Concrete News

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Concrete News

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From the President's Desk

Dear ACI-KC members:

Last September marked the 12th anniversary of the Kuwait Chapter of ACI, which was officially inaugurated by the President of ACI International, Mr. Richard White, in 1997. In spite of tough indicators for 2009, our chapter succeeded in sustaining very good quality active programs and activities. We continue to be optimistic that the coming year will witness further achievements.

I have served as an active ACI board member, a committee head, and Chapter President during our early years. This experience has helped me to grow both personally and professionally. Fully understanding the responsibilities of the position, I m honored to have been elected Chapter President a second time. Therefore, I wish to thank all of the past presidents of the ACI Kuwait Chapter for their outstanding service, which has succeeded in sustaining our small but well-known NGO activities within the local construction industry.

A number of field visits to major construction projects and factories were carried out during the last few months, as reported in this newsletter. Managing the initiation, and successful planning and implementation of such activities relies mainly on champions who are willing to lead and participate on chapter committees. We appreciate your membership in the Kuwait Chapter, as well s your participation in the technical programs and activities. We also encourage you to participate by offering ideas for technical subjects that would most help your company or organization. We will be happy to receive any suggestions or comments. Just email them to the chapter office and rest assured that all will be appreciated.

Finally, I hope to see everyone at our upcoming event. I wish you and your families a happy and prosperous new year.

Hayfaa Almudhaf
President, ACI Kuwait Chapter
December 2009

About ACI-Kuwait Chapter

The three main bodies of the Chapter are its
Directors, Committees, Members.

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:

The terms of office of the President and the Vice - President cover a maximum of one year. The Directors are elected every year to serve a three-year term.

Board of Directors 2008 - 2009

President:	**Ms. Hayfaa Al- Mudhaf**
Vice President:	**Dr. Moetaz El-Hawary**
Past President:	**Dr. Hasan Kamal**
Past President:	**Mr. Ahmad A. Al-Jihayem**
Director:	**Mr. A.W. Rumani**
Director:	**Dr. Khaldoun Rahal**
Director:	**Dr. Saud Al-Otaibi**
Director:	**Mr. Mansour Rao**
Director:	**Mr. Mohamad Harb**

Membership Committees

Chairperson	Mohammed Harb Madbouly
Member	Dr. Saud Al-Otaibi
Member	Dr. Khaldoun Rahal
Member	Mr. Roumani
Member	Nezar Q. Nazzal

- Recruiting new member individuals and organizations.
- Issuing and renewing membership certificates.
- Publishing and updating chapter directory of membership.
- Facilitating communication among members and communicating to the Board of Directors and other established student chapter.

Technical Committees

Chairperson	Mr. Ali Al-Abdullah
Co-Chair	Dr. Moetaz El-Hawari
Member	Mr. A. W. Rumani
Member	Dr. Hasan Kamal
Member	Dr. Khaldoun Rahal
Member	Mr. Mohammed Harb
Member	Mr. Mr. Sushant A Chakravarty

- Identifying technical topics of interest to Chapter Members and recommendations to the Chapter for seminars,short courses and workshop on the topics.
- Reviewing and submitting to Chapter members of ACI International committee reports of relevance to Kuwait
- Reviewing proposed revision of ACI Standards and submitting reviewed comments to the Chapter's Board of Directors for submission to ACI International.
- Promoting local research and testing programs to resolve technical issues of importance for durable concrete construction in Kuwait.

Publication Committees

Chairperson	Dr. Saud Al-Otaibi
Member	Dr. Khaldoun Rahal
Member	Mr. Abdulwahab Roumani
Member	Mr. Ashraf Sedqee

- Publishing the periodic newsletter to inform of Chapter activities and provide general information of use to Chapter membership.
- Printing and distributing copies of technical reports to Chapter members, as well as to interested individuals and concerned bodies.
- Preparing meeting reports and Chapter news for submission for publication in the Concrete International Magazine.

Social Committees

Chairperson	Eng. Dana Drobiova
Member	Eng. Mohamed Adel El-Amir

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

Nominating Committees

Chairperson	Dr. Hasan Kamal
Member	Mr. Anas Al-Kassam
Member	Mr. Ubaid Arain
Member	Mr. Tareq Shoaid
Member	Mr. Hosam Al-Tahooq

- The nominating committee selects individuals who have the interest and the willingness to serve, as well as those possessed of leadership qualities for selection to the Board of Directors and Chapter offices. The committee submits their names before the annual general selection by Chapter members.

ACI - Key to success

Membership

ACI Kuwait Chapter Wants You

You already know the benefits of the American Concrete Institute International membership,but have you considered the benefits of belonging to your local ACI chapter? The local Kuwait Chapter functions as a distribution center on latest information and ideas. You'll find professionals with ready answers to local concrete problems you encounter everyday.

Fill out coupon below and fax it to **2428148.** Complete details on ACI Chapter affiliation will follow immediately.

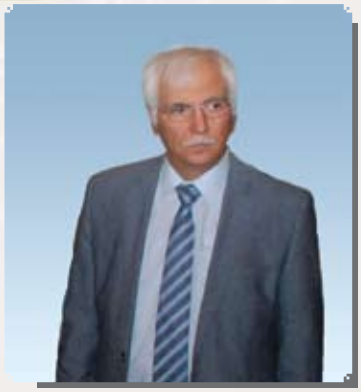
Send the fax to ACI Kuwait Chapter

Name: _____

Company: _____

Fax or Address: _____

In the spotlight



Mr. Ali Al-Abdullah

Personal particulars

Place & Date of Birth: Kuwait on July 5th , 1942
Marital Status: Married with Four Children

Education

- B.Sc. (Civil Engineering) 1970 London University – UK.
- Projects Evaluation & Management-Arab Institute for Planning.
- General Certificate of Education (GCE)-University entrance requirement.
- GCE in Classical Arabic and Classical Persian Languages Cambridge University Examining Board – UK.

Experience and Positions held

- Chairman Jeeran Holding Co. | September 2004 to date
- Free Lance Consultant | January 2003~ September 2004
- Executive Director-Salem Al-Marzouk & Sabah Abi Hanna (SSH) January 2000 ~ January 2003
- Partner / Director (SSH) |August 1992~January 2000.
- Special Advisor to the Minister of MPW on Mega Projects, namely: Development of Failaka Island, Subiyah Port Project and the second Boubiyan Bridge.

Professional Memberships/ boards of directors/committees

- Member of Kuwait Society of Engineers (KSE).
- Member of American Concrete Institute (ACI)
- Member of American Concrete Institute – Kuwait Chapter (ACI – KC).
- Member of Board of Directors – Kuwait Touristic Enterprises (TEC).
- Member of Environmental Protection Agency (EPA) | 1986 ~ 1993.
- Member of Supreme Committee for Traffic.
- Member of Supreme Housing Committee (chaired by H.H. the Crown Prince and Prime Minister), and member of its Special Sub-committee for Development of New Cities.
- Member of International Roads Federation (IRF) Washington USA
- Regional Director for the Middle East (IRF).
- Head of Specifications and Measures - MPW and member of the main committee for development of Kuwaiti Standard Specifications – Ministry of commerce and Industry

Hobbies

- Writing and reciting poetry in three languages (Arabic, Persian & English).
- Great interest in theology, culture, philosophy and intellectual other intellectual issues.
- Social gatherings, debates and intellectual discussions.

Kuwait Chapter

Local Connection with International Links

Annual Ceremonies

The 8th Annual Awards Ceremony

Excellency Dr. Fadhel Safar
Minister of Public Works and State Minister for Municipality Affairs.

The ACI-Kuwait Chapter has organized its Eight Annual Award Ceremony. The Chapter recognizes outstanding contribution by offering two yearly awards: The Award of Excellence and the Award of Achievement. The year 2008 ceremony took place in May 22, 2009 and was hosted in the J.W. Marriott Hotel in downtown Kuwait. It was held under the patronage and presence of his Excellency Dr. Fadhel Safar, Minister of Public Works and State Minister for Municipality Affairs. The event was attended by more than three hundreds persons with interest in the concrete construction.

AWARDS

The ceremony activities were presented by ACI Director and Past President Khaldoun Rahal, Professor of Civil Engineering at Kuwait University. The ceremony started by the address of the year 2008 President of the Chapter Dr. Hassan Kamal, who is a Research Scientist at the Kuwait Institute for Scientific Research. It was followed by the address of his Excellency Dr. Fadhel Safar, Minister of Public Works and State Minister for Municipality Affairs. Then, Dr. Rahal presented to the audience a brief introduction on the activities and achievements of the Chapter, followed by a summary of the projects and individuals who have been recognized since the initiation of the Awards in the year 2001. Then the year 2008 awards were

The Award of Excellence is presented to a local project to (1) recognize outstanding work in concrete construction and practices in the State of Kuwait, (2) draw attention to recent developments and state-of-the-art applications of concrete in both design and construction and (3) increase public awareness of the importance of quality in construction work. The year 2008 Award of Excellence was presented to the SALHIA Real Estate Company for the "Arraya Office Tower" project. The tower was the tallest completed building in Kuwait, earned the award for "pushing the limits to new record heights". Parties involved in the construction and design of this project were also recognized with Certificates of Excellence. For this project, the certificates were presented to the Architect and Engineer: the Pan Arab Consulting Engineers, the General Contractor: Ahmadiah Contracting and Trading Company, and the concrete supplier: Ahmadiah Contracting and Trading Company.

The Award of Achievement is presented to an individual to recognize outstanding contribution in the field of concrete in Kuwait. The year 2008 Award was presented to Dr. Mohamed Abdel-Rohman, Professor of Civil Engineering at Kuwait University. He earned the Award "for 30 years of devotion to teaching and research in structural engineering."

Annual Awards

award of Achievement

The Year 2008 - 2009 Award of Achievement
Professor Mohamed Abdel-Rohman

Professor Mohamed Abdel-Rohman

The year 2008 Award of Achievement was presented to Dr. Mohamed Abdel-Rohman, Professor of Civil Engineering at Kuwait University. He earned the Award "for 30 years of devotion to teaching and research in structural engineering." This is the first time the award is presented to an academian and researcher. Previous awards were presented to persons with achievements in the construction and engineering industry.

Professor Abdel-Rohman was born in Cairo in 1949. He graduated from the Khedewi Ismail High School in 1967, and received the Presidential Scholarship to pursue his engineering study at Cairo University. In 1972, he graduated from Cairo University with a Bachelor degree in Civil Engineering (Distinction with honor). He was appointed "Demonstrator" and served in this position till 1974. He was them awarded a teaching and research scholarship from Waterloo University in Canada to study for his M.Sc. degree, which was completed in 1976. Three years later, Dr. Abdel-Rohman was awarded with the Doctorate degree from the same university based on his thesis on active control of vibrations in Civil Engineering Structures.

After serving more than a year as a post-doctoral fellow at Waterloo University, Professor Abdel-Rohman jointed the Civil Engineering Department at Kuwait University in 1979 and has been there since that time. During his first year at Kuwait University, he taught the students who later became the first to graduate from the Civil Engineering Department.

During his career in academia and research, Professor Abdel-Rohman was the recipient of numerous awards including:

1. The 1984 "Abdul Hameed Shouman" Award for Junior Arab Scientists

CEREMONIES

2. The 1996 "Distinguished Researcher" Award from the College of Engineering and Petroleum at Kuwait University
3. The 2007 "Distinguished Researcher" Award from the College of Engineering and Petroleum at Kuwait University

During his career at Kuwait University, Professor Mohamed Abdel-Rohman is the author and co-author of eight books on Structural Analysis and on Control of Structures. He was the chairman of the organizing committee of the two Arab Structural Engineering Conferences which took place in Kuwait in 1997 and 2006. He also published more than 65 papers in refereed international journals and over 30 refereed papers in conferences in more than 20 countries. Professor Mohamed Abdel-Rohman also reviewed research papers and reports for various international journals and organizations including the ASCE journal and NATO.

Professor Abdel-Rohman has educated engineering students in Kuwait for 30 years, he has advanced the state of the art on a complicated subject (Control of Structures) and published research articles in top ranked engineering journals and authored and co-authored eight books. All this was achieved while being in Kuwait and with affiliation to Kuwait University. Hence, for "30 Years of Devotion to Teaching and Research in Structural Engineering," the year 2008 Award of Achievement was presented to Dr. Mohamed Abdel-Rohman, Professor of Civil Engineering at Kuwait University.

awards of EXCELLENCE

The Year 2008 Award of Excellence
The ARRAYA Office Tower
Salhia Real Estate Company

The year 2008 Award of Excellence was presented to the SALHIA Real Estate Company for the "Arraya Office Tower" project. This tower was the tallest building in Kuwait during construction, and remains the tallest completed building when this newsletter is issued near the end of the year 2009.

The tower is located in downtown Kuwait City and accommodates 55 rentable office floors. It completes the diverse group of buildings: Arraya Center, Arraya Convention Center and Arraya Car Park. The following provides details of the design and construction of this Kuwaiti landmark.

The Arraya Office tower stands 300 meters above ground level. The record height of the building was achieved in spite of the relatively small site are (1058 m^2). The tower includes a ground floor, two mezzanine floors, 52 office floors (rentable area of 550 m^2), three basement floors (service floors) and four mechanical floors. The different levels of the building are serviced via three groups of high-speed elevators, each group was dedicated to serve a different range of floor levels. The 20^{th} and 40^{th} floors act as evacuation floors in case of emergencies.

To enable achieving the record height on a small footprint area, extensive soil tests were carried out. Bore holes were taken to depths of 70 meters below ground level to extract samples. These samples were used to investigate the properties of the soil under the tower. To minimize the differential settlement, 52 twenty-meters deep piles were constructed under the part of the structure which is most stressed. The tower stood on a three-meter thick reinforced concrete raft. Self compacting concrete (4 MPa in strength) was used to attain the required speed of casting and adequate passage of concrete through the multi-layers of steel reinforcement in the raft.

The shear walls were designed to resist the lateral loads from wind. The level of load during peak wind action was obtained from wind tunnel tests. The walls and the columns were cast using a special concrete mix designed to achieve strength of 60 MPa.

The floor panels were relatively large, exceeding 13x18 meters in the typical floors. Waffle slabs would be the most efficient design for such large slabs. However, construction of such system would delay the construction cycle of each floor to about 11 days. The Engineer decided to cast a solid 28-cm slab on wide spandrel beams. This reduced the construction cycle to 5 days per floor, and saved about 300 days in the overall construction time of the building. The adequacy of the aggressive use of such a small thickness slab was demonstrated using tests to check for vibration. Some of the long span beams in the floors were pre-cambered 4 cm during construction.

An automatic climbing system was used in casting the vertical walls to allow a more swift construction. A special climbing protection system, and the construction sequence where walls were constructed three floors ahead of the slabs, allowed the construction of the slabs to take place in the safest possible environment.

A GPS system was used to continuously monitor the verticality of the building, the shortening of the columns and the building drift and settlement.

Symposium ...

Testing of RC beams and ribbed slabs with embedded pipes

The Technical Committee of the ACI –Kuwait Chapter, in association with Kuwait Institute for Scientific Research, organized a technical symposium entitled: ***Testing of RC beams and ribbed slabs with embedded pipes***
The symposium was held under the patronage of the Kuwait Institute for Scientific Research Director General ***Dr. Naji Al-Mutairi*** who is also a past president of ACI-Kuwait. The symposium was held on Tuesday, 9th June 2009 at Manhal Hall, Kuwait Institute for Scientific Research.

Participated in this symposium were **Dr. Amr Sadek** (Research scientist at Kuwait Institute for scientific research), **Dr. Moetaz El-Hawary** (Research scientist at Kuwait Institute for scientific research, Director and past president of ACI-Kuwait), **Dr. Hasan Kamal** (Research Associate at Kuwait Institute for scientific research and President of ACI-Kuwait) and Eng. **Tarek Abu Laban** (Initiator of the presented technique).
In this symposium the results of two research activities conducted at the Kuwait Institute for Scientific Research to investigate the validity and adequacy of utilizing reinforced concrete beams and ribbed slabs with embedded pipes as

a new improved and more economical construction system, were presented. The studies were conducted as per the request of Eng, Tarek Abu-Laban to examine a new system for design and construction of flexural reinforced concrete members consisting of embedding PVC or steel tubes in the concrete members with the objectives of reducing the own weight and quantities of concrete as well as enhancing strength and serviceability characteristics of concrete members. For this purpose extensive experimental program was conducted using full scale specimens to assess the strength, serviceability and durability characteristics of the new system as compared to the conventional system. Seven beam specimens of 6000 mm span were tested up to failure using four point test setup. A standard loading test as per ACI-318 was conducted on two ribbed slabs of 10000 mm span with and without

embedded steel tubes. For durability analysis, seven short specimens of 900 mm span were subjected to accelerated wetting and drying cycles and their properties were examined.

It was concluded that beams with embedded steel tubes showed very favorable behavior when tested up to failure as compared to conventional control beam. Ultimate moment capacity was considerably increased by as much as 113% of the control case. Substantial increase of the stiffness in the elastic range was observed as compared to the control case. This feature was clearly manifested in the reduced deflection values for specimens with steel tubes. Beams with embedded PVC pipes, while having the advantage of reduced own weight due to the embedded pipes, maintained essentially same response as compare to the control case in terms of carrying capacity as well as elastic stiffness.

Standard loading test was conducted as per ACI-318 requirements on two ribbed slabs of 10000 mm span with and without steel tube. The performance of the alternative system with steel tubes was found to be far superior to the conventional system on the two accounts of the standard loading test. Durability investigation showed that no significant difference in durability characteristics was observed between conventional reinforced concrete members and those with steel tubes or PVC pipes.

The event attracted wide newspaper coverage and was attended by a large number of ACI members and interested engineers that exceeded one hundred, many of them participated in the discussion session that followed the presentations.

Technical Activities

"Seminar"

"Porous Concrete: Uses, Properties, Benefits and Constituents"

Prof. Moetaz El-Hawary

A technical seminar entitled *"Porous Concrete: Uses, Properties, Benefits and Constituents"* was held on Wednesday, 21st of October 2009. The seminar was presented by the current vice president and president of ACI-Kuwait Chapter, Prof. **Moetaz El-Hawary**, research scientist at the Kuwait Institute for Scientific Research. The event was held in the Kuwait Society of Engineers and was attended by a large number of engineers.

Dr. Moetaz mentioned that Porous concrete consists of a specially formulated mixture of Portland cement, uniform open graded aggregate and water, with void space ranges between 15% to 22% compared to 3% to 5% for conventional concrete. As the developing land for residential, commercial and industrial use carries the detrimental effect of vastly increasing the amount of impervious area as land is paved to create roads and parking lots, the importance of using porous concrete pavements is increasing. He focused on the many benefits of pervious concrete that include, but not limited to, reducing the amount of impervious cover, reducing peak velocity and volume of storm water, recharging ground water supply and filtering contaminates from runoff water. Pervious concrete pavements also requires less curbing and less storm water sewers beside reducing the urban heat island phenomenon,

which has a considerable impact on sustainability and energy conservation. In this seminar Dr. Moetaz discussed the different uses of pervious concrete along with the resulting benefits and advantages. Required constituent materials, mix design precautions, mechanical and physical specifications, construction techniques, inspection and testing procedures, were also discussed. The presentation was followed by a question and answer session.

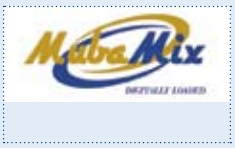
KUWAIT CHAPTER

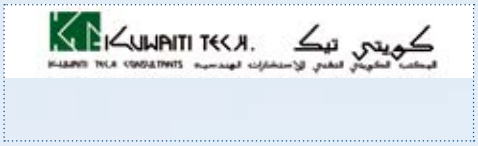
Benefactors .....Sponsors.....Friends.....

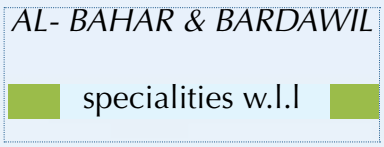
Your support and your willingness to share knowledge are highly appreciated

Benefactors.....Sponsors.....Friends.....







ACI KUWAIT CHAPTER

Local Connection with International Links

Site visit

The deepest sewage pump station in Kuwait at egaila

The Social Committee of the ACI-KC organized a field visit to the deepest pump station in Kuwait called egaila pump station.

True enough, the learning generated from the visit can be counted as another memorable experience for the ACI-KC members.

The group conducted the site visit on the 14th Nov 2009.

Egaila pump station is located within a 100 x 150 m plot in Egaila area The pump station is designed by the joint venture of Parson Engineering Science with GULF CONSULT and owned by MPW-Kuwait, It consists of Administration Building, Substation, Valve Chamber and 45m deep, fully equipped Heavy Pump Station structure. Construction of this under ground structure has taken more than five years with enormous effort and engineering tactics. It has had to cope with a wide range of excavation problems such as high level ground water table, large number of cavities and variations in Soil types. Shoring has been installed comprising of Piles and using almost 1000 lateral anchors in the complete perimeter of the excavation. Heavy dewatering was another critical activity. To cope with the Uplifting Pressures and considering the depth of the Pump Station the base and wall thickness at the base was provided as 3m.The total quantity of K500 concrete used in the Project is around 65000m^3. Water proofing works consisting of two layers each 5mm thick bituminous membrane. Heavy duty electro-mechanical equipments were selected for suitability and long life.

Gravity sewer lines of dia 1200 and 2250mm with deep manholes were laid using the Micro tunneling to connects the pump station. All structures above the ground level are fully cladded with expensive selected material to provide a better view and to suit the Kuwait climate.

Due to this project of Kuwait catchments areas such as Fahaheel, Mangaf , Abuhalifa ,Mahboula, Fintas and Riqqa will be benefitted to drain their sewage water.

In conclusion, the pump station will operate with 4 lifting+4 transfer heavy duty pumps to discharge 4200L/sec of sewage water to the Riqqa WWTP by 3 No's of 1400mm dia pressure lines. Moreover the operation is fully automatic with Distributed Control System monitored through computers by the Engineers.

Particular attention has been paid to avoid environmental impact by adopting sympathetic architectural design, sound attenuation and state of the art odor treatment plant.

Kuwait Chapter

MEMBERSHIP APPLICATION

PHOTO

First Name | Middle Name | Surname

الأسم الأول | الاسم الثاني | اللقب

Employer/Organization | Corporate Title

Address

Telephone No. | Mobile/Pager No. | Fax No. | Email

Categories of Membership

Please check the category of membership you are applying for and provide the appropriate dues as described below:

- ❑ Organizational: KD 100/year … (A firm, corporation, agency of government, society, etc.)
- ❑ Individual: KD 15/year … (A person who is a member of ACI International)
- ❑ Affiliate: KD 15/year … (A person who is not a member of ACI International)
- ❑ Student: KD 5/year … (Full time student at an Educational Institution)

Member Profile Information (Please check only one box in each section)

- ❑ Officer, Top Management
- ❑ Administrative, Operating Management
- ❑ Plant, Production & construction
- ❑ Design Engineering Management
- ❑ Architectural & Engineering Services
- ❑ Chemicals and Allied Products
- ❑ Construction Machinery & Equipment
- ❑ Concrete Block & Brick
- ❑ Ready-Mixed Concrete
- ❑ Educational Institutions
- ❑ Engineering Services
- ❑ Contracting Services
- ❑ Architectural Services
- ❑ Management
- ❑ Design Engineer
- ❑ Materials Engineer
- ❑ Plant Engineer
- ❑ Research engineer
- ❑ Sale & Marketing
- ❑ Technical Specialist
- ❑ Testing Laboratory
- ❑ Quality Control
- ❑ Research Services
- ❑ Concrete Products
- ❑ Educator
- ❑ Student
- ❑ Utility
- ❑ Architect
- ❑ Government
- ❑ Other (Please specify)

Are you interested to join any ACI Chapter Committee? ( ) YES ( ) NO

Payment Method

Membership fees may be paid as follows:

❑ Cash — Receipt No.

❑ Cheque (Payable to ACI-Kuwait Chapter) — Cheque No.

❑ Money Transfer (Payable to ACI-Kuwait Chapter, Account No. 06655310 with The Gulf Bank) — Transaction No.

For ACI Kuwait Chapter use only.

Member No. | Date

Detailed Information Please Contact:
ACI Kuwait Chapter-P.O. Box: 12608,Shamiah 71657
Tel.: 22449071, 22448975 Ext.: 312, Fax: 22428148, Email: info@aci-kw.org
www.aci-kw.org

Kuwait Chapter

MEMBERSHIP APPLICATION

PHOTO

First Name | Middle Name | Surname

الأسم الأول | الاسم الثاني | اللقب

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- ❑ Other (Please specify)

Are you interested to join any ACI Chapter Committee? ( ) **YES** ( ) **NO**

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