



Top photo shows installation of mastic seal between wall and top slab on equalizer tank. Bottom photo shows tanks with joint wrap in place ready for back fill. photos by Jefferson Concrete

PCANY board and annual meetings at Turning Stone

The Annual Board and Business Meetings of PCANY were held at the Turning Stone Casino in Verona, NY on January 28. Officers for the current year were elected as follows: Scott Harrigan, The Fort Miller Co, President; Rick Martel, Unistress Corp, Vice President; Tom Montalbino, Roman Stone Construction, Secretary; David Wan, Oldcastle Precast, Treasurer; Ed Pennypacker, Concrete Sealants, Associate Director; and Ron Thornton, Delta Engineers, Professional Director.

The Annual Meeting included a presentation by Ed Pennypacker, Jepco Sales, who is chairman of the new Septic Tank Group reporting on progress and goals of the group. Other business included approval of a budget for 2004, a financial report for 2003, newsletter advertising, pricing policy for version 3.0 of the new culvert program which is expected for distribution in May. Proposed changes in the By-Laws related to a new class of membership for the Septic Tank Group were also presented and discussed.

Technical presentations were made by Dan Hubbell from Hubbell Galvanizing and Kurt Damery from Oilchem, Inc. □

Big tanks speed construction of new waste water treatment plant

Big precast tanks offer a number of advantages for construction of small wastewater treatment plants. A new plant, recently opened for the Hamlet of Lisbon in central New York State is a good example. The all precast plant, with a capacity of 50,000 gal/day, includes two 6,000 and two 14,000 gallon tanks that are connected in series for primary treatment. A 10,000 gallon equalizer tank completes the primary septic system.

Secondary treatment is provided in a rotating biological contractor or RBC for oxygen buildup, and from there effluent flows to a clarifier for further settling. Clear water from the clarifier flows to open sand filter beds and eventual discharge in a nearby stream. The system is economical for treatment plants to

a capacity of 100,000 gal/day and meets standards of the New York State Department of Environmental Conservation (ENCON).

Each tank included a base slab with a 1' stub wall, a 5' high riser wall segment, and a top slab. Walls and slabs were all 8" thick. The tanks were designed for an H₂O wheel loading. Inside dimensions of the 10 k tank was 12' x 25'-4 x 6', the 6 k tanks 12' x 15'-0 x 6' and the 14 k tanks 12' x 30'-4 x 6'. All of the segments, were installed in less than two days with some delay caused by rain and inexperience of the crew. The contractor notes however, that similar projects have been installed in one day since the Lisbon project. Each of the tanks were set on a subbase of 12" to 18" of crushed stone.

Watertight joints were achieved by cleaning the edges, application of a primer and installation of two strips of butyl mastic sealant. A 6"-wide ConSeal wrap was then installed on both the exterior and interior of the joints, after application of a primer. The wrap is a butyl fabric that will not shrink or oxidize with aging, and is good for installation in temperatures from 0° to 120°.

Precast tanks offer a number of advantages for plants of this type. Construction time, for tanks on the Lisbon project, which would have been cast-in-place, was cut from weeks to a few days. Inspection at the precast plant eliminated costly mistakes and lost time on the job site.

The owner of the plant is the Town of Lisbon, NY and the engineer was Bernier Carr and Associates from Watertown, NY. The contractor was Fiacco and Rieleigh from Norwood, NY. The precast tank fabricator was Jefferson Concrete, with their plant and offices located in Watertown, NY. □



Precast ducts are shown for storage of CSOs in New York City. photo from Precast Solutions

Underground chamber or holding tank for CSOs to open in Queens, New York City

A new underground chamber or holding tank for storm water Combined Sewer Overflows (CSOs) will open this year in the Flushing Meadows-Corona Park section of Queens, in New York City. The holding tank is constructed with a network of precast concrete single and double cell ducts or channels. The channels vary in size with the smallest at 45" x 24" and the largest at 60" x 30". A total of 375 channels were required on the project.

CSOs occur in systems, where sanitary and storm water are combined and when heavy rainfalls exceed the capacity for treatment. Such events are common in urban areas that were developed before the advent of separate sanitary and storm systems. In the past, the excess flow in the Queens area has been allowed to bypass treatment and be diverted directly into Flushing Creek and Flushing Bay. The new holding tank is designed to capture 90% of the CSOs and release them for treatment when the capacity of the nearby Tallman Island plant will permit. The top of the holding tank will be covered with soil and developed as a recreation park.

Management of CSOs has been mandated by the Federal Clean Water Act. Other solutions for CSOs are to increase capacity of the treatment plant, build separate storm water sewer systems, or develop storage capacity within the sewer system with oversize pipes or tunnels.

The owner of the retention facility is the New York City Department of Environmental Protection. The engineer is CRS Greiner and the contractor is E.E. Cruz both from New York City. The pre-caster was Jersey Precast Corp from North Brunswick, NJ. Material for this story was taken from the Winter 2002 issue of NPCA's Concrete Solutions. □

water and wastewater related resources

- **US Environmental Protection Agency**
(USEPA) www.epa.gov 800-426-4791
- **American Water Works Association**
(AWWA) www.awwa.org 303-794-7711
- **National Rural Water Association**
(NRWA) www.nrwa.org 580-252-0629
- **New England Water Works Association**
(NEWWA) www.newwa.org 508-893-7979
- **NYS Dept of Environmental Conservation**
(NYSDEC) www.dec.state.ny.us 518-357-2234
- **National Ground Water Association**
(NGWA) www.ngwa.org 800-551-7379
- **Water Environment Federation**
(WEF) www.wef.org 800-666-0206
- **Water Quality Association**
(WQA) www.wqa.org 630-505-0160

New website features state highway specs and astm standards

A new website, www.specs.fhwa.dot.gov, which is a collaborative effort of the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) features highway construction specifications from all 50 states and relevant American Society of Testing Materials (ASTM) standards.

Users can search, review, and cross-reference by subject, designation and title. The latest "blue book" standard specifications for New York State Department of Transportation (NYSDOT) are included. They can be viewed and downloaded as well as relevant ASTM standards. A separate category features specifications for varied topics such as design-build, performance-related specifications, quality assurance, warranty, and innovative and emerging specifications.

A recent visit to the site indicated accessibility problems in the latter category. Viewers are encouraged to email an address for direct response in the event of a recurrence of such problems. ASTM standards related to precast concrete were found in varied subject area folders such as buildings, cement and concrete, and masonry. □

Butyl seals effective for watertight joints

Butyl rubber seals and gaskets have proven effective in over 25 years of service in the precast concrete industry. They are widely accepted as a low pressure water seal with an indefinite service life. They are resistant to acid and alkaline conditions. They are made of a high quality butyl rubber with 98% solids that will not harden, shrink or oxidize.

The most common application for butyl seals has been "O" rings and gaskets used with pipe joints. The flexible butyl strips or wraps for tanks, described in this letter, are also common however. They are available in a variety of widths, thicknesses and formulations depending on the application.

For details, visit [pcany](http://pcany.org) at www.pcany.org for a list of Associate Members who supply or manufacture butyl material. □

Calendar of Coming Events:

- February 6-8 **Manufactured Concrete Products Exposition, Atlanta, GA**
Visit: www.mcp.org for details and registration
- February 6-8 **NPCA Annual Convention, Hyatt Atlanta Regency, Atlanta, GA**
Visit: www.precast.org for details and registration
- February 17-20 **World of Concrete 2004, Orlando, FL**
Visit: www.worldofconcrete.com for details and registration
- March 25-27 **Architectural Precast Association Annual Convention, Nashville, TN**
Visit: www.archprecast.com for details and registration

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Workman install top riser segment on new precast water tank. photo by Jefferson Concrete

Precast tank for fire protection, logical choice by designers

The installation of a new 25,000 gal precast water storage tank for standby fire protection at the Corning Glass plant in Corning, NY illustrates one of the best reasons for using precast for underground structures. A high water table, close proximity of existing utilities and a critical completion date made precast concrete a logical choice by the designers.

The inside dimensions of the tank are 10' x 20' x 16' in height with 1' thick walls, roof and base slabs. The tank was match cast in segments to reduce weight, and ease trucking and installation. The joints were made watertight by application of a primer and two strips of butyl mastic sealer. The base slab was installed on 12" of crushed stone, and was cast with stub walls for receiving the wall riser segments. The base slab was extended 1' from the wall line to engage soil above and add weight for resisting floatation. The wall segments were 4' and 7' in height. They were cast with struts at the third points to resist lateral soil loads.

The owner of the tank is the Corning Glass Co and the engineer was Hunt Engineers, Architects and Surveyors, PC from Corning, NY. The contractor was Northeastern Construction Co from Waddington, NY. The precast segments were cast by Jefferson Concrete at their plant in Watertown, NY. □

Ver. 3.0 of culvert program presented at ACI meeting

Version 3.0, of the Concrete Culvert Design and Analysis Program was presented at an ACI Breakfast Meeting held at the Century House in Latham, NY, on January 14. The presentation was made by Larry Feeser, PhD, PE who is Professor of Civil Engineering at RPI and who has implemented each of the PC versions for PCANY since it was published in a MS-DOS format in 1996 and a Windows format in 1996.

The program is used for design of precast concrete box culvert modules. It will design and/or analyze one, two, three or four cell members with or without the bottom slab. The output consists of wall slab thickness, unfactored moments and shears based on fatigue, required bar reinforcement and reinforcing bar schedules. Distribution by PCANY is expected this spring.

The original program, written by the North Carolina Department of Transportation in 1978 was modified and adopted by NYSDOT in the early 90s. In a main frame format, it was initially used exclusively for in-house design and analysis. The PC versions and distribution by PCANY allowed consultants and precasters to submit designs according to NYSDOT standards. Hundreds of precast box structures have been built in New York State since that time. A joint committee from the department and PCANY administers revisions in the program. □

Call for entries to 2004 Concrete Bridge Awards Competition

A call for entries to the 2004 Concrete Bridge Awards Competition has been issued by the Portland Cement Association. All types of bridges are eligible including highway, railway, and pedestrian. All kinds and spans of bridges are also eligible including precast, cast-in-place and combinations for short, medium and long spans and for new, construction, rehabilitated and widened structures. Bridges must have been completed between November 2002 and May 2004. Visit www.cement.org/bridges for details. □

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Precast box members are installed for an underground storm water storage tank.

photo by W E Dailey Co

Storm water runoff controlled with one million gallon tank

Storm water runoff, in a part of the city of Albany, NY is controlled by an underground, one-million gallon precast box element storage tank that is burried under the athletic fields at Albany High School. The tank was installed and put into operation in late 1996.

The tank is composed of three structures that are 335' long, each made up of 60 precast concrete box elements that are installed side by side. The boxes are 8.5' x 20' inside, 5.5' in length and weigh 26 tons each. The three structures were connected in parallel to an existing 5' diameter storm sewer to relieve flooding that was common in the area during heavy rains. At last report the tank was working successfully.

The City of Albany is the owner. Hershberg and Hershberg, from Albany, was the consultant and J H Maloy, also from Albany, the contractor. The project was reported in the March '66 issue of the PCANY newsletter. □

ACI 350 to be used with caution and not supercede ASTMs

An article in the Jan/Feb issue of Precast Concrete News encourages designers to use ACI-350 with caution, when writing specifications for projects. ACI 350-01 has specific language stating it is not intended to supercede ASTM standards for precast structures, and is written specifically for cast-in-place work. Specifiers who use the ACI-350 anyway may discover provisions that have an economic impact on a project. □

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PCANY MONTHLY NEWSLETTER

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Going underground for water management:

views by the editor

Precast elements are going underground to solve all kinds of water management problems. Our newsletter this month notes applications for storm water, waste water and even plain water like the standby fire system tank at Corning Glass.

Precast vaults, tanks, and boxes keep getting bigger, better and more economical. They are bigger because the handling equipment, in the precast plant and on the job have greater capacity and control. The product is better with higher quality concrete, improved forming, and certified quality control programs in most plants. And they are economical because of savings in time and labor on the jobsite.

Going underground has another major advantage and that is, saving valuable space above ground for parks, recreation, roadways or parking. Most precast structures are designed for H₂O loadings. They can even be designed for aircraft loadings. And they can be installed on a stone base without complicated backfilling procedures that are frequently

required with plastic or corrugated steel systems. Once in place, the load capacity of a precast element is derived from the strength of its concrete and steel and is not dependent on the quality of the surrounding backfill materials.

Other advantages of precast concrete include weight and the ability to be modified with features such as extending a bottom slab to resist buoyancy. Precast elements are non-combustible and better able to resist high temperatures in the event of a fire. Precast joints are watertight when sealed with butyl rubber systems or gaskets. Precast elements are watertight also when made according to ASTM or NPCA certification standards.

Finally they can be installed in series or parallel for a variety of water management applications. Regulating flow of waste and storm water to existing treatment plants, storm sewers or the natural environment and doing it all underground, is more and more a best management plan. Visit the **pcany** website at **www.pcany.org** for ideas. □