

MESSAGE FROM CEE HEAD

1 January 2020

Dear CEE Colleagues, students, alumni and partners,

With the ending of 2019, I would like to thank all of you for your kind contributions and generous support to make CEE Department and NUS a premium place for education, research, professional meetings and social bonding. CEE Department certainly would not be where it is if not for your positive presence, sharing and camaraderie. At the dawn of 2020, I certainly would like to wish everyone of you a Happy, Healthy and Successful New Year. To start off the year, I would as usual share with you some updates since my previous message.

NUS is preparing departments to operate conscious of profit and loss accountability. Based on CEE Department's operating income statements for AY2016 to AY2018, we have been in the black all these years, despite the drop in income from capitation & tuition fees, and donations, as well as increase in expenditure over the last 3 years. This healthy situation is due to our increasing income from self-funded education programs (such as Graduate Certificates and short courses) and grants from various sources including research. As we move forward, CEE Department would need to work harder to get more funds, particularly for scholarships, endowment payouts and new self-funded programmes, as income from capitation is expected to drop further over the next few years.

The year ended with an agreement signed with the School of Civil Engineering and School of Transportation at Southeast University (SEU) to offer the 311 programme. Selected undergraduates will complete their SEU final year undergraduate study and pursue a one-year NUS Master degree, both at NUS on full-fee paying basis. Southeast University is currently ranked joint first (with Tongji University) in civil engineering within China. The department will be signing agreements in early 2020 with a few other top universities in China to enrich our education environment and networking opportunities for students.

The department is proud to share that besides being internationally ranked second under QS World University Rankings by Subject in the field of Civil and Structural Engineering for 2019, it has been ranked third by US News in Civil Engineering for 2020. Irrespective of our ranking, we will continue to make sure that our efforts are focused on delivering a good curriculum and education experience for our students and ensure that our research are cutting edge in terms of tackling the grand challenges that lie ahead, especially in the context of Singapore and the region.

To deepen our connectivity with the industry and obtain quality advice on positioning optimally for the future, three additional Department Consultative Committee (DCC) members holding key positions in professional associations agreed to come on board in September 2019. They are **Er Chua Tong Seng**, President of the Association of Consulting Engineers Singapore (ACES) and Managing Director, Kiso-Jiban Singapore Pte Ltd; **Mr Kenneth Loo**, Immediate Past President of the Singapore Contractors Association Limited (SCAL) and Executive Director / Chief Operating Officer, Straits Construction Singapore Private Limited; and **Er Teo Tiong Yong**, Deputy Chair of the Infrastructure Cluster of the Institution of Engineers Singapore (IES) and Group Director (Project Management), JTC Corporation. Our second DCC meeting was held on 7 November 2019 chaired by Mr Chin Chi Leong, Deputy CEO and Building Commissioner, BCA. The meeting focused on updating our environmental engineering curriculum to be in line with our nation's Industrial Transformation Map, responding to the manpower supply and demand landscape for the Built Environmental sector, and PEB's proposed changes to conducting of the Fundamentals of Engineering Examination.

On the education front, our maiden common engineering undergraduate curriculum is progressing well and staff have been busy preparing their courses to be in line with the newly announced digitalization specialization for our B. Eng. (Civil) and B. Eng. (Environmental) programmes. In 30 July 2019, the department held a [graduation ceremony](#) for 47 Graduate Certificates (GCs) graduands from GC Geotechnical Engineering, GC Structural Design Technology, and GC Technology for Environmental Sustainability. Amongst the 309 students admitted to our GC programmes since its inception in 2016, 137 have successfully graduated and 112 have gained admission to our M.Sc. programmes, amongst whom 58 have already graduated with M.Sc. degrees. More information on our Graduate Certificate programmes can be found on the link at <https://www.eng.nus.edu.sg/cee/graduate/graduate-certificate-programmes/>.

Our staff continue to work tirelessly to secure grants to fund their research. Over the last six months, the department received new grants from funding agencies for 6 projects with a total amount of S\$5 million. This brings the total number of projects for 2019 to 29 with total funding of S\$15.4 million. The key research focuses in the near future remain on the effects of climate change, smart construction and sustainable materials development, space creation, offshore technology and environmental sustainability. In the area of smart construction, the department has invited Professor Mirosław J. Skibniewski from the University of Maryland as the **WOH HUP Visiting Professor** at NUS from 6 to 24 January 2020. He will deliver the [WOH HUP Distinguished Lecture](#) entitled “Recent Developments in Construction Automation and Robotics Applications in the USA” on 14 January at 4 pm in the Engineering Auditorium. Besides interacting with NUS staff, arrangements have been made for him to meet up with various statutory boards and private organizations.

As in previous years, the department continues its effort to organize professional and bonding events for staff, site visits and networking sessions (including with alumni) for our students, and “catching-up” sessions for our alumni. [Details](#) are attached at the end of this message. Examples of events include a workshop on professional activities, fellowships and awards for our younger faculty, an alumni-student dialogue session, an alumni gathering session held at NUS Staff Club Lounge on 12 July 2019 for both CVE and EVE alumni where alumni from classes of 1987, 1992, 2001, and 2019 were invited.

The department is honoured by the achievements of our faculty, alumni and students in terms of international recognition and awards. The [details](#) are attached at the end of this message and the more notable ones summarized below.

Professor Richard Liew was awarded the 2019 MND Medallion, which acknowledges individuals who have served and contributed significantly to the Ministry of National Development (MND) Family of agencies.

Former CEE Colleague and Adjunct Professor Wang Chien Ming was the only academic from the Physical Sciences & Engineering panel to be elected as Fellow of the Australian Academy of Technology and Engineering. He was also awarded the Nishino Medal and the JN Reddy Medal for his contributions in the field of engineering mechanics in 2019.

Assoc Professor Qian Xudong was awarded the Nishino Prize at the bi-annual East Asia Pacific Conference on Structural Engineering and Construction (EASEC) held in Brisbane in December 2019.

Asst Professor Ong Ghim Ping, Raymond received the inaugural Early Career Award from the International Society of Maintenance and Rehabilitation of Transport infrastructures (iSMARTi).

Asst Professor Olivier Patrick Lefebvre received the IES Prestigious Engineering Achievement Award 2019 in the category of Applied Research and Development.

Dr Paul Ong won the Outstanding Mentor Award at the 25th Youth Science Conference under MOE Science Mentorship Programme on 21 September 2019.

EVE4 students, **Chia Jia Ling, David Imanuel Tanaka, Neo Wen Yang, and Wee Li Teng** (mentored by Professor Hu Jiangyong) won 1st prize for WEF-EESS student design competition award in July 2019. They represented Singapore to compete at the WEFTEC2019 in Chicago, USA in September 2019.

Congratulations to our student group of **Operation Orion 2018** for being accorded a Distinction award in the “Community Service” category in the student life award on 2 November 2019, having made significant impact on the lives of over 5,000 villagers in Philippines.

Er. Teh Poh Suan (Civil Engineering Class of 1990), currently Director of Building Research in HDB, was presented on 9 November 2019 with the inaugural Innovative Professional Engineer Awards by Minister Desmond Lee, for exemplifying professionalism through innovativeness and entrepreneurship

Professor Liew Mun Leong, Provost's Chair Professor (Practice) at both NUS Engineering and the NUS Business School, NUS (Civil Engineering Class of 1970), Chairman of Changi Airport Group and Surbana Jurong Private Limited, received the NUS Distinguished Alumni Service Award. The Distinguished Alumni Service Award recognises alumni who have distinguished themselves and demonstrated tangible impact in their chosen fields, and rendered excellent volunteer service to NUS, its predecessor institutions and/or the community. More information about the award is available at <https://news.nus.edu.sg/press-releases/nus-alumni-awards-2019>.

Mr Vincent Loka (Environmental Engineering Class of 2015) and **Mr Lim Chong Tee** (Environmental Engineering Class of 2016) co-founders of WateROAM received the NUS Outstanding Young Alumni Award 2019. The NUS Outstanding Young Alumni Award recognises alumni aged 40 and below who have distinguished themselves in their chosen fields. They may also have rendered excellent volunteer service to NUS and/or the community while exemplifying the best attributes of youth in today's world.

Er. Tan Seng Chuan (Civil Engineering Class of 1983), Chairman and Managing Director, TEMBUSU Asia Consulting Pte Ltd, received the Distinguished Engineering Alumni Award at the [Engineering Alumni Gala Dinner 2019](#) held on 8 November 2019 at NUSS Kent Ridge Guildhouse. **Mr Lim Chong Tee**, Chief Marketing Officer, WateROAM Pte Ltd, Environmental Engineering, Class of 2016 received the inaugural Outstanding Engineering Young Alumni Award at the same event.



(Left) Er Tan Seng Chuan receiving the Distinguished Engineering Alumni Award from Professor Aaron Voon-Yew Thean, Dean, NUS Engineering Dean, Engineering

(Right) Mr Lim Chong Tee receiving the Outstanding Engineering Young Alumni Award from Professor Aaron Voon-Yew Thean, Dean, NUS Engineering

On staff movement, **Professor Choo Yoo Sang** retired as a full-time staff and has been appointed as Adjunct Professor. Our laboratory technician, **Mr Loo Leong Huat** also retired after 46 years of service. The department wishes to acknowledge the dedicated services of Professor Choo and Mr Loo for their years of dedicated service to the faculty and department and wish them the best in their new phase of life.

Our condolence to the family of our former colleague, late **Professor Andrew Palmer**, who left us on 21 December 2019 in Singapore. He left behind his wife, Jane, and daughter, Emily.

Over the last six months, CEE Department is glad to welcome the following new [additions](#).

Dr Anand Sarma is jointly appointed as Associate Professor (Practice) after serving several years as an adjunct academic staff. Dr Anand is Head of Engineering (Geo Dynamics) at the Defence Science & Technology Agency (DSTA) and provides technical support for infrastructural developments covering areas such as soft ground improvement, structural design to resist blast effects, dynamic response of buried structures, ground vibrations propagation and effects. Dr Anand holds a practicing PE (Civil) and Specialist PE (Protective Security) licenses, adding to our faculty with substantial industrial experience to help us prepare our graduates to be future-ready.

Dr. Geng Guoqing joined us as Assistant Professor. He received his Bachelor degree from Southeast University (China) in 2010, his Master and Doctoral degree in CEE from UC Berkeley (USA) in 2013 and 2017, respectively. He has more than two years of post-doctoral experience with fellowship in Paul Scherrer Institute (Switzerland). His PhD program was dedicated to investigating the microscale chemistry and mineralogy of modern construction materials.

Dr. Du Hongjian return to CEE Department as Lecturer. He obtained his BEng and PhD from Shanghai Jiao Tong University in 2007 and National University of Singapore in 2012, respectively. He worked as a Research Fellow and then Senior Research Fellow in NUS before taking up a Lecturer position at Swinburne University of Technology, Australia.

As always, do feel free to send us your feedback, suggestions, donations, as well as information on internship and career opportunities. You can find our updates on the department website and events calendar at <http://cee.nus.edu.sg>.

In closing, once again, I wish our friends, alumni, staff and students a Bright and Happy 2020.

With sincere and warm regards,
Ser Tong

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Department matters

Staff Appointments

Department Management Committee (Effective January 2020)

Professor Hu Jiangyong will replace **Professor Ong Say Leong** as Group Head for Environmental Engineering, Hydraulics & Hydrology. She will relinquish her post of Deputy Head (Administration).

Professor David Chua Kim Huat will assume the post of the Deputy Head (Administration) with effect from 1 January 2020. He will be assisted by **Assoc Professor Low Ying Min** who will be Associate Head (Administration).

Assoc Professor Poh Leong Hien will replace **Assoc Professor Chin Hoong Chor** as Associate Head (Academic Matters). He will focus on managing our M.Sc. and 311 programmes.

The department would like to record our appreciation to **Professor Ong Say Leong** for his many years of service in managing the “Wet” Group and **Assoc Prof Chin Hoong Chor** for his incisive views to ensure that our curriculum and evaluation system is well thought through and fundamentally relevant despite the many turbulent changes that have taken place over the years. Their contributions as DMC members to help manage the department are acknowledged.



Dr. Anand Sarma Associate Professor (Practice) is being appointed in CEE on 1 August 2019. Dr Anand is a Head Engineering (Geo Dynamics) at Defence Science & Technology Agency (DSTA) and provides technical support for infrastructural developments covering areas such as soft ground improvement, structural design to resist blast effects, dynamic response of buried structures, ground vibrations propagation and effects. He also oversees training, competency development and assessment of DSTA staff in Protective Engineering domain. Dr Anand obtained his Bachelor's and Ph.D. degrees from NTU. He also obtained specialized training on blast engineering as part of a Master's degree at Northwestern University. His main research interests are in soil dynamics, ground improvement, protective engineering design, ground vibration monitoring and performance evaluation of dynamic and impulsively loaded structures. He also has a Law degree and an Advocate & Solicitor (S'pore) with interests in construction dispute resolution. Dr Anand is a practicing PE (Civil) and Specialist PE (Protective Security)



Dr. Geng Guoqing joined the department on 20 December 2019 as an Assistant Professor. He received his Bachelor degree in Southeast University (China) in 2010, his Master and Doctoral degree in CEE at UC Berkeley (USA) in 2013 and 2017, respectively. His PhD program was dedicated to investigating the microscale chemistry and mineralogy of modern construction materials. Following his PhD, Dr. Geng was funded by the EU Horizon 2020 program to continue a postdoctoral research in Paul Scherrer Institute (Switzerland), where he studied the durability of concrete both as a construction material and hosting material for radioactive waste. Dr. Geng has general research interests in 1) multiscale structure-property correlation of construction material, 2) sustainability-oriented innovation of cementitious binder, and 3) geochemical process of construction material over long-term service life. His research involves the usage of a set of synchrotron-based characterization techniques, e.g. micro X-ray Absorption Spectroscopy, micro X-ray Diffraction, High Pressure X-ray Diffraction and X-ray Tomography. He has published 11 journal papers as the first or corresponding author, and 20 papers as a co-author, besides several conference contributions and a book chapter.



Dr. Du Hongjian will be joining us on 18 December 2019 as Lecturer. He obtained his BEng and PhD from Shanghai Jiao Tong University in 2007 and National University of Singapore in 2012, respectively. He worked as a Research Fellow and then Senior Research Fellow in NUS before accepting an ongoing Lecturer position at Swinburne University of Technology, Australia. Dr. Du returned to Singapore in 2019 and joined CEE as a lecturer. He has a strong research focus on developing sustainable and high

performance concrete for modern construction. He has been leading and co-leading some research projects, funded by government, industry and university grants. He is now mentoring a few PhD students on various research topics including 3D concrete printing, nano-cement composites and reuse of solid waste.



The department showed our appreciation to our retiring staff Mr Loo Leong Huat by presenting him a plaque. Mr. Loo, Laboratory Technologist, will be retiring from service on 21 December 2019 after 46 years of dedicated service with the department.

Mr Loo Leong Huat receiving an appreciation plaque from Professor Quek ST, CEE HoD

Achievements and Recognition

Appointments (chronological order)

Professor Quek Ser Tong is appointed as Visiting Professor at Tsinghua University from October 2019 and at Southeast University from November 2019, both for a period of three years.

Professor Tan Kiang Hwee has been appointed External Assessor for the Bachelor of Civil Engineering programme at the University of Malaya, for the 2019/2020 to 2022/2023 academic sessions.

Dr. Kong Kian Hau, Senior Lecturer has been invited to serve in the 2019 RILEM's Technical Committee 273-RAC on R&D of "Structural Behaviour and Innovation of Recycled Aggregate Concrete"

Professor Ng How Yong was appointed as Board Certified Environmental Engineering Member (BCEEM) of the American Academy of Environmental Engineers & Scientists, USA. BCEEM identifies and recognizes highly qualified professionals by virtue of the accomplishments these eminent environmental engineers.

Assoc Professor Vladan Babovic was appointed as Chartered Engineer Assessor by the Institution of Engineers Singapore.

Professor Rajasekhar Balasubramanian was appointed as member in the Asia Pacific Clean Air Partnership (APCAP), UN Environment's Asia and the Pacific Office.

Adjunct Professor Wang Chien Ming was elected as Fellow of the Australian Academy of Technology and Engineering in 2019. He is the only academic to be elected from the Physical Sciences & Engineering panel.

Asst Professor Ong Ghim Ping, Raymond is invited to be a fellow of the "International Society for Maintenance and Rehabilitation of Transport infrastructures" (iSMARTi) on 27 December 2019.

Faculty and Research Students and Staff - Awards

Asst Professor Ong Ghim Ping, Raymond received the inaugural Early Career Award from the International Society of Maintenance and Rehabilitation of Transport infrastructures (iSMARTi) during the 1st International Conference of Smart Cities held in Seoul, South Korea, 16-20 July 2019. He is recognised for “his early career advancement worldwide in transportation, education and research, significantly contributing to the advancement of transport infrastructure technologies, worthwhile emulating for present and future generations of transportation professionals”.

Asst Professor Olivier Patrick Lefebvre received the IES Prestigious Engineering Achievement Award 2019 in the category of Applied Research and Development for a project entitled: EWaT – Electrochemical treatment targeted at “hard-to-treat” industrial wastewater at the World Engineers Summit (WES) 2019 Conference Dinner held on 29 August 2019. With his proprietary graphene electrodes, he proposes electrochemistry as the new gold standard to address the problem of “hard-to-treat” industrial wastewater. This is a problem of utmost importance recently highlighted by the World Bank Group in their report entitled “Quality Unknown: the Invisible Water Crisis”.

Professor David Chua Kim Huat, Dr Justin Yeoh Ker-Wei together with **Mr Zhao Xiaojing** (CEE former research fellow) received the excellent paper III award at the International Conference on Engineering, Project and Production Management at the 10th International Conference on Engineering, Project and Production Management held on 2-4 September 2019 in Berlin, Germany. The paper is entitled “Extracting Construction Knowledge from Project Schedules using Natural Language Process”.

Professor Meng Qiang and his research team: **Kang, L.** (CEE research fellow), **Gao, S** (CEE former research assistant) won The OCDI Takeuchi Yoshio Special Award for the best paper in the field of logistics research presented at the 13th EASTS International Conference held on 9-12 September 2019 in Colombo, Sri Lanka. The paper entitled “Capacity Analysis of Ship Tugging Operations in a Large Container Port”.

Professor Hu Jiangyong and her mentees from Hwa Chong Institution presented the project titled “Adsorption and Enhanced Electrochemical Adsorption for the Treatment of Pharmaceutical Wastewater” and received the Distinction award at the 25th Youth Science Conference under MOE Science Mentorship Programme on 21 September 2019.

Dr Paul Ong and his mentees from River Valley High School presented the project titled “Conversion of Rainwater to Electricity in Singapore’s High Rise Building” and received the Distinction award. Dr Paul Ong was awarded the Outstanding Mentor Award at the 25th Youth Science Conference under MOE Science Mentorship Programme on 21 September 2019.

Professor Hu Jiangyong mentored EVE4 students (**Chia Jia Ling, David Imanuel Tanaka, Neo Wen Yang, and Wee Li Teng**) and won 1st prize for WEF-EESS student design competition award in July 2019. Their design project titled “Two-Stage Bioretention Treatment for Stormwater and Irrigation runoff from Commercial Plant Nurseries” focuses on sustainable stormwater management issue and represented Singapore to compete at the WEFTEC2019 in Chicago, USA in September 2019.

Professor Richard Liew was awarded the 2019 MND Medallion, which acknowledges individuals who have served and contributed significantly to the Ministry of National Development (MND) Family of agencies.

Asst Professor Alex Lee’s PhD student, **Ms Nethmi Kasthuriarachchi** received the best student poster award in the 37th America Association of Aerosol Research (AAAR) Annual Conference held on 14-18 October 2019 in Portland, USA.

Asst Professor Bae Sung Woo and his research team members: **Mr Thio Si Kuan** and **Miss Chiang Li Ching Elaine** developed a highly sensitive system that uses a smartphone to rapidly detect the

presence of toxin-producing algae in water within 15 minutes. This invention can generate test results on-site, and findings can be reported in real-time using the smartphone's wireless communications capabilities.

Assoc Professor Chin Hoong Chor's PHD student **Ms Zhou Mo**, received the Best Poster Award in the Transportation Engineering category at the National University of Singapore (NUS) and Nagoya University (NU) Joint Symposium, held in Nagoya (Japan) in November 2019. The Best Poster Award was judged to be the most innovative and promising research work among the 30 poster entries from the various engineering departments of the 2 Universities.

Asst Professor Chew Soon Hoe's PhD student **Mr Koh Juan Wei** won the Best Paper Award for the paper titled "QA/QC PLAN AND EVALUATION OF CHARACTERISTIC VALUE FOR DEEP CEMENT MIXING" in the GEOMATE 2019 Conference, 20 - 22 November 2019 at Tokyo, Japan.

Assoc Professor Qian Xudong was awarded the Nishino Prize at the East Asia Pacific Conference on Structural Engineering & Construction Conference held in Brisbane, 3-6 December 2019. The Nishino Prize is given to a young engineer (age below 45 years), from the Asia-Pacific region, who has made significant contributions and shown potential for great future achievements in the area of structural engineering and construction through research, development and/or practice. The conference is held once every two years and has more than 300 participants. The prize is given only to two winners at each conference.

Assoc Professor Qian Xudong's PhD student **Mr Liu Tianyao** received the "ISTS Young Researcher Award" in the 17th International Symposium on Tubular Structures held in Singapore on 9-12 December 2019. The ISTS Young Researcher Award recognizes the technical and innovative contributions for researchers aged below 35. Mr Liu Tianyao stood out among the shortlisted candidates, which include early-career faculty members in Europe, Asia and Australia.

Faculty and Research Staff - Plenary/Keynote/Invited Lectures

Professor Philip Li-Fan LIU delivered an AXFORD LECTURE on "2018 Sulawesi Earthquake and Palu Tsunami" on 29 July 2019 during the AOGS 16th Annual Meeting (28 Jul to 2 August, 2019) in Singapore. Asia Oceania Geosciences Society (AOGS) was established in 2003 to promote geosciences and its application for the benefit of humanity, specifically in Asia and Oceania and with an overarching approach to global issues.

Professor Quek Ser Tong delivered a keynote lecture on "Petal Auxetics with Target Poisson's Ratio using Isogeometric Shape Optimization" on 5 December 2019 at the East Asia Pacific Structural Engineering Conference held in Brisbane, Australia. He also delivered a Professorial Lecture at Tsinghua University on 8 October 2019 entitled "Improving the Efficiency of Structural Reliability Computation".

Faculty and Research Staff – Research Grant

Congratulations to our colleagues on winning the following major grant awards for 2019.

Principal Investigator, Co Pi	Funding Programme (Source of Funding)	Dept.	Project Title	Project month
Professor Balasubramanian, Rajasekhar	Ministry Of Education (MOE)	CEE	Photoconversion Of Co2 Into Value added Products Using Novel Functional Materials	January 2019
Asst Professor Chew Soon Hoe	Housing And Development Board (HDB)	CEE	Joint Study On Advanced Geohydrological And Geotechnical Instrumentations For The	January 2019

			Construction Of Polder	
Asst Professor Chian Siau Chen Darren	Engro Corporation Limited	CEE	Specialty Cements For Geotechnics	January 2019
Professor Chua Kim Huat, David	National Research Foundation (NRF)	CEE	Drone Inspection System For Building Facade	February 2019
Assoc Professor He Jianzhong	Public Utilities Board (PUB)	CEE	Optimization Of Nutrient Removal Processes And Microbial Activities In A Demonstration Water Reclamation Plant	February 2019
Assoc Professor Poh Leong Hien	Ministry Of Education (MOE)	CEE	Design And Optimisation Of Advanced Composite Structures For Infrastructure Protection	February 2019
Asst Professor Bae Sung Woo	Ministry Of Education (MOE)	CEE	To Develop Engineered Microbial Consortia To Control Biofouling In A Mbr System	March 2019
Asst Professor Chian Siau Chen Darren	Ministry Of Education (MOE)	CEE	Converting Unwanted Soil Waste Into Useful Supplementary Building Materials By Calcination	March 2019
Professor Lee Fook Hou	National Research Foundation (NRF)	CEE	Sinkhole Risk Assessment For Tunnelling In Complex Geological Conditions Using Big Data Analysis	March 2019
Asst Professor Lee King Yin, Alex	Ministry Of Education (MOE)	CEE	Exploring Formation And Sources Of Particle-Bound Reactive Oxygen Species In The Atmosphere	March 2019
Asst Professor Ong Ghim Ping, Raymond	Ministry Of Education (MOE)	CEE	Urban Planning And Facility Design With Mobility Consideration For Active Aging	March 2019
Assoc Professor Poh Leong Hien	Ministry Of Education (MOE)	CEE	Data Driven Design Of Concrete Structures Against Impact Loading	March 2019
Asst Professor Bae Sung Woo	Ministry Of Education (MOE)	CEE	Dna-Intercalating Dye For Viability Pcr To Discriminate Metabolically Active Cells	April 2019
Asst Professor Chian Siau Chen Darren	Land Transport Authority (LTA)	CEE	Remote Sensing Photogrammetry For Excavation Volume Calculation, With Post-Bim Integration	April 2019
Asst Professor Lee King Yin, Alex (Co-Pi)	Ministry Of Education (MOE)	SPH	Integrated Approach For Exploring Potential Health Impacts Of Cooking Fumes	April 2019
Professor Liu Li-Fan, Philip	National Research Foundation (NRF)	CEE	Probabilistic Tsunami Hazard Assessment In South China Sea Region - Quantification Of Aleatory And Epistemic Uncertainties	April 2019
Asst Professor Ong Ghim Ping, Raymond	Defence Science & Technology Agency (DSTA)	CPT	Design Of A Flexible Pavement With Protective Hard Base	April 2019
Assoc Professor Qian Xudong	National Research Foundation (NRF)	CEE	Substitution Of Natural Sand With Granite Dust In Concrete Production	April 2019

Professor Liu Li-Fan, Philip	Ministry Of Education (MOE)	CEE	On Sediment Transport In Wave-Current Benthic Boundary Layer	May 2019
Asst Professor Chew Soon Hoe	National Research Foundation (NRF)	CEE	Artificial Intelligence For Soil Recognition	June 2019
Asst Professor Chew Soon Hoe	National Research Foundation (NRF)	CEE	Clay Sintering	June 2019
Professor Meng Qiang	Neptune Orient Lines Ltd (NOL)	CEE	Container Haulage Problems: Model Development, Effective Algorithm Design And Applications	June 2019
Asst Professor Ong Ghim Ping, Raymond	Ministry Of Home Affairs (MHA)	CEE	Modelling Tool And Capabilities For Woodlands Checkpoint	July 2019
Professor Liu Li-Fan, Philip	Ministry Of Education (MOE)	CEE	Adaptive Coastal Protection Against Sea Level Rise And Weather Extremes	August 2019
Asst Professor Chew Soon Hoe	National Research Foundation (NRF)	CEE	Geobag Seawall To Replace Traditional Seawall	November 2019
Assoc Professor Bai Renbi	Ministry Of Education (MOE)	CEE	Novel Hydrophilic And Oleophobic Membrane For Oily Wastewater Treatment	December 2019
Assoc Professor Vladan Babovic	Public Utilities Board (PUB)	CEE	Jurong Island Groundwater Research Programme (Phase 3)	December 2019

Students Achievement



Operation Orion 2018 won Distinction in the “Community Service” category in the student life award on 2 November 2019. The members of Operation Orion made a significant impact on the lives of over 5,000 villagers in Philippines by constructing a hydraulic ram pump system and reservoir tank providing easy access to water sources for irrigation of crops hence eliminating crop failure and increasing the annual income of the locals.

Fatim Mohrini is part of the four NUS students team who did an internship in Shenzhen, China, earlier this year and the internship stint led them to an idea to make the world's first 7-in-1 USB-C hub with a solid-state drive (SSD) enclosure.



NUS Team “7 Monkeys” supervised by **Dr Yeoh Ker-Wei Justin** won the Merit Award at the International Building Design Competition 2019, as part of the International Built Environment Week (IBEW) held annually. The multidisciplinary team comprise 4 Civil Engineering students, 2 SDE students, and 1 ME student. BEng (Civil) students are **Joel Lee Yu En (CVE3)**, **Teo Wei Ywin (CVE3)**, **Tay Bing Sen (CVE4)** and **Ryan Leong**

Wei Ren (CVE 4). The International Building Design Competition 2019 is co-organised by Singapore Building and Construction Authority (BCA) and Singapore Polytechnic (SP). This event encourages students around the globe to form inter-disciplinary teams to design architectural spaces. The theme for 2019 was about creating a co-working space on Coney Island, accustomed to the needs of a

millennial workforce. 36 teams participated and 8 winners were selected, with the NUS team clinching a Merit prize .The team received S\$1,000 and a plaque in Sep 2019.

Past Events

Graduate Certificate Graduation Ceremony: The department held a graduation ceremony for a total of 47 Graduate Certificates graduands from GC Geotechnical Engineering, GC Structural Design Technology and GC Technology for Environmental Sustainability on 30 July 2019.



The Graduands at the Graduate Certificates Ceremony on 30 July 2019

NUS Engineering Alumni Gala Dinner 2019 - 8 Nov 2019 Friday at Kent Ridge NUSS Guild House



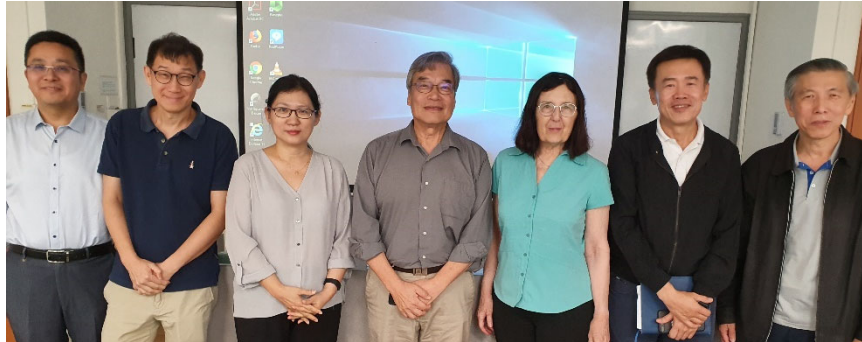
CEE Alumni, Industry Partners, Staff at NUS Engineering Alumni Gala Dinner 2019

Department Meetings, Briefings and Activities

A CEE Department Meeting took place on 23 August 2019 to provide updates on department and Visiting Committee visit from 19 - 21 March 2019. CEE staff also gathered for a buffet lunch after the meeting. The next Department Meeting has been scheduled on 17 January 2020 Fri in the new semester to provide new updates to the department.

The department gathered for another buffet lunch after the department's Board of Examinations Meeting on 13 December 2019 to mark the end of the semester.

Workshop on Professional Societies (Fellowships/Awards/Technical Activities) took place on 27 November 2019. The topics were shared by our senior Faculty Distinguished Professor Phillip Liu, Distinguished Professor Christine Shoemaker, Professor Hu Jiangyong, Professor Meng Qiang, Phoon Kok Kwang, Distinguished Professor & Vice Provost (Academic Personnel) and Professor Richard Liew.



(Left) Professor Meng Qiang, Professor Phoon Kok Kwang, Professor Hu Jiangyong, Professor Phillip Liu, Professor Christine Shoemaker, Professor Richard Liew and Professor Quek Ser Tong

Student & Alumni Activities and Events

Civil Engineering Class of 1989 had a class reunion on 31 August 2019 led by Mr Gan Cheng Chian.

Alumni Gathering 2019, NUS Staff Club Lounge on 12 July 2019

Civil Engineering Class of 1987, 1992, 2001, 2019 and Environmental Engineering attended the event hosted by the department. It was a memorable gathering for alumni.



(Left) Civil Engineering Class of 1987 and (Right) Civil Engineering Class of 2001



(Left) Civil Engineering Class of 2019 and (Right) Environmental Engineering Alumni



Mentor Mentee sharing Session with Mr Tai Xu Hong (EVE Alumni and DCC member)



Sharing Session on "Environmental Management Systems" on 14 Aug 2019 by former CEE Part time lecturer Mr Marvin Lee, Director, EHS-APAC and EVE Alumni: Ms Patryce Ng, Asst Manager & Safety Officer, Changi General Hospital and Mr Jasper Ng, Asst Manager (Occupational Safety & Health), ESH Department, Omron Asia Pacific Pte Ltd



CEE Students & Civil Engineering Alumni Dialogue Session 2019, 27 Aug 2019

Panel Speaker	Designation & Company	B. Eng. (Civil) Graduation Year
Dr Faizal Zulkefli	Executive Manager, Automation & Robotics, Advanced Construction Materials (ARACM), Built Environment Research and Innovation Institute (BERII), BCA	2011 PhD - 2016
Mr Ricky Nagatie	Senior Engineer, HDB	2012
Ms Caroline Ong	Manager, Beca	2013
Mr Cuthbert Yeo	Design Engineer, Surbana Jurong	2016
Ms Rebecca Tan	Project Engineer, Santarli Construction Pte Ltd	2018



CEE Students & Environmental Engineering Alumni Dialogue Session 2019, 1 October 2019

Panel Speaker Name	Designation & Company	B. Eng (Environmental) Graduation Year
Ms Selina Patra	Research Project Manager, GA circular	2013
Ms Aqila Aziz Alkaff	Senior Executive, Ministry of the Environment and Water Resources	2014
Mr Arnan Koh Yeang Ngee	Principal Engineer, Singapore Environmental Consultancy And Solutions Pte Ltd	2015
Mr Lan Yi Chieh	Executive Engineer, Surbana Jurong	2017
Mr Wee Yong Han Vincent	Civil Engineer, Arup Singapore Pte Ltd	2018

Internship - 31 students (29 CVE and 2 EVE) had their Industrial Attachment (IA) from July - November 2019. A new batch of 119 (88 CVE and 31 EVE) students will be having their internships from January – May 2020. NUS is supporting the implementation of the 3 days Built Environment (BE) Formation Programme initiated by Building and Construction Authority (BCA) Academy for students to understand, stay and contribute in the built environment industry. The BCA press release is at: <https://www.bca.gov.sg/newsroom/iBuildSGSS-MR24102019.html> for your reference. We thank our industry partners for their valuable support.

Site Visits

With the support of industry partners, academic staff and student clubs, students visited companies and the work sites to gain some practical knowledge. Here are some of the sites they have visited in the second half of 2019.



(Left) Visit precast factory Syscon for PPVC production on 16 October 2019 for CE3165 and CE3166 students, led by Professor Tan KH and Assoc Professor Pang SD.



(Left) Visit to Building and Construction Authority (BCA) Academy – 22, 23 October and 25 October 2019 for EG1311 Design & Make, and CE2409 Computer Application in Civil Engineering



Assoc Professor Karina Gin together with 43 students went to Lorong Halus Constructed Wetland on 15 November 2019 for ESE2000 Environmental Engineering Fundamentals. The students saw how leachate from landfill is treated using the aeration lagoons and constructed wetland.

Company/Site	Date	Accompanying Faculty
CE4103 - Design Project JTC, Jurong Town Hall site at Woodlands North Coast	25 September 2019	Assoc Professor Pang Sze Dai & Dr Justin Yeoh
CE3165 Structural Concrete Design and CE3166 Structural Steel Design and System Visit PPVC Factory & Project Site at Greencourt@Tampines	14 October 2019	Professor Tan Kiang Hwee
CE3165 Structural Concrete Design and CE3166 Structural Steel Design and System Visit precast factory Syscon for PPVC production	16 October 2019	Assoc Professor Pang Sze Dai
EG1311 Design & Make, and CE2409 Computer Application in Civil Engineering Visit to Building and Construction Authority (BCA) Academy	22, 23 & 25 October 2019	Assoc Professor Chan Weng Tat & Dr Justin Yeoh
PUB Learning visit - Changi Water Reclamation Plant (CWRP) visit	24 October 2019	Professor Hu Jiangyong
ESE2000 Water Quality Engineering Lorong Halus Constructed Wetland	15 November 2019	Assoc Professor Karina Gin

Seminars

The department hosted 18 public seminars in the second half of 2019 in various research interest areas.

Seminar Topic	Speaker/s	Date
Ballistic performance of nacre-like aluminium composite plates	Dr Luming Shen School of Civil Engineering, The University of Sydney, NSW 2006, Australia	9 July 2019
Taking a closer look at the importance of public transport ridership for commuters	Dr Subeh Chowdhury Senior Lecturer at the Department of Civil and Environmental Engineering, University of Auckland, New Zealand	25 July 2019
Geotechnical Construction and Testing of Piling Foundations on Problematic Soils of Kazakhstan	Professor Askar Zhussupbekov Eurasian National University Nur-Sultan, Kazakhstan	1 August 2019
An explicit time-domain approach for random vibration of large complex structures	Professor Cheng Su School of Civil Engineering and Transportation, South China University of Technology	2 August 2019
Roles of Large-Scale Structural Testing – As Lessons Learned from 1995 Kobe and 2011 Tohoku Earthquakes	Professor Emeritus Masayoshi Nakashima Kyoto University, Japan	7 August 2019
Multi-Tier Adaptive Memory Programming and Cluster- and Job-based Relocation for Distributed On-demand Crowdshipping	Assoc Professor Bo Zou Transportation Systems Engineering University of Illinois at Chicago	16 August 2019
Damage Waves in Earth and Engineering Structures as precursors to catastrophic failure	Professor Klaus Regenauer-Lieb Minerals and Energy Resources Engineering Petroleum Engineering Discipline Leader UNSW AUSTRALIA	23 August 2019
SEG 3Q/4Q Seminar on Practical Insights and Techniques in Seismic Velocity Estimation	Dr John Etgen BP, Houston, Texas, USA	26 August 2019
CTR Seminar by Two Professors from ETH Zürich Disruption Management in Railway Networks How Large can Autonomous Taxi fleets become?	Professor Francesco Corman Transport Systems, Swiss federal Institute of Technology ETH Zürich Kay Axhausen, Professor & Hazel Chair Infrastructure Engineering, Dept. of Civil, Environmental and Geomatic Engineering ETH Zurich	19 September 2019
Using Big Data Analytics in Active Traffic Management	Mr Mohamed Abdel-Aty Trustee Chair, Pegasus Professor & Chair Department of Civil, Environmental & Construction Eng. University of Central Florida	23 October 2019
Sediment as a Resource, International Experience of Beneficial and Nature-Based Sediment Use for Engineering and Environmental Applications in the Context of Sustainable Development.	Mr Bio Luca Sittoni Deltares	23 October 2019

Improving structural models of congestion	Asst Professor Jonathan Hall Department of Economics and Munk School of Global Affairs and Public Policy University of Toronto	7 November 2019
CE3166/CE5509 Special Lecture on Design and Construction of Complex Steel Structures	Professor Richard Liew Jat Yuen Department of Civil & Environmental Engineering, NUS	11 November 2019
Strategic planning for coastal community resilience to maritime transportation disruption	Asst Professor Floris Goerlandt Canada Research Chair in Risk Management and Resource Optimization for Marine Industries Dalhousie University, Halifax, NS, Canada	21 November 2019
SEG Distinguished Instructor Short Course (DISC) Physics and Mechanics of Rocks: A Practical Approach	Dr Manika Prasad Petroleum Engineering department of the Colorado School of Mines (CSM)	29 November 2019
Trajectory Planning for Autonomous Modular Vehicles Docking Operations	Assoc Professor Xiaopeng Li Associate Professor, Susan A. Bracken Faculty Fellow, University of South Florida	5 December 2019
Seismic Site Classification- Can it be applied for any Site? Detailed studies on shallow & deep soil sites classification and proposal of new seismic site classification	Associate Professor P. Anbazhagan Department of Civil Engrg., Indian Institute of Science, Bangalore, India	9 December 2019
SEG honorary lecture-Pacific South: A Hitchhiker's Guide to Geophysics	Dr Koya Suto Brisbane, Australia	13 December 2019
International Symposium on Advances in Steel & Composite Structures	10 Speakers are:- 1 Professor Richard Liew - NUS 2 Professor Chan Siu-Lai - Hong Kong University 3 Mr Patrick Beshara - Lendlease Australia 4 Professor Chiew Sing Ping - SIT 5 Assoc Professor Pang Sze Dai - NUS 6 Mr Zhu Zhongyi - Beijing Architectural Design & Research Institute 7 Mr Jason Tan - ARUP 8 Mr Lai Binglin - NUS 9 Mr Koji Oki - JFE Steel Corporation 10 Mr Seunghwan Lee - Sen Engineering Group	10 January 2020
Recent Developments in Construction Automation and Robotics Applications in the USA - WOH HUP Distinguished Lecture	Professor Mirosław Jan Skibniewski Construction Engineering and Project Management, Department of Civil and Environmental Engineering, University of Maryland, College Park, USA	14 January 2020

Information sources

Do follow us on social media: website, Facebook, Instagram and YouTube to get updates on events and news about our department using the following QR codes.

