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# Current trends in pre- engineered metal buildings

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Here at Jewett Construction, a northeast region Butler Builder, we've seen a marked increase in two important areas in the pre-engineered metal building sector, those of reroofing and energy upgrades. With the last two winters being particularly long and brutal, even by New England standards, and with some of our metal buildings clients reporting energy cost increases as high as 40% this past winter, buttoning up the building envelope to improve energy efficiency has become an increasing priority. We may be basking in the warmth of summer now, but it won't be long before another season of cold and snow is upon us. Now's the time to start thinking about those needed upgrades.

It should be noted that the actual construction of a metal building constitutes only ten percent of its total cost, with the lifetime expenses of utilities and general maintenance totaling as much as ninety percent. And while energy efficiency is an inherent quality of metal building systems due to the physical properties of the material involved, the level of insulation in older metal buildings is considered inadequate by today's upgraded energy requirements. Compounding the problem is the fact that many of the earlier metal roof systems are fast coming to the end of their lifecycle.

According to Bay Insulation, the country's largest provider of insulation systems for the pre-engineered metal building market, the old days of single layer roof insulation are over. Of the New England states, Vermont, Connecticut, Massachusetts and Rhode Island have all adopted the latest, more stringent insulation requirements as outlined by ASHRAE 90.1 & IECC, and administered by the International Code Council (ICC). Under these guidelines, the installation of a typical roof, whether new or retrofit, requires two layers of insulation, providing enhanced energy performance systems in the R-30 to R-40 range. These new insulation requirements help keep the overall building cooler in warmer weather and warmer during the winter months.

The Butler MR-24 Roof System, with its in-place weathertight performance, is one example of this trend toward turning roofing into a passive energy asset. Another example can be found in cool metal roofingâ€”a family of sustainable, energy efficient roofing products comprised of unpainted metal, pre-painted metal and granular-coated metal capable of achieving solar reflectance of over 70 percent, meeting the EPA Energy Star Roof Products Program performance criteria. It can also help to mitigate the urban heat island effect due to its high reflectance, which can reduce ambient air temperatures.

Complementing the successes of these metal roofing innovations, advancements in insulated metal wall panels have shown improvements in building efficiency as well. A new, highly efficient generation of insulated metal panels with a core of continuous, rigid insulation is now providing the industry R- and U-values that provide superior airtightness performance.

Advances in other areas include a new generation of light controls, HVAC and other internal systems; as well as innovative use of solar tubes and daylighting systemsâ€”something we're

currently utilizing in both a new YMCA facility and an auto dealership renovation. All of these advances, when taken together, help establish the new generation of pre-engineered metal buildings at the forefront of energy-efficient commercial construction.

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