Notes From The Director

We are in the process of updating the PCANY Buyer’s Guide for 2017-2018. Accordingly, now would be a good time to review your listing and send any corrections to my attention. If you are not listed then this would be a great time to join PCANY. We are always open to new Producer, Associate, Professional, or Septic Tank members.

PCANY was featured in the June 2017 issue of Construction In Focus Magazine. It was a good opportunity to promote the work we do on behalf of the precast industry. Click on the following link to view the article (Article)

Warmest Regards,

Ronald E. Thornton, P.E.
Precast Arch Selected for Bridge Design Award

Submitted by Mark W. Olstad, PE of AECOM and ABCD-WNY

Elk Drive Bridge over the LaChute River (BIN 3302520) in the Town of Ticonderoga, Essex County was selected for the 2016 Bridge Design award by the Eastern NY Chapter of the Association for Bridge Construction and Design. The precast arch structure replaced an existing 60’ span steel girder bridge originally constructed around 1959. A 2014 inspection report of the existing bridge resulted in yellow structural flags due to transverse cracking at the abutment pedestals and stem walls along with significant bearing loss and deck deterioration.

GPI Greenman Pedersen provided design services for the replacement bridge with the objective of obtaining a design life of 75 years or greater, address hydraulic and drainage concerns, and provide a structure that blended with the historic aesthetic character of the surrounding community.

Essex County submitted documentation to NYSDOT requesting funding assistance for the project, which was subsequently approved by NYSDOT Region 1 and funded under the HBRR program.

The design methodology included excavation behind the existing substructure through clay overburden to sound bedrock followed by the placement of a keyed thrust back anchored to bedrock to resist the horizontal reactions from the proposed 90’ span precast arch units. Arch units were produced and erected in pairs. Precast U-walls and headwalls were also utilized to save on cost and field work.

AECOM and Greenman Pederson, Inc. are Professional Members of PCANY. LHV Precast, Inc. is a Producer Member. Check out all of our members in the PCANY Buyer’s Guide located on our website.

Project Credits:
Owner: Essex County DPW
Engineer-of-Record: Greenman-Pedersen, Inc.
Specialty Precast Engineer: Contech Engineered Solutions
Contractor: Reale Construction Co., Inc.
Precast Manufacturer: LHV Precast, Inc.
Choosing a Method of Design for Precast Concrete Below-Ground Structures

Submitted by Gary K. Munkelt, PE of Gary K. Munkelt & Associates, LLC

Precast concrete “Below Ground” structures have been built since the 1960’s. Specifications are available for the different types of precast products on the market. There specifications, written by volunteers and published by ASTM International provide general guidance for dimensions and materials based on manufacturing tolerances and field experience. They do not, however, include the method of analysis and design necessary to verify (1) thickness of walls and slabs and (2) amount and placement of reinforcing steel. Instead, the specifications refer to ACI 318 “Building Code Requirements for Structural Concrete” and AASHTO “LRFD Bridge Design Specifications” for a method that includes formulas and guidelines.

The American Concrete Institute (ACI) has published a design method for more than a century. The allowable stress design (ASD, also called working stress design (WSD)) was popular until the 1970’s. Many buildings exist wit designs using ASD (WSD) method. Some of the formulas are still used today to determine the actual stress in the steel (fs) when checking for crack control. This method, however, was uneconomical because it treated dead load (DL) and live load (LL) with equal importance even though prediction of DL was more reliable than the prediction of LL. ACI introduced a method in the 1960’s that would provide a more economical design.

The LFD method uses coefficients to provide a distinction between DL and LL. The DL, being more predictable, was multiplied by 1.4. LL, being less predictable, was assigned a coefficient of 1.7. Thus, the ultimate or applied load became 1.4DL + 1.7LL. Future research and experience could provide justification yo adjust the coefficients.

The AASHTO LRFD Method, which stands for “Load and Resistance Factor Design” is an extension of LFD that considers variability and reliability in construction and material properties. Designs for below-ground precast structures will typically be similar whether using LFD or LRFD. Therefore, the choice of which method to use may be based on where the product will be installed and the specifying jurisdiction. State and County DOT’s may require that LRFD method be used for design, even though the end result may be the same as LFD.

Regardless of the method used, engineers have a responsibility to protect the safety and welfare of the public. Any of the three methods described above (ASD, LFD, or LRFD) will result in a product that satisfies this obligation.

Gary K. Munkult & Associates, PE is a Professional Members of PCANY. Check out all of our members in the PCANY Buyer’s Guide located on our website.
OSHA Exempts Monorail Hoists

Starting Nov. 10, 2018, OSHA will require crane operators to be certified to operate most cranes that have a lifting capacity of 2,000 pounds or more. Precast manufacturers who use monorail hoists, also referred to as A-frame cranes, will not be required certify operators of those vehicles. Certification must be issued by an accredited crane operator certification organization. (Information)

NPCA Annual Convention Registration Opens

The 52nd Annual Convention of the National Precast Concrete Association will be held October 12—14, 2017 in Atlanta, GA. Visit precast.org/meetings/annual-convention/ for information and registration.