

Hydronic Heating and Cooling Suits This 18th Century Home

Retrofitting heating and air conditioning into older homes is always difficult, but historically relevant or protected homes are the ultimate challenge. The construction style of past centuries usually does not lend itself to install bulkheads for conventional duct systems. In those days, they used furniture for storage so closets were rare, and hand formed plaster moldings around ceilings leaves nowhere for ductwork to be hidden.

Often times there are concerns regarding impact on the landscaping outside of the home as well. This was exactly the case when the new owner of Rose Hill Manor in Port Tobacco, Maryland reached out to SMO Energy when he wanted to install central air conditioning and supplemental heat for his steam boiler in his 18th century home.

Aside from the typical challenges associated with historic homes, the new homeowner did not want multiple condensers scattered around the outside of the large exquisite home, affecting the landscape and aesthetic appearance. The homeowner designated a single area specifically for the outdoor components and with a cooling load of eight tons, conventional mini-split systems were not an option for multiple reasons.

SpacePak's Solstice Air-to-Water Heat Pump System was the chosen solution because it met all design, performance and aesthetic requirements of the job on top of protecting the architectural integrity of the renowned historic property.

The cascading feature of the outdoor heat pumps allowed them to be placed together in the homeowner's designated location. The buffer tank and manifold system allowed SMO Energy to create a centrally located distribution system and utilize the array of SpacePak air handler options as various solutions to provide condition air to multiple areas of the home, including those difficult to service areas.





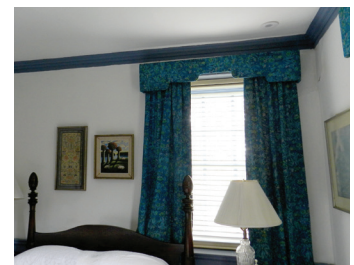
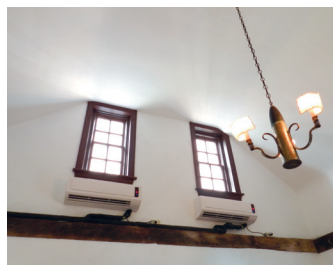
Two SpacePak Solstice Extreme 4-ton heat pumps were cascaded with an 80-gallon buffer tank, servicing five separate zones throughout the home. SMO Energy installed a SpacePak hydronic air handler in the attic to service the top floor of the three-level home using SpacePak's small 2-inch flexible ducts discretely fed down between the existing walls and floors. To meet the needs of other areas, a combination of SpacePak's HighWall and ThinWall hydronic fan coils were installed to service the basement and extended wings of the house, while dual SpacePak Air Cells conditioned the first floor of the main house. Everything was connected using PEX tubing making it infinitely easier to install and to also hide the supply and return lines, a task not easily accomplished using refrigerant piping or traditional ductwork.

Another added advantage of using a hydronic system is that the individual air handlers are zoned separately for custom temperature control, and each zone is valved at the manifold for ease of service. Hydronic-based systems keep potentially harmful refrigerant outside the home using clean, efficient water as the heat transfer medium inside the occupied space.

SMO Energy worked with COREDRON, the local SpacePak manufacturer's representative and SpacePak's team of Application Engineers to design the optimal system layout including determining the proper pipe sizes and pump selections to ensure the most efficient performance of the overall system.

Serving Maryland for over 90 years, SMO Energy is one of the largest businesses of its kind in the region. They pride themselves on providing high quality equipment with courteous, efficient and quality service.

COREDRON, represents leading plumbing, heating, & HVAC equipment manufacturers from around the world, and covers the Mid-Atlantic region for SpacePak. Partners Jeff Riley and Duane Withers have over 60 years of combined industry experience.



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