

## YMCA OF NORTHWEST NORTH CAROLINA

*Various Locations in Northwest North Carolina*

### Project Overview

In November 2010, Vanir entered an agreement to finance, design, develop, build and operate solar thermal facilities at six (6) YMCAs of Northwest North Carolina near Winston-Salem. Through the use of Vanir's Solar Thermal Power Purchase Agreements, the YMCAs of Northwest North Carolina received new state of the art solar thermal facilities locking in their energy cost from Vanir for 20 years, all without making any capital outlays.

The solar thermal generation facilities were designed using the Ritter XL Solar System. The XL Solar System is uniquely designed with the "Aqua Principal" using water as a heat transfer medium. By using water instead of glycol, the solar facility is able to create and sustain a hotter water temperature that ultimately increases the amount of energy the YMCA can offset from conventional fossil fuel heating sources, dramatically reducing the YMCA's carbon footprint.

Five of the YMCAs including Davie, Yadkin, Stokes, Fulton and Wilkes were completed in early 2011. These five YMCA solar installations each have fifty (50) CPC 45 Star Azzurro evacuated tube collectors ballast mounted to their rooftops. Each of these five YMCA solar thermal facilities will provide approximately 7,374 therms annually. The sixth installation at William G. White, Jr. Family YMCA will feature 210 CPC 45 Star Azzurro evacuated tube collectors mounted to the rooftop using both penetrating steel and ballast mounted racking solutions. The William G. White, Jr. Family YMCA's solar thermal facility is expected to provide approximately 31,264 therms annually with a completion date of August 2011. All six of the systems are being monitored by Vanir utilizing an easy to use internet accessible monitoring package provided by Draker Labs.

The YMCA of Northwest North Carolina will be using the solar thermal generated hot water from these facilities to augment their need for hot water in such uses as showers, laundry, space heating, indoor pool area dehumidification, and pool & spa water heating.



### PROJECT INFORMATION

YMCA of Northwest North Carolina

- Davie Family YMCA
- Yadkin Family YMCA
- Stokes Family YMCA
- Fulton Family YMCA
- Wilkes Family YMCA
- William G. White, Jr. Family YMCA

#### Summary:

- 1.9 MW of solar thermal power generation capacity installed
- Powered by 460 CPC Star Azzurro evacuated tube collectors
- YMCA is using the solar thermal generated hot water for showers, laundry, space heating, indoor pool area dehumidification, and pool & spa water heating
- The renewable energy generated offsets 2,632,699 lbs. of CO<sub>2</sub>, equivalent to reducing 2,597,854 miles of cars driven, and saves 301,200 trees
- Vanir's installation of these solar thermal facilities created approximately 30 jobs and generated \$3+ million in revenue for the local economy