

the news

PHILADELPHIA SECTION
AMERICAN SOCIETY OF CIVIL ENGINEERS

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Our 66th Year

January, 1979

JANUARY MEETING

Philadelphia Section, American Society of Civil Engineers

TUESDAY, JANUARY 9, 1979

Engineers' Club, 1317 Spruce Street, Philadelphia

Cocktails — 5:30 P.M. Dinner — 6:30 P.M. Meeting — 7:30 P.M.

SUBJECT:

"TYPICAL PROBLEMS IN ROCK TUNNEL EXCAVATION"

SPEAKER:

RONALD E. HEUER, Ph.D.

PROGRAM HOST:

SCOTT A. FRITZINGER, Chairman, Geotechnical Group

TOPIC SYNOPSIS:

Typical problems such as overbreak, face stability, fallout and air slaking will be discussed and illustrated for both boring machine as well as drilling and blasting excavations. Solutions using various support and presupport methods will be described.

After receiving degrees in civil engineering and geology from the University of Illinois at Urbana-Champaign, **Dr. Heuer** worked 5 years for the firm of A. A. Mathews, Inc., and a year for Foster-Miller Associates, Inc. He then returned to the University of Illinois where he was an Associate Professor of Civil Engineering for 3 years. He now works full time as an individual consultant.

His professional experience is in the field of engineering geology and geotechnical engineering for underground construction. He has worked on evaluation of geologic conditions and prediction of ground behavior for tunneling methods, and evaluation and design of initial support and final borings for underground openings ranging from large chamber excavations in rock to subaqueous shield and compressed air tunneling in soft ground.

He is a member of ASCE, the Association of Engineering Geologists, and is a registered professional engineer in California, New York, and Virginia.

SPECIAL FEATURE:

"DREXEL NIGHT"

The ASCE Student Chapter members, faculty and alumni of the Civil Engineering Department of Drexel University will be honored at this meeting. All students, faculty and alumni are cordially invited to attend.

Mail Reservation Cards Immediately or call Mr. deKovacs at the Engineers' Club — PE 5-5234
Win a FREE DINNER!

STUDENTS — Plan to attend for Dinner (Half Price) or meeting after Dinner

TECHNICAL GROUP ACTIVITIES

Geotechnical

Sponsor of Main Section Meeting.

Hydraulics and Sanitary

Date: Wednesday, February 7, 1979
Luncheon Meeting — 12:00 Noon
Engineers' Club

Subject: **Dam Safety and Inspection**

Speaker: **Frank Vinci**
U. S. Army, Corps of Engineers

Program Host: **Clyde S. Younkin**,
Secretary-Treasurer, H. & S. Group

The speaker will discuss both the legal and technical aspects of dam inspection and dam safety.

For details and reservations contact
Clyde S. Younkin, Greeley and Hansen,
1818 Market Street, Phila., Pa. 19103,
Phone: (215) 563-3460.

AMERICAN CONCRETE INSTITUTE

Delaware Valley Chapter

January Meeting

Date: **January 31, 1979, 6:00 P.M.**
Engineers' Club, Phila., Pa.

Subject:
High Strength Concrete Construction

Speakers: Panel-Moderator, **Joe Finston**
Panelists: **Ed Siegle, John Toftson,**
and **John Albinger.**

For reservations and further information on all meetings, call or write **Michael Boyle**, Valley Forge Laboratories, 6 Berkley Road, Devon, Pa. 19333, Phone (215) 688-8517.

THE PRESIDENT'S NEW YEAR'S MESSAGE

On behalf of the Officers and Directors of our Section, I extend Best Wishes for Happy Holidays. I have already had happy days, because the seven months I have served as your President have been a pleasure. The members of our Section are dedicated and hard working. They also maintain a sense of humor. Our ASCE Manual No. 21, **Standards of Professional Relations and Conduct**, lists "a sense of humor" as the second item under "A Code of Courtesy and Personal Conduct." This attests to its importance. Of course, some other reasons for my happiness are the good attendance at our meetings, as many as 150, the great speakers and topics and the much improved food and facilities of the Engineers' Club. I expect that the word has gotten around and the attendance at our January 9th meeting, with its interesting subject of rock tunnelling, may be the best attended of all. Of course, that is also Drexel Night.

In addition to our Section meetings, I am particularly pleased with the vigorous activities of the ASCE Student Chapters. I attended the Student Chapter meetings at Drexel Day and Evening Colleges, Penn, Temple, Widener, Swarthmore and am scheduled to do so at Villanova. The Civil Engineering students are our potential members and leaders in our Civil Engineering community and they are certainly displaying the ability to meet the challenge.

Another area of involvement of Civil Engineers is in Legislative activity. Our members at the Section level and District level have reviewed over 800 pieces of legislation and commented, in detail, on 47 House and Senate Bills. This is a most worthwhile undertaking since so many engineering concerns are legislated.

I look forward to the remaining five months of my term of office with sincere pleasure and the desire to represent the Civil Engineering community to the best of my ability.

Sincerely,

C. R. (Chuck) Pennoni, P.E., President

**SYRNICK
SECTION VICE PRESIDENT**

On the recommendation of the Philadelphia Section's Nominating Committee and the unanimous approval of the Board of Directors, **Joseph R. Syrnick** has been appointed Second Vice President, to complete the unexpired term of **Joseph P. Welsh**, who recently resigned because of a job transfer to another city (see THE NEWS, November, 1978).

Joe Syrnick has been one of the Section's most dynamic affiliates, serving in many official positions, including Director, Membership Secretary and numerous committees - since joining ASCE immediately after his graduation from Drexel University in 1969. (A "Section Profile" on Mr. Syrnick was published in THE NEWS, March, 1974).

THE NEWS is especially proud of Joe's newest appointment because, among his many other current duties in the Section, he is Assistant Chairman of Publications and Associate Editor of THE NEWS. We extend the Section's heartiest congratulations.

IRA PIERCE HONORED

Former Section Director **Ira N. Pierce, P.E.**, Chief, Public Transportation Planning, Delaware Valley Regional Planning Commission; and the Chairman of PUMP (Design Societies' Philadelphia Urban Manpower Program, Inc.), which was originated by the Philadelphia Section, was honored at the December 12th, 1978 Section Luncheon Meeting. He was awarded National ASCE's Certificate of Recognition, for his dedicated service in the Urban Transportation Technical Division. He is a Past Chairman of the National Transportation Policy Committee of that Division and currently serves on the Executive Committee and Board of the Division.

Section Past President **James W. McPhillips**, Chief Engineer and Surveyor, Phila. Department of Streets is the immediate Past Chairman of the National Transportation Policy Committee of the Division.

MEETINGS ALERT!

PROGRAMS REVERSED

The speakers and topics for the **February** and **March, 1979** Main Section Meetings have been reversed. The **February 13** meeting will host **E. Montford Fucik**, Chairman Emeritus of Harza Engineering in Chicago, who will present a movie and slide presentation on **The Grand Teton Dam Failure**.

The **March 13** meeting will present **Angelos Demetrou**, from the office of Angelos Demetrou, AIA, who will speak on **The Atlantic City Master Plan**.

**PHILADELPHIA SECTION
AMERICAN SOCIETY OF
CIVIL ENGINEERS**

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SEND COPY TO:

Sidney Robin

64 Nancy Drive

Richboro, Pennsylvania 18954

Phone: (215) 322-7464

**COPY DEADLINE FOR
FEBRUARY, 1979 ISSUE
JANUARY 9, 1979**



Philadelphia Section ASCE

— One Day Seminar —

USE OF FABRICS IN SOILS ENGINEERING AND CONSTRUCTION

Date: Friday, February 23, 1979

Place: Engineers' Club
1317 Spruce Street
Philadelphia, Pa.

Time: 9:00 A.M. to 5:00 P.M.

Cost: \$100 (includes seminar notes, lunch, coffee) All proceeds in addition to costs go to the Philadelphia Section ASCE to sponsor future National ASCE meetings.

Overview: The use of man-made fabrics in soils engineering and below ground construction is increasing at a tremendous rate. From 6,000,000 sq. yds. in 1976 to 18,000,000 sq. yds. in 1977 to an estimated 40,000,000 sq. yds. in 1978. This is reflected in the amount of advertising in Civil Engineering magazine each month on fabrics which currently amounts to the equivalent of 5 or 6 full page ads. In the past the major uses were for reinforcement of poor subgrade soils and for protection of underdrain systems. Many newer uses are currently being attempted.

This seminar will present an overview of all current uses which fall into the categories of separation, reinforcement, drainage, erosion control and for flexible forms. It will then briefly touch on the many fabrics currently available. This will be followed by a description of the current tests used to characterize fabrics (physical, mechanical, hydraulic and environmental tests) and then a review of the available guidelines for selection of fabrics.

We are then fortunate to have representatives of four major fabric manufacturers present details and specifics of their fabrics in a wide variety of construction applications. These companies are Celanese ("Mirafi"), duPont ("Typar"), Monsanto ("Bidim") and Philips ("Petromat"). To them our sincere appreciation.

This is a fantastic opportunity for exposure to this rapidly growing technology in a minimum amount of your time. We feel that the subject is of vital interest to all contractors, engineers and related personnel in the Delaware Valley area.

(OVER)

Format:

- 9:00 to 9:15 Welcome — B. M. McNamee
- 9:15 to 10:15 Fabric Use and Types — R. M. Koerner
- 10:15 to 10:45 Fabric Properties and Guidelines—J. L. Rosenfarb
- 10:45 to 11:00 Coffee
- 11:00 to 12:00 Celanese, "Mirafi"
- 12:00 to 1:30 Lunch
- 1:30 to 2:30 duPont, "Typar"
- 2:30 to 3:30 Monsanto, "Bidim"
- 3:30 to 4:30 Philips, "Petromat"
- 4:30 to 5:00 Fabrics as Forms and other Uses — J. P. Welsh

Instructors:

- Representatives of the four Fabric Manufacturers
- Joseph P. Welsh is Vice President of Hayward Baker Co. in Odenton, MD (301 551-8200)
- Jack L. Rosenfarb (215 895-2355) and Robert M. Koerner (215 895-2343) are Faculty at Drexel University
- Bernard M. McNamee (215 895-2369) is a Director of the Philadelphia Section ASCE

Application Form:

Name:

Firm:

Address:

Phone:

Fee: \$100 includes, seminar notes, lunch, coffee.

Make checks payable to Philadelphia Section, ASCE

Send to: Dr. Bernard M. McNamee
Director — Philadelphia Section ASCE
Drexel University
Department of Civil Engineering
Philadelphia, Pa. 19104

DECEMBER LUNCHEON MEETING

December 12, 1978 Engineers' Club

Editor's Note: THE NEWS is indebted to Dr. Edward F. Gilardi, Chairman, and Clyde S. Younkin, Sec.-Treas., H. & S. Group for the resume of Mr. Landman's talk in the following article.

More than 80 Philadelphia Section members and guests attended the second Luncheon Regular Monthly Meeting of the 1978 - 1979 season. It was sponsored by the Hydraulics and Sanitary Group, and the competent Program Host was Dr. Edward F. Gilardi, Chairman of H. & S. Principal speaker was William J. Landman, Commissioner of Sanitation, Hempstead, N. Y.

Swarthmore Day

The meeting honored the Engineering Department and the ASCE Student Chapter of Swarthmore College. In spite of final exams later in the week, five of the seven Civil Engineering majors of the senior class attended. They were introduced by Dr. Joseph M. Willis, Head of the Engineering Department, and James Downey, President of Swarthmore's ASCE Student Chapter. Jim described briefly the current and proposed Chapter happenings, including several field trips to noteworthy projects; and lectures on varied subjects - technical, administrative and professional.

Dr. Willis summarized the latest curricula in engineering at Swarthmore. He noted that many engineering graduates, after a few years in industry or practice, enter colleges to pursue the degree of Master of Business Administration — (MBA).

The Hempstead Solid Waste Program

A readily implementable approach to solid waste management in the highly developed suburban environment was described by Mr. William Landman, Commissioner of Sanitation for the Town of Hempstead, New York.

Mr. Landman traced the efforts of the town, begun several years ago, to develop methods of disposal of the solid wastes produced by the town's 850,000 residents. The amount of solid waste being generated by the town was steadily increasing. Existing landfills were becoming hills in an otherwise flat landscape. Land in the area was scarce and very expensive. As a result, additional landfills were not a reasonable solution.

Economic realities generally have changed the focus of solid waste management from simple disposal to the extraction of positive values. Hempstead's approach is to reclaim the non-

burnable fraction (glass, ferrous and non-ferrous metals) and to utilize the burnable fraction as fuel for an on-site power generation facility.

Private Industry

What is particularly noteable in Hempstead's approach, Mr. Landman explained, is the utilization of private industries methods both in technical and financial aspects of this project. Rather than build a facility itself, Hempstead contracted a private firm to finance, build and operate the facility. By terms of the contract the town would then be charged a set "tipping fee" for the solid waste it brought to the facility. (The contract runs for 20 years.) The town would be required to take back ash, up to 3% of the amount of waste dumped. In addition, the local power utility would buy the electricity generated by the plant and the Town of Hempstead would receive 40% of the revenues from these sales.

The solid waste is considered as a raw material rather than as a waste material, and the entire project was conceived as a potential profit making venture.

The benefits to the town, Mr. Landman explained, were: (1) a disposal cost less than what they were currently paying, (2) no general obligation on the part of the town - all monies were raised by private means, and (3) materially shortened construction time - the overall project was constructed in two and a half years, approximately half the time that would have been required if the town had let multi-contracts for the plant components.

Black-Clawson Hydrosposal

The process used in the facility is the Black-Clawson Hydrosposal Process. This is a wet pulping process originally developed for the pulp and paper industry. The basic sequence consists of creating a water slurry of the incoming solid wastes; separating the metals and glass from the slurry; dewatering the combustible components and burning the dewatered material to produce the fuel for the power plant constructed on-site. One of the major attributes of the system is the preparation of homogeneous fuel, a problem which has interfered greatly with power generation from solid waste in the past. Mr. Landman explained that this attribute overcame the thermodynamic detriment of increasing the average water content of the fuel from 25 to 45 percent. The metal and glass removed from the waste are cleaned, and recovered for recycling. Aluminum and ferrous metals are separated by magnets.

Approximately 2,000 tons per day of solid waste are handled, generating 250 million kilowatt hours of electricity per year. The dumping fee charged to the town is \$12 to \$13 per ton. The present contract is for 20 years, at the end of which time the town would assume ownership of the facility. The facility has been in early stages of operation since September of 1978.

No Red Tape

Mr. Landman stated that the privately run facility offered advantages in terms of eliminating government "red tape". The facility was built more quickly by the private corporation than could have been expected of a government agency and future alterations can be made more simply. He also emphasized that while the process was developmental in regard to its application to solid waste, all components have been used extensively in private industry. Should all his expectations be fulfilled, the cooperation of the private and public sector in waste management could well be advanced greatly.

A comprehensive Question and Answer discussion followed Mr. Landman's excellent slide-illustrated address. Our articulate, well-informed speaker responded forthrightly to the audience's queries and comments. President Pennoni presented Mr. Landman the Section's Certificate of Appreciation and a copy of the Bicentennial Celebration Book: The History of Civil Engineering and Construction in the Delaware Valley.

EIT EXAM REVIEW

TEMPLE UNIVERSITY COLLEGE OF ENGINEERING TECHNOLOGY announces the 1979 Engineer-in-Training (EIT) Examination Review Course:

WHERE: Engineering Technology Building, 12th & Norris Sts., Philadelphia, Pa. 19122

WHEN: Wednesday evenings - 6:00 P.M. to 8:30 P.M., January 10, 1979 thru April 4, 1979

COST: \$180 Tuition & Handout Material

REGISTRATION: January 8, 9, and 10, 1979 or first night of class-January 10, 1979, Engineering Technology Building, Room 341, 5:00 P.M. to 8:00 P.M., See Mr. George Mackey.

FOR ADDITIONAL INFORMATION Call - College of Engineering Technology, Continuing Education Programs 787-7802.

**1979
NATIONAL ENGINEERS' WEEK
FEBRUARY 16 - 24, 1979**

H. Robert Sharbaugh, board chairman of Sun Company, Inc., Radnor, Pa., and 1978 Engineer of the Year has been named general chairman for the 1979 Engineers' Week observances in Delaware Valley. The theme this year is: "Engineers - People Bringing Purpose to Progress." **Lewis Caccese**, chief of operations-construction division, U.S. Army Corps of Engineers, Philadelphia Division and **Louis Maddona**, of Widener College, were appointed vice-chairmen.

The national and Delaware Valley programs will include high school conferences, guidance counseling seminars on engineering careers, talks by engineers before student and civic groups, guided tours of industrial plants, and the selection of the 1979 Engineer of the Year.

Special features of the Delaware Valley program will be the second annual undergraduate college student papers competition for students in Delaware Valley area community colleges, colleges and universities, a Science Teachers' Workshop for high school teachers and guidance counselors, and the presentation of awards for outstanding engineering achievements in Delaware Valley.

Student Papers Competition

In the Undergraduate College Student Papers Competition for students in colleges, universities and community colleges in Delaware Valley, cash prizes totaling \$1,000 will be offered for the winning papers interpreting the theme of 1979 Engineers' Week.

The competition will be for enrolled students at two levels - one for community college students and college and university freshmen and sophomores, and the other for juniors and seniors.

Entries should be submitted through the Department of Engineering or designated Engineers' Week liason person at each college or university. Each school may submit two papers at each level. January 16, 1979 is the deadline for submission to the Engineers' Week Committee.

Judges for the 1979 competition will be **Frederick Brown**, of Day and Zimmermann; **Samuel Baxter**, consultant and former Philadelphia Water Commissioner; **Lewis Caccese**, chief of the operations-construction division of the U. S. Army Corps of Engineers, Philadelphia Division; **Kenneth Zitomer**, Philadelphia Deputy Water Commissioner; **George Matters**, of Thomas Jefferson University and president of the Engineers' Club of Philadelphia; **Alan Ritchie**,

of Site Engineers, Inc., and **Victor Marcus**, chairman of the project.

Phila. Section members serving on committees include the following: **Victor A. Marcus**, of John Reutter Associates, is chairman of the college undergraduate papers competition; **Leo F. O'Connor**, of Pennoni Associates, is chairman of the engineering achievements awards committee; **Allan L. Flinn**, of Hudson Engineers, heads the Engineer of the Year selection committee; **John J. Gillespie**, of Pennoni Associates, is in charge of programs and printing. Other committee members are: **Willi M. Heiser**, of Justin & Courtney; **Edgar H. Hendler**, of Hudson Engineers; and **John J. Lotz**, of William F. Lotz, Inc.

POSITIONS OPEN IN EPA

Editor's Note: The following was abstracted from a letter sent to Section President Pennoni by Don P. Reynolds, Chairman of ASCE National Environmental Engineering Division Executive Committee.

The ASCE National Policy Committee on Environmental Systems received a request for names of prospects for employment in the ten regional offices of the Environmental Protection Agency (EPA).

Positions for which EPA is recruiting include Division Directors, for air, water, hazardous materials, enforcement. GS 15 or GS 16 levels with salaries in the \$38,160 to \$48,500 bracket, are the ratings.

The notice was received late in the time schedule, so any names should be sent pronto, directly to the appropriate Regional Director of EPA, offices listed below. Anyone interested can obtain more details about the positions from the office of the EPA Region III Director 6th and Walnut Streets, Phila., Pa. 19106, Phone 597-9814.

ASCE has been urging that more Civil Engineers be placed in decision-making positions in EPA. Here is an opportunity to demonstrate availability of prospects.

WOMEN'S AUXILIARY

NO MEETINGS IN JANUARY OR FEBRUARY, 1979.

The Auxiliary is actively enlisting new members. Wives of Section members are urged to contact Membership Chairman **Marie (Mrs. Kenneth J.) Zitomer**, LI 8-5324.

Guests of members are cordially invited to attend all Auxiliary Luncheon Meetings and Phila. Section social functions.

GREETINGS from Dr. Brothers

Publications Chairman Sid Robin recently received a warm letter from **Dr. Leroy A. Brothers**, distinguished Phila. Section member, retired Dean of the Engineering College, Drexel University, and a personal friend of many decades. He is temporarily residing in Florida, but retains a residence in Bryn Mawr, Pa.

Sadly, Roy reports the death of his dear wife of 46 years, Alice, last April. Roy sends his best greetings to all the Section Membership and would welcome hearing from his many friends.

Until April 15, 1979, Dr. Brothers' address is: Yacht Harbor Manor, N-7, 2500 Gulf Shore Blvd. N., Naples, Florida 33940. His Bryn Mawr address is 830 Montgomery Ave., Bryn Mawr, Pa. 19010.

WATER POLLUTION CONTROL ACT

Copies of the 1972 Water Pollution Control Act, updated with changes as adopted in the Clean Water Act of 1977, are now available from the American Consulting Engineers Council. This 125 page booklet was part of the material that was distributed to the more than 1,000 individuals who attended the ASCE ACEC Clean Water Act seminars in May and June 1978. The price is \$3.50.

Direct inquiries to:
American Consulting Engineers Council
1155 Fifteenth Street, N.W., Suite 713
Washington, D.C. 20005

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Look to ASCE Publications, Meetings, Conferences, and Courses to provide new ideas, concepts and solutions to your needs.

Ways to Research ASCE Publications

Review 1975, 1976, 1977 and 1978 ASCE Combined Indexes for subject author index listing of all 1977 and 1978 ASCE publications. (Each Combined Index is available at \$5.00 per copy from ASCE Headquarters; The 1970-74 Cumulative Index costs \$12.00 each.)

Study the monthly Civil Engineering listings and references for new and currently available publications.

Review ASCE Division Journals for applicable papers, using the abstract cards as the point of entry.

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