

CONSTRUCTION PRODUCTS CONTINUE TO EVOLVE

The demand for more efficient buildings means more insulation in walls and roofs. One of the best insulators is foam plastic, which is commonly used now in construction. While foam plastic insulation helps to meet the energy efficiency requirements, it does introduce new fire and life safety issues that architects and contractors have to address. Foam plastic insulation is found in wall systems such as Insulated Concrete Forms (ICFs), composed of polystyrene panels that are connected to each other with polypropylene cross ties, exterior insulation finishing systems (EIFS), and other walls that use rigid foam and spray foam plastic for insulation.

ICFs, once filled with concrete and steel reinforcement, can create residential and commercial buildings that are strong, safe and energy efficient. Properly constructed, these buildings may be tornado and hurricane-resistant and withstand other natural disasters. According to *ICF Magazine*, the market for insulated concrete forms grows an estimated 20 percent a year.

Unlike foam plastic applications, a Bautex Wall System provides increased energy efficiency and a four-hour fire rating, meeting or exceeding fire and life safety standards for most commercial and residential construction. Its ease of installation is similar to concrete masonry units. Bautex Block is made of a composite material that blends individual expanded polystyrene (EPS) beads with a proprietary cement mixture, providing a tough and fire-resistant material. When stacked, the blocks form a grid of six-inch cylindrical steel-reinforced concrete columns and beams on 16-inch centers, using about one-half the concrete of the flat wall formed by traditional ICF. Bautex Blocks are more stable than the foam plastic ICF during construction and require far less bracing and simplifying construction. The Bautex Wall System is installed by local masonry or concrete contractors that have been trained to build with the system.

Source: <http://www.usgbc.org/node/4603346> and <http://www.icfmag.com/>

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