



Concrete News

Kuwait Chapter

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June 2011 - December 2011



ACI-Kuwait chapter
Local Connection with
International Link





Kuwait Chapter



***Local Connection
with International Link***

Concrete News



Concrete News is published periodically by ACI-Kuwait Chapter for information sharing, prolific exchange of technical knowledge among members, and enhancement of the Chapter's position within the engineering community

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President



Kuwait Chapter ►►

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Ali A. Al-Abdullah

From the President's Desk

It is my noble pleasure and dear delight to have been honored with serving ACI – Kuwait Chapter as the President. It is immensely rewarding to work hand in hand with various members of the Chapter who relentlessly and selflessly perform numerous tasks voluntarily to serve the community of the “Concrete Industry” in Kuwait.

The vision and perseverance of the first founders, and those who followed in their footsteps, must be held in high esteem for recognizing the need for such an elite organization for benefiting the very industry which has contributed to Kuwait development.

The Chapter, over the years has fulfilled its goals in serving the public through: “gathering, correlating and disseminating information for the improvement of the design, construction and the use of concrete products and structures”.

The form, shape and structural complexity of modern buildings coupled with addressing of, direct and indirect environmental impact have imposed different dimensions on concrete characteristics and requirements of its quality. Advancements in concrete technology are attributed to two effective elements; speed of construction and the durability. Such issues, I am confident, have been addressed before and the Chapter shall continue to keep abreast of the technology to serve the industry and the community by and large.

In this regard, we look forward to the Chapter's 3rd International conference and exhibition which shall be held in March 2012 providing a great and unique opportunity for enhancing and exchanging our knowledge in the wonderful world of concrete.

About ACI



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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 Namination Committee. There are eleven 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 2010-2011

President	:	Mr. Ali Abdullah
Vice President	:	Mr. Bader Al-Salman
Past President 1	:	Dr. Moetaz El-Hawary
Past President 2	:	Mrs. Hayfaa AL-Mudhaf
Past President 3	:	Dr. Hasan Kamal
Director	:	Mr. Abdul Wahab Rumani
Director	:	Mr. Mansoor Rao
Director	:	Dr. Khaldoun Rahal
Director	:	Dr. Saud Al-Otaibi
Director	:	Mr. Mohammad Harb
Director	:	Mr. Mousa Al-Sarraf

Technical Committee

Chairperson	Dr. Moetaz El-Hawary
Member	Dr. Hasan Kamal
Member	Mr. Mohamad Harb
Member	Dr. Khaldoun Rahal
Member	Mr. Abdel Wahab Rumani
Member	Mr. Hany Fahim

* 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.

Membership Committee

Chairperson	Mr. Mohammed Harb Madbouly
Member 1	Mr. Rumani
Member 2	Mr. Fahad Ahmad Alaswad
Member 3	Mr. Yousef A. BenAwadh

* 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.



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Publication Committee

Chairperson	Dr. Saud Al-Otaibi	* Publishing the periodic newsletter to inform the 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 to submit for publication in the Concrete International Magazine.
Member	Mr. A. W. Rumani	
Member	Mr. Nezar Nazzal	
Member	Mr. Yousef A. Ben Awad	

Social Committee

Chairperson	Engn. Dana Drobiova	* Organizing annual recreational activities for Chapter members. * Organizing representation of the Chapter for the selected national events. * Organizing field trips to major construction projects/industries.
Member	Eng. Mansoor Rao	
Member	Eng. Nezar Nazzal	

Nominating Committee

Chairperson	Dr. Moetaz El-Hawari	* 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.
Member	Mr. Aziz Mamuji	
Member	Mrs. Ibtisam Al-Kazemi	
Member	Mr. Sami Ur. Rehman	
Member	Mr. Anas Al-Kassem	
Member	Mr. Waleed Barakat	



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 22428148. Complete details on ACI Chapter affiliation will follow immediately.

Send the Fax to ACI Kuwait Chapter

Name:

Company:

Fax or Address:

The opinions expressed in Concrete News are these of the authors and do not necessarily reflect the views of ACI - Kuwait Chapter.

Walid k. Barakat

Over 25 years of diversified experience in all aspects of Civil Engineering from Project Management, Construction, Feasibility Studies, Planning & Design for various Commercial, Health, Office, Industrial, Power, Governmental & Residential Projects.

EDUCATION: Master of Science in Civil Engineering (Magna Cum Laude) - 1987
Major: Construction Engineering & Management
Oklahoma State University.

Bachelor of Science in Civil Engineering - 1985
University of Texas at El Paso.

EXPERIENCE: Sr. Project Manager (December 1992 – Present)
Sayed Hamid Behbehani & Sons Company

Resident Engineer/Structural Designer (December 1991 – December 1992)
Al-Turath Consulting Engineering Bureau

Civil / Structural Engineer (April 1991 – November 1991)
Adel Behbehani Engineering Consultants Office

Design / Planning Engineer (December 1987 – March 1991)
Al-Turath Consulting Engineering Bureau

Graduate Teaching Assistant (January 1987 – December 1987)
Oklahoma State University, Stillwater, OK.

Construction Engineer (January 1986 – August 1986)
Al-Barari Kuwaities Construction Company

HONORS: Academic Scholarship – Civil Engineering Dept. at UTEP, 1985
Chi Epsilon National Civil Engineering Honor Society (USA) – Member – 1985

MEMBER OF: Kuwait Society of Engineers – Since 1986
ACI – International & Kuwait Chapter – Since 1997
PMI – Project Management Institute – Since 1997
Certified Structural Design Engineer – Kuwait Municipality – Since 1993
Consultant Engineer – Execution – Kuwait Society of Engineers – Since - 2009



Annual Awards Ceremony



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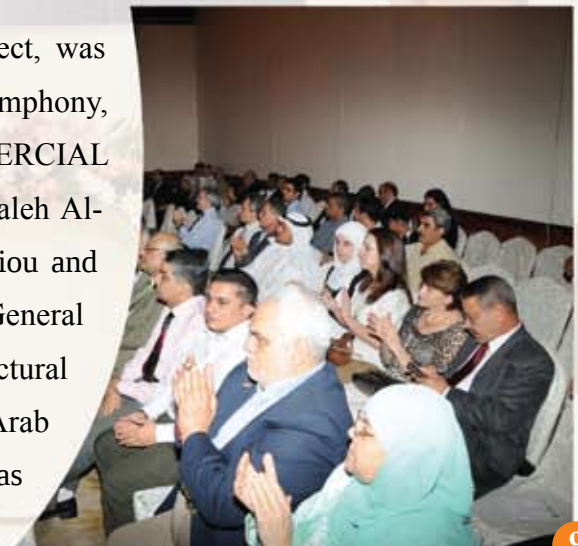
Annual Awards Ceremony

Keeping up with the American Concrete Institute, Kuwait Chapter, tradition, the Annual Award Banquet was held on 01 June 2011. The event was held under the patronage of His Excellency Dr. Fadhel Safar, Minister of Public Works, State Minister for Municipal Affairs at Movenpick Hotel – The Convention Center – Free Trade Zone. It was attended by a large number of colleagues from various disciplines of the constructions industry along with the ACI members. The award of achievement, presented by ACI-KC to an individual to recognize outstanding contribution to the Engineering Community in Kuwait, was given to Arch./ Ahmad Awad Al-Jihayem in recognition of his significant impact on how Kuwait City is portrayed throw Designing Landmark Buildings to Ornament the Horizon of Modern Kuwait City.





The Award of Excellence presented to a local outstanding project, was given to The Symphony Complex project for being A Superb Symphony, Using Concrete in Kuwait. The award was given to COMMERCIAL REAL ESTATE Co.; the Owner and Developer of the project, Saleh Al-Qallaf Engineering Consultants in association with Dino Georgiou and Partners; the Architect; Burhan International Contracting Co., the General Contractor, Saleh Al-Qallaf Engineering Consultants; the Structural Designer, Kuwait British ReadyMix Company (KBRC) and Arab Ready-mix Concrete Center; The Concrete Suppliers. The event was followed by a social and dinner party.



Award of



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THE YEAR 2010 AWARD OF ACHIEVEMENT ARCH./ AHMAD AWAD AL-JIHAYEM “DESIGNING LANDMARK BUILDINGS TO ORNAMENT THE HORIZON OF MODERN KUWAIT CITY”

This year 2010, the award is presented to architect Ahmad Awad Al-Jihayem who made a significant impact on how Kuwait City is portrayed. Through his vision as an architect and his knowledge of the people and the culture, he was able to translate the needs of his clients – in design and functionality – into monumental forms. These forms contribute to, and in instances dominate, the picturesque modern city of Kuwait.

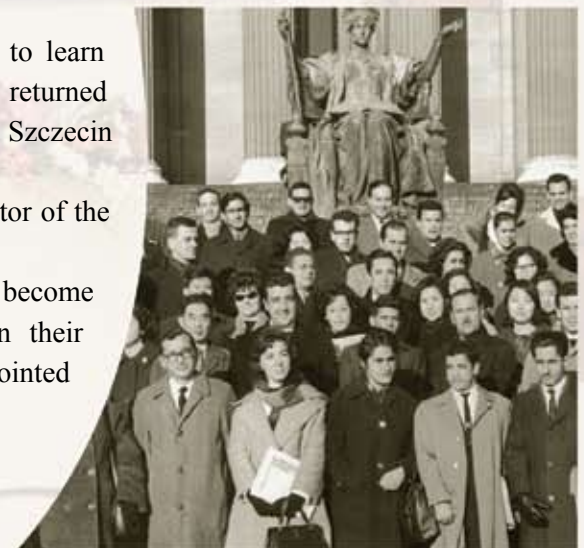
Ahmad Awad Al-Jihayem was born in 1942 in Shuaiba, Kuwait. Formal education was not established in Shuaiba, so he studied reading in the local mosque. In 1950, formal education reached Shuaiba. Students in the mosque, including 8 years old Ahmad joined Al-Shuaiba School for boys and for Being a model student, the school principal used to take Ahmad to visit parents to persuade them to commit their kids to go to school. Ahmad completed his middle school classes and moved on to the Shuweikh high-school, which was the only high-school in Kuwait at that time. He lived on Campus, until graduation in 1962 then went on to study Architecture in the United States of America and graduated at the end of 1968 from Montana State University.

On advice from Arch. Hamid Shuaib, Arch. Ahmad Al-Jihayem joined Kuwait Municipality – Planning Department, working with Eng. Fahd Al-Hasawi and Near the end of 1969, Arch. Ahmad was appointed Assistant Manager, the Building Department at the Kuwait Municipality, working on the planning phases of Kuwait.

In 1971, Arch. Ahmad was delegated by the Municipality to visit Poland to learn from their experience in re-building their country after the world war II. He returned from Poland with experience along with a diploma in Urban Planning from Szczecin University.

In October 1972, Arch. Ahmad was promoted to the rank of Managing Director of the Building Department at Kuwait Municipality.

In 1978, he established Al-Jazera Consultant, and that has grown to become one of the leading consulting offices, currently employs 200 people in their Kuwait office, and has also offices in Lebanon, In 1983, he was appointed to the Municipal Council



Achievement



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Member of

- Kuwait Society of Engineers (Board Secretary)
- National Real-estate Co. (Board of Directors)
- Real-estate Investment Group (Board of Directors)
- Municipality Committee
- Higher Council for housing (Board of Directors)
- Council housing Authority (Board of Directors)
- Engineering Bureaus Committee
- Compensation Committee
- Some of his unique and distinctive landmark achievements in Al-Jazera Office :Al-Hamra Tower
- Al-Tijaria Tower - Recipient of the 2009 ACI-KC Award of Exc.
- Al-Asima Tower - Recipient of the 2007 ACI-KC Award of Excellence
- KOTC Headquarters
- Legal Advice Headquarters
- Kuwait Chamber of Commerce - Recipient of the 2002 ACI-KC Award of Excellence
- KUFPEC Headquarters
- KISR Headquarters
- Arab Open University
- KGOC Headquarters
- KGOC Al-Khafji Offices



Awards of



Kuwait Chapter ►►

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Award of Excellence 2010-2011

ACI – Kuwait Chapter presents the awards of excellence to a project in recognition of outstanding work in concrete construction and practices within Kuwait.

The Award of Excellence this year 2010/2011 was presented to The Symphony Complex Project . An iconic landmark in the skyline of Kuwait City For Composing a Superb Symphony Using Concrete.

There are Two-Towers comprising a Hotel, Spa, Offices and a Shopping Mall

Site Area: 11,700m² - Total built area: 90,000 m²

Hotel Tower: Six Senses Spa (2nd floor) Hotel Missoni (3rd to 20th floor)

Commercial Tower: Offices (2nd to 11th floor)

Both Towers: Mall (basement 1 to 1st floor) Underground parking.



Foundations

Towers sit on a 1.5 m thick raft foundation

Raft is supported on piles. Most piles were in compression, but some were subjected to tension and were designed accordingly

Floor Systems Diverse combination to suit function

Waffle Slabs

Precast double T

Solid slabs on beams

Flat slabs

Steel beams

Towers

Designed to resist Wind forces and Earthquake

Shear walls designed and detailed to resist lateral effects from wind and EQ



Excellence



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The Award was presented to :

Owner : COMMERCIAL REAL ESTATE Company

The Award co. recipient are:

Architect & Engineer

- Dar Saleh Al-Qallaf Engineering Consultants
- Dino Georgiou and Partners

Structural Designer

- Dar Saleh Al-Qallaf Engineering Consultants

General Contractor

Burhan International Contracting Co.

Concrete Suppliers

- Kuwait British ReadyMix Company (KBRC).
- Arab Ready-mix Concrete Center



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



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Your support and your willingness to share knowledge are highly appreciated



PAN ARAB



Ministry of
Public Works



KISR



GULF INSPECTION INTL.



Ministry of Defence



Ahliya Chemical Industries



NATIONAL INDUSTRIES COMPANY
for Building Materials (K.S.C.)



شركة الصناعات الوطنية
للمواد البنية التحتية



AI AHLIYA
Contracting Group



Gulf Rocks Co.



شركة كويت بروكنر للمقاولات العامة د.م.
Kuwait Bruckner General Contracting w.l.l.



established 1961

MUSHRIF
TRADING & CONTRACTING CO.
(K.S.C.)



مشرف
للجارية والمقاولات
(ش.م.ح.)





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استشارات الجزيرة
AL-JAZERA CONSULTANTS

BASF
The Chemical Company

doka
The Formwork Experts



شركة الفخام للمواد الخاصة ذ.م.م.
ALGHANIM SPECIALITIES CO. W.L.L.



Kuwait Technical
Consulting Bureau

HIGH SLANT
PRECAST FACTORY



شركة مختبرات إنكو الصناعية (ش.م.ك.م)
رأس المال المدفوع ٦٠٠,٠٠٠ دك
INCO - LABS (KSCC)
Paid up Capital K.D. 600,000

Bubiyan
Ready - Mix

بوبيان
للخرسانة الجاهزة



كويتي تيك
المكتب الكويتي للتقني للاستشارات الهندسية
KUWAITI TEK CONSULTANTS

Al-Taneeb Trading Co.



شركة الطنيب التجارية



شركة اسمنت الكويت للخرسانة الجاهزة
KUWAIT CEMENT READY MIX COMPANY
رأس مال دينار كويتي مدفوع بالكامل



دار فيس للإستشارات الهندسية
معماريون، مهندسون، وممثلون
DAR FACE Consultant Engineers
Architects, Engineers & Planners

Muba Mix
DIGITALLY LOADED

BIG
مجموعة بوجمعيان العالمية للمقاولات

ACI
الأميرية للصناعات الخرسانية



GEC DAR
GULF ENGINEER'S CONSULTANTS

ACICO CONSTRUCTION
BUILDING ON SOLID FOUNDATIONS

شركة إعمار للاعارة الجاهزة
AL-Eemar Ready Mix Co.



Abdulaziz Alsaqabi
Consulting Engineers

LAFARGE
READYMIX
KUWAIT

Social Activities



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Site Visit to UNISTEEL



On Saturday October 22, 2011, the ACI social committee organized a field trip for its members to visit the rolling mill plant of United Steel Industrial Company (UNISTEEL) in Kuwait. This was the second visit to United Steel. The first time was last year when the ACI members visited the new steel manufacturing plant. Mr. Mohammad Dehbokri, the plant manager, and his assistant Hasan Shafeian were at the reception to welcome the ACI members. The members were taken for a tour around the facility to observe the production process. Members were impressed by the sophisticated process in the pioneering company of the industry.



Social Activities



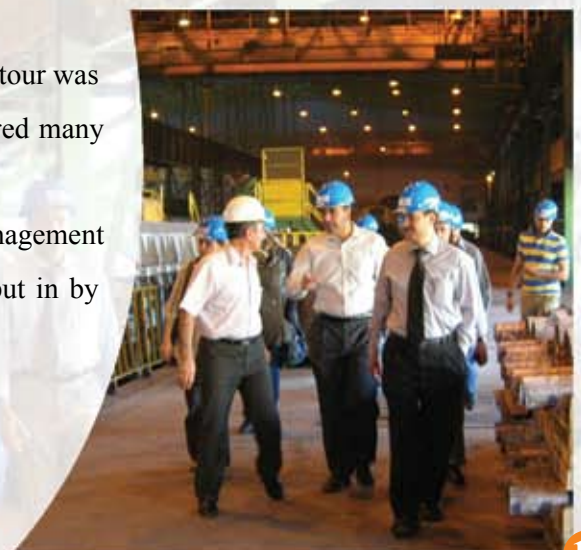
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The plant produces steel reinforcement re bars in a range of sizes .The tour was followed up with a Q&A session which was very informative and covered many aspects of the steel industry and plant operation.

Engineer Nezar Nazzal, a member of the social committee, Thanked the management for their kind hospitality and expressed his appreciation to the efforts put in by plant management to the success of this visit.



لا بد من استخدام الخرسانة الصديقة للبيئة التي تحافظ على التكييف وتقلل استخدام الطاقة



دكتور أحمد الجراح

من بين أهم الأبحاث والوقائع التي تبناها المعهد الكويتي للتربية المدنية أن الخرسانة صديقة البيئة لا بد من استخدامها في جميع مشاريع البناء والتشييد. هذا البحث العلمي الذي أجراه دكتور أحمد الجراح، أستاذ الهندسة المدنية في جامعة الكويت، يسلط الضوء على أهمية استخدام الخرسانة الصديقة للبيئة في المشاريع الإنشائية، خاصة في ظل التحديات البيئية والارتفاع المستمر في أسعار الطاقة.

يشرح الدكتور الجراح في مقاله أن الخرسانة التقليدية تحتوي على نسبة عالية من ثاني أكسيد الكربون الناتج عن عملية تصنيع الأسمنت. هذا يجعلها مسؤولة عن نسبة كبيرة من الانبعاثات الكربونية في قطاع البناء. من ناحية أخرى، الخرسانة الصديقة للبيئة، المعروفة أيضًا بالخرسانة الخضراء، تُصنع باستخدام مواد بديلة مثل الرماد المتطاير أو خبث الحديد، مما يقلل بشكل كبير من البصمة الكربونية.

بالإضافة إلى ذلك، تتميز الخرسانة الصديقة للبيئة بخصائص ميكانيكية أفضل، مما يقلل من الحاجة إلى التكييف في المباني. هذا بدوره يؤدي إلى توفير كبير في استهلاك الطاقة التشغيلية للمباني، مما يجعلها خيارًا اقتصاديًا وبيئيًا مثاليًا للمشاريع الحديثة.

في البداية، يهدف إلقاء الضوء على دور المعهد الكويتي للدراسات والبحوث في مجال الخرسانة الصديقة للبيئة. هذا البحث العلمي الذي أجراه دكتور أحمد الجراح، أستاذ الهندسة المدنية في جامعة الكويت، يسلط الضوء على أهمية استخدام الخرسانة الصديقة للبيئة في المشاريع الإنشائية، خاصة في ظل التحديات البيئية والارتفاع المستمر في أسعار الطاقة.

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«سيمفوني» يحصل على جائزة «التميز للمشاريع الإنشائية»



خليل العنبري يتسلم الدرع التقديرية من الوزير صفر

مستوى دولة الكويت بناء على الأصالة في التصميم، وجود التنفيذ وحسن إجراءات تحسين الجودة واستخدام المواد والأساليب المتطورة لخدمة المشروع.

علامة مميزة للأبراج الشاهقة في سماء الكويت، وجائزة التميز للمشاريع الإنشائية تمنح تقديرًا للأعمال المتميزة في مجال التصميم والإنشاء والتنفيذ للخرسانة على

الجائزة أن مشروع برج التجارية قد وجد موضعًا على خارطة المعالم الإنشائية والمعمارية في الكويت ليكون نقلة نوعية لعالم العقار والوجه المعماري للعاصمة

أعلنت الشركة التجارية العقارية عن حصول مشروع سيمفوني على جائزة التميز للمشاريع الإنشائية في دولة الكويت للعام 2010 وذلك في الحفل السنوي التكريمي للمشروع التميزي على مستوى دولة الكويت الذي أقامه المعهد الأمريكي للخرسانة. فرع الكويت تحت رعاية وزير الأشغال العامة ووزير الدولة لشؤون البلدية الدكتور فاضل صفر على صفر والذي القيم في مركز المؤتمرات والرويال سويت بلندق مولفك بالمنطقة التجارية الحرة بالشويخ الأزيعاء أ يونيو وقد تسلم الرئيس التنفيذي لمجموعة الشؤون الفنية المهندس خليل العنبري الدرع التقديرية ممثلة عن الشركة التجارية العقارية مطور ومالك المشروع. وحصلت الشركة التجارية العقارية السنة الماضية على جائزة التميز للمشاريع الإنشائية في دولة الكويت للعام 2009 عن مشروع برج التجارية، حيث رأى القادون على



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Thin Concrete Panels Deliver Durability and Beauty

Stainless steel prestressing strands allow ultra-thin architectural precast concrete elements

The Arcis Corporation manufactures thin concrete panels that are prestressed longitudinally and transversely using stainless steel wire rope tendons. Because the tendons are highly resistant to corrosion, Arcis panels can be fabricated with remarkably thin sections—as little as 5/8 in. (16 mm). The bonded tendons provide about 200 to 325 psi (1.4 to 2.2 MPa) effective prestress in the concrete, so the panels have high strength, resilience, and durability. These thin sections can also be cast in an infinite variety of colors and textures.

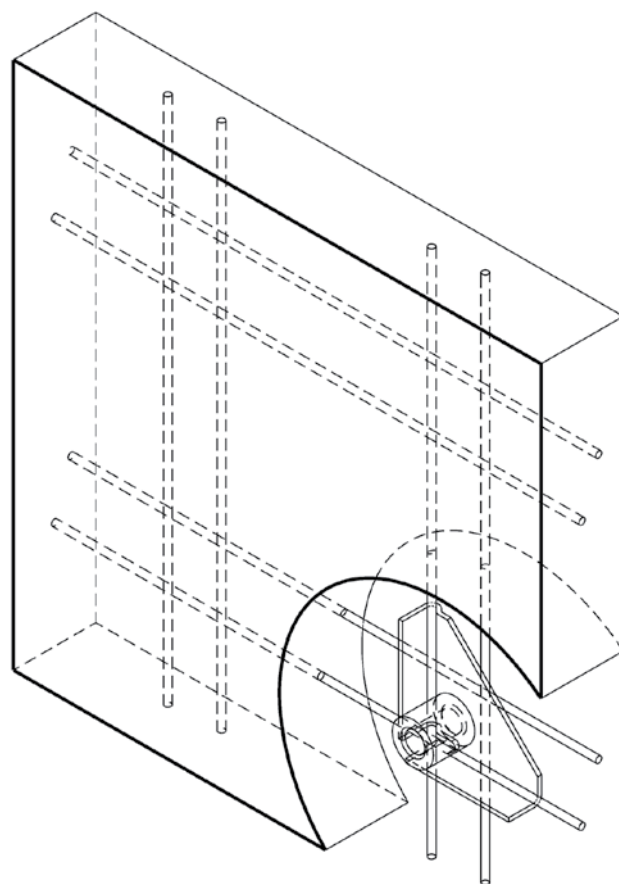
Utility and Versatility

Arcis panels have been used for building cladding, boat docks, plaza decks, stair treads, countertops, and more. As with conventional precast concrete products, custom finishes and colors can be provided through the use of form liners and colored concrete. Rigging options include wire rope loops that extend out of the panel edges for edge lifts or inserts within the panel for hoisting and setting panels in a horizontal plane.

Design and Construction

In the development of the patented system (US Patent No. 6711866 and Canadian Patent No. 2357834), 47 different tendon types were tested. The selected tendons are stainless steel strand. Not only are they corrosion-resistant, but they also have superior bond to the concrete. Development lengths can be less than 2 in. (50 mm), which allows for cutting and drilling of the panels with no adverse structural effect.

Development of the system included much in-house and third-party testing to confirm that standard prestressed concrete principles can be directly applied to thin panel design. Tendon placement was key in the system development. The tendons are actually off the midplane of the panel, so Arcis panels resist curling, warping, and cracking, allowing for much thinner sections for most applications.

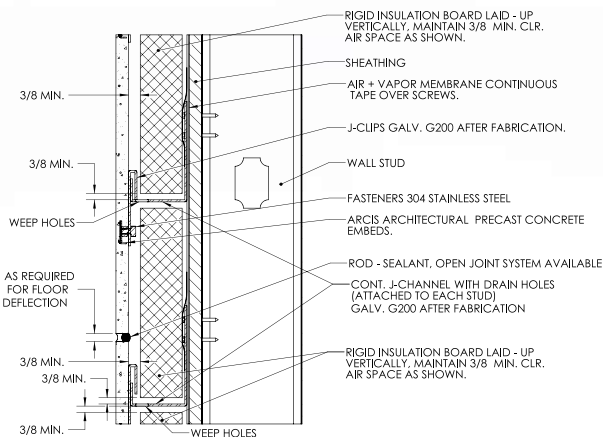


Cladding panel connections are made using embedded stainless steel anchors that are attached directly to the prestressing strand. The connection to the building structure is accomplished with screw fasteners—no welding is required



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Cladding panels allow for the construction of durable, light weight rain screen wall systems (dimensions in in.; 1 in. = 25 mm)



Workers install rain screen cladding on the Casey Condominium in Portland, OR. The cladding system comprises a continuous air/vapor barrier, extruded polystyrene insulation, and Arcis panels attached to horizontal J-channels



Large precast concrete panels can be polished to construct conference tables and counters

Panels are cast on large drop tables that allow for production of a uniform finish. To date, the largest panels supplied to a customer were 10 x 15 ft (3 x 4.5 m). Panels can be cut and cored using diamond tools. This allows for efficient production, as small panels can be cut from large sheets. Arcis panels can also be constructed with small edge returns.

The typical concrete mixture has a very low water-cement ratio (0.32) and has a 28-day strength of 7500 psi (51.7 MPa). Tendon sizes and spacings are varied according to project requirements.

Cladding Panels

Arcis panels are ideal for building cladding because the thin sections are lightweight. Each connection point within the panel is attached to the prestressing strand, creating a consistent capacity. The attachment to the building structural system is a simple clip system screwed to the light-gauge metal stud framing. No structural steel or welded connections are required.

Arcis panels were recently used as the cladding panels for the Casey, a high-rise condominium in Portland, OR. The cladding panels had to satisfy a number of requirements. The primary objective for the cladding system was to protect the interior building finishes from the moist, northwestern U.S. climate. Previous condominium projects in the region have suffered from leaks and condensation, resulting in mold (and litigation). Other objectives for the panels included a sandy, dappled appearance; an extremely long service life; and low weight.

To achieve the required aesthetic effects, the panels were fabricated with a blend of three colors (to create a dappled effect) and using a light acid-wash finish. The required service life is built into the panel system and its stainless steel prestressing strand. The limited weight was achieved by configuring the panels to have only a 1 in. (25 mm) thickness.

The thin panels allowed the architect to design a thin, yet effective, rain screen system with a full height air cavity outboard of extruded polymer insulation boards and an air/vapor barrier. Providing an air cavity behind the cladding panels allows for the equalization of exterior and air cavity pressures. Any wind-driven rain that penetrates the exterior joints can bleed to the exterior of the cladding. Placing the insulation boards outboard of the building envelope forces the dewpoint to be outside of the vapor barrier, so condensation is also free to bleed to the exterior of the cladding (not into the drywall).

The Casey is one of very few LEED Platinum buildings with an expected service life of 100 years.

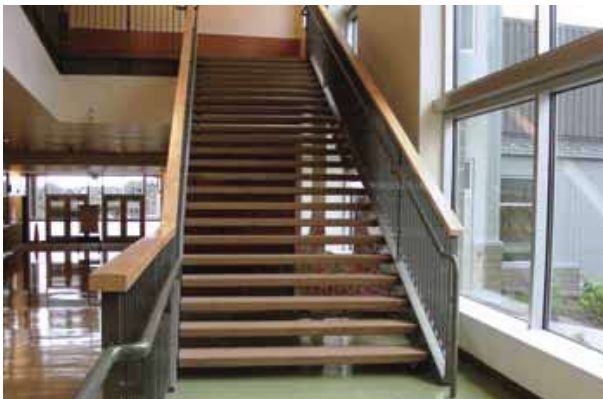


Kuwait Chapter

*Local Connection
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Lightweight and durable, Arcis panels provide a no-slip surface—ideal for the construction of boat docks. The thin, flexible panels allow marine structures to bend and twist without overload



Prestressed concrete treads can be designed to span between stringers or be supported on steel pans. Two in. (50 mm) thick treads can span 6 ft (1.8 m). Treads as thin as 1 in. (25 mm) will not crack, curl, or warp



Precast concrete panels can even be used in renovation projects. In this project, 1.5 in. (38 mm) prestressed deck panels were used to replace wood decking. The concrete system was light enough to be supported on the exterior wood-framed wall without structural alterations



The durability resulting from the stainless steel prestressing strands will be a key contributor toward extending the service life of the project. The thin panels aided in achieving the high LEED rating by reducing material use over conventional designs, having high recycled content, and allowing maximum insulation thickness. This is all accomplished with a durable system that weighs no more than a plaster stucco system. The weight savings over conventional precast or brick resulted in significant savings in structural systems.

Varied Applications

Arcis panels have been used in a variety of applications beyond building cladding. Designers and builders have used the panels to create durable, safe marine structures; modern, open stairs; unique office furniture; and even as a replacement for wooden decking.

Selected for reader interest by the editors.



Kuwait Chapter ▶▶

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KUWAIT CHAPTER

ACI INTERNATIONAL

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

PURPOSE OF THE ACI KUWAIT CHAPTER

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

HOW THE CHAPTER FUNCTIONS

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

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

BENEFITS TO CHAPTER MEMBERS

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

HOW TO JOIN THE ACI KUWAIT CHAPTER

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

Detailed Information Please Contact;

ACI Kuwait Chapter-

P O. Box 12608 Shamiah 71657 Kuwait

Tel: (965) 2449071, 2448975- Ext. 312, Fax: 2428148, E-mail: info@acikuwait.com

EMBED Word.Picture.8

Membership Application

First Name

الاسم الاول

Middle Name

الاسم الثاني

Surname

اللقب

Photo

Employer/Organization: Corporate Title:

Address:

Telephone No.: Mobile/Pager No.: Fax No.: E-mail:

Categories of Membership

Please check the category of membership you are applying for and provide the appropriated 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: Please check the category of membership you are applying for and
- ☐ 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 | ☐ Engineering Services | ☐ Testing Laboratory |
| ☐ Administrative, Operating Management | ☐ Constructing Services | ☐ Quality Control |
| ☐ Plant, Production & Construction | ☐ Architectural Services | ☐ Research Services |
| ☐ Design engineering Management | ☐ Management | ☐ Concrete Products |
| ☐ Architectural Engineering Services | ☐ Design Engineer | ☐ Educators |
| ☐ Chemicals and Allied Products | ☐ Material Engineer | ☐ Student |
| ☐ Contructons Machinery and Equipment | ☐ Plant Engineer | ☐ Utility |
| ☐ Concrete Block and Brick | ☐ Research Engineer | ☐ Architect |
| ☐ Ready Mixed Concrete | ☐ Sale and Marketing | ☐ Government |
| ☐ Educational Institutions | ☐ Technical Specialist | ☐ Other (Please especfy) |

Are you Intrested to joint ACI Chapter Committee?

() YES

() NO

Method of Payment

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

Receipt

Cheque No.

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

Transaction No.

For ACI Kuwait Chapter use only:

Membership No.

Date:



Detailed Information Please Contact:

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