

CAE Newsletter Issue 06



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Message from Head of the Department

Dr. Mohammed Hussein Associate Professor, BSc (Hons) PhD (Cantab) MIIAV PGCHE FHEA



am delighted to welcome you to the 6th edition of the newsletter of the Department of Civil and Architectural Engineering. The newsletter presents the Department's activities and news for the academic year 2018-2019. This academic year has been a successful year and witnessed more steps towards achieving the vision of the department in becoming a leading department in the region. The newsletter highlights among other activities in the academic year 2018-2019, the main seminars and workshop, the competitions, the outreach activities and the site visits. It also highlights the faculty achievements and students success stories. I hope the newsletter gives you a good idea about the Department's activities and news, and I hope you enjoy reading it.

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DEPARTMENT NEWS



CAE Collaboration with Ashghal

A meeting was organized in the College of Engineering at Qatar University with Ashghal Directors on the 26th of March 2019. The meeting discussed the ongoing collaboration and the plans for new initiatives for attracting students to study Civil Engineering beside collaboration in developments of laboratories and organization of an International Conference in 2020.





ICE Recognition of Civil Engineering in CAE Department



The Institution of Civil Engineers (ICE) has formally recognized the civil engineering ABET accredited program of the CAE Department. Our graduating students will no longer need to apply for an academic assessment to gain an ICE professional qualification. The civil engineering degree is now recognized by the ICE as fully satisfying the educational base for an Incorporated Engineer (IEng) and partially satisfying the educational base for a Chartered Engineer (CEng). This development means that our students can now pursue the ICE professional qualifications as an option after graduation. Our enrolled students can apply for fee membership of ICE which places them on the path to a successful career. The membership provides students with access to engineering knowledge, including ICE's online Infrastructure Learning Hub, enabling them to learn even more about civil engineering, innovation and developments through recorded lectures, webinars and case studies.

Industrial WORKSHOPS



The CAE Department offers a number of lectures each year given by industrial experts. In the academic year 2018-2019, five workshops were organized to offer undergraduate and graduate students the opportunity to meet and benefit from experts from various industries in civil engineering in different disciplines.

1. Lean Construction



The Department of Civil and Architectural Engineering would like to invite you to attend a seminar entitled:

Lean Construction "Improving the Project Delivery

Process"

Abstract:

Problems in construction are many. Excessive waste, inefficiency, low productivity, and poor records of safety placed construction behind many other industries around the globe. Construction is normally an adversarial and challenging industry as project stakeholders have conflicting interests.

Introduced as a creative and innovative solution, Lean Construction can help to improve the project delivery process by generating value, maximizing efficiency, and minimizing waste. However, exploiting such an opportunity requires Lean Thinking, hard work, and culture transformation in leadership and practice at every level of the organization throughout project lifecycle.

Dr. Sabek will introduce the concepts of Lean Construction, present Lean tools and techniques, explain how to apply Lean in construction, and discuss his experience in implementing Lean Construction in Qatar since 2012. Real Lean Construction applications in Qatar resulting in QAR 300 million of hard saving will be presented



Biography:

From Qatar Armed Forces to the Asian Games to Qatar Diar, Dr. Luai has been contributing to the successful delivery of signature mega projects in Qatar for over 19 years.

Dr. Luai is PMP Certified (Project Management Institute, USA) and Registered Professional Engineer in Ohio, USA and Nova Scotia, Canada. He obtained his Ph.D. in Civil Engineering from the University of Toronto, Ontario; Canada. Dr. Luai has several publications in mega projects and Lean Construction in top tier journals.

> Thursday October 4,2018 11:00am – 11:50am Qatar university, B09-F106

عرمدة الطاد إدرمت فطرتها وعاد إعرمته فطرة عرمته فالمتراج ومنت فلطرة والمتن فطرتها والمعارة

As part of the industrial workshop series, CAE department conducted a seminar on "Lean construction: Improving the project delivery process" on the 4th of October 2018. Eng. Luai M. El-Sabek, a registered professional engineer in Ohio, USA and Nova Scotia, Canada delivered the lecture at the College of Engineering. The concepts of lean construction, present tools and techniques and how to apply lean construction in Qatar were the key points covered in the lecture.





2. Construction Dewatering in Qatar

As part of Qatar National vision 2030 and FIFA 2022 world cup, Qatar is experiencing an unprecedented investment in its infrastructure. Throughout the world improvements construction techniques combined with an eagerness to exploit sustainable and socially acceptable solutions has led to an increase in exploitation of underground space. The development of underground infrastructure has to be dealt with dewatering arrangement due to the high water level in the country. Focusing on these aspect CAE has arranged a workshop on "construction dewatering in Qatar" on the 27th of February 2019 in the Office of graduate studies, College of Engineering, University. The engineering Director Hydroserv W.L.L, Eng. Barry O'Sulliven talked about his 10 years' experience in the field.









3. Pavement Deterioration









The Department of Civil and Architectural Engineering at Qatar University collaborated with Engineers Australia in hosting a workshop on "Pavement Deterioration – A study in Qatar" on 20th March 2019 in the Office of graduate studies, College of Engineering, University. The lecture provided an overview on guidelines for pavement failure analysis and identification of types and causes of premature failure. There was an interesting discussion about a few unique experiences from recent pavement distress evaluation study in Qatar. Kanagaraj Muthiah and Simon Wanklyn, professionals from BG & E Consulting Engineers LLC were delivered the exciting session for professions from academics and other companies.



4. Accelerated Bridge Construction



Engineering from the University

of Illinois at Urbana-Champaign

in 1997, and joined UB that year.

He teaches and conducts

ke engineering, and multi-p

engineering,

computational

Department Of Civil And Architectural Engineering Cordially Invites You To a Seminar:

A NOVEL HYBRID SLIDING-ROCKING POST-TENSIONED SYSTEM FOR ACCELERATED BRIDGE CONSTRUCTION

DAY & DATE: TUESDAY, APRIL 9, 2019 TIME: 11:00 am – 12:00 pm. VENUE: B09-F106

ABSTRAC

A novel precast concrete segmental bridge system consisting of hybrid sliding-rocking (HSR) members is introduced as part of strategies that lead to accelerated bridge construction (ABC). The HSR members incorporate HSR joints coupled with internal unbonded post-tensioning (PT). The HSR joints can potentially exhibit joint sliding and/or rocking to mitigate the applied seismic loading. The slide mode offers high energy dissipation with negligible damage, which is an appealing attribute for seismic applications, and provides moderate self-centering. The rocking mode offers low energy dissipation and high self-centering that deteriorates at large rocking rotations due to concrete crushing at the joints and potential yielding of the post-tensioning system. Both modes provide control of the applied seismic forces by modifying the strength and stiffness of the HSR joints. The joint response is also controlled by the layout of the PT tendons along the member length.

strength and stiffness of the HSR joints. The joint response is also controlled by the layout of the PT section. Prof. Amjad Aref, from the Department of Civil, Structural and Environmental Engineering at the University of Buffalo, USA, has delivered a seminar on "Novel hybrid sliding-rocking post accelerated tensioned system for construction" on the 9th of April 2019 at the office of research and graduate studies, College of Engineering. Hybrid sliding-rocking members are introduced to accelerated bridge construction as part of precast concrete segmental bridge system. The seismic performance of the sliding-rocking hybrid joints was discussed in the session based on experimental analysis.

5. Transit Oriented Development for Metro

The Department of Civil and Architectural Engineering at Qatar University collaborated with Qatar Rail in hosting a workshop on 'Modeling transit oriented development (TOD) interactions on existing metro systems and the need for the design of adequate structural monitoring system' on the 17th of April 2019 in the office of graduate studies, College of Engineering, Qatar University. The TOD buildings are a part of future cities and metro systems in Qatar. The lecture described the importance of structural monitoring systems to provide validation of the structural dynamics performance of the closed TOD tunnel/Station system. The workshop was supported by a number of experts and researchers from Qatar University and Qatar Rail.







6th Wooden Bridge Competition

The Department of Civil and Architectural Engineering organized the High School Wooden Bridge Competition (HSWBC) to motivate students to join the field of engineering in general and civil

engineering in particular. Teams of high school students constructed bridge models using sticks and glue as per the instructions and guidelines provided by the faculty and staff during their visit to the school as part of the outreach program. The competition aimed to equip the secondary school students with main skills of civil engineering and to enable them to test, design and build small



bridges of different use. Loads were applied at the center of the bridge on the final day of the competition which was on the 17th of March 2019 in the Library Building at Qatar University. The team with the largest load Carrying Capacity Bridge won the first place out of twenty Independent High Schools participated in the competition.









School Name	Position
Abdulla bin Ali Al Misnad Boys Secondary School	1 st Place
Mohammed bin Abdul Aziz Al Mana Secondary School	2 nd Place
Hassan bin Thabit Secondary School	3 rd Place



Dome Building Competition





In support of Qatar 2018 Sustainability Week,
Engineers Australia Qatar Chapter together with
the Department of Civil and Architectural
Engineering at Qatar University and Qatar Green
Building Council hosted a Dome Building

The challenge was to plan and construct the strongest geodesic dome out of newspaper in three hours. The struts of geodesic dome joined together in triangles with the joints of triangles on the surface of the Dome. The edges of the triangles form great circles or geodesics over the surface of the Dome.

competition on the 3rd of November 2018 at

Oxygen Park, Qatar Foundation.

The dome with largest diameter and height won the first prize, while the strongest dome carrying heaviest load on top of the dome won second prize and third prize was given to the dome with authentic shapes.











Senior Design Poster Competition Senior Design Poster Competition Fall 2018

The Senior Design Poster Competition was held on the 7th of November 2018 in front of the Civil and Architectural Engineering Department. **Eleven groups from SDP-1** and **seven groups from SDP-II** participated in this competition. Here are the details of the winners;

SDP-II Poster Competition Winner Details:

Position	Students	Title of Project	Primary Supervisor
1 st	Khalid E. Adam	Design of a pedestrian crossing (either a bridge or a tunnel)	Dr. M. Elshafie
	Mohamed k. Abdelsalam		
	Mohammed O. Abuqamar		
	Rabeh F. Almashhadani		
2 nd	Mohamed Abboud	Design of a RC Library with a Singular Spiral Staircase	Dr. W. Al Nahhal
	Hassan Abu Zuaiter		
	Mahgoub Omer		
	Yaqoub Al Asmar		
3 rd	Omar Karawia	Tall building with a parking facility	Dr. U. Ebead
	Ossama Mohamed		
	Mohamed M. ElSaman		



1st place







3rd place

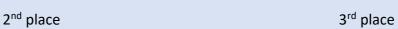
SDP-I Poster Competition Winner Details:

Position	Students	Title of Project	Primary Supervisor
1 st	Mutaz Albustami	Design of a water and sewer	Dr. A. Al-Hawari
	Kamal Alrihawi	distribution network in	
	Zaid Ibraheem	Doha	
	Mohamed Deyab		
2 nd	Ahmed Elhilal	Design of Water Distribution Networks	Dr. R. Al-Roush
	Sameh Abdelfattah		
	Sayed mahmoud mostafa		
	Eslam Esam Nassar		
3 rd	Mohamed Elsayyad	Design of a water	Dr. A. Al-Hawari
	Tamim Mardini	distribution network in	
	Feras Abohmeid	Doha	
	Ahmed Albatesh		



1st place





Senior Design Poster Competition Spring 2019

The Senior Design –II Poster Competition was held on the 24th of April 2019 in front of the Civil and Architectural Engineering Department. **Eleven groups** participated in this competition. The students presented their posters to external judges. Here are the details of the winners.

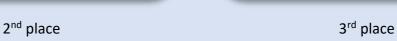
SDP -II Poster Co	npetition	Winner	Details
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Position	Students	Title of Project	Primary Supervisor
1 st	Alhassan Mahmoud	Football Stadium Roof Design	Dr. M. Elshafie
	Moustafa Elsayed		
	Adeeb Nimry		
	Mostafa Hussein		
2 nd	Omar Abuiwaili Design of an	Design of an	Dr. M. Elshafie
	Abdullah Elsherif	Olympic Swimming Pool in Doha	
	Omar Shihadah		
	Housam Hamed Alijla		
3rd	3rd Hammam Hattab Design of Doha Eye	Design of Doha Eye	Dr. M. Hussein
	Yousef Abdelrahman		
	Hatem Elshaarawi		
	Abd El-Rahman Bahloul		



1st place





Senior Design Contest Spring 2019

The Senior Design –II Spring 2019 Contest was held on the 1st of May 2019 in the College of Engineering. **Eleven groups** participated in this competition. The students presented their project to the Jury members as well as to Internal and external Examiners. Here are the details of the winners.

SDP –II Contest Winner Details:

Position	Students	Title of Project	Primary Supervisor
1 st	Omar Abuiwaili	Design of an Olympic	Dr. M. Elshafie
	Abdullah Elsherif	Swimming Pool in Doha	
	Omar Shihadah		
	Housam Hamed Alijla		
2 nd	Mutaz Albustami	Design of a water and sewer distribution network	Dr. Alaa AlHawari
	Kamal Alrihawi		
	Zaid Ibraheem	in Doha	
	Mohamed Deyab		
3rd	Alhassan Mahmoud	Football Stadium Roof	Dr. M. Elshafie
	Moustafa Elsayed	Design	
	Adeeb Nimry		
	Mostafa Hussein		



1st place





2nd place 3rd place



Outreach Programs











The Department of Civil and Architectural Engineering outreached for high school students. Visits to Al Wakra, Omar Bin Al-Khatab, Musaab Bin Omair, Mohammed bin Abdulaziz Al Mana, Alshahanyih, Nasser bin Abdullah Al-Attiya, Doha School, Ali Bin Jassim AlThani, Abdullah Bin Ali Almisned, Omar Bin Abulaziz, Al- Zubara School, Alshamal School and Tariq Bin Zeyad high schools were organized during the academic year 2018-2019. The visits aimed at giving detailed information about the Engineering Programs at Qatar University and to highlight the importance and roles of Civil Engineers in the society to high school students in Qatar.





Site visits





World Cup Pavilion

Aiming to enrich the student experience in various Civil Engineering disciplines, the Department of Civil and Architectural Engineering organized four site visits during this academic year. The students visited the World Cup Pavilion on the 16th of October 2019 located on the 14th floor of Al Bidda Tower. The students got a chance to create a journey through 60 years of sports history in Qatar through the information, texts and exhibits gathered around.







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Al Shamal Wastewater Treatment Plant



The students visited Al-Shamal Wastewater Treatment Plant on the 5th of November 2018. The treatment plant serve three cities in Al Shamal municipality with an average capacity of 7,500 m³/day, which can be expanded up to 22,500 m³/day. The students got an opportunity to learn about various treatment procedures applied in the plant.







Oatar Rail

A site visit was organized to the Mock-up tracks at MPLA west site of Qatar Rail on the 1st of November 2018. The students learned from the engineers in the site about the various types of railway slab tracks (tracks with discrete resilient elements, continuous resilient elements, and directly-fixed tracks) and the manufacturing process.





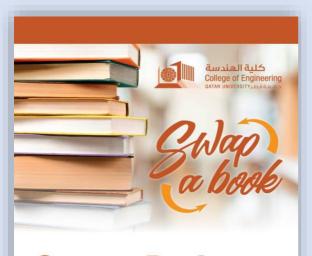
OTHER ENTS ENTS

The Department of Civil and Architectural Engineering was participated in the Engineering Week event conducted on 18th - 20th of February 2019 in the Sports Complex at Qatar University. The event aimed to introduce high school students as well as first year students about the principles and fundamentals of engineering. Each department from CENG had its own booth with different models and activities.

Several models were presented in the Civil Engineering Booth which attracted a lot of students. A model was presented to highlight the effect of vibration coming from ground rail on bridges as well on the surrounding structures. Another model showed the effect of different vibration frequencies on a plate surface. In addition, the high school students got the chance to participate in fun activities related to Civil Engineering. The booth was very successful in exhibiting the interesting aspects of Civil Engineering and the students were interested to learn more about civil engineering topics.



SWAP A BOOK

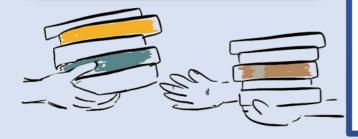


Swap a Book "For Students By Students"

Clear your shelves and get unused books back into circulation.

"Swap a Book" is now accepting your old engineering text books from all courses. The Mission is simply to help students receive books that they need without having to buy new books.

Help us contribute to the success of future engineers and saving the environment.





Do you want to trade your textbook with another textbook? If YES we can help. Book Swap is a new initiative that will start this semester initiated by the Department of Civil and Architectural Engineering. The aim of the initiative is to help students to swap their textbooks instead of buying new textbooks. Bring your unwanted textbook for another textbook. The plan is as follows, if you have a textbook that you do not need, you can swap that textbook for another textbook that you need. As this is the first semester to start this practice we really appreciate any books donation to start the wheel running. With book swap you will not only save money, but you will save the environment as well. Did you know that one tree can produce 24 books? This means with only a couple of dozen exchanges you will have saved a tree. Participating in a book exchange also saves on ink and leaves a smaller environmental footprint.

For any inquiries feel free to email Eng. Ahmed Elrahmani at: ae1304061@qu.edu.qa

"From Students to Students"





FACULTY ACHIEVEMENTS



 ✓ Prof. Mohammed Al-Ansari has been promoted to Full professor in Civil Engineering.



 ✓ Dr. Wael Al-Nahhal has been promoted to Associate professor in Civil Engineering.



- ✓ **Dr. Mohammed Elshafie** has been announced as a joint winner of the J. James R. Croes Medal, 2019.
- Or. Mohammed Elshafie was invited to join the Gates Cambridge Trust interview panel which took place at Wolfson College in Cambridge, (United Kingdom) during the last week of March 2019. Each year, the Gates Cambridge Trust invites a select group of internationally recognized academics and researchers from internationally recognized academic and research organizations to be part of the Gates Cambridge International Round Interview Panel. Being part of a select group of interview panelists for the Gates Cambridge Scholarship comes with significant recognition and privilege for the academics invited and the organizations they represent.



STUDENT SUCCESS STORIES



✓ Eng. Adil Younus, a Ph.D. student supervised
 by Dr. Usama Ebead won the
 University Graduate Research Award.



✓ Students Radwan Elfahel and Mohammed

Ammar Hafez supervised by Dr. Alaa Al

Hawari won the best poster award jointly

with a student from CAM.



✓ Mshael Thabit, a master student supervised by Dr. Alaa Al Hawari got the best poster award in the conference at QU entitled "The role of youth in innovation and sustainable development in the state of Qatar".



Our students Mustafa Almallah, Ahmed Awad, Radwan Alfahel, Abdelkarim Mikdad, Qasim Qasim and Adeeb Alnimri were awarded with a certificate of appreciation for their outstanding research project in the 11th Annual Undergraduate Research Experience Program (UREP) competition held on 31st of March 2019. The project was supervised by Dr. Alaa Al Hawari and Dr. Mohammed Arselene Ayari.



✓ Qatar University won the University League 2018-19 title after beating Carnegie Mellon University in Qatar (CMU-Q) 6-1 in an exciting final match for the sixth consecutive time. Our graduate student **Yahia Alabbasi** and undergraduate student **Zaid** were players in the university football team for the season of 2018-2019.



✓ The graduate student Yahia Alabbasi won
the first place in the 50 m free swimming,
beginner's level, in the QU Swimming
Tournament held at QU Sports Complex in
March 2019.



✓ Graduate students Yahia Alabbasi and Sateh
Alabbasi won the fourth and fifth places,
respectively among the students group in
the first triathlon race held in Qatar
University on 19th January 2019 organized by
Qatar Triathlon Federation and MAD
Triathlon.



An undergraduate student of civil engineering department, **Yahya Zakaria** participated in the 5th international university debating championship in Arabic, organized by Qatar Debate center. His team got the 2nd position out of more than 100 participants from all around the world.



Newsletter Editors

o Dr. Alaa Al-Hawari



o Eng. Safna Nishad







o Eng. Afnan Alkhatib