

MSR DESIGN TESTIMONIAL

ARCHITECTURE FIRM IMPROVES INDOOR AIR QUALITY WITH 75F



“ Occupant feedback was fantastic. The first day we moved in, everyone was amazed at how quiet the space was. They said when they opened the door, they could actually feel the difference in the air quality compared to the outside environment. ”

Rhys MacPherson | Senior Associate

CHALLENGE

MSR Design is an architecture firm based in Minneapolis that specializes in sustainable, equitable, healthy and beautiful projects across the U.S.

Before installing 75F, MSR Design was headquartered in a St. Paul building that sparked significant occupant complaints about poor indoor air quality (IAQ) and noise levels. After running a series of IAQ tests, the firm discovered they had excessive volatile organic compound (VOC) levels and other IAQ issues. The firm needed its headquarters to fit the health and wellness standards their architects strive to achieve in their own projects, so they decided to move locations and build a space of their own.

MSR Design planned for its new space to fulfill the Living Building Challenge (LBC) Materials Petal, a deep certification for healthy, sustainable buildings. The firm needed building controls that would maintain exceptional IAQ and help them qualify for the LBC challenge.

AT A GLANCE

Location	Minneapolis, Minnesota
75F Solutions	Indoor Air Quality Monitoring & Control 75F Dynamic Airflow Balancing 75F Outside Air Optimization Partial VFD Control
Square Footage	13,737
Number of RTUs	2

SOLUTION

MSR Design's new headquarters is located on the second floor of an 11-story office building in downtown Minneapolis. 75F installed 11 Smart Nodes, two Central Control Units, and a series of sensors and one Smart Stat to monitor and enhance IAQ.

During the office suite's renovation process, MSR Design utilized 75F sensors to verify IAQ in the space. Because of this, their team discovered that CO₂ was back-drafting into the office in the early hours of the morning, well after the main building's system had shut down. This issue was affecting all other floors of the building but was thus far undetected because the main building did not have a building management system (BMS) in place.

MSR Design was able to act as the data liaison by showing the information and alerts from 75F to the main building operators so they could correct the issue.



RESULT

After completing their 75F installation, MSR Design was able to achieve a Living Building Challenge Materials Petal certification. Their office is the first to do this in the state of Minnesota. Occupant complaints regarding IAQ and comfort in the MSR Design office have virtually disappeared, and guests frequently point out the unique quietness and breathability in the space.

Thanks to 75F's IoT-based monitoring and control capabilities, building operators have been able to catch and fix issues such as broken windows letting in cold air during unoccupied hours.



“ We had to work very closely with 75F to do a lot of disclosure. The folks at 75F were great. We were able to get all the RoHS information, verifying that all the materials that went into the making of 75F was safe and transparent. ”

Rhys Macpherson | Senior Associate

The Living Building Challenge Materials Petal

The International Living Institute's Living Building Challenge is widely considered to be one of the deepest wellness and sustainability certification programs available today. It celebrates buildings that are self sufficient; connect occupants to light, air, food, nature, and community; and create a positive impact on the human and natural systems that interact with the building. The Materials Petal specifically focuses on non-toxic, ecologically restorative, transparent, and socially equitable materials.

In order to achieve this certification, the firm had to work closely with all their suppliers, including 75F, to disclose Restriction of Hazardous Substances (RoHS) information such as materials, material tracking, costs, and other accountability information to the International Living Institute.



75F® Outside Air Optimization™

75F® Outside Air Optimization™ (OAO) is an application that combines hardware, software and real-time weather data providing advanced sequences of operation for rooftop economizers and built-up air handlers in a wide range of commercial buildings.

OAO's three primary benefits are Improved Efficiency, Comfort and IAQ, something it accomplishes thanks to two main application functions: Economizing and Demand Control Ventilation (DCV).

The 75F OAO kit includes a CO₂ sensor in the return duct of the air handler to measure the average IAQ of the building's envelope. When occupancy is high, or when external factors are deteriorating IAQ, 75F will modulate the OA damper proportionally with IAQ values to ventilate with fresh OA to achieve minimum values.

ASHRAE Standard 62.1 provides direction for the correct ventilation rates of occupied spaces. When occupancy is unknown, the standard calls for assuming the worst case — maximum occupancy — to set the minimum position of the OA damper. In reality, most spaces are not occupied at maximum and the result is that most indoor spaces are over-ventilated at the cost of much greater mechanical conditioning and energy cost. Using DCV, OAO from 75F delivers an ASHRAE-approved method to derive occupancy, allowing for adjustments of the OA damper according to CO₂ instead of assuming the worst case. The result is energy savings during low occupancy and improved IAQ during high occupancy. With 75F® Epidemic Mode™, users can automate enhanced OA ventilation to CDC standards during a pandemic.

To learn more about 75F's IoT-based Building Management System, visit www.75f.io.