

PLAINS TALK

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Cedar Rapids WPE: Retrofits Maquoketa Cardinal Elementary School Lights

- Maquoketa Cardinal Elementary School was built in 1974. Although it was remodeled in 1993 and an addition was added in 2003, many of the original light fixtures remained. The electric bills seemed high and the light fixtures were showing their age.

The school district hired West Plains Engineering to update the lighting and lighting controls. All of the school's original lighting fixtures were replaced and new light switches and occupancy sensors were installed. The original building contained mostly 4 lamp T12 2' x 4' recessed fixtures. These were replaced with 2 and 3 lamp T8 2' x 4' recessed light fixtures. The gym's metal halide fixtures were replaced with fluorescent light fixtures. Other improvements included replacing the exterior high pressure sodium and interior incandescent fixtures, both were replaced with LED fixtures. In addition, occupancy sensors were added throughout the facility. In a few open classroom areas as well as the library, light fixture group switching was modified to provide more efficient options for energizing only a



Cost efficient lighting for one of many rooms at Maquoketa Cardinal Elementary School

portion of the light fixtures in a space. The cost of the project was \$113,270 for the 42,000 sq. ft. building. Trenkamp Electric was the electrical contractor on this project.

Prior to the project, the yearly electric bill was approximately \$48,000. After the new light fixtures were installed the yearly bill was reduced to \$32,000, a \$16,000 per year savings

(33%). With more efficient fixtures and higher lumen output lamps, lighting levels were maintained in addition to realizing the significant savings. West Plains also helped procure utility company rebates by working with the utility company to provide the lamps and ballasts that were pre-qualified for the rebates.

As a Maquoketa native, it was rewarding to be part of a project that will help save money for the local schools.

About the Author:
Blake Pauls is a CAD Technician in the Cedar Rapids office.



Rapid City WPE: Remodel Building 560 - Physical Fitness Center, Camp Rapid

• West Plains Engineering was pleased to have been involved in the renovation/remodel of Building 560 at Camp Rapid, South Dakota Army National Guard (SDARNG) located within Rapid City, South Dakota. WPE was selected as the lead design firm for the project providing overall project management for the remodel as well as the mechanical and electrical systems, which included heating, ventilation, plumbing, fire protection, power distribution, lighting, fire alarm, multi-media, security, and sound system.

The 9,800 sq. ft facility was originally constructed in 1936. It was originally built and used as Warehouse No. 1 to the then South Dakota National Guard Permanent Camp. Around 1950 the 216th Ordnance Company Armory took occupancy of the facility. The facility served as a Maintenance Shop for vehicles and PMCS (Preventive Maintenance, Checks and Services). In 1987 the facility was remodeled into an Office facility which included Public Affairs, Recruiting, Personnel Records, Judge Advocate General (JAG), and the Construction and Facilities Management Office (CFMO).

In 2012, after the completion of the Joint Force Headquarters facility also at Camp Rapid, the facility was vacated which generated the vision to remodel the facility into a new on-campus state-of-the-art Physical Fitness Center for all National Guard personnel to utilize. With the



Physical Fitness Center for Building 560

help of Donald Deurmier, the acting project manager with the CFMO, West Plains Engineering, and Upper Deck Architects, the vision and ideas of the remodel were put together.

The interior of the existing facility was entirely demolished leaving only the exterior walls and exposed structure remaining. Based on the vast input from National Guard personnel, the facility was designed to accommodate an open structure atmosphere for the cardio, cross-fit, weight stations and centrally located lockers, restrooms, and storage area. The fitness areas were provided with rubberized floors, TV, audio, and automatic lighting control. In addition, a new entrance canopy was incorporated into the project.

Col. Scott T. Petrik, MG Timothy Reisch, and BG Ted Johnson presided over the open house and dedication ceremony of this facility on December 18, 2013. Today, the Physical Fitness Center serves as a great asset to Camp Rapid and the commitment to readiness for the Soldiers and Airmen of the South Dakota National Guard.



About the Author:

David Riemenschneider is a mechanical designer in the Rapid City office.

West Plains Engineering Receives Award of Excellence



• David Riemenschneider and Matt VonHaden are holding the Award of Excellence presented to West Plains Engineering on the remodel of Building 560 for the South Dakota National Guard. The award notes the physical fitness center being a great asset to the SDNG for many years to come. The overall finished product is a testament to the expertise, vision and talent of West Plains Engineering, Inc. and Upper Deck Architecture. The commitment to remodeling Building 560 and the National Guard is much appreciated.

Sioux Falls WPE: Mitchell Ice Arena - More Ice Please

• Mitchell Hockey Association had a problem that many youth sports groups are facing. There were more youth involved in the program than the facility could accommodate. To resolve this problem, the Mitchell Hockey Association partnered with the Mitchell Parks and Recreation department to add an additional rink to their existing indoor facility. The addition doubles the indoor ice available and expands the existing lobby, provides 3 new restrooms, 6 additional locker rooms, Zamboni storage, a refrigeration equipment room and a maintenance room.

Fluorescent high bay lighting provides even illumination of the rink. Occupancy sensors were installed in the locker rooms and toilet rooms to assist with managing energy costs from lighting not in use. A new voice evacuation fire detection and notification system was installed in the addition and the existing arena space for public safety.

The ice rink play area is cooled and dehumidified by a specialized air handling unit that uses a desiccant wheel to drive the humidity. The cooling and dehumidification unit is controlled by a VFD to help reduce energy costs and has the ability to ramp up to 100% airflow when sensing high levels of CO from the exhaust of the Zamboni. This ability, while acting as a life safety feature, also limits the amount of untreated raw air that would typically be brought in with exhaust fans that could soften or melt the ice sheet. As an added backup, if the cooling and dehumid-



new ice sheet ready for use



refrigeration system for making ice

ification unit cannot lower the CO levels to a safe level, auxiliary exhaust fans will turn on to help lower CO levels.

The spectator bleachers are heated with radiant heaters and the locker rooms are heated with electric furnaces. There is no cooling in the locker rooms. The lobby and the public bathrooms are heated with an independent electric furnace to allow this space to be heated to a higher temperature than the locker rooms.

In the Zamboni room a large dump pit uses the waste heat from the ice rink refrigeration system to melt the ice shavings from the Zamboni.

The design team consisted of Puetz Corporation, architectural services, Schmucker, Paul, Nohr & Associates, civil design, Stevens Engineers, refrigeration

system design, American Technical Services, structural design and West Plains Engineering, HVAC, electrical and plumbing design. Palace Builders was the General Contractor with Howe Heating and Plumbing, Krohmer Plumbing, Paulson Sheet Metal, Powertech Electrical Service and Rink Tec International rounding out the construction team.

About the Author:

Isaac Anderson is a Mechanical Engineer in the Sioux Falls office.



WPE COMPANY NEWS • WPE COMPANY NEWS

Congratulations!

• **Sara Norstrom**...and hubby Tom welcomed new baby girl Mallory Rose. Mallory was born on March 25th weighing 7 lbs., 7 oz. and 20-3/4" long. Sara is an Electrical Designer in the Sioux Falls office.

• **Kenny Thelen & David Clark**...were both certified for LEED AP Building Design & Construction on March 22, 2014. Kenny is an Electrical Designer and David is a Mechanical Designer, both work in the Cedar Rapids, Iowa office.

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Rapid City WPE: A Minute Can Make All the Difference

• On September 26, 1774 the town of Concord voted:

that there be one or more companies raised in this town by enlistment and that they chose their officers out of the body so enlisted and that said company or companies stand a minute's warning in case of an alarm and when said company should be called for out of town, in that case the town pay said company or companies reasonable wages for the time they were absent.

Other towns soon followed suit. These minute companies were strictly local, responsible only to the protection of their towns. They could, and they did, respond swiftly to the call when it came.

In 1872 Daniel French was commissioned by the town of Concord to be the sculptor for a statue. His intent was to portray Captain Isaac Davis of Acton, who was killed at



Minuteman posed outside of Camp Rapid

the North Bridge at the Battle of Concord on April 19, 1775. The statue, which was dedicated in April 1875, depicts a Minuteman leaving his farm, signified by the plow, holding his musket ready to defend his community. The statue symbolizes the qualities and clothing of the Citizen-soldier of the 1790's and of today.

The symbol of the National Guard is the Minuteman statue by Daniel French.

To celebrate the 125th Anniversary of the South Dakota Army National Guard, 42nd Street Design Studio was hired to provide the design of a base for a replica of the Minuteman statue and to integrate it into the entrance landscape at the Camp Rapid National Guard Campus. West Plains Engineering was hired as a sub-consultant to 42nd Street Design Studio to provide the lighting for the new statue. The lighting was accomplished by energy efficient LED flood lights placed at the base of the statue.



West Plains is celebrating it's 30th Anniversary in 2014! Watch for further announcement and events.