



# The PARADIGM

*One Team, One Goal ~ Excellence*

PARAGON Engineering Services, Inc.

## LEED DESIGN COSTS



### PARAGON PULSE

The first newsletter was received very well—THANK YOU! I pray the New Year has shown itself to be better for all. The New Year finds us at Paragon Engineering Services at the beginning of a new chapter in our History; we are embarking on renovations to an existing facility to make our new home. The renovations include upgrading the building envelope, mechanical systems, lighting, and controls to the point of applying for a LEED Silver Certification. I would like to give thanks to our in-house LEED team as well as the numerous suppliers and clients that have aided in this undertaking.

Our newsletter highlights some of our LEED projects along with other projects that we have completed in our office areas. I hope you enjoy reading our newsletter—your feedback is very much appreciated.

Blessings to all!

*Vaughn Silar, President*

### LOGANVILLE, PA Springfield Township Municipal Building



The interest in green building is exploding in our market; LEED is becoming a very common word used during the planning stages of most buildings. Many times projects start as a LEED project until the budgetary issues arise. The perception of high-cost documentation tends to steer clients away from LEED. Then the projects tend to 'go green' as much as possible without increasing construction costs; but not submit for LEED certification. Regardless, the trade off is always up-front costs versus long-term savings. Paragon Engineering Services, Inc. has been involved in several LEED projects both design and providing the LEED documentation for the certification process. PES has decided to incorporate basic energy modeling as part of their standard MEP design package. In doing so, if a project is to go to the LEED level, we can greatly reduce the added cost for the energy modeling which is one of the most expensive required items in LEED certification. In most cases the design approach is very similar for a LEED building as a standard design due to the current code requirements.



### HANOVER, PA Conewago Enterprises, Inc.

This is a proposed 33,000 sf office building in Hanover for Conewago Enterprises, Inc. It's designed to achieve a LEED gold certification (review pending). The building uses precast wall panels with R15.5 integral insulation, high performance reflective windows, and high efficiency 15 SEER heat pumps with hot water radiant floor heating using a 95% efficient boiler system. High efficiency T5 fluorescent lighting systems with automated controls are used throughout the office areas. An emergency diesel generator provides backup power for this building

and other adjacent buildings on the site. Electrical systems include communications and network infrastructure and addressable fire alarm.

The building energy consumption is estimated to be 37% less than conventional buildings and will have other 'green' features such as a vegetated green roof areas, high reflective roof areas, 30% recycled materials, 40% regional materials, stormwater management systems, low VOC materials, 40% reduced water consumption with waterless urinals, 30% excess fresh air, and more.

Heating and cooling for the offices was accomplished with closed-loop R-410 ground source geothermal heat pumps. Under floor radiant piping was used to provide even, efficient space heating using a water-to-water geothermal heat pump. Heating, and cooling for the large meeting room was accomplished using an air handler and water-to-water geothermal heat pump, including reclaimed condenser heat for reheat and dehumidification. An exhaust air enthalpy wheel energy recovery unit was used to provide ventilation for the meeting room. Electrical consisted of fluorescent lighting for offices, security lighting over exterior doors, battery powered units for emergency lighting, sound system with ceiling speakers, desk and floor mounted microphones.





## EXTON, PA Collegium Charter School

This is an approximately 67,000 sf of new building. The project was done in two phase. The first phase was the design of a shell building. The second phase was the build-out of the shell space into a charter school. The electrical design included new lighting, power, complete IT design including data racks, patch panel etc. Electric service was 33KV. Project also included a tie into existing voice/data system in adjacent building. Project included fire alarm, sound, minimal stage lighting and dimming. The building had to be designed that it could be turned into an office building in the future. HVAC Systems include water source heat pumps, open tower with plate heat exchanger & 959 RFF condensing gas boilers. The design included a web access digital system for HVAC control & energy management.

## ALLENTOWN, PA Lehigh Valley Grand Prix

Developed within a 48,000 sf area of the former Mack Trucks assembly facility at the Bridgeworks Industrial Complex, Lehigh Valley Grand Prix is an indoor go-cart racing facility with 42,000 sf dedicated to the quarter mile race track. In addition, the facility has a conference room for corporate events, party rooms, arcade area, office areas, and cart maintenance area. As a design-build project, PES provided engineering design services to the electrical and mechanical contractors. Special consideration in the design of the HVAC system for the race track area was required in order to ensure desired comfort levels while providing a very high ventilation rate in order to remove the exhaust generated by the gas powered go-carts.



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Jason Craley

### PESPOTLIGHT Team Member

**Jason Craley** started out working for a large construction firm where he gained valuable field experience. He has been working in the engineering industry for the past 10 years. Jason joined the Paragon team in 2004. He has worked on numerous projects including some LEED designs. He is currently a Project Manager in the Mechanical Department and is an asset to Paragon. We are pleased to have him heading up our efforts in the Maryland market.

### PARAGON PERSPECTIVE Design-Build—*Bridging the Gap*

Design-Build; a project delivery system that delivers fast, cost-effective, quality results. It seems like common sense. Different professionals from each discipline required on a particular project come together and discuss, in detail, their piece of the project. The benefit: true teaming of everyone involved, understanding of the 'big picture', focus on the project nuances, early budget consciousness, on-time schedule maintenance, responsibilities and risks divided according to expertise. This list can go on... Design-Build has experienced extraordinary growth in recent years and it's rapidly becoming the most preferred form of project delivery in small & large, simple & complex, and public & private ventures.

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**WORDS OF WISDOM** "EVERYONE has opportunities—some good, some bad, but the key is knowing which they are and doing something about it." Vaughn Silar

*par-a-digm* an outstandingly clear or typical example or archetype [PEServices.org](http://PEServices.org)

