

the news



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PHILADELPHIA SECTION

AMERICAN SOCIETY OF CIVIL ENGINEERS

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Electronic Message Hotline: (215) 934-3639 (24 hours a day)

Vol. 70-8

Our 84th Year

May, 1998

ARRIVEDERGI • ROMA BRAVISSIMO • BENENUTO • LA DOLCE VITA • CHE BELLA

CIAO! LA FIESTA ITALIANO!!

Phila. Section, ASCE Fantastico Annual Dinner Dance Friday, May 1, 1998

at

SugarLoaf Conference Center

*(Executive Conference Center of Temple University)
9230 Germantown Ave., Phila., PA 19118 (215) 242-9100*

*6:00 pm Cocktails (Cash Bar)
Hors d'Oeuvres*

*7:00 pm Dinner
(Vegetarian Choices Available)*

Music for your listening and dancing pleasure 'til Midnight

*Send for your tickets today... Guests Welcome!
\$35.00 per person*

Consultants, Contractors, etc...

Tables can be reserved for your party or firm.

For reservations and more information, call
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TECHNICAL GROUP ACTIVITIES Engineering Management Group

May Luncheon Meeting

DATE: Wednesday, May 13, 1998, 12:00 Noon
LOCATION: Municipal Services Building, 1401 John F. Kennedy Blvd., 16th Floor, (Room To Be Determined), Philadelphia, PA

SUBJECT: "The Impact of Waterfront Development on the Greater Philadelphia Region"

SPEAKER: Mr. James Cuorato, Executive Vice President, Penn's Landing Corporation

Price: \$10.00 (Students and retired persons \$5.00)
A buffet lunch will be served starting at 12:00 noon and Mr. Cuorato's presentation will begin at 12:30 p.m. Seating is limited. For reservations, contact **Dennis MacBride at (215) 580-7084** no later than **Wednesday, May 6, 1998.**

Geotechnical and Environmental/ Water Resources Groups

DATE: Tuesday, June 23, 1998

Location: Holiday Inn, King of Prussia

Time: 5:30 pm

SPEAKER: David B. Wilson, P.E., Vice President and Senior Project Manager, Gannett Fleming, Inc.

SUBJECT: Penn Forest Dam Replacement Project

For reservations, please call **Adam Hockenberry at (215) 895-1633, no later than Thursday, June 4, 1998.** \$25.00 for non-Phila. Section members, and \$20.00 for Phila. Section members

Penn Forest Dam is a large earthfill embankment dam that impounds one of the City of Bethlehem's two major water supply reservoirs. The dam is 145 feet high and 1,930 feet long and was constructed between 1956 and 1958. On May 18, 1960, during the first filling of the reservoir, a large sinkhole developed on the upstream embankment slope. In July of 1994, with the reservoir level at spillway crest, piezometric levels in the foundation rock in the vicinity of the former sinkhole declined rapidly, indicating a potential dam failure in development. The final conclusion from the investigations and analysis was that the dam was in an unsafe condition and could not be

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BUON GIORNO • O SOLE MIO • PARLA ITALIANO • PRESTO A PRESTO • AMICOS Y AMICAS • CIAO, CIAO BAMBINO

BUON APPETITO • VIDI, VICI VINCI • LA CUCINA ITALIANO • BUONA SERA • COME SI CHIAMA • VICI D'ARTE

BUONA NOTTE • CIRIBIRIBIN • SANTA LUCIA • TORNA A SORRIENTO • GRAZIE



THE PRESIDENT'S MESSAGE

Since this is my last President's Message, I would like to take this opportunity to thank all Phila. Section members for your support this year. A very special thanks goes to our Board members and all of the volunteers who made this a very special year for our Section. Over the next several months we will be making our mark on Philadelphia. First was the Concrete Canoe Race and Steel Bridge Competition on April 18, 1998. And later this Spring we will be installing our mural which you have been hearing about for some time now (Credit for the mural goes to the YMF and Past President **Al Zion's** Board of Directors). I

knew that this position would be a lot of work; what I wasn't prepared for was the incredible amount of support that I got from all of the Engineers that I had the pleasure to meet and work with.

There are several items that I would like to bring to your attention in this issue:

House Bill 167, sponsored by Rep. Kenny (Phila) proposes to make drastic changes to the Professional Registration Board along with the rest of the Boards and Commissions in PA. At the time of this writing the bill does not appear to be going anywhere, but ASCE is tracking the bill and will inform us of any change. The Registration Board is totally self sufficient; all funds for the Board come from the registration and testing fees. We want to make sure that the Board continues to be run by engineers.

The Concrete Canoe Race and Steel Bridge Competition was back to the Philadelphia area at Peace Valley Park near Doylestown. The students put a lot of work into these canoes and bridges. The event was a great success.

This summer you will receive a ballot for the next National ASCE President Elect. The two candidates are both from our Zone. It is very important that everyone select a candidate and send in his or her ballot. The more votes we send in (one per person, please), the more the outcome of the election represents the feelings of our Zone. The next District 4 Director will also be on that ballot. **Joseph Syrnick**, Past Section President and last year's Delaware Valley Engineer of the Year, will be the official candidate. Joe has done a lot for our Section, now it's our turn to show our support for him with an overwhelming response from our membership. Make a difference, make your voice heard, send in your ballot.

In my next three years as Past President I will remain active with the Section and use the contacts that I have made this year to keep our Section visible on the national level. I promised the students a Local Student Chapter Conference and will be working over the summer to put one together for the Fall. Once again thank you for the opportunity to make a difference, and I hope I lived up to your expectations of what your Section President should be. Have a great summer!

Sincerely,

Darin L. Gatti P.E.

President, Philadelphia Section ASCE
215-686-5573 darin.gatti@phila.gov

(Editorial)

THE GATTI PRESIDENCY: BUILDING A BRIDGE

The Philadelphia Section, ASCE has been blessed, throughout the years, with Officers at the highest level of character and ability. And fulfillment of Presidential duties has inevitably reflected his or her character and professional competence (yes, we have enjoyed a "her" as Section President — **Sue Lior, P.E.**,— 1988-1989 — and anticipate soon to be inaugurated a second one for 1998-1999 — **Sandra May, P.E.**)

It was no exception in the Presidency about to be concluded, of **Darin L. Gatti, P.E.** In a word, his tenure personified a deliberate, thorough-although, subdued — approach to all of the challenges the office presents to the incoming President. Darin accepted the challenges and addressed them head-on, just as he has faced, since 1982 as (in his words: a "young punk Engineer" in the Bridge Section of the Philadelphia Department of Streets). He continues to face them in his present top job with Streets as Engineer of Design in the Bridge Section. His responsibility includes design calculations, specifications, and contract drawings of both steel and prestressed concrete bridges. He supervises all design projects and construction problems in the Bridge Section. Section personnel

are responsible for the rating, design and construction of over 350 City-owned bridges in Philadelphia. All work is done in-house with the exception of the actual construction, which is contracted out by bidding.

What a testimonial to the appropriateness of Darin as a key bridge expert to his mission of building a Bridge between the established concepts of his worthy presidential predecessors and the implementation of his own progressive and innovative ideas! Darin's credo and consistently motivating theme has been "reach higher." In his quiet, deliberate and thorough manner, he has left no stones unturned in order to press forward the ideals and objectives, both professional and communal, that have preserved and broadened the recognition of the Phila. Section as a prime professional engineering organization in the Delaware Valley, and acknowledged by National ASCE as one of the most outstanding Local Sections in the United States and abroad.

His success is manifest in one of the most important of Bridge components: that connecting the Younger Civil Engineers of the Society into the

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Technical Group Activities

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safely refilled. Concepts for remediation or replacement of Penn Forest Dam were developed by December 1995, and selection of the Roller Compacted Concrete (RCC) replacement dam option was made in January 1996. The Penn Forest RCC replacement dam will be approximately 180 feet high and will be the third largest RCC dam by volume in the United States.

David B. Wilson, P.E., is a Professional Engineer in the states of Pennsylvania, Virginia and South Carolina. He has 25 years of professional experience in the field of dam design and dam safety. He holds B.S. and M.S. degrees in Civil Engineering from Lehigh University.

PHILA. SECTION, ASCE

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THE GATTI PRESIDENCY

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mainstream of ASCE affairs, both Nationally and Locally. The Section's Younger Member Forum has thrived – through the brilliant efforts of outstanding YMF Officers and members of recent years, and the sympathetic and seasoned professional guidance of President Darin L. Gatti.

Darin's Bridge has been clearly and concisely articulated in his splendid monthly President's message columns published in THE NEWS. Reference to Darin's final Message in this issue succinctly sums up his tireless efforts to direct the Phila. Section constantly forward, to add more spans to that Bridge which he began to design immediately after assuming office at the Section's Annual Dinner Dance at Sugarloaf on May 2, 1997 and where on May 1, 1998 he will relinquish the honored gavel to Sandra May. The Message also puts forth his final blueprint and specifications for that magnificent Bridge.

Darin will be the first to acknowledge that a one-year tenure is too short a period in which to realize the fulfillment of all a President's hopes and plans. But that does not detract from the great accomplishments he has achieved.

Darin Gatti rose through the hierarchy of Phila. Section, ASCE officialdom as Director, Treasurer (6 years), Vice President, President-Elect, and, finally, President 1997-1998. In 1992 he was honored as ASCE Young Government Engineer of the Year. The Precast-Prestressed Concrete Institute (PCI) awarded the Dunks Ferry Road Bridge – for which Darin was Primary Designer and Project Supervisor – the 1991 PCI Prize Bridge.

When he was elected Phila. Section President, therefore, Darin's qualifications and talents were no myths or strangers to the membership. He proved the worthiness of those qualifications in spades. Not only did he advance vigorously the bridge between ASCE and the dynamic Younger Member Forum, he also oversaw a Section Meetings Program of outstanding subjects and speakers that inspired enthusiastic response from the members and their guests. He sought and followed the suggestions and requests of the Chairmen of the Technical Groups and Special Committees, his fellow officers, and the Section Membership in general, in order to improve constantly the Section's contributions to the profession and to the Community. He has incorporated full cooperation with the Section's Reading Branch, the District 4 Colleges and Universities ASCE Student Chapters of the Civil, Architectural and Environmental Engineering Departments, the latter of which have been for many years honored at Regular Phila. Section Meetings. He has continued and broadened the policy of Joint Meetings with other Engineering Professional Societies – which have been highly successful – and joint involvement with other agencies allied with these Societies, including very active participation in the pursuits of the Annual Engineers Week Committee, in which several devoted Phila. Section members have served year after year.

Being President of the Section is nearly a full-time job in itself during the one-year term. Adding to this and his difficult and demanding position in the Bridge Section of the Streets Department, Darin has managed to find time for many extracurricular activities. Since 1982 to the present, he has served as an Instructor in the City of Philadelphia Construction Technology Program, in which basic engineering courses are taught to City employees in conjunction with The Community College of Philadelphia. Courses include Graphics; Blueprint Reading and Cost Estimating; Foundation Design and Construction; and Contracts and Specifications. We are comforted by Darin's declaration in this month's President's Message that during the three years he will remain on the Section's Board of Directors he will not serve merely as a figurehead. In his words "...I will remain active with the Section and use the contacts that I have made this year to keep our Section visible on the National ASCE level..." We can add that with the contribution of his talents and abilities, he will keep the Section viable at many other levels, within the Engineering Professional Community and society in general.

We praise you, Darin Gatti, without restriction or limitation, for the wonderful job you have performed. Congratulations! You have built your Bridge!

And now, **Sandra May**, we await your inauguration at the 1998 Annual Dinner Dance at Sugarloaf on Friday, May 1, 1998. Your outstanding qualifications and leadership abilities are well known to us. You have demonstrated them time after time in the innumerable assignments which you have so admirably carried out on behalf of the Phila. Section with your usual expertise. Your fellow Board Members, Technical Group and Committee personnel, as well as the General Membership of the Section, welcome you and stand by to be at your service. Our hearts and our hands are extended to you to help you in all your endeavors. Good luck!

LIFE MEMBERSHIPS AWARDED

At the March 12, 1998 Joint Dinner Meeting between the Philadelphia Section, ASCE and the Delaware Valley Chapter, American Concrete Institute (ACI), fourteen Phila. Section, ASCE members were awarded Certificates of Life Membership in ASCE. The following members were in attendance at the meeting and received their Awards in person from President Gatti: Lawrence V. Orata, Jr., Jack W. Boorse, Robert E. Chester, Thomas P. Conlon, Robert M. Koerner, Anthony Mele.

The following recipients were unable to attend the meeting, and their Certificates will be mailed to them: Lawrence D. Anderson; David K. Erickson; James E. Germain; George V. Hughes; Stephen A. McGlynn; Alan Newman; H.P. Sibertsen; William Wheeler.

The Phila. Section, ASCE congratulates the Life Members on reaching this important milestone in their Civil Engineering Careers.



MOY WINS TOP TEN AWARD

Lawrence M. Moy, P.E., Commissioner of the Philadelphia Department of Streets, has been named as one of the Top Ten Public Works Leaders in the nation by the American Public Works Association (APWA).

Moy, a graduate of Saint Joseph's Prep and Villanova University, has been employed by the Philadelphia Department of Streets for 42 years and has been its Commissioner since 1993. Prior to being named Commissioner by Mayor Rendell, Moy was Philadelphia's Chief Highway Engineer.

In his capacity as Commissioner, Moy directs the primary Sanitation and Transportation agency of the City of Philadelphia, responsible for proper management of municipal solid waste and provision of a clean and safe system for the City's highway and bridge network. The Commissioner oversees 2,400 employees and administers an annual capital budget totaling \$210 million. The Department's annual operating budget is \$160 million.

Commissioner Moy is a Registered Professional Engineer, who has completed additional coursework in Structures, Traffic Engineering and Local and State Government. He is a long-time member of the American Society of Civil Engineers, where he served as President of the Philadelphia Section, (1971-1972), Chairman of the Humphrey Memorial Fund, Chairman of the National Committee on Minority Programs, and from which he received the Civil Engineer of the Year Award in 1994. He is also a member of the American Public Works Association, where he served on the Oak Ridge National Laboratory Task Force and Urban Forum. Commissioner Moy is a board member of the Market Street East Improvement Association and serves as co-chair of PhilaPride, a quasi-public agency charged with urban renewal and beautification issues.

The Phila. Section, ASCE congratulates Commissioner Moy on this noteworthy achievement. The award will be formally presented at a recognition celebration in May.

YOUNGER MEMBER FORUM NEWS

The Younger Member Forum (YMF) current membership includes college students, recent graduates, and young registered Professional Engineers who are 35 years of age and under. The objectives of the group are: 1) To provide networking opportunities, 2) To interact with schools and the general public to promote civil engineering, and 3) To enhance career development.

Young engineers or college students who would like to become part of the YMF please contact **Carol Martsoff**, Parsons Brinkerhoff at (215) 790-2319 or martsoff@pbworld.com.

Upcoming Events

It's that time of the year again. Elections will take place at our **Tuesday, April 21, 1998** meeting. The YMF is currently seeking nominations for the positions of President, Vice-President, Secretary, Treasurer, Vice-President for College Contacts, Vice-President for Technical Groups, and Vice-President for Community Service. All posts are for one-year terms. In addition, we are also in need of volunteers for the various local colleges and Technical Groups (See last page of this newsletter). Nominations and volunteer names should be given to Carol Martsoff. This is an excellent opportunity to support the YMF and your professional development. Meeting specifics to be announced. Contact **Carol Martsoff** for more information.

On **Saturday, May 9, 1998** the YMF will sponsor a Habitat for Humanity workday. It will be a joint project with The Philadelphia Section of The Women's Transportation Seminar, an organization whose membership includes men and women transportation professionals who discuss different transportation issues. The worksite will be in Philadelphia. For more information, please contact Carol Martsoff. There will be free lunches provided for the volunteers by The Pennsylvania General Store, at the Reading Terminal Market, 12th and Arch Streets, Philadelphia, PA 19107. Their telephone number is (215) 592-9772. The Pennsylvania General Store caters breakfast and lunch, and is famous for their delicious box lunches. They also sell gift items in the Reading Terminal Market - all from local vendors. In addition, they have a mail-order brochure for their gift items.

During one weekend in June, the YMF will sponsor a Trailwork Day in The Wissahickon Park in northwest Philadelphia. The project is being coordinated with The Wissahickon Off-Road Cyclists group. Several hands-on opportunities will be available, including trail stabilization, site clearing, grading, and building a rough stone retaining wall from scratch. Afterwards, the volunteers will enjoy a picnic. In addition to the YMF, area colleges, companies, and individual Section members are also encouraged to participate. For details, please contact **Christopher Menna**, Phila. Dept. of Streets at (215) 686-5070.

Past Accomplishments

We still do not have a winner! The winning raffle ticket drawn at the December Winter Social was **7685109**. The winner was not present at the

event. Please tell all of your friends and colleagues who bought tickets to check them. If you have the winning ticket, please contact **Carol Martsoff**.

On **February 23, 1998**, several YMF members attended a forum sponsored by The Young Engineers Forum of The Engineers Club of Philadelphia. The topic was "Critical Issues Facing Young Engineers" and was well received.

The Engineering Management Group's February 24, 1998 Luncheon Meeting was a great success. **Mr. Al Tantala, P.E.**, President, Tantala Associates and Past President (1986-1987) of the Phila. Section, ASCE, spoke on the very controversial issue of Continuing Professional Development. A special thanks goes to **Tim Gunner**, Frederic R. Harris. Through Tim's efforts, five Younger Members participated, along with the other Section members.

The month of March proved just as busy. Many YMF members went to the **March 23, 1998** Joint Geotechnical/Environmental Technical Group and YMF meeting, which was held at URS-Greiner in King of Prussia. **Mr. Roy E. Hunt, P.E.** gave a very interesting talk, entitled "Slope Failures Along Highways in Southern Ecuador." **Wendy Walters**, Woodward Clyde, made coordination of this meeting possible.

Also, on **March 24, 1998** the YMF held its own monthly meeting at Houlihan's in King of Prussia. Our featured speaker was **Ms. Sandra May, P.E.**, PECO Energy. Sandra gave an enlightening discussion about competition and deregulation in the power industry. The YMF was honored to have her as its guest. And it was an excellent opportunity to get to know The Section's incoming 1998-1999 President. The success of this meeting was due to the diligent work of **Chris Barber**, Pennoni Associates.

Member Spotlight

The purpose of the member spotlight is to introduce a fellow YMF member to the Delaware Valley Engineering Community.

David P. Lamontagne is an Environmental Engineer at Urban Engineers in Olde City. Dave participates in many investigations designed to protect public health. One such example is a recent carbon monoxide investigation as part of The Lackawanna Valley Industrial Highway construction in the Poconos. The investigation was initiated after a teenager in a home situated within one hundred feet of the highway's legal right-of-way line was overcome with carbon monoxide poisoning. Urban conducted an investigation. It was found that a contractor had performed blasting to install drainage pipes several days prior to the incident. Six subsurface mine layers which naturally contain carbon monoxide complicated the investigation and sampling. The release of the carbon monoxide was due to the blasting. Dave was involved in much of the project and in the end, helped to report the findings to Mr. Brad Mallory, Pennsylvania Secretary of Transportation. Dave is planning to take the P.E. Exam in the Fall of 1998. He recently completed his Masters Degree

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February Joint Dinner Meeting

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lion estimate for the park project, roughly \$4 million would be needed to construct the remaining portions of the bulkhead. The park project is currently being managed by the City's Department of Streets.

Bids were taken for the bulkhead construction in October 1996 and Bedwell Construction was the successful contractor. Work began in January 1997 and was completed this past February. The total construction cost is approximately \$3.7 million.

Problems and Future Plans

The contractor had a bit of a rough start. At first, Bedwell envisioned that most of the work would be done from the land side. Difficulties were encountered and this approach had to be rethought, with barges being brought to the site to function as work platforms. Much of the bulkhead wall tieback work consists of diagonal tubes that are drilled to bedrock and grouted. Tidal variations often severely limited the windows during which drilling could be accomplished. The use of dredged river silt behind the new bulkhead was not permitted by environmental agencies (it was done in the section built in 1978).

In most areas, the existing timber supports for the former piers and bulkhead sections were still in place. The planned construction had to account for this and often needed to snake around these features to the maximum extent possible. In the section north of Vine Street, gabions were used in place of the steel sheeting to address environmental concerns. While this was done in part to try and help the re-establishment of breeding grounds for blue crabs, it was not to the liking of the Corps of Engineers.

There are several sewer outfalls along the river throughout the project which will be needed to function since they drain stormwater from City streets. In these locations the bulkhead has openings with baffles and the "deck" of the Park bridges the openings.

With the bulkhead complete, the design of the Park itself can be completed and construction is anticipated to begin in 1999. When the Park opens, the dream of a linear park along the Schuylkill's east bank will finally become a reality, nearly fifty years after it was first conceived.

Question and Answer Period

Mr. Boles fielded several in-depth questions from the audience. His excellent talk illustrated his thorough knowledge and experience on this long and complex project. The audience responded with great applause of praise and appreciation.

Tantala

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Young Engineer of the Year Awards Dinner recently. The event honored young engineers "...who have contributed to their profession and to their community through achievement and participation with service beyond self..."

The Phila. Section, ASCE congratulates this young leader on a noteworthy achievement.

FEBRUARY JOINT DINNER MEETING

February 12, 1998

Harbor League Club, Camden, NJ

The Schuylkill River Park and Bulkhead

by Bob Wright, Staff Writer

As always, the Annual Joint Dinner Meeting of the Phila. Section, ASCE, and the South Jersey Branch, New Jersey Section, ASCE, attracted a large audience from both Sections. The meeting discussed a highly interesting and important current engineering project involving both organizations. The subject was: "*The Schuylkill River Park and Bulkhead.*" Principal speaker was **Elmore J. Boles, P.E., P.L.S.**, President, Boles Smyth Associates, Inc.

The meeting was co-chaired by **Hugh J. Dougherty, P.E.**, President, South Jersey Branch; and **Darin L. Gatti, P.E.**, President, Phila. Section, ASCE. Both Presidents made announcements of concern to their respective organizations.

Swarthmore College Night

The meeting honored the ASCE Student Chapter, Alumni and Faculty of the Civil Engineering Department of Swarthmore College. A delegation of students attended the meeting and participated in its proceedings. **Dr. Faruq Siddiqui, P.E.**, Faculty Advisor of the Swarthmore ASCE student Chapter and current Vice President of the Phila. Section, thanked his hosts for honoring the Swarthmore Student Chapter. He also took the opportunity to boast about the Chapter's progressive activities. Although Swarthmore is noted principally as a Liberal Arts college, Dr. Siddiqui pointed out that since 1935 it has had an outstanding engineering program. He described the Civil Engineering Scholarship Awards Program at Swarthmore, which were sometimes combined with the Economics Degree Scholarship Program.

Dr. Siddiqui proudly described several engineering research projects and paper competitions of many student classes, particularly in Civil Engineering.

Chapter President Speaks

Swarthmore ASCE Student Chapter President **Chris Rodger** thanked his hosts for their courtesies and the invitation, and introduced his fellow officers: Vice President, **Carl Mas**; Treasurer, **Jon Fiorelle**; Secretary, **Aaron Marsh**. He paid particular tribute to Professor Siddiqui and Alumni Contact Members **Dick Mabry** and **Dan Honig** for their invaluable help in planning Chapter events and in fulfilling its objectives. Chris described an important senior design and cost study project — a parking lot for the college. A very interesting and productive initiative is the Student Chapter's cooperative program with other engineering undergraduate disciplines, including the Institute of Electrical and Electronic Engineers (IEEE), the American Society of Mechanical Engineers (ASME) and the Society of Women Engineers (SWE).

The Student Chapter participated in the ACI Concrete Beam Competition held annually at Temple University. A very significant accomplishment of the Chapter has been the setting up

and maintenance of the Phila. Section's Webpage (a function which President Gatti later in the evening acknowledged with great thanks to the Chapter for its efforts).

Tom Branigan Introduces Speaker

Phila. Section Director **Thomas J. Branigan, P.E.** introduced the Principal Speaker of the evening, **Elmore J. Boles, P.E., P.L.S.**, President, Boles Smyth Associates, Inc., the firm responsible for the design of the Schuylkill River Park and Bulkhead project.

Mr. Boles related some history of the City of Philadelphia's effort to bring the Schuylkill River Park to reality. Many Americans, through movies and personal visits, experienced linear parks along the rivers of the cities of Europe in the post-World War II years. Paris, in particular, boasted a substantial park along the Seine River. In the early 1950's, Philadelphia's planners set out to create a similar park along the east side of the Schuylkill River from South Street to the Art Museum.

Description of the Area

For the most part, this area was a desolate one. It was bordered on the east by the tracks of the Baltimore and Ohio Railroad and in its northern reaches was often a very narrow sliver of land. The B&O had constructed timber bulkheads along the river to establish the railroad right-of-way in the early part of the century, and several portions had begun to fail by this time. Much of the area between the railroad and the river shoreline had been occupied by finger piers which served river transportation and related industries. Commercial barges transported coal and hardware products from the Reading area by way of the River and several canals until the decline of river transport, which came about when the railroads began to spread. The railroad had moved to fill in the pier area with coal and cinders when it constructed the new bulkheads. The areas formerly occupied by the piers now began to be sites for warehouses and rail-related facilities.

Various Studies Initiated

In the early 1960's the B&O closed its passenger station at Chestnut Street and railroad operations in the area began to decline. The right-of-way was seen as a corridor for a possible east-side complement to the Schuylkill Expressway. However, concerns for the needs for open space caused this idea to be shelved. The area's possible uses were restricted due to the lack of access to the City's street system, and billboards began to populate the site.

In 1963 the City's Fairmount Park Commission commissioned architect John Collins (now a partner of Boles' in the Delta Group) to develop plans for a linear park along the east side of the river, beginning at Spruce Street and eventually reaching to Valley Forge. A construction budget of \$50-60 million was foreseen. The design of this park remained a challenge given the many physi-

cal and environmental constraints that were faced. The adjacent railroad, for example, presents severe access problems that remain to this day. The tracks would need to be crossed in some fashion to connect the City to the Park.

The original concept was a multi-level park, with easy access to the water. This became more feasible after the Hurricane Agnes floods in 1972, when the Corps of Engineers constructed many dams upstream on the Schuylkill to control flooding. The frequency of flooding of the Park site decreased dramatically as a result of the construction of these dams and the site is no longer in the river's flood plain. Before these dams were built, the area was often flooded up to and, occasionally, over the tracks.

Bulkhead Needs Described

To construct the Park, the bulkhead situation would have to be addressed. In a close examination of the existing bulkhead, failures were evident. Two types of failures were generally found — complete collapse (the result of settlement of the relieving platform) and tipping. New bulkheading would be needed especially at the northern edge of the Park to capture needed space. This could be achieved by construction of a new bulkhead to the lines established by the Secretary of War in the 1940's to facilitate unimpeded shipping traffic on the river.

Budget Problems Addressed

The large construction budget was also revisited. To reduce costs, the philosophy of the Park was changed somewhat. The original concept was a fully-paved area with limited landscaping. This was revised and the hard surfaces were minimized and replaced with more vegetation. The multi-level scheme was discarded. Reuse of existing facilities was recommended wherever possible. Three diverse segments were envisioned, primarily to meet the wishes of neighboring groups — a playground at the southern end, a community garden near Spruce Street, and a passive park for the remaining portions.

The first section of bulkheading was started in 1978, once a myriad of federal, state and local agencies had been contacted and all necessary permits were in hand. Often, dictates of one agency were in direct conflict with those of others. The design was a steel sheet pile wall with a concrete cap, similar to construction used on Lake Erie, rather than an earlier thought to use a cantilevered platform. The sheet pile wall would extend through the river bottom to bedrock and would need to be supported by tiebacks. Due to the limited funding made available for the project by the City, only a small segment of bulkheading could be constructed.

Construction is Begun and Completed

The project began to gather momentum in the early 1990's and federal highway funding was found for it. It was determined that the bulkhead could be eligible for congestion management funds since the park would feature a pedestrian/bicycle path, which would conversely help to reduce highway congestion. Of the current \$12 mil-

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SECTION PARTICIPATES IN SCIENCE FAIRS

by Chris Rood, Phila. Section Director

The Phila. Section, ASCE for the fourth consecutive year, sponsored Special Awards in the 1998 Delaware Valley Science Fairs with this year's Fairs held on April 8, 1998 at the Fort Washington Expo. The Delaware Valley Science Fairs offers the best and brightest students an opportunity to present exhibitions of research that promote Science and Technical education. The team of judges representing the Phila. Section examined more than 900 public, parochial and private school student Science Fair winners from the fifteen county Tri-state area in Grades 6 thru 12 looking for the top projects relating to the Civil Engineering field.

The Section presented four awards. First and Second Place awards were presented in both the Grades 6th thru 8th and the Grades 9th thru 12th categories. The Second Place awards consisted of a plaque and a \$50.00 check. These were presented to **Lori Sansone** from Lacey Township high School, for her project entitled "Analysis of Lacey Township Water Supply II" and **Erica Rodriguez** from Baldi Middle School for her project, entitled "What Bridge Type Will Support The Most Weight?". The First Place awards consisted of a plaque, a \$100 check and complimentary tickets for the student and her parents to attend our Section's Spring Dinner Dance, to be held May 1, 1998. These were presented to **Jayne Margolin** from Upper Dublin High School for her project, entitled "Earthquake Resistant Structures" and **Beth Skovira**, from Downingtown Middle school for her project entitled "What is the Effect of Municipal Treatment Plants on the East Branch of the Brandywine?" All four of these projects were exceptional and well presented by the students, and the team of judges, led by our own **Robert Wright**, had an enjoyable day.

The Section anticipates participating in the 1999 Science Fairs scheduled to be held in April, 1999. If anyone is interested in volunteering to be a judge for the Section's awards, or in being one of the over 500 volunteer judges needed for the overall Fair judging, contact our Section Director, **Mr. Chris Rood, P.E.**, at (215) 580-7586.

ACI CONCRETE CONSTRUCTION SEMINAR

The Delaware Valley Chapter, American Concrete Institute (ACI) is sponsoring a Seminar: "Troubleshooting Concrete Construction" on **Wednesday, September 23, 1998**, at the Marriott West (Conshohocken, PA).

Seminar Outline:
Let's Face It...

On construction projects there are always problems. At the ACI Troubleshooting Concrete Construction seminar, some of the all-too-common problems that will be discussed include:

• Problems with Fresh Concrete

Rapid slump loss, variations in air content, plastic shrinkage cracking, admixture incompatibility, false set

• Problems with Slabs

Curling, popouts, drying shrinkage, cracking, joint failure, flatness, discoloration, abrasion loss, placement of reinforcement, scaling, carbonation

• Problems with Vertical Concrete

Honeycombing, air surface voids, streaking layer lines, form offsets, form sticking, bug holes

• Problems with Structural Concrete

Cracks and what they mean, fire damage evaluation, load tests

There will also be a discussion of the techniques used to determine the causes of a problem in the field and in the laboratory, including visual observation, impact-rebound, Windsor probe, petrography, and chemical tests.

Free Publications Included

As part of the Seminar, you will receive FREE the following publications, Guide for Concrete Floor and Slab Construction; Guide to Cast-in-Place Architectural Concrete Practice; Identification and Control of Consolidated Related Surface Defects in Formed Concrete; Guide for Concrete Inspection; Batch Plant Inspection and Field Testing of Ready-Mixed Concrete.

For full Seminar details and registration information, contact ACI Director **Monica Schultes**, Mid-Atlantic Precasters Association, (302) 738-9850.

VILLANOVA SPONSORS STORMWATER SYMPOSIUM

Villanova University Department of Civil and Environmental Engineering, in cooperation with PA Department of Transportation (PennDOT) and the PA Department of Environmental Protection (PaDEP), is sponsoring the *1998 Pennsylvania stormwater Management Symposium*, on Villanova campus, **October 21-23, 1998**. Proposed Sessions include the following: Comprehensive Watershed Management, Financing Stormwater Improvements; Stormwater Management Tools and Techniques; Using the New Pennsylvania Best Management Practice Manual; Municipal Implementation of Stormwater Management; Stormwater Management Aesthetics - Case Studies; Developers' Perspectives on Stormwater Management; Stormwater Management Partnerships; Education and Outreach in Watershed Stormwater Management; Legislative and Regulatory Initiatives; Nonpoint Source Pollution.

For full information and details contact: **Robert G. Traver, PhD, P.E.**, (610) 519-7899, rtraver@email.vill.edu, Associate Professor of Civil and Environmental Engineering; Professor **Frank Falcone, PhD, P.E.**, (610) 519-7920, ffalcone@email.vill.edu, Director, Center for Environmental Engineering Research, Villanova University, Villanova, PA 19085.

FREDERIC R. HARRIS, INC. RECEIVES ASCE AWARD

The Phila. office of **Frederic R. Harris, Jr** Consulting Engineers, received the National ASCE Committee on Younger Members **1997 Employer Recognition Award**. This Award Program was a result of the ASCE Strategic Plan, which called for the establishment of a program to recognize and acknowledge employers for exemplary support of Younger Members' involvement and participation in ASCE activities. These efforts include:

- Providing a model for involvement through company-wide participation in local, regional and national ASCE activities.
- Allowing young engineers time off to attend ASCE meetings and seminars.
- Supporting and encouraging technical and professional growth.
- Encouraging young engineers to prepare articles for publication in ASCE professional and technical journals.
- Assisting in the payment of local and national dues.

The nomination was submitted to ASCE by **David C. Hanly**, Past President of the Phila. Section Younger Member Forum, and an employee of Frederic R. Harris. A Certificate of Recognition of the firm's award has been received by Section President Gatti, and will be acknowledged at the Annual Dinner Dance at Sugarloaf on May, 1998.

Younger Members who want their organization to be considered for recognition will fill out a questionnaire which describes their organization's level of compliance with these guidelines. Sections and Branches, with the help of local Younger Member Groups, will forward meritorious submittals to CYM. After its review, CYM will prepare a list of exemplary employers by Section and Branch. This list will be submitted for publication in *Civil Engineering* magazine or *ASCE News*. Sections/ Branches will be encouraged to provide local recognition (for example, a certificate of commendation) to selected organizations.

For information on procedures to submit nominations for this award, contact **Dave Hanly** at Frederic R. Harris, Inc., 200 S. Brad Street, Suite 720, Philadelphia, PA 19102, (215) 735-0832; or ASCE Headquarters, 1801 Alexander Bell Drive, Reston, VA 22901, Attn: Geographic Services Department. Deadline for submission of 1998 nominees is **August 1, 1998**.

MIKE TANTALA HONORED

Yet another award has been bestowed on one of the Phila. Section, ASCE's most dynamic Student Members, **Michael W. Tantala**, son of **Albert M. Tantala, P.E.**, Past President (1987) of the Phila. Section.

Mike, President of the University of Pennsylvania ASCE Student Chapter, received the **1998 John S. Morrison Scholarship Award** at a

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DANIEL MEAD PAPER SUBMITTED

Editor's Note: On behalf of the Phila. Section, President Darin Gatti has submitted to National ASCE a paper by Younger Member Forum Secretary Carol Martsoff, abstracts of which are published herewith, for the 1998 Daniel W. Mead Paper Competition. In addition to her office with the YMF, Carol has been a very active member of the Phila. Section, assisting the Board of Directors in planning activities. She has served on the 1997 Northeast Regional Younger Member Council Planning Committee, and is involved in community service organizations, including Habitat for Humanity and Philabundance (an organization that helps distribute food to homeless shelters and soup kitchens). In President Gatti's words "...Carol's character and dedication are prime examples of the spirit of Civil Engineering and ASCE. While writing her paper, she went to great lengths to announce the Competition repeatedly, and solicit additional entries from her colleagues. This in spite of knowing we were eligible to submit only one paper per year. We are very proud to have Carol as a member of our Section..."

1998 Daniel W. Mead Paper Competition Submitted by Carol C. Martsoff

It is the summer of 1997, and I have been chosen to be one of the field engineers for the construction of a hospital in a third world country. The background of this project is that the developer originally intended to dispose of the toxins and low-level radioactive wastes in an unsafe landfill that would have endangered the water supply of a local community; no local laws prevented her from doing this and the local people wanted the hospital because of the jobs it would create. To the chagrin of the developer, my company managed to get the United Nations to force the developer to build an incinerator and a small landfill for disposal of the wastes with the support from ASCE National. The hospital is currently under construction. Shop drawings, which are grossly incorrect, were submitted by the contractor's steel supplier; the structural steel certifications appear to be fraudulent. A design mix specification for the concrete was submitted and approved, but the first batch of concrete delivered to the site does not match this specification. I also suspect that many piles were driven in incorrect locations, or not driven at all, while I was infirm for several days away from the construction site. If I were to walk off of the job, the contractor may build a substandard structure. The funding for the project may be discontinued, and the project is months behind schedule. My letters and meetings with the village councils about my concerns were to no avail, and I am viewed with disfavor. The local people are pleased with the jobs that the hospital has created and are desperate for the improved level of healthcare it will bring. Already, there is overwhelming support from surrounding villages, and new businesses are beginning to open. It is estimated that thousands of lives will be saved.

My company has the patent on a new type of

insulated precast building construction which is going to revolutionize the industry. It allows building schedules to be shortened by 20 percent, cuts construction costs by 20 percent, and cuts heating and cooling costs by 18 percent per year. The current design of the hospital does not use the new precast system as it is only being sold to developers who will pay the higher cost which will help defray the development costs my company has invested. The project will be saved and the hospital constructed safely if I take it upon myself to change the design in the field incorporating the new design.

Is it ethical to use the new patented construction method for the construction of the hospital?

Ethics: Being In Accordance with What Is "Right"

Sometimes we may have to confront issues in our daily design practice that may influence our decisions to do what is "right."

In the business and social milieu in which we practice engineering today, we have other factors to consider besides those that are merely design-based — such as meeting schedules, keeping costs under budget, and addressing the concerns of the public. Our design decisions need to be based on ethics in order to withstand these ancillary, yet important, considerations.

The American Society of Civil Engineers recognizes the importance of being ethical in our business and design decisions, and has formulated a Code of Ethics, consisting of a series of fundamental canons for engineers to follow in providing services in an ethical manner.

Upon introspection and consideration of all the factors involved, as well as the perusal of the ASCE Code of Ethics to substantiate my conclusions, I have decided that it is not ethical for me to take it upon myself to change the design in the field incorporating the new design, for various reasons. They include public safety and welfare, my lack of thorough understanding of the precast design constraints, and the absence of initial concurrence with the designers of the precast construction to use their design in a situation where they, or my company, would not be compensated in the measure as planned.

Public Safety and Welfare

The most important reason not to use the new design is to protect the public. The first fundamental canon of the American Society of Civil Engineers' Code of Ethics is "Engineers shall hold paramount the safety, health, and welfare of the public."

We as civil engineers should hold the public interest in the highest regard, above all other considerations, should they be cost savings, meeting construction schedules, the client's interests, or public opinion. It would not be in the best interest of the public to use the new patented construction method for the hospital; in fact, it has the potential to be detrimental and unsafe to the public. Hospitals, more than any other building, have special and unique design considerations. Hospitals should be designed to withstand any natural disaster, whether it be an earthquake, hurricane, flood, tornado, or any other natural disaster. Not only

should the hospital be designed to save lives by preventing structural collapse, but it should be designed to still remain functional during such events. Hospitals also serve as shelters for disasters. To use a precast design, one that does not take into account the local earthquake probability, local seismic activity, or any other local conditions, would not be prudent. There is too much risk in using a new, unproven design on an institutional structure that is so vital to public health and welfare.

Design Understanding

As engineers, it is not only unethical to carry through with a project that we know is incorrectly designed, but also it is unethical to incorporate a design that we don't know is correct. This concept is incorporated in ASCE's Code of Ethics; the second fundamental canon states that "Engineers shall perform services only in areas of their competence." In my situation, I don't know what assumptions were incorporated into the precast construction. I was not a part of the research and development team who designed it. I don't have any license to use the precast design method if I don't know what the design constraints are.

Rightful Compensation

The precast construction method was intended to be used by a developer who would pay a higher cost to compensate my company for the development costs. The developer for this project is not paying the higher amount. According to the ASCE Code of Ethics, a subcategory of Canon 5 states that "Engineers shall give proper credit for engineering work to those to whom credit is due." As an extension of this definition, we should also give engineers their just compensation for their work. The engineers in the research and development team put a lot of hard work and thought into the precast design, and it would be unethical for me to take it upon myself to use the design knowing they, or my company in general, would not be rightfully compensated. If they decided that for charitable reasons they would agree to use the design and not be compensated in the same measure as planned, then using the design is certainly ethical. My making that decision for them is not.

Conclusion

Oftentimes, when we have to weigh our options, it is important to remember that our consideration of long-term consequences may outweigh any immediate, short-term benefits. In fact, decisions that are made based on immediate results or convenience may have such negative long-term consequences, that those short-term benefits may become void. We must hold steadfast to our ethics. We must conduct business and make decisions based on ethics because our decisions have a direct impact on the public. We should not yield our ethics to cost control or the vicissitudes of public opinion.

Therefore, despite my being held in disfavor by the public, having the pressure by the local people to build the hospital, having the project already months behind schedule, and realizing there are problems with the funding, I have decided not

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1998 SECTION AWARDS TO BE PRESENTED AT SPRING SOCIAL

As is the Section's custom, the 1998 Section Awards will be presented to this year's recipients at the Annual Spring Social and Dinner Dance. In a slight deviation from past practice, the Awards nomination process was begun a month earlier than usual this year so that the list of awardees could be publicized in THE NEWS before the Dinner Dance. Thus, members of the Section could be aware of who the awardees are before the Social, and publicity of the Awards would not be left to the recipients.

Accordingly, we are proud to announce our 1998 Phila. Section Award winners:

- **Robert Waitkus**, Woodward Clyde Consultants – Philadelphia Civil Engineer of the Year
- **Sean Markey**, Frederic R. Harris, Inc., – Philadelphia Young Civil Engineer of the Year
- **Jay Beratan**, City of Philadelphia Commerce Department, Division of Aviation – Government Engineer of the Year
- **Thomas Branigan**, City of Philadelphia, Department of Streets, – Transportation Engineer of the Year
- **William Richards**, Hazen and Sawyer, Engineers, Phila., Water Resources Engineer of the Year
- **John Lepore**, University of Pennsylvania – Educator of the Year

In addition, the Section's Presidential Award, a special citation which recognizes special service to the Section, will be presented to John Durrant. John is a past member of the Section who held various Section offices including President (1984-1985), and served as District 4 Director. Last July, John accepted the position of Director of the Geotechnical and Structural Institutes at ASCE National.

We hope you will join us at the May 1st Dinner Dance to honor these deserving individuals.

The October issue of THE NEWS will feature more information on the awardees as well as a synopsis of the Social's events.

Mead Paper

(Continued from Page 7)

to change the design of the hospital in the field by incorporating the precast construction. The use of the precast construction would only be possible after consultation with my company's research and development team concerning the special local design conditions of the area, and any retrofitting or design modifications that may be required, and after our mutual agreement of its usage.

Sometimes during our practice of engineering, there may be influences and pressures that may cast a shadow on our decision-making and make the line between doing what's right and wrong somewhat blurred; but as long as we shed the light of ethics on our decisions, we will be able to clearly see what is "right."

WISHING YOU A PLEASANT SPRING AND SUMMER

On behalf of the Officers and Board of Directors of the Phila. Section, ASCE, THE NEWS extends to the Membership its Best Wishes for a pleasant Spring and Summer Season. We look forward to an active 1998-1999 year starting in October, 1998. So, please participate fully, attend all meetings and functions of the Technical Groups, Standing and Special Committees, etc., and invite your colleagues and associates to join with you in attending and supporting all Section activities. And we'll see you at the Annual Dinner Dance at Sugarloaf Friday, May 1, 1998 (see page 1 for details!)

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YMF News

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of Civil Engineering at Villanova University in September of 1997. Dave has been become very active in the YMF and also is a member of the Society of American Military Engineers (SAME).