

Twin Cities “Ohm Sweet Ohm”

Roseville, MN



Mark and Kathryn lovingly refer to their new custom home as “Ohm Sweet Ohm,” a play on the word for the unit of measurement of electrical resistance. This Twin Cities area residence elegantly balances sustainability and energy saving with a beautiful and understated exterior. It also perfectly integrates into an already established neighborhood of one- and two-story houses. When Mark and Kathryn set out to build their new home, one of their

major goals was to reach net zero energy for their house and automobile electricity consumption on an annual basis. To achieve this, careful consideration was given to the overall massing, mechanical systems, detail development and materials selection at all levels. All the products used in the house were selected with the environment in mind, and are made with local materials when possible, including the furniture, the concrete, and the landscaping.

Project Details

Building Size:	2,500 sq. ft.
Geothermal Equipment:	GeoComfort Compass series 2-ton combination, GeoComfort 2-ton water-to-water
Loop Type:	Vertical loop
Installation Date:	December 2015
Installation Details:	The 2-ton Vertical Packaged Combination unit provides all of the home’s heating and cooling. The home uses forced air zoning in the main level and basement, and also features seven radiant floor zones. Zoning allows for distinctive temperature adjustments in different areas of the home. Additionally, the Water-to-Water geothermal system provides 100% of the home’s domestic hot water.
Other Features:	The home also features 61 solar panels on the south-facing roof. This amounts to 20,000-kilowatt hours each year, enough to completely power the home and charge their Tesla cars. The homeowners also had the city install curb cuts off their street, which will guide storm water onto the lot and into rain gardens, making the home waterway-friendly. The design of the home also enables the owners to minimize energy consumption by taking advantage of passive solar principles with efficient window tuning. This home is seeking several certifications including GreenStar, LEED for Homes, Minnesota Green Path and Living Building Challenge - Net Zero Energy Building.

-  CONSTRUCTION TYPE
New Construction
-  SYSTEM TYPE
Forced Air System
-  SYSTEM TYPE
Radiant Floor System
-  LOOP TYPE
Vertical Loop

Geothermal Contractor: Massman Geothermal • (763) 389-0376 • www.massmangeothermal.com

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The roof features 61 solar panels



The home takes advantage of passive solar design principles



Left: 2-Ton GeoComfort Combination unit
Right: 2-Ton GeoComfort Water-to-Water unit