

The semi-annual
newsletter of

BRIDGERS & PAXTON
CONSULTING ENGINEERS, INC.



Celebrating 49 years of service 1951-2000

THE NEWS DIFFUSER

Design/Build Projects Delivered On Time



Photograph by Allen Green

Emcore West Headquarters Albuquerque, New Mexico

This fast-paced, design/build project was completed within 6 months from the onset of design. Bridgers & Paxton provided mechanical and electrical engineering services for this 70,000-sf design/build project which houses Class 10,000; 1000; and 100 manufacturing, office/administration, and support areas. The majority of the building is the Class 1000 manufacturing area. Two new 800-ton chillers and a 400-hp steam boiler were added to serve the new area in addition to the 450-ton, water-cooled chiller and 5-million-Btu hot-water boiler already serving

the facility. Process cooling water generated through a chilled-water heat exchanger provides manufacturing equipment cooling. A variable-air-volume rooftop unit serves the office area. The Class 1000 space contains approximately 40% ceiling filter coverage of 99.99% HEPA filters. A special HVAC system serves the Class 100 lithography room.

Process piping systems for compressed air, house vacuum, nitrogen, hydrogen, and other miscellaneous gases were also installed. An exhaust system was provided for equipment and general room exhaust.

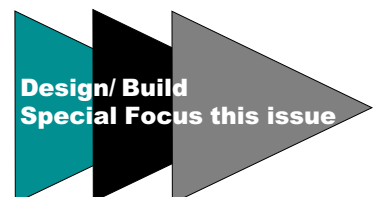
The facility's electrical service includes two 12.47 kV, 1200 kVA transformers, one at 480/277V to serve lighting and facility mechanical loads, and one at 208/120V to serve the process equipment loads. An emergency generator provides back-up power to the critical exhaust systems and to selected lighting. Special systems include a fire alarm system with smoke detection, toxic gas emergency evacuation alarm, security intrusion alarm, and access control system.

The primary team members were John Grapsas, P.E., Principal-in-Charge; Richard Reif, P.E., Mechanical Project Engineer; Terry Warnke, P.E., Electrical Project Manager/Engineer; Marcel Harmon, P.E., Electrical Engineer; and Scott Surdahl, C.I.P.E., Lead Plumbing/Process Piping Designer. B&P teamed with Yearout Mechanical & Engineering and Chaparral Electric to provide engineering services. Reid & Associates was the General Contractor, and Dekker/Perich/Sabatini was the Project Architect.

Comments from our Clients

Kevin Reid, President
Bill Smith, Project Manager
Reid & Associates, Inc.

...This high-tech (design/build) project was an extreme challenge to our team. With your help we were able to finish this cleanroom project in a previously unheard of six months from start of design to completion... This remarkable accomplishment would not have been possible without the conscientious efforts of you and your employees...



Three New PEs at B&P



John Graveline



Mike Smith



Rich Reif

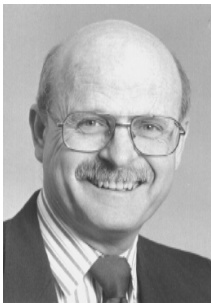
Congratulations to **John E. Graveline**, **Richard J. Reif**, and **Michael L. Smith** who received notification in February that they successfully completed all the requirements for licensure as professional engineers in the State of New Mexico. This brings the number of licensed professional engineers in both the Albuquerque and Phoenix offices to 26 with a total staff of 64.

Who's New at B&P

- Marty Hall
- Rick Downing
- Chuck Thompson
- Eric Stockli
- Fred Clark
- Aaron Downing
- Keith Cooper
- Courtney Overton
- Joe Hernandez
- Lynette Lincoln
- Dora Lujan

W E L C O M E

B&P recently welcomed two new staff members to its growing electrical engineering department.



Chuck Thompson, P.E. brings to the B&P team 27 years of comprehensive electric utility experience working for the Public Service Company of New Mexico in Albuquerque. After retiring from PNM, he joined the staff of Bridgers & Paxton. About B&P, Chuck says, "The work is challenging, and I am learning a lot!" He is currently working on

substation projects for the University of New Mexico and Los Alamos National Laboratory.

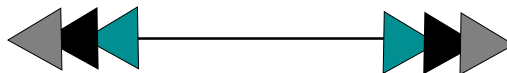
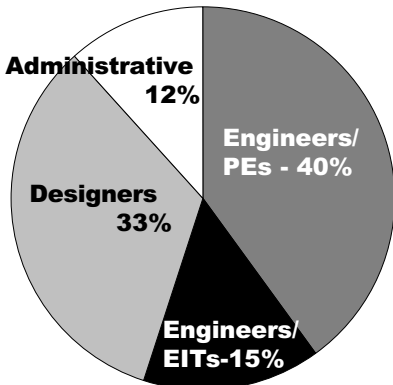
Chuck is originally from El Paso, Texas. He and his wife Clare moved to Albuquerque 28 years ago. Outside of work, Chuck enjoys reading, playing the guitar, and helping out at his church. He says that he is genuinely pleased to learn that there is truly life after PNM!



Keith Cooper, Electrical Project Manager, has over 23 years of electrical engineering experience designing and coordinating projects in both the government and industrial sectors. He is currently working on projects for the Ethicon, Inc. San Angelo, Texas site; Los Alamos National Laboratory; and Sandia National Laboratories. Keith

started his career as a draftsman in 1976 and is currently pursuing his electrical engineering degree. He appreciates the professionalism, work ethic, and dedication of all the employees at B&P.

Keith is married and has three children. When not working, he enjoys off-road vehicles, welding, and home remodeling.



B&P Staff

Employment Opportunities

If you are interested in working at Bridgers & Paxton or if you would like to learn more about us, please check our website at

www.bpce.com.



We Need Your Comments

Please let us know if there is any way that we can improve our service at B&P. We continually strive for excellence but realistically know that sometimes we may fall short. It is never pleasant to hear complaints, but complaints let us know exactly where we can improve to better meet our goal of "Excellence in Engineering." So, "good" or "bad", we appreciate your comments.

Design/Build Teaming

By Al Guerra, Project Manager/On-Site Facility Consultant

With both private and public sectors moving toward design/build, A/E firms are teaming with contractors to meet this new construction approach. Design/build places a different spin on the traditional roles of the contractor and the A/E design team. Contractors are taking the lead role in design/build projects with the architects and engineers taking supporting roles. Successful design/build projects require teamwork and partnering among all the participants including the owner, design professional(s), and the contractor. The owner benefits by having the A/E and contractor on-board from project inception — kind of a "one-stop" shopping.

Design/Build, design/build, design/build....

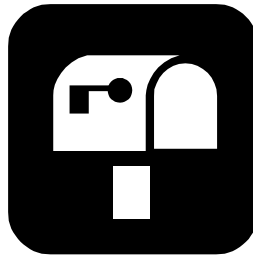
Philips Semiconductor Albuquerque, New Mexico

Bridgers & Paxton designed the mechanical, process piping, plumbing, life safety, telecommunication, and electrical systems for the 20,000-square-foot, Class 1000, semiconductor manufacturing facility build-out and two 250-square-foot hazardous production materials prefabricated storage buildings. In addition to design services, Bridgers & Paxton provided commissioning services during construction. The manufacturing clean room was built within an existing three-story facility and utilizes mini-environments for the production of 0.25-micron semiconductors.

B&P worked closely with Klinger Constructors, Inc., Yearout Mechanical & Engineering, Inc., DKD Electric Co. and BDA Architects in a design/build effort to facilitate an aggressive construction schedule. The construction occurred adjacent to existing manufacturing space without disruption to production. All utility tie-ins and facility equipment start-up were closely coordinated with Philips Semiconductor's facility engineers to ensure a smooth transition to clean room certification and process tool qualification.

Bridgers & Paxton is currently working with the same design/build team on the second phase of the build-out.

United States Postal Service - Post Office Buildings North Valley & East Valley Distribution Centers



Bridgers & Paxton provided mechanical and plumbing design services for two United States Postal Services (USPS) Delivery Distribution Centers (DDC), a 61,000-square-foot facility in Phoenix, Arizona and a 62,000-square-foot facility in Gilbert, Arizona. B&P teamed with Hofmann-Dietz Architects (Architectural Design Team), Paragon Structural Design Inc. (PSDI), Keith Hubbard Engineering (Civil Engineering Design Team), GK Flanagan & Associates (GKFA, Landscape Architectural Design Team), and FCI Constructors, Inc. (General Contractor) to provide design/build services to the USPS for these projects. The design/build team also worked closely on these projects with Midstate Mechanical and NJ Schneider Plumbing.

The DDC facilities each had an overall budget of approximately \$4.4-million and a mechanical, plumbing, and fire protection budget of approximately \$700,000. The facilities are conditioned by roof-mounted, packaged, air-conditioning units in accordance with the USPS Design Guidelines. Two 30-hp rotary screw compressors; two 1/2-hp air-cooled, non-cycling, refrigerated air dryers; a 30-gallon oil/water separator with external activated carbon filter, coalescing filters, and a 200-gallon receiver provide process compressed air for the USPS digital bar code sorters and flat mail sorters.

As a result of these successful projects, B&P, HDA, PSDI, KHE, GKFA, and FCI have been awarded a 5-year open-end contract to provide A/E services for all new USPS facilities within the State of Arizona.



1999 Giants Report

Bridgers & Paxton is ranked in the top 100 mechanical/electrical consulting engineering firms in the nation by *Consulting-Specifying Engineer*. The ranking of engineering firms was based on mechanical/electrical billings from the last fiscal year.

Design/Build Casino Rolls into the Southwest's Top 25 Jobs for 1999

Isleta Pueblo Casino



The **Isleta Pueblo Casino** was ranked 23rd in the Southwest's Top 25 Projects for 1999 by *Southwest Contractor* magazine for the states of New Mexico, Arizona, and Nevada. The Isleta Pueblo Casino is being built on a 60-acre site in Albuquerque, New Mexico. It will cost approximately \$38 million and is scheduled for comple-



tion in December 2000. The three-story building totaling 232,000 sq. ft. will include gaming on the first level, offices on the second level, and a penthouse restaurant on the third level.

The building HVAC systems are served from a central plant containing two 450-ton water-cooled chillers and two 5.6-million-Btuh hot-water boilers. The casino areas are served from air handler units capable of providing 100% outside air. The units have heat recovery and indirect evaporative cooling sections to minimize energy use. The amount of outside air is controlled by air quality sensors located in the casino.



The design/build team includes Yearout Mechanical for project management/engineering, Bridgers & Paxton for mechanical/plumbing design; Jaynes Corporation as General Contractor, and Paul Pink Architects in Minnesota as design/build architect.