

# President's Memo

## Concrete Can Be "User Friendly," Too!

**T**o be selected President of the American Concrete Institute is an honor accepted with great pride, but much humility. As I begin this responsibility I am humbled by the performance of the men who held this position over the 84 years of ACI's existence.

I am equally humbled by the great outpouring of technical and educational information that flows from ACI committees. The work of the Institute and its members sets exceptionally high standards for your officers and directors. I will do my best to reach your level of excellence as your President.

The value of ACI committee work is recognized around the world despite language difficulties and different units of measure. All of the committees, and the chapters are instrumental in advancing the knowledge of concrete design, construction, and technology.

This is the basic mission of ACI and, as participants in your Institute, you meet that mission very well.

But we are only one part of a larger construction industry made up of many parts, and many materials. All of the superb technical information developed by ACI has no real purpose until a project is planned, financed, and concrete has been selected as the construction material.

Planning and financing depends on economic trends here, and around the world over which we, as individuals, have little control. But the selection of concrete for any project depends on how well each of us does our job in making concrete "user friendly" for designers, contractors, owners, financial institutions, and users. And in this area each ACI member can make a significant contribution.

I hope to develop this "user friendly" concept in more detail in future messages, but for now, may I again express my deepest appreciation for your confidence in selecting me to serve as your President.



# President's Memo

## "User Friendly" ACI Publications

**U**ser friendly is a term for computer programs that are easy to use. The first user friendly computer spreadsheet program launched an explosive computerization of small business.

Since ACI publications are written by users, they tend to be user friendly. But some users have said that each year we seem to make it more difficult to design in concrete.

Suggesting that ACI publications become even more user friendly may sound suspiciously like a call for marketing, which is a business function to create and retain customers.

Certainly, ACI is not a business, but a professional institute. Our main purposes are to "... further engineering and technical education, scientific investigation and research, and the development of standards for the design and construction of concrete structures".

And, ACI committees meet this purpose. However, ACI documents are produced not only for members, but also to advance the general knowledge about concrete. And so, we serve a constituency broader than our membership. If ACI was a business, that constituency would be our customer base.

In that sense, the model codes and municipalities that adopt ACI's "Building Code Requirements for Reinforced Concrete" are customers. Each person using the *Manual of Concrete Practice* is a customer. Each pro-

fessor who writes a book referring to ACI documents is a customer.

Today, the better businesses are becoming totally customer oriented. Big corporations restructure into smaller, independent groups to respond swiftly to even minor changes in customer needs. Part of the factory floor has become a laboratory where engineers can work with production people on ways to shorten the time between design and full production of product changes.

Response to customer desires is faster than ever thought possible. Tom Peter's book, *Thriving on Chaos* states that Toyota received 1,905,682 suggestions for changes in one year and implemented 95 percent of them. As customers become accustomed to the quick response of business, there will be pressure on nonbusiness organizations to adapt.

It is important that committee members continue to aim for accuracy of information, written to be user friendly, and available when the customer needs it, which is yet another way to be user friendly. To be responsive to ACI's constituency, we must be both accurate and timely. This is the challenge we face.



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## Can Portland Cement Be User Friendly?

**T**oday, many manufacturing firms are striving to become totally customer oriented (user friendly) to meet the competition.

For the concrete industry, a user friendly cement would be a uniform cement, or a specialty cement tailored to a narrow market segment. Either should provide higher quality construction at a lower job cost.

There should be a demand for a cement that always will produce a uniform concrete from a specific mix design (with other uniform ingredients). Uniformity is as valuable to a producer of ready mixed concrete and his contractor customer as it is to the mass production of concrete products priced for a daily form turnover. Uniformity should result in lower job costs, even though the cement may cost a bit more.

Researching a customer's needs with him could result in a specialty cement of extra value to the cement producer, his customer, and the owner of the project.

Can a cement industry that has built ever-larger plants for efficiency reasons now make short production runs of special cements without prohibitive costs?

Perhaps short production runs are impractical in million-ton plants, but in-plant compounding and blending may be one solution. Other solutions would appear to require research.

In the meantime, smaller plants with locally developed specialty cements for local customers might find a very secure, and valuable market-niche for themselves.

The concept of providing a consistently uniform cement or user friendly specialty cements tailored to the needs of various segments of the local industry may seem farfetched. But, if the results are higher quality, lower cost concrete construction, beneficial to our industry and its customers, perhaps the time has come to give the concept a try.



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# President's Memo

What makes concrete structures friendly for the user?

## *Collaboration Between Designers and Concrete Constructors!*

**U**sers today expect quality craftsmanship in everything they buy or use: automobiles, telephones, coffeemakers, and even structures.

User friendly aspects of a concrete project start at the design phase with careful attention to client and user needs, life-safety considerations, and workable specifications for durable, high quality concrete.

The user measures the quality of a finished structure by the efficiency of its layout for his needs, and the "fit and finish" of the concrete work. Poor "fit and finish" usually means poor quality and questionable durability to the user.

Both the "fit and finish," and the durability of a structure depend not only on the specifications, but also on the quality of the many daily decisions that the concrete constructor must make throughout the construction period.

When the concrete constructor becomes a part of the planning team, the qualities of his job-site decisions are based on a broader understanding of the project. This should improve the overall quality of the finished structure.

Some of a contractor's job-site problems require engineering input. As a member of the planning team, he will be more aware of the engineering requirements, and will call for engineering collaboration before the problem turns into a crisis.

In return, the concrete constructor brings hands-on construction experience to the planning phase that often results in design modifications that simplify construction and reduce costs without affecting quality.

On ACI committees, the concrete constructor's in-depth construction experience also has been proven to be valuable. In return, contractors gain insights into design requirements that are equally as valuable to their operations.

Collaboration between designer and constructor, both on the job and in ACI committees, is mutually beneficial and results in concrete structures that are even more "user friendly." And that's a worthwhile goal for all contractors and designers and our industry.



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## Y'All Come!

**A**re your plans all made to attend the ACI fall convention in Houston, Texas? (The meeting opens Sunday, October 30, and continues through Friday, November 4.)

If not, you had better order your airplane tickets far enough in advance for the lowest cost. Don't forget that you usually can take advantage of a further reduction in ticket cost if your plans permit your staying over a Saturday night.

If you've never visited the NASA Manned Space Center at Houston, to see up-close, the Shuttle Orbiter Trainer, Mission Control, the Space Laboratory, the huge rockets that put our astronauts into space, the actual Apollo 17 Command Module, and more, then this is the time to see it all.

But the main events at Houston will be the ACI committee meetings, general sessions, and the conversations that go on endlessly whenever ACI members get together.

Houston is where you will pick up the tidbits of information, knowledge about new developments, and techniques that are automatically stored via your brain's software onto your personal hard-disk. This is your ACI data-base. It will shape many of your work decisions over the next six months to the next convention.

With my small consulting business, I know all about the cost of attending an ACI convention. But the question I always wind up asking myself is, "Can my business afford not to have me attend the ACI convention?" (To answer your unasked question: yes, ACI presidents do pay their own convention travel expenses and registration fees!)

On the rare occasions when I have to miss an ACI convention, I have a very real problem in working with an increasingly outdated data-base for a full year!

My business would be hard-pressed to survive without all of the input that I pack away for reuse after every ACI convention.

So I'll be at Houston, and I suspect that most of my friends, and some of my better business competitors will be there, too!

When y'all get to Houston, pardner, come on by to say "howdy." I'll be looking for you!



# President's Memo

## *There's Excitement and Value in ACI Committee Membership!*

**E**arly in my career, I had a rare opportunity to serve on the joint ACI-American Society of Civil Engineers Committee 323, Prestressed Concrete. Formed in 1949, the committee had enough information by 1953 to begin to develop a "Recommended Practice for Prestressed Concrete."

Although prestressed concrete tanks were built here in the 1930s, linear prestressing of bridges and buildings was just beginning to be used by 1953.

Acceptance of the new technique of prestressing concrete was slowed by the lack of experience, research, and authoritative design provisions. Designers, comfortable with 2500 psi concrete and 18,000 psi stresses in reinforcing bars, hesitated to embrace the 5000 psi concrete and 250,000 psi steel used for prestressed concrete.

By 1956, the joint committee distributed its preliminary report for "study, criticism, and revision." The appearance of the final report, "Tentative Recommendations for Prestressed Concrete," in the January 1958 issue of ACI JOURNAL accelerated acceptance and led to the inclusion of design provisions in the next revision of the ACI 318 Building Code. This quickly established prestressed concrete as one of the major construction materials.

These tentative recommendations were developed by a committee of 34 members, along with 81 members of a task group that included virtually every segment of the public and private sectors as well as designers, professors, researchers, and materials experts from the United States and abroad. Most had strongly held opinions on the subject.

Looking back now after 32 years and remembering how many sections of the report had to be based on the collective judgment of the committee, I believe the report was a remarkable, exciting achievement of real value to early designers, owners, and users of prestressed concrete structures.

This same diverse mixture of experience and skill fosters internal debate and discussion within all ACI committees; this insures sound reports and recommended practices that advance current practice.

Committee participation also offers a potential personal benefit — in addition to advancing the knowledge and proper use of concrete, committee members have the opportunity to become an expert on the subject encompassed by the committee's mission.

Are you an ACI committee member? If not, take advantage of a key benefit of the American Concrete Institute. Call ACI today and find out how you can apply for membership on a committee of interest to you!



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# President's Memo

## Back To Fundamentals For More Durability?

**C**oncrete structures can bring to their users and owners the attributes of life safety, sound attenuation, and durability for a safe, pleasant place in which to live or work.

To achieve this, concrete must meet design strength requirements and be durable. The concrete constructor also wants concrete that is workable and finishable.

With the current high level of sophistication in batching, transporting, placing, and curing concrete, and with admixtures not even dreamed about early in my career, is there a need to discuss workability, finishability, and durability of concrete?

The answer is yes! Even though we have the technology for durable concrete, complaints do surface: "The concrete we get today is tough to finish!" or "The concrete streets my Dad built in the 1930s held up better than the streets I put down today."

In his Raymond E. Davis lecture at the ACI fall convention in 1983, at Kansas City, Mo., G. M. Idorn, of Denmark, expressed concern about performance reliability not keeping pace with strength efficiency. (See *Concrete International: Design & Construction*, V. 6, No. 2, February 1984, pp. 13-20.)

The National Materials Advisory Board of the National Research Council established a committee to study the durability of concrete in service. (See "Concrete Durability — A Multibillion Dollar Opportunity," *Concrete International: Design & Construction*, V. 10, No. 1, January 1988, pp. 33-35.) The report cites many reasons for durability problems, including too much emphasis on concrete strength and price without

an equal emphasis on performance.

The article, "Concrete Durability in a Free Market System," by G. E. (Ev) Munro of St. Lawrence Cement Co. of Ontario, Canada, (*Concrete International: Design & Construction*, V. 8, No. 10, October 1986, pp. 30-31) also addressed this subject. Munro pointed out that today's 1:2:3 concrete mix has 40 percent less cement and a higher water-cement ratio than it did early in this century. He suggests that for concrete not exposed to deicer scaling the first priority in the mix proportioning should be assigned to water-cement ratio, followed by cement content, curing, cover, and workmanship. For concrete exposed to deicer scaling, air content would have the top priority.

In other words: Back to fundamentals in mix proportionment and construction practices!

The value of the concrete infrastructure of the United States is estimated to be \$6 trillion. Therefore, specifying a low water-cement ratio and a bit more cement should provide concrete with greater durability, workability, finishability, and also offer genuine life-cycle cost benefits for our nation as well as for privately financed construction.

In the process, we could make concrete still more user-friendly!



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## ACI's "Open Sesame"

**R**emember the tale from the *Arabian Nights* of Ali Baba, the poor wood-chopper, who found that the door to the treasure cave of the 40 thieves could be opened by saying "Open Sesame?"

The American Concrete Institute has a treasure of its own—the accumulated wisdom, experience, and skills of more than 2300 technical committee members, all stored in the *Manual of Concrete Practice* (MCP).

The MCP is a collection of committee documents and standards. Its index guides the user to the primary documents for the information needed. Always, there remains a nagging suspicion that more information could be found if only time permitted a thorough search of all the documents.

That suspicion could be eliminated with an MCP electronic data base combined with a retrieval program capable of searching any series of related words.

How would this work? Suppose you are looking for everything ACI has on the creep of prestressed concrete using lightweight aggregate. The ideal electronic retrieval system would be activated by the simple typing of the words creep, lightweight aggregate concrete, and prestressed concrete on your computer screen.

These words would be the "open sesame" to retrieving information on the specific topic from all documents in the MCP for viewing on the user's computer screen. The computer's printer provides hard copy of pertinent excerpts.

Electronic information retrieval of ACI data is imminent. Your Institute's goal is to have the MCP in electronic format by 1991. Eventually, access could be by the user's computer telephone modem or a compact disk reader snuggled closely to his/her computer.

ACI is exploring every new development, experimenting with the technical methods, and debating the charges for the service necessary to bring the exciting advantages of electronic dissemination of Institute information to the user at the earliest opportunity.

Once the challenges are met, the retrieval of ACI information will be almost as simple as shouting "Open Sesame!" Could anything be more user friendly?



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# President's Memo

## Atlanta —

### A Cast of Tens of Thousands!

**G**rits and greens, plantations and mint juleps, tall concrete buildings and southern hospitality, ACI and the World of Concrete all come together the week of February 19 for a concrete industry mix of outsized proportions at Atlanta, Georgia.

ACI plans a week of important technical sessions and committee meetings plus exciting other events of interest to all members. But you should also sneak a peek at the goings on at the Georgia World Congress Center in Atlanta where the World of Concrete will have the goods and services of over 700 exhibitors on display and some 50 seminars and workshops. Over 32,000 persons attended last year's World of Concrete in Las Vegas.

With the ACI convention and the World of Concrete, everybody who is anybody in the cement, concrete, concrete construction, concrete design, and concrete codes field will be there.

This is too good to miss! There is the new Atlanta with innovative concrete buildings that started a nationwide trend in exposed concrete sky-high atriums. There is the old Atlanta with the magnificent cyclorama; an old oil painting of the Civil War Battle of Atlanta that physically surrounds you with the sights and emotions of that fratricidal struggle. And the warm hospitality of the old South still lingers in the shadows of the spectacular buildings that proclaim the business and financial muscle of the new South.

Every Institute member should plan to attend the Atlanta convention; our whole industry will be there.

Listen carefully as you head for the airport at the end of the week. You'll probably hear again that warm phrase of southern hospitality: "Y'all come back, hear?"

See you in Atlanta!



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# President's Memo

## *Why Are ACI Members, Members of ACI?*

If the headline above sounds like double talk, my apologies.

The question, and an answer, evolved during my travels to various chapters and chapter roundtables as I gained added insight into the dedication of members of the Institute.

Not every ACI member is a committee member or a chapter officer. But some 4000 active members serve in these capacities and they are the ones that drive our Institute forward. The persistence and dedication of these volunteers produce the growth in knowledge on which the industry advances. The remaining members participate in conventions, seminars, chapter activities, and support ACI through their yearly dues and publication purchases.

It is almost as if ACI members are driven by some inner force that demands their participation.

After a year of objective observation of all the activities that are carried out under the ACI logo, it occurred to me that perhaps what drives us ever onward are the complexities of this seemingly simple material called portland cement concrete.

Each year, we learn more — new admixtures, new methods of construction, new structural concepts. Each advance opens up more avenues to explore.

How long has this been going on? At least since the first century when a marvelous book entitled, "The Ten Books of Architecture" was written by a Roman named Vitruvius. His interest in concrete shines through this quote describing pozzolan: "There is also a kind of powder which from natural causes produces astonishing results. It is found in the neighborhood of Baiae and in the country belonging to the towns round about Mt. Vesuvius. This substance, when mixed with lime and rubble, not only lends strength to buildings of other kinds but even when piers of it are constructed in the sea, they set hard under the water!" The exclamation point is mine because it still amazes the layman.

After the long advance of the Roman era, the sophisticated techniques they developed for concrete construction lay relatively dormant.

In 1698, the first lighthouse was completed on the wave-swept Eddystone rocks off Plymouth harbor in England. This first lighthouse and the second, both

built by Winstanley, were eventually swept into the sea. A third, built by Rudyerd, burned. It wasn't until 1756 when Smeaton, perhaps the first of the "modern" engineers, brought pozzolan from Italy for the mortar between the base stones of the lighthouse. Previous mortars tended to wash away as the waves smashed against the lighthouse. Smeaton's lighthouse stood for 126 years before it was replaced by a taller, more modern structure.

And then came Joseph Aspdin who obtained a patent for portland cement in 1824. Aspdin was followed by a host of famous persons from every country who made advancement after advancement in the materials, design, and construction of concrete structures.

You see, once a person becomes even partially involved in this fascinating material, they want to know more. And, since there are always new developments, we stay interested for life.

Since 1904, ACI members have banded together to master concrete's subtleties. Through ACI we can each make a contribution to the advancing knowledge about concrete.

From Vitruvius through Smeaton and Aspdin (and a host of other well-known men) to today's ACI committee member, all have contributed to advancing the knowledge of this marvelous plastic material called concrete. The result of all this effort has been lasting benefits for mankind. You and I are only the latest in a long and distinguished lineage that has made concrete one of the most versatile and widely used construction materials.

That is why an ACI member is an ACI member. And that is why it is such an honor to serve as president of the American Concrete Institute.

To the membership of ACI, my deepest appreciation for making this fascinating year possible and my congratulations for the contributions you make every year to our data base on concrete and concrete construction.



A handwritten signature in cursive script that reads "Warren Bennett".