

**Engineer's Fabric Duct
Design in Pool,
Gym, & Foyer Saves
H.S. Athletic
Complex \$\$.**



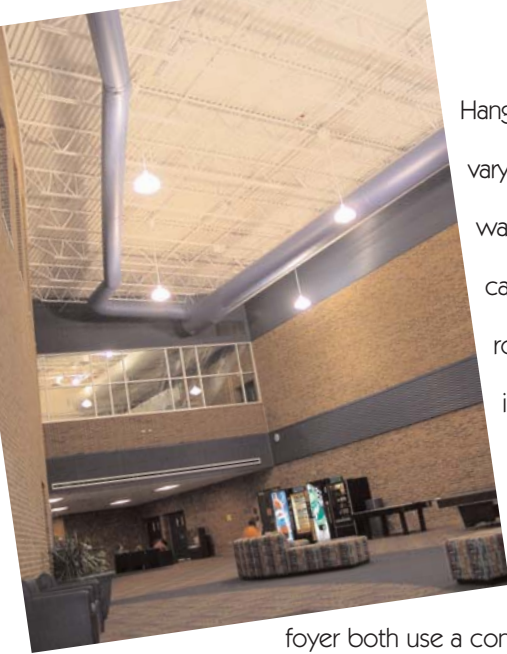
Michigan's Hastings H.S. gets natatorium windows plus superior IAQ, but avoids the heavy cost of under floor ductwork.

HASTINGS, MI— A wall of windows in a humid natatorium setting is an expensive aesthetic because it typically requires costly under deck ductwork for air distribution to the bottom half of the glass to eliminate wintertime condensation.

However, an innovative use of fabric ductwork by Todd Gilroy, mechanical engineering department head at **Capital Consultants, Lansing, MI**, eliminated under deck aluminum or PVC ductwork at the new \$10.5 million Hastings Community Center addition to Hastings High School and saved local taxpayers more than \$10,000.

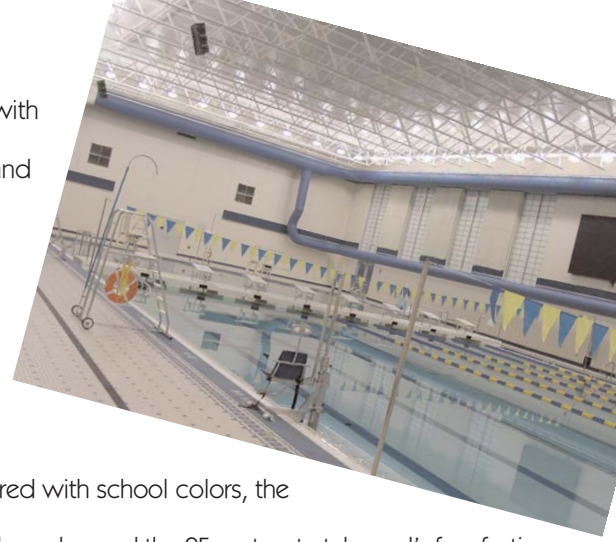
The 24 to 42-inch-diameter Sedona polyester-blended fabric duct, manufactured by DuctSox, Dubuque, Iowa, also saved Hastings, Michigan taxpayers approximately thousands of dollars more in labor costs versus metal duct, according to Michael Vander Ark, project manager, River City Mechanical, Grand Rapids, MI

Gilroy continued the savings and fabric ductwork theme in the 8,500-square-foot gymnasium with 150 linear feet of 28-inch-diameter TufTex fabric duct and with 200 linear feet of 34 to 24-inch-diameter Sedona distributes 7,000-cfm of air conditioning in the high ceiling foyer.



Hanging systems for the duct vary per room. The gym duct was hung on a suspended cable threaded through the roof trusses that adds to the indestructibility that's needed in a gymnasium situation. The natatorium's top duct run and the

experience with fabric duct and it looks real slick in there...very high tech."



Custom colored with school colors, the fabric duct also enhanced the 25-meter stretch pool's fun, festive theme by architect, DesignWorks A/E, Grand Rapids, MI. "Our first

foyer both use a conventional ceiling-hung H-track suspension system with radius sections to complement

the complicated layout. For the unique drop

section under the natatorium

windows, Gilroy, Vander Ark

and DuctSox engineers developed

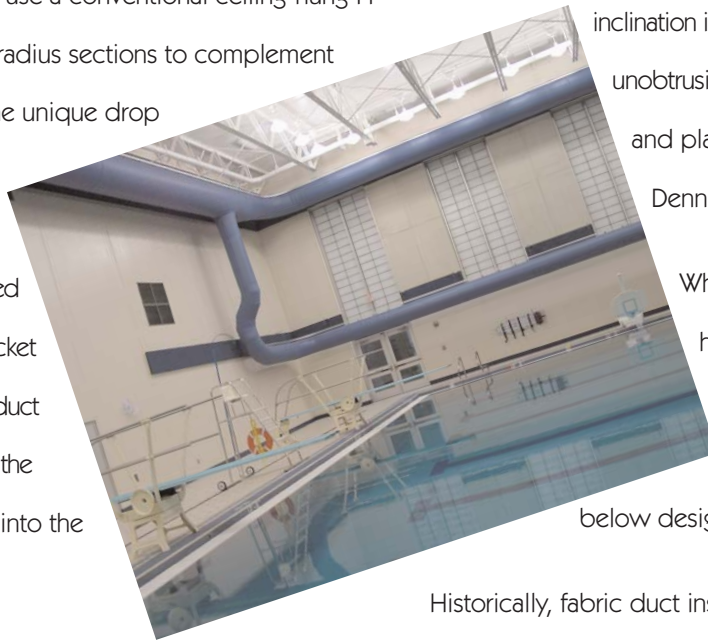
a one-of-a-kind "L-shaped" bracket

system for suspending the low duct

run's stainless steel H-track under the

windows that blends invisibly into the

wall behind the fabric duct.



inclination in a natatorium is ductwork that blends in

unobtrusively, but in this case the color, shape

and placement adds to the aesthetics," said

Dennis Bekken, principal, DesignWorks A/E.

While the duct is visibly seen, it is barely

heard. Gilroy's promises of quietness to

the school board held true with operating

decibel levels of fabric duct that are

below design standards.

The 700-linear feet of H-track hanging system over/under the windows

and another 100 feet across the 300-seat spectator area took

approximately three days to install and would have gone up faster

if it wasn't the crew's first experience in fabric duct suspension,

according to Vander Ark.

"Once the suspension system

went up, it took only a few

hours to string the fabric duct

onto it," said Vander Ark, who

also oversaw the installation

of the dehumidification and

HVAC systems throughout

the building. It was our first

"Our first inclination in a natatorium is ductwork that blends in unobtrusively, but in this case the color, shape and placement adds to the aesthetics," said Dennis

Bekken, principal, DesignWorks A/E.

Historically, fabric duct installation costs are always less than metal

duct, however the two methodologies had been competitive in

material costs. Since the project was completed, recent 40-percent

steel material cost upturns have made metal duct costlier than fabric duct.

As school budgets continually get squeezed throughout the country,

architects and consulting engineers will find ways to save new

construction costs while still improving space conditions such as

indoor air quality. ■

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