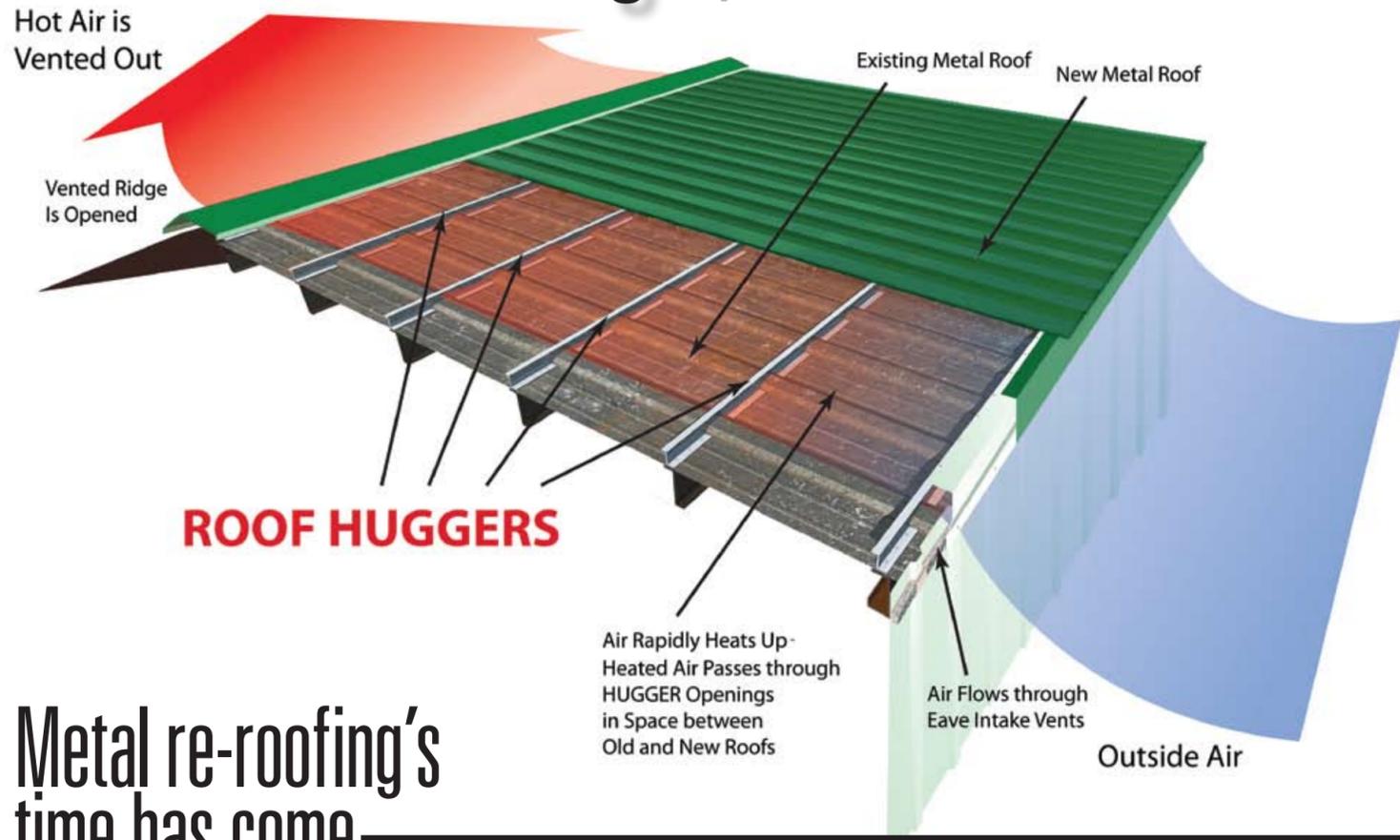


Retrofitting Renaissance

By Mark James



ASV Natural Convective Cooling System by Roof Hugger

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 to integrate energy savings technology into a "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 for extreme thermal resistance. In addition, new technologies can be employed in conjunction with the insulated cavity, such as natural convective cooling ventilation or above sheathing ventilation, 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.

Taking Off with Retrofitting

Why are energy-efficient roofs such a big deal all of a sudden? Just think about it. In 2005, the Federal Energy Policy Act 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 of October 2008 and the most recent and infamous American Recovery and Reinvestment Act of 2009. While the ARRA was just enacted some 11 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 public schools to be more energy efficient.

What's your opportunity in the re-roofing market? According to McGraw-Hill, New York, and the Department of Energy's Energy Information Administration, the commercial building stock in the United States is approximately 76.9 billion square feet (7.1 billion m²). This doesn't include manufacturing and other metal roof friendly markets such as schools. These two would add another 17.2 billion square feet (1.6 billion m²) to the mix and this doesn't take

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into account other market sectors. Therefore, the overall potential market for non-residential re-roofing approaches 100 billion square feet (9 billion m²). 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 to 30 percent 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 percent. With this in mind, we can equate a potential market size between 8 and 9 billion square feet (743.2 million and 836.1 million m²), not dollars. This number however could grow 20 to 30 percent by year-end 2014, according to 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, Washington, D.C., 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?

Tax Credits

Tax credits are 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 Dec. 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 percent reduction in energy and power costs. For buildings that achieve less than 50 percent, a deduction of 60 cents per square foot is allowed so long as a minimum of 16.66 percent 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 percent. Hence, these systems would qualify for the deduction. However, there is one catch with these tax deductions, the IRS limits you to a maximum \$1,500. 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 percent of the total in-place costs of the entire system for a retrofit re-roof ap-

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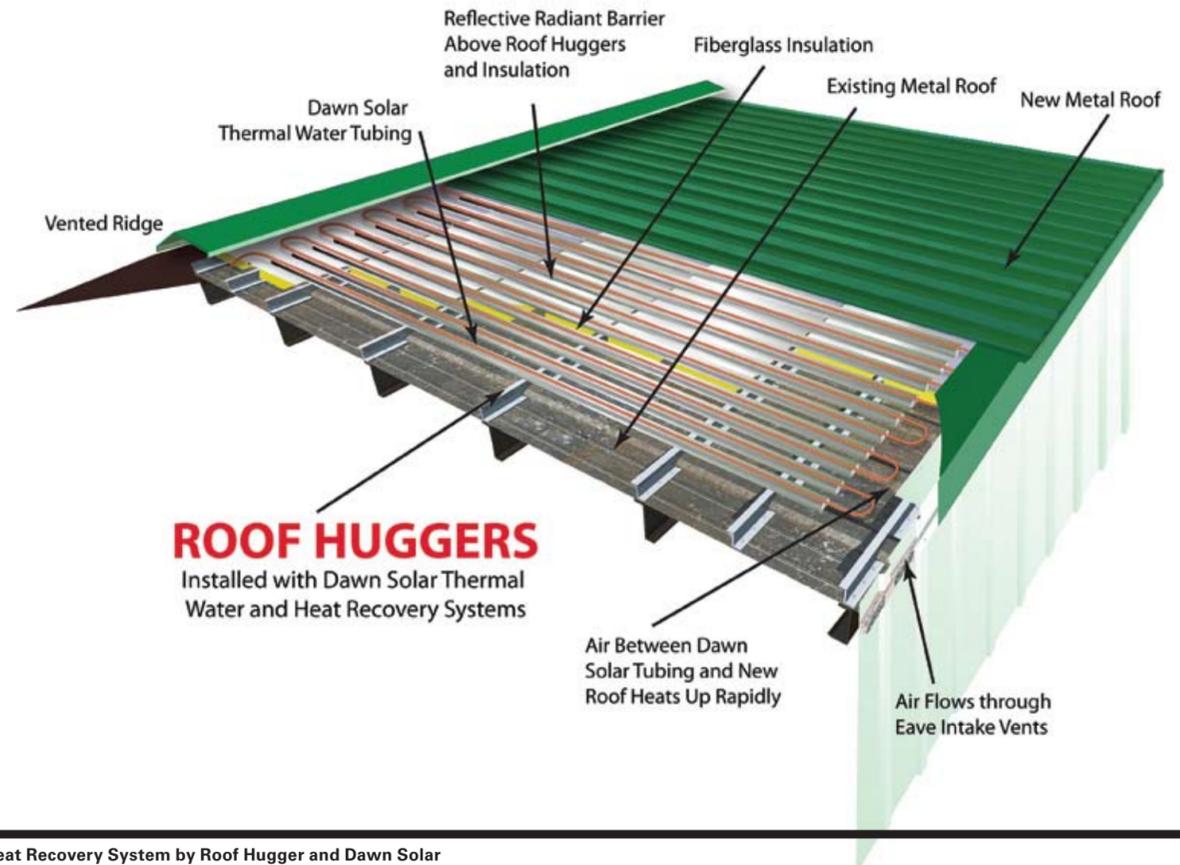
plication. This means all materials with labor to install the system including new roofing, sub-purlin framing, solar thermal equipment and reflective radiant barrier. In addition, the IRS allows what they call "bonus depreciation," which means 50 percent depreciation of the system during the first year 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 on your location. You will want to consult with a tax professional to obtain more information.

A Vehicle to Grow Your Business

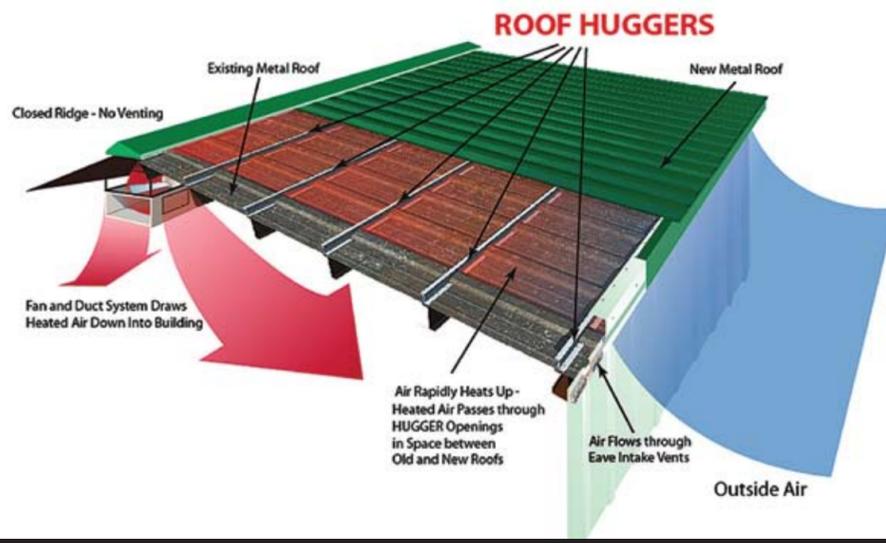
So, what do all of these statistics and their related potential mean to you, the design professional or metal roofing contractor? Quite simply, you have a threshold of opportunity looking at you straight on. Retrofit metal roof systems are a vehicle that can grow your business. These systems are the future of metal roofing. Grab the opportunity and ask any one 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. 

Mark James is the vice president of sales and marketing at Roof Hugger Inc., Lutz, Fla. For more information, go to www.roofhugger.com.



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