

President's Memo

by Dean E. Stephan

Where Do We Go From Here?

It is an honor, privilege, and humbling experience to have been elected by the membership to serve as president of the American Concrete Institute. In my routine encounters in business, most people assume ACI is a trade association rather than a consensus standards setting organization composed of individual members from diverse backgrounds and professional activities. ACI's membership, drawn from throughout the world, shares an abiding interest in concrete and concrete technology. We are individuals who voluntarily give time to an Institute whose technical and educational interests range from concrete patio slabs to lunar concrete. An Institute whose purpose is "progress through knowledge."

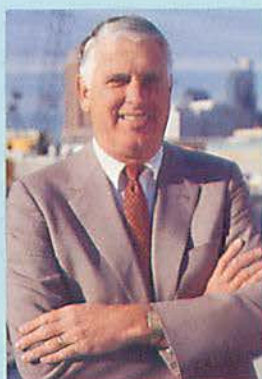
This diversity and individuality is the core of the strength of a consensus standards organization such as ACI. Diversity yields the objectivity, thoroughness of exploration, and breadth of knowledge that gives ACI its credibility and establishes its excellence. Diversity and associated personal interests also cause strains in a volunteer organization. The wide range of individual member interests in various aspects of concrete technology and use results in a wide range of desired services. The advancement of this concrete technology provides an unlimited mission for ACI.

In addition to our geographical and expertise diversity, we are faced with unsurpassed technological change occurring at an asymptotic rate. Communication and mobility are making national technologies international. Acquaintances within and without the industry are often surprised to discover that a material as old and common as concrete is going through a "high tech" revolution in laboratories around the world. They are amazed that design and use concepts for concrete are dynamic and changing.

All of this challenges ACI to define itself in terms that recognize the diversity of needs and interests of its membership and a technology that knows no national or geographical boundaries. To prepare for tomorrow and on into the next century, we need an introspective self-examination of where we have been, where we are going, and where we want to go. Within an organization of volunteers who associate around a common interest, change is not revolutionary. Change will be evolutionary.

Several years ago the Board of Direction recognized the need for planning the future course of ACI when it established the Planning Committee and adopted a Long-Range Plan. The pace of change today makes the process all the

more critical. The demands placed upon finite resources dictate that directions, goals, and visions be established so that the use of ACI's resources can be intelligently allocated and committed. If ACI is to grow and remain relevant in tomorrow's world, it must constantly redefine itself to accommodate external and internal forces and membership needs.



Some of the issues that are close to my heart are ACI's future role in:

- Concrete research
- Technology transfer
- Education
- Training
- An integrated global community.

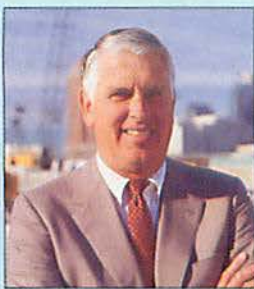
As we think about future activities and actions, we are fortunate to be building on a very strong foundation. The professional staff of ACI has maintained and strengthened the financial position of the Institute through difficult economic times. The technical programs and publications are sound. Certification is expanding. The *Manual of Concrete Practice* is available in electronic format. A second international conference in Singapore is scheduled for November. ACI has assumed the secretariat of ISO/TC-71. The revisions for the 1995 Building Code are being finalized. Commitments are being made regarding the much needed relocation of headquarters into facilities that can accommodate and enhance ACI's future activities and growth.

As we review our accomplishments and look to future issues, we need to develop consensus amongst ourselves of where we want to go. This is necessary for us to effectively and prudently use ACI resources to ensure we remain responsive to member needs, relevant to the advancement of the industry, and the world's premier institution and accessible repository of knowledge dealing with concrete and concrete technology. Your thoughts and comments regarding ACI's role in our changing world are solicited. We all should engage in the dialogue.

A large, handwritten signature in black ink that reads "Dean E. Stephan". The signature is written in a cursive, flowing style.

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Techies

Like it or not, we are all "techies." ACI's bylaws state: "The purpose of the Institute shall be to further engineering and technical education, scientific investigation and research, and development of standards for design and construction incorporating concrete and related materials." All "techie" stuff.

With this purpose comes responsibility. The development of standards strikes at the heart of the "techie" world — technology transfer. ACI is, by choice, the technology gatekeeper for concrete. The code and standards committees currently determine technological acceptance. This acceptance is essential for the widespread use of a technology. The gatekeeper role precedes the market force determination of efficacy. The development of standards need not stifle progress. The standardization process substantially improves the acceptance of new technology or changes in existing technology because standardization involves detailed technical review and acceptance. Evaluation and acceptance is crucial to technology transfer from the laboratory and technical paper to practice. What manufacturer would incur the capital investment necessary to modify reinforcing steel deformation patterns if the code did not recognize the improved development capabilities resulting from change? It is the lack of standards for new or changed technology that inhibits implementation.

There have been arguments made that ACI's role should be to document existing standard practice rather than help establish it. In today's impatient and competitive world, standardization organizations that accept that premise will soon find themselves both obsolete and irrelevant. Today's standards must be based on science as well as experience and practice.

ACI has the unique collection of individuals with the wide range of training, experience, and vocation to perform the essential evaluation and acceptance necessary for the standardization of new and changing technology. The resources to, as Gene Corley (current Board of Direction member) put it, "protect the public from rascals and scoundrels." The challenge is to find timely ways to efficiently handle the introduction of technology. Past president James G. MacGregor pointed out in his February 1993 "President's Memo" that current ACI processes often take from eight to ten years from original research to completion of evaluation with the results often published in a form not directly available to or usable by the people who would implement the technology.

The problem is not unique to ACI or North America. Both Japan and the European Community have recognized that the rapidly increasing international economic integration will reward proper use of innovation and technology advancements. Both entities are establishing well documented efficient procedures to develop, introduce, and use new or changed technology and innovation — each working within their customs and social structure.

ACI's Technical Activities Committee has recognized the urgent need to explore ways to efficiently identify and evaluate new or changed technology and incorporate it into the body of knowledge and standards of ACI. The Educational Activities Committee has recognized the need for new and different training often required by new technology if it is to be placed into use.

Successful technology transfer by ACI demands that we "techies" apply the wealth of ideas that can come from our diverse backgrounds, interests, and perspectives to the problem and the processes to achieve solutions. In addition, all of us must constantly re-educate ourselves and not shy away from the unfamiliar or be complacent within our own knowledge or resist change because we find it challenging our competence.

The issue of technology transfer is too important to leave it to others. We must address it ourselves. To stimulate your ideas and promote examination of the status quo, the following are some ideas currently under discussion within ACI:

- Create task committees, composed of members of interested technical committees, for oversight of Concrete Research and Education Foundation (ConREF) research projects,
- Establish an ACI center for evaluation of concrete technology,
- Provide for a supplementary system of technical committee reports for the introduction of new technology,
- Include development activities in ConREF sponsored research,
- Make available data on new technology to local ACI chapters,
- Develop application training materials on new technologies for designers, contractors, and craftsmen,
- Incorporate new technologies into certification training and testing,
- Establish for ConREF a strong industry presence in concrete research,
- Supply research funding, including time and travel, for researchers to disseminate new technology,
- Impose term limits on memberships on ACI code committees, and
- Provide defined procedures for introduction of new technologies into the procedures of the Institute.

Traditional and easy approaches, such as presentations at convention sessions and publication in the technical journals, have proven to be inadequate on their own. Additional approaches must be explored and tried if ACI is to remain relevant in a world anxious to benefit from the worldwide advances in concrete technology. ACI needs to develop efficient systems to provide guidance on the use of new and changing concrete technologies.

Give us your thoughts and ideas. Let's all work together on the problem of timely technology transfer.

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Searching

We are always searching for answers, information, solutions, and innovation. ACI is no exception. In 1989, the Board of Direction established the Concrete Research and Education Foundation (ConREF) to sponsor and foster research and education in the science and technology of concrete. The foundation along with its constituent research councils — such as the International Joints and Bearing Research Council and the Concrete Research Council — is ACI's tool in searching for new answers, information, solutions, and innovation regarding concrete and its use. ConREF's research to date spans investigation in the science of materials to the design of new concrete structural assemblages. Unfortunately, the scope of ConREF's activities has been constrained by minimal financial resources.

Over the last few years, increasing need for concrete research has become apparent. An aging infrastructure, largely built of concrete, requires renewal through repair, replacement, and expansion. This capital investment in the fabric of our social structure has declined over the past twenty years. This trend is changing. The emerging economies are building their first modern infrastructure and established economies are awakening to the need for expansion and renewal of their aging infrastructure.

The magnitude of the needed worldwide infrastructure investment demands that scarce capital be spent efficiently. Both public and private infrastructure owners worldwide are searching for new answers, information, solutions, and innovation to achieve efficiencies in their investment. The infrastructure stalwart — concrete — must become a high performance material if it is to fulfill expected infrastructure life cycle cost needs and compete with the more exotic materials being developed. Concrete is the material that holds great promise for cost effective solutions, but its technology sorely needs updating. High performance concrete research and development programs are well established and underway in Europe and Japan. If ACI is to remain relevant to the advancement of the industry and the world's premier institution regarding concrete and concrete technology, it needs to participate in and help guide research and development of high performance concrete — concrete that can fulfill the properties and performances required by widely varying uses. ConREF is the entity that can provide ACI members the opportunity to guide HPC research, keeping it responsive to both basic research needs and current application needs. ConREF can be the focal point and provide homogeneity to a fragmented industry — giving users, designers, contractors, and researchers an effective voice in the much needed research and development.

To allow ACI and its members to assume an active role in concrete research, we must establish ConREF as the authority on concrete research. To accomplish this, we need to:

- Identify and provide financial resources for research,
- Provide industry guidance in ConREF's activities,

- Ensure permanence of ConREF,

- Provide resources for continuity of activities.

Some suggested methods and actions that might allow us to achieve these goals are:

- A ConREF corporate advisory board to involve the private sector with concrete research and its funding,

- Involvement of ACI's technical and educational committees in ConREF's research,

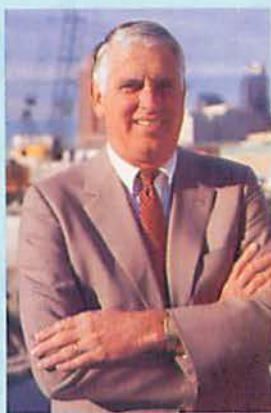
- Strengthening ACI's role as the gatekeeper of concrete technology by substantially improving ACI responsiveness to new or changed technology,

- Building of a ConREF endowment fund, and

- Provision of funding for staff to seek research funding, represent concrete research needs, promote and facilitate industry involvement in research, and to address barriers to research and technology transfer.

ACI, working with the Civil Engineering Research Foundation, an agency of the American Society of Civil Engineers, has articulated a vision and provided a forum for critical concrete research needs. These activities have resulted in the design and construction industry being categorized as "manufacturing." Future federal R&D funding decisions reflect this new recognition placing construction materials on a more equal footing with more exotic industries such as electronics. The results are some federal agencies have modified their budgets to foster and emphasize research on construction materials. Construction related research funding is being included in the growing alphabet soup of research initiatives such as the Advanced Technology Program (ATP), Technology Reinvestment Project (TRP), Advanced Manufacturing Technology (AMT), and Advanced Materials & Processing (AMP). ConREF can provide a single voice necessary if concrete research is to achieve maximum benefit from these programs and the sweeping changes in government attitude.

Societal needs and international competition are creating a public and private awareness of the requirement for concrete research and transfer of research results into practice. Potholes, decaying structures, contamination, waste disposal, natural disaster losses, are all driving the increasing public awareness for the need to achieve quantum improvements in the use of that "tried and true" material — concrete. A strong and viable ConREF offers ACI's best answer to accomplishing the research essential to satisfying its members and concrete user needs and demands for improved concrete performance, both as a material and in its structural and non-structural use. We need to keep searching for answers, information, solutions, and innovation in concrete.



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Investing

In today's volatile investment markets, we are all looking for security and reliable returns. Risk and reward are critical issues in our investment decisions. The same risk and reward principles governing our personal investments also govern industry investment decisions. Risk and reward determine industries' allocation of limited investment dollars to such options as expansion, new markets, physical plant, equipment and research.

We marvel at new concrete technology but often neglect to notice how reluctantly innovation is accepted and applied, regardless of its benefits. An essential ingredient in the application of technology is industry's investment in research and development leading to the technology. Industry's research and development (R&D) investment both expands technology and plays a crucial role in the application of technology. For this essential investment to occur, there must be a balance between risk and reward.

Necessary to risk control is the evaluation of a new technology. There must be defined, historically successful and efficient methods for evaluation of concrete technology relative to life safety and efficacy. From the owner's, designer's and constructor's point of view, use of unevaluated innovations constitute an unacceptable risk. No one in the construction industry is willing to be the "guinea pig." Because ACI is the current gatekeeper of concrete technology, it is up to the Institute to develop internal procedures and to work with model code organizations and others in creating external techniques for evaluating new technology. This can be done by using the invaluable expertise of ACI's members and the vast reservoir of knowledge that the Institute has chronicled over the past 90 years. If ACI is to remain in the forefront of concrete technology, it seems desirable for the Institute to pursue a leading role in concrete technology evaluation. It is interesting to note that evaluation activity for innovation is well advanced in both Japan and the European Community.

Reward for investment in research is a more complex issue. Manufacturers of products or equipment associated with concrete technology can use government patent procedures to enhance the opportunity of return on their investment in R&D. On the other hand, innovations in engineering, design, and construction are often related to processes which are generally not patentable. The current procurement practices of (i) price only as a basis of design and construction contract awards, (ii) prescriptive rather than performance based codes, standards, and construction contracts, and (iii) separation of construction design and execution functions would seem to make industry investment in unpatentable innovation irrational. In spite of this, individual firms and companies are using R&D investment and the culture of innovation

as parts of a strategic plan to differentiate themselves and bring added value to their clients. The construction industry in the United States is composed of an estimated 1,250,000 firms. Operations are generally regional or locally oriented. Due to this large and fragmented industry, dissemination of knowledge about innovation and new



technology is difficult and slow. This offers the opportunity to develop significant competitive advantage — thus reward — from investment in research independent of legal protection of exclusiveness. This means research outlays by innovative firms in our industry are both rational and essential.

The concrete industry — manufacturers, suppliers, designers and constructors — need to recognize that there is a rational basis for research investment. They must work together to shape the market forces that impact R&D investment decisions. We cannot ignore the realities of the marketplace and expect, through edict or broad dissemination of technological information, to maximize innovation and achieve technology transfer. If we develop efficient evaluation processes that determine efficacy and ensure life safety to control risk associated with using innovations and, at the same time, provide a forum for procurement policies that offer potential rewards for investment in research, innovation in concrete and its use will blossom. This will be followed by a demand for technology to transfer to practice that will outstrip our ability to advance the state-of-the-art.

ACI's Concrete Research and Education Foundation (ConREF) offers the concrete industry the ideal organization in which to focus its research investment. For starters, ConREF can be used to facilitate assembling industry consortium and public/private cooperatives to share research risk and develop multi-firm technologies. ConREF can also be shaped to provide a single effective voice for our fragmented industry to address the barriers to transferring innovation to practice. ConREF is a key element in the research and development of concrete technologies and their use. Rational industry investment in research and development is essential if the benefits of tomorrow's high performance concrete are to be realized.

Today's methods result in today's solutions. We must find new "methods" to advance to tomorrow's solutions. Let us know your thoughts and suggestions regarding industry and government involvement in ConREF.

A handwritten signature in black ink that reads "Dean E. Stephan". The signature is written in a cursive, flowing style.

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Certifiable

After a difficult day on the jobsite, a perplexing dilemma in the lab or design office, a prolonged contract negotiation, a difficult sales effort, spending time with a lawyer, we sometimes feel certifiable. When ACI, under the leadership of several past presidents including Norm Scott and Peter Smith as well as many other active Institute members established its certification program, there was probably a different definition in mind. ACI's certification program aligned with the Institute's charter of "progress through knowledge" by offering individuals the opportunity to demonstrate their concrete knowledge and skills and receive recognition of their competence.

The acceptance of ACI's certification program has been gratifying and its value to the concrete industry is validated by its expanded use. Exams graded by ACI staff increased 23.5 percent from 5,624 in 1992 to 6,945 in 1993. Nearly 100 local sponsoring groups conducted 579 exam sessions. These groups, located in all 50 states and the District of Columbia, all seven provinces of Canada, as well as Puerto Rico, Korea, and Argentina, administered over 9,700 examinations, resulting in 8,261 individuals receiving certification in 1993 — a 31 percent increase over 1992. ACI certification enjoys support from individual concrete craftsmen and their employers, and from organizations such as the Operating Plasterers' and Cement Masons' International Association and the Laborers/AGC Training Trust Fund.

The Certification Programs Committee (CPC), a board committee, is actively expanding ACI's certification activities into new areas. At the Minneapolis, Minn., convention in November 1993, the Board of Direction approved a new program to certify Concrete Transportation Construction Inspectors. A Canadian standards-based certification has been initiated for Concrete Field Testing Technicians with the exam covering six Canadian Standards Association Standard Test Methods and one ASTM method. A similarly designed program for Canadian concrete construction inspectors has been put in place with examination of 46 project inspectors at Hibernia Management and Development Co., Ltd. In addition, new certification programs under consideration include:

- Shotcrete nozzlemen,
- Masonry inspectors,
- Formwork detailers,
- Plasterer craftsmen, and
- Spanish language exams based upon standards in use in Mexico.

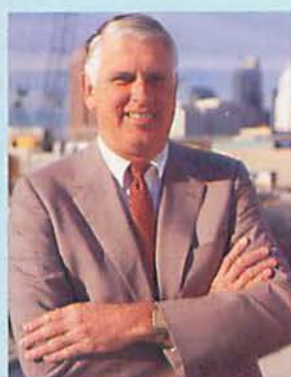
Integral with certifying demonstrated knowledge and competence is the training necessary to attain the knowledge and skills. If society is to benefit from the increasing advances in the development of high performance concrete, skill in pro-

duction, application, and quality assurance is essential. ACI's publications, manuals, and workbooks provide the self-study sources of knowledge essential for the international concrete industry to continuously improve its performance in the use of concrete. ACI's certification programs need to ensure the examinations and training materials used stay abreast of technological advances in concrete. For new technologies to fulfill their promise they must be properly executed by a workforce knowledgeable in their use. The certification programs need to identify emerging concrete technologies to ensure training materials provide instruction in their use and exams test the certificate holder's knowledge in the skills necessary for their proper employment. As such, certification becomes a critical link in the transfer of technology to practice by developing training materials for those who implement the technology. Expanding the knowledge of those who build with concrete is a critical ACI service.

This means that the research leading to innovations and new technology must include identification of the practices and skills essential to successful application. Successful concrete research includes not only the discovery of "truths" but also the discovery of the "methods" by which these truths can be applied in our continuing pursuit of the "better way."

Staff support of the efforts of ACI's volunteers at the local and international organizational levels is essential for consistent and uninterrupted service to the concrete industry. Certification is no exception. In fulfilling CPC's mission of providing programs which the industry needs and desires, and coordinating and supporting the local sponsoring groups administering the exams, Richard F. Heitzmann, director of certification, and his able staff at Institute headquarters deserve our thanks for the success of this vital service to the concrete industry.

The success of ACI's certification program is also the result of cooperative effort between local sponsoring groups — ACI chapters and accredited groups — and ACI International. Certification is a program of which we can be proud of past accomplishments and look forward to future successes. We would appreciate your thoughts, suggestions, and hearing of your experiences with the program. Many and differing insights lead to better solutions and improved services by ACI.



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Time to Convene

Twice a year individuals interested in concrete and its use gather at ACI conventions to exchange ideas and knowledge. This international and diverse group of experts have vocational backgrounds in research, design, construction, consulting, education, product manufacturing, and product supply. The common bond is an intense interest in concrete and its use. October 23 is the time and the Innisbrook Hilton Resort at Tarpon Springs, just outside Tampa Bay, Fla., is the place for the next Institute meeting.

An ACI convention is characterized by intellectual stimulation and professional networking with one's peers from throughout the world. These conventions provide a forum to share ideas, discuss and resolve problems, expand one's knowledge, and participate with data on the latest in concrete technology. An ACI convention is a working gathering consisting of committee meetings and presentations of technical symposia and sessions.

ACI's twice-a-year conventions are the mechanism by which the membership, through committees, comes together to formulate the Institute's codes, standards, recommended practices, and administrative policies. On the average, we conduct 250 committee and subcommittee meetings during each convention. Committee members are required to attend one committee meeting per year to participate in ACI's committee structure as voting members. Committee members discuss the latest technology in their areas of interest and expertise and offer input into ACI codes, standards, educational documents, and certification procedures that impact their everyday business.

The first ACI convention was held in Indianapolis, Ind., in 1905. Up to 1947, only one convention was scheduled annually. Conventions are now conducted in the fall and spring with the most recent one being in San Francisco, Calif., in March. The average registration per convention over the past five years has been 1208 attendees and 200 guests. In San Francisco, there was a record attendance of 1342.

In addition to providing a forum of experts, the ACI convention program also recognizes the interests and needs of future concrete professionals. The Institute's educational committees, in addition to working on documents that disseminate concrete knowledge, conduct student programs at the convention. These activities include a mentor program, a lunch for the students, and lighthearted but challenging contests such as concrete cube strength testing, computer programs with concrete applications, and concrete beam breaking.

To help contractors overcome the intimidation of academic titles and engineering reputations that abound at ACI

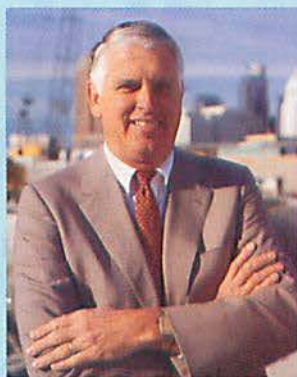
conventions, a special Contractors' Day is set aside. Its program offers morning and afternoon sessions specifically addressing contractor technical and training/educational interests. The highlight of this special day is the well-attended Contractors' Day luncheon with a noted speaker.

It is ACI policy to rotate conventions geographically so individuals faced with travel constraints can attend when it is in their area. The local chapters host the conventions and sponsor both social and technical activities. The local chapter's convention committee is a busy group with a work load extending over a period of years. Its activity is a crucial element in the success of a convention; these efforts include fund raising, publicity, hosting and sponsoring guest and family programs as well as certain receptions, guest registration and conducting technical sessions and field trips. This special group of volunteers deserve our thanks for without their dedication, hard work, and financial support, ACI conventions would not enjoy their justified reputation for excellence in activities and execution.

The ACI staff also plays a crucial role in the success of a convention. One of the major problems of an ACI convention is finding adequate meeting space. Because these are working conventions, 40-45 meeting rooms daily are required by the Institute. This is in addition to the ballrooms needed to conduct the General Session, awards events, and other large sessions. Very few hotels compatible with a 1300 person convention have meeting space of this magnitude. This means that site and facility selection are crucial. ACI's staff is constantly screening the North American hotel market to insure the best possible sites are selected for the convention. Before, during, and after the convention, staff is constantly shepherding the arrangements, making sure everything goes off without a hitch.

For the Tarpon Springs meeting, the arrangements are made, the meeting agendas are out, the slides are in the tray, and the presentations and papers polished by hours of preparation. All that is needed for another successful Institute convention is YOU! It's time to convene!

I look forward to seeing you in Innisbrook.



Dean E. Stephan

President's Memo

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Building for Tomorrow

All ACI members should be extremely delighted at the recent news about the execution of a contract for a new international headquarters for the Institute. As I write this memo, the processes of obtaining the necessary municipal approvals and planning appropriate groundbreaking ceremonies are under way. That is good news, indeed!

In this regard, I'm reminded of some words by one of my predecessors, past president John F. McLaughlin. Writing in 1979 at the Institute's 75th anniversary, McLaughlin noted that "institutions, unlike people, revel in growing old" since such establishments aspire to immortality and each passing year is evidence of "survival, success, and an additional step toward ever-lasting life." He added: "Institutional aging can be a sign of strength, continuing, need, accomplishment, and realization of purpose."

It's taken ACI sometime to get to the point of groundbreaking for the new headquarters building — nearly a decade but close to the original target date established in the mid-1980s. In response to an objective in the Long-Range Plan, ACI considered options for a future headquarters facility adequate for its growing space needs as well as the potential for expansion. At the fall Board of Direction meeting in Chicago, Ill., in 1985, the first official step was taken when the Board adopted a policy statement regarding a new building and authorized a search for land in the Detroit-Ann Arbor corridor. This hunt for property was launched and the Farmington Hills tract was acquired in 1989. A goal of construction in the mid-1990s was established.

About a year from now the Institute will be ready to move into the new headquarters building, located on a five acre site in Farmington Hills, an attractive, modern residential community northwest of Detroit. The site is a few minutes away from the area's interstate highway system and from Detroit Metropolitan Airport. The area is a mix of medium to high cost residential housing and retail and commercial establishments in selected, zoned plats. ACI's site is within a planned commercial development, once a Farmington Hills golf course, and care has been taken to create an orderly, pleasing neighborhood with a park-like atmosphere.

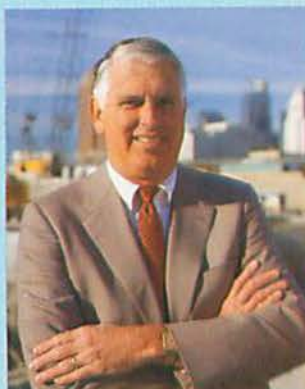
Since the early 1980s, ACI's staff has expanded from about 30 persons to more than double this number. The permanent positions now total about 65. As new programs and activities

are brought to fruition, staff will continue to increase and the need for additional space will rise correspondingly. The new headquarters will satisfy ACI's needs in the 21st Century — it provides room for expansion by the Institute and this is exactly what we anticipate for ACI — growth.

The contract with The Argos Group, Inc., Southfield, Mich., for the design and construction of the new building was made possible by the generosity of ACI's members and friends, responding to the Capital Campaign that was inaugurated at the Dallas, Tex., convention in November 1991. This drive for necessary funds resulted in nearly \$2 million, all of which will go for construction of the new building. The anticipated cost of the new facility to satisfy ACI's needs will, of course, exceed the amount. We are continuing the Capital Campaign in hopes that additional contributions will be forthcoming. And, perhaps, some contributors may choose to enlarge their pledge amounts. ACI members have always been generous with their time and expertise — now a financial magnanimity would be most welcome. By now, most of you will have received a letter about this matter and a request for additional financial support for the headquarters project. I hope that you will give anything that you can.

The start of work on the new building comes during ACI's 90th year. The beginning of a new century — also a new millennium — and the Institute's centennial are just a few years away. As McLaughlin noted, age as well as achievement are the goals of institutions such as ACI. Security, long life, solid foundation, conservatism — these are the hallmarks of institutions.

A new headquarters building and 90 years of advancement and accomplishment on the part of the American Concrete Institute — these are things of which we can all be proud! Let's prepare for the 21st Century and ACI's next 100 years of service to the public!



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It's a Small World

The construction industry in North America and throughout the world is changing rapidly. It used to be that both design and construction were centered around a local market — a market that generally encompassed a city or country. Over the last few decades in the United States, we have seen this traditional market as participated in by construction firms expand first to encompass states and regions, then to the nation as a whole. This expanding geographical focus is the result of economic forces and the reduction of barriers to diverse operations made possible by the improvement of communication techniques, ease of travel, and better dispersal of knowledge and technology. The three model-code organizations in the United States have recognized that technology and performance requirements no longer have regional orientations or boundaries. As a result, they are harmonizing their codes and are planning for the day when there will be just one national model code.

Improvements in communication and dispersal of knowledge and technology are also occurring internationally. The arduous "overseas" telephone call is a thing of the past in many areas of the world. The international telephone call, FAX, and other electronic transmittal of data have become commonplace business tools. The ability to transmit and apply local, regional, and national technologies to the international level, and the expanding knowledge of the various technologies and innovations available throughout the world, are creating design and construction markets that increasingly accommodate international competition.

In response to the needs of the Institute's North American and expanding international membership, and to our role in the advancement of concrete technology and its use, ACI has undertaken the Secretariat of the International Standards Organization's technical committee ISO/TC 71, "Concrete, Reinforced Concrete, and Prestressed Concrete." This committee has been dormant since 1987 pending the outcome of the European Community codes currently under development. As the United States representative to ISO/TC 71, ACI is currently taking measures to activate ISO/TC 71 with the support of the Central Secretariat of ISO. The purpose is to foster the development of international standards for concrete and its use as well as the international harmonization of such standards. The internationalization of the marketplace, the growing importance of the concept of international standards, and the GATT treaty's impact on national markets makes this activity essential. ACI's assumption of the Secretariat insures that the Institute will remain relevant, be at the forefront of concrete technology, and fulfill its mission of "progress through knowledge" on a global basis.

ACI is proposing the development of the following for the reactivated TC 71:

- consensus international standards for worldwide acceptance and intercontinental harmonization of the same,
- an umbrella performance-based document that is harmonized and contains broad basic principles that more specific and detailed regional or national concrete standards could be deemed to satisfy, and
- design, construction, and materials testing standards, as well as guidelines for production and control of concrete applications for use in emerging and developing countries.



To accomplish these goals, ACI will invite all the interested ISO member countries to a plenary session of TC 71 to be held in San Francisco, Calif., in August 1995. The purpose of the meeting will be to explore undertaking of the development of an umbrella performance-based standard for structural concrete. This standard is envisioned as a Level I standard expressing broad principles and procedures with general serviceability and safety levels. This document would be structured such that various regional and national model building codes, Level II documents, developed by such organizations as CEN/CEB/ACI/JCI could be deemed to satisfy the requirements of the Level I international performance standard. Thus, substantial compliance to all model codes would be derived from the application of the Level I document.

ACI must participate in the international standards process if it is to remain vital and relevant over the coming years. Our assumption of a leadership role in the development of the international standards which will govern the use of concrete throughout the world is appropriate and fulfills the long term needs of ACI's membership — members who will increasingly participate in the growing internationalized marketplace in concrete and its application.

It is truly becoming a small world with concrete technology and having no national boundaries. ACI has much to offer to, and to learn from, the world's concrete technology. ACI's participation in ISO/TC 71 insures that its members can continue to use and develop documents that will have international as well as national stature. The result will be familiar documents, technology, and knowledge that our members will be able to use throughout the expanding national, regional, and international marketplaces of this small world.

President's Memo

by Dean E. Stephan

Technology Transfer — The Innovative Task Group

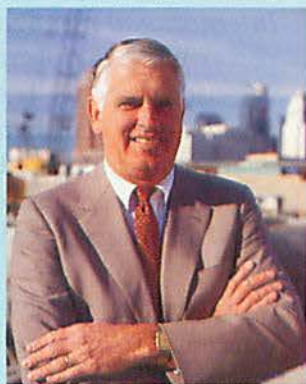
The world is currently witnessing exhilarating technological changes. Concrete as a material and as part of a constructed system is not immune from these changes. The laboratories and researchers around the world are expanding the performance and capabilities of concrete in both material science and engineering application. The challenge is to make the resulting technologies and knowledge available in a fashion usable to the industry so ACI can fulfill its goal of "progress through knowledge." Rapidly expanding and changing concrete technologies need to be exploited with efficiency so that we can advance the state-of-the-art of construction with concrete in keeping with the rest of society's technological advances.

The changes and progress in concrete technology that we are witnessing in the laboratory become most useful to the construction industry if they can be incorporated in a timely fashion into ACI's body of codes, standards, and reports. In recognition of this, the Technical Activities Committee (TAC) established the TAC Technology Transfer Committee (TTTC) to develop new procedures that would efficiently move knowledge and innovations into ACI documents; procedures that would enhance the consensus deliberations and document production of ACI's volunteer committees.

In response to this challenge, TTTC has established a prototype evaluation procedure through the use of an Innovative Task Group (ITG). The ITG's purpose is to facilitate the work of an ACI technical committee in addressing a new technology and incorporating it into the committee's documents. Thus, ITGs will evaluate, report on, and format in draft code and specification language, when appropriate, selected new technologies. The ITG will also evaluate or develop design procedures when required for a specific technology. As conceived, these ITGs are single purpose committees rather than standing committees. Hopefully, they will make a technical committee's deliberation regarding an innovation more efficient so the state-of-the-art of concrete construction can be advanced in a timely fashion. In turn, TTTC provides the standing committee to receive innovations for consideration for rapid and efficient introduction and processing under ACI's committee procedures.

Two new technologies were selected for evaluation by TTTC at ACI's recently concluded fall convention in Tarpon Springs, Fla., and the corresponding ITGs formed. One innovation is the optimization of reinforcing steel deformation patterns to substantially improve the development of reinforcing steel in reinforced concrete. The research is performed at the

University of Kansas with support provided by ASCE's Civil Engineering Research Foundation (CERF), and reinforcing steel manufacturers. The reinforcing steel deformation pattern research offers quantum improvement in bond development with the commensurate reduction in lap lengths. The resulting efficiency in material use offers substantial cost savings to the industry.



The other innovation is the development of joinery for precast concrete moment-resistant frames for use in seismic areas. This research is being performed at the National Institute of Standards and Technology (NIST) with the support of NIST and ACI's Concrete Research and Education Foundation (ConREF). The precast concrete moment-resisting frames research resulted in achieving hysteretic energy absorption capacity equivalent to a special moment-resisting frame. Energy absorption occurs within a connection independent of the structural components. The engineering concepts provide a self-centering joint and allow the structural components to perform elastically during a seismic event so structural damage and residual drift can be avoided. The concepts offer a major advancement in state-of-the-art concrete construction in seismic regions and cost effectiveness of precast concrete moment-resistant frames for use in concrete construction everywhere.

These two significant technological advances are test cases toward demonstrating if ITGs can in fact enhance ACI's ability to transfer essential innovations and knowledge into practice. The Institute's Board of Direction has recognized the critical need to improve the processes of handling new technologies and has provided a modest sum of money to augment the volunteer activities of ITGs. TTTC stands ready to consider additional innovations for processing. Researchers, commercial ventures, and others desiring consideration for an ITG evaluation of their innovation should contact H. S. Lew, at NIST, who is the TTTC chairman, or Frederic Nassaux, ACI staff engineer, who serves as its secretary.

I am sure everyone interested in advancing the state-of-the-art of concrete construction will be monitoring the ITG process and supporting such task group activities.

A handwritten signature in black ink that reads "Dean E. Stephan". The signature is written in a cursive, flowing style.

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International

As you may have noticed, the telephones at headquarters of the American Concrete Institute are now answered as "ACI International." Recently, I had the opportunity to see just how "international" ACI really is. In November last year, ACI sponsored its Second International Conference — this one on a theme of high-performance concrete — in Singapore. Following the event, I had the pleasure of chairing a follow-up "High-Performance Concrete Workshop," in Bangkok, Thailand, under the sponsorship of the National Science Foundation. In addition to the visits to Singapore and Bangkok, my travels in that part of the world also included stops in Japan, Korea, and Australia. It was very gratifying to observe the high regard accorded to ACI as an organization and to listen to words of respect about its technical and educational publications. This regard and respect is accorded to each of you; the membership of ACI generates these publications through the commitment of countless, unselfish volunteer hours. The Institute's members can take pride in their accomplishments and the organization they sustain!

While in Japan, George F. Leyh, the Executive Vice President of ACI, and I visited with the Japan Concrete Institute, which evolved from an ACI chapter about 30 years ago. Our discussions revolved around participation in the preparation of international standards. These standards will be produced under the auspices of the International Standards Organization (ISO). In Korea, we had similar discussions with the Korean Concrete Institute. In Singapore and Thailand, we met with representatives of the concrete industries and government officials of those nations. In all places, we received their support of ACI's assumption of the Secretariat of ISO Technical Committee 71, the committee charged with developing the international standards regarding concrete and concrete construction. They expressed interest in working together to produce these standards through the consensus process that has served ACI so well.

In response to the interest and support ACI has received relative to ISO TC-71 from Central and South American countries as well as nations of Asia, the Middle East, and Europe, the Institute's Board of Direction authorized the scheduling of a plenary session of TC-71 in San Francisco, Calif., this summer. The purpose of the session is to define TC-71's mission and goals and to initiate action regarding the preparation of consensus international standards. We in ACI will all benefit from this increased exposure to the best in worldwide technology and the development of consensus interna-

tional standards. Members of ACI are in a critical leadership role relative to the use of concrete throughout the world.

While in Australia, I executed on behalf of the Institute the first Affiliated International Society (AIS) agreement, formalizing a cooperative venture of ACI and the Concrete Institute of Australia. The AIS concept provides for a formal relationship with the concrete industry professionals in those countries where an ACI chapter would be inappropriate because of a national society's activities. We anticipate entering into more of these agreements.

The main event of the tour, the Singapore conference, was an unqualified success. There were 291 attendees from 35 countries representing all the continents. The conference was cosponsored by 13 ACI international chapters and 16 national concrete-related associations. Sixty-four papers were presented and discussed during the five days. The permanent technical record of the proceedings now resides in ACI's *Special Publication 149*, published prior to the event. The attendees took home new insights generated by exchanging and debating ideas.

ACI is international in membership and scope and has a significant worldwide impact. Approximately 25 percent of its membership resides outside of North America. You, as members of ACI, are respected for your technical knowledge, expertise, and excellence in research, design, and construction. Our increasing participation with worldwide concrete technology will enhance our skills and improve our professional capabilities.

Those who had the good fortune of attending the conferences in Singapore and Thailand took home warm feelings generated by the wonderful hospitality. I also had the privilege of enjoying the visits to Japan, Korea, and Australia. On behalf of ACI, I would like to thank all the countries and professionals that I had the pleasure of visiting for their hospitality. Hopefully, ACI will have an opportunity to reciprocate, to some at the 1995 conventions in Salt Lake City, Utah, in March, and in Montreal, Canada, in November. I certainly look forward to seeing ACI's many members and friends from throughout the world at these conventions.



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Where Have We Been?

ACI headquarters just sent me business cards with the designation of "Past President." Tempus Fugit! Last May in my first President's Memo, I asked, "Where do we go from here?" Now, a very short eleven months later, it is appropriate to ask "where have we been?"

In the area of concrete research, we have taken a first small step toward an expanded role for ACI's Concrete Research and Education Foundation by employing a part-time staff member as ConREF's representative in Washington, D. C. This individual, along with ACI staff, is representing concrete in the Construction Materials National Implementation Plan (CONMAT), a 10 year initiative for deploying high performance construction materials and systems. He and staff have also commenced efforts to establish research consortiums with firms in the composites industry, and initiated actions that could involve ConREF in aspects of the federal government's Advanced Technology Program (ATP) and the Construction Productivity Advancement Research (CPAR) program.

In the technology transfer area, the concept of provisional standards is being actively explored, and an innovative task group (ITG) has been established to evaluate University of Kansas reinforcing bar development research sponsored by the American Society of Civil Engineers' Civil Engineering Research Foundation (CERF) and industry. In addition, an ITG has been created and research is underway on precast concrete moment-resistant frames, sponsored by ConREF and the National Institute of Standards and Technology. ACI's ITG for reinforcing bars is being considered by the National Evaluation Service to perform the technical evaluation of the research results and to ascertain product performance criteria. The National Evaluation Service, a consortium of the three model code groups in the United States, has agreed to base its report on the ACI evaluation.

In the area of education and training, the *Manual of Concrete Practice* on CD-ROM has achieved a finan-

cially viable status and ConREF will be awarding 20 new scholarships funded by Schwing America in honor of the firm's national dealers. The Schwing America fellowships will be in addition to the Institute's other financial aid packages of older duration.

In the international area, ACI has actively assumed the secretariat of the International Standards Organization's Technical Committee 71 on concrete, marshaled the international support necessary for revitalizing the development of consensus international concrete standards, and initiated the actions necessary for an ISO TC-71 plenary session in San Francisco, California, late this summer. ACI also conducted in late 1994 in Singapore a highly successful international conference on high-performance concrete.

As we look to the future, we can see the conclusion of the demands imposed by the multi-year effort associated with the Institute's headquarters building. Occupancy is projected for late fall of 1995. Hopefully, this will allow for the redirection of attention and energies toward such issues as membership and planning as they are critical to ACI's stability and long range success.

As always, much has been accomplished and much remains to be done. I have enjoyed working with ACI's competent and dedicated staff over the past year. I thank you, the ACI membership, for your support and effort in making ACI an acknowledged leader in technical information regarding the use of concrete. Without your unselfish participation, the contributions ACI has made in improving mankind's infrastructure would have been impossible. It has been a real pleasure and honor to have served as the Institute's president over the past year!

