

the news



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PHILADELPHIA SECTION
AMERICAN SOCIETY OF CIVIL ENGINEERS

1317 Spruce Street, Philadelphia, PA 19107

Vol. 61-7

Celebrating Our  75th Anniversary

APRIL/MAY, 1989

The Ultimate Picnic

PHILA. SECTION, ASCE 75th ANNIVERSARY

Saturday, May 20, 1989

SEE FOLDER INSERT FOR FULL DETAILS

TECHNICAL GROUP ACTIVITIES

Geotechnical and Water/Environmental Groups

(Combined Program for 1988-89)

April Meeting

Date: April 18, 1989

The April Meeting, which took place before THE NEWS went to press, featured a presentation by Dave Ritter, Project Engineer; and John Hale, Manager, Contract Operations, PSC Environmental Services, Limerick, PA. The subject was: Design, Construction and Contract Operations, Oaks, PA Wastewater Treatment Plant.

The Plant, which commenced operations in October, 1988, serves six municipalities in Montgomery County, producing 8.5 MGD.

May Meeting

Date: Tuesday, May 16, 1989

Location: Room 4014, MacAlister Hall, Student Center, Drexel University, Chestnut Street between 32nd and 33rd.

SUBJECT: Performance of Prefabricated Drains in Soft Soils

SPEAKER: R. David Charles & Frank J. Gontowski, Duffield Associates, Wilmington, DE 19808

The presentation will focus on the use of vertical drains to modify up to 25' of dredge spoils and marsh deposits to allow use of shallow foundations at a power generating station near the Delaware River. This not only resulted in significant cost savings for structural foundations, but the general improvement in the site soils allowed an ambitious "fast track" design and construction schedule to be met.

The theory of consolidation and the development of prefabricated strip or wick drains will be briefly discussed. The presentation will address the properties of the soft soils at the site, the rationale used in design, and observations of soil response during and after construction.

Dinner will be available at the Drexel Faculty Club, 6th Floor, MacAlister Hall. For further information, please call Chairman Dave Ritter at (215) 495-0303; or Dr. Joseph P. Martin at (215) 895-2363.

Structural Group and Construction Group

Joint April Meeting

Date: Tuesday, April 25, 1989

Engineers' Club

Cocktails-5:30 pm; Dinner-6:30 pm;

Meeting-7:30 pm

SUBJECT: New Developments in Condition Evaluations of Concrete Structures

SPEAKER: Dr. Sandor Popovics, Department of Civil Engineering, Drexel University

Dr. Popovics will present a brief, informative program on the latest technology available to engineers and contractors for the performance of in-situ evaluations of reinforced concrete structures. The presentation will include: various test methods for the nondestructive estimation of concrete strength in structures; advantages and disadvantages of each method; new ideas for the improvement of strength estimation of concrete in structures; and improved method for the determination of the location and size of reinforcement in concrete structures.

For reservations and information, please contact David A. VanOcker, P.E., Chairman, Structural Group, c/o Christakis & Kachele, Inc., (215) 352-7676.

Transportation & Urban Development Group

April Meeting

Date: Thursday, April 27, 1989

Engineers' Club

Cocktails-5:30 pm; Dinner-6:00 pm;

Meeting-7:00 pm

SUBJECT: Amtrak CETC

SPEAKER: Thomas Rhodes, Senior Engineer for Amtrak.

Mr. Rhodes will describe Amtrak's Centralized Electricification and Traffic Control (CETC). CETC is located on the 8th floor of Amtrak's 30th Street Station Building, and now controls all train movements on the Northeast Corridor from Washington, DC to Philadelphia. The State of the Art System will be detailed from its conception to the present; and its proposed expansion to handle all train movements on the Canada to Boston, MA route.

For reservations and information on the April meeting, please contact Chris Rood, Chairman, Transportation and Urban Development Group, c/o SEPTA, Room 405, 714 Market St., Phila., PA 19106 - (215) 574-8493. Dinner meal charge - \$15.00

May Meeting

Date: May 25, 1989

Cocktails - 5:30 pm; Dinner - 6:00 pm;

Meeting - 7:00 pm

SPEAKER: James W. McPhillips, Vice President, Urban Engineers, Inc.

SUBJECT: Interstate I-95, Center City Completion Project

Mr. McPhillips will provide a presentation on the long awaited I-95 Center City Completion Project. This project encompasses the construction of on and off access ramps within the Center City area. It also involves the reconfiguration of the roadway as well as adjacent traffic improvements.

For reservations and information on the May meeting, please contact William T. Thomsen, Chairman, Transportation and Urban Development Technical Group - c/o Urban Engineers, Inc., 300 North Third St., Philadelphia, PA 19106, (215) 922-8080.

!! HERE IT COMES !!

The Event We've All Been Waiting For!

The Fabulous Annual Dinner Dance

Saturday, June 3, 1989

at

Park Towne Place

2200 Benjamin Franklin Parkway, South Building, Philadelphia, PA

Parking on Premises

6:30 PM Cocktails (Cash Bar)

Hot & Cold Hors d'Oeuvres

7:30 PM Dinner

Choice of Filet Mignon or Salmon Steak

Bavarian Dessert Table

Music for your listening and dancing pleasure provided by

"Moments to Remember"

PRESENTATION OF AWARDS

COME JOIN YOUR FRIENDS FOR FUN

Call or send for your tickets today. . . guests welcome!

\$35.00 per person

Consultants, Contractors, Etc. — Reserve tables for your firms.

Please make checks payable to "Phila. Section, ASCE" and mail to:

Susan K. Lior, PSI/Weston Inc.

1218 Chestnut Street, Suite 1004, Philadelphia, PA 19107

(215) 925-3196

(Tickets will be mailed after check is received.)

Please indicate entree choice(s).

REMEMBER HOW FANTASTIC THE FOOD AND SERVICE WERE LAST YEAR?

AND HOW DELIGHTFUL THE ENTIRE AFFAIR WAS??

LET'S MAKE SURE TO DO IT AGAIN!!

Please call Bethann at Sue Lior's office right away and reserve your tickets.

Dinner Dance Committee Chair Bob Wright (215) 686-5538.

ENJOY YOUR SUMMER!!

On behalf of the Officers and Board of Directors of the Philadelphia Section, ASCE, the staff of THE NEWS extends to all the Members and their families best wishes for healthy and pleasant Spring, Summer and Fall seasons.

We look forward to seeing you all at the first meeting of the Section's 1989-1990 season at the Engineers' Club on Tuesday, October 10, 1989. Watch for the October, 1989 issue of THE NEWS.

DELAWARE ESTUARY PROGRAM

The U.S. Environmental Protection Agency, Regions 11 and 111 are cosponsoring with the Delaware Department of Natural Resources and Environmental Control, the New Jersey Department of Environmental Protection, the Pennsylvania Department of Environmental Resources — a Delaware Estuary Program Workshop in which will be discussed an Issues Paper based on the comments of approximately 300 citizens at seven public workshops held in Delaware, New Jersey and Pennsylvania during February, 1989. This paper presents highest citizen concern on environ-

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PHILADELPHIA SECTION

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FOR

OCTOBER 1989

ISSUE

SEPTEMBER 5, 1989

THE PRESIDENT'S MESSAGE



I'm going to miss being President of this Section. It seems that about the time you get the organization functioning smoothly, it's time to move on. I can attest that leading an organization of engineers is challenging as well as arduous. The greatest portion of my appreciation for this role comes from the support and encouragement I've received from Officers, Directors, and Committee Members. The level of effort and amount of enthusiasm they put into ASCE makes it all worth it.

This will be the last issue of THE NEWS until the Fall, but it is by no means the last of our activities. Our Spring Picnic is scheduled for May 20th at Brandywine River Park. In Tim Haahs' words, "This will be the ultimate picnic." The Picnic has been planned around sport activities, food, and entertainment for the whole family.

In honor of our 75th year, the Section dug deep into its pockets to subsidize the cost of the picnic – so in addition to being fun, it will be a bargain.

Our Annual Spring Dinner-Dance, a more elegant affair, is scheduled for Saturday, June 3rd. A team of dedicated members is fast at work preparing for this affair. With the folding of the Women's Auxiliary last year, the Section has assumed responsibility for all aspects of the Social. It will be held at Colleen's at Park Towne Place again this year.

One last thought I'd like to share with you is something I read in *Business Week* recently concerning our investment in public infrastructure. I think this is something that should significantly impact our profession as well as our view towards maintaining the infrastructure. Alan Binder's August 29, 1988 article entitled "Are Crumbling Highways Giving Productivity A Flat?" reviewed recent statistical evidence which linked the lack of investment in public infrastructure with the slowdown in private-sector growth. Binder discussed the impact of the recent research of David Aschauer, an economist with the Federal Reserve Bank of Chicago who has unearthed this striking parallel. Although deteriorating and poorly maintained infrastructure is surely an inconvenience, it appears that our failure to maintain this infrastructure may have had more far reaching effects on the nation as a whole. From 1950 to 1970, the economy grew at a healthy 1.8% annual rate. From 1970 to 1985, this rate decreased to less than half at a 0.8% rate. Not surprisingly, economists have failed to explain the slowdown in productivity from 1970 to 1985. Aschauer noticed correlations between the decline in infrastructure investment and the slowdown in productivity – public infrastructure expanded at a 4.3% annual rate from 1950 to 1970 but only at a 1.5% rate from 1970 to 1985. Apparently, the fit of these two variables over shorter periods also matched. Although it might appear to be a coincidence, international comparisons also corroborated the relationship.

To quote Binder, "This finding will surprise those who see the public sector as the home of waste, fraud, and abuse. But it should also surprise those with a more liberal view, because much of the social value of infrastructure goes unmeasured."

Interesting too, Aschauer found that when he separated public capital into military and nonmilitary components, only nonmilitary investment was associated with higher productivity. Even among nonmilitary spending, productivity seemed to be associated with just core infrastructure elements, such as airports, highways, mass transit, and gas, water, and sewage facilities; not with noninvestment items such as paper or jet fuel.

These findings, if they hold up under further scrutiny, carry strong policy implications. To quote Binder, "The Reagan Administration may have barked up the wrong tree when it tried unsuccessfully to boost productivity growth by providing tax incentives for private investment. A better solution may be to restore the public capital stock that has been deteriorating before our eyes."

At the March Section meeting, Louis Gambaccini discussed SEPTA funding in detail, drawing an unattractive financial picture for continued maintenance, upgrades, and sorely needed expansions. Offhandedly, he mentioned that if Congress would fund one less Navy carrier, SEPTA could meet the transportation needs for the Delaware Valley for the 1990's and beyond. Needless to say, with adequate transportation, the attractiveness of the Delaware Valley would draw the private investment necessary to increase our overall productivity and prosperity. It appears Aschauer may have hit the nail on the head.

This all leads to the conclusion that we should be looking at our public budgets with a more informed eye. It appears we might be applying bandages where, with a little more effort, we could be curing diseases.

Thanks for a wonderful year. Sincerely, Susan K. Lior, President, Philadelphia Section ASCE

Editorial

"BESTS" AND "FIRSTS" – THE LIOR LEGACY

By Sid Robin, Chairman of Publications

The Philadelphia Section, ASCE, has been blessed through the years with an almost indefinable earmark of distinction. I like to call this quality "Bests" It is the superabundance of outstanding talent, which manifests itself not only in technical engineering expertise, but also in the

proven administrative ability of its annual Section Presidents. The 1988-1989 Section year introduced an extraordinary adjunct to "BESTS." It was "FIRSTS." Significantly, the Philadelphia Section celebrated its Diamond (75th) Anniversary by installing the first female President in its history. Her name is Susan K. Lior – but she is just plain "Sue" to all of us who have had the privilege and gratification of working with her in pursuing the bountiful 75th Anniversary season.

At her introduction into the Section in the early 1970's, as the prime mover in establishing the Engineering Management Technical Group, and the special Infrastructure Committee – it was immediately apparent that here was an individual of high intelligence, exceptionally motivated initiatives and executive aptitude. In the successive years of her advancement through the official hierarchy of the Section, from Director through Vice President, and finally to the highest office, Sue Lior has displayed an unmatched competency and dedication to the advancement of her profession, to ASCE and to the Philadelphia Section. To the Presidency – which she terminates when she turns over the gavel to the new President at the Annual Dinner-Dance on June 3rd – she has added a new dimension of accomplishment, technique and success. She has been tolerant, amenable and undogmatic in seeking opinions and ideas on issues from her colleagues on the Board of Directors. The Section's successful 1988-1989 season demonstrably attests to those realities.

In her opening President's Message in the October, 1988 issue of THE NEWS, Sue affirmed that "... over the 75 years since its founding, the Philadelphia Section has grown to be an outstanding organization, and one of the most active of all ASCE Local Sections in the nation. Through an era of crisis and change, we can be proud that our members have remained loyal, active and true leaders in the engineering profession and the community in general. . ."

Through Sue's skillful direction, the integrity and vitality of the Section's Technical groups have been maintained. The Society Affairs and Special Tasks Committees were reorganized to improve efficiency of ongoing activities and accomplishments of prior years. *Pro Tempore* Committees prospered in the conduct of a full calendar of events and projects. The Student Chapter programs – especially the monthly meetings honoring them and the Civil Engineering Departments of area colleges and universities – were enthusiastically supported by President Lior. The Section's Reading Branch was fully recognized for its valued contributions to the Philadelphia Section's achievements.

We thank you, President Lior, for the magnificent job you have accomplished. Of this we can be certain: the great legacy of the Sue Lior "First" surely is a portent of things to come for the Philadelphia Section. We will say only au revoir – "till we meet again" – because we trust, any we demand, that you continue active and constant participation in Philadelphia Section Affairs for many, many years to come, so that we all may be the beneficiaries of your abundant gifts and talents.

And now, Rich Weggel, we await with enthusiastic anticipation your ascendancy to the Presidency. Your splendid record precedes you, and you can only aggrandize it as we expect yet another "Best." We will all help you. Good Luck!!

◆ ◆ ◆
To be seventy years young is far more cheerful than to be forty years old.

◆ ◆ ◆
The only way to have a friend is to be one.

MARCH MEETING

March 20, 1989

Engineers' Club

"REPLANTING THE SEED CORN: THE NEED TO SUPPORT INCREASED SEPTA SUBSIDIES"

By Sid Robin, Chairman and Dave Perri, Associate Editor

Who said all Philadelphia Section, ASCE meetings have to be held on the second Tuesday of the month!! Well, ask the capacity audience of members, guests, distinguished public officials, and students who pushed against the Engineers' Club walls on **Monday, March 20, 1989** to hear recently appointed Chief Operations Officer/General Manager **Louis J. Gambaccini**, Southeastern Pennsylvania Transportation Authority, address the subject: **SEPTA: Action for the 90's.**

Widener University Night

The ASCE Student Chapter, Faculty, Alumni and Civil Engineering Department of Widener University were honored at the meeting. This was in keeping with the Philadelphia Section policy of highlighting the Student Chapter affiliations of area colleges and universities at its regular monthly meetings.

Dr. Charles Bartholomew, Chairman of the Department of Civil Engineering, thanked the Section for its courtesies, and expressed Widener's pleasure in participating. He described the recent establishment of the separate C.E. Department within the College of Engineering. He is encouraged by growing enrollments, and he is looking forward to the awarding of eleven M.S. in Civil Engineering degrees next year.

The College of Engineering has received full accreditation by the National Accreditation Board for Engineering and Technology (ABET). The Civil Engineering Department is actively engaged in research projects in cooperation with major companies, on construction materials, recycling, waste disposal and environmental protection issues.

President Eisenbrown on Chapter Activities

Widener ASCE Student Chapter President **Pete Eisenbrown** thanked the Section for its recognition, and introduced his fellow officers and other Chapter members, alumni and faculty attending: Vice President, **Sue Sutton**; Treasurer, **Brian Perry**; Secretary, **Amy Ward**. Faculty Advisor **Dr. Ronald L. Mersky** was unable to attend.

Mr. Eisenbrown reviewed the full schedule of activities of the Student Chapter. Speakers representing key Government Departments and Bureaus were engaged to speak at Chapter meetings; and several field trips to major construction project sites, as well as tours of Consulting Engineering firms' offices, were conducted. The 40+ member Student Chapter maintains a busy calendar of events and programs, and is actively establishing guidelines for future growth.

Mr. Gambaccini-Leadership Change for SEPTA

William T. Thomasen, Chairman of the Section's Transportation and Urban Development Group – and who made the arrangements for this excellent meeting – introduced the principal speaker, **Louis J. Gambaccini**.

Addressing the capacity audience, **Louis J. Gambaccini**, SEPTA's recently appointed and nationally respected Chief Operations Officer/General Manager, shared his vision for the transit authority's future. An insightful and engaging

speaker, Mr. Gambaccini inspires confidence that his new management team will be able to dynamically lead SEPTA in its vital mission. He called on the local engineering community to join him in building a strong and active coalition to rally support at the National, State and Local levels for re-investment in mass transit infrastructure.

Enormity of SEPTA System

The SEPTA system includes 136 routes and 2500 vehicles providing 4 million passenger miles daily. With 9600 employees, the Authority is the region's ninth largest employer. In perspective, if the SEPTA ridership were reassigned to the Region's highway network, an additional 45 highway lanes would be needed and center city would have to be paved over for automobile parking. The SEPTA network is a major catalyst for regional economic development. In a recent business survey asking companies why they choose to or elect to stay in Philadelphia, the most frequent response was the superior transportation network.

Three-Phase Rebuilding Program

Mr. Gambaccini divided the SEPTA program into three separate phases. Completion will ensure a firm underpinning to the region's economy by means of an efficient and reliable transportation network. His presentation provided a historical frame of reference, placing SEPTA's current situation into proper context. Phase One, completed prior to his stewardship, included the construction of the Commuter Tunnel and Airport High Speed Line, replacement of the entire Broad Street subway fleet, rehabilitation of 69th Street Station and replacement of much of the bus fleet. Significant improvements to maintenance and quality control programs yielded a remarkable turnaround in the reliability, cleanliness, and safety of SEPTA's buses.

Current Challenges

Phase Two, spanning the next decade, involves restoring the budget base to adequate levels and the securing of \$3.5 billion in capital funding for rehabilitation projects needed to avoid massive system shutdowns. Phase Two goals include completion of the transit division upgrade, and station and bridge repair on the commuter rail lines.

On a constant dollar basis, capital subsidies from all government sources have decreased by 60% since the late 1970's. This year's budget is \$50 million below requirements, forcing the Authority to dip into vehicle overhaul reserves. Annual fare increases of 5-7% will be needed in addition to increased State funding to close budget gaps. To get through the next three years, the state will be asked to back debt service to enable SEPTA to borrow \$500 million.

Towards the Future

For Phase Three, to be implemented in the period beyond the next ten years, SEPTA will need to wrap up its rehabilitation plans and embark on a substantial new commitment to expansion, particularly to meet rapidly escalating suburban needs and the next wave of growth.

Mr. Gambaccini explained: "The disinvestment in infrastructure that has occurred on a

national scale for the past 25 years is eating the seed corn of this nation. That means we are living off the (advance) investment of earlier generations; consuming the capacity, permitting the structure to deteriorate, not expanding capacity; and we are now facing political opposition even to fix what we have, much less expand it to underpin growth for future generations." SEPTA needs to assemble a political coalition to secure funding to assure a sustained commitment to the Region's infrastructure and its future. Mr. Gambaccini is seeking our support in this Herculean task.

Questions and Comments

Penetrating questions and comments from members of the audience were addressed forthrightly by our distinguished speaker. Asked about progress in negotiations for increased State funding, Mr. Gambaccini acknowledged that, although the outcome is unclear at present, there is room for optimism as legislators perceive the unequivocal need for the essential rebuilding and rehabilitation of the SEPTA infrastructure.

In response to an inquiry about cooperation from surrounding Philadelphia communities, Mr. Gambaccini expressed confidence that the townships and counties are willing to support SEPTA. The suburban traffic snarl and residential growth saturation can only be alleviated by their support of a viable public transit system.

Possible sources of additional revenue – besides subsidies – were discussed by Mr. Gambaccini as a function of the evaluation of the priorities of national needs (one Stealth Bomber costs \$5 billion!).

Associated intrastate transit authorities are exerting strong cooperative efforts with SETPA for state financial help; only thus can there be mutual benefit to all areas of Pennsylvania, both urban and rural. In conclusion, Mr. Gambaccini warned that the infrastructure crisis of public transit obtains not only in Pennsylvania, but in the entire country.

At the conclusion of his outstanding address, Mr. Gambaccini was presented the Section's Certificate of Appreciation by President Susan K. Lior. The audience applauded in standing tribute to this extraordinary public official.

STATE HOUSE DELIBERATES STORAGE TANK RESTRICTIONS ASCE lobbied for support

State Senator D. Michael Fisher of Pittsburgh is seeking ASCE members' support for legislation intended to impose tighter restrictions on storage tanks located throughout the Commonwealth. Of 90,000 registered underground storage tanks in the state, as many as one-third may be leaking.

Leaking tanks, whether above or below ground, are a major threat to drinking water supplies and public safety. Senator Fisher's proposed program would require permits for new tanks, test old tanks, establish regular inspections, earmark monies for cleanup of spills, and establish a state-sponsored fund to provide liability protection required by the EPA.

Last January's Ashland Oil tank collapse, which spilled 700,000 gallons of diesel fuel into the Monongahela River endangering drinking water supplies in the Pittsburgh area, is dramatic evi-

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LIFE MEMBERSHIPS AWARDED

A Special Event at the March 20, 1989 Philadelphia Section, ASCE Dinner-Meeting at the Engineers' Club was the awarding of Certificates of Life Membership in ASCE to the following Philadelphia Section members: (The presentations were made by Past President, Philadelphia Section, and National ASCE Vice President, Zone 1, Chuck Pennoni).

Awardees in attendance, who received their Certificates in person, were:

Harold W. Benditt
Walter E. Hoover, Jr.
Andrew Kowalski
Richard J. O'Heir
William A. Polk
Nathaniel E. Schwartz
Wesley T. Simmet
Joseph A. Wintz, Jr.

Life Member Awardees who did not attend the meeting, and whose Certificates were mailed to them are:

Milton Allen
James M. Anderson
Frederick H. Bauer
Herman Bandes
Andrejs Bross
Donald J. Crawford
George H. Finnie
Leo Goldstein
Robert R. Huber
Thomas J. Leidigh
John F. McDonnell, Sr.
Leopold Neiman
Harry E. Purnell
Robert K. Shimer
Albert S. Woodford

SECTION CO-SPONSORS WATER RESOURCES COURSE WITH VILLANOVA

In connection with Continuing Education Short Courses at Villanova University, the Phila. Section ASCE is co-sponsoring a short course as follows, in order to bring this service to engineers in the Philadelphia area:

Course Title: Computational Analysis of Water Surface Profiles Using HEC-2

Date: August 9-11, 1989

Cost: ASCE Phila. Section members - \$400, Others - \$450

Description: This course has been designed to instruct water resource professionals on the computational and design capabilities of HEC-2, a steady flow river model constructed by the Hydrologic Engineering Center of the Corp of Engineers. The model is in wide use and an IBM compatible micro computer version will be distributed. A guest lecturer, Dr. A.C. Miller from Penn State will be involved, along with several Villanova Professors who know the model well from both the practical and theoretical sides. The course is intended to combine both these aspects so the attendee should have a good working knowledge by the time they leave. The workshop will take place in Villanova College of Engineering Computer Assisted Classroom, allowing the attendees to try examples as the lecturer reviews them. The amount of attendees will be limited to 40, allowing personal attention and access to microcomputers.

Subjects Covered

The course initially reviews the basic principles of one dimensional steady open channel flow, concentrating on both accuracy and data requirements. After the initial review, the use of HEC-2 as a computational tool is reviewed and then applied by attendees, concentrating on capabilities, options and analysis of the program output. After each presentation the attendees actually work through a small example of the principle discussed. More advanced topics are presented the second and third day including bridge hydraulics and common errors and difficulties encountered when using the program.

Instructors

Lewis J. Mathers, Ph.D., P.E., Professor and head Civil Engineering Department, Villanova University

Ronald A. Chadderton, Ph.D., P.E., Professor of Civil Engineering, Villanova University

Robert G. Traver, Ph.D., P.E., Asst. Professor of Civil Engineering, Villanova University
Special Guest Lecturer

Arthur C. Miller, Ph.D., P.E., Professor of Civil Engineering, Penn State University

Villanova University - Civil Engineering Dept.

The Civil Engineering Department has a complete evening graduate school conferring the Master of Civil Engineering degree, the Master of Science in Transportation Engineering, and the Master of Science in Water Resources and Environmental Engineering.

For further information and registration details, please call Dr. Robert G. Traver at Villanova Civil Engineering Dept. (215) 645-4960.

Temple University Conducts Workshops Masonry: Worst Problems and Best Solutions

Building owners, design and review professionals, contractors and producers are invited to participate in submitting, reviewing, and discussing some of the worst, most troublesome masonry problems and some of the best, most useful masonry solutions of current interest to them and others. Submissions in either category are requested two weeks prior to two workshop sessions scheduled for two successive Tuesday evenings, 6:30 pm to 9:00 pm at Temple University, April 25, 1989

Structural Masonry Details,

Connections, Joints and Lintels for Grouted, Solid, Hollow, Veneered and Cavity Walls
May 2, 1989

Computer Applications for the Design of Structural Masonry

Submission selected as most significant and appropriate will entitle the originator and a designee to attend the appropriate session free. Others may register for \$30 per session.

These are the final two sessions of a six week Structural Masonry Design Workshop scheduled from March 28 to May 2, 1989. Other sessions concentrate on code requirements, structural design parameters, lateral loads and masonry shear walls in buildings.

Additional information is available by calling Professor Stephen G. Jochum, P.E. at (215) 787-7802.

NJIT OFFERS COMPUTER COURSE

The New Jersey Institute of Technology will be offering HEC-2 and ADVANCED HEC-2, at The Management Institute in Cherry Hill, New Jersey. HEC II is a two-day intensive, hands-on short course on the United States Corp of Engineers HEC-2 computer program. The HEC-2 course date is June 12 and 13, 1989.

ADVANCED HEC-2 participants should have a basic understanding of the HEC-2 model as this course requires a broader study and includes introduction to PLOT2. ADVANCED HEC-2 is offered June 26 and 27, 1989. For registration and further information contact Melissa Coleman, Division of Continuing Education, NJIT at (201) 596-3066.

Delaware Estuary Program

(Continued from Page 2)

mental issues facing the estuary program.

The Workshop will be held on Saturday, April 29, 1989 at the Academy of Natural Sciences, S.W. Corner 19th Street and Benjamin Franklin Parkway at Logan Circle, Philadelphia, PA.

The Delaware Estuary is located in the mid-Atlantic region of the United States, bordered by Pennsylvania and Delaware to the west and New Jersey to the east.

For full information contact the Delaware Valley Regional Planning Commission at (215) 592-1800, Ext. 141, attention: Beth Drost.

State House Deliberates

(Continued from Page 4)

water supplies in the Pittsburgh area, is dramatic evidence of a need for state action. The senator's bill has unanimously passed the Senate, but he is concerned that it will not pass the House where similar legislation died last year.

Section members interested in seeing passage of this legislation are urged to contact their state representative and request House approval of Senate Bill 280. ASCE District 4 Committee on Legislative Affairs is currently studying the bill and formal support is expected.

BARRIER AWARENESS SEMINAR

What is SB 730 (Penna. Architectural Accessibility Law) all about? How will this affect you and your community?

Barrier Awareness of Delaware County is having an Education Seminar & Workshop at Sun Center (Feltonville, near Chester off I-95) on Tuesday, May 9, 1989, 8:30 to 4:30.

Speakers will include Congressman Curt Weldon, Jim Varhola, State Department of Labor & Industry, Harrisburg; Kim Beasley, AIA Director of Architect and Barrier Free Design, Washing-

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University of Delaware Hosts Water Conference

Final plans have been made for the 1989 National Water Conference and LIFE Symposium to be held **July 18-20, 1989** at the University of Delaware John M. Clayton Hall in Newark, Delaware. The Conference is sponsored by the Irrigation and Drainage and Water Resources Planning and Management Divisions and Delaware Section of the American Society of Agricultural Engineers, U.S. Committee on Irrigation and Drainage, American Society of Agronomy, Crop Science Society of America, Soil Science Society of America and Agricultural Engineering Department, Civil Engineering Department and Water Resources Center of the University of Delaware.

Approximately 130 papers and two panel discussions are planned in 35 technical sessions. Herman Bouwer will present the keynote address, "Ground Water Contamination by Agricultural Chemicals: Issues and Challenges."

There are ten sessions planned for the LIFE Symposium. LIFE stands for legal, institutional, financial and environmental aspects of water resources. Session themes for the LIFE Symposium include:

Institutional/Legal Changes, A Must in Solving Water problems; Water Issues Become People Issues; Resolution of Global/Environmental Issues; Conflict Resolution; Urban Water Supplies: Recent Policy and Institutional Issues; Interstate Water Policies and Institutional Case Studies; Implementing Regional Water Supply Plans; State Financial, Institutional Arrangements; Instream Flows - Needs and Values.

A separate proceedings will be published for the LIFE Symposium.

Topics that will be discussed in 25 technical sessions at the National Water Conference are:

Stormwater Management; Salinity Management in Irrigated Agriculture; Hydrologic Modeling; Urban Hydrology; Ground Water Management; Artificial Recharge; Ground Water Quality; Irrigation Management; Controlled Subsurface Drainage and Water Quality; Ground Water Modeling; Nonpoint Source Pollution; Drought in the Humid Region; Water Erosion Modeling; and Standards for Urban Subsurface Drainage.

To receive a copy of the program or registration material for the conference contact **William F. Ritter**, Agricultural Engineering Department, University of Delaware, Newark, DE 19717, (302) 451-2468.

Barrier Awareness Seminar

(Continued from Page 5)

ton, DC; **Mark Manning**, Construction Co., will speak on Adaptable units and renovations.

We will be addressing Architects, Engineers, Contractors, Commissioners, Councilmen, and Members of the business community, Real Estate and Property Management, Religious Leaders and anyone who is responsible for Barrier Free Design.

For more information write Barrier Awareness, P.O. Box 458, Ridley Park, PA 19078 or call (215) 544-5520 or (215) 461-4459.

CALL FOR PAPERS Phila. Section Co-Sponsors Fifth International Conference on Solid Waste Management and Secondary Materials

A major international conference on solid waste management and secondary materials will be held in **Philadelphia on October 31- November 3, 1989**. The Conference is sponsored by:

- The Journal of Resource Management and Technology
- The University of Pennsylvania-Dept. of Systems
- Widener University-Dept. of Civil Engineering
- City of Philadelphia - Phila. Office of Recycling
- State of Delaware - Delaware Solid Waste Authority
- State of NJ - Dept. of Environmental Protection
- State of PA - Dept. of Environmental Resources
- US Environmental Protection Agency-Region 2
- US Environmental Protection Agency-Region 3

Papers related to all aspects of solid waste management and recycling/recovery of secondary materials are of interest. Papers concerning solid waste management models, research and education, financing and economic development, market development, and technology are particularly encouraged.

A one-page abstract (in English) to be received no later than **June 15, 1989**, should be sent to the following address:

Donald L. Mersky, Program Chairman
Department of Civil Engineering
Widener University
Telephone: (215) 499-4042
Telefax: (215) 876-9751

Authors will be notified after June 15, 1989, concerning acceptance or nonacceptance of submitted abstracts.

Papers presented at the Conference will be reviewed for possible publication in the Journal of Resource Management and Technology.

Conference Co-Sponsors (at time of printing):
Caribbean Association of Environmental Health Officers
Rutgers University - Center for Plastics Recycling Research
University of Alabama - Institute for Waste Management Research
Michigan State University - School of Packaging
Pennsylvania Resources Council
Pennsylvania Environmental Council
American Society of Civil Engineers - Philadelphia Section
University of Delaware - Department of Civil Engineering

The first Conference in this series was held under the title **First Symposium on Industrial Resource Management** in Philadelphia in 1981 to bring together experts from government, business, and academia to examine issues related to various fields of solid wastes/resources management and technology. The second Conference was held in Philadelphia in 1983, the third in New York City in 1987 and the fourth in Philadelphia in 1988.

ASCE STRUCTURES CONGRESS 1989

For over a year plans have been in preparation for the seventh annual Structures Congress of the American Society of Civil Engineers. This week-long technical conference will take place at the San Francisco Hilton at Mason and O'Farrell Streets in San Francisco, California. Registration will begin on **Sunday, April 30, 1989** with technical and plenary sessions scheduled for **May 1 through 5**. An "Ice Breaker" cocktail gathering is planned for Monday evening, May 1.

Because of the economic interdependence of the nations around the Pacific Ocean, this event is being called the **ASCE Seventh Structures and Pacific Rim Engineering Congress**. Engineering organizations from China, Japan, Taiwan, South Korea and Mexico will be sponsoring sessions. Other sessions are being sponsored by the Structural, Engineering Mechanics, Materials Engineering and Aerospace Divisions of ASCE.

There will be eight concurrent technical sessions each morning and afternoon, a total of eighty for the week. These sessions have been classified into five categories: Seismic, Buildings, Computers, Materials and Other Structures. Six volumes of Proceedings will be published, two for the seismic category and one each for the others. Congress attendees will receive one volume as part of their paid registration fee.

Each day's schedule begins with a plenary session featuring prominent speakers from within the Civil Engineering profession. These speakers will address the subjects of Earthquake Hazards and Mitigation, Engineering with Computers in the 21st Century, The Future of Building Design and Construction, Cable Suspended Bridges, and Implementation of the ASCE Quality Manual.

At The Tuesday Awards Luncheon **Alden P. Yates**, President of Bechtel Group, will speak about Partnerships for the New Century. This occasion will also feature the presentation of the annual ASCE Structural Division awards.

Participating organizations include the San Francisco Section of ASCE, the Structural Engineers Association of California, the Earthquake Engineering Research Institute, the American Concrete Institute, the American Institute of Steel Construction, the International Conference of Building Officials, and the Applied Technology Council.

In addition, an information desk will be open for business from 4:00 to 7:00 pm on Sunday, April 30 and from 8:00 to 11:00 am Monday through Friday. Information on local restaurants, points of interest, shopping, and self guided and organized tours will be readily available.

Registration information can be obtained from ASCE, 345 East 47th Street, New York, NY 10017-2398, telephone (212) 705-7350. For hotel information write San Francisco Hilton Hotel, One Hilton Square, San Francisco, CA 94102-2189, or call (415) 771-1400. Refer to ASCE Structures Congress for special room rates.

The Structures Congress Planning Committee is chaired by **Roland L. Sharpe**, Forell/Elsesser Engineers, Inc., 539 Bryant Street, San Francisco, CA 94107.



1989 Philadelphia Section ASCE — Salary and Benefits Survey

In order to aid our members and their employers to intelligently determine satisfactory salaries and benefits, the Philadelphia Section of the American Society of Civil Engineers is making a bi-annual survey of its members. Please complete this questionnaire, fold so that the Engineers' Club address is on the outside, staple, and return as soon as possible. The results will be published in the first Newsletter after the summer.

A. PERSONAL DATA

1. Age _____
2. Years of full-time employment _____
3. Race
 - ___ a Caucasian
 - ___ b Negro
 - ___ c Hispanic
 - ___ d Asiatic
 - ___ e Other _____
4. Sex
 - ___ a Male ___ b Female
5. Education (Check highest level)
 - ___ a No Degree
 - ___ b Bachelor's Degree
 - ___ c B. S. Degree + 15 hours
 - ___ d Master's Degree
 - ___ e Doctorate Degree
6. ASCE Membership Grade
 - ___ a Student
 - ___ b Associate
 - ___ c Member
 - ___ d Fellow
 - ___ e Life
7. Registration

no	yes (number of states)	
___	___	a EIT
___	___	b PE
___	___	c LS
8. Other Membership

Indicate the number of Professional/Technical Organizations other than ASCE of which you are a dues-paying member (i. e. NSPE, ACI, AWWA, ASTM, etc.) _____

B. EMPLOYMENT DATA

1. Income source
 - ___ a Self-employed
 - ___ b Salaried
 - ___ c Commissioned
 - ___ d Retired
 - ___ e Unemployed
 - ___ f Student

2. Type employer or self-employment (Check one)

- ___ a Consultant
- ___ b Contractor/Builder
- ___ c Federal Gov.
- ___ d State Gov.
- ___ e Municipal, local or Regional Gov. or Auth.
- ___ f Utility (Private & Pub.)
- ___ g Manufacturer
- ___ h Education
- ___ i Sales
- ___ j Other (explain) _____

3. Primary Responsibility (Check one)

- ___ a Technical
- ___ b Sales
- ___ c Supervisory
- ___ d Administrative
- ___ e Other (explain) _____

4. Do you supervise other people?

- ___ a Yes ___ b No
- If yes, how many? _____

5. Number of different employers since graduation (including current) _____

6. Do you hold a second job?

- ___ a Yes ___ b No
- If yes, is it
 - ___ a Salaried
 - ___ b Self-Employed
 - ___ c Other _____

7. Years with current employer _____

C. SALARY AND BENEFITS

1. Salary (incl. normal overtime)

\$ _____ per yr.

2. If bonus or commissions are paid in addition to above salary, indicate expected amount per year _____

3. Overtime Remuneration

- ___ a None
- ___ b Time (Compensatory)
- ___ c Paid at regular pay rate
- ___ d Paid at time-and-a-half rate
- ___ e Double Time

4. Vacation (incl. Admin. Leave, Personal Days, etc.) _____ days

5. Holidays _____ days

6. Sick Leave (number of days at full salary) _____ days

7. Insurance (Company Paid)

- a. Hospitalization

no	part	all
___	___	___
- b. Major Medical

no	part	all
___	___	___
- c. Dental

no	part	all
___	___	___
- d. Optical

no	part	all
___	___	___
- e. Disability

no	part	all
___	___	___
- f. Life

no	part	all
___	___	___

8. Pension Plan ___ yes ___ no

If yes:
 % comp. paid _____
 Employee contrib. _____

9. Profit sharing

yes no not applicable
 ___ ___ ___

10. Formal severance pay policy

yes no
 ___ ___

11. Continuing Education tuition reimbursement

yes no
 ___ ___
 If yes:
 max. % _____

D. OPINIONS

1. Are you satisfied with your current employment situation?

- a Unsatisfied
- b Somewhat unsatisfied
- c Satisfied
- d Mostly satisfied
- e Very satisfied

2. Do you believe that, in your current employment situation, you are performing true engineering work.

- a Yes
- b No, primarily administration, supervisory, business, promotion, etc.
- c No, primarily technician/draftsman
- d No, other functions

3. Do you believe that your work is properly reviewed?

- a Yes
- b Yes, but could be better
- c No
- d Not applicable

4. Do you think you will be looking for a new job within the next 2 years?

- Yes No If yes, why?
- a Salary
- b Boss
- c Lack of responsibility
- d Other (explain) _____

5. If you were looking for a new job, what would be your most critical concern?

- a Pay and benefits
- b Company reputation
- c Responsibility
- d Security
- e Location
- f Type of work
- g Other (explain) _____

6. How easy do you believe it would be for you to find a new job?

- a Very easy
- b Easy
- c Somewhat difficult
- d Difficult

7. Do you believe your salary, considering your experience and ability, compared to other Civil Engineers, is:

- much lower
- lower
- similar
- higher
- much higher

8. Do you believe your fringe benefits, compared to other Civil Engineers, are:

- much lower
- lower
- similar
- higher
- much higher

9. Is your professional physical environment (office appearance, privacy, secretarial support, etc) important to you?

- a Yes b No

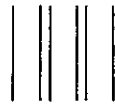
10. Are you satisfied with your professional physical environment?

- a Yes b No

11. Do you agree or disagree with the following statements?

- | | | |
|--|-------|-------|
| | ag. | dis. |
| a. Registration should be required for all Engineers as a condition of continued employment. | _____ | _____ |
| b. Continuing Education should be required to maintain registration. | _____ | _____ |
| c. Consulting work may be competitively bid when the requirements are reasonably well defined. | _____ | _____ |
| d. Advertising, by engineers, that is not self-laudatory is acceptable | _____ | _____ |

Additional comments and suggestions for future questions:



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