



Radiant Heat controlled by Danfoss ZCP system provides ultimate in comfort!

Radiant floor heating dates back to the days of the Romans, when as early as 60 A.D., Roman buildings and bathhouses were equipped with wood fired, radiant floor heating systems. Even today, radiation is still the most effective way to transfer heat between two objects separated by distance. Radiant heating technology has been improved and can be used in all or part of our homes by applying heat underneath or within the floor.

Floor heating is much cleaner and healthier than the alternative. It reduces the spread of dust, pollen and other airborne pollutants. Anyone with allergies can

certainly appreciate this benefit! Also, since floor heating is built-in, it doesn't affect the appearance of a room and allows complete design freedom. Furniture can be placed anywhere without concern over how it affects the performance of the heating system. Floor heating is virtually silent, helps keep floors clean and dry and can increase property values. Other benefits include easy and unlimited zonability, and easy maintenance.

The owners of a beautiful home located in Clifton, VA, through their travels to Europe, understood the benefits of radiant floor heating and were seeking a

hydronic system ideal for their 18000sq. ft. residence. The house was divided into 23 individual zones including private theatre, recrooms, bedrooms and other living areas. The building, surrounded by serene, delightfully landscaped gardens and fishponds, was ready for the owners' dream snow and ice melt system, and pool heating they wanted the ultimate in comfort. Dan Foley of Foley Mechanical in Alexandria, VA was hired to do the job.

As any business owner, Dan Foley was always looking for new ways to improve his profit and when he was presented with this



large residential project in Clifton, Dan turned to Danfoss. “The Danfoss ZCP system was extremely cost effective.” - says Dan, “We have saved several weeks on the job by installing Danfoss' pre-fabricated ZCP panels.”

Typically, there are three components to a radiant heating system: a heat source, a distribution piping system, and controls. The heat source in hydronic radiant floor heating systems is usually a boiler or a hot water heater. A circulator pump near the water supply manifold moves the water from the mixing valve to the supply manifold and into the distribution piping system (tubing) inside the floors. A properly designed radiant floor system will not exceed 29°C (85°F). To select how warm or cool a room or home will be, controls are required to set the

system to a particular temperature. A manifold system with a thermostat typically located in an accessible wall cavity controls a series of simple valves that are used to regulate the flow of water through each zone.

Zoning a variety of rooms with options for different temperatures has the potential to reduce energy consumption, although the system and controls installation process could be time and labor intense. To reduce the installation time Danfoss Inc. offers pre-fabricated, pre-engineered and pre-wired Zone Control Panels.

To most owners and many contractors, today's traditional hydronic systems are a maze of controls and piping. Jobs that involve on-site engineering and fabrication result in extended installation time and often additional, unexpected costs. Control wiring and testing repeatedly require the services of additional trades.

In this application, Brian Weldon and Todd Skuce of Danfoss in Canada rose to the challenge with a superior technical and engineering support. They laid out the entire boiler room indicating zones for each ZCP panel.





“I like dealing with Danfoss” says Dan, “It’s the people behind the product. I can get on the phone and call Bill Burton for information and the engineers at the factory, Brian, Todd... they have given me a level of comfort to try something new.” “In the past, it took too much time to design the controls, to get the materials from the suppliers, and to troubleshoot the system” commented Dan.

The warm coziness of radiant heat created a perfect living and working environment for the house owners. There are no more hot or cold spots and no drafts at the Clifford, VA residence. The owners feel better with radiant heating, they’re more productive, happier, and much, much more comfortable.