

A Way of Life



by Jay D. Johnson, LEED AP BD+C

Comments have been made lately that people are sick of "green"; it is no longer a trend and people are over it. Our theory supports this to a degree in that *sustainability isn't a trend*. But we disagree with naysayers because sustainability actually is a way of life today.

Before you argue, consider that being sustainable doesn't have to mean going off the grid and counting your carbon footprint. It can signify choosing materials wisely for the environmentally friendly, long-lasting and energy-efficiency characteristics they provide.

1. **Steel is environmentally friendly.** A metal building system consists of structural steel framing that bears a building's load. The roof and walls are then covered in various exterior building materials, which may include metal roof and wall panels. According to the Steel Recycling Institute, steel is North America's No. 1 recycled material. The steel used in metal building systems contains recycled content, but it also can be recycled when a building is demolished, repurposed or reconfigured. What this means is the steel framing adds sustainability to every project and can be used to comply with the requirements of sustainable design standards such as the International Green Construction Code (IgCC), and ASHRAE Standard 189.1 (*Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*). Steel

can also provide points for green building rating programs like the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) and the Green Building Institute's Green Globes rating program.

2. **Metal buildings are energy efficient structures.** There are many elements that add to a building's energy efficiency. The type of insulation, air barrier and exterior roof or wall covering material all affect the building's energy efficiency. If factory insulated wall panels are chosen, for instance, they add energy efficiency with their tested insulation R-values and provide exceptional air barrier performance for the building envelope. A standard range for insulated metal wall panels is from R-16 to R-32, so you can specify a system that meets a building owner's specific needs. Other insulation systems commonly used in metal building systems to meet or exceed the intended energy codes include fiberglass blanket insulation, rigid board insulation, or a combination of the two, with various layers applied.

3. **Metal buildings provide excellent platforms for energy saving products.** Metal buildings have the strength and flexibility to support photovoltaic (PV) panels. Nearly all metal buildings feature a high-performance metal roof, which makes solar panel installation fairly simple. With a standing seam metal roof the solar systems can be clamped to the upright panel seams without penetrating the roof panels. An additional advantage of metal roofs is their lifespan.

Studies have shown that certain metal roofing systems can last 60 years or more compared to a typical 15 to 20 year life for ordinary roofing materials. With a roof that lasts longer, your clients have less maintenance and replacement issues to worry about. If you offer a longer lasting roof to your clients, they will appreciate that their PV array can be installed for its lifespan instead of having to take the system down and then reinstall it each time the roof is replaced.

Utilizing natural daylighting is another way to bring energy savings to your clients, and metal building systems can be designed to incorporate skylights, sidelights, clerestory windows and other natural light alternatives. Other energy saving products include high performance commercial roll-up doors for vehicular access or loading docks, which aid in the thermal performance of the building.

The Midwest retailer Blain's Farm & Fleet exclusively uses metal buildings for a variety of reasons, including their adaptability. For example, the 114,500 square-foot Blain's Farm & Fleet in Verona, Wisconsin is a metal building system with a standing-seam metal roof. The walls include a combination of insulated precast concrete panels, split-face block, and horizontal and vertical architectural metal panels. Clerestory windows reduce the need for electric lighting. Another energy saving feature is the installation of 161 solar panels that move to optimize the sun's rays.



4. Metal building systems are cool. Just like exterior wall covering options, many roofing choices are available for metal building systems. When comparing materials to find the right one for your project, consider that purchasing from a single-source supplier could save money and time. Metal building manufacturers offer a complete building package that includes the structural steel framing as well as the metal roof and wall panels. Because of advanced coating technology, metal roofs make metal building systems more energy efficient by reducing the urban heat island effect in areas of the

country where this is a concern. Metal roofs are also fire and hail resistant, and they offer superior wind uplift performance. Ken Lee, partner with the Ogden, Utah based Building God's Way, designed the Bulverde Baptist Church in Bulverde, Texas. He says, "In Texas, installing a cool roof is important. Metal roofing can decrease air conditioning operating costs. The insulation also serves to deaden the sound in the sanctuary."

5. Consider a product's strength, lifespan, and energy efficiency. When you strip away the point system of voluntary green rating programs, there is another side to sustainability — the lasting value of a product. The entire metal building system, including all the steel framing members and metal roof and wall coverings are engineered specifically for each building application and then shipped to the construction site. This provides customization, cost savings from no wasted material, a fast construction period and the capability to erect a building year-round. The strength of steel adds a longer life to a building without the concern of degradation. The environmental impacts of a metal building can easily be analyzed with a whole building lifecycle assessment tool before the design process begins. One such tool is the Athena Impact Estimator for Buildings software that provides users access to advanced life-cycle inventory data (which includes metal building systems) via the easy-to-use tool available at <http://www.athenasmi.org/>

No building owner wants to pay higher electric bills because his or her building isn't energy efficient. Nor do owners want to replace materials every 15 to 20 years because the ones they selected did not stand the test of time. No one wants to see construction materials end up in landfills. A metal building system offers green and sustainable traits for your clients' project whether they request a specific sustainability benchmark or they simply want an energy-efficient and economical building. A metal building system will provide lasting value to your clients as it relates to its engineered structural integrity; long-lasting, energy-efficient, and ease of construction with no onsite construction waste.

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