

## CRISTALLA



<b>PROPERTY:</b>	Cristalla 2nd and Lenora Seattle, Washington
<b>ARCHITECT:</b>	Weber + Thompson PLLC
<b>CONSTRUCTION MANAGER:</b>	Murray Franklin
<b>DESIGN/BUILD:</b>	MacDonald-Miller, Facility Solutions
<b>OBSTACLE:</b>	Delivering Optimum Comfort while Staying on Budget

*"The hydronic fan coil system was chosen for its energy efficiency and comfort. The SureFlow® approach offered flexibility and design simplification, which lowered the installed cost."*  
-Mickey Woo, P.E.,-MacDonald-Miller, Facility Solutions

### BUILDING ORIGINS

Cristalla, an elegant 22-story residential tower located in downtown Seattle, generated a buzz as a residence that was "raising the bar" even before construction began. This was in part due to the fact that the design team intended to incorporate in the entrance to Cristalla the domed glass ceiling and terra-cotta base of the Crystal Pool. This saltwater bathing house once occupied the same site as Cristalla almost a hundred years earlier. The fusion of the sleek look of the new construction and the Italian Renaissance-inspired look of the Crystal Pool was breathtaking.

The project management knew that the discerning buyers of Seattle would expect a sophisticated HVAC system in their luxury condos. By using SureFlow®, the mechanical design team was able to accommodate the need for a superior HVAC system that provided optimum comfort while meeting the budget.

### SPECIALIZED CONVERSION NEEDS

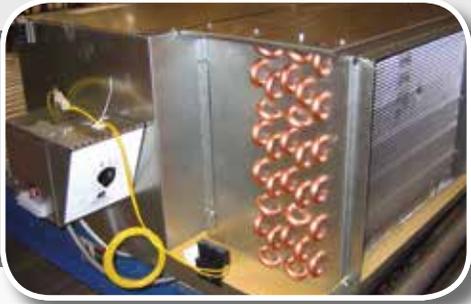
Given the publicity touting Cristalla as raising the bar for downtown residences, the challenge was to find an HVAC system that would also raise the bar. This system needed to have 4-pipe performance and allow the design team to deliver a first-class project in every detail, all while coming in on budget.

A SureFlow® hydronic system was the perfect fit. This type of system had the lowest operating cost, lowest maintenance cost, and the lowest sound levels in the rooms – with a competitive first cost. By using the SureFlow® system, the number of penetrations needed to accommodate 4-pipe performance was reduced by 40 percent – a tangible plus, since the owner wanted to reduce floor-to-floor fire-safe and waterproof seals. The vertical piping design allows the horizontal units to be located for easy access in multiple floor plans.



**PROBLEM:** A new construction project that required minimal piping penetrations.

**SOLUTION:** The SureFlow® system allowed for 2-pipes to deliver 4-pipe performance – thus cutting the required core drilling by 60%.



**PROBLEM:** Design required flexibility in the location of the mechanical equipment.

**SOLUTION:** Unlike a rigid DX system, SureFlow® is inherently flexible during the construction phase – even with floor plan changes.



**PROBLEM:** The need to maximize sellable floor space and to get the highest sell price per square foot.

**SOLUTION:** SureFlow® units install horizontally or vertically and do not have a compressor – making them out of sight and out of mind.

## INSTALLATION SPECIFICS

The use of SureFlow® in the Cristalla project eliminated over 5,000 feet of return risers. This reduced the required hangers and supports, expansion compensation, insulation and fittings. The SureFlow® design improves the performance of each fan coil unit by guaranteeing the proper flow while maintaining the highest flexibility for change during the project's construction or in future renovations.

The SureFlow® Hi-Performance series units accommodate ductwork; a necessity for a construction project of this caliber. Each unit included a three-speed fan switch to adjust the airflow after the ductwork was installed which allows for changes in air delivery to meet the required performance. Each fan coil is controlled by a digital, 7-day programmable thermostat.

*"SureFlow® allowed us to meet all the loads and model the performance for the contractor with the SureFlow® Loop Simulator software; it's flexible and helped to dramatically increase the project team's comfort level with SureFlow®."*

**-Steven Edwards, Certified SureFlow® Sales Manager  
Washington Air Reps**



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