



ASCE

ILLINOIS SECTION

NEWSLETTER

Vol. 38 No. 3

American Society of Civil Engineers

January 1997

IN THIS ISSUE

- Marketing to Government Agencies*
Page 1
- Mgmt. Group Questionnaire Results*
Page 1, 2
- National Geotechnical
Experimentation Site at N.U.*
Page 2
- President's Notes*
Page 3
- National Engineers Week Activities*
Page 4, 5
- Section Activities*
Page 5, 6

ILLINOIS SECTION NEWSLETTER

Mailed to all ASCE-IS dues-paying members
American Society of Civil Engineers
Illinois Section — Zone III — District 8

Editor — Dave Kendall

Rust Environment and Infrastructure
3121 Butterfield Rd., Oak Brook, IL 60521
(630) 574-2568 FAX: (630) 574-2007
email: dave_kendall@cmail.rusteli.com

Assistant Editor — Bob Israel

Louis Jones Enterprises, Inc.
1 IBM Plaza, Suite 3501, Chicago, IL 60611
(312) 923-0022 FAX: (312) 923-0136

News Coordinator — Bob Camillone

Material & Guideway Systems Company
14409 Maycliff Dr., Orland Park, IL 60462
(708) 349-2790

Pres. Allen Staron (312) 902-7100
Pres.-Elect Chris Burke (847) 823-0500
Sec. Richard Walther (847) 272-7400
Treas. John O'Holleran (312) 930-9119

Send changes of address notices to the
Secretary, Illinois Section ASCE, 203 N.
Wabash, Room 1000, Chicago, IL 60601; or
call (312) 263-1606, FAX: (312) 372-5673, or
email at: isasce@popmail.mcs.net

Web Site: <http://www.mcs.net/~isasce/>

**Submission deadline
for the Feb. Newsletter
is Jan. 13, 1997**

Marketing to Government Agencies

In September, the Management Group sponsored a dinner meeting entitled "Marketing to Governmental Agencies." We were honored to the following experts on government agencies participating in the panel discussion: Mr. Stan Kaderbek of the Chicago Department of Transportation; Mr. Pat McAtee from Metra; Mr. Ken Macander of the Illinois Department of Transportation; and Mr. Ralph Wehner of the Illinois State Toll Highway Authority. The panel members frankly discussed the situations of being on the receiving end of our marketing efforts. In addition to providing some colorful background on some of their best and worst marketing forays, they provided a bit of wisdom on approaching public agencies for work. Their collective message included the following very pertinent items:

1. When preparing a proposal, team members listed on a proposal and who are "sold" for the project are expected to continue for the entire project. Switching personnel upon project award or midstream is one of the key areas of agency dissatisfaction with consultants.
2. In preparing the submittal, the consultant needs to understand and demonstrate their understanding of the scope of work for the project. Standard "off the shelf" responses for the purpose of winning a specific project are not effective.
3. Glossy brochures and fancy submittals are not effective, unless placed as a supplement to demonstrate the Consultant's understanding of the work.

4. Personal attention and questions regarding the specific project during the proposal response time are effective.

After giving hope and knowledge to the assembled crowd, the panel discussed the programs for the coming year and maintained the recurring lamentation that there is nominal funding for new projects for 1997, or that most funding is going to projects outside of the Chicago area. In general, even though studies indicate that the state of our deteriorating infrastructure is critical, the monies are not forthcoming to repair or replace the infrastructure. The speakers indicated that the Society should become more politically involved in the encouragement of funding for infrastructure, rather than taking a reactionary role and waiting for the monies to somehow arrive.

The Results Are In; Are You Being Served?

The Illinois Section Management Group was established four years ago. As the Group is not considered a "technical" organization, and new members are continually arriving within the Group, it was decided that the scope and intent of the Group's responsibilities and where we interface with the technical groups should be revisited. A questionnaire was provided to interested (and participating) Society members in order to obtain input into the operations and services that could possibly be of help to the membership at large. We distributed
(Continued on Page 2)

National Geotechnical Experimentation Site at Northwestern

By Richard J. Finno, P.E.
and Sarah L. Gassman,
Northwestern University

The National Geotechnical Experimentation Site (NGES) at Northwestern University is located in Evanston, Illinois, on the northeast corner of campus adjacent to Lake Michigan on 1.5 acres of reclaimed land. This site was selected by the National Science Foundation and the Federal Highway Administration as a National Geotechnical Experimentation Site in 1992. The purpose of these sites is to allow full-scale field experimentation at locations where the subsurface conditions have been well characterized.

These sites are particularly attractive for conducting experiments using new equipment and/or testing procedures in that funds need not be expended to determine subsurface conditions and geotechnical parameters. Subsurface conditions at the site consist of 29 feet of sand fill, underlain by 41 feet of soft-to-medium clay and 20 feet of hard silt and clay (glacial till) with trace gravel. Beneath the silt, Niagaran dolomite bedrock is encountered. Vane shear, dilatometer, Menard pressure meter, standard penetration, cone and piezocone penetration, and cross-hole seismic tests have been conducted in situ. Laboratory test results include index tests, consolidation, direct shear, CKU triaxial com-

pression and extension tests and plane strain compression tests. To date, three full-scale test sections have been constructed at the site: a test section to evaluate axial capacity of four types of deep foundation elements, a drilled shaft test section for non-destructive evaluation of deep foundations, and a pressure-grouted micropile test section.

The axial capacity test section was constructed in conjunction with the 1989 Foundation Engineering Congress held at Northwestern University. For this event, *a priori* predictions of axial capacity and load transfer characteristics of four types of deep foundations, both driven steel piles and cast-in-place concrete drilled shafts, were compared to a series of pile load tests conducted over a 43-week period. The work was published in 1989 by ASCE in Special Geotechnical Publication No. 23 entitled "Predicted and Observed Axial Behavior of Piles."

A second test section was constructed in fall of 1994 to provide an opportunity to evaluate the effects of pile caps and other structure on the results of non-destructive evaluations (NDE) of deep foundations. The NDE test section consists of five drilled shafts with lengths varying from 40 to 90 feet, and diameters ranging from 2 to 3 feet constructed in three groups. Pile caps vary in thickness from 2 to 5 feet. Parallel seismic, sonic

logging, sonic echo, and impulse response tests have been conducted at the site. This continuing work is being funded by the National Science Foundation, the Infrastructure Technology Institute (ITI) at Northwestern University, and the Federal Highway Administration.

More recently, a micropile test section was constructed in the fall of 1996 to evaluate constructability and axial load behavior of pressure-grouted micropiles. Given the deterioration of our nation's infrastructure, there exists a need to develop techniques to construct non-traditional deep foundation elements under restricted access conditions to allow in-place rehabilitation of structures while maintaining functional capabilities. In cooperation with GEOBASE, Inc., four reaction piles, and seven test piles were installed using various grout mix designs. The piles were tested in compression and extension to evaluate the axial load behavior. After load testing, each micropile was excavated and visually inspected.

The existence of the NGES at Northwestern University presents a unique opportunity for full scale field experimentation. Anyone interested in conducting such experiments, or who wants to calibrate their own in situ testing device in well-characterized soil conditions, can contact Rich Finno at (847) 491-5885.

The Results Are In; Are You Being Served?

(Continued from Page 1)

the questionnaire at our September dinner meeting. The results were compiled and are summarized below:

1. Eleven issues were presented as goals for future management programs. The following five goals were rated in order of importance by those who responded:

- a. Marketing of Engineering Services
 - b. Project Management
 - c. Quality Assurance/Control
 - d. Project Control
 - e. Legal Issues
2. Speaker Topics
- a. Speakers on aforementioned topics.

b. Should have one speaker at a time, rather than a panel.

c. Project scheduling, project cost controls, and litigation support.

3. Meeting Sites/Times

a. Downtown, and evenings preferred.

4. Additional Comments

- a. Get good speakers
- b. Seminars that are affordable and can help younger Project Managers.
- c. Educational programs that would enhance professional knowledge.
- d. Help with day-to-day work

The Management Group has been evaluating these results and will, in the future, focus activities on the

above topics and interest to the membership. We intend to provide more dinner meetings/ seminars, as well as offering professional seminars.

As a result of the interest survey, and the overwhelming response to the dinner meeting, the Management Group has rededicated our efforts to providing services to the membership in the form of seminars and meetings that educate and inform.

We appreciate your input and your participation.

Submitted By:
Karen Steingrader and Bob Israel

PRESIDENT'S NOTES

The holiday season is over and business is back to normal. People are hard at work and you don't hear, or use, the excuse "Let's wait till after the holidays to talk about that." By now New Year resolutions have been made and probably many have been broken. Even at that, I would like to take this opportunity to wish all of you a Happy and Safe 1997!

The word that I would like to emphasize in that wish is the word, SAFE. I have never considered what we do as a dangerous business. For those of us who spend our careers working in offices, the most dangerous situation may be some middle-aged, overweight engineer pulling a back muscle picking up a file box. Or perhaps it is someone cutting their finger with an Eexacto knife instead of just their necktie. I have never considered what we do as a dangerous business.

That perception met with a strong dose of reality when I recently attended a memorial service for an old friend killed in an accident at a job site. Although Rodger and I had not worked together in many years, I remembered him as a fun loving, hard working, compassionate man. I am not fully aware of the specifics of the accident, but I do know that Rodger was running the instrument on a survey party and was struck by an errant vehicle; in all likelihood he probably never saw the vehicle that hit him.

I have never considered what we do as a dangerous business, but at that same memorial service for Rodger, I heard of an accident at a bridge site that claimed the life of another worker on the very same day. On another construction site in Chicago the next day, an engineer performing inspection work was hit by a car. Are these all isolated occurrences; unfortunately not. Those of us that earn our living at construction sites or doing field investigations are often subject to hazardous situations and materials. That may seem very obvious, but it merits all of our attention. Do our organizations have safety training? Does each project



have a safety plan? Are all staff on site aware of the safety plan? Are they aware of emergency procedures?

I have never considered what we do as a dangerous business, but in fact it is, or certainly can be. It is important for each of us to take responsibility for safety at the job site, and to initiate programs within our businesses to address safety and emergency issues.

Again I extend a wish for Happy and Safe New Year! Rodger will be missed this year; I hope no one else will be missed next year.

Allen Staron

P.E. Review Course Videotape Program

The next P.E. examination is April 18, 1997. Beginning in February, ASCE Illinois Section's Younger Member Group (YMG) is offering an eight-week Civil Engineering Exam Review Videotape Program. The program is a product of ASCE National's Continuing Education Services and consists of 23 hours of videotape filmed ASCE P.E. review classes.

Participants will meet Wednesdays from 5:30 p.m. to 9:00 p.m. in downtown Chicago. The program begins Feb. 19, 1997 and ends April 9, 1997. The civil engineering subjects covered are: Exam Overview, Hydraulics and Hydrology, Structural Analysis and Design, Sanitary Engineering, Soils, Transportation, Surveying, and Economics. Each subject is presented on videotape by an experienced engineer. The program includes a comprehensive reference manual with example problems. Volunteers from the Illinois Section may be available to answer questions.

The \$175 cost includes the reference manual, dinner and soft drinks. If interested, please register by faxing your name, address, company name, phone number and fax number to Don Wittmer at (312) 930-9063. Call Don at (312) 930-9119 for more information. The registration deadline is Feb. 12, 1997.

Nominations Sought for National Committees

The IS Nominating Committee is seeking persons interested in serving on National ASCE committees and representing Zone III. Full member appointments are controlled by a zonal rotation system, thus all committees do not have a vacancy slated for a Zone III member this year. Nominees are sought for both the Professional Division and Education Division Committees.

In the Professional Division, positions are open on the following committees: Quality in the CE Profession, Government Engineering Exec-Comm, Equal Opportunity Programs, and Professional Registration. In the Education Division, positions are open on the Student Services and

Technology Curricula & Accreditation Committees.

Information on committee member duties and functions is available in the Official Register, ASCE Headquarters, or from John Carrato, IS Nominating Chair, at (312) 565-0450. Service begins the August after selections are made. Members are expected to attend two two-day meetings per year and contribute an average of four days per year on assigned work. Meeting attendance is partially reimbursed under ASCE's standard policy.

This is an excellent method of involvement to make your views known. Nominations must be received at National by Feb. 1, 1997.

Engineers Week Activities

Judges Needed For Future City Competition

Judges are needed for regional Competition. The judges are asked to attend a judge training session and a pre-competition judging of essays on Saturday, Jan. 11, 1997. Judges are also asked to judge the regional competition on Saturday, Jan. 18, 1997. It is a rewarding experience for all Future City team members. Join the team and make a difference.

For more information, please contact one of the program co-coordinators: Doug Ritzmann, Fluor Daniel (312) 368-3556; Fax (312) 368-3686 or Todd Vanderwater, Fluor Daniel (312) 368-3849; Fax (312) 368-3746.

Dr. Frank Kreith To Receive Washington Award

Dr. Frank Kreith, Professor Emeritus and ASME Legislative Fellow for Energy Science and Natural Resources, National Conference of State Legislatures, has been elected to receive the 1997 "WASHINGTON AWARD," one of engineering's prized national honors. Dr. Kreith has published over 60 technical articles and books in Heat Transfer and Thermodynamics, his specialty.

The award will be presented to Dr. Kreith at a banquet on Tuesday evening, Feb. 18, 1997 at the Union League Club of Chicago, 65 W. Jackson Blvd., Chicago. A general reception will begin at 5:30 p.m., and dinner will be served at 7:00 p.m.

Tickets (\$60) to the banquet can be obtained from the Western Society of Engineers, 53 W. Jackson Blvd, Suite 1730, Chicago, IL 60604; Or call (312) 913-1730.

This event is presented annually by seven national and regional engineering societies, namely the American Society of Civil Engineers, American Institute of Mining, Metallurgical & Petroleum Engineers,

American Society of Mechanical Engineers, American Nuclear Society, The Institute of Electrical and Electronics Engineers, National Society of Professional Engineers, and administered by the Western Society of Engineers.

DuPage Area Engineers' Week

ASCE Illinois Section is pleased to be a sponsor for the 13th Annual DuPage Engineers' Week scheduled to occur Thursday, Feb. 20 through Saturday, Feb. 22, 1997 at the IIT Rice Campus in Wheaton. The Thursday night program includes a community forum where the public can exchange views with engineers on current issues. Friday morning and afternoon, two different groups of approximately 375 middle school students attend interactive presentations, have hands-on activities, and participate in team competitions. The Saturday session is open to students, parents, families, etc., to visit the interactive exhibits, hands-on activities, and contests to learn about career information. Admission is free to all the events. Volunteers are needed for any of the three days mentioned. Contact Ruth Sweetser at (630) 682-6020 about the program.

Genius, Not Gender

February 1997 marks the 150th anniversary of Thomas Edison's birth, and already plans are underway to celebrate the man whose inventions changed the world. But, what of the women engineers who have changed the world? Though Edison remains a household name all these years later, it's likely that the average American cannot name a single famous woman engineer.

The National Engineers Week Committee intends to change that. As part of its efforts to educate the public about the critical role engineers play in society, the committee - a consortium of engineering societies and major

corporations - is making a special effort to emphasize the role of women in engineering during National Engineers Week, Feb. 16-22, 1997.

Women have long played a vital role in engineering, the committee says, overcoming discrimination and harassment to bring some of the most significant advances to this significant field. From bulletproof vests to the fire escape to AZT, women have made and continue to make outstanding engineering contributions.

There's a need, the National Engineers Week Committee says, to fill the gaps in the history of engineering to tell the full story of the contributions of women engineers, including:

Ada Brown Lovelace, who collaborated with Charles Babbage, the Englishman credited with inventing the forerunner of the modern computer, wrote a scientific paper in 1843 that anticipated the development of computer software (including the term "software"), artificial intelligence, and computer music. The U.S. Department of Defense computer language, ADA, is named for her.

Amanda Theodosia Jones invented the vacuum method of food canning, a process that completely changed the entire food industry. In a move typical of women inventors of the 19th century, Jones denied the idea came from her inventiveness, but rather from instructions received from her late brother from beyond the grave.

Ellen Swallow Richards pioneered the field of environmental engineering with her groundbreaking research into water contamination. In 1870, she helped conduct the first analysis of Massachusetts' water supply and led the research on two subsequent testings. The work set the standard for the United States and the world. She showed incredible foresight with her insistence that the earth's environment be examined as a whole, rather than in "bits and pieces." She also urged tighter controls over solid waste disposal and air, food and water purity. Ironically, various men who are now

(Continued on Page 5)

Genius, Not Gender: Recognizing Women Engineers

(Continued from Page 4)

known as the "Father of Modern Sanitation" (Hiriam Mills), the first person to study nitrification (Edwin Jordan), and the "Father of Public Health" (William Sedgwick) all owe substantial credit to Richards. As one historian noted, if they were the "fathers . . . then she was the mother of them all."

At the beginning of the 20th century, **Mary Engle Pennington** revolutionized food delivery with her invention of an insulated train car cooled with ice beds, allowing for the first time the long-distance transportation of perishable food.

After **Mary Anderson** noticed that streetcar drivers had to open the window of their cars when it rained, she invented the windshield wiper in 1903. By 1916, they were standard equipment on all American cars.

In the 1920s and '30s, **Beulah Louise Henry** was known as "the Lady Edison" for the many inventions she patented, including a bobbinless lockstitch sewing machine, a doll with bendable arms, a vacuum ice cream freezer, a doll with a radio inside, and a typewriter that made multiple copies without carbon paper. One of the most outstanding features of her career was the way Henry capitalized on her inventions, founding manufacturing companies to produce her creations and making an enormous fortune in the process.

Hedy Lamarr – the 1940s actress known for her line, "Any girl can be glamorous. All you have to do is stand still and look stupid" – invented a sophisticated and unique anti-jamming device for use against Nazi radar. While the U.S. War Department rejected her design, years after her patent had expired Sylvania adapted the design for a device that today speeds satellite communications around the world. Lamarr received neither money, recognition, nor credit.

Grace Murray Hopper, a Rear Admiral in the U.S. Navy, developed the first computer compiler in 1952

and originated the concept that computer programs could be written in English. She once remarked, "No one thought of that earlier because they weren't as lazy as I was." Hopper is also the person who, upon discovering a moth that had jammed the works of an early computer, popularized the term "bug." In 1991, Hopper became the first woman, as an individual, to receive the National Medal of Technology. One of the Navy's newest destroyers – the USS Hopper – is named for her.

Stephanie Kwolek's discovery of a polymade solvent in 1966 led to the production of "Kevlar," the crucial component used in canoe hulls, auto bodies, and – perhaps most importantly – bullet-proof vests.

Ruth Handler, best known as the inventor of the Barbie doll, also created the first prosthesis for mastectomy patients.

Dr. Bonnie J. Dunbar, who earned a master's degree in ceramic engineering from the University of Washington, worked at Rockwell International in the late 1970s as a senior research engineer, helping to develop the ceramic tiles that enable the space shuttle to survive re-entry. In 1985, she had an opportunity to test those tiles first hand, as an astronaut aboard the shuttle.

As the first woman to serve on the U.S. Joint Chiefs of Staff, **Dr. Sheila E. Widnall** has already guaranteed her place in history. But serving since 1993 as the Secretary of the Air Force – with responsibility for 380,000 active duty personnel, 251,000 members of the Air National Guard, and 184,000 civilians, and overseeing an annual budget of \$62 billion – is only the latest in her long list of accomplishments. After graduating from MIT in 1964 with her doctorate in science, Widnall went on to become head of that institution's fluid mechanics division, director of the Fluid Dynamics Research Laboratory and an MIT associate provost. Internationally known for her work in the fluid dynamics of aircraft

turbulence and spiraling airflows, Widnall received the Distinguished Service Award from the National Academy of Engineering in 1993, and was inducted into the Women in Aviation Pioneer Hall of Fame in 1996.

Section Activities

(Continued from Page 6)

EE&WR Group

The EE&WR Group meets the second Tuesday of every month. The next meeting is:

Date: Jan. 14, 1997

Time: 5:30 p.m.

Place: Lobby Conference Room
111 N. Canal St.
Chicago

Info: David Moughton, (312) 353-6400 x3115

An FEQ class will be offered on April 29 to May 2. For more information, Eric Loucks at (312) 474-1313 or loucksed@cdm.com

Member News

Zdenek P. Bazant, endowed Professor of Civil Engineering and Materials Science at Northwestern University, was recognized a second time and received the prestigious Newmark Medal at the ASCE Annual Convention in Washington, DC on Nov. 13, 1996. The medal is awarded to "a member who, through contributions to structural mechanics, has helped substantially to strengthen the scientific base of structural engineering." Professor Bazant was cited for "fundamental contributions to the understanding of constitutive behavior of structural materials, non-linear fracture mechanics and stability of structures."

SECTION ACTIVITIES

Younger Member Group

January Dinner Meeting

Mr. Mansour Ghiasi, P.E., Vice President of Operations with Brownfield Development Corporation will discuss the issues related to the development of environmentally impaired properties, also known as Brownfields. Mr. Ghiasi will also discuss the City of Chicago Brownfield Initiative and other governmental programs intended to promote urban revitalization through Brownfield development.

Date: January 16, 1997

Time: 5:30 p.m.

Place: Main Floor Conference Room
River Center
111 N. Canal St., Chicago

RSVP: Carol Smith/John Lukas at
(312) 902-7100

Cost: \$12.00 (includes dinner)

On Sunday, Nov. 24, 1996, six YMG members participated in Christopher House's 15th Annual Thanksgiving Food Walk. Volunteers spent only two hours walking door to door soliciting food for Thanksgiving Baskets. Enough food was collected to feed over 500 families.

The Younger Member Group is geared toward civil engineers aged 35 and younger. Featured speakers at our meetings come from all areas of civil engineering. The Group prides itself on offering diverse meetings once a month, presenting social and networking opportunities and introducing younger engineers to other Illinois Section ASCE specialty divisions. We welcome everyone to come to our meetings, regardless of age or position.

Structural Group

January Meeting

Mr. Paul Gaudette of Wiss, Janney, Elstner Associates will discuss evaluation and repair of concrete building facades. The presentation will include a discussion of some fundamentals of concrete deterioration, and explore some unique aspects of investigation/repair of both vertical and horizontal components (balconies) of facades.

Date: Tuesday, Jan. 21, 1997

Time: 5:30 p.m. social
6:00 p.m. dinner
7:00 p.m. program

Place: Como Inn
546 N. Milwaukee, Chicago

Cost: \$25.00

RSVP: Barb Pries at (312) 263-1606

February Dinner Meeting

To be announced.

March and April 1997

The Structural Group and Structural Engineers Association of Illinois are co-sponsoring a lecture series entitled "Challenges in Modern Structural Engineering." The series consists of four evenings of lectures addressing design of structures to resist terrorist attacks, engineering liability issues, welding of structures, and high-performance concrete. Each session will consist of two or three lectures by recognized experts in the subject field, and a discussion by a panel of local professionals. Lecture Series sessions will be held at the Midland Hotel on March 5 and 19 and April 9 and 23. For registrants attending all sessions, 1.0 continuing education units will be issued. Registration deadline is March 1, 1997. For more information, contact John Vincent at (847) 965-7500.

Geotechnical Group

Geotechnical Group meetings are held every second Tuesday of the month, September through May. Details are as follows:

Time: 5:30 p.m. social
6:30 p.m. dinner
7:30 p.m. presentation

Place: Como Inn
546 N. Milwaukee, Chicago

Cost: \$25 with reservations, \$30 at the door, \$10 for students with reservations, and \$15 for faculty with reservations.

RSVP: Ms. Pat Moser at (630) 717-4263 by noon on Thursday preceding the meeting.

January Meeting

The January meeting will be a joint meeting with the Association of Engineering Geologists. Mr. Clyde Baker from STS Consultants will discuss the foundation system of the world's tallest building: the 88-story Petronas Towers in Kuala Lumpur, Malaysia. The 450-meter building is built on karst terrain.

Date: Jan. 14, 1997

February Meeting

The February meeting will feature speakers from the Chicago District of the U.S. Army Corps of Engineers. Bill Rochford and Olaf Weeks will discuss "Design and Construction of Roller Compacted Concrete Pavements at O'Hare Reservoir."

Date: Feb. 11, 1997

Management Group

For information of the Management Group and its activities, contact Jeff O'Connor at (312) 454-1060.

Administration Committee Meeting

This next AdComm meeting will take place immediately after the January Luncheon Meeting. The details are as follows:

Management Express Luncheon

Recent changes in government statutes regarding accessibility for the handicapped and in job site work rules have significantly impacted the design content. Our presentation is ADA and OSHA Compliance Update by Thomas Dugard JD from Matkov, Salzman, Madoff & Gunn.

Date: Thursday, Jan. 30, 1997

Time: 11:30 a.m. social
12:00 noon lunch
12:30 p.m. speaker

Place: Chicago Bar Association
321 S. Plymouth Ct., Chicago
(Jackson and Dearborn),

Cost: \$15.00 - pay in dining room

RSVP: Mark Schultz (312) 782-8150

Construction Publications

In 1997, a new quarterly issuance of research papers and case studies entitled JOURNAL OF COMPOSITES FOR CONSTRUCTION will be offered by the ASCE Materials Engineering Division. Check "CC" with a membership renewal, or call (800) 548-2723.