

## Aircuity case study

# Mohegan Sun

## Balancing “A World at Play” with Sustainability and Environmental Objectives

**T**HERE ARE A MILLION WAYS TO SHINE AT MOHEGAN SUN, which was created in 1996 by the Mohegan Tribe. It is one of the world's most amazing destinations with some of New England's finest dining, hotel accommodations, retail shopping, live entertainment and sporting events. Boasting three world-class casinos, Mohegan Sun is also



host to the Kids Quest/Cyber Quest family entertainment facility, a luxurious day spa, convention center and meeting facility, a state-of-the-art Poker Room as well as three major entertainment venues with seating from 300 to 10,000. People from across the globe come to see live concerts with some of today's top headliners, along with major sporting events including Mohegan Sun's very own WNBA team, the Connecticut Sun.

Behind the scenes, there is a lot of hard work that goes into creating a 24 hour, 7 days a week entertainment destination that is clean, comfortable, and enjoyable for guests and employees alike. At the same time, the Mohegan Tribe is sensitive to environmental concerns, and they have implemented many green initiatives over the years to reduce energy, eliminate waste, and recycle responsibly. Notable achievements include the use of recycled materials, hybrid fleet vehicles and bicycles, green cleaning practices, forestry donation, and the installation of fuel cell power systems to minimize green house gas emissions.

### BALANCING COMFORT AND CONSERVATION

One aspect of Mohegan Sun's green initiatives is to improve the energy efficiency of their facilities. The challenge is to find ways to maximize energy efficiency without sacrificing the indoor environmental quality of the resort. One way that Mohegan Sun achieves this balance is by implementing a ventilation solution known as Demand Control Ventilation, or DCV. The concept of DCV is straightforward: determine the number of people that are in each area and then adjust the ventilation rates accordingly. During busy times of the day ventilation will increase to provide more fresh air to guests, and when occupancy declines, ventilation is reduced, saving energy without negatively impacting the indoor environmental quality.

While traditional DCV technologies would measure the amount of indoor CO<sub>2</sub> in an area to determine occupancy and ventilation rates, and then adjust the amount of fresh air provided to that area based on that measurement, Mohegan Sun, with the help of Aircuity, takes

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**Mohegan Sun**

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DCV to a whole new level by sensing the total indoor environmental quality. Aircuity's unique approach senses CO<sub>2</sub>, particulates, and total volatile organic compounds (TVOCs) that negatively impact the indoor air quality and adjusts ventilation rates to ensure energy savings and maximum occupant comfort. “We want to make sure that we are providing the optimal amount of fresh air based on everything that's in the air, not just based on the number of people,” explained Daniel Webster, Chief Engineer at Mohegan Sun. “Aircuity's approach makes it

cost effective for us to measure many different critical parameters within the casino and make smart decisions about the ventilation control.”

### SEEING IS BELIEVING

Aircuity securely stores the data captured by the system and makes it available to Mohegan Sun facilities personnel for review. If there are reports of uncomfortable conditions within the facility, the time period in question can be located, graphed, and reviewed to gain insight into the nature and severity of the issue. This information can also be exported into other data analysis tools or reports, making it easy to share up to date information about the facility’s indoor environmental quality.

### GOING GREEN SAVES MONEY

Energy efficiency projects create the “greenest energy of all”—the energy that never gets used at all. At Mohegan Sun, implementing Aircuity in the Casino of the Earth has lowered ventilation rates and saved the energy needed to heat and cool that air. Over the past year, Mohegan Sun has saved an estimated \$74,000 in heating and cooling utility expenses. Based on these savings, the project paid for itself in 20 months. Mohegan Sun is now expanding this “Healthy DCV” solution in the Casino of the Sky and the Casino of the Wind.

The Mohegan Tribe’s dedication to sustainability dates

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**“Our first priority is to provide a great indoor environment for our guests; it’s great that Aircuity can help ensure this and lower our energy consumption at the same time.”**

**Daniel Webster – Chief Engineer  
Mohegan Sun**

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back to 1994—two years before the resort was opened—and their commitment is as strong today as it was nearly two decades ago. Mohegan Sun is proof that organizations can be sensitive to environmental issues while still maintaining high standards of quality for their guests. Aircuity’s demand control ventilation solution is just one way that Mohegan Sun saves money, reduces energy consumption, and lowers its carbon footprint without sacrificing the comfort of the occupants of their facilities.

### ABOUT AIRCUITY

Aircuity is the smart airside efficiency company providing building owners with sustained energy savings through its intelligent measurement solutions. By combining real-time sensing and continuous analysis of indoor environments, the company has helped commercial, institutional and lab building owners lower operating costs, improve safety and become more energy efficient. Founded in 2000 and headquartered in Newton, MA, Aircuity’s solutions have benefitted organizations such as the Prudential Center, Eli Lilly, Masdar City, the Bank of America Tower at One Bryant Park and the University of California, Irvine. For additional information on the company and its solutions, please visit: <http://www.aircuity.com>.



### ABOUT MOHEGAN SUN

A premier worldwide destination, Mohegan Sun is home to three casinos, a 34-story, 1,200 room hotel, a 20,000 square-foot world class spa by Elemis, an extraordinary 130,000 square-foot retail shopping experience, 100,000 square feet of function and meeting space, three entertainment venues, and more than 40 restaurant, food and beverage outlets. At Mohegan Sun, every turn leads to a new adventure with an indoor 55-foot waterfall, an electrifying water wall, the world’s largest and most spectacular indoor planetarium dome, and the awe-inspiring Wombi Rock, a glowing crystal mountain made of imported stone that serves as the focal point of Casino of the Sky. For more information about Mohegan Sun, please visit: <http://www.mohegansun.com>.

