

PLAINS TALK

A Publication of West Plains Engineering, Inc.

Cedar Rapids WPE: Tipton High School Auditorium

• Since the mid 1920's Tipton high school has held many theatrical events throughout the years in its 850 seat facility. A proposed building project was submitted in 2011 to provide a complete remodel of the historic auditorium. With much of the original architecture and a few modifications over the years a major renovation was in the sights of many. With vision from Ament Design located in Cedar Rapids, Iowa, the renovations became a reality.

West Plains Engineering teamed with Ament Design and Morning Star Studio to provide design services for the \$2.65 million dollar, 8,000 square foot renovation. Changes to the auditorium included the remodeling of the existing 6,000 square foot auditorium with balcony, and a 2,000 square foot addition to the stage, as well as remodeling an existing area for dressing rooms. The addition provided space for new mechanical and electrical equipment, scene storage, scene shop, general storage and a new fly gallery. A material lift was also added to provide access to the new storage area built under the stage.

With remodeling projects comes the necessity and opportunity to upgrade features throughout a facility. There was no exception to this renovation. LED lighting was used in the general seating areas, not only to conserve energy, but to provide a smooth dimming transition when needed. LED tread lighting was used to provide added safety when entering and



A remodeled balcony provides an incredible view of the stage



exiting. Existing theatrical lighting was relocated to the new catwalk, and new lighting was added. New theatrical sound equipment was included in the design to enhance the audio experience. All of these systems are capable of being controlled from both the front and back of the stage.

To provide comfort year round, an upgrade to the mechanical system was necessary. An 80-ton packaged variable air volume roof top unit was added to provide efficient heating and cooling. Variable air volume boxes with hydronic reheat coils served from an existing boiler were distributed throughout the auditorium to provide maximum temperature control for comfort. Duct-mounted sound attenuators were utilized to control airborne mechanical system noise.

Construction was completed by Garling Construction, Neumiller Electric, Inc., and Boche Plumbing & Heating, Inc. As shown in the pictures the renovation is complete and theatre productions have begun. In fact one of Iowa's longest-run-

ning film festivals "The Hardacre Film Festival" took place August 2, 2014 in the newly renovated facility.

About the Author:

Todd Baack is an Electrical Designer from the Cedar Rapids Office.



West Plains Engineering: Celebrating 30 Years of Service, Teamwork & Engineering Excellence

• From the start of West Plains Engineering back in 1984, in a small second story office in downtown Rapid City, we have been about providing professional engineering services to our clients. Dave Berg and Bob Thompson built a reputation as engineers who listened to the needs of their clients. After 30 years of engineering services, West Plains is still committed to the needs of our clients and how we assist them with their facility needs. We continue to ask ourselves the tough questions. How we can solve our clients design issues? How can we reduce their energy consumption or improve comfort levels? How may we help reduce their maintenance cost and improve equipment reliability?

Our approach is to assemble a team with strong and diverse engineering skills. Train and build on those skills, communicate at all levels and to understand our customers so we can provide a thorough solution for their mechanical, electrical and power engineering needs.

West Plains has grown into a regional firm with four offices working together as one large team, yet individually knowing our clients. This team will expand as we will soon open another location with local roots connected to the community.

The next 30 years will bring challenges for everyone; but West Plains will continue the tradition of service, teamwork, and growth with a purpose to continue providing paramount engineering services to our clients with energy efficiency, sustainability, power delivery, code compliance and occupant comfort in the facilities we design.

As West Plains celebrates 30 Years, we would like to invite those we serve to share “the 30 year experience” along with us. **We are celebrating with informal office celebrations at each office on the dates below. Stop by and celebrate with us!**

Casper Office

145 S. Durbin, Ste. #205

September 12th 3:00 - 6:00 pm

Rapid City Office

1750 Rand Road

September 17th 3:00 - 6:00 pm

Sioux Falls Office

4609 S Techlink Circle

September 18th 3:30 - 6:00 pm

Cedar Rapids Office

215 - 2nd Avenue SE, Ste. #200

October 2nd 3:00 - 6:00 pm



The building where WPE began 30 years ago!



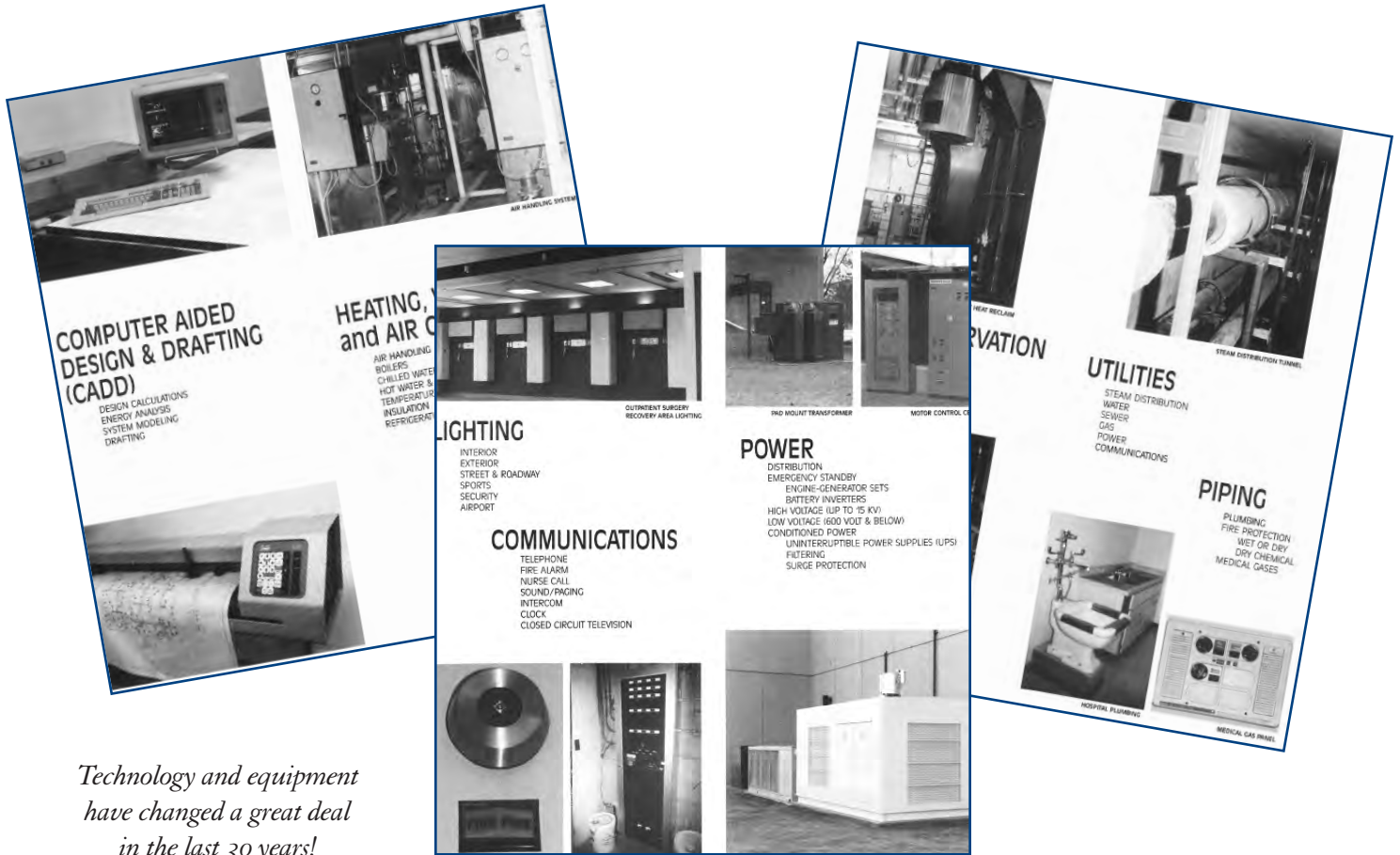
Dave Berg



Bob Thompson



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Technology and equipment have changed a great deal in the last 30 years!

WPE COMPANY NEWS • WPE COMPANY NEWS

Congratulations!

• **Matt VonHaden**...recently passed his P.E. test. He is an Electrical Engineer in the Rapid City office has been with West Plains since 2009.



through 5 semesters of school. Matt enjoys music, disc golf, camping and playing guitar.

- **Matt McTee**...joined West Plains Engineering in May 2014 as a drafting CAD Technician in the Rapid City Office. Matt graduated May 17, 2014 from Western Dakota Tech for Computer Aided Drafting. He was the only student in the class to graduate with honors and achieved a 3.9 GPA through 5 semesters of school. Matt enjoys music, disc golf, camping and playing guitar.
- **Linda Thomas**...joined the Accounting Team of West Plains Engineering in June 2014. Linda enjoys hiking, reading and spending time with her family and dogs. Linda is married (Tim) and has three adult children.



Announcements!

- After 30 years of service to our clients and company leadership, **Robert W. Thompson, P.E.** retired from West Plains at the end of June. Bob, was one of the founders, and held various positions throughout the years as the company grew from three to over fifty employees. Most recently Bob served as President of West Plains Engineering.
- **Douglas R. Feterl, P.E.** was named President following Bob's retirement. Doug has been with West Plains since the early '90's as a Design Engineer, Office Manager and most recently, Business Development Manager for the company. Doug has also been elected President of West Plains Board of Directors.
- **Bonnie Berg** retired from West Plains at the end of May after 30 years of service. Bonnie was one of the first employees and worked in the Accounting Department assisting employees with employee benefits and other administrative duties.

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Phone: (605) 362-3753
Fax: (605) 362-3759

• 1750 Rand Road, Rapid City, SD 57702
Phone: (605) 348-7455
Fax: (605) 348-9445

• 145 S. Durbin, Suite 205, Casper, WY 82601
Phone: (307) 234-9484
Fax: (307) 234-5494

• 215 2nd Ave. SE, Suite 200, Cedar Rapids, IA 52401
Phone: (319) 365-0030
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Sioux Falls WPE: Salem Street Lighting

• The City of Salem has replaced 28 light poles with new decorative poles along Main Street and two side streets. The new 30 foot steel poles are designed to last for 40 years with minimal maintenance or attention. The existing light poles were leased from the utility company with a lamp source of 400 Watt mercury



new lighting displayed along one of the main intersections in Salem

Vapor which uses 450 watts of electricity. The new LED fixtures are 129 watt which will save the City of Salem approximately \$4,300 per year. The payback for LED upgrade is 3 years excluding service/maintenance costs. The savings is a 73% reduction.

The new LED have a 5000 deg Kelvin color which is a very white light similar to daylight. LED are also a very direct light source and not a lamp like traditional technology. The fixtures provide much better and more even light distributions. The life of the LED is approximately 100,000 hours or approximately 34 years.

The new light poles include accessories such as flag pole holders, banner arms and receptacles. Flower basket hangers with integral watering for plants was also an option. The poles are black in color, fluted and have a historic lighting look which adds to their downtown theme.

LED technology is more expensive, but has closed the gap with traditional technology and like electronics will continue to come down in price. One of the biggest advantages of LED is the long life which means no maintenance.

Outdoor and indoor fixtures of 10' or greater mounting heights are excellent applications so lift rentals are not required.

Additional technologies that are available today are wireless control and sensors. LED's are instant on and can be easily dimmed or step dimmed. This would allow a parking lot to be at 25% light level until a car is

sensed and then the light(s) could go to full power. This would further save on electricity.

Many of our projects with the historic lighting were done with business development in mind. The better lit the storefronts are the better the shopping experience and the more likely shoppers will visit the stores and thus spend money. This also provides better security for the shoppers.

All lighting projects are done in house at West Plains utilizing a collection of lighting calculation tools and 3D modeling software that provides advanced analysis. Photometric data can be displayed in grid form or contours and in color for easy analysis. Charts can be generated to provide average, maximum, and minimum foot candles.

Please contact us if you have any indoor or outdoor lighting questions. Let West Plains Engineering help decide which application LED lighting works best for you.

About the Author:

Todd Weidner is the Electrical Department Head in the Sioux Falls office.

