

PLAINS TALK

A Publication of West Plains Engineering, Inc.

Casper WPE: Casper College Music Building

• The Casper office of West Plains Engineering, Inc. recently teamed up with MOA Architecture and HMS Architects to complete the new Music Building for Casper College. The new \$11.5 million, 35,000 square-foot building was completed in the fall of 2013.

The building occupies a hillside on the college campus, with ground-level entrances on both the first and second floor. The facility is home to a wide array of musical arts, and includes both choral and instrument-specific spaces. In order to ensure that adjacent rooms do not disturb one another, the building was designed from the ground up with acoustical enhancements and sound isolation techniques.

A variety of rooms are included within the facility, including a full recording studio, individual and group practice rooms, large and small classrooms, a complete piano lab, and even a small art gallery.

One of the goals of this building is to make it feel like home to any artist, whether they're first-year music students or international artists on tour. High ceilings, stone and wood finishes, and high quality construction accomplish exactly that.

The building's centerpiece is the new, state-of-the-art 417 seat concert hall. This performance space includes



Casper College Music Building Wheeler Concert Hall

cutting-edge theatrical lighting and acoustical systems, and any act will feel at home on its stage.

The concert hall is equipped with DMX-controlled LED house lights, which dramatically reduced energy usage in the space and also decreased the quantity of dimming racks necessary for full theatrical

lighting control.

In order for this project to be a success, a large team was assembled, which included the two architectural firms, a firm specializing in theatrical systems, and an acoustical consultant, as well as electrical, mechanical, structural, and civil engineering consultants. The team closely coordinated with one another in order to ensure that the systems in the building complemented and enhanced the space.

Casper College was Wyoming's first community college, and as it approaches its 70th anniversary, the Music Building stands as a testimony to the College's commitment to quality education for the next 70 years to come.

About the Author:

Jeff Eidsness is an Electrical Engineer and Office Manager of the Casper office.



Sioux Falls WPE: Milwaukee Wiener House

• In the fall of 2013 the Milwaukee Wiener House closed their doors along the 300 block of Pearl Street in Sioux City, Iowa to make room for the Hard Rock Hotel & Casino Sioux City. The one-story brick building has been an iconic eatery since the 1970's. This wasn't the first time the Wiener House has moved. It opened in 1918 at Pierce and Douglas streets, near the Milwaukee Railroad line. Since the majority of their customers were railroad workers the business found its name. Hot dogs back then sold for 5 cents each.

The Milwaukee Wiener House is a big rectangular dining room with rows of booths where you order your meal at the walk-up counter. You can find menu items such as pie ala mode, ice cream, donuts, cheeseburgers, chili, soup, cheese sandwich and of course hot dogs, even the double hot dog which comes with cheese! Order lemonade, milk, coffee, Sanka, hot tea or a glass bottle of pop to wash your hot dog down.

Sioux City Entertainers paid to build a new Wiener House at Douglas and Third streets. The 4,000 square foot building is in a new location in the same neighborhood.



The new Wiener House...ready to take your order

Electrical systems design included power distribution, lighting, fire alarm system and network communications. Mechanical systems included two roof top air conditioning/heating units, kitchen ventilation including a 6 foot hood over the wiener grill and plumbing systems.

Construction of the new restaurant started in the fall of 2013 by Conlon Construction Co. The new building has a wide open dining area with a serving counter. The serving area is where you order your hot dogs fresh off the grill. The commercial kitchen houses the dishwasher and walk-in cooler. There is an outdoor patio along the front for additional seating in the summer.

West Plains Engineering teamed up with M+ Architects providing design build services for the mechanical and electrical systems.



About the Author:

Sara Norstrom is an Electrical Designer in the Sioux Falls office.

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New Office Opens!



West Plains Engineering is pleased to announce our new Bismarck, North Dakota Office. Over the last few years, our engineers have completed many jobs in the Bakken oil patch and throughout the state. This increased activity led to us opening up a local office to serve our clients and handle our engineering design

and inspection projects. With the demand for new buildings and infrastructure at an all-time high in the Bakken oil region, our Engineering Team in Bismarck is ready to meet the needs of our North Dakota clients. Office Manager **Eric Fewson, P.E., C.E.M.**, will lead operations. Eric is an Electrical Engineer and a Certified Energy Manager who recently worked as a work group manager in the energy efficiency business. Eric enjoys the outdoors opportunities available in North Dakota, along with spending time with his kids Brennalyn (7) and Bridger (5). Please join us in welcoming Eric to the West Plains Team.

Congratulations!

Blake Pauls and wife Katie welcomed baby boy Clark Daniel on July 14, 2014. Clark weighed 9 lb's and 4 oz. at birth and was 20.5 inches long.



Steve Verdugt joined West Plains Engineering in September 2014 as an Electrical Engineer in the Rapid City office. Steve moved to Rapid City from Arizona, enjoys motorcycles and anything outdoors.

2014 Design Conference and Tenure Awards

At the 2014 Design Conference West Plains welcomed our Bismarck office for the first time. There is a feeling of excitement as we are expanding. By bringing all of our employees together for Professional Development, we enable internal networking and knowledge sharing. Our Design Conference is an annual educational and team building experience for West Plains employees. At the Design Conference we also recognized employees and their years of tenure. We celebrate with the following:

5 Year: **Todd Baack, John Huntley, Aaron Kompelien, Matt VonHaden, DeWayne Larson**

10 Year: **Cristie Belland**

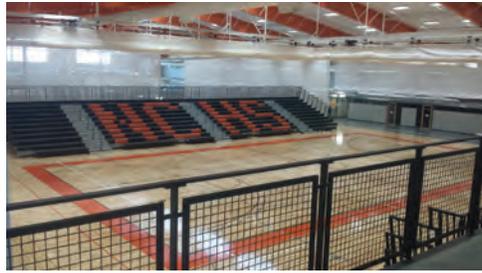
15 Year: **Chuck Hauck, Sara Norstrom**

20 Year: **Marty Christensen, Jeff Eidsness, Dave Riemenschneider**

Casper WPE: Natrona County High School - Student Fitness & Activity Center

• In 2012, the Casper Office of West Plains Engineering, Inc. teamed with GSG Architecture to design a new facility for the Natrona County High School. This facility provides a temporary location for classes to be held while the existing High School undergoes renovations and additions. This facility will later be used for permanent physical education instructional spaces. The facility was completed in August of 2014 and is currently housing classes through the first phase of construction.

The total square footage of the building is approximately 101,800 sq. ft. The main open area of the Student Fitness and Activity Center (SFAC), is around 84,000 sq.ft. and is currently being utilized as a temporary classroom facility. Modular walls have been provided to set up individual classroom spaces. A temporary library location has also been provided. The SFAC also consists of a two story portion, each floor at approximately 18,000 sq. ft. The main locker rooms for the facility are located on the first floor of this portion. There is also a PE Classroom and the main mechanical and electrical rooms. On the second floor there is a weight room, mat room and aerobics room. The boiler room, offices and the scorer's booth are also located on the second floor.



NCHS SFAC Main Gym with Temporary Classrooms Beyond



NCHS SFAC Aerobic Fitness Room

The main open area of the SFAC is conditioned with heating-only, constant volume air handling units. The lighting in this space utilizes high bay LED fixtures. This space is currently being used for classroom spaces and the main gym for sporting events. In the future, this space will be transformed into a full indoor track facility. The two story portion of this building is served by two multi-zone air handling units that provide the constant ventilation. The two multi-zone units are provided with heating and cooling coils, while the two units serving the open areas are only provided with heating coils. The unit providing heating and ventilation is provided with a temporary cooling coil to supply the temporary classrooms with air conditioning.

The heating plant for the SFAC consists of three 2,000 MBH Boilers. The cooling is provided by an 82 ton air cooled chiller.

Construction was completed by AP Wyoming, GW Mechanical, Sheet Metal Specialties and Modern Electric.



About the Author:

Brian Ames is a Mechanical Engineer in the Casper office.

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ACEC Engineering Excellence Award Ceremony

West Plains Engineering submitted three projects to the ACEC Engineering Excellence Competition.

The projects included:

- VA Medical Center CCTV Security Camera System - Fort Meade, SD
- South Dakota Army National Guard Building 560 Physical Fitness Remodel - Rapid City, SD
- Bramble Park Zoo Children's Zoo & Otter Exhibit - Watertown, SD



Pictured above are West Plains employees **Isaac Anderson** and **Sara Norstrom** from the Sioux Falls office and **Mike Sigman** and **Matt VonHaden** from the Rapid City office

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Cedar Rapids WPE: University of Iowa Lighting

• Despite the projected growth of the campus, the University of Iowa has a goal to consume less energy in the year 2020 than it did in the year 2010. To help them achieve this goal, West Plains Engineering was hired to reduce the energy use of the lighting and to add automatic lighting controls in the Field House.

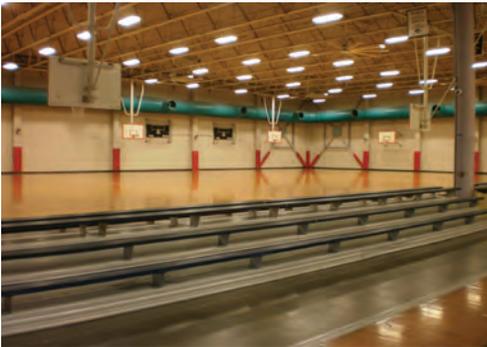
The Field House Main Gym, South Gym, and main corridors were previously illuminated with metal halide light fixtures. These fixtures did not provide adequate illumination. The existing metal halide light fixtures had a lighting power density of 1.23 watts per square foot and provided 5 to 25 footcandles of illumination in both gyms. The Illuminating Engineering Society's recommended lighting level for a recreational basketball court is 30 footcandles.

The high ceilings in gymnasiums always limit the type of light fixtures that can be used, but the 50 foot ceiling in the main gym further limited the fixture selection. West Plains Engineering generated two options to replace the existing light fixtures, T5 high output fluorescent and LED. With the T5 high output fluorescent fixtures, the lighting power density was calculated at 0.67 Watts per square foot with 35 to 40 footcandles on the gym floor. The lighting power density of the LED fixtures was calculated at 0.5 watts per square foot with a lighting level of 30 to 40 footcandles on the gym floor.

After completing a payback analysis, it was decided to replace the metal halide light fixtures with T5 high output



Field House South Gym - Before



Field House South Gym - After

fluorescent fixtures due to the shorter payback period. The project included the replacement of almost 250 metal halide lighting fixtures with T5 high output fluorescent fixtures. Due to a tight timeframe, the light fixtures were replaced "one for one" to save installation time. Also, the owner pre-purchased the light fixtures to expedite their delivery to the project even so, the manufacturer had to send partial shipments of fixtures as they were manufactured to complete the project as fast as possible.

In the South Gym, occupancy sensors were added to the six basketball courts. The occupancy sensors were integrated into the existing lighting control system so that each half of each of the basketball courts is controlled separately.

The new light fixtures provide a 45% energy savings over the existing light fixtures. Incorporating the

occupancy sensors in the South Gym further increased the projected energy savings to nearly 50%. Improving lighting levels while cutting electrical consumption nearly in half made this a "win-win" project.



About the Author:
Kenny Thelen is an Electrical Engineer in the Cedar Rapids Office.