



QUIET COMFORT AT OLYMPUS HIGH SCHOOL

Overview

When the Granite School District decided to build a new facility for Olympus High School, its HVAC goals included providing comfort while maximizing space for faculty and students. Located in Holladay, Utah – a few miles southeast of Salt Lake City – the new high school is built adjacent to where the former facility stood.

Van Boerum & Frank Associates Inc. (VBFA) was contracted to provide the HVAC system design for the Olympus High School project. VBFA is the largest engineering firm in Salt Lake City, providing design, remodeling, renovation and restoration of many facility types.

VBFA had worked with Midgley-Huber Inc., a Twin City Fan (TCF) representative, on previous projects, and was aware of the HVAC firm's excellent track record. VBFA knew from experience that by working with Midgley-Huber, they would satisfy the requirements of this application as well as get well-built, high-quality TCF fans. VBFA gave Midgley-Huber air flow requirements and details about the air handlers they wanted to accommodate. Midgley-Huber specified the fans, air handlers, and coils to accommodate the load requirements, and coordinated their construction with Salt Lake City-based Unitech.

Challenges

While temperature and humidity are obviously associated with comfort, peace and quiet are comfort elements as well – especially in a learning environment. Although high schools aren't typically known as "quiet zones," they don't need added noise from air handling units.

In addition to low-noise operation, other air-handling unit requirements included:

- Fan Modularity
- Small Footprint
- Redundancy
- Heavy-Duty Construction

Quick Facts

Industry

Education

Application

HVAC Air Handling Units

Customer/Project

Olympus High School - Holladay, Utah

Twin City Fan Representative

Matt DeGooyer, Midgley-Huber Inc.
Salt Lake City, Utah

Engineering Firm

Van Boerum & Frank Associates Inc.
Salt Lake City, Utah

Challenge

Low-noise operation, modularity, small foot print, redundancy and heavy-duty construction

Solution

Twin City Fan & Blower's modular, direct drive MPQN fans

Result

The school is comfortable; the air handling units operate quietly while occupying a small footprint

CASE STUDY



Model MPQN **Modular Plenum Fan,** **12-Bladed Airfoil Wheel**

Wheel Sizes
12.4" to 49"

Performance
Airflow to 76,000 CFM
Static pressure to 12" w.g.

Twin City Fan & Blower has the engineering and manufacturing capabilities to accommodate virtually every conceivable application. We have completed thousands of successful installations worldwide and have a proven track record for tackling the most technically complex and unique applications.

We separate ourselves from the competition by offering a greater breadth of products and quickly adapting to the needs of our customers. This is truly a testament to our company philosophy – respond to the needs of the customer, the first time, every time.



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Solution

MPQN plenum fans were well suited for this project because of their ability to fit within compact spaces, such as the 14 air handling units used for the Olympus High School project. Midgley-Huber supplied 110 MPQN fans of various sizes ranging from 2 to 15 HP from Twin City Fan.

Plenum fans are designed to operate inside of air handling units, which usually saves space by eliminating the fan housing, transitions and diffusers. Compared to a conventional system, the modular design of the MPQN plenum fan can reduce both the sound and the footprint of the air handling unit.

When used in parallel (in arrays), MPQN fans offer some advantages over conventional plenum fans and require less axial length in air handling units. This MPQN approach can also reduce sound levels, possibly eliminating the need for additional sound attenuation within the unit. “We are moving from conventional systems to a fan array that incorporates multiple fans.” said Matt DeGooyer, mechanical sales engineer, Midgley-Huber. Using an array of MPQN fans can also provide the redundancy required for critical fan applications.

The fans used for Olympus High School project incorporated variable frequency drives, which reduce energy consumption, and reduce noise levels even further by soft-starting the fans.

Benefits

Because of the MPQN’s compact design, the air handling units are smaller, which frees up building space. In addition, the entire facility is quieter due to the high blade-pass frequency of the MPQN’s 12-bladed fan impeller.

“We use Twin City fans because they are built like a tank,” said DeGooyer. “There are very robust enclosures around the fans, and they are lined with insulation, which provides excellent sound attenuation.”

According to DeGooyer, Van Boerum & Frank likes using the MPQN because they are very durable in their construction and because the MPQN’s are industrial fans operating in a commercial world.