

## YMCA TAKES NEW APPROACH TO BUILDING DESIGN AND CONSTRUCTION



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Reducing building costs is a challenge for any organization, and these desperate times have led to some pretty creative ideas to keep within budget without cutting services. This was the case when the Lincoln Nebraska Public School system was working a bond issue to build a new middle school. At the same time, the Lincoln YMCA was looking to better serve the families and children in the Northwest part of the community.

Because the relationship between the school system and YMCA was well established from many years of cooperation, and both could naturally share many of the same features, a joint-use building venture was formed, a first of its kind in the Lincoln area.

The single building structure features a 161,000 square-foot school for 700 to 900 students and a 50,000 square-foot YMCA, each having separate entrances and parking. About 45,000 square feet are shared space to be managed as needed. Both organizations use the same ground loop system for heating and cooling, making construction and operation very affordable.

“The shared space is used interchangeably depending on the day and time of year,” says Barbara Bettin, President/CEO of the Lincoln YMCA, “The design of our Fallbrook YMCA minimizes resources and maximizes faculty usage for a win-win situation.”

Bettin described how the middle school students could use the pool and additional gymnasium space during the day and the YMCA could use the school’s gyms for overflow. The YMCA will also use the student classrooms in the shared space for afterschool family and community educational courses.

Within the shared space, the school portion includes two large gymnasiums along with their own locker rooms and exercise areas. The YMCA section includes one smaller gymnasium, a cardio/weight room and a large natatorium that houses a lap pool, wading pool and spa. Spiral ducting was specified for these open ceiling areas.

Alvine Engineering’s Lincoln office was responsible for the project and Paul Bauman, Mechanical Engineer for the company said the pool area had to be treated a little differently.

“We generally use standard metal spiral ducting for open areas but the pool section would be subject to a corrosive environment,” said Bauman. “To protect against possible future deterioration, aluminum ducting was specified for the pool.”

### Project:

Fallbrook YMCA  
Lincoln NE

### Contractor:

Sampson Construction  
Lincoln, NE

### Engineer:

Alvine Engineering  
Lincoln, NE



Detail: Spiralmate connections eliminate costly sealing, and are virtually invisible at a distance.

### Ductmate Product Used:

Spiralmate®  
Round Duct Connector

Pool water chemistry is critical to the proper operation of the pool, and chlorination is the primary pool treatment method. Over treated pool water can facilitate the off-gassing of chlorine compounds, such as chloramines, into the air. This chloramine-laden condensate could form on cold surfaces and is very corrosive. It will damage or destroy metallic structural components and furnishings including those made from stainless steel.

The general contractor for this project was Sampson Construction of Lincoln Nebraska, and they selected Benes Heating and Air Conditioning of Raymond, NE as the mechanical contractor responsible for the duct installation.

Gene Benes, owner of the company, said installation of aluminum ducting can be very difficult. "We had prepared 34" round spiral ducting using .040" thick aluminum with corrugating for strength," Benes commented. "We had to build in 10' long linear diffusers along the ducting runs for air distribution which caused the ducting to deform into an egg-shape. We needed to use caution during the installation or risk damage to the pipe or an unsightly appearance."

Benes used Spiralmate® connectors from Ductmate Industries, a product he used many times before! For this project, however, Benes used Ductmate's aluminized version in the pool room to protect against the corrosive environment.

"The pipe was made to exact dimensions needed for field installation," said Benes. "Spiralmate's quick and easy installation helped us maintain the restrictive schedules set forth by the construction manager. It also helped minimize the scratches and damages to the pipe that can happen during installation."

"I've used the Spiralmate connector for well over 15 years, and it's the spiral ducting connector of choice for us," commented Benes. "They go on very quickly and make a rigid connection, and that's especially important when you work with large, flexible aluminum material."

Benes said the Spiralmate connectors saves his crew considerable time during the installation and that's critical because he has to get in and out quickly. The quick band and gasket allowed them to rotate the pipe to direct air flow to meet the design intended by the engineer. He also likes the Spiralmate because they provide a self-sealing installation that's air tight. The single bolt system can be located above the duct, leaving a smooth finish with no obstructions.

The overall project was quite large having approximately 300' of 34" aluminum ducting running around the perimeter of the pool area. This provided even air distribution to prevent the formation of condensation on walls and windows.

The two middle school gymnasiums included 300' of 24" spiral steel ducting while the smaller YMCA used 100' of 20" spiral ducting. The cardio/weight center included a series of 26" main feeds with 14" branch runs throughout the room. All ducting with the exception of the pool area included painting as the final finish.

The ceilings in the pool and cardio/weight rooms have a lamellar wood beam ceiling as a unique design feature. The ducting was positioned along the beam pockets making them less noticeable.

"The spiral joints are very smooth and blend very nicely, making them unnoticeable," noted Alvine Engineering's Bauman. "I spec Spiralmate connectors in all my projects because they are dependable and they will meet high performance and appearance standards."

Bauman also said the Lincoln Public School District's Design Guide strictly requires the use of Spiralmate connectors in all district buildings.

Mike Peterson, territory manager for American Metals, the distributor for Ductmate products said they are very popular in his territory, and Spiralmate connectors are the preferred choice with contractors and engineers in and around the Nebraska area.

The facility was completed on time and to the satisfaction of all concerned. YMCA President/CEO Bettin says the facility is beautiful with wood beam ceilings in the YMCA and exposed duct work painted to mesh in with the interior design of the building. There are many windows and sight lines and the facility has a warm feeling as you enter.



Spiralmate is available in specialty metals that withstand corrosive environments like this indoor swimming pool.