

Engineers' News

April 2022

Vol. 84 No. 7

www.FortWayneEngineersClub.org



April Tour



When: Thursday, April 28 @ 3:00 PM

Please be prompt. We will view a brief safety video at 3:15 PM, with the tour following. Rain or shine, dress appropriately.

Where: We will meet in the parking lot located at 1021 Swinney Avenue. Parking is available at 11801 Lindley Avenue.

Walk through McCulloch Park, cross Broadway boulevard, walk west on Swinney. Meet in the parking lot across from the old GE club, on the south side of Swinney Avenue. See maps below.

Website: <https://fortwayneelectricworks.com/>

Info: John Becker of Weigand Construction will be our tour guide for the tour of the Electric Works campus, formerly the GE plant on Broadway.

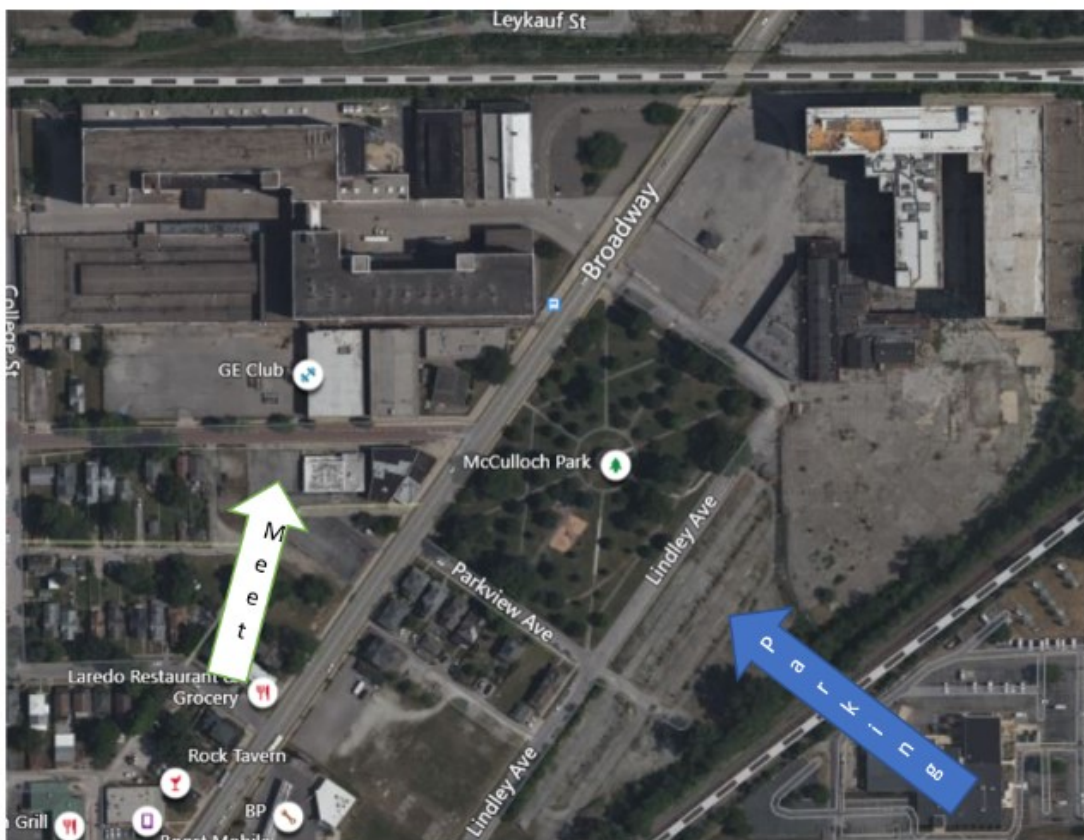
Tour Requirements:

- Steel toed shoes preferred, solid closed toe shoes accepted, no tennis shoe, sandals, etc
- Hard hat required - they have some extra
- Safety glasses required
- Safety vest required - they have some extra
- Must be physically able to climb multiple flights of stairs, as elevators may not be available
- Must be 18 or older

**This tour requires you to sign up in advance.
Tour is limited to 30 people.**

Last chance to sign up!

Register Now





May Tour



When: Thursday, May 26 @ 4:00 PM

Where: TTC building 9101 Clubridge Drive, Fort Wayne. There is plenty of parking in front of the building or next to it.

Website: <https://www.phdinc.com/>

Info: More details to come.

This tour requires you to sign up in advance. Tour is limited to 20 people.

Register early!

Register Now

March Tour Summary



Tour of AMT (Advanced Machine and Tool Corporation)

amt-corp.com

Written by Rod Vargo

March 10, 2022

Founded in 1970, AMT has proliferated through a series of buildings and building expansions in Fort Wayne. Their website indicates another four locations globally. It encompasses a variety of engineering and manufacturing skillsets including industrial automation/robotics, mechanical and electrical design, machining, 3D printing, prototyping, light to industrial duty vehicle parts, medical imaging components, software, maintenance, refurbishment, and resale/relocation.

We toured the shop floors and support areas in their Automated Solutions building, where customized and/or automated industrial production lines are designed and assembled. These focus primarily, but not exclusively, on production of electric motors, alternators, and generators. Another project on the assembly floor was aimed at automating metal work on seven-ton steel castings. All involved the automation of a protracted series of steps which have been (and still are in some facilities) labor intensive and error prone if done manually.

Our sincere THANK YOU to multiple folks at AMT for welcoming us into their lives and facilities.

See more tour details [here](#)



In Memoriam



We were sorry to hear about the passing of long-time club member Cecil Henn on March 4, 2022. He will be missed.

[View Obituary](#)

Volunteer Positions within the Club

Membership and Contact Chair: Open
Northeast Indiana DiscoverE Chair: Open

Let us know if you're interested!

Volunteer

Job posting and resumes listed

The club accepts both job openings from around the area, as well as resumes from those seeking employment. Please submit these to the following email address:

Info@FortWayneEngineersClub.org

Items of Note

FWEC member Rod Vargo is Chair of the 27 year-old and all-volunteer [Utility Advisory Group](#), which formally advises Fort Wayne City Utilities and often City Council. Your comments are welcome at rodvargo@comcast.net

Local Opportunities



EAA Young Eagles Rallies at Smith Field (historic hangar)

The EAA Young Eagles program was launched in 1992 to give interested young people, ages 8 - 17, an opportunity to go flying in a general aviation aircraft. These flights are offered free of charge and are made possible through the generosity of EAA member volunteers. Since 1992, more than 2.1 million Young Eagles have taken flight!

Saturdays, May 14 and June 11
9:00 a.m. -1:00 p.m.

Register to Fly!

Full and Part-Time Meter Installation Jobs Available

Fort Wayne's meter installation contractor, Tribus (Olameter in Fort Wayne), is looking for installers. If you know someone interested in full-time or part-time work, please share this information.

At this time, Tribus does not want to separate the job from installer and door knocker, but they can now take part-time employees. Shifts are Monday through Saturday, so there are opportunities for people interested in working full-time or a few days per week. Pay is \$18 per hour.

They can apply online or directly at their warehouse located at [217 Marciel Drive, Fort Wayne.](#)

View Open Jobs

General Club Info

Fort Wayne Engineers Club dues are \$0. Donations are welcome but strictly voluntary. In recent years, club funds have helped support Discover-E, the Regional Science and Engineering Fair, annual bridge building contests in schools, academic awards, networking events, mentoring, our website, and facilitating free tours.

Please see [FortWayneEngineersClub.org](#), [LinkedIn](#), or [Facebook](#) for updates on current Club activities, other news, and past newsletters.

Those participating in activities or hosting tours through FWEC do so strictly at their own risk, including disease exposures. Participation in club events is voluntary, free, nonprofit, and solely for the benefit of participants and the community at large. Anyone with an interest may participate unless restrictions are specified for specific events, such as minimum age or minimum safety attire.

Interested in hosting a tour?

Contact us today!

Host a Tour

FWEC Board Meetings

The FWEC board meets eight times a year to plan and organize tours for our members. These meetings are open for anyone to attend. We are always looking for new members to join our team! If you are interested in being a board member please attend our next board meeting or contact us at info@fortwayneengineersclub.org.

Next Meeting

Date: Tuesday, May 3, 2022

Time: 7:00 pm

Location: Blackstone Laboratories 502 E Pettit Ave, Fort Wayne, IN 46806

FWEC Roster for FY2021-2022

President: Nate Berndt

Vice President: Pending

Secretary: Marna Renteria

Treasurer: Ryan Stark

Treasurer-Trainee: John Magsam

First-year Board Members: John Magsam, Mike Magsam

Second-year Board Member: Dave Gordon, Bert Spellman

Third-year Board Member: Craig Welch, John Renie

Editor of Engineer News: Melissa Kurten

Membership and Contact Chair: Open

Northeast Indiana DiscoverE Chair: Open

Advertise in the Engineers' News

The FWEC provides advertising space within the Engineers' News. Advertisements are only \$10 per issue and limited to ½ page of content.

Advertise Your Business

March Summary Continued

Stators and rotors in motors, generators, and alternators are built up as stacks of hollow discs (laminations) separated by some form of electrically resistant layer (such as a varnish, resin, or plastic coating). Customers who purchase AMT's production lines typically provide the discs from other sources, sometimes already in sets with appropriate numbers of discs. These still must be properly consolidated, such as automatically welded together (typically MIG or plasma). AMT also designs and builds automated welding setups for various industries.

AMT has other mechanisms, some proprietary, to mechanically prepare coils (nascent windings) of coated wire (typically copper cored), and layer the coils for later insertion into the completed disc assemblies. Feed and tensioning systems are required, with the coated wire coming from bobbins as much as 2 feet in diameter and 3 feet high. The wire being worked at AMT varied greatly in thickness and coating. (Ed.: Each bobbin, also called reel or spool, can routinely weigh as much as 60 lbs. empty and refurbishing them is another local industry in itself.) Fort Wayne was once the world's center for "magnet wire" used in motors, electromagnetics for various purposes, and more. A combination of talented workforce and constant innovation helps keep our area in the game, typically with far less environmental impact and better lifestyles than elsewhere.

As with many of our hosts, AMT Automated Solutions tries to remain just below 100 employees for various regulatory reasons. Over recent years, other four hosts have indicated that exceeding 99 employees requires a 20-30% increase in administrative staffing and even greater increase in costs.

Also consistent with other hosts, a limiting factor is finding employees willing to do routine tasks, even though their actual projects change rapidly over time. So, engineers can design, but a squeeze point is finding individuals, trained or not, willing to execute designs. There was some discussion of potentially involving local schools as early as Grade 8. (Ed.: Generically speaking across industries and employers, this may be the best approach in terms of finding common ground between generations in matching individual interests, administrative outlooks, and safety practices. These three factors seem pivotal with workers under age 35.)

The coil and disc assemblies must be brought together with proper timing, potentially by

industrial turntables, robotic arm(s) and/or conveyor(s) from multiple sources or inspection stations. AMT is a FANUC "robotics integrator", which may include a customer's facility-wide networking and manufacturing software as needed. We watched layered coils and disc assemblies become compressed into complex and precise units. Compared to any manual methods, which are also much slower, automated machines allow much more coil mass to be properly located in a given disc/rotor space (providing "high slot fill") while also retaining integrity of the wire coating, resulting in more powerful and efficient motors with few or no rejects (typically also a much longer service life). Many of AMT's lines can switch between different sizes or types of discs either, within reason, automatically or very rapidly (Ed.: switching between wire feeds probably being the most demanding).

Electric motors, for instance, easily range from tiny affairs to traction motors. Pumps for household wells typically fit down a 4 inch ID pipe but are 4 feet long. So, the level of automation versus manual labor designed into production equipment varies considerably. Our tour also included fully self-contained hydraulic-powered units which did just one function. They are less expensive (though more labor dependent), need a minimum of floor space, can be more readily moved, and are adaptable.

The windings are finished with shaping, compaction, and lacing. Armature shafts, commutators, and other major steps or work/inspection stations are addressed, depending on customer needs. Again, compact self-contained hydraulically-powered units are available for low volume or often-changing steps.

Staff who design and fabricate production lines or equipment are the also the ones to dismantle, ship, and reinstall it at a customer's facility. Support and service usually continue long after warranties have expired, companies have changed ownership (including globally), and as customer facilities are relocated or redesigned. Maintaining, retooling, and updating existing customer equipment is an inherent part of the business.

Perhaps half the overall facility is dedicated to fabricating, warehousing, or otherwise adapting the various pieces and parts needed on AMT's assembly floor. An interesting video documented the flow and constant change on that floor during six months, but a background story is the array of infrastructure required to feed the floor.

An adjacent large building houses a separate business entity, AMT Precision Parts, which FWEC did not tour. It fabricates and machines finished parts for mostly outside customers, but occasionally other AMT entities such as Automated Solutions.

Copyright © 2022 Fort Wayne Engineers Club, All rights reserved.

[unsubscribe from this list](#) [update subscription preferences](#)

