



MCA Leads Study with US Dept. of Defense on Integrated Energy Efficient Roof Technology

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August 3, 2011, Glenview, Ill. -- Supported by the Metal Construction Association, a team of MCA members, contractors, and manufacturers developed a new retrofit roofing concept that merges existing technologies into an integrated metal roof system that can improve energy efficiency and lower energy demands in buildings. The team also included members of the U.S. Dept. of Energy's Oak Ridge National Laboratories (ORNL), Oak Ridge, TN, where metal roof components have been tested and proven energy efficient.

The Department of Defense's Environmental Security Technology Certification Program (ESTCP) has awarded MCA a grant for a 20-month project demonstrating the performance of this integrated retrofit system that will be installed on a U.S. Department of Defense (DoD) building at a U.S. Air Force base in Texas. Preparations for the installation are now in progress and when it is complete and the building instrumented, the system will be monitored for its impact on energy use, water use and overall savings.

Members of the MCA-supported team will manage the project installation. Robert Scichilli Associates, Inc., Richardson, TX, will coordinate information updates between the ESTCP, MCA and the building site. Paramount Metal Systems, Little Rock, AR, will oversee all design and construction management, procure materials for the entire roof assembly and liaison with Dawn Solar, Inc. Brentwood, NH, for all solar related equipment, purchasing and installation. Known as a fully-integrated retrofit metal roof system the concept is a holistically designed metal retrofit roofing system that creates an air-space by adding structural subframing atop the existing roof and then installing a new cool metal roof over the assembly. Within the air space the installation will include high performance insulation, solar water heating, and solar thermal air cooling systems. The surface of the retrofitted roof enables solar generated electricity and rainwater collection systems to be installed on the topside of the new metal roof.

The DoD project will provide substantiated research data and cost savings that meet or exceed the DoD's stated directive to reduce energy consumption in all forms. The expected energy savings from these technologies will improve the energy efficiency of the building and lower the electrical energy demand from the grid and on fossil fuels for water heating and space conditioning. In addition, the incorporation of a rainwater harvesting system will reduce the demand for fresh water. These improvements also will enhance the DoDs capability of obtaining USGBC LEED certification on new and retrofit projects. It is anticipated that the high performance roofing system will deliver ~6 KWH and ~6-12 KWH-T (KWH thermal equivalent) per square foot of installed area, depending upon location, solar array orientation and thermal system loads.

A mock up of the integrated system will also be displayed at METALCON International where an education session about the technology titled "Integrating Building Envelope Roof Technologies" will also be presented on Wednesday, October 12, by Mark James, Vice Chair of the MCA Retrofit Council and VP of Sales and Marketing for Roof Hugger, Inc., Odessa, FL, and Scott Kriner, Technical Director for the MCA and President of Green Metal Consulting, Inc., Macungie, PA.

METALCON is sponsored by the MCA and is the only annual conference and exhibition focused on metal construction products, technologies and solutions. It runs October 11-13, 2011 at the Georgia World Congress Center in Atlanta, GA.

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