



233 West Broadway, Bismarck, ND 58501
(701) 751-7322
1750 Rand Road, Rapid City, SD 57702
(605) 348-7455
4609 S. Techlink Circle, Sioux Falls, SD 57106
(605) 362-3753
145 S. Durbin, Suite 205, Casper, WY 82601
(307) 234-9484
215 2nd Avenue SE, Suite 200, Cedar Rapids, IA 52401
(319) 365-0030



Vol XII, Issue 4

PLAINS TALK

A Publication of West Plains Engineering, Inc.

Fall Issue 2016

Systems to Serve Those Who Protect
Design-Build for Bombers: B-52 Maintenance Dock
Keeping Camp Rapid Current

westplainsengineering.com



KEEPING CAMP RAPID CURRENT



TRANSFORMER STUDY

We like to tell people that our work sharing business model is one of the things that makes West Plains unique. With staff working in five offices across four states, our engineers, designers, drafters and support staff team up on projects across the region on a daily basis – giving more attention and access to expert input for each job.

In October, we got the opportunity to show the value of that collaboration to one of our longtime clients – the South Dakota National Guard. Our Electrical Specialties and Power Divisions, two specialized units focused on advanced electrical solutions, teamed up to evaluate all the transformers on the SDARNG campus at Camp Rapid.

At each pad mount transformer, we reviewed the cabinet numbers, serial numbers, age, manufacturer, general condition, physical location, gps location, facilities served, number of phases, primary and secondary voltages, rated kVa, poly-chlorinated biphenyls content, oil capacity, security and

required signage. A thermography study was also performed to evaluate internal oil levels and external electrical connections.

The details of the study are certainly a mouthful, but the underlying message is simple. By working together and streamlining our process, we were able to share our individual knowledge and the client got the comprehensive study they needed.

ABOUT THE AUTHORS



Todd Weidner, P.E., RCDD is a principal electrical engineer and manager of the Electrical Specialties Division. Todd has been with West Plains more than 15 years and is based out of the Sioux Falls office.
todd.weidner@westplainsengineering.com



Kevin Groves, P.E. is a retired Army National Guard CW4 and Master Aviator. He has more than 19 years of utility engineering experience and is manager of the Power Division. He has been with West Plains since 2006 and is based out of the Rapid City office.
kevin.groves@westplainsengineering.com

NEXT ISSUE

More changes are coming! We're glad everyone is enjoying our new look – but we're not quite finished yet. Check out the bigger, better Plains Talk headed your way in 2017.

MECHANICAL ELECTRICAL PLUMBING POWER

AN ENGINEERING SOLUTION CENTER



Systems to Serve Those Who Protect

Mike Sigman, PE, Electrical Engineer



Engineers love a challenge. When a problem is put in front of us, nothing makes us happier than finding creative ways to fix it. That's what makes designing mechanical and electrical systems for the military, not to mention other State and Federal agencies, so interesting.

Over the years, we've worked with multiple branches of the armed forces and government. As with all projects, the first step for the design team is always to understand the scope. But the next step is somewhat unique – and incredibly important. The team must also understand the particular Standards of Design to be followed. Each branch of the military has their own Standards, plus each military camp, post or base has its own Design Guides and Themes to assure the campuses are developed consistently.

One of our favorite projects to design are Military Readiness Centers. We've done several in the past decade, but each offers diverse features to challenge both the Architect and Engineer.

To start with, these facilities require the utmost security throughout computer centers, vaults with secure communication systems, Sensitive Compartmented Information Facilities (SCIF's) and classified briefing spaces. They also present multi-use spaces to serve large populations of service men and women, including classrooms with multi-media presentation requirements, industrial kitchens and dining spaces and weapons storage to name a few.

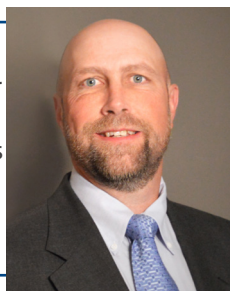
Typically, computer centers and SCIF's present the greatest design challenges – often resulting in the most creative solutions.

Computer centers must be secure and have redundant HVAC systems and emergency power systems from redundant sources, such as generators and UPS systems, to ensure they are operational 24/7 365 days a year. System failure simply is not an option.

SCIF's are the most secure spaces, other than the vaults, within the Readiness Centers. They contain secure communications equipment, as well as briefing areas with multi-media presentation capabilities.

ABOUT THE AUTHOR

Mike Sigman, P.E., is an electrical engineer and Rapid City office manager. Mike is a veteran of the U.S. Army Reserves and has been with WPE for nearly 20 years.
mike.sigman@westplainsengineering.com



These spaces are fed from multiple power sources and have dedicated HVAC systems to ensure they are operational even during the worst of events.

Ventilation to the building as a whole is a challenge as well. Force Protection Requirements are in place to ensure that air borne gases or agents are prevented from being drawn into the building with the fresh air system. Full shut-down of the ventilation systems is provided to respond to these types of attacks.

In order to be successful in the design of these facilities, it takes comprehensive knowledge of the Standards and Requirements. This knowledge comes, in part, from many hours of research and dedication from the design Architects and Engineers. But it also comes from the boots-on-the-ground experience gained only through designing each of these facilities. While each project may be similar in scope, it takes on a life of its own when we start to consider the site, climate and specialized needs of the end users.

Designing facilities for the men and women who serve this country may be a challenge, but delivering solutions to make their job a little easier is certainly a humbling reward.

For more information on our experience on Military projects, visit westplainsengineering.com.

A Soldier's Perspective

Chuck Hauck, P.E. | Mechanical Engineer
Lieutenant Colonel – SD Army National Guard



Those of us who wear "the uniform" have missions to accomplish, and the facilities where we work have a great impact on our ability to accomplish these missions effectively. From a tent in the Iraqi desert, to the Joint Force Headquarters in Rapid City, SD, we have to work with what we're given. While the boots-on-the-ground soldier rarely stops to think about these facilities – they are keenly aware when building shortcomings hinder their ability to do their job.

The most valuable asset to today's citizen soldier is time. The typical "M-Day", or part time soldier, has approximately 38 days a year to achieve and maintain their professional proficiency. When the myriad of additional requirements are added to the mix, it seems impossible at times to accomplish not only all that's required, but what is necessary to be trained and ready. A well-designed facility, with thought-out and thorough design, can maximize a soldier's effectiveness. The ability to be more efficient means more time spent on task and better end results.

While service men and women can work in almost any environment, the right facilities make them, their unit, and the organization a better, more effective force.

To view Chuck's full article, visit the News section at westplainsengineering.com

2016 West Plains Engineering Design Conference

West Plains Engineering staff from four states converged on Chamberlain, South Dakota in mid September for the company's annual Design Conference. The three-day event was spent learning, sharing ideas and, of course, having a little fun. Congratulations to this year's Design Competition winners, who created the best balloon-powered car using only a few pieces of paper, some old CDs and a whole lot of engineering imagination.



Marty Christensen presents Darrin Tille (a volunteer fire fighter) with his 10 year anniversary gift.



Trial and error during the design competition. L-R: Ben Josephson, Jeff Reinhart, Jeff Eidsness, Kevin Groves



Serious competitors. L-R: Scott Isennock, Doug Feterl, Darlene Weber.



Design Competition Winners! L-R: Chuck Hauck, Matt VonHaden, Duane Evert, Mike Fisher, Becky Kramer

Design-Build for Bombers: B-52 Maintenance Dock



MINOT AIR FORCE BASE – MINOT, ND

With a wingspan of 185 feet and an \$84 million price tag, the B-52 Stratofortress certainly lives up to its name. The B-52 is at the heart of the U.S. Air Force manned strategic bomber force and with only 58 in active inventory, it's important to keep these massive machines well maintained.

In 2012, West Plains Engineering worked with a design-build team to develop an 81,150 square foot maintenance hangar at Minot Air Force Base. Our team created mechanical and electrical systems to withstand the extreme North Dakota climate, while delivering LEED-level efficiencies and reliability. The service members at Minot Air Force Base have an important job to do in maintaining their fleet – our job was to make sure they had the best space to do it.

Thank You Service Members

We are honored to work both *for* and *with* a few of the incredible service men and women who sacrifice for this country. It's been our great honor to provide solutions for military installations throughout the upper Midwest. It's an even greater privilege to have several active duty and veteran service members on our team.

Kevin Groves, P.E. – Power Division Manager, Rapid City
Chuck Hauck, P.E. – Mechanical Engineer, Sioux Falls
Justin Henning – Draftsperson, Sioux Falls
Ben Josephson – Electrical Engineer, Rapid City
Gary Lyngen – Electrical Engineer, Sioux Falls
Joel O'Daniel – Draftsperson, Rapid City
John Rickert – Senior Electrical Engineer, Rapid City
Mike Sigman, P.E. – Office Manager, Rapid City

Welcome to Cedar Rapids!

We're pleased to welcome two new team members to our Cedar Rapids office. Electrical Engineer Brian Hall and Draftsperson Al Jones joined our team this fall in developing solutions in Iowa.



Brian Hall
Electrical Engineer



Al Jones
Draftsperson