



LEHIGH VALLEY CHAPTER
 PENNSYLVANIA SOCIETY OF
 PROFESSIONAL ENGINEERS

Lehigh, Northampton, Monroe, and Carbon Counties
(Organized 1935)

Valley Engineer Newsletter

December 2023-January 2024

Activities:

Mathcounts - Saturday February 3 8:00 AM with a snow date of Sunday February 4th, Orefield Middle School.

Engineer’s Week Banquet – Friday February 23rd Wood Dining Room, Iacocca Conference Center, Bethlehem. Registration deadline: Feb. 18.



**PENNSYLVANIA SOCIETY
 OF
 PROFESSIONAL ENGINEERS**

**LEHIGH VALLEY CHAPTER
 (ORGANIZED 1935)**

CARBON, LEHIGH, MONROE, & NORTHAMPTON COUNTIES

President’s Message!

Alexa Rooney, EIT, JD, President

Happy New Year! Hope everyone had a great holiday season and enjoyed time with your family and friends. I am excited for what this new year will bring. To start 2024, the Lehigh Valley Chapter has elected a new Vice President. Congratulations to Jonathan Kiechel and welcome to the LVPSPE Board.

Our next upcoming event, MATHCOUNTS®, is scheduled for Saturday, February 3, 2024, snow date of Sunday, February 4, 2024, starting at 8:00 AM. The event will take place at Orefield Middle School. As mentioned in the previous newsletter, this event promotes STEM education and encourages students to pursue careers in engineering. LVPSPE has supported this competition for many years and are very excited to continue to support this event for years to come. We are looking for volunteers to help in the scoring room and testing room. If you would like to volunteer or would like more information please reach out to Chris Williams, cwilliams@barryisett.com.

The Lehigh Valley Engineering Council will hold its annual Engineering Week Banquet at Wood Dinner Room at Iacocca Conference Center at Lehigh University in Bethlehem, PA. This year the featured speaker will be Terry Hart, astronaut and Professor of Mechanical Engineering at Lehigh University. PSPE will be presenting our Engineer of the Year and Young Engineer of the Year awards at the Banquet. If you are interested in attending the Engineer’s Week Banquet, please register at:

Continued on page 2

<http://www.lvengineeringcouncil.org/EngWeekBanquet>. Deadline for early registration is February 9, 2024 and the last day to register is February 20, 2024.

We will have a few tour opportunities for our members to attend this spring. Please keep an eye out in upcoming newsletters for more information for our 2024 events. Here is to a great New Year in 2024!

One of our goals at LVPSPE is to provide future engineering students scholarships to attend college for engineering. Kyle Kullman one of our scholarship winners from last year sent a thank you note that I would like to share with you. We could not provide our scholarships without your support. A big THANK YOU to all our scholarship sponsors.

Dear Lehigh Valley PSPE,

I am writing to thank you again for your generous contribution to my higher education, and to update you on my first semester at The Pennsylvania State University. I have finished my first semester at college, and enjoyed every second of it! I earned a 4.0 GPA while completing 18 credits.

I have attended many sporting contests, including all of the home football games, several basketball games and men's ice hockey. In addition I have joined Ohana, benefitting THON, a nonprofit organization raising money for families who have been impacted by childhood cancer. I am also an active member of the Land Surveying Club, which falls under the umbrella of Penn State ASCE.

I have explored many different types of engineering in my first semester while trying to narrow down my specialty area and ultimately declare a major. I am considering adding a minor in Engineering Leadership Development, but I still have some time to decide.

I am looking forward to the upcoming months at Penn State. I have tickets to see other sporting events and concerts, and I am excited to see what the future holds for me during and beyond my studies.

Once again, I express my gratitude for your belief in my potential to make a difference in the world and for investing in my future.

Sincerely, Kyle Kullman

The Neighborhood Improvement Zone, and Allentown

Alfred Gruenke, PE

On December 14, 2023, more than a dozen members and guests of the Lehigh Valley Chapter, Pennsylvania Society of Professional Engineers celebrated the Holiday Season at Kingfish American Bistro and Wine Bar in Bethlehem Township.



A pleasurable repast. President Alexa Rooney at center

After a tasty dinner and remarks by LVPSPE President Alexa Rooney, we were introduced to Jack Reilly, Project Manager for City Center Group, a private developer focusing on revitalizing neighborhoods. City Center Group is the largest developer in downtown Allentown's Neighborhood Improvement Zone (NIZ), a special district created to help revitalize downtown Allentown. He detailed the objectives of the NIZ, and City Center Group's future plans.



Jack Reilly presenting the present and future of downtown Allentown

Continued on page 3

Allentown and its neighboring Lehigh Valley municipalities have been in the center of industrializing America since the mid-18th century. This column has had various articles on the iron industry, grist mills, lime kilns, and other 19th century industries.

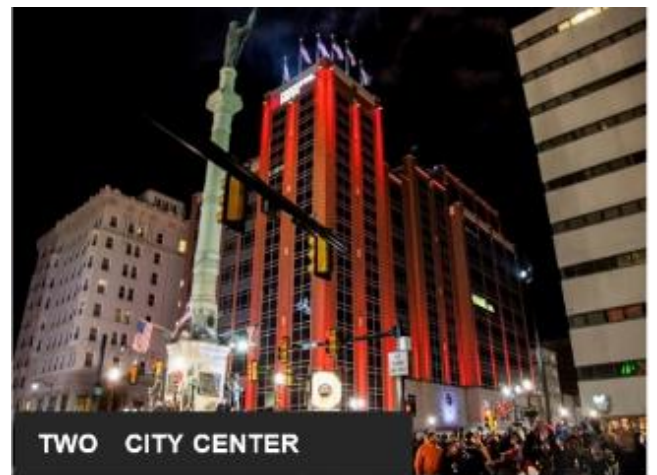
By the early 20th century these industries were replaced by other mass employers such as Bethlehem Steel, Mack Trucks, Western Electric, silk mills, clothing manufacturers, and other associated industries. By the late 20th century these industries also faded, resulting in the deterioration of many of the area's inner cities.

The NIZ is a special district created by the Pennsylvania Legislature in 2011 that is driving development in downtown Allentown, the third largest city in Pennsylvania and one of the fastest growing areas in the country. The NIZ is comprised of approximately 128 acres in center city Allentown and along the western side of the Lehigh River. In center city the NIZ encompasses approximately 5th Street to 12th Street, 1/2 block south of Hamilton Street north to Linden Street, with some smaller areas near 5th and Chew Street and 3rd and Hamilton Streets.

Certain state and local tax revenues generated by new and existing businesses within the NIZ can be used to pay debt service on bonds and loans issued for qualifying capital improvements. Property owners can recapture certain state and local taxes, and NIZ receives sales and state payroll taxes. School district taxes, however, still go to Allentown school district. Nearly a billion dollars in real estate development has been completed utilizing this unique tax incentive and financing tool to fund the development of an arena, office buildings, shops, restaurants, a hotel, and apartments. Jack gave us a short list of the downtown's major projects. The PPL Center, at Seventh and Hamilton Street, arena and concert hall. Tower 6, a mixed-use 142,000 SF building located at 600 Hamilton Street. The Trifecta Building, a mixed-use 40,000 SF building located in the heart of Allentown at 612 Hamilton Street on the site of H. Leh's department store. Five City Center, 740 Hamilton Street, a 30,000 SF office building with retail space on its ground floor. This building additionally offers an 800+ parking deck at Eighth and Walnut streets, which is right behind the building. Also, various apartments occupied by 2,000 residents, 15%-20% of whom work in the downtown area. The apartments are virtually full, attesting to the viability and attractiveness of the area. Lehigh Valley Health Network is the highest

employer of the residents. Jack emphasized that every attempt is made to keep the character of the city.

Contractors working in the NIZ are determined by competitive bids. However, all contractors must pay prevailing wage.



Continued on page 16

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 any amount –please send your TAX-DEDUCTIBLE donation to PA ENGINEERING FUND. Donations should be mailed to:

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P.O. Box 195
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Please note "LVPSPE Scholarship Fund" on the comment line.

Or, you may also 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

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The Pennsylvania Engineering Foundation oversees the Pennsylvania MATHCOUNTS program and PEF Scholarships.

The purpose is to help nurture future engineers.

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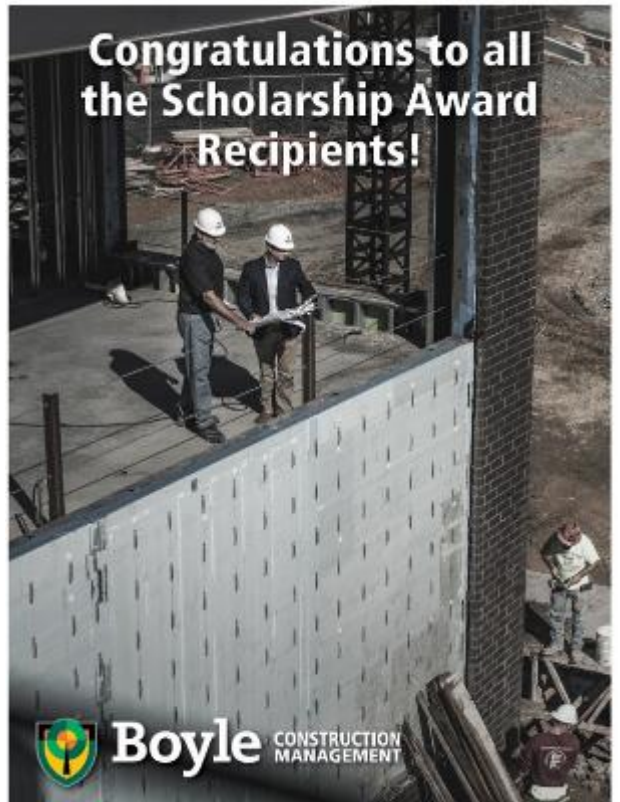
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Alfred Gruenke, PE, MBA

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A photograph of a large industrial facility, likely a cement or mining plant. The image shows a complex network of grey steel beams and supports. Two large, cylindrical, light-colored industrial tanks are visible, one on the left and one on the right. In the center, two workers wearing orange safety vests and white hard hats are standing on a yellow metal walkway with railings. The lighting is somewhat dim, suggesting an indoor or shaded industrial environment.

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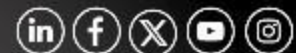


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The 7th Annual Joe Sommer Memorial Golf Tournament is almost upon us.

Joe was a valued employee of H.T. Lyons who touched the hearts of everyone he encountered. He loved to give back to the youth in the Lehigh Valley, the community and those interested in the trades. Each year, thousands of dollars are donated to various community organizations; Northampton Police Department, Friends of Bethlehem Mounted Police, Northampton Area Food Bank, Northampton Police Equipment Fund, The Boys and Girls Club of Bethlehem, PA Canine Search and Rescue, Beat the Streets/Concrete Barbell and Blue Star Mothers LVPA 20, just to name a few.

Please consider donating gift cards, money, or donations in kind to this great event!

If you require any other information, please contact Lee Millward at:

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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;

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Some major projects pending for City Center Group include a Marriott Moxie Hotel at 949 Hamilton Street, and the development of the former Allentown State Hospital site in East Allentown which is not located in the NIZ. The East Side Youth Center will be the beneficiary of one acre of this prime real estate for its own use.



PUBLIC SPACES

Urban renewal, or urban revitalization, has had a mixed history in Allentown and elsewhere. Sparked by the NIZ, City Center Group appears to have succeeded where others have failed. We thank Jack, and the City Center Group, for an inspiring presentation on the revitalization of Allentown, making it a better place to live, work and play.

 When something is said, it doesn't mean that it should be heard as well.

-Valantis Gaoutsis

 The problem with people who have no vices is that they're pretty sure to have some annoying virtues.

-Elizabeth Taylor

 Most of us miss out on life's big prizes. The Pulitzer. The Nobel. Oscars. Tonys. Emmys. But we're all eligible for life's small pleasures. A pat on the back. A kiss behind the ear. A four-pound bass. A full moon. An empty parking space. A crackling fire. A great meal. A glorious sunset. Hot soup. Cold beer.

-Anonymous

Thano Bula Khan, Dadu District, Pakistan

Alfred Gruenke, PE

As I mentioned previously, Pakistan is the most exotic and interesting country I have been to. I was involved with three cement plants; an established plant close to Karachi, a new plant located about half way between Karachi and Hyderabad in an area called Thano Bula Khan, Dadu District, and one in Northern Pakistan, near Islamabad.

In Thano Bula Khan we were tasked with installing and commissioning a new plant about 50 miles from Karachi.

The area can best be described as semi-arid, with a short stubble of grass, amid low rolling hills reminiscent of the Eurasian Steppe. There were small villages along the way but nothing of any size after leaving Karachi.



The Thano Bula Khan countryside

There were only three of us, plus an occasional vendor. We lived in a couple of houses a couple of hundred yards from the plant, with a ten-foot-high stone wall with broken glass on the top. Armed guards patrolled it at night, occasionally blowing whistles to alert any would-be robbers that there were guards about. An elderly ex-Army general named Muhamed Ali was employed to deal with the locals and prevent too much thievery.

Interestingly, he was referred to as "Baba", father in Urdu, but the connotation was "respected elder". It is also the familiar Slovak word for grandmother. I've always been interested in the etymology of words in various languages. Seems to me that "Baba", "respected elder", and "Baba", grandmother, thousands of miles apart and light years apart in culture had a common base sometime in the past.

We had a cook and a housekeeper who kept the rooms clean. Not great, but not bad. We even made a barbeque from a metal barrel cut in half. Every weekend we went to the customer's guest house in an upscale section of Karachi with evenings at the American Consulate. This was a pleasant change from the austere accommodations on-site.

We were still in a remote corner of the world. Before putting on our boots in the morning we always shook them in case some critter had decided to take up residence. And in July, the place was infested with zillions upon zillions of flying ants about 1/2" long! At night they massed around every light. They covered the pavements. There was an almost continual crunching sound when walking. Lying in bed I placed a sheet over my head to make sure I wouldn't inhale any bugs. I've never read any explanation of what they were or how they fit into the ecology of the area. They were active for about a month.

We observed a phenomena for which I would like an explanation. There were high voltage lines close to the houses. Don't know the voltage, I'm guestimating 200 kV. Occasionally, what looked like 30-40 feet long ropes of fire fell from the lines, then died out in a few seconds. Not once, but maybe every thirty minutes or so. I have never seen anything like it anywhere, including the 220 kV and 500 kV lines close to my house. If anyone can explain this, please let me know.

Pakistan is a fundamentalist Moslem country, so there were no libations. However, the government understands that there

were some individuals who absolutely need alcohol for their well-being. One can register with the government and various alcoholic drinks were available. I chose not to do that, deciding that having "ALCOHOLIC" stamped in my passport was probably not a good career move.

My predecessor had prepared me for this. He had bottles, a ten-gallon plastic tank, bottle capping equipment, and instructions on how to make beer with wort. Wort is a syrupy substance which, when mixed with water and sugar, makes beer. On 9th Street just off Hamilton in Allentown there was a store that sold wort. I bought a half dozen quart cans.

Mix the wort with water and sugar, let it ferment for a while, put into a bottle and let it age (lager). Not so bad. Even a vendor from Germany agreed that it was pretty good! We found that Tuesday's vintage was best.

The customer had a German consultant. We had the ball mills and kiln, plus associated equipment, but the rest was used equipment from Europe, some of it quite antiquated.

The customer had obtained a cement paper bag fabricating machine from somewhere in Belgium. They hired a German, Walther, to put the machine together and get it working. Interesting people one meets! Walther was with General Rommel in WW II in North Africa. He was captured by General Patton's army and shipped to America, was placed on a train with blacked-out windows and sent to Colorado. Prisoner of War Walther spent World War II in Colorado building roads! After the war he was again put on a blacked-out train and repatriated to Germany. So, his picture of America was Colorado. Nothing else.

The smaller dust collector bag houses from China had mechanical shakers. They did not work well. I advised the customer to buy some dust collectors from Fuller Company, but that fell on deaf ears.



Mechanical monstrosity dust collector bag shakers.

This was my first assignment as the lead Commissioning Engineer. My counterpart was the Pakistani contractor, Mr. Malik. We got along quite well. Mr. Malik was knowledgeable, but his background was a fertilizer plant. His subordinates were young and inexperienced. I don't think any of them knew how to change a car tire. We had a number basic of technical issues such as viscosity of fluids, high pressure lube systems, starting of high inertia loads, that kind of thing, but that's what made jobs like mine interesting.



A Pakistani engineer

One morning I had what might be called the Pakistani version of Montezuma's Revenge. Mr. Malik offered the use of his Jeep-like vehicle in the event of an emer-

Continued on page 19

gency. A bit later the urge was strong, so I ran to his vehicle and jumped in. I panicked! It didn't have a steering wheel! After a moment of shock I realized that I was sitting on the left seat. In Pakistan, they drive on the left side of the road, and the steering wheel is on the right! Emergency averted.

Pakistan is a violent country. We had a driver assigned to us who was also our bodyguard and carried a loaded revolver. Not to my liking but I didn't complain.



Sacrificing a goat to ensure a successful kiln start.

Driving recklessly and speeding is common in Pakistan. I had occasion to be in a car driven by the plant manager. He drove like a maniac, speeding and cutting in and out of traffic, etc. I asked him to slow down, that his god wasn't going to look out for me, and my god wasn't going to help me if I acted foolishly. He slowed down.

We ran the limestone ball mill, with some difficulties. The bearing lube flow was alarming, so one of the customer's electrical engineers figured out that if he installed a jumper somewhere in the controls the alarm stopped. The mill was shut down, and some men were on top. Someone pressed the lubrication pump start and the mill started, throwing the men about twenty feet onto the ground. They survived but were taken to the hospital. There were no repercussions for the engineer; he has up on the societal hierarchy and the hurt men were just tribesmen.

Mr. Malik asked what can he do with such an engineer. This was in 1985. I suggested that a young, strapping lad like this guy should be sent to Afghanistan to carry ammunition for the Afghan rebels for their fight with the Russians. My advice was not taken.

We started the kiln preheat. This did not go well. The refractory flaked off during preheat. I was in agony. My first Chief Commissioning assignment and the refractory failed during preheat! Mr. Malik told me what happened. Before installation the refractory had been stored outside on the Karachi docks for eighteen months and had deteriorated. The customer had been advised of this by the vendor, but decided that was a ploy to sell more refractory, and installed them anyway. The customer somehow managed to find replacements from other cement plants and restarted the kiln. I twiddled my thumbs in the interim.

Another tragedy. During preheat the electrical load increased. The main transformer automatic voltage correction switch compensated for the extra load, until it hit a defective switch position and blew up, shutting everything down.

The customer insisted that the problem would be fixed in a few days, but I knew better. I went home a week later. They did not re-start until four months later, without our assistance. End of assignment. Never heard anything more.

A New Year Blessing

Sharing joy is the tastiest of dishes,
Sharing with you, even more delicious

Happy New Year, to one and all,
Enjoy yourselves, and have a ball.

Give thanks to those who wish you well,
Those others go where? I cannot tell.

Burma Shave



**Lehigh Valley Chapter
Pennsylvania Society of Professional Engineers
Lehigh, Northampton, Monroe, and Carbon Counties**

Minutes for the January 8, 2024, Board of Directors Meeting
6:00pm on Microsoft Teams

Attendees: Alexa Rooney, Mary Rooney Ray Szczucki, Al Gruenke, Cody Callahan, Al Dezubay, Frank Walsh, Jeff Kutz, Robert Peruzzi, Jonathan Kiechel, and Angelika Forndran

A. Call to Order: 6:03

B. Programs

Activities:

- January – Nothing planned.
- February – Engineers Banquet February 23, 2024, at Iacocca Conference Center at Lehigh University.
 - i. Registration ends February 9th
 - ii. The Keynote speaker is Lehigh professor, Terry Hart. He will be discussing his experiences as an astronaut in the Space Shuttle program and the NASA Artemis program to send astronauts to the moon in 2025.
- March – Dorney Park/ATLAS Lab/Blue Mountain?
- April – Center City
- May – Haines Mill (end of April or early May) - \$9/person & Scholarship Dinner (middle of May)
- A special election has been conducted for the vacant Vice President position. Alexa Rooney has nominated Jonathan Kiechel for the position. Jonathan has been elected to be the Vice President by the Board of Directors.
- Newsletter – Al Gruenke will continue writing the newsletter until May and he will slowly help Jonathan transition into writing the newsletter going forward.

C. MATHCOUNTS

- Al Dezubay has agreed to be the moderator.
- Mary Rooney said she is available to hand out awards if no one else is able to attend.

D. Lehigh Valley EOY/YEOY & Scholarships

- A formal vote for engineer of the year was conducted and Gregory Kuklinski, PE, was selected.
- YEOY votes are due by close of business Wednesday, January 10, 2024. Email votes to Alexa Rooney.

- Fundraising – Frank Walsh
 - Frank has reached out to many companies and will send another round of emails to companies he has not heard back from at the end of January.
 - Pledged to date: \$6,000 (goal is to raise an additional \$5,000).
 - Received to date: \$2,150
 - If anyone has a contact at Lutron, please reach out to Frank.

E. Treasurer – Ray Szczucki

- Balance as of 12-31-23
 - Checking \$1,144.04
 - Savings \$7,413.98
 - Ray discussed the need to start raising money with our revenue dropping and the increased website costs.
 - We applied to PSPE for a grant on the development of a new website. Ray will check on the status of the application.
 - Alexa’s sister is able to update the website for \$600.00. She is looking into how to incorporate taking payment on the website. An estimate for the new website fees is \$50.00/month and domain fee of \$9.00/month.
 - A vote will be conducted next meeting on whether to go forward with the website overhaul or not.

F. State Director – Mike Basta

- Next PSPE board meeting will be on 1/17/24.

G. Past President – Jeff Kutz

- Jeff is working on updating his distribution list for the different schools and he will start sending out emails around the 3rd week of January.

H. Old Business/New Business

- The Lehigh Valley Business Journal is looking for general engineering articles to include in their engineer’s week edition.
 - i. Articles are to be of general interest and not heavy on marketing for one company. Your company can write an article about a project that your company is working on if it meets these general criteria. Articles are to be 500-700 words and good quality photos are helpful.
 - ii. Send articles to Mary Rooney by February 1st.
 - iii. Alexa will reach out to PPL and City Center.
 - iv. Cody will reach out to Barry Isett & Associates.
- Next board meeting is February 12th.

I. Adjournment on motion by Jonathan, seconded by Frank at 7:11.