

CONCRETE NEWS

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from **THE PRESIDENT**

We Share Our Success



Dr. Khaldoun Rahal
President

The Chapter measures its success by the achievement of its main goal, which is to gather, correlate and disseminate information for the improvement of design, construction, manufacture, use and maintenance of concrete structures and products. Given that, the year 2004 can be considered yet another successful year for the Chapter.

The seminars, training courses and Diwanis organized by the Technical Committee covered numerous subjects of interest to the concrete community and they were very well attended. The Technical Committee also translated two of its publications into Arabic to increase their circulation and benefit. The Chapter also joined efforts with the Kuwait Society of Engineers to offer training courses for engineers, in addition to training and certification courses for concrete technicians.

This year also witnessed an increase in the membership of the Chapter making the Kuwait Chapter as one of the highest ratios of members to population amongst all ACI Chapters around the world.

This year's social events provided other opportunities for the members to discuss concrete and other issues in a casual environment. The latest event was the Fourth Annual Award Banquet. This event attracted more than 170 people. To me and possibly to many of the attendees, this was a night to remember for many years to come.

The Chapter could not have achieved all of this without the support of the membership and the hard work and dedication of its Board of Directors and the members of the Committees. On behalf of the chapter, I would like to thank them all, and to invite them for more cooperation and achievements next year.



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CONTENTS

WHO's WHO CHAPTER NEWS



TECHNICAL ARTICLE *High Strength Concrete in Kuwait*



PROFILE *Dr. Hassan Kamal*



Award of Excellence *Market & Entertainment Buildings - Al Koot Fahaheel Waterfront*



Award of Achievement *Dr. Abdul Aziz Sultan*

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.

ACI KUWAIT CHAPTER

The purpose of the Chapter is to further the charter objective for which the American Concrete Institute was organized, i.e. to further education and technical practices, scientific investigation and research by organizing the efforts of its members for a nonprofit, 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 advance the 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 operates through its committees, which are made up of volunteers to meet the needs of the Chapter members. The Chapter may hold several meetings each year and engage in activities that include:

- Sponsoring educational seminars, short courses or work-shops.
- Holding or sponsoring certification training courses and examination.
- Publishing technical information and newsletters.
- Conducting awards programs to recognize quality, innovation and achievement.



ACI Kuwait Chapter

Kuwait Society of Engineers - KSE
Arabian Gulf Road
P.O.Box 12608, Shamiah 7165, Kuwait
Tel: 2448975 / 2448977 Ext: 307
e-mail: info@aciKuwait.com

Who's WHO

BOARD OF DIRECTORS 2004

1. Dr. Khaldoun Rahal (Kuwait University)	President
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2. Dr. Hasan Kamal (KISR)	Membership Committee
3. Mr. Anas A. Kassem (Parsons Brinckerhoff)	Publication Committee
4. Dr. Khaldoun Rahal (Kuwait University)	Public Relation Committee
5. Mr. Mohd. Harb Madbouly (Al Ghanim Specialities Co.,)	Social Committee
6. Dr. Moetaz El Hawary (KISR)	Technical Committee
7. Mr. Ahmed A. Al-Jihayem (Al Jazera Consultants)	Nomination Committee

CONCRETE NEWS

Mission

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.

Editorial Board

Anas A. Kassem	Keith Horsfield
Abdulwahab Rumani	T. C. Mohammad

Chapter NEWS

The **General Assembly Meeting and Election for the year 2005** were held on December 29, 2004. During the meeting the president and treasurer presented their report for last year and the elections for next year's board of directors were held. The results of the elections will be presented in the upcoming first issue of ConcreteNews in 2005.



The Social Committee cooperating with Pan Arab Consulting Engineers organized a technical **visit to Arraya Center Building** on 17 May 2004. The project manager explained and discussed the construction problems during the executing of the project.



The Social Committee organized a **family social visit to Planetarium** on 10th June, 2004. More than thirty family members enjoyed the visit. There was a show inside planetarium and visit to Kuwait National Museum



The Social committee held **Members Dinner Party** on 12th October, 2004. at al Zmerrud Hall. About 50 Members attended the party. Lucky Draw was held sponsored by Gulf Consult. Brief speeches were delivered by Dr. Khaldoun and Eng. Mohammed Herb.

Waterproofing Systems and Admixtures Seminar:

The event was sponsored by National Industries Company for Building Materials, and the seminar was offered by Rodney Bennett, Technical Manager for the Kryton group, on April 5th, 2004.



Admixtures for High Performance Concrete Seminar:

The event was sponsored by M. A. Kharafi Special Projects, Specialities Materials Division, and the seminar was offered by Hesham H. Shenouda, Managing Director, MAK-EAMIC, on April 25th, 2004.

Developments in Fiber Reinforcement for Concrete Seminar:

The event was sponsored by Stone and Wood Center Co., (part of Al-Arfaj Group of Companies), and the seminar was offered by Jonathan Brown, Technical Sales Manager, Synthetic Industries Europe Ltd., on May 11th, 2004.

High-Tech Coatings to Help Solve Insulation Problems Seminar:

The event was sponsored by M. A. Kharafi Special Projects, Specialities Materials Division, and the seminar was offered by Julio Sanchez, SPM Thermo-Shield Inc. Manager for Middle East, Central Asia and Northern Africa., on June 8th, 2004.



Training Course: Concrete Repair and Protection

The Chapter arranged for a three day course, which was sponsored by FOSROC. This course aims to provide design and supervision engineers, specifications specialists, and contractors with the necessary knowledge related to concrete damage assessment and causes, repair materials and techniques along with modern rehabilitation methods and trends. It was conducted by experts from FOSROC, main office, Dubai, during 24 to 26 May, 2004. Thirty five individuals attended.

HIGH STRENGTH CONCRETE IN KUWAIT

Contributed by A. W. Rumani

High Strength Concrete (HSC) can be described as concrete which has a compressive strength greater than is generally used for conventional structural work. The boundary strength which separates conventional concrete and HSC has increased over the years. At one time 400kg/cm² was considered HSC, this later increased to 600kg/cm², now strengths greater than 800kg/cm² are regarded as HSC.

The definition of HSC varies on a geographical basis. ACI defines High Strength Concrete as concrete that has a specified compressive strength of 500kg/cm² or greater.

In Kuwait concrete with compressive strengths of 500kg/cm² using locally available materials is already being produced commercially by the few quality suppliers in the country. Recently, on some projects, compressive strengths of 550kg/cm² and 575kg/cm² have also been produced.

The production of HSC that consistently meets workability and strength targets places more stringent requirements on material selection than for conventional concrete strength. Good quality aggregates, cement and always a high range superplasticiser are a must for HSC.

In Kuwait good quality aggregates are readily available except that the fine aggregate (washed natural sand) is more finely graded than the desired grading. Regardless of limitation however it can be successfully used with little modification to the mix design.

The choice of Portland Cement for HSC is extremely important. Cements can vary widely in their ability to produce HSC and their compatibility with super plasticisers.

There are two cement importers and a cement manufacturer in Kuwait. The supplied cement in Kuwait is of relatively low compressive strengths because most of it is manufactured to ASTM C150 which does not specify minimum 28 day strength requirement. British Standard (BS12) grades cement into four strength classes according to 28 day

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compressive strengths in N/mm², which are indicated by the figure 32.5, 42.5, 52.5 and 62.5. Hence cements manufactured to BS12 are easier to identify and select. For HSC a consistent quality cement of 42.5 strength class or higher is an absolute necessity. These strength classes are not generally readily available through the local suppliers.

Cement quality in Kuwait is, for the most part, inconsistent. Local importers purchase cement from different sources at different times according to the dictates of their commercial interests and do not always declare the actual source of the supplied cement.

Past experience has also shown that some local cement suppliers have not entertained specific requirement of their customers when asked to do so.

In order to overcome this problem, cement importation by concrete producers or contractors of a suitable quality which falls outside the scope of local suppliers is unfortunately economically unviable or logistically impractical in Kuwait.

To conclude, for a given set of concrete materials HSC is simply an extension of the range of the more usual concrete mixes. However, the material constraints (primarily cement) and the associated higher risk with HSC discourages concrete producers from venturing into this specialized concrete area preventing Kuwait from enjoying the related benefits.

Efforts are continually being made to improve the situation but more needs to be done. ACI Kuwait Chapter along with other institutions could add momentum to mitigating or overcoming the lethargy of the present situation.

ProFILE

Dr. Hasan Ali Kamal

Dr. Hasan Kamal graduated from Kuwait University gaining both the B.Sc. and M.Sc. degrees in civil engineering. He received his PhD degree in civil engineering from USA 2001. The title of his dissertation was "Simulation-Based Reliability Assessment Methods of Structural Systems".

Currently he is working with the Civil and Building Department in Kuwait Institute for Scientific Research (KISR) where he is involved in several projects related to the enhancement and development of building systems and materials. He is currently leading a significant project for treating underground cavities in a pilot area in a residential area in Kuwait.

Dr. Kamal joined ACI in 1998 during his PhD study in the USA and subsequently joined the ACI Kuwait Chapter in 2001. He is interested in most of the ACI technical and social activities such as the regularly organized Diwanneya, seminars, and social gatherings. The ACI provided him with the chance to be close to concrete field. He is a member in other professional societies such as the Kuwait Society of Engineers, American Society of Civil Engineers.

Dr. Kamal is a family person, married with has three children, Ali (10 years) in the fifth grade, Ahmad (5 years) in KG2 and Husain (2 years), so far no girls.

He spent his last vacation in the summer of 2004 in Thailand, Phuket and Bangkok. As a first visit to the Far East, it was a great chance for him and his family to be exposed to another culture and to know the history of a faithful nation, although the humid weather was unbearable.

Dr. Kamal's hobbies include sports, traveling and reading. He stated that he was an active athlete before adding 20 Kg to his weight in the last 10 years. He is a professional Table Tennis player, and enjoys practicing soccer and swimming.



Education:

- Ph.D. Civil Engineering, University of Maryland at College Park, Maryland, USA 2001.
- M.Sc. Civil Engineering, Kuwait University, Kuwait 1996.
- B.Sc. Civil Engineering, Kuwait University, Kuwait 1990

Family:

Dr. Kamal is married and has three children, Ali (10 years) in the fifth grade, Ahmad (5 years) in KG2 and Husain (2 years).

Work Experience:

- Associate Research Scientist, 2001 – Present: Building and Energy Technologies Department, Kuwait Institute for Scientific Research, Kuwait.
- Research Associate/Assistant, 1993 – 2001: Civil and Building Department, Kuwait Institute for Scientific Research, Kuwait.
- Manager of Supervision Department / Civil Engineer, 1990 – 1993: Maintenance Engineering Division, Ministry of Public Works, Kuwait.
- Part-Time Lecturer, Spring 2001/02 – Fall 2003/04: Department of Architecture, College of Engineering and Petroleum, Kuwait University, Kuwait.

Professional Membership

- Kuwait Society of Engineers, 1990 – Present.
- American Society of Civil Engineers, 1997 – Present.
- American Concrete Institute, 1998 – Present.
- American Society of Mechanical Engineers, 2001 – 2002.
- Institute of Electrical and Electronics Engineers 2001 – 2002.



Market and Entertainment Buildings, Al-Koot - Fahaheel Waterfront

Creative use of Concrete in a Design Combining Culture and
Functionality

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

The recipient of the Award this year is the Market and Entertainment Buildings, Al-Koot - Fahaheel Waterfront.

The project is located on the Arabian Gulf in the city of Fahaheel, extending over 200,000 m² area with an approximately 1,600m long costal front.

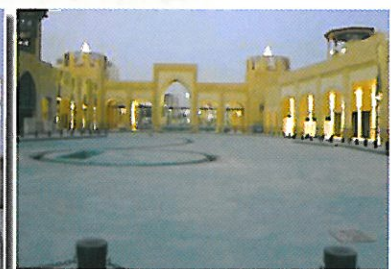
It consists of two distinct areas, the North Pier and the South Pier separated by top of the ARC Lagoon. The North Pier has retail shops, a variety of restaurants and food court as well as four Cinemas along with the distinctive Light House Tower.

The South Pier (Market Building) has a large super market in addition to the traditional fish, meat, chicken, vegetable markets and grocery shops. Along with functionality, the main design philosophy was to assure communication and continuity between land and sea. Piers were selected in order to provide minimum blockage to the Gulf front and allocate most of it for free public use.

All elements of the project were designed in such a way to reflect the Kuwaiti, Arabic and Islamic cultures. The project was also designed to represent, respect and interact with the Kuwaiti cultural inheritance and connect it with the present everyday human activities.

The Award was presented to Tamdeen Real Estate Company as the owner of this project.

Certificates were also presented to project consultant; Gulf Consult and the project main contractor; Ahmadiyah Contracting and Trading Company.



American Concrete Institute-Kuwait Chapter Award of Achievement 2004

Dr. Abdul Aziz Sultan

Pioneering, Leadership and Over 40 Years of Contribution

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

The Award's recipient this year is Dr. Abdul Aziz Sultan, in recognition of his valuable contributions to the engineering community and Kuwait's society.

Dr. Abdul Aziz earned his B.Sc, M.Sc and Ph.D. in civil engineering from the University of Michigan, USA in 1963, 1967 and 1970, respectively. He then assumed several leadership positions in both the public and private sectors, including MPW, Kuwait National Petroleum Company National Council for Education Evaluation, Higher Education Council for the Ministry of Education, The Gulf Bank, Gulf Forum, Development Forum and Kuwait Maritime Business School.

Dr. Abdul Aziz is currently the Chairman of the Board of the Plastic and Packaging Industries Company, Chairman of the Board and Managing Director of the Sultan Educational Foundation, Chairman of the Board of the Sultan Holding Company and President of KEO International Consultant. Under his leadership KEO, which he joined in 1971, now has more than 850 staff members and five regional offices.

Throughout his career, he earned the respect of his colleagues and employees because of his dedication and leadership qualities.

Dr. Abdul Aziz Sultan is a man of politics, a man of travel, a loving family man, a sports man and a leader who can face challenges and develop relationships.





KUWAIT CHAPTER THANKS OUR ORGANIZATIONAL MEMBERS

Their support and willingness to share knowledge is appreciated

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