



AMERICAN SOCIETY OF CIVIL ENGINEERS

Vol. 49 - No. 3

Our 64th Year

DECEMBER, 1976

DECEMBER MEETING

Philadelphia Section, American Society of Civil Engineers Sponsored by the Associate Member Group

TUESDAY, DECEMBER 14, 1976

Engineers' Club, 1317 Spruce Street, Philadelphia

Cocktails - 5:30

Dinner — 6:30

Meeting — 7:30

SUBJECT:

CONSTRUCTION OF THE LIMERICK NUCLEAR POWER FACILITY SPEAKER:

RICHARD A. MULFORD, Project Manager,

Mechanical Engineering Division, The Philadelphia Electric Company $PROGRAM\ HOST$:

WILLIAM M. MALARKEY, President, Associate Member Forum



Mr. Mulford is with the Engineering and Research Department of the Electric Company, and is Project Manager of the Limerick Plant, Units 1 and 2. He received his B.S. and M.S. in Mechanical Engineering at the University of Pennsylvania. He joined Philadelphia Electric in 1952. He is a Director of the Engineers' Club, and an active member of many engineering, civic and religious organizations in the Delaware Valley, including: American Society of Mechanical Engineers, Instrument Society of America, The Franklin Institute,

Engineering and Technical Societies Council of Delaware Valley (Past President), Engineering Alumni Society, University of Pennsylvania (Past President), Union League of Philadelphia, Bryn Mawr Presbyterian Church, Philadelphia Orchestra Association. He is Treasurer, Philadelphia Chapter, Pennsylvania Society of Professional Engineers.

SPECIAL FEATURE:

"SWARTHMORE and WIDENER NIGHT"

The ASCE Student Chapter members, faculty and alumni of the Civil Engineering Departments of Swarthmore College and Widener College will be honored at this meeting. All students, faculty and alumni are cordially invited to attend.

. . . Greetings of the Season . . .

The Editor and Staff of THE NEWS, on behalf of the Officers and Board of Directors, extend to the Membership of the Philadelphia Section, ASCE, heartiest felicitations of the Holiday Season and Best Wishes for a Happy and Prosperous New Year.

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

IMPORTANT NOTICE

Due to new regulations and fees by the post office it is necessary to discontinue **prepaid** return cards for our Section meetings. Post office fee is \$30.00 per year plus 21 cents per returned card.

New cards will be mailed with THE NEWS that will require 9 cent stamps. Alternative to return card is to call The Engineers' Club, 1317 Spruce Street and notify them of the number expected to attend dinner-meeting. Phone: (215) PE 5-5234.

ETSCO

The Engineering & Technical Societies Council of Delaware Valley, Inc. is pleased to announce a

Special Program

"THE AVAILABILITY OF ENERGY AND THE ENERGY PROBLEM"

the speaker

DR. CHALMER G. KIRKBRIDE

Science Adviser to Administrator, Energy Research & Development Admin.

Place—Engineers' Club of Philadelphia 1317 Spruce Street

Date—Thursday, December 16, 1976

Time—Cocktails 5:30 - 6:30 pm cash bar Dinner 6:30 pm

Cost-\$10.00 per person

Menu-Filet Mignon

For assured seating—Please make reservations with Mrs. Shirley Golden, Headquarters Office, (215) 382-2607 before December 13, 1976.

Notice: If THE NEWS arrives late—please call the Engineers' Club, PE 5-5234 and leave word for Mr. deKovacs, Exec. Mgr., to reserve a dinner plate.

NOVEMBER MEETING

Engineers' Club - November 9, 1976

The well-attended November Section meeting sponsored by the Construction Group, featured Jerome White and A. Charles Larkin as Principal Speakers on the subject: "Construction Problems of I-95".

Mr. White, Vice President of Slattery Associates, Inc., discussed the problems encountered in building around an operating mass transit system (the Frankford El) and maintaing local street traffic.

Key points were building by phases; the temporary railway system; need for speed in construction; tolerances (an 80 ton structure placed within 1/32 of an inch); a 1400 foot train tunnel and sewer work 50 foot below grade requiring the use of divers; and electrical insulation of the railway from structural steel.

Mr. Larkin, of Buckley and Co., Inc., Project Manager for the joint venture of Conduit and Foundation, Inc., and Buckley and Co., Inc.'s "bathtub" portion of I-95, spoke on the problems encountered on this controversial section.

Highlighted were the problems encountered by "forgotten construction": foundations, pilings, timbers, and souvenir hunters; the tieback systems used in close proximity to other structures such as an 8-foot intercepter sewer; the two-tier dewatering system; the use of AX temperature controlled concrete requiring chilled water (35° - 38° F); and the complex "brains" of the tunnel using sophisticated fire controls, lighting, TV monitoring, ventilation air quality control, and pumping systems,

"Temple University Night"

The meeting honored the ASCE Student Chapter and Civil Engineering Department of the Temple University College of Engineering Technology. Faculty member Dr. R. J. Stone described the diversity of the Engineering Technology program, and how students were indoctrinated in the broad spectrum of the Engineering profession.

Construction Group Chairman Frederic L. Plotnick was Program Host for the meeting. Section President Will M. Heiser presided.

Mr. Plotnick presented the distinguished and interesting speakers the Section's Certificates of Appreciation at the conclusion of their talks,

(Editor's Note: THE NEWS thanks Construction Group Chairman Plotnick for his assistance in preparing this article.)

THE BOOK IS NOW AVAILABLE

The special Bicentennial Commemorative book celebrating the 1976 ASCE National Convention and Exposition, hosted by the Philadelphia Section on September 27 - October 1, 1976: "The History of Civil Engineering and Construction in the Delaware Valley" is now available for purchase by the Section membership, their friends and associates.

The 164-page profusely illustrated volume is a splendid publication for permanent reference on the Convention program; a circumferential spectrum of historical and technological interest of the various principal elements of civil engineering, construction and public works development in the Delaware Valley; and short histories of the foremost individual engineers, consulting firms and construction-allied companies and industries in the region.

Copies will be on hand for purchase at \$10.00 each - at the December 14. 1976 Section meeting at the Engineers' Club, Arrangements for buying the book may also be made by calling Section Treasurer Ted Davis, c/o Rothbaum and Davis, 215 S. Broad Street, Phila. 19107, Phone (215) PE 5-6498.

ADVERTISEMENTS INVITED

As the Philadelphia Section commences its 1976-1977 season, THE NEWS cordially invites members, consulting firms, and commercial and industrial service and supply companies to advertise in its monthly issues. Rates are as follows:

(Annual contract for seven issues) Professional Card ---

\$60/year (One-fifth column)

Advertising Copy -

\$75/year (One-fourth column) (Display cuts, if required, should be supplied by advertiser.) Multiples of the above spaces are available at discount rates.

For further information and contract arrangements, please direct inquiries to Advertising Manager, Robert H. Plucienik, c/o Roy F. Weston, Inc., 2000 Market St., Phila. 19103, Phone: (215) 567-2631,

Please Patronize our Advertisers for your Special Consultation Requirements.

CONDOLENCES TO BILL PADLASKY

The Philadelphia Section extends its heartfelt sympathies to Past President William Padlasky and his family on the loss of his beloved wife, Grace, who died suddenly after apparently successful surgery on November 19, 1976.

Grace Padlasky, popular member of the Section's Women's Auxiliary, was a full-time teacher of Home Economics for twenty years. For the past sixteen years she was an instructor in her specialty at the Swarthmore Junior-Senior High School. She was very active in the community affairs of Upper Darby, where she and Bill resided. Beside her husband, she leaves two daughters, Mrs. Estelle Limor and Miss Sandra Padlasky (Sandy), a Civil Engineering graduate of Drexel University; and a brother, Paul Kaufman,

Bill has been for several years Chairman of the Board of Trustees of the Section's Richard L. Humphrey Memorial Fund.

PHILADELPHIA SECTION AMERICAN SOCIETY OF CIVIL ENGINEERS Officers 1976-1977

PRESIDENT Will M. Heiser VICE PRESIDENTS Walter H. Clark Celestino R. Pennoni SECRETARY
Albert M. Tantala
ASSISTANT SECRETARY
Ernest G. Brizell, III TREASURER MEMBERSHIP SECRETARY Joseph R. Syrnick DIRECTORS
George N. Beetle
Robert C. Belfi Gerald Charles Peters e N. Beetle Gerald M. McDonnell
Frederic Roll
William M. Malarkey
(from Associate Member Forum)

PUBLICATIONS COMMITTEE

PAST PRESIDENTS alvacchia Alfred O. Quinn

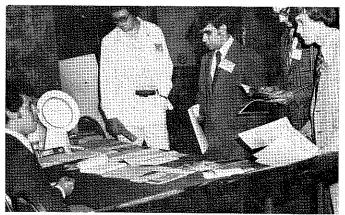
Bruno J. Talvacchia Alla. Robert M. Koerner

Sidney Robin Chairman and Editor of THE NEWS Joseph R. Syrnick Assistant Chairman and Associate Editor Staff Writer John E. Spitko Associate Member Forum News Editor William J. Parente Publications Coordinator Albert M. Tantala Advertising Manager Robert H. Plucienik SEND COPY TO: Sidney Robin 4745 N. 12th Street Philadelphia, Penna. 19141

> COPY DEADLINE FOR JANUARY, 1977 ISSUE **DECEMBER 22, 1976**

CONVENTION HIGHLIGHTS

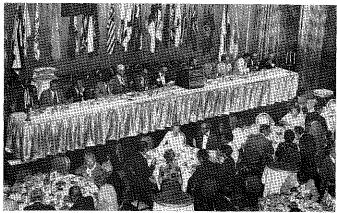
The November, 1976 issue of CIVIL ENGINEERING magazine and the November newsletter ASCE NEWS covered in detail the highly successful 1976 National ASCE Convention and Exposition hosted by the Philadelphia Section at the Sheraton Hotel September 27 - October 1, 1976. These publications are recommended valuable reading to



Activity at the busy Student Registration and Information Desk. A very gratifying turnout of about 400 civil engineering students, including contingents from many distant colleges, attended and participated in the Convention.



The City of Philadelphia Proclamation, in which Mayor Frank L. Rizzo honors ASCE and the Convention, is admired by (I. to r.): David C. Sims, Deputy Secretary for Highways Administration, PennDOT; Will M. Heiser, President, Philadelphia Section ASCE; Arthur J. Fox, Jr., outgoing National President of ASCE; and James W. McPhillips, General Chairman of Convention Committee, Philadelphia Section.



A general view of the Keynote Luncheon, Monday, September 28th. Our own pride, Samuel S. Baxter, National ASCE Past President, was the principal speaker,

the Membership as a record of the Convention's elements and proceedings. We are printing hereinbelow a few captioned photos which provide a bit of personal insight into the affair. Close to 3,000 members of ASCE and affiliates registered at the Convention.



Philadelphia Section Immediate Past President Dr. Robert M. Koerner and Drexel University Civil Enginering Department Head Dr. Bernard M. McNamee take a break during Wednesday morning, September 29th Poster Session — "Is Regulation Killing Productivity in Enginering Construction" — in which they participated.



PHILADELPHIA WATER DEPARTMENT INITIATES PILOT PLANT

Our nation's water supplies contain today dozens of infinitely tiny "organics", drawn from industrial and natural sources.

Last year — thanks to new techniques which it developed — Philadelphia was the first American city to identify its own trace organics.

Now comes new leadership by our city to meet the challenge posed by organics.



On Thursday, September 30, 1976, as part of the Convention Program the Philadelphia Water Department put into operation a UNIQUE PILOT PLANT — the first in any American city — to study advanced methods for removing trace organics from drinking water. Nearly 200 guests, including public officials, community leaders, and members of ASCE attended the brief ribbon cutting ceremony and a luncheon at the Torresdale Filtration Plant.

(continued on page 4)

SECTION PROFILES



If any man merits the enfranchisement of "Mr. Philadelphia Section ASCE", that man is Professor Samuel T. Carpenter. You will meet him at the December 14th Section meeting, where his beloved Swarthmore

College Civil Engineering Department will be honored together with Widener College. Professor Carpenter, who was Section President 1953 - 1954, received his M.S. in Civil Engineering at Ohio State University in 1939, after achieving his B.C.E. (1930) and Professional C.E. (1935) at the same university. He has served — and does still, full time — on the Swarthmore C.E. faculty for 41 years, advancing through the ranks from Instructor to Professor, Chairman of the C.E. Department (1947 - 1964), and Chairman of the Department of Engineering (1964 - 1972).

Mr. Carpenter apologizes for not being as active in the Section in recent years as he would have liked. How could he possibly divide himself into all the segments necessary to satisfy the demands on his time and talents? Besides a full time teaching schedule, he has been writing on engineering education and structural mechanics texts; racing hither and yon to receive the countless awards bestowed upon him; and busily serving as Chairman of the Swarthmore Borough Planning Commission (1968 to date).

As an active member of several scientific and professional societies (in addition to ASCE in which he is a Fellow); Past Chairman, Civil Engineering Division of the American Society for Engineering Education (ASEE); American

WOMEN'S AUXILIARY

Christmas Party and Membership Drive

New members are invited to join the Women's Auxiliary of the Phila. Section, ASCE at their annual Chritmas Party on Wednesday, December 15, 1976, 12 noon at the Engineers' Club. Come join us for some holiday fun and cheer and meet our ladies of the Auxiliary. We know you will have an enjoyable afternoon. Hope to see you there.

If you are able to attend, please contact Marie (Mrs. Kenneth S.) Zitomer, LI 8-5324. Happy holidays!

Society for Testing Materials (ASTM)— he attends as many meetings as possible. He feeds his alert and astute mind by continuous self-study to keep abreast of developments in Operations Research, Structural Theory Design, Computer Programming, etc. He is engaged in consulting practice in the new fields of ice breakers and ocean mining vessels.

Among Mr. Carpenter's honors and awards are: Tau Beta Pi, Sigma Xi; Isaiah V. Williamson Professor of Civil and Mechanical Engineering; Engineer of the Year (1967) PSPE, Délaware County Chapter; Centennial Distinguished Alumnis Award, The Ohio State University (Engineering 1970). Mr. Carpenter's most recent award as Borough of Swarthmore 1976 Man-of-the-Year cites his contributions as a twoterm member of the Swarthmore-Rutledge School Board, Secretary of the School Authority and Chairman of the Swarthmore Borough Planning Commission. On the School Board, Sam was Chairman of the Property Committee, and he was instrumental in guiding the construction of two new elementary schools and reconstruction of the High School after the fire in 1958. Following his terms on the School Board - in Sam's words ".... I was appointed to the School Authority so that I could help pay for all that we spent" As Chairman of the Borough Planning Commission, he has spearheaded the preparation of the Comprehensive Plan and the recently Council-adopted new zoning ordinance for Swanthmore.

If there exists a more appropriate exemplification of a community-oriented representative of the engineering profession than Sam Carpenter, that example has escaped this writers' experience. The Philadelphia Section is proud that he is one of us.

A final observationin addition to his professional and academic stature, his great civic and communal contributions, and his limitless achievements — Sam Carpenter happens to be one helluva nice guy!



WATER RESOURCES DEVELOPMENT
WASTEWATER POLLUTION CONTROL
DAMS - HYDROPOWER - FLOOD CONTROL
226 W. RITTENHOUSE, SQ.
PHILADELPHIA, PA. 19103
DOVER, DELAWARE

DAVIS' HOST SOCIAL

The Philadelphia Section Fall Social assumed a new format this year, on Sunday, November 7, 1976. It was one of the most pleasurable funtions in memory. The idea, originated by the Women's Auxiliary, was a "pitch-in" party. The ladies brought delicious food and goodies—and the men pitched in modest contributions to cover costs.

The party was held at the lovely Hatboro home of Eleanor and Section Treasurer Ted Davis. A large turnout of members and their wives enjoyed conversation and companionship in the warm and cordial atmosphere of the Davis residence. With the cozy fireplaces glowing, good-fellowship and fun abounded at the late afternoon gathering.

The Fall Social is traditionally sponsored and arranged by the Auxiliary as a fund-raiser for the Annette Estrada Memorial Scholarship Fund. The financial success of this year's gathering at the Davis' was the greatest in history.

The Section is indebted to the Women's Auxiliary — and especially to hard working Fall Social Chairman Ann (Mrs. James D.) Leasure for so artfully coordinating arrangements for the affair. 'Too much praise and thanks cannot be extended to Eleanor and Ted for their hospitality, generosity and expertise as gracious hosts. We look forward to a continuation of this innovative and popular idea for our Fall Socials in the future.

PHILA, WATER DEPARTMENT

(continued from page 3)

During a three-year study, the new pilot plant will duplicate on a small scale all of the conventional, and some non-conventional, processes for treating water.

Out of this study will come the knowledge to (1) plan wisely for future large scale removal of trace organics, (2) invest efficiently the millions of dollars that will be required for related capital equipment and plant modifications, (3) eliminate subtile river-water tastes and odors that now defy the best technology of the water works industry, and (4) lay the ground work for future computer control of all water treatment and distribution.

SECTION MEMBERS!

Please Take THE NEWS Home. Your Wife Wants to Read The Women's Auxiliary Items.

TECHNICAL GROUP ACTIVITIES

Geotechnical

Date: Tuesday, December 21, 1976 Engineers' Club — 7:00 P.M.

Subject: "Laboratory Modeling of Dynamic Response"

Speaker: Dr. Jack Rosenfarb,

Drexel University

Program Host: Dennis J. Mohan

Much useful information has been obtained in soil mechanics from small scale laboratory modeling of soil responses to both static and dynamic loads. A laboratory earthquake simulation apparatus recently constructed at Drexel will be discussed.

October and November Meetings

The first two meetings of the series on the general topic of "Soil and Rock Dynamics" were presented by Dr. Jagat Dalal of United Engineers & Constructors Inc. on seismicity and seismic loadings and by Dr. Edward Doheny of Drexel University on earthquake causes and effects.

Dr. Dalal concisely and lucidly described how to determine the seismicity of an area and to convert this value into loads to be applied to structures.

Dr. Doheny, in a delightful talk, lavishly supported by top quality slides touched on all aspects of earthquakes but emphasized their damage potential even when designed for their anticipated effects

Attendance and interest in the topic is growing and all are invited as the topic is felt to be of special interest not only to geotechnical but to structural engineers as well.

NOTICE

Other Technical Group Meetings will be announced at the Section Meeting December 14, 1976. Information was not received by THE NEWS at press time.

P.U.M.P. RECEIVES GRANT

The Philadelphia Urban Manpower Program, Inc. (P.U.M.P.), established by the Philadelphia Section ASCE to provide engineering training and job placement to disadvantaged youth is pleased to announce receipt of a \$10,000 grant from the INA Foundation, a financial adjunct of the INA Corp. Philadelphia. The money will be used principally to support the Academy for Graphic Communications. Former Section Secretary Ira N. Pierce, one of the originators of the P.U.M.P. organization, looks forward to use of the funds. ".... to further the purposes of mutual interest to the Foundation and the Design Societies"

ROY WESTON HONORED

The Section's congratulations are extended to Roy F. Weston, President of Roy F. Weston, Inc., Consulting Engineers, who has been elected to membership in the National Academy of Engineers (NAE). Mr. Weston, a renowned Phila. Section member, was recognized for his outstanding services to the engineering profession.

Mr. Weston's firm became a Consulting organization in 1955 after 16 years of specialization in pollution control. As Mr. Weston states: "...In 1957 we were the first firm — to my knowledge — to call ourselves Environmental Engineers. This encompasses land use management in its broadest sense; and air as well as water pollution control

Other awards received and prominent offices held by Mr. Weston include: President, American Academy of Environmental Engineers (1974).

Engineer of the Year —
Delaware County PSPE (1968)
NSPE for Pennsylvania (1970)
NSPE National (1973).

The George Washington Medal of the Engineers' Club of Philadelphia.

The National Academy of Engineers was established in 1964 as an organization of distinguished engineers parallel with the National Academy of Science. It shares with NAS responsibility to examine questions of science and technology at the request of the Federal Government; to sponsor engineering programs aimed at meeting National needs; to encourage engineering research; and to recognize distinguished engineers.

If you have not already done so, please send your Phila. Section dues check promptly. Payable to Phila. Section ASCE (\$10.00). Mail to Theodore Davis, Treasurer, c/o ASCE, The Engineers' Club, 1317 Spruce St., Phila. Pa. 19107.

SPRAGUE & HENWOOD, INC.

Foundation investigations - Soil Testing and Test Borings - Grout Hole Drilling and Pressure Grouting - Diamond Core Drilling

> Philadelphia, Pa. (215) 735-6774 Bridgeport, N. J. (609) 467-1800

THE MAGIC OF THE CONCRETE CANOES

(Reprinted from Engineering News-Record)

It won't ever become a major intercollegiate sport, but concrete cance racing at schools from Maine to Hawaii has put student chapters of the American Society of Civil Engineers (ASCE) into a new kind of collegiate fun and games, into a new light on the campuses.

At a dozen campuses from coast to coast this year they gathered for the competition and for the camaraderie of it all. And some student designers and builders of concrete canoes have hauled them to Maine from schools as far away as New York City to race on rapids of a white water course.

At some of the competitions, canoes are judged for design, lightness and line, as well as for speed in the water. At most of the races, the good fun, cold beer, new friends (and the possibility of local press or TV coverage) matter more than winning.

On Philadelphia's famous Schuylkill River rowing course, on October 2, 1976, CE students from 13 colleges raced 18 concrete canoes. (A canoe built by students that week in the exhibit hall of ASCE's Annual Convention in Philadelphia disqualified as "lacking floatation capability.")

Students at Convention

Over 350 civil engineering students attended that ASCE convention. Over 370 attended the Denver convention last year, coming from as far away as Virginia Polytechnic Institute and the University of Connecticut.

Forty-six percent of graduating ASCE student chapter members applied for Society membership last year, and in 1970 only 12% applied. ASCE's continued growth has been due in large measure to success at interesting the students. Much credit for that must go to good ASCE staff work and to turned on CE faculty advisers.

And maybe there's also some magic in the fun of making and racing those concrete canoes.

Editors Note: Congratulations to Carnegie-Mellon University, winner of both the men's and the women's races. A faculty race between the University of West Virginia and Drexel University was won by the former by 7/10 of a second! A valiant effort by Drexel paddlers Bob Koerner and Joe Syrnick. Information about next year's race will appear in future issues of THE NEWS.

MAUDEP PROGRAMS ANNOUNCED

The Metropolitan Association of Urban Designers and Environmental Planners, Inc. (MAUDEP) announces an ambitious program planned for 1977. The staff of THE NEWS feels that the following items might be of interest to the Philadelphia Section Membership. Our own very active Section member and former officer, Ira Pierce, is National Secretary of MAUDEP and he will be glad to discuss full particulars with those individuals who desire details about the individual seminars, workshops and conferences on the MAUDEP agenda. He may be reached as follows:

Ira N. Pierce, Chief, Public Transportation Planning, Delaware Valley Regional Planning Commission (DVRPC), 1819 J. F. Kennedy Boulevard (Penn Towers Building), Philadelphia, Penna. 19103, Phone: (215) LO 7-3000

Inquiries may also be directed to MAUDEP Headquarters Newsletter Suite 804, 15 Park Row New York N.Y. 10038.

MÁUDEP, is a non-profit organization created in 1968 to provide a congenial forum for the interchange of ideas among members of the urban design and environmental planning professions.

MAUDEP works in cooperation with and supported by professional organizations in the U.S. and around the world. Individual voting membership is on a voluntary basis and costs \$4.00 a year, and is open to all members of professional organizations. Members of MAUDEP receive four newsletters a year, special bulletins and other materials describing all programs.

To many members, MAUDEP Seminars allow face-to-face meetings with contemporaries and these personal contacts often prove invaluable in the months and years to come. By knowing whom to contact, and where, you can often get more information in minutes than you could through hours of pain-staking research on your own.

WORLD CONFERENCE ON TRANSPORT RESEARCH Rotterdam, The Netherlands April 26-28, 1977

Transport Decisions in an Age of Uncertainty

The conference is being organized by an international group of experts, each closely associated with transport research, who think it useful to bring together those engaged throughout the world in all aspects of research on transport problems with others con-

cerned with formulating and implementing transport policy decisions. The Netherlands Government will be host to the conference.

The conference will be world-wide, in that it covers both developed and developing areas. It will be multimodal.

The conference continues the tradition of relating research advances to policy applications which was established with the first earlier conferences in this series, at Bruges, Belgium in 1973 and at Paris in 1975.

Papers-

Contributed papers are invited and will be reviewed by a technical committee. A summary (1500 words) of each paper should be submitted by November 1, 1976, to MAUDEP, in 3 copies.

Authors will be notified whether their proposed paper has been accepted by January 15, 1977. The complete text of accepted papers will be due by March 1, 1977.

Program-

The program will cover these topics:

- 1. Appraisal
- 2. Current research directions
- 3. Transport directions for the next decade

For information write: Carl Berkowitz, c/o MAUDEP, P. O. Box 722, Church Street Station, New York, N. Y. 10008.

URBAN DESIGN/

ENVIRONMENTAL PLANNING SEMINAR AND WORKSHOPS

Russia — Rome — Europe

Orient — South America — India For detailed information write: Robert Schumacher, Program Director, MAUD EP, P.O. Box 722, Church St. Station, New York, N. Y. 10008.

PLANNING, DESIGN and IMPLEMENTATION of BICYCLE and PEDESTRIAN FACILITIES

Palo Alto, California July 6-8, 1977

For detailed information write.: Dr. Walter Kraft, Assistant Vice President, Edwards and Kelcey, One World Trade Center, New York, N.Y. 10048.

SECOND

INTERNATIONAL WATERBORNE TRANSPORTATION CONFERENCE

Berkeley, California May 25 - 27, 1977

For detailed information write: Commissioner Vito Fossella, New York City Department of Marine and Aviation, Battery Maritime Bldg., N.Y., N.Y. 10004

LOOKING FOR HELP IN SOLVING A PROBLEM?

Look to ASCE publications, meetings, conferences, and courses to provide new ideas, concepts and solutions to your needs.

Nine ways to research ASCE publications:

- 1. Review 1975 ASCE COMBINED INDEX for subject/author index listing of all 1975 publications. (The 1975 COMBINED INDEX is available at \$5.00 each per copy from ASCE Headquarters; The 1970-74 Cumulative Index costs \$10.00 each.)
- 2. Study the monthly CIVIL ENGINEERING listings and references for new and currently available publications.
- 3. Review ASCE Division Journals for applicable papers, using the abstract cards as the point of entry.
- 4. Subscribe to ASCE PUBLICATIONS ABSTRACTS, a bi-monthly index/abstract publication covering Journals and CIVIL ENGINEERING.
- 5. Read the 1975 TRANSACTIONS for indexes and abstracts of articles published over the past year or two.
- 6. Check 1976 ASCE OFFICIAL REGISTER for listings of Publications ... and available Information Retrieval Systems. (OFFICIAL REGISTER is mailed to every member upon request)
- 7. Check Publications Center area at National Conventions for copies of papers, related publications and new material.
- 8. Read the ASCE PROCEEDINGS of Specialty Conferences, containing copies of papers presented at the Conference. Coupons are available in CIVIL ENGINEERING and ASCE NEWS.
- 9. Check Publication Display at Section/Branch meetings for copies of papers and publications related to subject of meeting.

ASCE, 345 East 47th Street New York, N. Y. 10017 (212) 644-7672



S. T. HUDSON ENGINEERS, INC.
Professional Engineers & Consultants

Supports the Goals and Activities of A.S.C.E.

Telephone 215-732-5000

211 S. BROAD STREET Philadelphia, Pa. 19107