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## **Don't miss the mark: Mechanical insulation is critical in value engineering - by Jim Lister**

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Jim Lister

When value engineering a new project, we consider many factors. However, some contractors underestimate the importance of proper mechanical insulation in optimizing an investment. In short-sighted (so-called) “value engineering,” some may instead cut down on critical insulation for the sake of negligible savings during construction -- a penny-wise, dollar-foolish miscalculation -- neglecting to take into account the potentially serious, long-term cost and safety ramifications. Proper mechanical insulation can save commercial facilities up to billions of dollars annually. Research shows that professionally-installed mechanical insulation is a crucial investment, especially for large, mechanically-intensive facilities, to optimize energy efficiency and generate massive cost savings.

A study by the National Insulation Association (NIA) yielded that proper mechanical insulation can save a hospital 149 kBtu/sf/yr of energy per year on average, which is 78% or more of total energy use. That translates to up to \$85 billion in savings annually.

By optimizing the efficiency of a building’s mechanical systems, insulation helps to reduce energy costs, reduce emissions, increase the lifespan of your mechanical equipment, and in many cases elongate the life of your building overall.

When mechanical insulation is lacking, the facility’s systems are forced to work harder to meet the necessary operating conditions and achieve their desired output, thus increasing costs and wearing on the equipment. Mechanical insulation also prevents condensation that cultivates hazardous mold and mildew, which can be unsafe for occupants and lead to hundreds of thousands of dollars in removal or remediation.

That’s why in reality, effective “value engineering” in most cases means increasing mechanical insulation, not decreasing it. In an industry, a market, and a world, all of which are making a move to lower-cost, green energy solutions, proper mechanical insulation is one of the most reliable solutions to lowering your carbon footprint in a way that achieves a return on investment in as little as a year.

Jim Lister is the business manager of Heat & Frost Insulators Local 6, Boston, Mass.

New England Real Estate Journal - 17 Accord Park Drive #207, Norwell MA 02061 - (781) 878-4540