UNIVERSITY OF MINNESOTA AQUATIC CENTER MINNEAPOLIS, MN

Innovent Air Handling Equipment

Location: Minneapolis, MN
General Contractor: J.E. Dunn Construction
Equipment Supplier: SVL, Inc.
Engineer: Dunham Associates

Challenge

Improve indoor air quality by removing harmful chloramines and increasing air movement and create a healthy environment for the swimmers, coaches, officials, and spectators.

Solution

The recommended solution for the University of Minnesota Aquatic Center included two Innovent units for the spectator areas, two Innovent units for the pool area, and updated air distribution that works in concert with the capabilities of the Innovent units to provide superior indoor air quality.

Project Details

The indoor air quality (IAQ) issues during major swim meets at the Jean K. Freeman Aquatic Center were well-known. The University of Minnesota Aquatics Director, Linda McKee was frustrated. “This facility was built for championship swim meets, and we were starting to lose those meets because of the poor air quality,” she stated.

Air quality had gradually deteriorated in the facility built in the ’90s. “We’d have swim meets with hundreds of athletes, maybe a thousand spectators, lasting from four to twelve hours a day. By the end of those days, the air quality had diminished significantly to the point where swimmers were coughing. Eyes were red. Lots of respiratory issues. The pool flu, we call it.” McKee says, “About four years ago we started to look into potential solutions. We looked into water chemistry, but our testing showed no issues there. We looked at different filtration. It really all just came down to air movement and the fact that we weren’t moving the volume of air we needed to move for a healthy space.”

SVL’s team selected Innovent’s pool dehumidification systems to leverage the beneficial properties of fresh air providing both a healthy environment and economic climate control.

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Energy recovery technologies and intelligent dehumidification based on seasonal conditions reduce energy costs while providing up to three times as much fresh air as traditional systems.

The recommended solution for the University of Minnesota Aquatic Center, designed by Dunham Associates, included two Innovent P-Series units for the spectator areas, two P-Series units for the pool area, and updated air distribution that works in concert with the capabilities of the Innovent units to provide superior indoor air quality.

The old HVAC system had been delivering 80,000 cfm with 20% outdoor air. The new Innovent system dramatically increased this to 152,000 cfm (six air changes per hour) with up to 50% outdoor air.

THE END RESULT

During the first two large swim meets, the newly-installed system faced tough tests of performance not unlike those an athlete undergoes. As McKee recalls, "The first major meet we had after the system update was during a particularly hot and humid stretch of weather." In fact, the 80-degree dew point outdoors exceeded the new system's design parameters. The team held their breath to see how the system would perform when pushed to or beyond its limits. McKee was relieved the reaction was favorable. "That wouldn't have happened in the past. People realized right away, 'Oh, it is hot, but my eyes aren't bothered. I'm not breathing in that chlorine and the chloramines and that stagnant air. This is moving fresh air, and I can feel that.'"

Shortly afterwards came the second big meet. "This was our first time back on the national stage since the renovations and, really, I couldn't have been happier with the performance," said McKee. "It was a four-day meet, four full days of 700-plus athletes, a thousand people in the stands. By the end of the first day, we could already tell how much better the IAQ was. The air flow was noticeable, the deck temp was comfortable, my eyes were not burning, and I was not coughing.

"One of our officials reported she's never felt better at the end of a four-day meet, and a USA Swimming official said the facility has set the standard for indoor pool air quality." Air

quality tests back up these observations. Air samples analyzed by an independent testing laboratory showed a 73% reduction in trichloramine levels with the new system.

The University is busy planning a series of swim meets in the retrofitted facility, and McKee is full of optimism, saying, “This is really our chance to get back into the national spotlight. It’s almost like we’re a new facility.”

To learn more about Innovent’s products or to learn more about SVL’s product solutions, please visit svl.com.

PRODUCTS USED

Innovent P-Series

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