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### **RETROFIT METAL RE-ROOFING'S TIME HAS COME**

One of the “Buzz” words being thrown around the construction industry nowadays is “Retrofit”. While this word has many connotations, to the metal construction industry it represents a wealth of opportunity in the current economy for contractors, design professionals and building owners. Retrofit metal re-roofing has been around for many years. But now, it has come to the surface with a major emphasis on energy efficiency. Yesterday, it was installing a new metal roof over an existing metal roof with very little emphasis on improving the energy efficiency of the building. Today, this proven re-roofing concept is used to not only re-roof the building with a high performance long-lasting new metal roof, but is being used to integrate energy savings technology into an “sandwiched” assembly between the old and new roofs including renewable solar energy equipment.

As simple as it may sound, this air space between the old roof and new roof creates a perfect plenum to incorporate new and old technologies. These can include various types of insulating materials such as fiberglass batt, rigid board polyisocyanurate/polystyrene or next generation phase change materials (PCM) for extreme thermal resistance. In addition, new technologies can be employed in conjunction with the insulated cavity, such as natural convective cooling ventilation (ASV), reflective radiant barriers and renewable solar thermal heating and cooling (water) and solar heat recovery for space and process heating (air). All of these materials can be installed collectively to create a fully integrated encapsulated thermal-composite roof assembly over an existing roof. In fact, these systems are now finding their way in new metal building construction. The only difference is a new metal sub-roof or deck instead of an existing metal roof.

Why is energy efficient roofs such a big deal all of a sudden? Just think about it, in 2005, the Federal Energy Policy Act (EPACT) was enacted and since then we have witnessed a very strong influence for retrofitting existing buildings in legislation that has passed. To name a few; the Economic Stabilization Act (ESA) of October 2008 and the most recent and infamous American Recovery and Reinvestment Act (ARRA/Stimulus) of 2009. While the ARRA was just enacted some eleven months ago, I will bet you have seen some of its recipient projects insofar as re-roofing of schools, airports, port authority warehouses, military facilities, prisons and the list goes on. Actually, it appeared that in the last quarter of 2009, somebody lit the fuse on the retrofit rocket. Inquiries, bids and orders grew at an amazing pace and we are still in the beginning stages of this renaissance. To give you one example, \$26 billion was set aside for retrofitting our public schools to be more energy efficient.

What's your opportunity in the re-roofing market? According to McGraw-Hill and the Department of Energy's Energy Information Administration, the commercial building stock in the United States is

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approximately 76.9 billion square feet. This doesn't include manufacturing and other metal roof friendly markets such as schools. These two would add another 17.2 billion square feet to the mix and this doesn't take into account other market sectors. Therefore, the overall potential market for non-residential re-roofing approaches 100 billion square feet. Of these buildings, the DOE estimates that more than one-fourth is energy inefficient due to ineffective roof systems that cause heat loss/gain and air-infiltration. It is also estimated that solar heat gain can contribute to as much as 24-30% of the cooling/heating loads. In dollars, this is \$14.3 billion of energy costs that is consumed annually to compensate for these inefficiencies related to building roofs. To be realistic for the purposes of this article and to define metal roofing's market, let's only consider metal's current re-roofing market share of 8.7%. With this in mind, we can equate a potential market size between 8 and 9 billion square feet, not dollars. This number however could grow 20-30% by year-end 2014 according McGraw-Hill's most recent Smart Market Report.

Now, let's consider some other growth factors that make retrofit even more interesting in the years to come. According to the Solar Energy Information Association (SEIA) an investment of \$336 billion for renewable solar energy installations will be infused into the construction marketplace by year-end 2016 when Federal Solar Energy Tax Credits expire. Are you now starting to see where this is going?

Did I say tax credits? This is one of the primary drivers in making these integrated assemblies attractive to building owners. The add-on insulation and convective air systems are subject to tax deductions as provided by Section 179D of the U.S. Tax Code. These deductions have been extended through December 31, 2013 as a result of the ESA-2008. The amount deductible may be as much as \$1.80 per square foot of building floor area for buildings that achieve a 50% reduction in energy and power costs. For buildings that achieve less than 50%, a deduction of 60 cents per square foot is allowed so long as a minimum of 16<sup>2</sup>/<sub>3</sub>% reduction is achieved. In recent two-year long case studies for insulated re-roofing projects as well as convective air system applications, energy consumption was reduced between 21% and 25%. Hence, these systems would qualify for the deduction. However, there is one catch with these tax deductions, the IRS limits you to a maximum \$1500. For renewable solar energy based systems, it is a completely different story. Under the ARRA-2009, dollar-for-dollar tax credits and incentives have been extended through year-end 2016. These credits can amount to a huge percentage of the overall costs of a re-roofing project. The credit is 30% of the total in-place costs of the entire system for a retrofit re-roof application. This means all materials with labor to install the system including new roofing, sub-purlin framing, solar thermal equipment and reflective radiant barrier. In addition, the IRS allows what they call "bonus depreciation", which means 50% depreciation of the system during the first year after the project is completed. The balance is depreciated out over the following six years. To make even more enticing, there are numerous loan guarantees/funding, grants, energy bonds and rebate programs depending your location. You will want to consult with a tax professional to obtain more information.

So, what does all of these statistics and their related potential mean to you the design professional or metal roofing contractor? Quite simply, you have a threshold of opportunity looking at you straight on. **Retrofit metal roof systems are a vehicle that can grow your business.** These systems are the future of metal roofing. Grab the opportunity and ask anyone of the many metal roofing manufacturers to help guide you with the technical aspects of these integrated energy efficient metal roof systems.

Now, if you are currently keeping busy with roofing projects, then my guess is you are already involved in retrofitting existing buildings. If you are still trying to find enough work to keep busy, then consider entering the retrofit metal roofing market.