

City of Verona Fire and Fitch-Rona EMS Station







As the city of Verona, WI grew, the old Fire and EMS Station was removed to make room for a new complex that included living quarters. The department would expand from a 10,200 sq. ft. facility to a 41,500 sq. ft. facility, and they were motivated to reduce natural gas usage. MEP, A Salas O'Brien Company, a multi-disciplinary engineering consulting firm, was tapped to provide HVAC, electrical, plumbing, and fire protection engineering design services. A high-level geothermal feasibility study was conducted to compare the performance of a traditional HVAC system to the proposed geothermal system. The city chose to go with a geothermal hybrid system.

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PROJECT DETAILS

Building Size:	41,500 sq. ft.
Loop Type:	Vertical Loop
Geothermal Equipment:	WD Single-Stage Water-to-Water (Four 20-ton systems)
Installation Features:	The geothermal hybrid system includes a fan coil air-side system with ERV, a geothermal heat pump with a cooling efficiency of 0.761 kW per ton and heating efficiency of 4.6 COP, and a hybrid gas fired hot water boiler (rated 85% efficiency). A large portion of the square footage is heating only, as the garage space where the fire and EMS trucks are stored does not require cooling. The geothermal system meets most of the heating requirements and provides all of the cooling for the office and living quarters.
Contractor / Installer:	Engineer: MEP Associates, a Salas O'Brien Company
Savings:	Operating costs reduced by \$3,416 annually

-  CONSTRUCTION TYPE
New Construction
-  APPLICATION TYPE
Forced Air System
-  **Radiant System**
-  LOOP TYPE
Vertical Loop



Clockwise from top Right:
Four 20-ton WD systems heat and cool the building
Outdoor portions of the fire and EMS station