

# Concrete News

- **Annual Awards 2013-2014**
- **Award of Excellence**
- **Award of Achievement**
- **Precast Segmental Bridges**

Volume 18  
June - December 2014



**Kuwait Chapter**

*Local Connection with International Links*

## ■ **Concrete News**

**Concrete News is published by ACI-Kuwait Chapter for sharing information, promoting exchange of technical knowledge amongst its membership, and enhancing the Chapter's position within Kuwait's engineering fraternity.**

## ■ ACI Kuwait Chapter

The purpose of the Chapter is to help in furthering the chartered objectives of the American Concrete Institute. The American Concrete Institute (ACI), is a nonprofit international organization that promotes improved technology, technical competence, design, and construction aspects related of concrete for the benefit of society.

ACI-Kuwait Chapter was established essentially to promote education, standards of technical practice, scientific investigation and research in concrete technology. The Chapter also aims to channel efforts of its members towards a non-profit public service in collecting, correlating and disseminating information for the improvement of design, construction, manufacturing, utilisation and maintenance of concrete products and structures.

### ■ Functions

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 serve as Chapter Officers. Chapter membership is open to individuals and organizations with an interest in any aspect of concrete technology. The Chapter is operated through its Committees, which are comprised up of volunteers from the membership. Programs are developed by the Committees to help achieve Chapter objectives and to meet the needs of its members. The Chapter may hold several meetings each year and engage in activities that may include:

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

### ■ Benefits

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

### ■ Committees

The Chapter's affairs and activities are executed through its Committees, which include:

- Technical Committee
- Membership Committee
- Publication Committee
- Social Committee
- Nomination Committee
- ACI-KC Students' Committee

### ■ Joining ACI Kuwait Chapter

To become a member of ACI Kuwait Chapter, complete the membership application form printed on the last page of this publication. Different categories of membership are available. You will receive a copy of the Chapter Bylaws upon becoming a member. The functioning of ACI Kuwait Chapter is based on mutual interest and voluntarily effort. Its success depends upon the active participation of its members.

#### Contact:

##### **ACI Kuwait Chapter**

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## ■ President's Message



ACI-KC President, Eng. Mousa Al-Sarraf

One more eventful year has ended, and I believe we can confidently say that all in all, ACI-Kuwait Chapter has delivered on its mandate. We have continued to conduct a variety of technical and social activities; and it is particularly pleasing to note the growth and enthusiastic involvement of our Students' Committee.

I am, however, disappointed that our membership numbers are not increasing as much as they should. The Chapter has a lot to offer, and I feel that the new Board of Directors should make every effort to more vigorously publicise the benefits that can be accrued both, locally through our activities, and from ACI International through its monthly publications and informative Webinars.

This year's Annual Awards function, again held under the patronage of His Excellency the Minister of Public Works and Minister of Electricity and Water, Eng. Abdul Aziz Al Ibrahim, was a particularly successful event. An excellent project and an exceptional personality were deserving winners, and this issue of Concrete News includes coverage of the ceremonies and awardees. We should all work towards making our Newsletter more interesting and informative, and I would strongly encourage members to contribute technical articles.

Join me in looking forward to 2015 with renewed hope and expectation. I also wish to take this opportunity to wish you all good health and success in your careers.

## ■ Chapter Organisation

### ■ Board of Directors

The Board of Directors is comprised of Members elected by the Chapter's general membership, after being nominated by the Nomination Committee. The Board of Director comprises eleven members. The President and the Vice-President serve in their positions for a maximum of one year. Directors are elected every year to serve three-year terms. The Board of Directors for the year 2014-2015, as formalized during the Chapter's Annual General Assembly held on 4<sup>th</sup> June, 2014, comprises:

|                     |   |                       |
|---------------------|---|-----------------------|
| President           | : | Dr. Mousa Al-Sarraf   |
| Vice President      | : | Dr. Moetaz El-Hawary  |
| Past President 1    | : | Dr. Saud Al-Otaibi    |
| Past President 2    | : | Mr. Bader Al-Salman   |
| Past President 3    | : | Mr. Ali Abdullah      |
| Director/Secretary  | : | Mr. Mansoor Rao       |
| Director /Treasurer | : | Mr. Abdul Wahab Ruman |
| Director            | : | Dr. Hasan Kamal       |
| Director            | : | Dr.Khaldoun Rahal     |
| Director            | : | Mr. Aziz Mamuji       |
| Director            | : | Mr. Mohammad Harb     |

- Identifying technical topics of interest to Chapter Members and arranging seminars, short courses and workshops on various topics.
- Reviewing and submitting to Chapter Members, ACI International committee reports on subjects of relevance to Kuwait.
- Reviewing proposed revisions of ACI Standards and submitting comments to Chapter's Board of Directors for submission to ACI International.
- Serving objectives of the Chapter by organizing training courses and technical workshops.
- Promoting local research and testing programs to resolve technical issues of importance for durable concrete construction in Kuwait

### ■ Technical Committee

|             |                       |
|-------------|-----------------------|
| Chairperson | Dr. Moetaz El-Hawary  |
| Member      | Dr. Zafer Sakka       |
| Member      | Dr. Khaldoun Rahal    |
| Member      | Mr. Abdel Wahab Ruman |

## ■ Students' Committee

|             |                                                 |
|-------------|-------------------------------------------------|
| Chairperson | Dr. Moetaz El-Hawary                            |
| Members     | Student Members of ACI-KU<br>Board of Directors |

- Activities are generally in line with ACI-Kuwait Chapter objectives.
- Encouraging student participation in all activities of ACI-Kuwait Chapter
- Student participation guided and organized by an elected Board of Directors, and sub-committees appointed from within their membership.
- Activities include technical and social events and further information can be found on [www.ACIQ8.com](http://www.ACIQ8.com).

## ■ Membership Committee

|             |                        |
|-------------|------------------------|
| Chairperson | Mr. Mansoor Rao        |
| Member 1    | Mr. Abdel Wahab Rumani |
| Member 2    | Mr. Sami-ur-Rehman     |

- Recruiting new individual members and organizations.
- Issuing and renewing membership identity cards.
- Publishing and updating Chapter's membership directory.
- Facilitating interaction amongst members and communicating their concerns to the Board of Directors and other Committees.

## ■ Publication Committee

|             |                    |
|-------------|--------------------|
| Chairperson | Mr. Aziz Mamuji    |
| Member      | Dr. Jafarali Parol |

- Publishing periodic newsletters covering the Chapter's activities and providing general information of use to Chapter members.
- Printing and distributing copies of technical reports to Chapter members, as well as to interested individuals and concerned organisations.
- Preparing reports and Chapter news for publication in ACI's Concrete International magazine.

## ■ Social Committee

|             |                     |
|-------------|---------------------|
| Chairperson | Ms. Dana Drobiova   |
| Member 1    | Mr. Mansoor Rao     |
| Member 2    | Ms. Satya Hany Awad |
| Member 3    | Ms. Sana Javed      |

- Organizing major annual Chapter events and programs for members.
- Organizing field trips to major construction projects and industries.
- Arranging participation of the Chapter in selected national events.

## ■ Nomination Committee

|             |                          |
|-------------|--------------------------|
| Chairperson | Dr. Saud Al-Otaibi       |
| Member      | Mr. Khalid Ahmad         |
| Member      | Mr. Ashok Chadha         |
| Member      | Ms. Suad Khalid Al Bahar |
| Member      | Ms. Ibtisam AlKazemi     |
| Member      | Ms. Safa Abdul-Salam     |

- Nominating individuals who have the interest, leadership qualities and willingness to serve the Chapter, for selection to the Board of Directors.
- Submits names, prior to the Chapter's Annual General Assembly, for election by members.

## ■ Annual Awards 2013 -2014

ACI-Kuwait Chapter held its Annual Awards Banquet on 20<sup>th</sup> May, 2014. The event was organised under the patronage of His Excellency, Eng. Abdul Aziz Al-Ibrahim, Minister of Electricity and Water and State Minister for Municipal Affairs. The function was held in the Al Hashemi II Ballroom of Radisson Blu Hotel, and was attended by a large number of guests, ACI-KC members and prominent representatives of Kuwait's building and construction industries.

The Awards Ceremony is a highly anticipated annual event, during which ACI-KC recognizes outstanding projects and individuals. The two main honours bestowed by the Chapter this year were the Award of Excellence and Award of Achievement.

### ■ Award of Excellence

The Award of Excellence is presented annually to a local project of outstanding merit. The award itself is given to the Owners or developers of the project, and is accompanied by Certificates of Excellence which are presented to the general contractor; the local and international design consultant, if there is one; the supervision consultant; and the main concrete supplier.

This year ACI-KC honoured Jumeirah Messilah Beach Hotel and Spa, as a significant redevelopment of a war-damaged hotel in Kuwait using concrete as a primary construction material. The award was given to Al Azizia United General Trading and Contracting Company.



His Excellency Eng. Abdul Aziz Al-Ibrahim



Awards Recipients and Board of Directors

## ■ Award of Achievement

### *Innovative Use of Concrete*

The Award of Achievement is presented to an individual to recognize outstanding contribution to the engineering community and in the State of Kuwait. The award this year was given to Dr. Hasan Abdulaziz Al Sanad for outstanding work and contribution towards enhancing the civil engineering Profession, Education and Practices in the State of Kuwait.



ACI-KC Past President, Dr. Soud Al Otaibi



Mr. Aziz Mamuji addressing the Audience



Dr. Al Otaibi receiving Certificate of Appreciation



Awards Ceremony Audience

## ■ Award of Excellence 2013 - 2014

### *Innovative Use of Concrete*

**ACI-Kuwait Chapter presents the Award of Excellence to a project in recognition of outstanding concrete construction practices within Kuwait.**

ACI-Kuwait Chapter presents its Award of Excellence to a project in recognition of outstanding concrete construction and practices within Kuwait.

The Award of Excellence for 2013 was presented to Al-Azizia United General Trading and Contracting Company for Jumeirah Messilah Beach Hotel and Spa, which was honoured for being a significant redevelopment of a war-damaged Hotel in Kuwait, using concrete as a primary construction material.

Messilah Beach Hotel, as this hotel was formally known, was opened by His Highness, Sheikh Jaber Al Ahmed Al Jaber Al Sabah in 1974. It was at that time an impressive

facility, but during the Iraqi invasion the hotel was occupied by Iraqi troops. On 26<sup>th</sup> February, 1991, it was destroyed by P4 plastic explosives and other incendiary devices. All restaurants, kitchens and 111 rooms were completely destroyed, and 226 rooms were severely damaged.

The hotel, however, reopened to the public in the winter of 1991 with limited facilities.

But the owner, Mr. Mubarak Al Hasawi, wished to make it a leading business and resort hotel by creating a facility for the 21<sup>st</sup> century, yet one which would respect local traditions and culture.

He appointed Skidmore, Owings and Merrill (SOM) of New York, as the lead architectural designers, working in association with Gulf Consult of Kuwait, to realise his vision. Gulf Consult undertook all engineering, landscaping and site works design, and supervised the construction of this new 5-Star hotel and resort complex.



Jumeirah Messilah Beach Hotel & SPA

The result of the efforts of the many people involved in the project is the new Jumeirah Messilah Beach Hotel and Spa, the grandeur of which is reflected in the selected pictures reproduced here.

## ■ Structural Design Feature

The architects wished that all vehicles entering the hotel's large arrival courtyard, with its dramatic fountain as a centre-piece, should do so through a grand archway beneath one of the hotel's wings.

This called for a 40m wide clear span archway, supporting five occupied floor above it. To achieve this, the structural design team proposed the use of 30cms thick Vierendeel Walls.

## ■ The Award was presented to:

### ■ Owner

Al-Azizia United General Trading & Contracting Company

Certificates and plaques were presented to:

### ■ General Contractor

Kuwait Company for Process Plant Construction and Contracting (KCPC)

### ■ International Design Architect

Owings and Merrill (SOM), New York, USA

### ■ Design and Supervision Consultant

Dar Gulf Consult, Kuwait



Mr. Hakan Petek, General Manager of Jumeirah Messilah Beach Hotel collecting Award on behalf of Al Azizia United General Trading Company



Mr. Moayed Musaad Al Saleh, Chairman of KCPC, receiving the Award



Mr. George Efsthathiou receiving Award on behalf of SOM

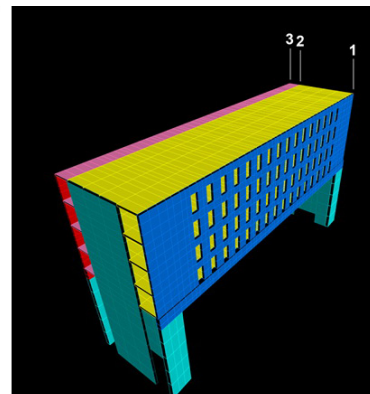
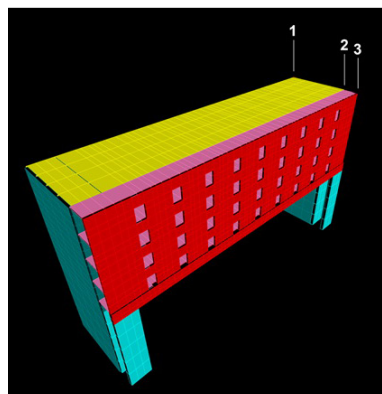


Ms. Najla Alghanim, Chairman of Gulf Consult, receiving the Award

## ■ Building Information :

Jumeirah Messilah Beach Hotel and Spa is located on a site of 37,360 m<sup>2</sup>, in the northern part of Kuwait's Messilah neighbourhood, at the junction of 6<sup>th</sup> Ring Road, Fahaheel Expressway and Al-Bida'a Road. The development is essentially a 5-star deluxe hotel and resort, and its facilities include:

- 300 rooms
- 78 fully-serviced apartments
- 13 self-contained chalets
- State-of-the-art spa and fitness centre
- 4 international restaurants
- Grand Ballroom (2000 persons capacity)
- Business Centre / 12 multi-function rooms
- Open-air swimming and an infinity pools
- Beach resort facilities and sheltered harbour
- 800 parking spaces (400 in basement)



Jumeirah Messilah Beach Hotel & SPA

## ■ Award of Achievement

*Contribution towards enhancing the Civil Engineering Profession*

**The 2013 Award of Achievement was presented to Dr. Hasan Abdulaziz Al Sanad, who for the past 30 years has directly influenced the civil engineering profession in Kuwait. He is a distinguished academican researcher, technical advisor, consultant, author and a re-nowned expert in his field of specialization.**

He has carried out many special duties for his country, and has actively participated in various local and international professional organisations. Dr. Sanad has also served as a member and leader of numerous high level committees, and has always been actively involved in important community initiatives and charitable activities.

The Award of Achievement was bestowed upon Dr. Hasan Al Sanad for his lifetime contribution towards enhancing the civil engineering profession, education and practices in the State of Kuwait.

Dr. Hasan Al Sanad was born on 19<sup>th</sup> October, 1953. His early schooling in Kuwait was made all the more memorable by his fame as a child-star, when between 1961-1963 he appeared thrice in a popular television programme of that time. In 1971 he was awarded a scholarship to the USA, and

went to the University of Ohio to study Civil Engineering. After graduating, he briefly worked with Kuwait Municipality before returning to the USA to join Ohio State University, where he completed his Masters in 1977. He then pursued doctoral research and in August 1982, he was awarded his doctorate by Ohio State University, specialising in Geotechnical Engineering.

## ■ Professional Career

In 1982, Dr. Hasan Al Sanad joined Kuwait University as Assistant Professor, and after some years as an Associate Professor, in 1996 he became a Professor a position he still holds. His career with Kuwait University is characterised by progressively increasing responsibilities and impressive promotions.



His Excellency presents the Award of Achievement to Dr. Hassan Al Sanad

- 1991-1993 : Vice Dean, College of Engineering and Petroleum
- 1994-1998 : Dean, College of Engineering and Petroleum
- 2002-2006 : Vice President of Planning
- 2011-Present : Vice President for Research

Between 1999-2002, Dr. Hasan Sanad, as President of Kuwait Society of Engineers, presided over a period during which the society became more inclusive in its association with other professional institutes.

During his lengthy professional career, Dr. Hasan has, as would be expected, initiated, promoted and participated in many academic activities and national committees. He also greatly influenced, expedited and guided the establishment and development of Kuwait University's new Sabah Al Salem University City at Shadadiya. And he is particularly proud of initiating and formalising the design agreement for the new College of Engineering and Petroleum (COEP) which is currently under construction in this new campus.

## ■ Career Achievements:

- 30 Research Grants and numerous Conference Papers
- Special Papers
- Improving Engineering Education
- Soil Mechanics
- Articles and Publications
- Member of many Specialist Committees and Professional Organisations
- Various Awards and Honours
- Expertise in Geotechnical Engineering and Soil Mechanics
- Expertise in Concrete Practice and Foundation Engineering
- Specialist Consultancy Services

## Family

Dr. Hasan Al Sanad is father to 3 girls and 3 boys. His son Abdullah is a Professor at Kuwait University's College of Life Sciences, teaching Environmental Engineering.



## ■ Technical Activities

**ACI - KC regularly conducts technical seminars to introduce members and interested professionals to modern trends in engineering practice.**

### ■ Big 5

Following last year's successful participation in Big 5 Kuwait, ACI-Kuwait Chapter also co-sponsored this year's event which was held from 22-24 September, 2014. Big 5 was once again a great success, and ACI-KC members were also invited to attend various activities which accompanied the exhibition. These included:

- Facility Management Congress, held on 22nd September, which included many presentations and seminars that lasted from 9.30am to 5.30pm.

- Six certified workshops were offered: Project Management, Managing Facility Management Contracts & SLAs, Introduction to LEED Version 4, Technologies in Construction and Facility Management; BIM and the Design Process, and New Innovations in Concrete Repair.
- Seminar on How to Trade in Kuwait. This 3-hour seminar was held on 23rd September.
- Roundtable Zone. Roundtable discussions on various subjects were held on every day of the BIG 5 event.
- ACI-KC looks forward to sponsoring the BIG 5 Kuwait next year.



## ■ Webinars

In the last issue of ACI-KC's Concrete News (Volume 17) the availability of Webinars, or Web Sessions, was announced. These generally free seminars are arranged by ACI International, and are recorded presentations from their conventions and other concrete industry events.

Webinars conducted since May 2014:

- Self Consolidating Concrete (SCC) in Repair Applications.
- ACI 332 : A Contractor-Friendly Code Understanding the purpose and applicability of this code.
- Certified Adhesive Anchor Installers Focusing on the need for an adhesive anchor installer certification program.
- Anchorage to Concrete (5 Sessions) Comprehensive review of behavior and designer recommendations for anchoring fixtures to concrete.
- Guide to Design and Construction of Externally Bonded Fabric-Reinforced Cementitious Matrix (FRCM) System.
- Background and Application of ACI 437.2-13 : Code Requirements for Load Testing of Existing Concrete Structures.
- Intentions and Contents of the New "Guide to Formed Concrete Surfaces".
- Review ACI 222.2R-14: A Report on Corrosion of Prestressing Steels
- Understanding the deterioration mechanisms of prestressing steels in concrete, protection techniques, field evaluation, and impact of corrosion on field performance of prestressed concrete structures.
- Load Testing of Existing Concrete Structures
- Highlighted monotonic and cyclic load testing protocols within the Code and provided knowledge required to implement either approach.
- Code Requirement for Nuclear Safety-Related Concrete Structures (ACI 349).
- Discussed the historical development of ACI 349 for concrete structures where protection against potential radioactive release is a concern and the major difference between ACI 369 and ACI 318 code requirements. (Conducted in 4 Sessions).
- LEED Green Associate (GA) Accreditation Teaming
- Led by experts in LEED Training.

## ■ ACI-KC Students' Committee

### ■ Board of members

Nour Al Mutairi  
Ghaith Al Ghaith  
Dalas Al Khaifat  
Mariam Al Kafeef  
Mesaed Al Rashidi  
Soliman Al-Howaidi

Contacts :  
Website : [www.aciq8.com](http://www.aciq8.com)  
Instagram : Aciq8

ACI-KC Students' Committee has opened an ACI-KC Office in the Civil Engineering Department of Kuwait University's College of Engineering and Petroleum. The Students' Committee has been busy over the past few months, organising and participating in many activities, which included:

- Participating in Kuwait University's 16th and 17th Admission Exhibition, representing the Civil Engineering Department of College of Engineering and Petroleum.
- Attended ACI-Kuwait Chapter's Annual Awards Banquet in May, 2014.
- Distributed costumed helmets to members.
- Distributed 1st Semester simple treats, with encouraging words, to students of Civil Engineering Department.
- At the outset of the 1st Semester, presented every Professor and Teaching Assistant in the Department, with a special gift from the ACI Committee.
- The ACI-KC Office in the Department has acquired a number of lab coats and simple programmable calculators, to be loaned to students.



- Conducted a one-week local membership registration drive. This was organized in the 9 KH corridor, and a large number of students showed interest.
- Participated effectively in the Breast Cancer Awareness Week.
- Arranged a competition in which students had to guess the 3-digit safe-box combination. The numbers represented Civil Engineering courses, and winners received a gift inside the box.



## ■ Technical Article

### Precast Segmental Bridges

*Philip L. Filipovski, Deputy General Manager  
(Index Trading and Contracting Company for Precast and GRC)*

**A large number of bridge constructions in Kuwait are currently in progress in order to improve traffic flow in the country. This article discusses the production of segmental bridges for the 6<sup>th</sup> and 7<sup>th</sup> Ring Road projects, where Index Precast Company was involved in producing the required precast segmental elements. The bridges are curved in plan and have slopes in both vertical and horizontal directions, with very specific geometric dimensions.**

Segments are produced using short-line match-cast joint method, which is one of the most versatile and reliable ways of building precast segmental bridges. In this method, segments are cast against adjoining segments in the correct relative orientation with respect to each other, starting from the first segment and working away from its pair. The segments are subsequently erected in the same order; and hence no adjustments are required between segments during assembly.

The success of short-line match-cast joint method relies heavily on accurate geometry control during match casting, as the scale of adjustment during erection is very small and



Molds being assembled in production line

it is difficult to accommodate any geometrical misalignments during assembly. The required levels of accuracy in positioning the segments match-cast against each other are stringent, so as to assure acceptable tolerances in the geometry of the structure. Stringent control of geometry and successive correction of errors are required to ensure that geometry of the bridge is maintained.

## ■ Precast Production

Precast construction of bridge members has several advantages over cast in place bridge construction. A major advantage is that the complete casting of the superstructure

can be removed from the critical path of the overall construction schedule, since the superstructure segments can be precast during construction of the substructure. Another major advantage is that an industrialized process allows high quality control of segments, and helps in saving money through reuse of formwork.

Match-casting is an important concept in the construction of precast segment construction. This system, which was developed by Jean Muller, allows the transverse slicing of concrete box girders and the assembly of such slices (the segment) in the same order as they were produced, without any need for additional in-situ concrete to complete the bridge deck. This is done by ensuring that segments are cast in the formwork between bulkhead at one end and an already cast segment at the other. Segments are cast at our precast factory at Mina Abdullah, one at a time. Segments are cast against the previous one, so that the end face of one segment will be an imprint of the adjacent segment, ensuring a perfect fit at the erection site.

One key element to accurately assemble the segments is effective and proper geometry control. This is important, as tolerances are in the order of a fraction of a millimeter, and any deviation in excess of this will result in misalignment of the bridge.



Lifting of first element at column

## ■ Short-line Method

Since the bridge is effectively built in the factory, in small units, these segments must meet all the geometric characteristics of the bridge at site. It is therefore necessary to set up proper quality and survey control to ensure that each part will match the geometry of the bridge in final position. We use a specially built mould for these bridges, which allows us the option to adjust horizontally and vertically, to the fraction of a millimeter, using hydraulic jacks.

The procedure that was followed is summarised below:

- Global coordinates are calculated for each segment axis, with four defined points in each segment, including allowances for the precast members.
- The longitudinal segment axis is defined as a straight line, between either ends of each segment.
- The local horizontal plane is defined by the segment axis and the top surface of the transverse bulkhead.
- The bulkhead is assumed to be orthogonal with the local horizontal plane.

- After inputting the geometry of the bridge, it is divided into segments and relevant co-ordinates X,Y,Z are calculated.
- Survey the cast element; compare the as-cast with the theoretical coordinates; rectify any eventual error; and calculate the geometry of the next segment in order to match the final geometry of the bridge.

The top surface of the segment represents a strip of the bridge surface, each identified with four points. These points facilitate the calculation of theoretical co-ordinates in the horizontal and vertical directions of the bridge surface, divided into individual areas. We use a double reading method, with two engineers reading the data, and if the reading is within two millimetres we use the average for placing the match-cast segment. Any larger difference will lead to re-doing the reading. A production line survey tower has also been built in the factory to have a stable platform and to avoid any errors in placing instruments.



Base mold on rail

Vertical positioning was done with four vertical jacks of the mould manipulator. These jacks have an in-built option for adjusting vertical positions to 0.3mm accuracy; and all measurements are then recorded in a special survey form. Horizontal positioning was done with two horizontal jacks in the mould manipulator. These jacks have the in-built option for adjusting horizontal positions up to 0.5mm accuracy. Final checking was done after closure of the mould before proceeding with concrete pouring. Neither concrete pouring, nor stripping of elements from the mould, can commence until the Production Engineer is satisfied that the moulds are adjusted properly, and the as-cast readings have been verified.

The goal of geometry control is to monitor the casting operation and establish "as-cast" curves, step-by-step, and to verify that the actual superstructure geometry is in close agreement with the theoretical casting curves. After each segment is cast, the position of this segment is established in the general layout of the structure. Comparing the location of the newly cast segment with locations in the casting curve will allow for determining the adjustments required before the next pour.



Element in place

## ■ ACI-KC News

### ■ ACI-KC Vice President's

ACI-KC Vice President, Mr. Moetaz El-Hawary's article on the Chapter's Awards Program, held in May 2014, was published in the October 2014 issue of CI, Concrete international, the magazine of American Concrete Institute. The Publication Committee is pleased to reproduce that article in this issue of ACI-KC Concrete News.

## Awards Program: The Kuwait Chapter – ACI Experience

By Moetaz El-Hawary

The Kuwait Chapter – ACI was established in 1997. The number of individual chapter members now exceeds 400 and organizational members total 50. So, relative to the population of the state of Kuwait, the Kuwait Chapter – ACI might be considered the largest international chapter in the world, per capita. Chapter activities include technical seminars, field visits, training courses, social events, technical guides, student activities, and many others. The chapter has held three international conferences so far.

The Awards Program was started in 2001. The need for this program initiated from the fact that Kuwait is a developing, rich country. The rate of development of infrastructure, commercial buildings, governmental buildings, and residential houses is considered high. The Awards Program aimed to encourage and commend quality and professionalism, along with aesthetic elements.

Two types of awards are presented:

### Award of Excellence

This award is given to the most distinguished construction project of the year, to recognize and celebrate a local project. The award is presented to the owner of the project, with certificates provided to the consultant, main contractor, and the concrete supplier. With this award, the chapter aims to highlight outstanding work in concrete construction and practices in the State of Kuwait, draw public attention to recent developments and state-of-the-art applications of concrete in both design and construction, and increase public awareness of the importance of quality in construction work.

The judging criteria for evaluating the projects include originality of design, implementation of quality improvement measures, application of advanced materials practices to better serve the project needs, uniqueness of application, and owner's satisfaction.

### Award of Achievement

This award is presented to an individual to recognize and honor an outstanding lifetime contribution in the field of concrete in the State of Kuwait. The nominated individual should have made a noticeable impact in at least one of the following areas: "Contributions to the Profession,"



The 2014 Awards Banquet of the Kuwait Chapter – ACI

"Significance and Impact of Service," "Advancement of Technology," or "Technology Transfer."

Nomination forms are sent to all engineering offices, governmental sectors, and individuals working in research or education in the construction field. Submitted nominations are examined by a committee formed by the Kuwait Chapter – ACI Board of Directors for final selection.

### Annual Awards Banquet

The Awards Banquet has become the main attraction of the Kuwait Chapter – ACI. The banquet is attended by a large number of members, engineers, nominees, governmental representatives, and other interested individuals. To assure success and press coverage, the banquet is held under the patronage of a governmental representative, typically a minister. Local newspapers and TV stations usually attend and cover the Awards Banquet.

The main challenge our chapter faces in arranging such a large banquet is financial. The cost of holding the event in a ballroom at a hotel with dinner and an awards program exceeds the chapter budget. This difficulty is overcome by asking for contributions from main contractors and consulting offices, and so far this has been successful.

This year's Awards Banquet was held at the Radisson Blu Hotel under the patronage of H.E. Eng. Abdulaziz Al-Ibrahim, Minister of Public Works and Minister of Electricity and Water. The Award of Excellence was given to the Al Jumrah hotel project and the Award of Achievement was given to Hasan Al-Sanad, Professor in civil engineering, Kuwait University, Safat, Kuwait.

We are looking forward to our 15th Annual Awards Banquet in May 2015.

Selected for reader interest by the editors.



ACI member **Moetaz El-Hawary** is an Associate Professor, Civil Engineering Department, with Kuwait University, Safat, Kuwait. He is a member of ACI Committees 130, Sustainability of Concrete; 201, Durability of Concrete; and 555, Concrete with Recycled Materials. He is the Vice President of the Kuwait Chapter – ACI.



## Build Your Success Online



### NEW eLearning Courses!

**Testing of Self-Consolidating Concrete (category of three courses)**  
Total continuing education credit is 0.4 CEU (4 PDH)  
Price: \$160 nonmember/\$128 member.

- **Introduction to Self-Consolidating Concrete (SCC)**  
Continuing education credit: 0.15 CEU (1.5 PDH); Price: \$75 nonmember/\$60 member
- **ASTM Test Methods for Self-Consolidating Concrete (SCC)**  
Continuing education credit: 0.15 CEU (1.5 PDH); Price: \$75 nonmember/\$60 member
- **Testing Self-Consolidating Concrete (SCC) Using Non-ASTM Test Methods**  
Continuing education credit: 0.1 CEU (1 PDH); Price: \$50 nonmember/\$40 member

**Fiber-Reinforced Concrete (category of three courses)**  
Total continuing education credit is 0.45 CEU (4.5 PDH)  
Price: \$144 nonmember/\$115.20 member

- **Fiber-Reinforced Concrete: Introduction and Production**  
Continuing education credit: 0.15 CEU (1.5 PDH); Price: \$60 nonmember/\$48 member
- **Fiber-Reinforced Concrete: Testing and Design**  
Continuing education credit: 0.2 CEU (2 PDH); Price: \$80 nonmember/\$64 member
- **Fiber-Reinforced Concrete: Applications**  
Continuing education credit: 0.1 CEU (1 PDH); Price: \$40 nonmember/\$32 member

To preview these courses and other eLearning courses available from ACI, visit [ACIeLearning.org](http://ACIeLearning.org).

## Apology

The Publication Committee inadvertently missed out on acknowledging the author of the article "Hollow Core Slabs", that was published in ACI-KC Concrete News, Volume 17 (January-May 2014). The article was written by Mr. Philip L. Filipovski, Deputy General Manager of Index Trading and Contracting Company for Precast and GRC. The error is regretted and an apology is being tendered to him.

## Press Coverage

The Annual Awards function held in May, 2014 was an unqualified success and received considerable coverage in local newspapers. Excerpts from various newspapers are reproduced here.

10 الخميس 23 رجب 1435 هـ - 22 مايو 2014 - السنة 43 - العدد 14719



الإبراهيم أثناء التكريم، ويدا المسلمان والعتيبي

### السند شخصية العام.. و«الجميرا» المشروع الأفضل

منح المعهد الأميركي للخرسانة بالكويت جائزة شخصية العام لرئيس جمعية المهندسين وعبد كلفة الهندسة والبتروكول السابق، وثالث مدير جامعة الكويت لقطاع البحوث والدراسات السابق، د. حسن السند، وذلك لعدائاته العلمية والفنية ودعمه مسيرة العمل المهني التطوعي على مدى أكثر من 44 عاماً. كما منح المعهد جائزة أفضل مشروع للتمجيد «الجميرا» لتمييزه في التصميم والتنفيذ الخرساني، حيث تسلمت رئيسة مكتب استشاري الخليج نجلا، فغانم جائزة أفضل مشروع، واستعرض المعهد الحضور مزايا ومواصفات المشروع الفائز من مختلف النواحي التصميمية والتنفيذية والمزايا المعمارية فيه.

المحلية



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Thursday 22nd May 2014 (46th Year) Issue No (16376)

07

الخميس 23 رجب 1435 هـ - الموافق 22 مايو (أيار) 2014م (السنة 46) العدد (16376)

## رعى احتفال المعهد الأميركي للخرسانة بتكريم المشروع المتميز وأكد أن العالم يستهلك 6 مليارات طن منها سنوياً الإبراهيم: حريصون على الاستفادة من التطبيقات المتطورة في البناء

كتب - محمد غانم:



(تصوير - محمود جدي)

لوزير عبدالعزيز الإبراهيم خلال تكريمه شخصية العام د.حسن السند

### شخصية العام... والمشروع الأفضل

منح المعهد الأميركي للخرسانة بالكويت جائزة شخصية العام لرئيس جمعية المهندسين وعبد كلفة الهندسة والبتروكول السابق، وثالث مدير جامعة الكويت لقطاع البحوث والدراسات السابق الدكتور حسن السند، وذلك لعدائاته العلمية والفنية، ودعمه مسيرة العمل المهني التطوعي على مدى أكثر من 44 عاماً. كما منح المعهد جائزة أفضل مشروع لجمعية الجعيرة لتمييزه في التصميم والتنفيذ الخرساني، حيث تسلمت رئيسة مكتب استشاري الخليج، الهندسة نجله فغانم جائزة أفضل مشروع. واستعرض المعهد الحضور مزايا ومواصفات المشروع الفائز من مختلف النواحي التصميمية والتنفيذية والمزايا المعمارية فيه.

### قصيدة... علمتني الخرسانة

التعلم والثبات  
والعمل الذي يابدينه  
نصنع للذكريات  
وهذه الأبراج تشهد  
جهد المهندسة وقام بترجمتها  
والكويت هي وطننا  
وملائها غنا

■ القى رئيس فرع المعهد الأميركي للخرسانة في الكويت الدكتور سعود فهد العتيبي ألبا عر فيها عن جبه المهندسة وقام بترجمتها للغة الانكليزية يقول فيها علمتني الخرسانة

### العتيبي: الكويت تعتمد أهم الكودات الخرسانية عالياً في تصميم المنشآت

أكد وزير الأشغال العامة ووزير الكهرباء والماء المهندس عبد العزيز الإبراهيم حرص الحكومة على الاستفادة من التطبيقات المتطورة للتقنيات المستخدمة في البناء والتشييد، وخصوصاً في مجالات الخرسانة المسلحة والتي بلغ حجمها المتداول ستة مليارات طن مئري سنوياً في العالم. جاء ذلك في كلمة للوزير الإبراهيم خلال الحفل السنوي الذي أقامه المعهد الأميركي للخرسانة برعايته للمرة الثالثة على التوالي في فندق راديسون بلو مساء أول من أمس، لافتاً إلى أن مهنة الهندسة من المهن المؤثرة على حياة الشعوب، خاصة هندسة وتكنولوجيا الخرسانة. وأضاف، إن كل ما نراه من إبداعات معمارية بأشكالها الخفيفة وأحجامها وارتفاعاتها الشاهقة التي تتناطح السحاب، إضافة إلى تنمية البنى التحتية في العالم تدل في صناعتها والخرسانة بمختلف مواصفاتها، لذلك أصبحت من المتطلبات الضرورية والمستوجبة لتلبية احتياجات النمو الاقتصادي وتنميين مستوى جودة الحياة في مختلف الدول الصناعية ومنها والنامية، وبين أن المعهد الأميركي يفتنى ضمن أنشطته إقامة هذا الحفل السنوي اختيار وتكريم مشروع متميز من ضمن مشاريع القطاع الخاص أو العام للدولة وتكريم شخصية متميزة لعدائاتها وإسهاماتها في التطوير والتنمية، وانتزح هذه المناسبة لتقديم الشكر والتقدير لإدارة المعهد وأعضائه، مؤكداً حرصه وحرص الحكومة الجاد على دعم مثل هذه الأنشطة.

ومن جانبه أكد رئيس المعهد الأميركي للخرسانة بالكويت الدكتور سعود العتيبي، أن الكويت تعتمد في منشآتها وأحد من أهم الكودات الخرسانية عالمياً هو كود التصميم الإنشائي للمنشآت الخرسانية aci318، لافتاً إلى أن هذا الكود واحد من أهم منتجات المعهد، الذي يعد مؤسسة غير حكومية كما أنها غير ربحية مقرها الرئيسي في الولايات المتحدة الأميركية.

وأوضح العتيبي، أن هذا الكود يعطي تفاصيل دقيقة لطريقة تصميم وتنفيذ الخرسانة المسلحة، لافتاً إلى أن مناشط المعهد

الأخرى تغطي كافة جوانب الصناعة الخرسانية. وأضاف أن المعهد يقوم بعملية تأهيل وتدريب الكوادر الوطنية العاملين في مجال الخرسانة، ووضع الاختبارات التي تقاس مستوى مهارة كل صاحب حرف "خرسانية" بدقة ويمنحه شهادة معتمدة، مشيراً إلى أن الجهات المعنية في الكويت ومنها جمعية المهندسين قد بدأت فعلاً في تأهيل وتصنيف المهندسين واعتمادهم من قبل بعض وزارات الدولة ونأمل أن تتوسع هذه الخطوة لتشمل الجهات الأخرى. وأكد العتيبي، أن رعاية الوزير الإبراهيم للحفل السنوي إعلان دوائر المعهد بالكويت، يمثل دعماً كموماً رسمياً وإهتماماً من الدولة برعاية وتشجيع الأنشطة المهنية والفنية التي تساهم في دعم جهود التنمية بالبلاد، مضيفاً أن منح جائزتين سنوياً الأولى لأفضل مشروع والثانية لأحدى الشخصيات هو تقدير عالي لصناعة الخرسانة في الكويت.

Press Coverage

مجلات 13

الانباء

الخميس 22 مايو 2014

## الإبراهيم: الحكومة حريصة على الاستفادة من التطبيقات الحديثة في البناء

خلال رعاية الحفل السنوي لإعلان وتوزيع جوائز المعهد الأمريكي للخرسانة



تكريم الجيبرا كاتفضل مشروع



تكريم المشارك بأفضل مشروع



م. عبدالعزیز الإبراهيم ود. سعود العتيبي يكرمان د. حسن السند

ويمنحه شهادة معتمدة، مشيراً إلى أن الجهات المهنية في الكويت ومنها جمعية المهندسين قد بدأت فعلاً في تأهيل وتصنيف المهندسين واعتمادهم من قبل بعض وزارات الدولة ونأمل أن تنويع هذه الخطوة لتكون

الخرسانية «aci318»، لافتاً إلى أن هذا الكود واحداً من أهم منتجات المعهد، حيث إنه مؤسسة غير حكومية وغير ربحية مقرها الرئيسي في الولايات المتحدة الأمريكية وله أفرع حول العالم بهدف الم. تشجيع التطوير

الجلاد تحسنت رعاية القيادة السياسية الحكيمة. الخرسانة في الكويت ومن جانبه، أكد رئيس المعهد الأمريكي للخرسانة بالكويت د.سعود العتيبي: أن الكويت تعتمد في منشآتها واحداً من أهم الكودات

مشاريع القطاع الخاص أو العام للدولة وتكريم شخصية متميزة لمساهماتها وإسهاماتها في التطوير والتنمية، وانتهز هذه المناسبة لتقديم الشكر والتقدير لإدارة المعهد وأعضائه، مؤكداً حرصه وحرص الحكومة الحار

وجهد في سبيل التطوير المهني، وتثقيف المهندسين والعاملين، والتواصل مع كافة الجهات التي تعمل في مجال صناعة الخرسانة. وبين الإبراهيم أن المعهد الأمريكي يتبنى ضمن أنشطته إقامة هذا الحفل

الاقتصادي وتحسين مستوى جودة الحياة في مختلف الدول الصناعية منها والتنمية. ومن هنا كان اهتمام العالم بالمؤسسات والمنظمات العاملة في صناعة الخرسانة، والمعهد الأمريكي للخرسانة من المنظمات الرائدة في هذا

أكد وزير الأشغال العامة ووزير الكهرباء والماء م.عبدالعزیز الإبراهيم حرص الحكومة على الاستفادة من التطبيقات المتطورة للتقنيات المستخدمة في البناء والتشييد، وخاصة محاللات الخرسانة

مجلات



الوطن

12

رعى الحفل السنوي لإعلان وتوزيع جوائز المعهد الأمريكي للخرسانة

## الإبراهيم: الحكومة حريصة على الاستفادة من التطبيقات الحديثة في البناء والتشييد



كتبت مرفت عبدالدايم:

أكد وزير الأشغال العامة ووزير الكهرباء والماء المهندس عبدالعزیز الإبراهيم حرص الحكومة على الاستفادة من التطبيقات المتطورة للتقنيات المستخدمة في البناء والتشييد، وخاصة في مجالات الخرسانة المسلحة والتي حجمها المتداول ستة بلايين طن متري سنوياً.

جاء ذلك في كلمة للوزير الإبراهيم خلال الحفل السنوي الذي أقامه المعهد الأمريكي للخرسانة برعايته للمرة الثالثة على التوالي في فندق راديسون بلو مساء أمس الأول، لافتاً إلى أن مهنة الهندسة من المهن المؤثرة في حياة الشعوب، خاصة هندسة وتكنولوجيا الخرسانة.

● الوزير الإبراهيم والمشاركون في حفل المعهد الأمريكي للخرسانة

(تصوير: أحمد أبو عطية)

التصميم الإنشائي للمنشآت الخرسانية aci318، لافتاً إلى أن هذا الكود يعد واحداً من أهم منتجات المعهد، حيث إنه مؤسسه غير حكومية كما أنها

والمنظمات العاملة في صناعة الخرسانة، والمعهد الأمريكي للخرسانة من المنظمات الرائدة في هذا المجال مقدماً الشكر للقائمين عليه لما يبذلونه من

الضرورية والمستجوبة لتلبية احتياجات النمو الاقتصادي وتحسين مستوى جودة الحياة في مختلف الدول الصناعية منها في التنمية.

الفنية المختلفة وأحجامها وارتفاعاتها الشاهقة التي تناطح السحاب، إضافة إلى تنمية البنى التحتية في العالم تدخلاً في صناعتها الخرسانية

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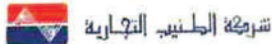


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## MEMBERSHIP APPLICATION FORM

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Middle Name

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الاسم الأول

Photo

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Position:.....

Address:.....

Telephone:..... Mobile:..... Email:.....

### Membership Categories

Please check the category of membership you are applying for and submit the Form with appropriate dues as noted below:

- ☐ Organization: KD 100/year ... (Firm, Corporation, Government Agency, Society or Institute, etc.)
- ☐ Individual: KD 15/year ... (Individual 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 approved Educational Institution)

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

- |                                                               |                                                 |                                                 |
|---------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Top Management                       | <input type="checkbox"/> Engineering Services   | <input type="checkbox"/> Testing Laboratory     |
| <input type="checkbox"/> Administrative, Operating Management | <input type="checkbox"/> Contracting Services   | <input type="checkbox"/> Quality Control        |
| <input type="checkbox"/> Plant, Production & construction     | <input type="checkbox"/> Architectural Services | <input type="checkbox"/> Research Services      |
| <input type="checkbox"/> Design/Engineering Management        | <input type="checkbox"/> Management             | <input type="checkbox"/> Concrete Products      |
| <input type="checkbox"/> Architectural & Engineering Services | <input type="checkbox"/> Design Engineer        | <input type="checkbox"/> Educator               |
| <input type="checkbox"/> Chemicals and Allied Products        | <input type="checkbox"/> Materials Engineer     | <input type="checkbox"/> Student                |
| <input type="checkbox"/> Construction Machinery & Equipment   | <input type="checkbox"/> Plant Engineer         | <input type="checkbox"/> Utility                |
| <input type="checkbox"/> Concrete Blocks & Bricks             | <input type="checkbox"/> Research Engineer      | <input type="checkbox"/> Architect              |
| <input type="checkbox"/> Ready-Mixed Concrete                 | <input type="checkbox"/> Sale & Marketing       | <input type="checkbox"/> Government             |
| <input type="checkbox"/> Educational Institutions             | <input type="checkbox"/> Technical Specialist   | <input type="checkbox"/> Other (Please specify) |

Are you interested to join any ACI Chapter Committee?

( ) Yes

( ) No

### Payment Method

Membership fees may be paid as follows:

- ☐ Cash..... ☐ Cheque (Payable to ACI-Kuwait Chapter)

Receipt No.

Cheque No.

- ☐ Money Transfer (Payable to ACI-Kuwait Chapter, Account No. 06655310 with Gulf Bank)

Transaction No.



Detailed Information Please Contact  
ACI Kuwait Chapter - P.O.Box 12608, Shamiah 71657  
E-mail: [Info@aci-kw.org](mailto:Info@aci-kw.org)



