the news

PHILADELPHIA SECTION

AMERICAN SOCIETY OF CIVIL ENGINEERS

VOL. 46 - No. 7 | Our 61st Year | April-May, 1974

APRIL JOINT MEETING

Philadelphia Section, American Society of Civil Engineers
Philadelphia Post, Society of American Military Engineers

TUESDAY, APRIL 9, 1974

Engineers' Club, 1317 Spruce Street, Philadelphia
Cocktails — 5:30 Dinner — 6:30 Meeting — 7:30

SUBJECT:
RIO-NITEROI BRIDGE, STEEL GIRDER BRIDGE OF RECORD SPAN

SPEAKER:
GERARD F. FOX, Partner, Howard Needles Tammen and Bergendoff

PROGRAM HOST:
ROBERT O. DRANGE, Partner, Howard Needles Tammen and Bergendoff and President of Philadelphia Section ASCE.

A 7.9 mile crossing of the Guanabara Bay, The Rio-Niteroi Bridge is the major link between the cities of Rio de Janeiro and Niteroi. It includes 2,780 feet of steel spans and the remainder is prestressed concrete. The three-span navigation channel unit has spans of 656 ft., 984 ft., and 656 ft. and is an orthotropic steel deck girder 43 ft. deep at the piers and 25 ft. deep at mid span. The use of girders for this world-record span was dictated by a combination of navigation and aviation clearance requirements. Recently opened to traffic, the total project cost was in excess of $125,000,000.


Gerard F. Fox

GERARD F. FOX, Partner-in-Charge of the New York Office of Howard Needles Tammen & Bergendoff, received his Bachelor in Civil Engineering degree from Cornell University in 1948. He is a Registered Professional Engineer in several states, is a member of ASCE and holds memberships to numerous other engineering societies. In addition to being Managing Partner on The Rio-Niteroi Bridge Project, he has managed several large expressway projects in the New York area and also manages his firm's design work on the Washington, D.C., Metro transit system. He has been responsible for the design of several major bridges including the Woodrow Wilson Memorial Bridge, the Newark Bay Bridge and the Delaware Memorial Suspension Bridge. Mr. Fox is also an Adjunct Professor and has lectured in civil engineering and structures at Columbia and Cornell Universities.

Free Beer and Refreshments at the Meeting

Mail Reservation Cards Immediately — Win a FREE DINNER!

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

CANOE RACE TO BE BIG EVENT

The Second Annual Concrete Canoe Race, sponsored by the ASCE Student Chapter of the American Society of Civil Engineers at the University of Pennsylvania will be conducted on **Saturday, April 13, 1974,** from **1:00** to **4:00 P.M.** on the Schuylkill River in Fairmount Park.

Following the success of last year's race, the University of Pennsylvania will be hosting 23 schools who have entered a total of 34 canoes. The schools come from as far as Ohio and Rhode Island.

The official starter for the race is Edgar Hoag, who is an internationally qualified shell racing referee. The finish-line judges are Thomas Dowd and Sidney Robin, both of whom are shell racing enthusiasts and were last year's judges. A third judge will be chosen at a later date. In addition to their racing qualifications, all of these men are engineers.

In addition to the award to the winning school, individual awards will be made to the winning paddlers and the paddlers of the second and third place canoes. Awards will be made to the schools with the "best constructed" and the "best looking" canoes.

The races will be held on the shell racing course of the Schuylkill River, finishing at the John Kelly reviewing stands just north of the Columbia Avenue Bridge on the east bank of the river. All members of the engineering communities and their families are invited to attend.

IT'S SWINGING PARTY AND DANCE TIME!

!! The Annual Spring Social !!

SATURDAY, MAY 4, 1974

BALA GOLF CLUB

50th St. and Woodbine Avenue, Philadelphia

MUSIC AND DANCING

to the Melodic Strains of GENE MAYO's Orchestra

COCKTAILS — 6:00 to 7:00 P.M.

DINNER — Prime Ribs of Beef — 7:00 P.M.

Fun and Good Fellowship with All Your Friends

Tickets — $11.00 per person

SEND FOR YOUR TICKETS TODAY . . . GUESTS WELCOME

Please make checks payable to WOMEN'S AUXILIARY, ASCE

and send checks with return address to:

MRS. WILLIAM CLAYTON
English Village, Apt. C-4, Bldg. 11
North Wales, Pa. 19454
Phone: MI 6-2817

Editorial

THE TEST OF LEADERSHIP

Much has been written in this publication about the perceptions and talents of Robert O. Drange. But the Philadelphia Section has experienced leadership in action by a man so eminently qualified to be President of our distinguished organization that he literally molded the office into his own exceptional image. When Bob Drange was the "Section Profiles" subject in the February, 1973 issue of THE NEWS, we stated: ". . . the Philadelphia Section awaits with great expectation and pride his term as President next year . . ." We have not been disappointed.

At the outset of his term, he contoured major goals. Most prominent were the following:

1. Strong monthly meetings with appealing topics and speakers, to attract increasing attendance.
2. Expanded activity, especially in membership participation in the Technical Groups.
3. A broader base of Active Membership (those who pay Section dues), to add **quantity** to the **quality** which the Section has always maintained.
4. To establish more intimate rapport between the officers and Board of Directors with the general membership and their guests at professional meetings and social affairs.
5. To extend the thrust and impact of the Section's voice and activities in community service. This included a legislative awareness program, and full cooperation with other technical organizations as well as community-improvement groups.
6. To exert affirmative initiatives to improve employment conditions and economic environment for civil engineers; as well as bringing their message to the public, which too, often blames them for almost all ecological and social decadence or retrogression of our communities.

Bob Drange is a big enough man to admit that complete fulfillment of this Herculean list of aims in one short presidential tenure is practically impossible. But he has continued and enlarged the scope of the fine work accomplished by his predecessors; and he has set the pace and designed the guide-lines for his successors to follow in all of these great goals.

The Philadelphia Section, ASCE, salutes President Drange and his fine staff of officers, Technical Group and Committee chairmen, and Board of Directors for the great strides which have been accomplished during this incumbency. You have served us well and we are grateful for your competency and dedication. In Emerson's words: ". . . the reward of a thing well done is to have done it . . ."

And now, Alfred O. Quinn takes up the cudgel as President for 1974-1975. From his past record in the Philadelphia Section and National ASCE, we can expect nothing less than skillful resourcefulness, untiring effort; and an efficacious and sure-footed administration.

MARK YOUR BALLOT — DIGIOIA FOR DISTRICT 4 DIRECTOR

The Philadelphia Section membership is reminded that the Board of Directors has endorsed **Dr. Anthony M. DiGioia,** candidate of the Pittsburgh Section, as nominee for National ASCE Director, District 4 — to succeed John E. McCall — for the term October, 1974 to October, 1977. (See detailed article in THE NEWS issue of November, 1973).

Nominating ballots have been scheduled to be mailed out by New York Headquarters in early April. When you receive your ballot, please write in Dr. DiGioia's name.

PUBLICATIONS COMMITTEE
Sidney Robin,
Chairman and Editor of THE NEWS
Staff Writers:
Will M. Heiser — Joseph R. Syrnick
Associate Member Forum News Editor:
Richard E. Daniels
Publications Coordinator:
Albert M. Tantala
Advertising Manager:
Joseph M. Cervone

SEND COPY TO:
Sidney Robin
4745 N. 12th St.
Philadelphia, Penna. 19141

COPY DEADLINE FOR OCTOBER, 1974 ISSUE SEPTEMBER 15, 1974

MEMBERS IN THE NEWS

C. R. (Chuck) Pennoni, venerable Secretary of the Phila. Section ASCE, has been nominated as 1974-1975 President of the Phila. Chapter, Pennsylvania Society of Professional Engineers. He is currently First Vice President of that organization.

Other Phila. Section ASCE members on the PSPE nominating slate for 1974-1975 are:

Joseph A. Wintz, Jr. — President-elect (a new post one step below the Presidency).

Lewis A. Caccese—First Vice President

William T. Shull — Director

•

Dr. Dalim K. Majumdar, a principal of Soils Analysis and Foundation Engineering Co., Philadelphia (see the firm's ad in THE NEWS), has recently achieved the grade of Fellow in the American Society of Civil Engineers.

•

Publications Chairman **Sidney Robin** has also recently become a Fellow in ASCE.

•

Leo Goldstein, former Commissioner, Phila. Dept. of Streets and Deputy Commissioner of Licenses and Inspections, announces the opening of his Consulting Practice, with offices at Park Drive Manor, 1012-A, Lincoln Drive and Harvey St., Phila., 19144, Phone (215) 844-5292.

He will specialize in inspection and analysis of negligence cases—involving building safety, construction, codes and materials, highway construction and safety, solid waste disposal, and administration.

Mr. Goldstein, a former Director of the Phila. Section ASCE, has been nominated a Director of the Phila. Chapter, P.S.P.E. for 1974-1975. He was honored at a testimonial luncheon at the Sheraton Hotel last January 15 (see February 1974 issue of THE NEWS). Leo and his wife, Sybil, will be honored at a dinner on Sunday evening, May 5, 1974 at the Old York Road Temple, Beth Am Auditorium in Abington.

The testimonial is in recognition of the many years of devoted service they have devoted to local communal organizations and to the State of Israel.

THE PRESIDENT'S MESSAGE

It seems almost impossible that this ASCE year is already drawing to a close. Each new set of officers approaches the task of running the Section full of hopes and aspirations that they can do something to make the Section grow and prosper. While this year has brought many times of fulfillment, there are also those other moments when you know you could have done something better and maybe achieved a different result.

To review the achievements of this year gives us the opportunity to recognize the dedicated efforts of some members. We have had superb attendance at our Section meetings. I know a large measure of this success has been due to the excellent program developed by Joe Welsh and his committee. Our Technical Group programs have again offered a solid fare of good speakers and topics under the guidance of Bob Koerner. He has also revitalized the Structural Group and the Construction Group after a hiatus. We have had the most enthusiasm among the Student Chapters in some time. Fred Roll has seen that the student affairs run smoothly. These are some of the visible things that you all see.

There are several new things that are not as visible. Your Board established a long range planning committee to see where the Section is going and how it can better serve its members. Bob Koerner heads this group. We learned this year that we will host the National Convention in the fall of 1976, the Bicentennial Year. The Section was fortunate to enlist a battle-tested leader, Past President Jim McPhillips, to assume the post of General Chairman. You will hear a great deal more about this in the coming months. In line with the policy of National, we have become more active in Public Affairs, legislation and registration. Al Quinn and George Beetle are leading this effort. Among all of the Societies in the area, ASCE members, Past President Larry Moy and Ira Pierce, are the driving force behind JUMP, Philadelphia's minority employment program. In another new area of service to our members, we may shortly establish a Branch in Reading to serve the growing number of members in that area.

There are several areas of our operation where we are not so pleased with our progress. As a Section only 52 percent of those who hold National membership have paid Local Section dues and support the activities of the Section. Our neighbors in Pittsburgh have Local Section participation by 75 percent of their assigned members. A solid program for increasing membership is being designed by John Coscia to rectify these shortcomings. We likewise need to develop a stronger bridge between the Student Chapter membership and ultimate full ASCE membership when they graduate.

We also learned this year of the potential formation of a New Jersey Section, which would take our Trenton Branch members and possibly many more in South Jersey. While we wish them well, we will sorely miss the leadership and support that they have given to us in the past.

As I look ahead for the next year, I am certain that the new leadership can do better than the last. Al Quinn, who has been my strong right arm during this year, has the drive to really propel the Section forward. I deeply appreciate the excellent assistance you have all given to me during this year and know that you will extend this to your new officers. For me this has been a wonderful year, and probably the greatest enjoyment for me personally was the opportunity to get to know more of you personally. Thank you for everything.

Robert O. Drange, *President*

Section President-elect **Alfred O. Quinn** and Associate Member Forum President **Joseph R. Syrnick** have been named by President Drange to be delegates to a Local Sections Regional Conference in New York City, April 30 and May 1, 1974. Representatives from all Sections in Districts 1, 2, 3, 4 and 5 will convene to discuss issues of common ASCE interest. A full report on the conference will be reported in THE NEWS next fall.

MARCH MEETING

March 12, 1974 **Engineers' Club**

(Editor's Note: A separate article on Life Membership Awards at this meeting appears elsewhere in THE NEWS.)

Extending its amazing streak of record-shattering attendance at monthly meetings this year, the Philadelphia Section hosted 150 members and guests, including over 50 Villanova University students, alumni and faculty, at its March 12th meeting. The splendid program, arranged by the Section's Associate Member Forum with AMF President Joseph R. Syrnick as Program Host, was an illuminating experience on the critical issue of "Professional Liability," a subject too often tragically neglected or misunderstood even by the most prominent consulting firms.

Principal speakers were two eminent experts in the field: **Paul L. Genecki** of Victor Schinnerer and Company; and **Ralph B. Powell, Jr., Esq.**, of Harvey, Pennington, Herting and Renneisen, Ltd.

Spotlight on Villanova

The University delegation was honored as a highlight of "Villanova Night," part of a continuing Section policy to extend special recognition at its monthly meetings to the ASCE Student Chapters and civil engineering departments of colleges and universities in the Metropolitan Philadelphia area.

Villanova Student Chapter Faculty Advisor, **Professor Robert Lynch**, spoke briefly, introduced the University guests, and presented **Dr. John J. Gallen**, distinguished Past President of the Philadelphia Section and Dean of the College of Engineering at Villanova. In commenting on the civil engineering programs at the University, Dr. Gallen stressed that the conservative, middle-of-the-road attitudes and principles traditional at the school have not been abandoned, in spite of strong pressures to foresake past methods and criteria in engineering education and replace them with "mod" techniques.

Dr. Gallen reviewed progress in undergraduate and post-graduate degree curricula and special projects. He was pleased to report marked increases in the numbers of registered engineers on the faculty, and a rising proportion of those earning advanced degrees. Dr. Gallen's views and comments on the philosophical and socialogical impulses of the times and their corresponding impact on engineering education concepts were scholarly and enlightening. As always when he speaks, his comments were refreshingly embellished with his generous wit and subtle, perceptive humor.

The Implications of Liability

Mr. Genecki, the first speaker, is the Director of the Office for Professional Liability Research, of the Schinnerer Company, recognized as the most widely known and experienced insurance brokers in the United States to assist engineers in liability protection and counsel. In introduction, he reassured his audience, particularly the students, not to be terrified at the implications of professional liability. There is reason for cautious optimism that there is available ample protection — that is — insurance against claims. He also cautioned against inordinately protective or defensive design practices (as physicians have in the past protected themselves against mal-practice suits).

In his 17 years' experience, Mr. Genecki has seen his company involved in over 18,000 claims against professional engineers. Current new claims are accelerating to about 200 per month. Four out of ten will require court Litigation proceedings; the others are usually resolved by arbitration. The incurred loss in the 18,000 claims is $150 million, including reserves for contingent claim compensation for non-concluded cases. The frequency rate of claims has increased to the point where by 1974 it is expected that one in four consulting firms will have claims registered against them.

Large Claims Get the Publicity

While claims over $150,000 are more spectacular and get most of the publicity, they constitute only 1.2%. 95% of all cases are for $25,000 or less. Although bodily injury usually has jury appeal and receives more notoriety, they account for less than 15% of total settlement dollars.

Speculative-type builders, said Mr. Genecki, are responsible for large proportionate amounts of liability claims, particularly in multi-family apartment construction. The probable reason for this is the "repetitive-clientele relationship" syndrome, in which the owner, architect, engineer and contractor usually constitute a "team" on several projects. They often tend to get careless and perfunctory toward the constraints of well-drawn contracts and specifications. When job troubles arise in this environment, pinpointing responsibility and liability become vague, and

(continued on page 5)

wrangling and litigation frequently ensue.

Some Tough Insurance Categories

Mr. Genecki described the types of design projects with the poorest liability history. They included garages; churches and other religious-type buildings; schools and colleges; and sewer projects. This is because bodily injury, restoration and structural repair cost claims on these types of buildings are usually much higher than on residential type structures. A praiseworthy research program is being conducted by the Schinnerer Company in which seminars, tabulations of recommendations and composition of guidlines are used to advise architects and structural designers on how to confine budgets and minimize the accrual of construction problems and potentially expensive accidents.

Quality Control and OSHA Standards

On sewer projects, of course, proper shoring and trench protection, subsurface soil condition investigation, and pipe-joint crack or failure prevention are vital functions of quality control on a high professional level of supervision. These principles, said Mr. Genecki, apply also to high-rise buildings and other types of major commercial, industrial and residential construction. He recommended that the standards and requirements of the Federal Occupational Safety and Health Act (OSHA) should be incorporated in the design.

Mr. Genecki strongly emphasized the principle that **safety conditions at the job site are the prime responsibility of the general contractor.** The engineer may rightfully call an unsafe construction feature to the attention of the contractor, but he should refrain from making suggestions or recommendations for rectifying it.

Guidance from the Engineer-Lawyer

The second speaker, Ralph B. Powell, a Professional Civil Engineer and former principal in an architecture-engineering firm, holds a Juris Doctor degree in law. In his present legal practice he is counsel to the General Building Contractors Association. He therefore knows intimately whereof he speaks in advising engineers on professional liability.

Law Suits Lurk Everywhere

Although he should not design overdefensively (as Mr. Genecki stated at the outset), the engineer constantly must be aware that potential law suits lie latent on every sidewalk, roadway and building site. This may be true because when a professional offers his services to a client, he is by implication considered an expert. The engineer must be alert to the implied, inferred or tacit responsibilities which the client or contractor considers inherent in the contract. This applies especially in the repetitive-clientele relationships previously described by Mr. Genecki, in which the parties are prone to be careless in spelling out "formalistic" details and legal criteria of the contracts.

Beware of "Supervision" and "Economies"

Watch out, admonished Mr. Powell, for the term "supervision" if you are the engineer on the job. Supervision connotes **control** of the contractor. On the other hand, if the engineer is obliged to conduct job-site **"inspections,"** he has the right to call to his client's attention any departure or violation — voluntary or involuntary — from his plans and specifications. Although admittedly difficult to discipline, particularly in a repetitive clientele atmosphere, it is inadvisable for the engineer to become too familiar with his client. An arm's-length professional relationship is more prudent.

Mr. Powell advised his audience not to acquiesce to the client's inducements and ideas to reduce design caliber or standards on purely money-savings bases. Very often, also during construction, the contractor will approach the designer to discuss a revision which he claims will save costs. Frequently these suggestions have merit and deserve serious consideration by the engineer. In many instances, however, these initiatives are ploys by the contractor to increase his own profits. Similar pressures must be resisted if the contractor attempts to influence the client on "savings," thus placing the designer in an awkward middle-man position.

New Products' Persuasion and Risks

The dangers of severe contract suits often smolder in new products and sales representatives' leverage or influence for their use. Before the engineer incorporates new types of materials or procedures in his design, admonished Mr. Powell, he should be convinced of their merit and proved performance. It is extremely likely that if the product fails to function as represented — and personal injury or structural inadequacy result, the engineer will be responsible and liable.

Litigation-Conscious World

Mr. Powell urged his audience to be vigilant in this extremely lawsuit-prone world. When an individual is injured or senses that he has been aggrieved because of a construction job mishap, he will inevitably seek out the engineers-designers and involve them in litigation.

The absorbing and educational meeting was superbly arranged and conducted and it was thoroughly appreciated by all who attended. President Drange congratulated Program Host Syrnick for his fine job, and he also presented the Section's Certificates of Appreciation to Mr. Genecki and Mr. Powell for giving us so generously of their time and talents.

ASSOCIATE MEMBER FORUM NEWS

Membership Drive

Over 3,000 names of potential members have been submitted by the membership via CALL FOR MEMBERS, which appears in "Civil Engineering," many of these will enter the Society in the rank of Associate Member. This membership promotional campaign and program will continue through 1974. If you know an eligible engineer, why not recommend him for membership?

Just for information, the "average" ASCE Member has been enrolled for 14.8 years, with the average Associate Membership 5.9 years.

Bicentennial Planning Discused At March Meeting

On Wednesday, February 20th, William Grabske, Director of Transportation for the Philadelphia '76 Corporation, discussed the current Bicentennial Plans at a joint meeting sponsored by the Drexel Forum.

Making use of large poster-like graphics, Mr. Grabske gave a detailed account of the planned transportation corridors and discussed the various vehicles which would operate on them.

Interestingly enough, the Bicentennial planners have, almost from the beginning, adopted a very conservative (and, as it turns out, a very realistic) approach to handle the 100,000+ visitors per day who are expected during the peak exhibition periods. This approach was basically to assume that all capital improvement projects which were questionable from a completion date standpoint would not be completed in time for the opening of the Bicentennial session in April 1976. Thus, it was up to the Bicentennial planners to come up with viable schemes for moving these large masses of people among the several key exhibition areas. Also, if any of the questionable projects were completed and available for Bicentennial traffic it would be a bonus.

It was obvious from the audience reaction that the most appealing facet of the overall plan was the Chestnut Street transitway. This concept would entail closing Chestnut Street to all vehicular traffic except for a very modern two directional bus operation. These buses would be the major link between the Penn's Landing/Independence Mall area and the Art Museum/Benjamin Franklin Parkway exhibit areas. The elimination of the other vehicular traffic would create a mall-like corridor which would be rejuvenated by replacing the clumsy street hardware with aesthetic lighting fixtures and relocating the utilities underground. This would, in turn, promote relatively free-wheeling pedestrian activity which would add to the festive mood. Anyone who has participated in or witnessed the Walnut Street Walks or the Super Sundays will attest to the success of this concept.

The AMF and the Drexel Student Chapter thank Mr. Grabske for his very instructive presentation.

LIFE MEMBERSHIPS AWARDED

A special feature of the Philadelphia Section meeting on March 12, 1974, was the annual awarding of Certificates of ASCE Life Membership to those distinguished members who qualify. It is always a warm and pleasant ceremony, and this year's was no exception. As they did last year, Past Presidents Frank Rennis and John E. McCall teamed up to bestow the honors. Mr. McCall is currently ASCE National Director, District 4. He thus was acting as an official representative from National Headquarters. Messrs. Rennis and McCall performed their assignment with exemplary wit, grace and aplomb. Brief biographies of each recipient were read, and the awardees presented comments and reflections on their careers as civil engineers and their long affiliations with ASCE. They also offered advice and counsel to the large Villanova Student Chapter delegation at the meeting.

Those members who attended the meeting and received their Certificates in person were (in alphabetical order):

Perry J. Goldman

Thomas S. Keefer, Jr.

Leonard T. Lynch

Joseph A. Schulcz (Past President of the Phila. Section and former Publications Chairman and Editor of THE NEWS).

The following members were not present at the meeting; their Certificates have been mailed to them:

Cornelius N. Conner

John C. Kohl

Edward S. Loane

James W. Myers

The Philadelphia Section congratulates all the recipients, and salutes them for their high achievements in the profession and in the American Society of Civil Engineers.

TRENTON BRANCH

April Meeting

The April meeting of the Trenton Branch of the Philadelphia Section, ASCE, will be a joint meeting with the Ocean County Chapter of the NJSPE, to be held in Toms River, New Jersey on Tuesday evening, April 16, 1974. It will be a dinner meeting at "Ye Olde Cedar Inn Restaurant," 15 Cedar Inn Drive, Toms River, New Jersey. (Off Route 37.)

Subject: **Off-Shore Deepwater Port Facilities**

Speaker: **John Mascenik**, Engineering Associate with Exxon Research and Engineering Company, Florham Park, N. J.

6:30 P.M. Fellowship; 7:15 P.M., Dinner; 8:15 P.M., Meeting.

Advance reservations for the dinner will be necessary, and should be in by April 11, 1974. For reservations please call Secretary-Treasurer Ronald B. Rulon at (609) 883-9500, Extension 265. Those unable to attend dinner will be most welcome to join the group for the speaker's presentation. Philadelphia Section members, wives, and guests are cordially invited to attend. A free dinner is given away to one lucky person, and in addition, all Princeton University Student Chapter members in attendance will have one-half of their meal costs paid for by the Trenton Branch.

Nominations for Office

In accordance with the constitution and by-laws of the Trenton Branch, ASCE, the Nominating Committee has submitted to President Marcus Russell, the following official slate of nominees for the coming year:

President: Robert F. LeMassena (one year)

Vice-President: John P. Ryan (one year)

Councilor 1975: Ronald B. Rulon (one year)

Councilor 1976: Alain L. Kornhauser (one year)

Secretary-Treasurer: David B. Christian (two years)

Additional nominations may be made by petition, signed by at least five (5) branch members, which must be received by the Secretary not later than May 1, 1974.

TECHNICAL GROUP ACTIVITIES

Hydraulics and Sanitary Group

Date:
Thursday, April 18, 1974
Engineers' Club—7:30 P.M.
Informal dinner, Main Dining Room, 6:15 P.M.

Subject:
Water Quality Planning

Speakers:
Richard Bordman,
Chief Division of Water Quality,
Pa. Dept. of Environmental Resources.
Kelly O'Day,, Vice President,
Betz Environmental Engineers

Program Host:
Allen F. Hess, Vice Chairman
H and S Group

•

Structural Group

Luncheon Meeting: **Friday, April 26,** 1974, Engineers' Club, 12:00 noon.

Topic: "Los Angeles and Managua Earthquakes — Emphasis on Shear Wall Design."

Speaker: **Randall Cronin,** Portland Cement Association.

•

Geotechnical Engineering Group

Date:
April 16, 1974 — 7:00 P. M.,
Engineers' Club

Subject:
"Mudwaves and Foundation Piles"

Speaker:
Dr. Ralph Brown
Law Engineering Testing Co.,
MacClean, Virginia.

Program Host:
Richard Mabry, Chairman
Geotechnical Engineering Group

To continue the series on Soft Ground Engineering, Dr. Brown will discuss theoretical and practical aspects of constructing fills on soft estuary deposits. The results from extensive performance monitoring disclosed some unusual and unexpected behavior. Also, the fill appeared to have a detrimental effect of serious proportions on an adjacent major building supported on piles. This meeting will be especially interesting in pointing out how construction on soft ground can affect adjacent property. As usual, refreshments will be provided.

The Geotechnical Engineering Group is planning a panel discussion in May with local participants to summarize the series and present some of the Philadelphia area softground engineering expertise. Further details will be announced.

"Shallow Foundations," the proceedings of last year's technical series, are available at $10.00 per copy. This 400 page volume is a valuable reference for summarized technical developments and practical case histories of construction that are not readily available elsewhere. Place your order with Richard Mabry at Woodward, Gardner and Associates or Alfred McClymont at Geotech, Inc.

NEW STRUCTURAL GROUP HOLDS FIRST MEETING

The newly reconstituted Structural Group of the Philadelphia Section of the ASCE under the chairmanship of **Professor Frederic Roll,** University of Pennsylvania, held a luncheon meeting on Thursday, March 21, 1974, at the Engineer's Club.

The guest of honor was Edward Cohen, Partner, Ammann and Whitney, and Past President of the American Concrete Institute, who discussed "Design and Construction Considerations of the First Section of the New Washington Subway." Mr. Cohen's talk was enthusiastically received by the attendees at the meeting. The large attendance was a tribute to Mr. Cohen's reputation.

Meeting April 26

The next meeting of the Structural Group will be a luncheon meeting starting at 12:00 o'clock on **Friday, April 26, 1974,** at the Engineer's Club.

The speaker will be **Randall Cronin,** Portland Cement Association, who will speak on the topic, "Los Angeles and Managua Earthquakes — Emphasis on Shear Wall Design."

ASCE CO-SPONSORS BICYCLE SYMPOSIUM

Notice all those bikes on the streets these days? The bicycle explosion has brought with it problems for highway and traffic engineers, urban and transportation planners, architects, and many other professions. To explore these problems and their solutions, the Philadelphia Regional Chapter of the American Institute of Planners, the Philadelphia Section of ASCE, and the Delaware Valley Regional Planning Commission are co-sponsoring a technical symposium on bicycle transportation.

The symposium will be held on May 17 and 18 at Memorial Hall in Fairmount Park. It will feature several nationally known speakers in this field, and there will be workshop sessions to explore important issues in depth. A detailed program will be mailed to all ASCE Section members late in April.

WOMEN'S AUXILIARY

March Combined Meeting a Success

After a two-month winter hiatus, the Phila. Section Auxiliary hosted a Combined Auxiliaries Luncheon-Meeting at the Engineers' Club on March 20, 1974. Joining with ASCE were the Phila. Chapter Women's Auxiliaries of PSPE, ASME and IEEE.

The meeting was an outstanding success in all categories: attendance (almost 100); good-fellowship; and a delicious buffet luncheon. Featured speaker was Bernard C. Meltzer, President, Bernard Meltzer and Associates, Inc., Real Estate Appraisers and Developers. Mr. Meltzer is a civil engineer and an active member of the Philadelphia Section. He is Chairman of the Philadelphia City Planning Commission, an economist, newspaper columnist, radio commentator on professional and humanistic issues; and he is engaged in innumerable civic activities. His extemporaneous talk on far-ranging subjects was learned, penetrating and provocative. The ladies loved it. So did the several male members of the Phila. Section who came in to listen to Mr. Meltzer's talk. It was a splendid meeting!

April Meeting

At its regular Luncheon-Meeting to be held **Wednesday, April 17, 1974,** 12:00 noon at the Engineers' Club, the Section Women's Auxiliary is fortunate to have engaged as the principal speaker the Hon. Lisa A. Richette, Judge of the Court of Common Pleas, Philadelphia. Long an eminent figure in the realm of law and jurisprudence, Judge Richette is also in wide demand as a speaker and lecturer on the human and socialogical issues of our time.

Assuredly, Judge Richette will be an engaging and enlightening guest. All Auxiliary members are urged to attend this meeting and to bring their friends.

May Meeting

The final Luncheon-Meeting of the season for the Auxiliary will be held at Whitemarsh Country Club on Wednesday, May 15, 1974, 12:00 noon. New officers for 1974-1975 will be installed and, as is customary at this pleasant season finale, good fun will abound and the business discussion will be at a minimum. All Women's Auxiliary members are urged to attend. Guests of members are also cordially invited.

A Section Profiles Special

CIVIL AND URBAN ENGINEERING

"For the Benefit of Mankind"

Sidney Shore,
Professor of Civil Engineering
University of Pennsylvania

(Editor's Note: The author of the following essay, a prominent member of the Phila. Section, ASCE, is Head of the Department of Civil and Urban Engineering at Penn, and he is an eminent teacher and consultant to engineering firms and municipal agencies, including the Mayor's Science and Technology Advisory Council (M-STAC). The context of the dissertation was inspired by a series of faculty conferences to explore ways and means of attracting high school graduates into engineering careers. Dr. Shore's article is the first in what is hoped will be a collection, in book form, on the subject. It is a subtle revelation and insight as a quasi-autobiographical sketch of its learned and distinguished author. Dr. Shore has asked his engineering-faculty colleagues at Penn to write corollary theses on the theme of their personal involvements and aspirations in engineering, so that the compositions can be assembled as an encyclopedic-biographical handbook, manual or thesaurus to stimulate young people who are on the brink of choice, but are not quite sure. THE NEWS apologizes to Dr. Shore for the cuts in his brilliant original copy, because of space limitations.)

Sidney Shore

It must have been the majesty of structure in nature that struck a responsive chord in me. My earliest recollections of this were the questions I asked myself, beginning at the tender age of four. Why must we go over the mountain, why not through it? Why must we ferry the river, why not ride across? Why must we have deserts, why not redistribute our sources of water? In my quest for answers, it wasn't long before I realized that many others before me asked the same questions and some even supplied answers or solutions.

Two thousand years ago, the Romans, for example, in their ever expanding conquest of territory, utilized military engineers as supporting personnel for their conquering armies. As the periods of peace lengthened the tasks and chores of the military engineer turned to providing housing, water supply and sanitary systems for the civilian population. Thus, the military engineer became the civilian engineer or the "civil engineer."

The transition from being interested in the magnificence of structures in nature to understanding the awe-inspiring structures conceived by man was nurtured in my youth by the design and erection of such civil engineering landmarks as the Boulder Dam (1936), the Empire State Building (1931), the Golden Gate Bridge (1937)—each a Goliath in its own right. At this point, the questions I now posed were what are the requisites to be able to perform such herculean-like feats? The requirements, in part, were a formal education in a traditional civil engineering curriculum of the early 1940's steeped in mathematics, chemistry, physics, and many technical subjects; and, in part, in the needs of the country to conquer the physical frontiers from the east coast to the west coast.

As a neophyte civil engineer (with a major in structural engineering) I became immersed in the activities of a Naval Aircraft Laboratory since the country was at war battling to preserve its way of life. Gone for the time being were my lofty visions of matching structure of man with structure of nature; to the contrary, my thoughts and deeds had to be channeled to destorying structure and form.

With the war years now behind me, I found myself troubled and uncertain which way to turn in my profession. Although I probed, the reasons for these feelings did not surface, or if they did, were not evident to me. I turned to university teaching by joining the faculty of Civil Engineering at Princeton University. At Princeton, and subsequently at Pennsylvania for a period of twenty years, I taught, published, and did research in civil engineering in the accepted tradition of objectivity with a minimum of social sensitivity, logic and rationalism in consonance with the physical laws of nature but essentially independent of the institutions of our society. Another aspect of my civil engineering career also developed during this period. As an engineering consultant to industrial and governmental agencies, I participated in many diverse design projects, such as: radio telescopes, missiles, thin concrete shell houses for the Caribbean area; large high pressure vessels for testing submarine components, structures "on land, sea, and air." These activities, in fact, seemed to fit very neatly within the credo of the engineering profession — **the control and utilization of the forces of nature for the benefit of mankind.** The phrase "for the benefit of mankind" kept nagging me during this productive period of my career, and it made me uneasy again.

It was in the early and mid-1960's, the years when our cities were literally burning, that the veil lifted. I now knew and understood what had caused my continuing uneasiness for twenty years. Heretofore the civil engineering profession considered almost exclusively the technical aspects of the control and utilization of natural forces, and only very cursory attention to the full impact of the technological solutions in our society. Now, I saw the real dilemma—civil engineers were provincial in their outlook. The provincialism referred to is the viewpoint that the engineer should address himself only to those problems which are essentially quantitative in nature and, thereby, exclude the sociological and political factors which are qualitative in nature. I did not advocate that the engineer be the dilettante in these non-technical areas but rather to try to learn and understand what these other fields were saying and doing, in the large and complex problems which were confronting society. To this end, the education of the engineer had to include humanistic and social studies.

Further, I felt the engineer must learn to be a member of a team of many experts; that this concept of forming a team to structure and solve our complex urban problems would probably become the modus operendi of the future. It was quite clear that the pressing problems our nation faced were in transportation, urban renewal and water resources, and it was exactly these complex systems which would require the best of many professions if we were to conquer new social frontiers for the benefit of mankind.

It was on the basis of this outlook that in 1966 a new dimension was added to Civil Engineering at the University of Pennsylvania which we chose to call **Urban Engineering.** Our curriculum emphasis would be on the urban areas and our research focus on solutions of urban problems which evidenced themselves in the form of sprawl, decay, blight, congestion and pollution.

Currently, therefore, the Department of Civil and Urban Engineering is concentrating its attention in the following areas: structures and housing, transportation engineering, and environmental engineering. The Department has as its fundamental objectives to truly harness the forces of nature for the benefit of mankind within the context of the benefits I have described previously. Today I find my engineering role stimulating, challenging and hopefully benefiting mankind.