

MULTI-PURPOSE SOLAR DESIGN

Vernon, VT: Renaud Brothers'



The dual purpose Commercial Car Port provides a new roof space with direct access to the sun for the solar project, as well as a place to park their commercial vehicles.

This spring, Renaud Brothers, Inc. contracted with Integrated Solar Applications Corp. to design and construct a unique solar photovoltaic facility that pushes the boundaries of what can be done with solar design and metal fabrication. The 74.88kW solar array provides 100% of the power needed at the Renaud Brothers facility, while providing a multi-purpose carport structure for the company's metal fabrication business. Incorporated in the structure is a tracked crane system that allows Renaud Brothers to lift and maneuver metals. Mike Renaud, vice president and owner of Renaud Brothers stated that the crane system "allows us to efficiently store large quantities of metals underneath the solar structure that can be easily organized, accessed and maneuvered". Renaud Brothers are a well-known contractor in Vernon, VT specializing in bridge building and metal fabrication around New England.

Integrated Solar, a Brattleboro based renewable energy design and build firm, worked with Renaud Brothers on the concept and design. Michael Whigham, the lead designer with Integrated Solar, stated "we were really excited about the opportunity to work with Renaud Brothers on this unique project. In the beginning, we had a hard time finding a site for a standard ground mounted

system, and the existing buildings could not accept the additional weight of a solar array. This pushed us to come up with a creative design that meets the energy needs of Renaud Brothers but that can also be applied to other projects". The steel structure was first designed to meet the needs of the crane equipment, and then was adjusted to account for the optimal solar design. "A lot of thought went into the engineering and design of this unique approach to solar racking and the outcome was outstanding!" said Whigham. The 74.88kW system includes 312 SolarWorld modules, a pad mounted inverter from Solectria, and solar mounting rails from Schletter. Mike Renaud stated that "beyond creating a facility that meets our energy needs, we wanted to explore designs that can be applied to other projects such as solar carports and other unique multi-purpose structures." The hope is that the concept and design can be incorporated at other businesses, schools and municipalities where covered carports or other types of utility structures make sense. These dual purpose structures can provide a new roof space giving direct access to the sun for a solar project. That's a great way to optimize a design and gain a higher rate of return on the investment.



From left to right: Mike Renaud, Vice President and owner of Renaud Brothers, Inc. and Mike Whigham, lead designer with Integrated Solar are standing in front of the Solectria inverter and combiner boxes. Above them you can see the back of the array.



'Reaching for the Sky' at Renaud Bros., with the 312 SolarWorld modules that complete the 74.88kW solar photovoltaic system.

Info: Integrated Solar (802) 257-7493
www.isasolar.com or Renaud Brothers, Inc. (802) 257-7383



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