



Table Rock Welcome Centre – Niagara Falls, ON

Background

Perched adjacent to Niagara's Horseshoe Falls, the Table Rock Welcome Centre hosts more than eight million visitors every year. The original structure has undergone numerous upgrades since its construction in 1853 to keep pace with an ever-increasing flow of tourists from around the world.

One of the the greatest challenges for the Table Rock Welcome Centre comes not from handling the scores of sightseers passing through each day, but from the Falls themselves: the dense veil of mist rising from the base of the Falls quickly freezes in cold weather to create thick, heavy layers of ice on nearby surfaces. When this occurs on rock formations and trees, it can add to site's natural beauty; however, the ice can also place enormous loads on man-made structures and create treacherous conditions for pedestrian traffic.

In 2008, the Niagara Parks Commission began construction on a covered pedestrian walkway straddling the Niagara Parkway and the Grand Hall – a two-level indoor viewing gallery offering panoramic views of the Falls in all weather conditions. The project also included the installation of equipment for space heating and preventing ice buildup in key areas of the complex.

The Viessmann Solution

A boiler plant comprised of three Viessmann Vitocrossal 300, CT3-72 gas-fired condensing boilers was commissioned to provide heat for the viewing gallery and ice and snow melt system.

Installation Details

The boiler cascade provides up to 1500 MBH for three air handling units in the Grand Hall, plus an additional 1000 MBH for melting ice and snow on the 2,500-square-foot pedestrian walkway and a 1,000-square-foot area at the main entrance.

The rooftop ice and snow melt system accounts for the bulk of the heating load. It consists of more than 5 km of ¾" copper piping winding back and forth across the roof. The piping was installed in the gaps of a wooden racking system and covered by metal mesh for protection during roof maintenance.



The Table Rock Welcome Centre is often bathed in mist from the Horseshoe Falls



Three Vitocrossal 300, CT3 boilers provide heating for the viewing gallery and ice and snow melt system

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The entire system is managed by a Viessmann Vitocontrol-S, CT3 digital outdoor reset cascade control. The Vitocontrol-S is programmed to keep supply temperatures slightly above freezing, while full modulation and staging ensure maximum turndown operation for greatest efficiency.

The Results

The Viessmann boilers continue to provide reliable and efficient service while minimizing operating costs for The Niagara Parks Commission. Together, the space heating in the Grand Hall and the exterior ice and snow melt system have helped to keep the Table Rock Welcome Centre a safe and comfortable destination all year round.

Project Details

Project Year	2008
Equipment	3 x Vitocrossal 300, CT3-72 Vitocontrol-S, CT3 Cascade Control
Rated Output	7848 MBH / 2301 kW
Engineer	Group 8 Engineering, Hamilton, ON
Mechanical Contractor	Besseling Mechanical Inc., Hamilton, ON



The ice and snow melt system keeps the pedestrian walkway and main entrance clear



Wood racking and metal mesh offer protection for the rooftop ice and snow melt system's copper piping