



Valley Engineer Newsletter

January, 2016

UPCOMING PROGRAMS

- February 6, 2016 (snow date February 7), MATHCOUNTS®, at Northeast Middle School in Bethlehem, PA.
- February 26, 2016, Lehigh Valley Engineering Council Banquet, Holiday Inn, Breiningsville, PA
- March 17, 2016, Micro Boot Camp, DeSales University, Center Valley, PA (tentative)
- April 7, 2016 Hoover Mason Trestle tour, Bethlehem, PA



**PENNSYLVANIA SOCIETY
OF
PROFESSIONAL ENGINEERS**

**LEHIGH VALLEY CHAPTER
(ORGANIZED 1935)**

CARBON, LEHIGH, MONROE, & NORTHAMPTON COUNTIES

President's Message

Alfred Gruenke, PE

We hope that all of you had a very happy holiday season, and a prosperous New Year, though recent events on Wall Street are prophesizing anything but prosperity.

But, we carry on. Kevin Campbell and his small army of volunteers, commandeered by Chris Williams, are getting ready for another round of MATHCOUNTS on February 6th at Northeast Middle School in Bethlehem. I have been associated with this endeavor for almost ten years, but I have to admit that the thrill of all that brain power in one place is still awe inspiring. Further, if one wants a humbling experience, try solving some of those problems! It's so much easier to spout lofty rhetoric about how tough things were before calculators, when we had nothing but pencil, paper, and a slide rule (log-log decitrig for me). Sure we had it hard, but I think the problems today are more difficult. These kids are good!

Kevin's contribution to MATHCOUNTS has received State recognition. He has been asked to assist with the State MATHCOUNTS competition in March. The impact of our Chapter on PSPE continues to grow.

Peter Staffeld PhD, PE, F.NSPE, will again moderate the Countdown Round session. We are fortunate to have someone of Peter's stature (and I don't mean height) in our organization.

Our scholarship fundraising is doing okay, but a couple of major donors have not made a commitment. I'm hoping persistence will be rewarded.

Continued on page 2

In December our Chapter had a tour of Cetronia Ambulance Corps whose function and dedication impressed our members. So much so that the Board has decided to donate \$1,000.00 to the Ambulance Corps, and forever enshrine our Chapter's name on their Wall of Fame. The contribution can be on the installment plan. We are donating \$250.00 at this time, the remainder in the very near future. Service to the engineering community, service to the community at large!

The week of February 26th is Engineering Week, which celebrates engineers, and how engineers make a difference in our world. The Lehigh Valley Engineering Council (LVEC) will host the Engineering Week banquet at the Holiday Inn. Located at the intersection of Rt. 100 and I-78 in Fogelsville (ac-tually Breinigsville). The featured speaker for the evening is Andrei G. Jablokow, PhD. He will be presenting "Think Like an Engineer, Speak Like a Leader - The Ins and Outs of High Performance Engineering Leadership." Engineers are more than educated technocrats. We're often leaders, and leaders lead. This presentation is PDH eligible.

Our Chapter again is a Gold Sponsor for this event, contributing \$500.00. This entitles us to a table for eight. Our website, www.lvpspe.org, is again being utilized by LVEC for anyone wishing to register and pay on-line. When LVPSPE members register and pay via our website we keep the registration fee, up to eight people. So, when making your reservation, make sure you note LVPSPE for Affiliation to keep our accounting neat. Early Bird registration is \$35.00 and ends February 10th. Registration closes February 22nd.

Display your pride in your profession and our organization by attending. See you there.

I have a tip that can take five strokes off anyone's game. It's called an eraser.
-Arnold Palmer

One language sets you in a corridor for Life. Two languages open every door along the way.
-Frank Smith

High Tech meets Hands-on Tech

3D printing. The words conjure up visions of a chrome and glass "clean room", with attendants in white lab coats and hair nets scurrying about to serve the machine. In fact, the term 3D printing is a misnomer. 3D printing should more properly be called additive manufacturing, a process whereby an object is created by laying down successive layers of material until the entire object is created. The additive is a resin or plastic; anything that can be made to flow and adhere to itself. The "printer" is controlled by various software packages such as Solid Works or Autocad.

On a chilly January evening twenty members and guests of the Lehigh Valley Chapter were dazzled by Fab Lab Manager Jeffrey Boerner and woodworking instructor Robert Blum. It is located on Bethlehem's South Side in a building that once housed part of Bethlehem Steel's corporate structure.

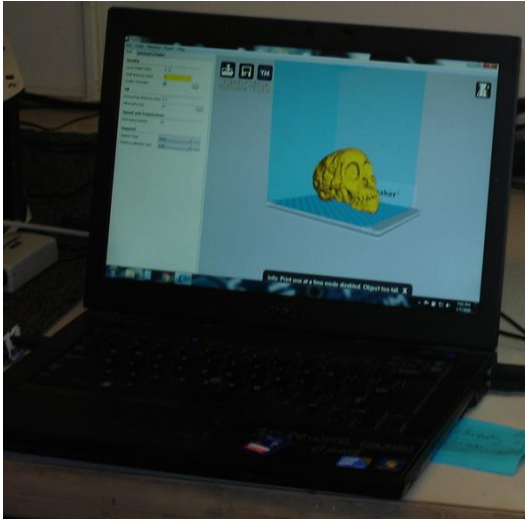
The Fab Lab (Fabrication Laboratory) concept combines the high-tech wizardry of 3D printing plus other high tech equipment with some good, state-of-the-art woodworking and metalworking equipment. It is associated with Northampton Community College but does not offer degree credits. It is somewhat a bit of a throwback, to the times when people enjoyed creating things with their hands. The facilities are available for anyone to use for a mere \$10.00 an hour. Instructional classes in the use of the various equipment are offered periodically at a nominal cost.

Making guitars is one of Fab Lab's specialties, with all the necessary equipment and material to actually make one! In fact, Fab Lab has a very close relationship with Martin Guitar of Nazareth. Martin Guitar has paid the tuition of many of their employees to attend guitar fabrication classes. There is a sound lab to test the performance of the guitars and any other purpose which may arise.

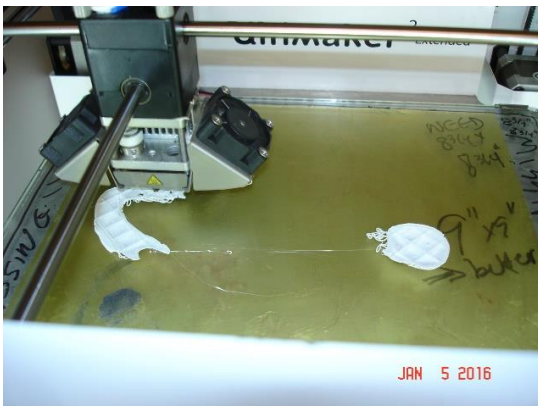
Having 3D printing explained does not take the magic out of the process. It is possible to fabricate complex shapes, even some which are im-

Continues on page 3

possible by any other means. The "print" head is driven by servomotors and cog belts, with a precision within .001 inch. 3D printing is one of the courses offered.



When it's finished

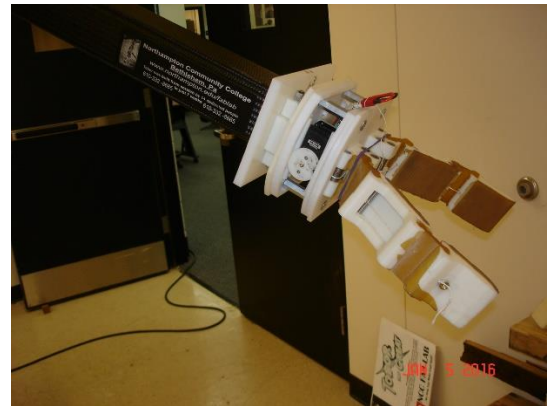


The beginning of "printing" the above.



A beaming Jeffrey Boerner with one of his creations.

The pride of the Fab Lab is a robot arm called TOBOR the GREAT. It was built by fourteen talented people in only seven weeks. Movement is by Servomotors, controlled by a series of Arduino robotic computers. The "hand" follows the movement of a glove worn by the operator. The team is presently working on an upgrade, so sensors in the robot's hand send signals so the operator can "feel" what the hand feels. Arduino programming is one of the courses offered by the Fab Lab.



The Hand of TOBOR the GREAT.

The robot has been displayed at various robot exhibitions around the country, most recently in Philadelphia.

Jeffrey Boerner and Robert Blum ably explained the Fab Lab concept and a lot of the high-tech gadgets. We thank Jeff and the FAB LAB staff for dispelling some of the myths, and opened a new portal of learning for many of us. Course Prices are in the \$200.00 range for the courses. All equipment is provided. See the NCC website for course listings.

<https://lifelearn.northampton.edu/modules/shop/index.html?action=courseBrowse&CatalogID=81>.

It doesn't make sense to hire smart people and then tell them what to do; we hire smart people so they can tell us what to do.

-Steve Jobs

I would like to electrocute everyone who uses the word "fair" in connection with income tax policies.

-William F. Buckley, Jr.

SCHOLARSHIP SPONSORS

A great way to be involved in the LVPSPE Chapter is to contribute to the **LVPSPE SCHOLARSHIP FUND**. Please Contact the Valley Engineer Editor to sponsor scholarships for the remainder of the calendar year.

If you would like to contribute in any amount – please send your TAX DEDUCTIBLE donation to PA ENGINEERING FUND. Donations should be mailed to:

LVPSPE
P.O. Box 3441
Allentown, PA 18106

Please note “LVPSPE Scholarship Fund” on the comment line.

Or, you may contribute via the LVPSPE website <http://www.lvpspe.org/Donations>.

Scholarship application is at <http://www.lvpspe.org/Scholarships>. Any questions regarding scholarships can be directed to

Alex Dezubay, PE
610-597-2007
Scholarship@LVPSPE.org

PSPE SCHOLARSHIPS

The Pennsylvania Engineering Foundation currently administers the following scholarships for engineering students:

Undergraduate

- \$1,000 PEF Grant: (2 awards)

Upperclassman

- \$2,000 Pennsylvania Engineering Foundation Grant

Applications and guidelines are on-line now at <http://www.pspe.org/scholarships>

2014 – 2015 LVPSPE SCHOLARSHIP DONORS

Graduate

FLSmith, Inc.
Bethlehem, PA
Bridge Gap Engineering
Northampton, PA

Senior

Lutron Electronics Co., Inc.
Coopersburg, PA
PPL
Allentown, PA
Millenium Electro-Hydraulics Services
Whitehall, PA
VICTAULIC Company
Easton, PA

Junior

Barry Isett & Associates
Allentown, Phoenixville, Hazleton and
Forty Fort, PA; Phillipsburg, NJ
Borton Lawson Engineering
Bethlehem, PA
Hanover Engineering Associates
Bethlehem, PA
McTish, Kunkle & Associates
Allentown, PA
Rettew
Lancaster, PA
Pennonni Associates, Inc.
Bethlehem, PA
The Pidcock Company
Allentown, PA

Sophomore

PEAK Technical Staffing USA
Horsham, PA
Advantage Engineers
Allentown, PA
DME Alliance
Allentown, PA
Newton Engineering
Allentown, PA
Staffeld Engineering Services
Center Valley, PA

Continued on page 15



MONARCH
PRECAST CONCRETE CORPORATION

Paul L. Stein, Jr.

425 North Dauphin Street
Allentown, Pa 18109-2199

Phone: 610-435-6746
Fax: 610-437-7133
pstein@monarchprecast.com

www.monarchprecast.com




McTish, Kunkel & Associates
Consulting Engineers & Surveyors

Site Planning & Design
Land Surveying
Transportation Engineering
Structural Engineering
Environmental Permitting
Municipal Engineering
Construction Inspection

3500 Winchester Rd., Suite 300
Allentown, PA 18104
610.841.2700
email: info@mctish.com

Engineering firm of choice since 1972



KCE
KEYSTONE
CONSULTING
ENGINEERS

www.KeystoneConsultingEngineers.com

Three Regional Locations


East Office
Bethlehem, PA
610-865-4555

West Office
Wescosville, PA
610-395-0971

North Office
Kresgeville, PA
610-681-5233

Johann F. Szautner, D.I., P.E., P.L.S.

CIVIL & FORENSIC ENGINEERING



1775 Euclid Avenue
Bethlehem, PA 18018-2112

Phone: 610 216 3918
forensicengineerszautner@verizon.net



**STAFFELD
ENGINEERING
SERVICES**

Staffeld Engineering Services (SES) provides business and engineering consulting services, primarily to chemical and manufacturing companies.

We develop and implement economical solutions for a wide range of manufacturing and technical issues. SES offers the following services:

- Process Troubleshooting
- Process Improvements
- Equipment Specifications
- Modeling & Optimization
- Project Economics
- Technical Training Services

Scan the QR code below to visit our website (www.staffeld.com) for more information.



STAFFELD ENGINEERING SERVICES
Post Office Box 241
Center Valley, PA 18034-0241

www.staffeld.com
1-855-STAFFELD
peter@staffeld.com

www.newtonengineering.us



newton
ENGINEERING

TRAFFIC, SURVEYING AND DEVELOPMENT PROFESSIONALS
- *Tomorrow's Engineering Solutions Today* -

TRAFFIC, TRANSPORTATION & HIGHWAY

- Highway Occupancy Permits
- Highway and Driveway Design
- Traffic Counts, Analysis & Projections
- Traffic Impact Studies

LAND DEVELOPMENT & SUBDIVISION ENTITLEMENTS

- Subdivision Layout and Design
- Land Development Engineering
- Sketch and Concept Plans
- Soil and Erosion Control Plans

PRECISION SURVEY

- Boundary Surveys
- Topographic Surveys
- Construction Stake-Out
- As-Built Plans

PROFESSIONAL, CPESC & CERTIFIED

- Professional Civil Engineers
- Professional Surveyors
- Professional Traffic/Operations Engineers
- Certified Stormwater Quality Professionals
- Certified Erosion & Sedimentation Professionals

CONTACT US AT:
Suite 212, Zack Building
6235 Hamilton Blvd. Allentown, PA 18106
(p) 610-366-0060 (f) 610-366-7818
(e) info@newtonengineering.us



KOHN ENGINEERING

FIRE PROTECTION CONSULTING

Donald J. Kohn, P.E.
Principal

4220 Mountain Road
Macungie, PA 18062

KohnEngineering@ptd.net www.KohnEngineering.com

Phone 610-967-4766 Fax: 610-967-6468



PEAK TECHNICAL STAFFING USA

Engineering Talent. Guaranteed.

Rob Cleland
VICE PRESIDENT - NORTHEAST REGION

215.586.3600 866.234.PEAK (7325) cel 267.221.2038
robcleland@peaktechnical.com www.peaktechnical.com
601 DRESHER ROAD, SUITE 250, HORSHAM, PA 19044



Minuteman Press

Design • Print • Copy • Posters • EDDM
Mailing Services • Promo Products • Post Office

BLUEPRINTS
New Service! **\$1.50** D Size Prints

ALLENTOWN 1801 West Tilghman Street Allentown, PA 18104 484.223.3311 M-F 8am-6pm Sat 8am-2pm	BETHLEHEM 123 East Broad Street Bethlehem, PA 18018 610.865.9946 M-F 7:30am-5:30pm
EASTON 661 South 25th Street Easton, PA 18045 610.923.9266 M-F 8am-6pm Sat 8am-2pm	DESALES UNIVERSITY 2755 Station Ave Center Valley, PA 18034 610.282.1100 x1201 M-Th 9am-5pm Sat 9am-4pm

WWW.MMPLV.COM

 **UNITED STATES POSTAL SERVICE.** **FULL SERVICE CONTRACT UNITS**

NOW AT OUR ALLENTOWN & EASTON STORES

Alfred Gruenke, PE

Kevin Campbell, PE

Grayson McNair, PE

THE PIDCOCK COMPANY

CIVIL ENGINEERING
LAND PLANNING
ARCHITECTURE
LAND SURVEYING

FOUNDED 1924

Oxford Drive at Fish Hatchery Road
2451 Parkwood Drive
Allentown, Pennsylvania
18103-9608

TELEPHONE: 610-791-2252
TELEFACSIMILE: 610-791-1256
EMAIL: info@pidcockcompany.com
WEBSITE: www.pidcockcompany.com



Engineers, environmental consultants, surveyors, site designers, and safety advisors committed to sustainable development and resource conservation.

Charles Myers, PE
Director of Energy & Environmental Engineering
cmyers@rettew.com
484-240-4519

610-866-8330
rettew.com |   

PENNSYLVANIA
*Athens • Lancaster
Lehigh Valley • Mechanicsburg
Pittsburgh • Williamsport*

J.P. MASCARO & SONS



If it's service, it's us!

1-888-MASCARO www.jpmascaro.com



R. Peruzzi Inc.
Electrical Engineering Consultant

Robert Peruzzi, PhD, PE
President

P: 610 462 3939
E: peruzzi@rperuzzi.com
W: www.rperuzzi.com

719 Fourth Avenue
Bethlehem, PA 18018

Behavioral Modeling and Verification for RF
Analog and Mixed-Signal IC and SOC Design

**Integrity
Ownership
Trust**

MULTIDISCIPLINE
ENGINEERS
& CONSULTANTS

**BARRY
ISETT &
ASSOCIATES INC**



Landscape Architecture Land Planning
Water & Waste Water Construction Se
Development
Inspections Lan
Land Planning
Services La
Municipal Engineering Plumbing Water



SOCIETAS AWARD
FOR RESPONSIBLE CORPORATE CONDUCT

www.barryisett.com

- ALLENTOWN 610.398.0904
- PHOENIXVILLE 610.935.2175
- PHILLIPSBURG 908.454.9500
- HAZLETON 570.455.2999
- FORTY FORT 570.285.8200



Hanover

Engineering Associates Inc



*Proudly serving our clients and community for over 40 years
with offices throughout Pennsylvania*

- Municipal Engineering and Planning
- Structural Engineering
- Mechanical Engineering
- Environmental Services
- Subdivision and Land Development
- Stormwater Management
- Transportation Planning and Permitting
- Surveying
- Utility Line Design and Permitting
- CAD/GIS/GPS Services

Office Locations

<i>Bethlehem</i>	<i>610.691.5644</i>
<i>Pocono</i>	<i>570.688.9550</i>
<i>Lehigh</i>	<i>610.395.9222</i>
<i>Lancaster</i>	<i>717.721.7444</i>
<i>Elizabethtown</i>	<i>717.367.0144</i>
<i>Towanda</i>	<i>570.265.1020</i>
<i>Wellsboro</i>	<i>570.724.5326</i>
<i>New Castle</i>	<i>724.598.6414</i>

Putting your project needs first ... always

www.hanovereng.com



Develop Your Career with Us

“I’ve been a part of Lutron for 3 ½ years.”

Jamie McMahon (Electrical Engineering Major)
Design and Development Engineer

At Lutron, we’ve been designing and manufacturing energy-saving light control solutions since 1961.

Our success depends on your success. Join Lutron’s Innovation Leadership Program and you’ll develop the skills and knowledge needed to win in the world of innovation.

- Immediately join an engineering development team
- Receive formal mentor support
- Collaborate regularly with business unit managers and directors
- Acquire real-world experience through field assignments
- Foster relationships with Lutron’s global customers

Key opportunities include:

- Engineering**—Electrical, Mechanical, Computer, Software, Manufacturing, Industrial, Architectural
- Science**—Physics, Chemistry, Math

Opportunities are also available in sales leadership and field engineering leadership—**hiring all majors.**



To learn more about how you can be a part of our future visit

www.lutron.com/careers



▲ Dynamic keypad in Black



©2012 Lutron Electronics Co., Inc. | PN 308-2717 REV/B

Bridging the World through Relationships of Trust



Bridge Gap Engineering is an agile and highly responsive engineering company lead by a uniquely diverse team of trusted cement and minerals industry experts. Based on service, solutions and relationships, Bridge Gap Engineering is a learning organization focused on knowing our customers and their changing needs in the 21st Century. Our experience spans decades and our knowledge spans multiple industries encompassing plant design, process design, and plant maintenance and operations.

PE Engineers

Josh Cooney • Peter Paone • Roger Wall • Frank Walsh • Dan Sautter

E.I.T.

Jeff Kutz

1717 Main Street, Northampton, PA 18067 • 610-400-8145

www.bridgegapengineering.com

COUPLING INNOVATION WITH CONFIDENCE



Since 1919, Victaulic has been the world's leading producer of pipe joining solutions. Our products are used in the most recognizable landmarks, from the Hoover Dam to Egypt's Alexandria Library, making bold designs possible.

Backed by 1,800+ patents, Victaulic is committed to our customers' needs, providing solutions for your design challenges. We draw it, train on it and certify the installation, all while utilizing best-in-class technology. From concept through construction, we ensure your project runs efficiently as possible.

Engineering Solutions:

- Construction Piping Services (CPS) helps reduce risk and increase reliability for a smoother project experience.
- BIM Software keeps communication and collaboration in sync.
- Proprietary truck loading software saves time and confusion on the job with phased product schematics.

victaulic.com



VICTAULIC IS A REGISTERED TRADEMARK OF VICTAULIC COMPANY.
© 2014 VICTAULIC COMPANY. ALL RIGHTS RESERVED.



POWERING OUR QUALITY OF LIFE

PPL Electric Utilities continues to offer exceptional career opportunities as we expand our team of leaders. If you are an experienced Engineering Manager with your PE and a proven track record of successfully leading Transmission and Distribution engineering teams, we want to talk to you.

Explore our available positions at www.pplweb.com/careers and see for yourself how PPL Electric Utilities can brighten your career!

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, protected veteran status, or disability status.

www.pplelectric.com



Proud to Honor our Engineers in the Lehigh Valley & Around the Globe



Engineering is what we do at FLSmidth. As a world leader in providing equipment and services to the cement and minerals industries, our success begins with our engineers who plan and design the systems and equipment for which our customers rely.

2040 Avenue C · Bethlehem, PA 18017 · www.flsmidth.com

Internet Addresses

National Society of Professional Engineers

www.NSPE.org

Pennsylvania Society of Professional Engineers

www.PSPE.org

Lehigh Valley Chapter – PSPE

www.LVPSPE.org

2015 – 2016 State Officers

State Director

Angelika Forndran, PE
StateDirector@LVPSPE.org
215-536-7075

Alt. State Director

Open

VP Northeast:

Michael F. Basta, PE
StateVP@LVPSPE.org
610-767-1617

Board of Direction Meetings

The monthly Board of Direction meetings are 6:00 PM on the second (2nd) Monday of each month. Open to all members; they are held at the office of Barry Isett & Associates, 85 South Route 100, Allentown, PA.

2015–2016 Chapter Officers

President:

Alfred Gruenke, PE
President@LVPSPE.org 610-395-6561

Vice President:

Brian Kutz, PE
VicePresident@LVPSPE.org 484-821-0470

Secretary:

Chris Williams, PE, LEED AP
Secretary@LVPSPE.org 610-398-0904

Treasurer:

Ray Szczucki, PE
Treasurer@LVPSPE.org 610-614-1245

Immediate Past President:

Kevin Campbell, PE, LEED AP
PastPresident@LVPSPE.org 610-398-0904

Chapter Directors:

Don Kohn, PE
Directors@LVPSPE.org 610-967-4766

Nicole Gasda, PE
Directors@LVPSPE.org

Alex Dezubay, PE
Directors@LVPSPE.org 610-597-2007

**2014 – 2015 LVPSPE
SCHOLARSHIP DONORS**

(cont'd)

Freshmen

- Kohn Engineering
Macungie, PA
- Civil & Forensic Engineering
Bethlehem, PA
- R. Peruzzi, Inc.
Bethlehem, PA
- J.P. Mascaro & Sons
Audubon, PA
- Keystone Consulting Engineers
Bethlehem, Wescosville and Kresgeville, PA
- Monarch Precast Concrete Corporation
Allentown, PA
- Lock Ridge Engineering
Emmaus, PA

Contributors

- Alfred Gruenke, PE
- Grayson McNair, PE
- Kevin Campbell, PE
- Michael F. Basta, PE



**Borton
Lawson**
ENGINEERING
ARCHITECTURE

PROUDLY SUPPORTS
MATHCOUNTS and the
LVPSPE Scholarship Program

484.821.0470 | borton-lawson.com



**ADVANTAGE
ENGINEERS**
your engineering advantage



Providing timely, professional, cost effective
Design & Construction Phase Geotechnical Services
for over 1,300 projects and counting.

6520 Stonegate Drive, #110
Allentown, PA 18106 • (610) 366-7120

*Serving the Mid-Atlantic Region from 5 offices in
Pennsylvania, Maryland, and New Jersey*
www.advantageengineers.com



DME

Engineering Solutions For Life

PROCESS • MECHANICAL • ELECTRICAL •
PLUMBING

- Life Sciences
- Food & Beverage
- Chemical Process
- Research & Development

www.DMEforLife.com 610.366.1744

**Engineering Design Services for
Advanced Technology Industries**

DME Alliance Inc., 7540 Windsor Drive, Suite 311, Allentown, Pennsylvania 18195



PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

PROVIDING ENGINEERING SERVICES SINCE 1966

Construction Services
Energy & Sustainability
Environmental
Geotechnical
Laboratory Testing
Landscape Architecture
Materials Testing & Inspection
MEP
Municipal
Planning
Site Design
Structural
Survey & Geomatics
Transportation
Water/Wastewater



2041 Avenue C, Suite 100, Bethlehem, PA 18017
610-231-0600 | www.pennoni.com

Lock Ridge Engineering

Michael F. Basta, PE

When in trouble, when in doubt,
Don't just stand there, wave and
shout.
Calm yourself, and have no fear,
Your savior has arrived, an
Engineer

Burma Shave

MASADA

Alfred Gruenke, PE

Israel is such an interesting place, on so many levels. It seems as if the history of the whole world is compressed in Israel, a rather small country on the Eastern shore of the Mediterranean Sea. It is considered holy by three major world religions, so there is something there for almost everyone.

I daresay that there have been more books, articles, stories, whatever, written about Israel than any other place on Earth. It was an interesting time for me.

Besides being culturally diverse, Israel has a number of unusual geographic features. There is a lush coastal strip, the Judean Desert, and the Dead Sea, the lowest spot on Earth. This geological anomaly is an extension of the Great Rift Valley of East Africa and is 1,407 ft. below sea level. The Jordan River connects the Dead Sea to the Sea of Galilee, the source of its water. There is no outlet to the open sea. Millions of years of mineral deposits has raised the mineral content to among the highest of any body of water in the world. One cannot sink in the Dead Sea. The water feels oily; I would think being immersed in it would not be pleasant.



A sign on the road from Bersheba to the Dead Sea.

Extraction facilities in both Israel and Jordan harvest these minerals for various purposes. The area around the Dead Sea has a number of phosphate deposits so I assume that this is a major

component of minerals dissolved in the water also.

As an aside, the Judean Desert is one of the most dismal deserts I've ever seen. It may not be big, but its barrenness makes up for it, especially the road from Jericho to Jerusalem. The story of the Good Samaritan took on an extra significance after driving on it.

One of the lesser known stories coming out of Israel is the fortress of Masada, located on the western shore of the Dead Sea. The diamond shaped "mesa" is approximately 600 x 400 meters in area, and about 400 meters above the Dead Sea plain. It juts out from the Judean Plateau similar to an off-shore island, separated from the mainland by a huge chasm that had been eroded over the millennia.

Masada is a natural fortress by itself, but was fortified by King Herod around the time of Christ. Herod had more enemies than friends within Judea, but supposedly he built it because he feared an attack from Cleopatra of Egypt. It had all the comforts of home; food storage, swimming pools, palaces, plus other necessities of life 2,000 years ago.

The fortress jumped into the pages of history around 73 AD, following the destruction of the temple in Jerusalem by the Romans. Around 1,000 Jewish zealots and their families overcame the fortress, massacring the Roman garrison. They remained safe from the Romans for over two years.

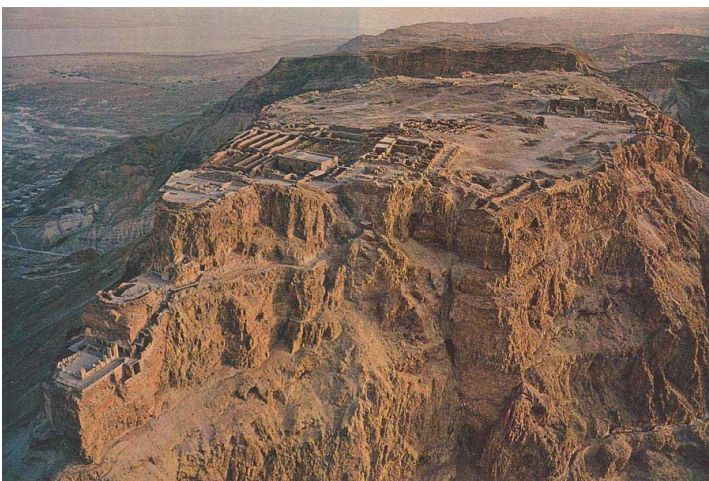
The Romans finally got tired of the shenanigans and decided to put an end to it. According to Josephus a besieging Roman Army of 10,000 soldiers built a wall around Masada and a ramp on the east side using Jewish prisoners. The nearest food and water source for the Romans was ten miles away, so they were at a disadvantage. The siege lasted only three months. The Romans attacked, but found only dead bodies. Heads of household had killed their families, ten men then killed the rest of the men, then one killed the others, who killed himself.

Continued on page 18

To commemorate this heroic stand the swearing-in of new recruits of the Israeli Parachute Division is on Masada. Their slogan is, "Never again!"



Masada, view from the road.



Masada, aerial view.

My assignment was at Negev Phosphate on the northern edge of the Negev Desert. I lived at the Holiday Inn (no relation to the American motel chain) in Bersheba (Be'er Shiva). On a day off I drove north, then east to the Dead Sea side of Masada in order to tour this ancient site. The distance was around 60 miles and took only 90 minutes to drive.

There is a cable car to the top at a price around \$10.00. I thought this was exorbitant so I decided to walk up the Serpentine Path, the traditional way to reach the top.



View from the top. Note the cable car and Serpentine Path.

I attached myself to a group of German tourists so I heard the presentation by a tour guide for free. She explained that the site was well stocked so it could withstand a siege of many years. Water was no problem. Even though this was a desert it does rain occasionally, and she pointed out the intricate drainage and cistern system so that every drop of rain is utilized.

I saw the same system at other sites in Israel. Under the right circumstances a city could withstand a siege of many years. Avdat, in the Negev desert, survived a siege of 29 years by the Egyptians. Engineering water reclamation systems was probably a lucrative and well respected profession!

King Herod's castle was on the north side of Masada, the cooler side. The ruins of the palace still exist.

Talking to my colleagues about Masada I realized that I had not prepared myself well and missed quite a few of the features. I had to go back. However, I decided to go from the western side, up the Roman ramp.

Continued on page 19



Roman ramp, on the west side.

This path was a lot easier than the Serpentine Path! Unfortunately there were no tours I could attach myself to, so I just wandered around with a guidebook in hand.

I toured a synagogue, a Byzantine chapel, and even a Roman-style bath. Herod certainly liked his creature comforts!

King Herod had his faults but he was a tremendous builder. I think his son-in-law was a contractor, so Herod went on a building spree to keep him from moving in with him! Besides Masada he also built an expansion of the Second Temple in Jerusalem, a palace/fortress at Herodium located a few miles South of Jerusalem, and the city of Caesarea on the Mediterranean coast.

Working in Israel was pleasant. Five days a week, Fridays and Saturdays off, a car, and drivable roads.

During the two and a half months in Israel I saw things and went to places one only hears about in religion or history classes. An interesting and informative assignment, to say the least.

 A man in a hot air balloon realized he was lost. He lowered altitude and spotted a man in a boat below. He shouted to him, "Excuse me, can you help me? I promised a friend I would meet him an hour ago, but I don't know where I am."

The man in the boat consulted his portable GPS and replied, "You're in a hot air balloon

approximately 30 feet above a ground elevation of 346 feet above sea level. You are 40 degrees, 37 minutes north latitude and 75 degrees, 22 minutes west longitude."

The balloonist rolled his eyes and said, "You must be an Engineer."

"I am," replied the man. "But how did you know?"

Well," answered the balloonist, "everything you told me is technically correct, but I have no idea what to make of your information, and I'm still lost. Frankly, you've not been much help to me."

The man smiled and responded, "You must be a politician."

"I am," replied the balloonist. "But how did you know?"

"Well," said the man, "You don't know where you are or where you're going. You've risen to where you are due to a large quantity of hot air. You've made a promise that you have no idea how to keep, and now you expect ME to solve your problem. You're in EXACTLY the same position you were in before we met, but somehow, now, it's MY fault."

 Yogi Berra died last year. He was a fantastic baseball player, but will always primarily be remembered for his mangling of the English language. This is a short sampling.

"I always thought that record would stand until it was broken."

"He hits from both sides of the plate. He's amphibious."

"If you don't know where you are going, you might wind up someplace else."

"You can observe a lot by watching."

"It gets late early out here."

Minutes for the January 11, 2016 Board of Directors Meeting
6:00 pm at the office of Barry Isett & Associates, 85 S. Route 100, Allentown, PA

Attendees: Al Gruenke, Brian Kutz, Chris Williams, Don Kohn, Ray Szczucki (phone), Kevin Campbell, Angelika Forndran, Nicole Gasda, Peter Staffeld and Al Dezubay

- A. Call to Order – Chris Williams called the meeting to order at 5:59
- B. MATHCOUNTS – Kevin Campbell
- Scheduled for 2/6/2016 at Northeast Middle School (1170 Fernwood Street, Bethlehem, PA 18018) in the Bethlehem Area School District.
 - Will have access to school at 4pm the prior evening for event setup.
 - Food orders have been made, flash drives have been ordered, all volunteers in leadership roles from last year have confirmed their participation.
 - In addition to serving as coordinator for the local event, Kevin Campbell has now taken on the role as assistant coordinator for the state competition
 - Discussed donation to PEF for state competition. All agreed to wait until after the local event to make a decision.
- C. Programs – Al Gruenke
- February – MATHCOUNTS
 - March – Possibly a 2 PDH event at DeSales. Would involve two speakers with dinner to be provided. Considering presentations from Frank Walsh, EJ Kleintop and the NCCC Fab Lab. Date to be determined.
 - April – Hoover-Mason Trestle Tour at Bethlehem Steel. Date to be determined.
 - May – Annual LVPSPE banquet.
 - Kevin Campbell suggested making a donation to Cetronia Ambulance Corps. The December facility tour and room was made available at no cost to the Chapter. On a motion by Kevin Campbell, seconded by Nicole Gasda, all agreed to make a donation of \$250.00 to Cetronia Ambulance Corps.
- D. President – Al Gruenke
- Al has been attending LVEC meetings recently. After coordination with LVEC, it was determined that the Chapter owes LVEC \$1,530 for last year's Engineers' Week Banquet.
 - On a motion by Don Kohn, seconded by Nicole Gasda, all agreed to purchase a table at the 2016 banquet.
- E. Secretary – Ray Szczucki
- Ray reviewed account balances: Checking \$2,757.52, Bus. Mkt rate acct \$23,632.72.
 - Discussed various deposits, transfers and payments for website, holiday party, awards, etc.
 - Discussed adding Al Gruenke and Brian Kutz as signatories on bank accounts
- F. Scholarships – Al Dezubay
- Al to send email to guidance counselors soon. Received 26 applicants last year, hoping for similar or better turnout this year.