

ANGLE and LINE

A Quarterly Newsletter by COWAN ASSOCIATES, INC.

Engineers • Designers • Surveyors
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COWAN PROJECTS RECOGNIZED BY STATE AGENCIES

by Carl H. Wischner, Sr. Project Manager

Cowan Associates, Inc. has had the privilege to have worked on two projects that have recently been recognized by the Pennsylvania Department of Conservation and Natural Resources (DCNR) and the Pennsylvania Infrastructure Investment Authority (PennVest).

CAI assisted the Borough of Lansford, Carbon County, in developing a new playground, Ashton Hill Park which was constructed near the Borough's swimming pool. The project was partially funded by grants from DCNR and Community Development Block Grants administered through Carbon County, along with contributions and volunteer labor by the Borough of Lansford, its residents and businesses.

CAI's services included final design and engineered drawings to meet DCNR requirements; development of bid plans and specifications for the lighting portion of the project; assisting the Borough with grant administration, final costs, final budget development and construction.

Project administration was complex due to all the entities involved but, in the end, the project came together extremely well. DCNR was very pleased with the project and chose it as its focal point example in its most recently developed seminar, "Developing an 'Excellent Project' 2008 Grant Workshop" that it has been conducting throughout the state.

The second project receiving recognition was the Borough of Sellersville Water Filtration Plant Update and Renovations. The 2.112 million dollar project was funded through PennVest. The 0.690 million gallons per day plant was originally constructed in the mid 1930's and was in need of a major overhaul and upgrade.

The project included complete removal and replacement of the plant piping systems, replacement of filter media and under-

drain system with air scour capabilities, control valves and pumps. Chemical feed systems were completely revamped and relocated. The deteriorated concrete sedimentation tank was repaired and a curtain baffle installed to improve contact time.

The building interior was sandblasted, repainted, and a new ceiling installed. An operator's office was added along with a building ventilation system. Security systems were installed along with a new site fence to improve the source security.

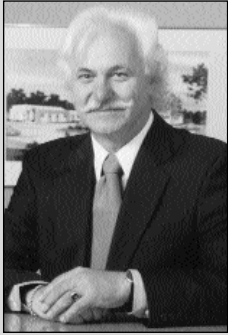
The original manual plant operation was upgraded by installing a Supervisory Control and Data Acquisition (SCADA) system to control and monitor plant operation. The SCADA system also incorporated the monitoring and control of the Borough's distribution system components, which included wells, storage tanks, booster pumps and disinfection. The gravity transmission main from the plant was also upgraded to improve flow to the distribution system.

PennVest, which had been following the project from its inception, was extremely pleased with the dramatic improvements to the facility and featured the project as their lead article, entitled "Securing Their Water Future," which appeared in PennVest's Winter 2007-2008 "Liquid Assets" Newsletter which can be viewed at www.pennvest.state.pa.us/pennvest/site/default.asp. Click on Press and Publications > Liquid Assets Newsletter.

Cowan Associates is very proud to be associated with these municipalities and state agencies. CAI will continue to strive to meet the goals of our Vision Statement: "To be an outstanding Professional Engineering service provider who partners with clients with diverse needs to successfully turn their ideas into reality" and our Mission Statement: "To provide quality Professional Engineering services, personalized and with on-time delivery. We, the employees and management, aim to strive for excellence so that you, the client, will achieve success."



PRESIDENT'S CORNER



We used to view development as something that happens out of necessity at the expense of environmental preservation. I well remember my own experience as a consultant to an out-of-state land development company which came to the Poconos in the 1980's. We were working on a plan to create a 300 unit residential development, partially in a "swampy" area, which we now know as wetlands.

This development proposal included a sewage treatment plant, thus creating the opportunity to eliminate sewage leaking from existing malfunctioning on-site systems on adjacent lands. As a civil engineer, I was as proud of this project as any with which I had been involved. To my surprise, at a public meeting, a group of individuals later organized as "concerned citizens for the environment," accused the developers and consultants working on this project of planning to degrade the environment. Because of the naivete of the developers and consultants, me included, no appropriate defense was offered and the newspapers led a misinformed charge that killed the project. As a result, regular sewage leakage from existing on-site systems continued to contaminate a high water quality stream for ten more years until another development with a public sewerage solution was finally built. To quote the warden in the Paul Newman classic, *Cool Hand Luke*, "what we got there is . . . failure to communicate."

As the population grows and our resources diminish by comparison, we are coming to realize that any approach that is adverse to environmental preservation and resource conservation will be a dead-end. We can no longer measure benefits against financial costs alone, but also against environmental costs. We need to divorce ourselves from the perceived dichotomy that development and preservation of the natural environment are mutually exclusive. As a result, sustainability calls for civil engineers to be leaders, and we need to exercise that role while there is still time. Most reasonable people today understand that it is as much in the true interest of business as it is in the interest of the most ardent environmentalist to preserve this small planet for the future of all its species. Sustainable technology, processes and development reconcile these interests. We must work together to protect our environment while simultaneously supporting an expanding economy and its supporting infrastructure. It is a formidable challenge which we have no choice but to meet. As Kermit the Frog sings, "it's not easy being green," knowing though that he also has no choice in this matter.

by Johann F. Szautner, P.E.

Cowan Associates is proud to announce that its application for membership in the Better Business Bureau of Metropolitan Washington DC and Eastern Pennsylvania was recently accepted. We are honored as not all businesses are approved. The Better Business Bureau fights for free and fair trade, which fits well with our motto, Quality is Attitude!

THE FIRE INSPECTOR

by Todd R. Myers, PLS

Recently I have had the opportunity to become certified as a Fire Inspector I under the guidelines of the International Fire Service Accreditation Congress, National Fire Protection Association, and the National Board of Fire Service Professional Qualifications (Pro Board). Along with my day job as Executive Vice President of Cowan Associates, I have had the great opportunity to be a firefighter for the last 32 years. During that time, I have had many wonderful experiences, difficult situations to overcome, and some of the best training any firefighter can receive. This training comes through our local Bucks County Community College and the Bucks County Public Service Training Center located in Doylestown, PA.

The reason for my interest in becoming a Certified Fire Inspector is two-fold – one for the opportunity to apply this skill at Cowan Associates through our Construction Testing and Inspection Department as well as using it as an educational tool in my fire response area, which is the Borough of Riegelsville, Durham Township, and the northern portion of Nockamixon Township, all located in Bucks County.

The common view of the Fire Inspector is one of an enforcing or policing authority, however, the public safety mission of the inspector places great emphasis on fire prevention in the first place. The inspector helps to educate the occupants in ways to control hazards and proper methods of evacuation, and overall fire safety practices. It is much more effective, in the long run, to educate the public than simply keep enforcing regulations on them.

Fire suppression activities are not the only way to combat fires: a well-planned and executed fire prevention inspection program is a less expensive and more effective way to accomplish the goals of the fire service. The goal is, of course, to minimize the risk of life and property loss from fire. By observing, making recommendations, subsequently controlling or eliminating hazardous conditions, the inspector can make major strides towards accomplishing this goal before a fire occurs.

Historically, courts have ruled that fire departments and individuals empowered to perform fire inspections may be held legally accountable for the performance. The certification and training for Fire Inspector I addresses the issues of liability as well as authority and responsibilities of the inspector. The inspector also learns policing power, right of entry, organizational structure and cooperation among other agencies such as local zoning and building code officials. The Fire Inspector must properly prepare for the inspection, make the inspection himself, document any deficiencies or code violations, follow-up inspections and potentially take a case to court.

The Fire Inspector must also know how fires start and spread in order to recognize fire hazards and their potential consequences. Fire hazard recognition is safety considerations that affect many occupancies. These considerations include good housekeeping, and regulating smoking, open burning and the use of flammable decorations. Electrical safety is also critical in the Fire Inspector's world, so a basic understanding of electrical theory, electrical hazards, and the dangers of static electricity are important to understand.

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THE FIRE INSPECTOR

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One of the most difficult jobs of a Fire Inspector is understanding the construction and occupancy classifications. It is very important to understand the classifications in order to determine that a building meets the appropriate building and fire safety codes so he/she understands the various construction and occupancy classifications that are used by all of the model code organizations. Additionally, one of the most crucial elements in building construction and occupancy classification is the ability of the occupants to quickly and efficiently evacuate the structure in the event of a fire or other hazardous condition. Along with evacuation, the means of egress for a structure, the Fire Inspector must have a proper understanding to assure site access for emergency personnel and emergency planning procedures for building occupants to follow.

The Fire Inspector must have an understanding of extinguishing equipment and fire protection systems which are effective ways to increase occupant safety and control fires during their early stages. These are, but are not limited to, the following: water-based fire protection systems which include fire sprinkler systems and standpipe systems, fire pumps and water supply systems. During my Fire Inspector I certification I became well-versed in the procedures for inspecting and testing each of these systems. In addition to these water-based fire protection systems, the Fire Inspector also has an understanding of a wide variety of other types of fire protection systems and equipment and testing of portable fire extinguishers, special agent fixed extinguishing systems, and fire detection and alarm systems.

Community business owners and fire departments must understand that the role of Fire Inspector is a necessity not only in plan review, but overall fire protection and prevention.

This is just a snapshot of a Fire Inspector's public safety mandate. It is very important that the community, as well as the general public, understand that the Fire Inspector and the need for fire inspections is not to penalize a company or business owner, but to educate the business community and general public on ways to prevent a hazardous condition or fire to minimize the risk of life and property loss.

HUMOR

A group of managers was given the assignment to measure the height of a flagpole, so they go out to the flagpole with ladders and tape measures, and they're falling off the ladders, dropping the tape measures – the whole thing is just a mess.

An engineer comes along and sees what they're trying to do, walks over, pulls the flagpole out of the ground, lays it flat, measures it from end to end, gives the measurement to one of the managers and walks away.

After the engineer has gone, one manager turns to another and laughs. "Isn't that just like an engineer, we're looking for the height and he gives us the length."

IT WAS A GREAT NIGHT!

by Johann F. Szautner, P.E.

May 2nd was a cold and rainy Friday night at State College, but no one seemed to notice nor did they care at the 2008 Senior Recognition and Awards Banquet held at the Nittany Lion Inn. Conversations swirled around graduation, future employment opportunities and specific career plans of those already hired, interrupted only by cheers for award winners and laughter at the exchange of thesis preparation war stories.

After an afternoon of listening to and judging Senior Thesis Presentations of Penn State's Architectural Engineering seniors, I felt as elated and tired as some of the students looked. Representing "The Pennsylvania Engineers in Private Practice" organization (Pa PEPP), I was honored to serve as part of a distinguished panel of about 50 judges, visiting engineering practitioners from all over the country. Pa PEPP, true to its mission of sponsoring professional development of engineers in private practice, is supporting undergraduate students pursuing their degree in engineering. Two scholarships (\$1,000 each) are awarded annually to students entering school in the fall. Traditionally Penn State University architectural engineering students have been the recipients, as their senior thesis program emphasizes careers in private practice. Two (2) awards are typically presented — one for the juried best Senior Thesis, including a check for \$1,000; and one for the faculty chosen "Professional Practice Award," also including a check for \$1,000. Jury members offer additional prizes and underwrite the banquet held for the awards ceremony.

The Senior Thesis Presentations are the major highlight of the five year BEA Undergraduate Program. A Senior Thesis consists of obtaining an outside sponsor who provides the student with an actual building that will be used as the model for a variety of technical and management tasks throughout the year. Based on the building, students will investigate and analyze its design and construction, and value engineering components for performance improvements, construction cost and time savings.

Their work is grouped in accordance with four discipline specializations – construction, lighting/electrical, mechanical and structural. Eight finalists, two from each discipline, were then selected to compete for the best Senior Thesis awards. It is important to note that students are required to include work in their primary discipline area of AE as well as to demonstrate breath capabilities in several other architectural engineering areas.

This year's winner is Jason M. Sambolt, EIT, a mechanical engineering senior, who selected to value engineer the Xanadu Snowdome Sports Complex, an indoor ski resort building with a retail section planned for the N.J. Meadowlands. He planned to tap into a landfill near the site to harvest the gas as an energy source for heat and power generation. He demonstrated substantial cost savings with positive environmental consequences.

The practice award underwritten by PEPP went to Antonio D. Verne, EIT, by selection of the department committee. Selection criteria include planning of a career in private practice, demonstrating leadership qualities and favorably representing the Department of Architectural Engineering and the profession in his activities.

It was indeed a great night for the graduating students as well as for faculty. Students from all branches of Architectural Engineering were recognized in a broad range of nominations and awards. This banquet showed once again that excellence in engineering is alive and well at Penn State's Department of Architectural Engineering.

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Contact Person: Michael R. Smith
 Telephone: (215)536-7075, ext. 133
 E-mail Address: mrs@cowanassociates.com
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Code requirements it will enforce:

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Congratulations to Nicole Gasda upon her receipt of the prestigious Truman Yeager Award as presented by the Lehigh Valley Chapter of the Pennsylvania Society of Professional Engineers. This award was established in 1972 as a memorial to Mr. Yeager who had a tremendous influence in advancing the Engineer's position locally and statewide. Qualifications include outstanding service to the Lehigh Valley Chapter and exceptional professional contributions to the Lehigh Valley which reflects credit to the Lehigh Valley Chapter.

Nicole has worked tirelessly on the Lehigh Valley Chapter publication, "Valley Engineer," over the past years, dealing with deadlines, article submission, and coordination with other Board members. The professionalism of the publication reflects positively on the Lehigh Valley Chapter. Nicole has accomplished this task while concurrently gaining her Professional Engineer's license and preparing for her wedding, along with her normal workload as a Structural Engineer and Project Manager.

The Truman Yeager Award was presented to Nicole at the Installation and Awards dinner of the Lehigh Valley Chapter in May. Well done, Nicole!

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