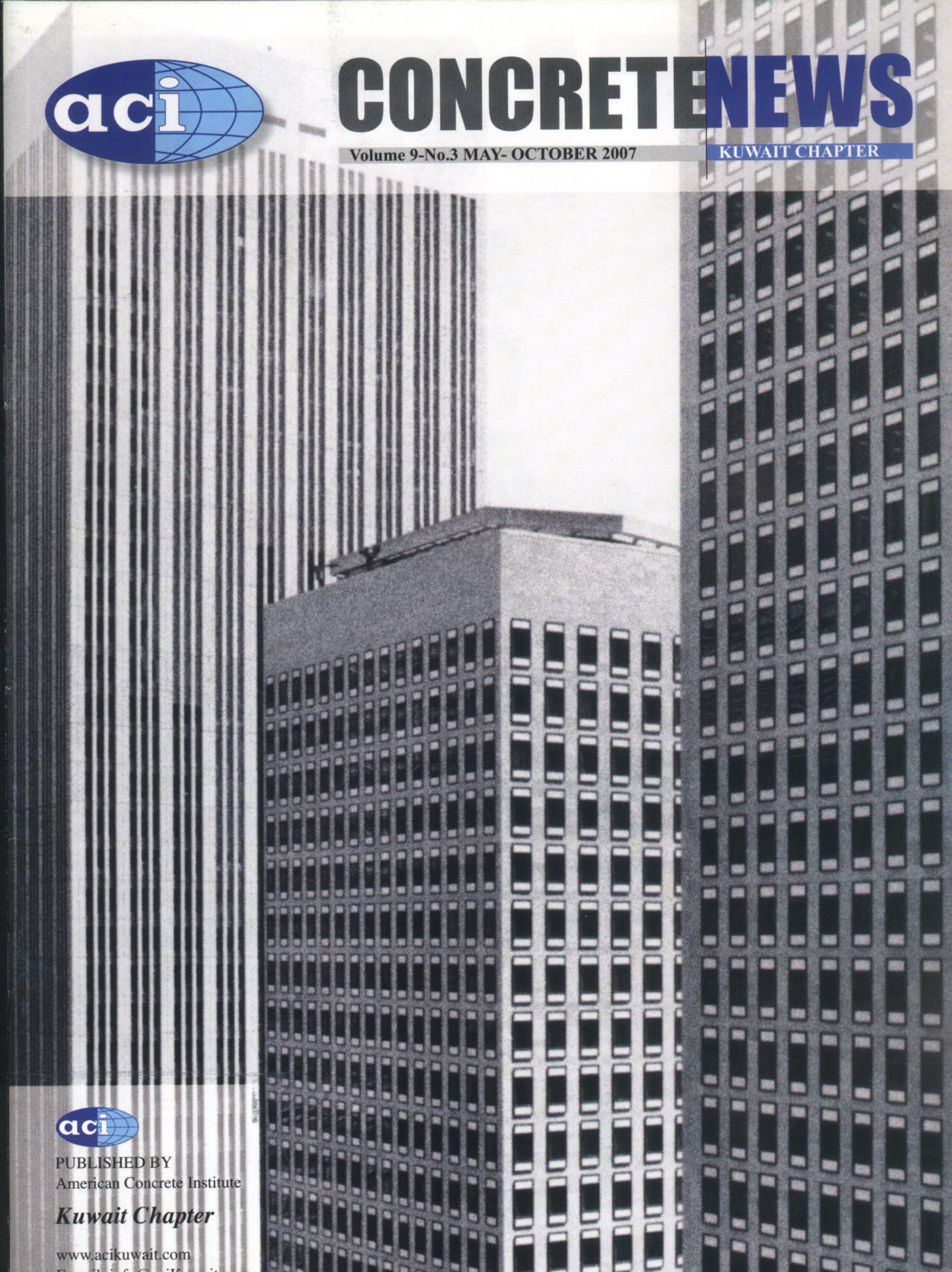
CONCRETE NEWS

Volume 9-No.3 MAY- OCTOBER 2007

KUWAIT CHAPTER



PUBLISHED BY
American Concrete Institute

Kuwait Chapter

www.acikuwait.com

CON

CONCRETE NEWS

Concrete News is published periodically by ACI-Kuwait Chapter to share information between members, exchange technical knowledge and enhance the Chapter's position within the engineering community.

Mission

ITENTS

aci Kuwait Chapter

FROM THE PRESIDENT (2006-2007)

Globalization and Certification

Dr. Moetaz EL-Hawary

Few years back we used to talk about globalization as something that may occur in the far future. Now, however, we have to realize and acknowledge that globalization has approached. The globe is now a small village, where you can find a Chinese company working in Africa, American firms in China or a French company in Kuwait. In the building industry, it is not feasible for large companies to relocate their full staff for each new project. International companies highly depend on locals to fill some engineering positions along with most supporting posts. Most technicians, foremen and labors are selected among the locals for specific projects. International firms are faced with the difficult task of selecting high caliber personnel in a country where they are not familiar with the standards, the education system or the training practice. In many instances, they may end with some personnel that do not meet the expectations and hence jeopardize the integrity of the whole project along with the company's reputation. The ACI has found a reasonable solution to this problem through certification. ACI offers courses and examinations leading towards international certification. ACI certified personnel are listed in a database, available world wide and published on the net. International firms can check those databases, by country, and select qualified personnel.

ACI-Kuwait Chapter has found that the numbers of ACI certified personnel are very limited, which may in turn limit the chances or the willingness of large reputable companies to participate in Kuwaiti projects or, on the other hand, may require exaggerated budget to compensate for the lack of internationally certified personnel. Realized this fact, ACI-KC has started to offer ACI certification courses, the first of which was offered last year and others will be offered soon. We discovered, however, that those courses in spite of their importance, do not solve the full problem as the offered courses are expensive and do not cover all the required specializations. To rectify those shortcomings, ACI-KC has started preparations for local certification courses which will compliment the international ones. Those courses will be less expensive, hence attract larger numbers, and in addition will cover more disciplines than those offered internationally. As those certificates will be offered and certified by the ACI-KC, which is a local chapter affiliated with the international ACI, they will be recognized globally by international companies.

To gain the full trust of the international companies, certification should not be limited to personnel and should cover all activities related to the building industry. ACI-KC has started certifying concrete batching plants and trucks to assure the utilization of local concrete by international firms. There is also a strong drive toward the certification of concrete and building materials laboratories to assure the quality control requirements.

In short, ACI-KC is applying maximum effort to meet the certification obligations necessitated through globalization.

ABOUT ACI

There are main three bodies of the chapter: Members, Committees and Directors.

BOARD OF DIRECTORS

Members of the Board of Directors are elected by the Members of the Chapter after being nominated by the Nomination Committee. There are nine members of the Board of Directors:

- President
- Vice President
- Past President
- Secretary
- Treasurer
- Directors (six)

The President and Vice president terms are limited to one year. Directors and other officers term is three years. Two Directors will be elected every year for a three -years term.

COMMITTEES

Membership Committee, the main activities for this committee are:

- Recruit new members as individuals and organizations
- Issue and renew membership certificates.
- Publish and update chapter directory of membership.
- Facilitate members communications and communicate their concerns to the board of directors and other committees.
- Establish students chapter and run its affairs.

Technical Committee, the main activities for this committee are:

- Identify technical topics of interest to Chapter members and make recommendations to the Chapter Board of Direction for seminars, short courses and workshops on these topics.
- Review and report to Chapter members on ACI International committee reports of relevance to Kuwait.
- Review proposed revision of ACI Standards and submit review comments to the Chapter Board of Direction for submission to ACI International.
- Promote local research and testing programs to resolve technical issues of importance for durable concrete construction in Kuwait.

Publication Committee, the main activities for this committee are:

- Publish a periodic newsletter to inform members of Chapter activities and provide general information of use to the Chapter membership.
- Print and distribute copies of technical reports to Chapter members, as well as to interested individuals and concerned bodies.
- Prepare meeting reports and Chapter news for submission to ACI International for publication in Concrete International magazine.

Social Committee, the main activities for this committee are:

- Organize annual recreational activities for Chapter members.
- Organize representation of the Chapter at selected national events.
- Organize field trips to major construction projects for chapter members.

aci Kuwait Chapter

PROFILE

MRS. SHEIKHA AL –ARFAJ

Mrs. Sheikha Al-Arfaj has twenty one years of professional experience in management activities in the development and implementation of strategic plans including business development.
Mrs Sheikha completed her Civil Engineering degree at Kuwait university in1985 and commenced her professional career at the Kuwaiti Engineering Office. She is the General Manager at Pan Arab Consulting Engineers(PACE), where she has been actively involved in many prominent projects carried out by PACE in Kuwait and abroad.

Sheikha has extensive experience with a wide range of donor financed projects administrations such as:

- Kuwait Fund Arab Economic Development (KFAED).
- Islamic Development Bank (IsDB).
- Saudi Fund for Development (SFD).
- Arab Fund Economic and Social Development (AFESD)
- Arab Bank for Economic Development in Africa.(ABEDA)

Family:

Mrs.Sheikha Al-Arfaj is married and has three children Razan, Abdul Aziz and Amna.

Education:

B.Sc. in Civil Engineering from Kuwait University (1985)
Specialization; Construction Management.

Membership in Prefessional Organization:

Kuwait Society of Engineers

Work Experience:

Nov. 2006 to date- Pan Arab Consulting Engineers
General Manager
Dec 2000 to Nov. 2006-Pan Arab Consulting Engineers
Project / Business Development Manager
March 1991 to Nov. 2000-Al Arfaj Group of Companies, Kuwait
General Manager
Feb 1987 to March 1991- Housing Welfare Institute, Kuwait
Manager, Planning Division
Nov. 1985 to Jan 1987-Kuwait Engineering Office (KEO), Kuwait
Assistant Engineer.

International Conference, Award Banquet and Roundtable Meeting

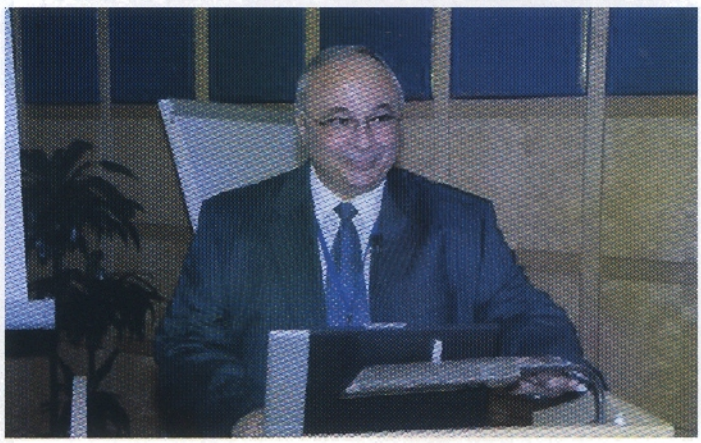
The American Concrete Institute, Kuwait Chapter has held its largest event ever to be arranged by the chapter. It consisted of three joined important events; the international conference, the award banquet and the roundtable meeting. The Second ACI-KC International Conference, "Design and Sustainability of Structural Concrete in the Middle East; with emphasis on High Rise Buildings", was held in SAS Hotel from 12-14 of March 2007. Thirty two scientific papers from thirteen different countries were presented in this international conference, chaired by Dr. Naji Al-Mutairi.

International Conference, Award Banquet and Roundtable Meeting

The presented papers included the following two distinguished keynote presentations:

- "Fiber Reinforced Concrete: State of Progress at the Edge of the New Millennium" by Antoine E. Naaman, Professor of Civil Engineering, University of Michigan, Ann Arbor, USA.

- "High Performance Material Applications in Civil Engineering" by Issam E. Harik, Raymond Blythe Professor of Civil Engineering, and Program Manager, Structures and Coatings, Kentucky Transportation Center, University of Kentucky, Lexington, USA.



The conference attracted a large number of participants and audience form consulting firms, contractors, research institutes and ministries. It is expected that the outcomes of this conference will influence and have a significant impact on the building industry in Kuwait.

International Conference, Award Banquet and Roundtable Meeting

Keeping up with the chapter tradition, the annual award banquet was held on 12 March 2007. The date was selected to coincide with the opening ceremony and the reception of the Second International Conference. The joint event was held under the patronage of his Excellency Dr. Ismail Al-Shati, Deputy Prime Minister and Minister of State for Cabinet Affairs, in Al-Hashmy Hall in SAS Hotel and was attended by a large number of colleagues from various disciplines of the building industry along with ACI members.

The Award of Achievement, presented by ACI-KC to an individual to "recognize outstanding contribution to the Engineering Community in Kuwait", was given to Engineer Abdullateef Al-Dakhaeel in recognition of his services and achievements during more than 30 years in the Ministry of Public Works where he had a leading role in the development of the infrastructure in Kuwait.

The Award of Excellence, presented to a local outstanding project, was given to Al-Manshar Mall project. The award was given to Tamdeen Real Estate: the owner and developer of the project, Dar Al Omran: the architect, Pan Arab: the structural designer and Ahmadiah: the contractor.

A special award was presented to Ms. Ebtisam Al-Kazmi in recognision for her contribution to the ACI-Kuwait Chapter.

International Conference, Award Banquet and Roundtable Meeting

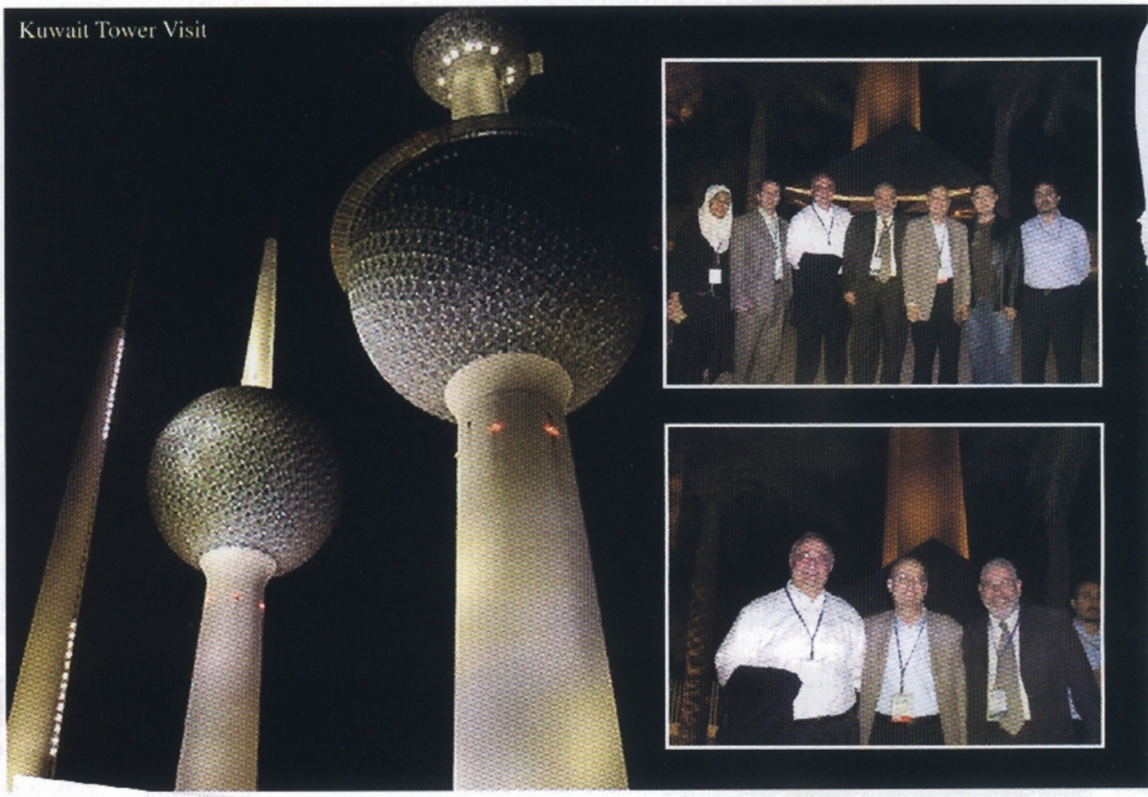
The first ACI roundtable meeting to be held in Kuwait was held on 13 of March 2007 in SAS hotel. The meeting was attended by Moetaz El-Hawary, Khaldoun Rahal, Anas Kassem; (ACI-Kuwait Chapter), Surendra Manjrekar, R. N. Raikar, Mohan Jacob; (ACI-India Chapter), Maher Bader; (ACI-Saudi Arabia Chapter) and Abdul Kader Kairouz; (ACI-Lebanon Chapter). Many subjects of regional importance were discussed. Among other recommendations, it was agreed to nominate a coordination officer from one of the Chapters to communicate announcements, news and newsletters .

The event was sponsored by KSE, KFAS, KISR, Bubiyan Ready Mix, Kuwait University, Gulf Consult and Kuwait Portland Cement.

The accompanying pictures shed the light on this combined ACI-KC triple event.

Tour For Conference Guests

The Social Committee arranged a tour around Kuwait for the keynote speakers and the guests who attended the Conference which was held between the 12th and the 14th of April, 2007 at Radisson SAS Hotel.



Kuwait Tower Visit

Modern Art Museum Visit

Tariq Rajab Museum Visit

Bubiyan
Ready - Mix

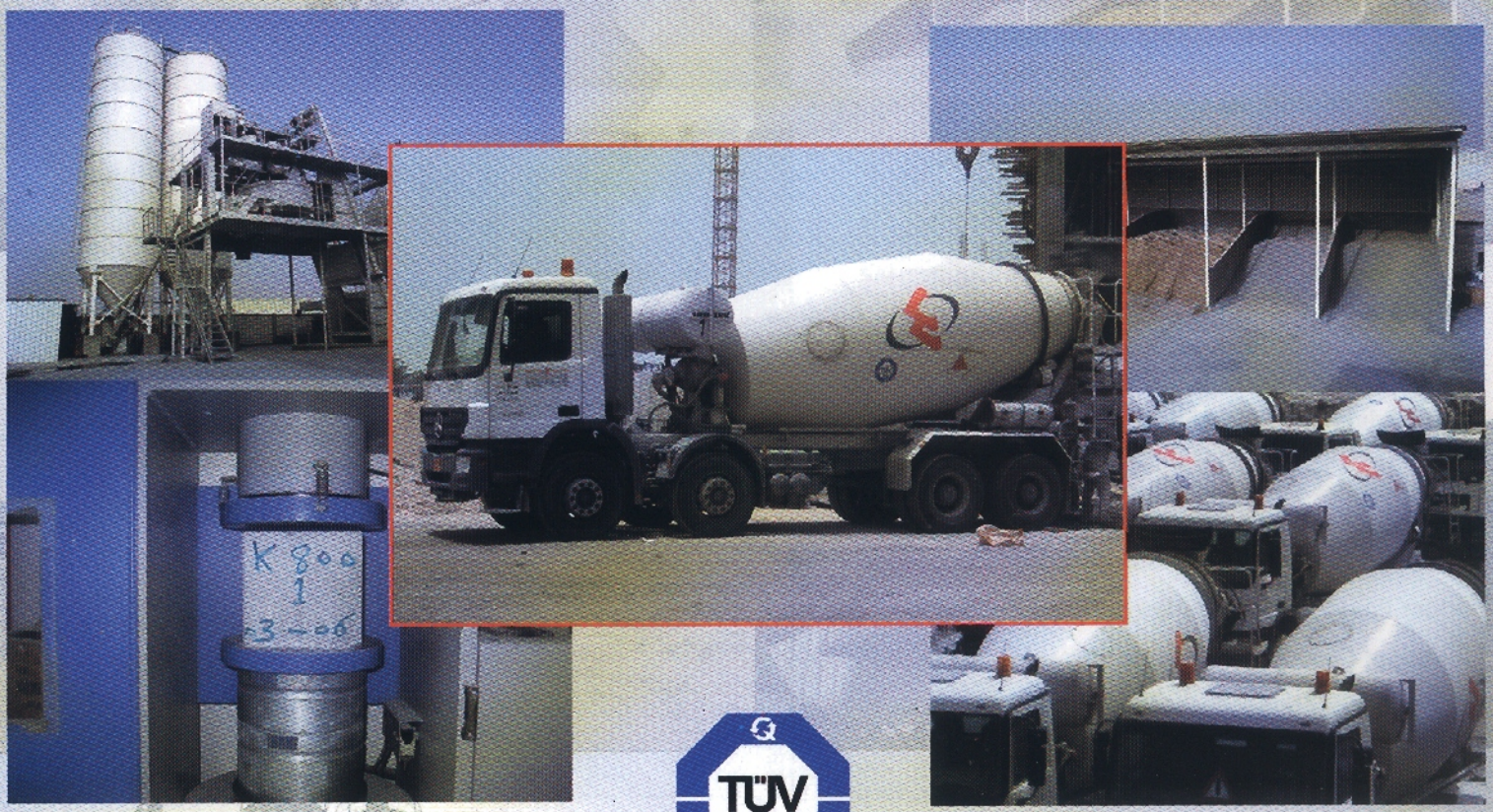
بوبيان
للخرسانة الجاهزة

الشركة الرائدة في صناعة الخرسانة الجاهزة

Quality

It's all about...

Time Technology



إحدى شركات

Insha'a Holding

إنشاء القابضة

P.O.BOX: 42132 Shuwaikh 70652 Kuwait Tel: +965-4827766 - Fax: +965-4610368

American Concrete Institute – Kuwait Chapter
Award of Achievement 2006

Mr. Abdullateef Al-Dakheel

Over 30 Years of Leadership and Contribution to Public Works

ACI – Kuwait Chapter presents the Award *of Achievement* to an individual in recognition of outstanding contribution in the field of concrete and engineering in the State of Kuwait.

The recipient of the award for this year is Mr. Abdullateef Al-Dakheel in recognition of his valuable contributions to the engineering community and public works.

Eng. AL-Dakheel received his B.S. in Civil Engineering from the University of Missouri, USA in 1979 and spent most of his career working in the Ministry of Public Works where he started as a design engineer to rise to the level of Assistant Undersecretary level holding the following positions:

- Assistant Undersecretary - Construction Administration.
- Assistant Undersecretary - Sanitary Engineering
- Assistant Undersecretary - MPW Laboratory
- Assistant Undersecretary - Roads Administration

Mr. Abdulateef Al-Dakheel's was a competent engineer who was highly respected by his peers. He was known to make his decisions based on sound engineering judgement and after consulting with his staff. He has involved in several important assignments:

• Vice President of Kuwait Society of Engineers 1994-1996

• Head of Committee for Strategic Planning, MPW 1997

• Member of Higher Committee for Traffic, Kuwait 1992 – 1998

• Member of the advisory committee to Kuwait University, Faculty of Engineering (1996-1998)

• Chairman of the Organizing Committee for First GCCC Roads Conference, 2002

• Member of Municipal Council, Kuwait Municipality 2003 - 2005

• Member of a team to select the departmental dean of the technical school Public Authority for Applied Education and Training (PAAET), Kuwait 2005

American Concrete Institute – Kuwait Chapter
Award of Excellence 2006

Al Manshar Mall Project

An Innovative Renewal and Renovation Project

ACI – Kuwait Chapter presents the Award of Excellence to a Project in recognition of outstanding work in Concrete Construction and Practices within Kuwait.

The Award of Excellence this year was presented to Al Manshar Mall Project.

The project is an excellent example of what creativity and good use of concrete material can do for renovation work.

The Owner has transformed an old debilitated complex into a landmark project including a hotel, shopping mall, business offices and housing units which extend over 220,200 square meters with over 30 concrete structures.

The design allowed for a seamless integration of the old and new using the traditional themes preserving the historical character and at the same time improving the development potential of the surrounding area.

The design called for strengthening existing structures to remain using trussed roofs combined with tensile fabric structures. This creative use of trusses and fabric structure gave reference to local traditional themes of construction.

The high quality concrete finish and the state-of-the-art lighting used convey to visitors a pleasant and memorable experience worthy of the recognition.

The Award was presented to:

- **Owner**: Tamdeen Real Estate Co.

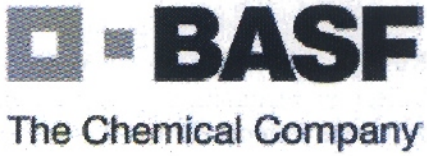
The Award co-recipients are:

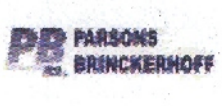
- **Main Contractor** : Ahmadiah Contracting & Trading Co.
- **Consultant**: Pan Arab Consulting Engineers
- **Architect** : Dar Al-Omran (Jordan)

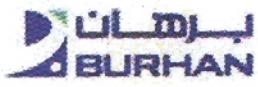
KUWAIT CHAPTER THANKS OUR ORGANIZATIONAL MEMBERS

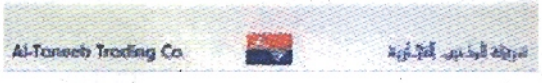
Their support and willingness to share knowledge is appreciated

Your Organization Logo Could be here!









THE RESOURCES TO RESPOND

MAK TRAVEL & TOURS
Welcome to the World of Tourism for all your Travel needs

KUWAITI BRITISH READYMIX COMPANY
Readymix Concrete, ISO 9001:2000 certified

SABHAN STEEL REINFORCEMENT COMPANY
steel wire mesh,cut and bent Steel reinforcement, etc.

INVESTMENT DIVISION
Investments and real estate

CYBERMAK INFO SYSTEMS W.L.L.
Enterprise-wide software solutions - Help Desk Asset, Change, Customer Relationship Management

ALUMINIUM INDUSTRIES COMPANY
Aluminium fabrication, doors, windows and glass works

INTERNATIONAL TRADE AND BARTER DIVISION
Barter trade and credit line facilities

ISOFOAM
Manufacturer of Extruded and Expanded Polystyrene, Polyurethane, Isodek Sandwich Panels and Isotex Textured Form Liners ISO 9001: 2000 certified

NATIONAL PILING COMPANY
Piling, foundation, shoring and marine Works

FACTORIES DIVISION
Prefabricated workers camps, portable houses & offices, steel furniture and steel structures

AGENCIES DIVISION
Agency representation and services, procurement and import-export

SWIMMING POOLS CENTER
Swimming pools and related products

PAPER & EQUIPMENT DIVISION
Paper and paper products, printing machinery, computer systems, construction equipment, etc.

NATIONAL COMPANY FOR MECHANICAL & ELECTRICAL WORKS LTD.
Electrical, mechanical, HVAC, plumbing, firefighting, oil and gas projects, office automation systems, etc. ISO 9001: 2000 certified

We are a completely integrated international contractor, the largest in Kuwait, and one of the largest in the area with specialized divisions and subsidiaries

Head Office :

MOHAMMED ABDULMOHSIN AL-KHARAFI & SONS W.L.L.

P.O. BOX: 886 13009 SAFAT TEL: (965) 4813622/5 FAX: (965) 4813740/4830078
TELEX: 22071 & 23569 CABLE: ALKHARAFI KUWAIT
E-mail: darnold@makkharafi.net

ISO 9001 : 2000
Cert. No. 156224

ISO 9001 : 2000
Cert. No. 156224

Branch Offices :

Saudi Arabia United Arab Emirates Egypt Yemen Albania Tunisia Bulgaria
South Africa Ethiopia Syria Botswana Tanzania Lesotho Lebanon The Gambia

Mohammed Abdulmohsin Al-Kharafi & Sons W.L.L.

Reprinted from the January 2007 issue of Concrete International with permission from the American Concrete Institute (www.concrete.org)

Evaluating Riser Height Tolerances for Concrete Stairs

A procedure for measuring stairs is needed, as are data that can help to better define reasonable stair tolerances

BY HEATHER J. BROWN AND BRUCE A. SUPRENANT

Tolerances for building construction have sometimes been set without concern for the builder's ability to meet them or the effects of an out-of-tolerance condition on the serviceability of the structure. Stair tolerances illustrate this point. For buildings in the U.S., stair geometry—especially riser height—is tightly controlled. Section 7.2.2.3.5 of the National Fire Protection Association's Life Safety Code, 2000 Edition,[1] requires riser height to be measured as the vertical distance between tread nosings. When the tread slopes to the front or the back, this height can be measured using a carpenter's level and tape as illustrated in Fig. 1. Section 7.2.2.3.6 of the Life Safety Code then states that:

> "There shall be no variation in excess of 3/16 in. in the depth of adjacent risers, and the tolerance between the largest and smallest riser shall not exceed 3/8 in. in any flight."

ACI 117-06[2] contains the same 3/16 in. (5 mm) tolerance for the depth of adjacent risers but has no requirement for the difference between the maximum and minimum riser depth. Regardless of whether the stairs are cast-in-place, precast, or concrete-filled metal pans, these tolerances are hard to meet and corrective action is often expensive. One reason corrective action is expensive is that modification of one tread elevation will affect two riser heights. That is, grinding or patching the surface of one tread may bring a riser height into tolerance, but it can simultaneously cause the adjacent riser to be out of the specified tolerance. In a cascading effect, each successive adjacent tread may require grinding or patching until the bottom or top of the flight is reached.

If an out-of-tolerance condition isn't detected during initial construction and a trip-and-fall accident occurs later, as-built measurements may show that the stairs were out of tolerance. Thus, the builder is often one of the defendants in a lawsuit. This can happen even if the building is 10 years old, the staircase was poorly lit, and

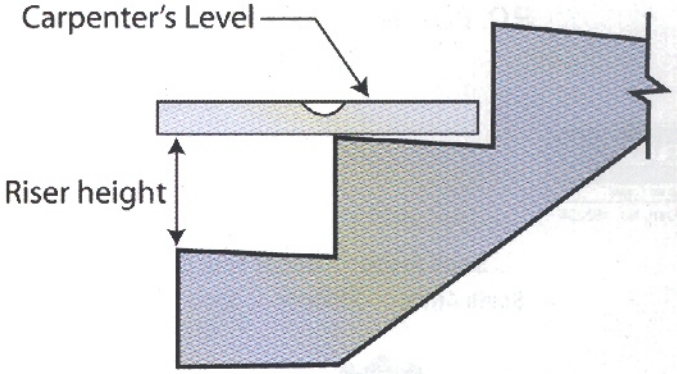


Fig. 1: The NFPA Life Safety Code requires stair riser height to be measured from nosing to nosing, but the location of the measurement along the tread width isn't stated

the stairs weren't properly maintained. It can also happen despite the fact that there are no studies showing that a difference of 3/16 in. (5 mm) in the height of adjacent risers is less likely to cause a trip-and-fall accident than a difference of 1/4 in. (6 mm) or more. A 1992 review of literature and data for a stair safety study yielded only five research efforts aimed directly at identifying the role of riser and tread geometry in residential and industrial stair safety through either the study of accidents or some proxy such as "incidents." An in-depth review of these major works found that the described research, considered either separately or together, failed to establish a consistent, statistically valid link between stair safety and stair geometry.[3] Without such a link between riser height and stair safety, it's hard to support an argument that the 3/16 in. (5 mm) tolerance on riser height is necessary.

In this article, we present a procedure for measuring stairs. We also present data that can be useful in better defining reasonable stair tolerances. Students in the Concrete Industry Management (CIM) program at Middle Tennessee State University began collecting this data during the Fall 2006 semester.

DATA SELECTED

For the first data-gathering effort, we decided to acquire data that would show:

- Variability in riser height from one set of stairs to another (are there differences in stairs constructed using different systems?);
- Variability of riser height in a given set of stairs (is the top or bottom step more likely to be out of tolerance than other steps?); and
- Variability in riser height for any single step in a set of stairs (does the location of the measurement affect the probability of being in or out of tolerance?).

Residential construction was excluded at this time and 10 sets of stairs were chosen for measurement in each of three general types of buildings:

- Government agencies;
- Schools; and
- Offices/Medical.

These are arbitrary categories where major differences were not expected. The students identified the type of stairs—precast, cast-in-place, or concrete-filled pan—and whether the stairs connected a slab-on-ground to a suspended floor or one suspended floor to another. Settlement of slabs-on-ground might result in out-of-tolerance situations that occurred after original construction. Also, it may be more difficult to connect stairs between suspended slabs. Suprenant discussed the problems related to elevation tolerances for floor surfaces not being compatible with riser-height tolerances.[4]

DEVELOPING A MEASUREMENT PROTOCOL

Because we couldn't find a protocol for making riser-height measurements, our first task was to develop such a procedure. Although the method for measuring riser height is defined in the Life Safety Code, the location of the measurement along the tread width isn't specified—it should be. The measurement location would logically coincide with the area on which foot traffic is most likely. On the one hand, an out-of-tolerance spot at either end of the tread would be of less concern than one in the highest traffic path. On the other hand, it would be interesting to know the expected variation in riser height over the entire width of the tread.

Exhibit 7.32 of the Life Safety Code Handbook illustrates the requirement that handrails be within a maximum 30 in. (0.76 m) reach of people using the stairs, and Exhibit 7.33 shows the inner edge of the handrail being 3-1/2 in. (90 mm) from the wall.[5] Based on this, foot traffic would most likely be centered on a line about 18 in. (0.46 m) from the wall, so we chose that line for our measurements. For each stair flight measured, students also took other riser measurements at differing intervals along the tread. This was done to gather data related to variability in riser height for any single step in a set of stairs. The students took a photo from the bottom of the stairs and superimposed lines to illustrate where the riser measurements were made. The measurements were made using a 2 ft (0.6 m) long carpenter's level and metal ruler. A sample data sheet is shown in Fig. 2.

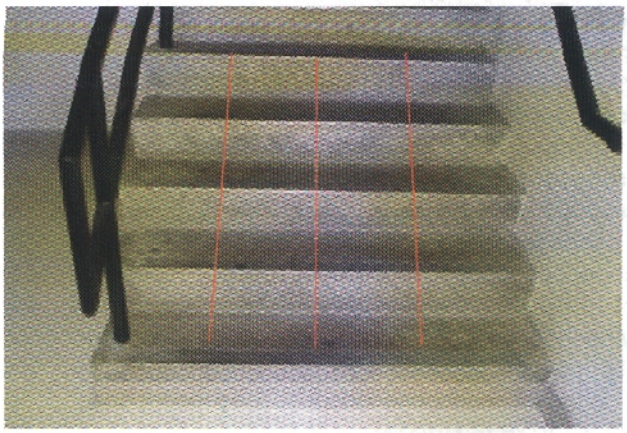
INITIAL INDICATIONS

Some initial indications from the measurements are of interest. Based on data from the first 10 sets of stairs measured (Fig. 3 and 4), about 30% of the differences in adjacent riser heights are greater than 3/16 in. (5 mm) and about 82% of the maximum-minus-minimum riser height differences in a stair flight are greater than 3/8 in. (10 mm). This indicates that a very high percentage of the stairs measured were not within the tolerances required by either the 2000 or 2006 editions of the Life Safety Code.

The initial data also indicate that when two measurements are made, there is about a 15% likelihood of an ambiguous result—some riser height differences within tolerance and some out of tolerance. When more than two measurements are made, the likelihood of an ambiguous result increases to about 66%, so increasing the number of measurements is likely to result in more arguments about whether or not the stairs are in or out of tolerance. We suggest using the preconstruction meeting to discuss locations for stair riser measurements that will be used to either check for compliance with

Middle Tennessee State Stair Survey

Building Name	Example Building
Location	Test Location
Year Constructed	1984
Number of Stories	2
Building Type	Hospitals
Stair Construction	Cast-in-place
Stair Type	Slab on Ground
Survey by	Matt and Blake
Date of Survey	October, 2006
	Location as shown in picture (left to right)
Measurement line 1	18 in
Measurement line 2	30 in
Measurement line 3	48 in



		Measurement #1		Measurement #2		Measurement #3	
Stair Flight	**Stair Number**	**Riser**	**Change**	**Riser**	**Change**	**Riser**	**Change**
1	1	6 8/16		6 8/16		6 9/16	
	2	5 14/16	10/16	5 15/16	9/16	5 14/16	11/16
	3	6 2/16	4/16	6 2/16	3/16	6 1/16	3/16
	4	5 12/16	6/16	5 12/16	6/16	5 13/16	4/16
	5	6 4/16	8/16	6 3/16	7/16	6 4/16	7/16
	6	5 12/16	8/16	5 14/16	5/16	5 13/16	7/16
	7	5 14/16	2/16	5 13/16	1/16	5 13/16	0
	8	6 4/16	6/16	6 5/16	8/16	6 5/16	8/16
	9	6	4/16	6 1/16	4/16	6 1/16	4/16
	10	5 12/16	4/16	5 14/16	3/16	5 13/16	4/16
	11	6 2/16	6/16	6	2/16	6	3/16
	Total Stair Height	66 4/16		66 7/16		66 6/16	
	Maximum Riser Change in flight		6/8		6/8		6/8
2	1	5 14/16		5 14/16		5 15/16	
	2	6	2/16	6 1/16	3/16	6	1/16
	3	5 12/16	4/16	5 13/16	4/16	5 12/16	4/16
	4	5 15/16	3/16	5 14/16	1/16	5 14/16	2/16
	5	5 14/16	1/16	5 14/16	0	5 15/16	1/16
	6	6 1/16	3/16	6	2/16	6	1/16
	7	5 12/16	5/16	5 13/16	3/16	5 12/16	4/16
	8	5 13/16	1/16	5 13/16	0	5 12/16	0
	9	5 13/16	0	5 13/16	0	5 13/16	1/16
	10	5 11/16	2/16	5 11/16	2/16	5 12/16	1/16
	11	5 12/16	1/16	5 11/16	0	5 11/16	1/16
	Total Stair Height	64 5/16		64 5/16		64 4/16	
	Maximum Riser Change in flight		3/8		3/8		3/8

Fig. 2: Data sheets for stair measurements show the building, stair type, and riser measurements, plus a photo indicating the locations of riser measurement lines. Out-of-tolerance values are highlighted in red (1 in. = 25.4 mm)

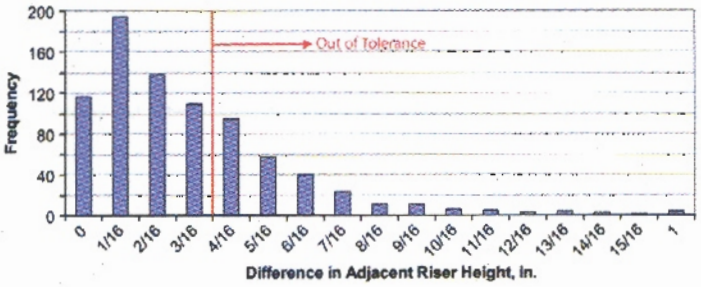


Fig. 3: Frequency histogram for riser height measurements on the first 10 buildings surveyed. A total of 829 adjacent stair riser measurements were made. Of these, 272 (30%) don't meet the requirement that adjacent risers can't differ by more than 3/16 in. (5mm) (1 in. = 25.4 mm)

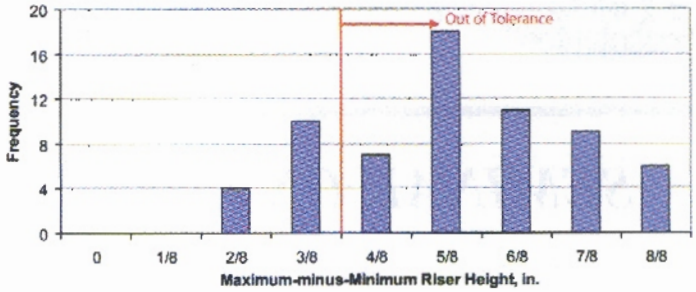


Fig. 4: Frequency histogram for maximum-minus-minimum riser heights in flights of stairs measured for the first 10 buildings surveyed. A total of 76 riser measurements were made. Of these, 68 (82%) don't meet the requirement that the maximum-minus-minimum value can't exceed 3/8 in. (10 mm) (1 in. = 25.4 mm)

tolerance requirements or check the effectiveness of corrective measures.

Some additional measurements will be made to aid in interpreting the variability in riser height that has been noted. For instance, even with the relatively simple measurement method used, an estimate of measurement precision is needed. Centering the bubble in the carpenter's level is probably the most likely source of a precision error, but not the sole source. By having different student groups measure riser heights on the same flight of stairs, we can use the data to develop a precision statement.

We also anticipate that measurements using the protocol described in this article will be made by students in CIM programs that were recently established in Arizona, California, and New Jersey. Comparing results from different locations in the U.S. will give an indication of the effects of regional differences in construction methods. Further analysis of our results and those of others will help answer the questions about riser-height variability asked earlier in this article.

Acknowledgments

All stair measurements were made by L. Grisham, M. Rendon, M. Trotter, J. Birkofer, D. Gammon, B. Bowman, and A. Sons as part of a special projects course for the Concrete Industry Management program at Middle Tennessee State University.

References

1. "Life Safety Code," 2000 Edition (NFPA 101), National Fire Protection Association, 2000, pp. 50-51.

2. ACI Committee 117, "Specifications for Tolerances for Concrete Construction and Materials and Commentary (ACI 117-06)," American Concrete Institute, Farmington Hills, MI, 2006, 70 pp.

3. NAHB Research Center, "Stair Safety—A Review of the Literature and Data Concerning Stair Geometry and Other Characteristics," prepared for the U.S. Department of Housing and Urban Development, 1992, 96 pp.

4. Suprenant, B.A., "Solution to a Stair Problem," *Structural Engineer*, V. 7, No. 6, July 2006, pp. 22-25.

5. Cote, R., *Life Safety Code Handbook*, 8th Edition, National Fire Protection Association, 2000, p. 143.

Selected for reader interest by the editors.

ACI member **Heather J. Brown** is an Associate Professor and Acting Director of the Concrete Industry Management program at Middle Tennessee State University (MTSU), Murfreesboro, TN. She teaches concrete-related courses and construction surveying at MTSU, and is a member of ACI Committee 522, Pervious Concrete.

Bruce A. Suprenant, FACI, is President, Concrete Engineering Specialists, Boulder, CO. He is a member of ACI Committees 117, Tolerances; 222, Corrosion of Metals in Concrete; 228, Nondestructive Testing of Concrete; 301, Specifications for Concrete; and 302, Construction of Concrete Floors.

KUWAIT CHAPTER

Local Connection with International Links

SEMINAR ON POST TENSIONING

The Technical Committee of the ACI –Kuwait Chapter organized a seminar on "Post Tensioning for Building applications" presented by Mr. Stephen Burke, General Manager VSL Middle East and Mr. Ismail Charkit – Technical Manager VSL Middle East. The event took place on the 22nd of January, 2007 at the Kuwait Society of Engineers. The event was sponsored by AL-Bahar and Bardawil Specialities W.L.L.and the number of attendees exceeded eighty.

SEMINAR ON DURABILITY

The Department of Civil Engineering at Kuwait University and the ACI-Kuwait Chapter jointly organized a seminar entitled "Role of Structural Joints in the Durability of Reinforced Concrete Structures". The seminar was presented by Dr. Obada Kayali of the University of New South Wales, Australia. The event took place on April 29, 2007 at the Kuwait Society of Engineers, and was attended by more than eighty people, most of them are members of the Chapter. The seminar highlighted the importance of durability of reinforced concrete structures towards the sustainability of the concrete industry. It showed the measures necessary to detail structural joints to avoid early deterioration of the concrete structures. It is to be noted that Dr. Kayali was an Associate Professor at the Department of Civil Engineering at Kuwait University between 1978 and 1990 before joining the University of New South Wales, and few of the attendees were previously his students.

aci **KUWAIT CHAPTER**

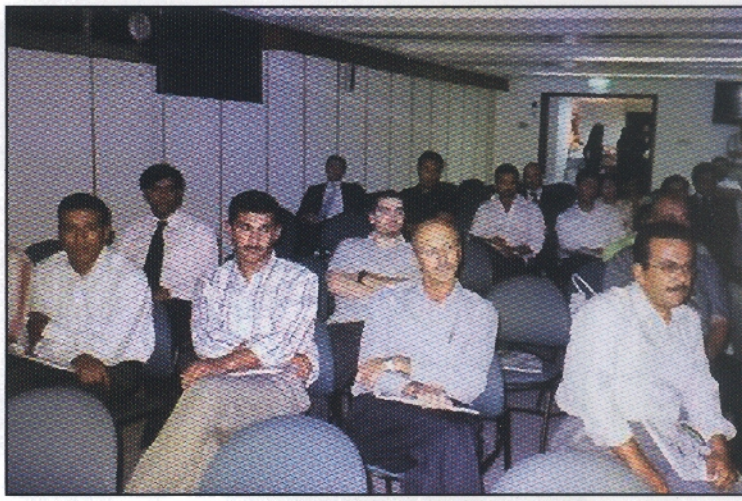
Local Connection with International Links

SEMINAR ON GEOTEXTILES

The Technical Committee of the ACI - Kuwait Chapter and AL -Bahar and Bardawil Specialities W.L.L. organized a seminar entitled "Geotextile in Civil Engineering Applications" presented by Mr. Eyad Al-Hasan, Export Sales Manager for ALYAF - Saudi Arabia. The event took place on the 20th of May, 2007 at the Kuwait Society of Engineers.

Geotextiles are permeable textile materials used in a wide range of civil engineering applications including soil stabilization for road construction, sub-surface water drainage, crack retardation in pavement overlay, sea shore erosion control, synthetic membrane protection for waste containment systems and waterproofing systems.

This seminar aimed at highlighting the functions, benefits and design procedure of using Geotextiles in civil engineering applications. It was attended by about eighty participants.



SEMINAR ON GEOTEXTILES

The Technical Committee of the ACI Kuwait Chapter and Alghanim Specialities Co. W.L.L. jointly organized a seminar entitled ***The Advantages Of Fibertex 3-D Geotextiles*** presented By Mr. Jan Falden, Export Manager, Fibertex A/S - Denmark. The event took place at Alghanim Specialities Auditorium - Shuwaikh on May 21st, 2007 and was attended by more than 75 participants.

KUWAIT CHAPTER

Social Event: Annual Dinner

The Social Committee held its annual dinner at Movenpick Hotel on the 15th of May, 2007 at Noura Hall. The dinner was sponsored by Al-Ghanim Specialities Co.

Dr. Moetaz El-Hawary Speach
(President of ACI-Kuwait Chapter)

Eng. Kalifa Al-Fadhala
(Al-Ghanim Specialities Co.)

Part of the event

aci KUWAIT CHAPTER
IN MEMORANDUM

Hamad Abdulatif Thunayan Alghanim
(1938 – 2007)

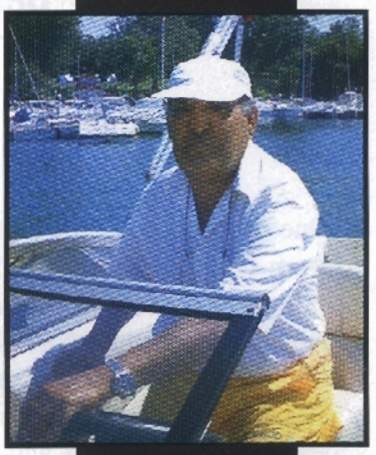
Many of you who have met Hamad Abdulatif Thunayan Alghanim (Abu Talal), knew him as the founder and owner of Gulf Consult, the firm he has established in 1967. From its humble beginnings, Gulf Consult has grown to be one of Kuwait's leading architectural and engineering firms with complex and specialized projects ranging from buildings to infrastructure.

It was indeed sad for everybody in the engineering field in Kuwait that Abu Talal is no longer with us, especially those who dealt with him frequently and closely. To soothe this deep sense of loss, all we can do is to commemorate his life, remember his humility and open mind, and make his philosophy and spirit a vital part of our lives.

Abu Talal was born in Kuwait in 1938, the son of a merchant and political advocate. His quest for knowledge took him from the Mubarikiya School in Kuwait, to Victoria College in Alexandria, Egypt, where he was sent by his father at the age of 10. After completing his O-levels, he went to England to obtain his A-levels, after which, he was accepted at Queens University in Belfast; eventually joining the University of Arizona, where he received a degree in Civil Engineering, becoming one of the first Kuwaitis to graduate overseas as an engineer.

His career began as a Civil Engineer at the Ministry of Public Works, and until the day he died, he was continuously and directly involved in the operation and management of Gulf Consult. He was always a supporter of the ACI Kuwait Chapter and of its objectives and was proud to be one of its early members.

Away from work, he was an avid squash player at Kuwait Sports Club, a keen photographer and most importantly, a lover of the sea.
Abu Talal lived his life through a set of values which he never compromised; whether in his personal relationships or in his career. He had always conducted himself with professionalism, honesty, commitment and humanity. These principles were the essence of his personality, making him a great professional, father, husband and friend, but above all else, a great human being.



Hamad on his boat in France. He loved the sea.

This photo was taken a few days before he died while testing out his new camera

Hamad in Victoria College, Alexandria 1950's, 2nd row from bottom, 4th from left
Top row: Jasim Al-Bahar (fourth from right)
3rd row: Tariq Al-Ghanim (brother 1st from left) Jasim Mohammed Al-Khurafi (2nd from left)
Faisal Thunayan Al-Ghanim (3rd from left)
Abdulla Al-Zahim (5th from left) Sager Thunayan Al-Ghanim (9th from left)
2nd row: Abdulatif Abdulrahman Al-Bahar (10th from left)

How to Listen

Getting the most out of an ACI presentation

BY KENNETH C. HOVER

One of ACI's most important missions is to provide a forum for the exchange of information. This means bringing speakers and listeners, writers and readers together to open the channels of communication for sending, receiving, and evaluating ideas.

The first two articles I wrote on this topic (which appeared in the January and February 2005 issues of CI) discussed the planning and delivery of information in the formal setting of a local chapter meeting or in a technical session at an ACI convention. A few suggestions are posed in this article on how to listen and learn from the many presentations that will come your way through your involvement in ACL[1].

One of ACI's greatest strengths is the fact that the membership represents a broad cross section of the modern concrete materials, design, and construction industries. A typical audience represents a wide range of backgrounds, experiences, tools and values-and uses an equally broad vocabulary to describe various segments of the industry. This gives you the opportunity to pursue your own particular interests in depth, and at an ACI meeting, you can explore as many aspects of the concrete industry as time and schedule permit.

Regardless of your particular area of interest, you will be able to find and ACI member who shares that interest and who is more than happy to talk about it. You will find folks who not only share your point of view on many issues, but as ACI Past President Dan Baker says, they also share your " viewing point," meaning that they look at the concrete industry more or less the same way you do, or from same angle, or from the same perspective. But Dan Baker also says that to really take advantage of the ACI experience, periodically take the opportunity to change your viewing point and listen carefully to a presentation from someone who looks at concrete from a different angle. (Fortunately, the institute is large enough that the chances are excellent that you will able to find someone who sees things differently[2].)

Therefore, let's start by agreeing that we can benefit from, learn from, appreciate, and enjoy a presentation even when what has been said does not match our view of the world. In fact, we might get more out of a talk that challenges our understanding, even if we end up reaffirming our initial position[3]. Further, if we, as members of the audience, have a right to expect that the speaker comes well-prepared, it's fair for the speaker to expect an audience with an open mind.

LISTENING WITH AN OPEN MIND

I would like to consider six aspects of open-minded listening:

1. consider the unique objectives of the session and presentation. Recognize that not all papers and sessions have the same purpose;

---

1. Consider an active ACI "career". You will have attended over 50 ACI conventions and perhaps more than 200 local chapter meetings and you might have logged 1000-plus hours on the receiving end of presentations converting a broad range of concrete=related topics.

2. Frank II. T. Rhodes, President Emeritus of Cornell University, defines a faculty member as "one who things otherwise" That may also define many active and valuable ACI members.

3.According to industrial psychologist Haries Cone, whenever two people thing exactly alike on a subjects, only one is needed if the job is to come up with fresh ides.this same idea can be ascribed to many speakers.

2. Broaden your listening objectives_think about why you came;

3. Be aware of your personal bias and expectations. Evaluate the presentation on the basis of what you hear and see, not on what you expect to hear;

4. Expand your area of interest_learn about a new facet of our industry;

5. Look for value_find out what the speaker considers to be valuable; and

6. Find news you can use_there are many things that you can take away from a presentation. Don't leave empty handed.

Consider unique objectives

The similarity of layout and format of many ACI presentations can disguise the different purposes for the sessions as a whole, and the differing roles that individual presentations can have within a given session. The purpose of many presentations is to convey new information, and these new stories may be told in the context of full-scale field test, case studies, carefully controlled laboratory work, computer simulation, or other detailed analysis.

Talks in the "Research in progress" sessions introduce important and interesting ongoing work and include preliminary results or conclusions. Some presentations confirm results that have been previously reported ,or in some cases demonstrate that earlier results were not repeatable under certain conditions. The goal of other presentations is to explain phenomena that may have already been reported[4]. ACI also leaves plenty of room for speakers to air their opinions and to solicit the opinions of the audience. Good examples are the Hot Topics Sessions that can be exciting events centered on important and generally controversial issues.

One ACI's challenges is to strike the right balance between opportunities to exchange new, groundbreaking, or controversial information, with opportunities to bring newer members of the industry up to speed on basics. For this reason, ACI has a series of traveling seminars designed to review and instruct. ACI also has educational sessions at the conventions, and some technical sessions effectively use a few "background" papers to set the stage for late-breaking research and field results.

The next time you are in a session and find that you have previously heard much of the information, look around you. How many others in the room might be hearing it for the first time? Besides, our dynamic industry is in flux, and we are learning and relearning stuff all the time. It is important that speakers and session planners clearly identify the nature of their presentations, and that audience members recognize the need for a range of approaches to the topic. It is probably true that as long as the industry continues to face many of the same problems (control of water content, control of air content ,workability, curing, constructability), There will be a continued need to review the basics[5].

Broaden your listening objectives

There can be many reasons for attending an ACI presentation, and the more reasons we have, the more likely it is that we will benefit from the experience. We might be looking for verification of our own observations, experiences, problems, or ideas. (We really get our money's worth when the speakers not only addresses a problem that has been troubling us. but proposes a few tentative solutions as well). It usually takes several well-documented reports of the same problem before we can begin to get a handle on it, and it often takes more than one report of a good solution before we make real progress.

We come because we have questions and are looking to the presentation for answers, or are looking for better explanation for something we already have seen or already know. Others of us are looking for problems to solve, hot topics to investigate, or possible markets for various goods, services or creative ideas. Finally, many of us are in the session

---

4. The correct, technical term for an explanation that has been tested and found to be valid is a "theory" Thus, when a speaker waxes "theoretical," it simply means that he or she is providing an explanation. This is good news since an accurate explanation leads to accurate predictions and accurate predictions can help make desirable events happen and can help prevent the undesirable. Note that a proposed but unproven explanation is not called a theory. It is correctly called an "hypothesis" (Gribbin, J., The Little Book of Science, Barnes & Noble Publishers. 1999. pp. 7879-).

5. Our could also argue that the perenniai recurrence to typical concrete problems proves that either the conventional approach to covering the basics has been ineffective, or there is an acute need for research to solve these problems once and for all.

to learn whatever we can and a few of us actually hope for a bit of enjoyment while we listen and think about our favorite topic. In any given audience, you are surrounded by folks who are there for many of these different reasons, and the more reasons you can give yourself for listening, the more likely you will consider the time well spent.

Be aware of personal bias

Whatever our reasons for attending, many of us react more favorably to the speaker when the presentation meets our predetermined expectations and aligns with our view of the concrete world. When the talk starts to go in some other direction, we get fidgety, check our watches, recheck the convention program, and look for the exits. Fair enough-we are paying to be there, and we deserve to get what we paid for. On the other hand, in any given audience, there is a wide range of individual expectations, and the odds are slim that the speaker can meet them all. If you are happy to find that a given speaker is addressing your concerns, there's a good chance that someone else in the room is dissatisfied[6].

We might be able to listen more objectively if we set our expectations and biases aside during the talk, and evaluate after we have heard the whole presentation and perhaps asked a question or two, when the speaker's observations or conclusions don't align with yours, analyze the apparent contradiction by determining the differences between the speaker's experience and yours.

Were there differences in materials, proportions, techniques, ambient conditions, test methods, test specimens, personnel, ability to control materials or conditions, or range of uncertainty in the values? Did the speaker talk about pumping or was it slipform pavement? Was the subject material paste, mortar, or concrete? Was it fresh air or hardened air, at-the-plant slump or on site slump? Was the admixture added at the plant or on site? Was water- cement ratio lowered by reducing water or by adding cement? Is this precast or cast-in-place, summer or winter, wet or dry? When you confront an apparent contradiction, try to narrow down the point of conflict. Exactly where do you differ? Perhaps start by figuring out where you agree.

Expand your area of interest

When the topic moves away from your own center of interest, the natural tendency is to let your weary mind wander. True, when your time is limited, it may be best to take the ACI prerogative and vote with your feet as unobtrusively as possible. You might find, however, that if you lasso your wandering thoughts and listen harder, you might be rewarded with a bit of useful information. We are all assembling knowledge like a jigsaw puzzle, and missing pieces turn up in the most unexpected places.

Look for the value

We "evaluate" everything we see on the basis of what we value, and if we can broaden our sense of value, we can broaden our sense of appreciation. Many of us put a premium on ideas that increase profit or solve a problem.

Practicality, applicability to the plant or job site, robustness, and the ability to perform over a wide variety of conditions are vital. Others may value control, precision, repeatability, or scientific rigor. Evidence and proof are always valued, but for some seeing is believing and for others a more scientific or mathematical proof is required. Small scale, carefully controlled lab results provide proof for some, while only large-scale field result count for others.

Some of us value the connection between any new idea and its background in the extensive literature of our discipline. Most sound, new ideas have a well-developed background that must be understood to be able to understood to be able to understand the new idea. The majority of the ACI audience needs data to confirm an idea and, in this regard, good researchers are their own toughest critics. Our best problem-solvers require the same standards for convincing evidence from themselves, their colleagues, and from fellow ACI speakers[7].

---

6. At the ACI Spring Meeting in Orlando in 1988, I was holding forth on a not-so-profound method to predict the influence of air content on compressive strength. One expert stood up in the middle of the talk, waved his hands in air , pronounced the entire concept to be bunk, and then unceremoniously left the room . At the conclusion of the talk, and equally well-known researcher came up and whispered so that no one would overhear, "that was the greatest idea I ever heard". You can't win 'em all .

Opinions vary, however, as to what constitutes compelling data. Facts are valued and opinions, though interesting and useful, should be labeled as such. Some listeners require a mathematical expression of reality, while for other, the math clouds the issue. Some of us are not happy unless we know why something occurs, while others can sleep comfortably without explanations, scientific or otherwise. The job of the speaker is to give the audience information that they can value, and the more you as a listener can extend your range of values, the more you will appreciate the speaker's efforts.

Find news you can use

Expect to take something away from the presentation. At a minimum, you take a snapshot of how the speaker sees the world, regardless of whether you share that view. At a maximum, you can see the concrete world a bit differently than you did before. If your views were challenged, maybe they are now stronger for the experience or perhaps you are now more receptive to change[8].

A few years back, my good friend and ACI member Jim Cornell organized a series of technical talks for a group of his construction supervisors. Afterward, he chaired a group discussion that challenged the supervisors to identify any changes they could consider in construction technique on the basis of the presentations. We should all take Jim's example and try to identify changes that we might make on the basis of the talk, with changes in thinking at the top of list.

If we learned something, that's a change. If we saw a part of industry from another viewing point, that's a change. If we decided to shift our own viewing point, that's a big change. When ACI participation regularly leads to changes and progress, attendance at meeting is not only enjoyable, but truly cost-effective.

THE CONCRETE ELEPHANT

The ancient parable of the "Blind Men and the Elephant" has roots in many different cultures. In the story, a number of blind men each encounter just a single aspect of an elephant, and make interpretations on the basis of their limited data. One finds the head to be like a cooking pot and the tusk to be a spear. Another finds the ear to be a fan, or a shield, or a piece of leather. Another finds the trunk to be like a snake, or a water pipe. Yet another finds the tail to be like a rope or a brush, and they each go on to characterize the entire animal from their personal "viewing point".

Most of the time this fable is told to demonstrate how wrong each of these "experts" is , but in the case of the concrete industry (a similarly large, gray beast that cannot be explored or examined from a single perspective) we might make the case that each viewer is right. We just have to assemble the many individual views into a coherent picture of the whole, and ACI provides the opportunity to do just that.

Kenneth C. Hover, FACI, has been an ACI member for more then 25 years. He is the Past President of the ACI Greater Miami Valley Chapter and also served as its Program Chair. The ACI Central New York Chapter is now his home base, and he has presented more than 500 seminars, short courses, technical presentations, and ACI Chapter events.

7. This expectation is expressed succinctly by the saying. "Without the date, the 'chatta" don't "matta".

8. "Faced with the choice between changing one's mind proving that there is no need to do so, almost everyone gets busy on the proof"- John Kenneth Galbraith.

Reprinted from the March 2005 issue of Concrete International with permission from the American Concrete Institute (www.concrete.org)

aci KUWAIT CHAPTER
Local Connection with International Links

General Assembly Meeting

The ACI-KC Annual General Assembly Meeting was held at KSE on the 29th of May, 2007 at 7:30 p.m. The annual report was distributed and then Dr. Moetaz El-Hawary, the chapter president, summarized the activities of chapter during the period between January 2006 and May 2007. Mr. A.W. Rumani, the chapter treasurer discussed the financial report. The election ballots were then distributed, filled by the attending members, collected and counted. The results were announced where Dr. Hassan Kamal was selected as Vice President, Dr. Saud Al-Otaibi and Prof. Khaldoun Rahal were selected as Board Directors and Prof. Husain Al-Khaiat, Eng. Mohamed Harb, Eng. Mohamed Seraj and Eng. Ubedur Rahman.Arain, were selected as members in the Nomination Committee.
Dr. Moetaz announced that the modified chapter's bylaws have been approved as no objections regarding those modifications were received.
The meeting was adjourned and was followed by a dinner reception.

KUWAIT CHAPTER

ACI INTERNATIONAL

The American Concrete Institute, (ACI), is a nonprofit international organization that promotes improved technology, technical competence, design, and construction related to concrete for the benefit of society.

PURPOSE OF THE ACI KUWAIT CHAPTER

The purpose of the chapter is to further the chartered objective for which the American Concrete Institute was organized i.e., to further education and technical practice, scientific investigation and research by organizing the efforts of its members for a non-profit, public service in gathering, correlating, and disseminating information for the improvement of the design, construction, manufacture, use and maintenance of concrete products and structures.

HOW THE CHAPTER FUNCTIONS

The ACI Kuwait Chapter is approved and authorized by the Board of Directors of ACI International to provide the means of furthering the chartered objectives of the Institute in the State of Kuwait. The Chapter is managed by a local Board of Directors whose members constitute the Chapter officers. Chapter membership is open to all individuals and organizations with an interest in any aspect of concrete technology. The Chapter is operated through its committees which are made up of volunteers from the membership. Programs are developed by the committees to meet the needs of the Chapter members. The Chapter may hold several meetings each year and engage in activities that may include:

- Sponsoring educational seminars, short courses or workshops.
- Holding or sponsoring certification training courses and examinations.
- Publishing technical information and newsletters.
- Conducting awards, programs for local concrete structures.
- Special social events.

BENEFITS TO CHAPTER MEMBERS

- Attend seminars, short courses and workshops organized by the Chapter at reduced fees.
- Free use of ACI publications, which are supplied to the Chapter by ACI International and are, kept in the Chapter library.
- A forum for members to interact with colleagues and identify potential sources for cooperation in addressing specific technical problems.

HOW TO JOIN THE ACI KUWAIT CHAPTER

To become a member of the Kuwait Chapter please complete the attached membership application form. Different categories of membership are available. You will receive a copy of the Chapter Bylaws upon becoming a member. The work of the ACI Kuwait Chapter is a mutual interest effort and success depends upon your active participation.

إبداع في حياة و ثقافة الكويت

Innovation in Kuwaiti Life & Culture

يتمتّع دار الكويت للإستشارات الفنية بالخبرة الكبيرة والاطلاع ليعمل كمستشار رائد لمختلف العملاء الذين يرغبون بالاستفادة من شركة واحدة لتقديم جميع خدمات التصميم. ويحتفظ دار الكويت للاستشارات الفنية أيضًا بسجلّ شامل للأعمال الناجحة مع مستشارين بارزين دوليًا.

Kuwait Technical Consulting Bureau has the vast experience and acquaintance to act as a leading consultant for the various clients, wishing to commission a single Firm to provide all of the design services. Kuwait Technical Consulting Bureau also holds an extensive record of successful work with internationally prominent / eminent consultants.

دار الكويت للإستشارات الفنية

kuwait technical consulting bureau

Margab - Abdalla Al-Mubarak Street, Al-Mosael Building - 4th Floor
Tel.: (965) 2456785 Fax (965) 2456784