



LOCATION

FARGO, ND



GENERAL
CONTRACTOR

GEHRTZ CONSTRUCTION



ENGINEERING
FIRM

OBERMILLER NELSON



INSTALLING
CONTRACTOR

MIDWEST MECHANICAL



The BlueDuct® underground air duct supplies air to the linear diffusers in the natatorium area.

Sanford Health partnered with the YMCA to create a state-of-the-art fitness facility focused on community wellness and year-round activity. A key feature of the facility is the natatorium, designed to provide a comfortable indoor swimming environment despite extreme outdoor winter conditions. The goal was to maintain optimal indoor air quality and visibility while ensuring long-term durability in a highly demanding environment.

~ The Challenge

Natatoriums present one of the most difficult HVAC applications due to high humidity and extreme temperature differences between indoor and outdoor conditions. In this case, warm, humid indoor air meets very cold exterior temperatures across a large glass wall, creating a significant risk of condensation and frost. The system needed to maintain clear glass year-round while operating across a wide temperature differential, all without room for performance failure.



The BlueDuct underground air duct supplies air to the hidden displacement diffusers as indicated by the white arrows.

~ The Solution

The engineering team designed a system that delivers warm, dry air directly along the glass to prevent condensation. This was achieved using an underground duct system that feeds linear diffusers positioned to “wash” the glass surface with conditioned air.

The BlueDuct® system was selected for its air-tight and water-tight construction, integrated insulation, and long service life. Its high-density polyethylene material also provides excellent resistance to the corrosive environment typical of natatorium spaces, ensuring reliable long-term performance.

~ The Result

The final system successfully maintains clear, condensation-free glass while supporting a comfortable indoor environment for occupants. By combining precise air delivery with durable materials, the project achieves both performance and longevity in one of the most challenging HVAC applications.