

'Big Green' a big winner

Maine Coast incorporates Dawn Solar with VP building, roofing project

It's known as "Big Green."

Maine Coast Construction of Camden, Maine, erected the 23,000 square foot Varco Pruden building, complete with the manufacturer's SSR metal roofing. As part of the "green" construction, John Davee's crew worked with technicians from Dawn Solar to install a 22,400 square foot heat gathering system to heat the building with energy from the sun.

"There's a lot of labor in installing and hooking up the system," says Davee. "It added about a week to the project, but it's worth the time to install."

Davee notes the installation occurred in 2006, when propane fuel prices were at \$5 per gallon.

Dawn Solar routinely provides a complete engineering package and full system commissioning support, insuring seamless integration of the solar energy system into the mechanical system. According to Bill Poleatewich of Dawn Solar, on this project, Dawn Solar's system engineer provided a complete heating system design including the radiant heating system layout, pump, piping and heat exchanger design and a custom control panel integrating the solar thermal heating system with the buildings conventional heating system.

In this case, which has been proven to be typical, Dawn Solar mobilizes a field engineering team (1-2 men) that train the contractors crew on the first day of the roof installation. This field engineering team often works with the contractor's crew through the completion of the Dawn Solar collector and



Maine Coast Construction photos



Top: The Dawn Solar system as it appears under the standing seam roofing.

Left: light coming through the simple saver fabric and the framing system during construction.

the integrated roofing system. Once a contractor has been trained, the company becomes a Certified Dawn Solar Installer approved for independent installations going forward.

Once the solar thermal roofing system is in place, with Dawn Solar field engineering support, the HVAC or plumbing contractor typically completes the installation from the manifold installed just below the roof to the mechanical room.

The Dawn Solar System absorbs heat generated by the sun shining on the

roof into a concealed, patent-pending thermal collector. From there, it delivers heating, cooling and hot water. And because it's under the roof, it does not affect aesthetics and it's protected from the elements, extending product life.

"Big Green" was the sixth building project Maine Coast Construction oversaw for Lyman Morse, a boat builder in Thomaston, Maine. It was constructed to accommodate large catamarans, powerboats and sailboats. The door is a 40X40-foot Wilson bi-fold door with a VP panel Rib sheeting and 36 inches of clear open height.

The Dawn passive solar system transfers collected heat from the roof to the radiant concrete floor and retaining

walls. In the non-winter months, the building is heated almost solely by this system, meaning the building uses less fuel than one of Lyman Morse's other buildings that is one-third the size. Davee says it works in the wintertime because snow slides off the 24-gauge Galvalume two-foot wide panels — painted in Colonial Red PVDF finish.

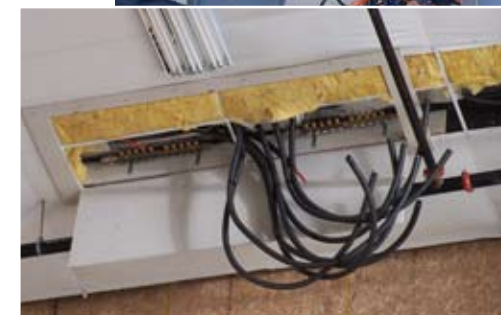
The building was inducted into the VP Hall of Fame in 2008. The award honors steel structures that represent the state of the art in quality and innovation. The steel components of the building were custom-fabricated by Varco Pruden and the walls are sheathed with super-insulated structural integrated panels and sided with cedar shingles.

"Since this project uses the solar energy only for seasonal space heating, it has a simple payback of 4 to 5 years with energy prices at the current modest levels," Poleatewich says. "A similar project using thermal energy on a year-around basis would have a payback of between 1 and 3 years depending upon the amount of thermal energy used by the occupant of the building. In virtually all cases, when commercial projects are financed with conventional mortgages, they are cash flow positive from day one."

Poleatewich says since project ROI's will vary from state to state and from utility to utility, a key service provided by Dawn Solar to its dealers and distributors is a comprehensive financial analysis that considers project specific factors (location, rebates, building design and orientation, etc.) and include the highly beneficial impact of the 30 percent Federal Investment Tax Credit for the metal roofing and metal curtain walls used on the solar portion of the building envelope. *MR*



Connections of the Dawn Solar system inside the building known as "Big Green."



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