

Green Perspective™

Solar thermal installation tips

by Jack Daniels

Sure, inspiring solar installers would do well to complete a formal training program that includes a wide variety of hands-on classroom training, but becoming a true professional comes from solid, field-tested experience. The Wisconsin solar energy industry, including many installers, suppliers, and other related organizations, enjoys a fine tradition of sharing best practices to help ensure that a high standard of excellence continues.

It is in that spirit that I will periodically share some tips that I have learned over the years as well as (more importantly) pass on valuable tidbits of wisdom from some of the most successful solar thermal installers around.

• **When in doubt, go with a drain-back design.** Sizing pressurized systems for Wisconsin's cold winters means that they may be prone to overheating in the summer. When possible, we always suggest a drain-back, closed-loop system first.

- **Solar thermal system components that come with bells and whistles,** such as factory-installed unions on solar collectors, integrated pump stations, and corrugated stainless steel piping, usually come at a considerably higher price, but those extra prices should be, in part, offset by reduced labor costs. It pays to do the math for each project.
- **Consider promoting energy efficiency first.** Suggest energy efficiency upgrades to your customers when you can, e.g., modern high-efficiency water heaters for backup, pool covers, high-quality insulation, etc. Put the customer first, and they will come back for more.
- **Keep it simple.** There is certainly a place for complex designs that may include several heating loops, but they incur a plethora of extra investment expenses in parts and labor. Especially in a residential setting, a simple, powerful solar domestic hot water heating system is usually the most cost effective and perhaps helps produce a high level of customer satisfaction over time, especially as related to cost/benefit analysis. *(continued on page 34)*



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ADVICE FROM KEITH OUIMETTE

The following tips are provided by Keith Ouimette, Cardinal Heating and Air Conditioning, Sun Prairie. He has helped design and install many large solar energy systems in Wisconsin. Most recently he and his team completed installing systems that use a total of 56 Solar Skies' thermal collectors on two of the most energy-efficient, high-rise, multi-family buildings in the country: Riverwalk Place and The Landing at Eagle Flats, Appleton.

- **Use copper pipe and fittings when you can.** If you have a retrofit situation where you have tight areas to work around, stainless steel corrugated line sets work well for pressurized systems.
- **Don't skimp on system components.** You may be able to find cheap unions or cheap controls online, but they may cost you a lot in the long run. The last thing you want is a callback.
- **Educate yourself on different roofing materials,** as well as mounting and racking solutions. You want to make the install look aesthetically pleasing and make sure the roof is properly sealed so you do not create leaks in the customer's roof.
- **Invest in good fall protection.** Your life is worth it, and you will be more comfortable while wearing it.
- **Plug-and-play package systems are a good start** for a new installer. Also consider that a quality, experienced supplier can help you put together a more customized system as well.

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ADVICE FROM JOHN PRICE

In addition to teaching solar thermal installation classes with the Midwest Renewable Energy Association, John Price, owner of Access Solar, Waukesha, has seen tremendous growth in his installation business in the past few years. Here's what he has to share:

- **When laying the system out, leave room for other people** who may have to work on the same roof later on such as firemen, roofers, HVAC contractors, etc.
- **Mixing valves with built-in temperature gauges are a good idea for ease of setting.** Also, installing a bypass around the mixing valve is a good idea for service or replacement.
- **When using a preassembled pumping station, don't forget to add a drain** at the lowest point in the solar loop. You can place a cap on the drain, tightened with a pump pliers, and remove the handle so no one mistakes it for a water source in the future.
- **On the roof a lot? Spend the extra money** and buy the deluxe harness with padding and the quick-release buckle system.
- **Most of the preassembled pumping stations come with multiple speed pumps so don't forget** to set them up for optimum performance.
- **Educating your customers about how the system works** helps minimize callbacks and, at the same time, creates advocates for the solar industry. Leave a customized binder with all of the system components literature, warranties, and a simple line drawing, including commissioning date and amount of heat transfer fluid used.
- **Don't forget to call or stop back** by customers after the system has been completed and running for a while. Make sure the system is operating as designed. Keep the customer happy! •