



Message from Prof Richard Liew, Head of Department

Dear NUS Civil and Environmental Engineering Community,

I hope this message finds you well. On behalf of the CEE Management Team, I would like to welcome our students to the new academic year 2022. We also wish to thank all our staff, students, alumni, partners, and friends who have contributed to the beautiful closing of academic year 2021. Our heartfelt congratulations to the Class of 2022, our first batch of CDE graduates, and their graduation have been well earned given the challenging two years of pandemic. Class of 2022 comprised 497 students; 37 Ph.D. & M. Eng. students, 279 M.Sc. students, 152 B. Eng. Students and 28 B.Tech. students. We had the honour to have 2 valedictorians: Mr Quek Yong Xiang (B. Eng. Civil Engineering) and Ms Lim Ting Ting (M.Sc. Civil Engineering) to speak at the [commencement ceremony](#).

CEE Department has expanded learning pathways with a new undergraduate curriculum, which provides a greater choice for students to chart their university journeys, enabling them to

seamlessly take courses from different schools, developing competencies across different fields. The department has launched a new second major on [Sustainable Urban Development \(SUD\)](#) which is made available to all undergraduate students in NUS. This SUD major will provide the basis for a holistic understanding of urban challenges to build sustainable and resilient cities. As part of the alignment with global trends and industry needs for continuous learning, [M. Sc. Civil Engineering](#) introduced a Capstone project in each specialization as the integrator of interdisciplinary learning while [M. Sc. Environmental Engineering](#) introduced new modules on “Climate Change” and “Urban System” as well as “Environ System Planning & Analysis”.

QS World University Rankings has released its subject ranking in 2022 with NUS Civil Engineering ranked # 3 in the world while we are still maintaining first place in the QS Asia University Subject Rankings. The QS ranking in Environmental Sciences, closest to our Environmental Engineering programme, rose to 10th place. The rankings are based on academic reputation, employer reputation, research citations per paper, H-index and international research network. For more information about NUS 2022 rankings, visit: <https://news.nus.edu.sg/sixteen-nus-programmes-in-global-top-10/>

We would like to thank Trimble Solutions SEA Pte Ltd for their commitment and contribution to the Department. A [Memorandum of Understanding \(MOU\)](#) was signed between NUS College of Design and Engineering (CDE) and Trimble Solutions SEA Pte Ltd to strengthen the partnership and incorporate more of Trimble’s technology and solutions into our curriculum.

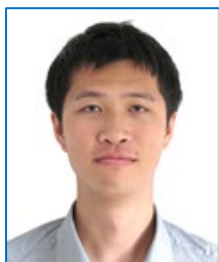
The department extends a warm welcome to **Dr Yang Kaidi**, who is a new Assistant Professor joining us in Mar 2022. He received his Ph.D. in Civil Engineering from ETH Zurich in 2019, M.Sc. in Control Science and Engineering from Tsinghua University in 2014, and dual bachelor's degrees in Automation and Mathematics from Tsinghua University in 2011. Before joining NUS, he was a postdoctoral scholar with the Autonomous Systems Lab at Stanford University. His research aims to develop efficient and trustworthy algorithms for the design and operation of future mobility systems, considering intelligent vehicles and shared mobility.

The accomplishment of the department is completely due to the collective efforts and inspiring work done by our incredible students, faculty, staff, alumni and friends. I am looking forward to working with you in the coming months to forge an even stronger CEE community.

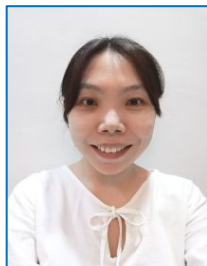
Richard Liew
Professor and Head,
Department of Civil and Environmental Engineering, NUS

Faculty & Staff Updates

CEE Welcomes



Dr Yang Kaidi
Assistant Professor



Ms Anna Chua
Laboratory Technologist



Mr Khong Chee Houe
Asst Senior Manager,
Research

Staff Retirement

On behalf of the department, I would like to convey our sincere thanks to them for their many years of outstanding contributions and loyal service to the Department, College and University. We wish them well in their retirement.



Mr Krishna Shanmugam, Laboratory Technologist



Mr. Semawi Bin Sadi, Laboratory Technologist, last day of service was on 30 Nov 2021

Staff Achievements and Awards

Associate Professor Chian Siau Chen Darren (PI), **Emeritus Professor Leung Chun Fai** (Co-PI), **Dr Shen Zhichao** (RF), **Dr Hitesh Halai** (RF) and **Mr Nicolas Lee Lin Hao** (RE), obtained the **Ministry of Transport, Minister's Innovation Award - Distinguished Award** for their creation of Digitaland@Tuas, a digital twin of the Next Generation Tuas Port as part of their SMI funded research project. The award is based on the quality of the initiative, which demonstrated a level of innovation that contributed significantly to achieving the Ministry's mission and goals. These resulted in benefits to the public and industry & have proven to be cost and time effective.

Associate Professor Chian Siau Chen Darren and **Dr Yeoh Ker-Wei Justin**, were named as the **Land Transport Excellence Award** (Most Innovative Solution) Finalist for their remote sensing technologies on 28 Mar 2022. The Land Transport Excellence Awards (LTEA) is a biennial event organised to recognise industry partners and individuals who have played a pivotal role in Singapore's endeavour towards developing a people-centred, efficient, and sustainable land transport system. The Awards aim to showcase best industry practices in Singapore's land transport system and has created positive brand equity for the land transport industry players, as they work together to enhance travel experience for all commuters.

Adjunct Assistant Professor Elita Li Yunyue was presented the **Land Transport Excellence Award (Young Innovator)** for her novel Tunnel-Look-Ahead geophysical technology on 28 Mar 2022. The Land Transport Excellence Awards (LTEA) is a biennial event organised to recognise industry partners and individuals who have played a pivotal role in Singapore's endeavour towards developing a people-centred, efficient, and sustainable land transport system. The Awards aim to showcase best industry practices in Singapore's land transport system and has created positive brand equity for the land transport industry players, as they work together to enhance travel experience for all commuters.

The conference paper titled "Laboratory-scale Production of 'Sand-like' material from Excavated Soft Soil" authored by **Koh Juan-Wei** (Research Fellow), **Subramanian Sathyamoorthy** (Research Fellow), **Assistant Professor Chew Soon Hoe, Low Kai-En** (PhD Student & Research Engineer), won the **Best Paper Award** at the 7th World Congress on Civil, Structural, and Environmental Engineering (CSEE'22). The paper was presented by Koh Juan-Wei virtually. Other Authors include: HDB- Chua Kok-Eng, Tan Yeow-Chong, Jamie Lee, & Charmaine Koh.

Student Life & Student Achievements

Mr. Zhang Zhe, PhD student, supervised by **Dr Geng Guoqing** won the **Outstanding Student Poster Award** in the 76th RILEM Annual Week and ICRC2022 on 7-9 Sep in Kyoto. The title of his poster is "The Origin of Strength of Calcium Silicate Hydrate". The award package includes free registration for the next RILEM annual week conference in Vancouver in 2023.

Mr. Zhong Yu, a President Graduate Fellowship (PGF) scholar in the Department of Civil and Environmental Engineering supervised by **Professor Hu Jiangyong**, won the **Best Student Poster Runner-up Award** at the Singapore International Water Week 2022 (SIWW2022), held in 17-21 Apr 2022, with a poster titled "Disinfection by-products formation during ozone/BAC and UV/chlorine treatment of secondary effluent (co-authored by Y Zhong, SL Ong, JY Hu, WS Ang and B Viswanath)". This award is one of three awards given at this international conference for excellent student poster presentations.

NUS Built Environment Case Competition (BECC) 2022 (3rd run) is a student-led initiative organised by Civil Engineering and Real Estate students. Civil Engineering students **Chloe Ng Xuanhui, Elizabeth Lim Zhi Yan, Hugo Teo Wee Siang** and **Keamjeera Vatanawood** bagged both the second position and People's Choice Award. The team was supervised by Senior Lecturer **Dr Du Hong Jian**. The students proposed a new concept of mass engineered bamboo (MEB), aiming to actualise carbon net-zero for built environment. Their work was highlighted in the opening speech by **Member of Parliament (MP) Ms Cheryl Chan** on the day of the competition on 30 Jul.



**Member of Parliament (MP)
Ms Cheryl Chan**



**2nd place - Team HECC
from NUS CDE Civil
Engineering Year 1**

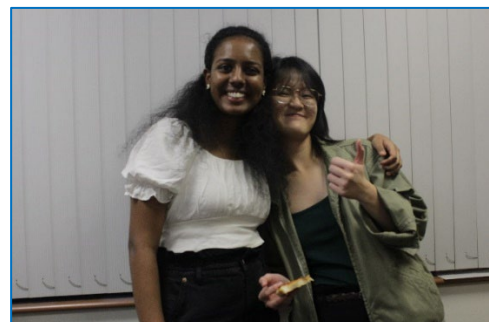
The **CESE Camp** hosted by the 2 student clubs; CE Club and ESESC concluded on 17 Jun for the incoming freshmen to the B Eng programmes and provided a memorable experience for all the participants.



Freshmen Welcome 2022 took place on 4 Aug. **Professor Aaron Thean, Dean of CDE** gave a welcome speech while **Professor Ho Ghim Wei, Vice Dean (Student Life)** shared with students the list of student life services available and the importance of having a balanced life. Invited speakers from various NUS Administration offices also briefed our students on key topics such as student wellness, careers, campus security, and student conduct. For our Department's segment, **Associate Professor Pang Sze Dai** (Civil Engineering Programme Director), **Professor Hu Jiangyong** (Environmental Engineering Programme Director), **Dr Chew Soon Hoe** (Industrial Engagement) and **Mr Desmond Lie** (CFG Career advisor) welcomed our students with short briefings on curriculum, Industrial Attachment and Services provided by NUS Centre for Future-ready Graduates followed by lunch.

CE Club Annual Meeting on 8 Sep 2022 and 25th Committee Inauguration

Right photo: Immediate Past President, Nagarajan Nivedha and new President Chloe Ng.



ESESC Annual Meeting on 9 Sep 2022 and 15th Committee Inauguration

We welcome the 15th ESESC Committee!



Winner of Youth Pharmacists Chapter SANDBOX Competition 2022

Our heartiest congratulations to the Environmental Engineering (EVE) students who are part of the Green Doctors Programme (GDP), who participated in the Youth Pharmacists Chapter SANDBOX Competition 2022 and emerged as winner for the project (with 2K grant for the research and project development over a 1-year collaboration). The team was mentored by **Professor Hu Jiangyong**. The team members who participated in the competition are **Eugene Lau Cheng Jin, Jung Se Hee, Chia Miao Hui Deborah, Lavanya Ramaravikumar**, and **Jesslyn Tanawa Dharma**.

Final Year Environmental Engineering (EVE) students, **Sophia Ding Ning Ke** and **Su Yee Shien** were featured in [The Straits Times's article](#) on 21 Aug on "NUS students come up with recycling method for medicine strips".

Alumni Achievements



Photo credit: NUS Overseas Colleges

Introduce you to [ConcreteAI](#)

ConcreteAI is a deep-tech spin-off from NUS and founded by 4 NUS Engineering graduates: **Ms Chang Qingyang NOC Alumni (CVE), Mr Siow Ming En Isaac (CVE)**, Ms Ooi Xi Yi, Mr Peter Lim, former Final Year Project students supervised by **Dr. Kevin Kuang**. Their solution is backed by IP.

The start-up company utilizes connected sensors coupled with machine learning algorithms to enable real-time monitoring of concrete strength and temperature, the technology can achieve significant increase in construction productivity, removing

guesswork while providing objective information for decision-making on the jobsite. The IoT solution monitors the concrete strength development during curing in real-time and this information allows builders like the main contractors or pre-cast manufacturers to speed up the casting cycle by 20% and reduce resource wastage incurred with the current concrete testing

method by 50%. ConcreteAI has worked successfully on a series of trials with various clients in Singapore including Greyform, Soilbuild, Alliance Concrete, and Dragages showing tremendous potential of the technology.

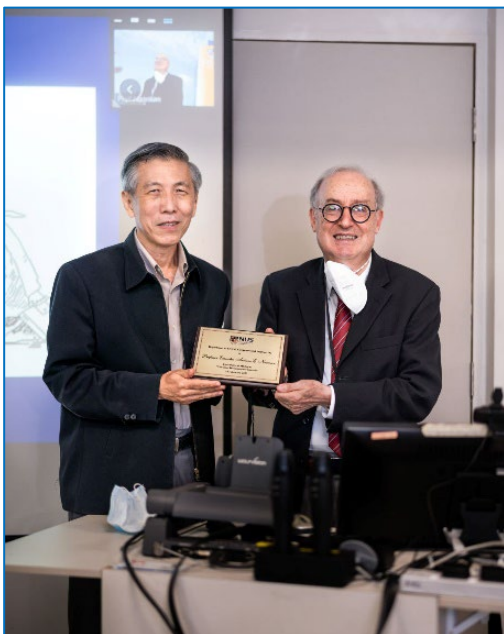
Congratulations to the team for winning the following awards: NUS Outstanding Undergraduate Researcher Prize 2021, NUS GRIP 2021, NUS Enterprise Practicum Grant, Asia Star award of the Alibaba Cloud x [Kr ASIA Global Startup Accelerator Singapore Demo Day 2022](#), Innovation award at Built Environment Demo Day 2022, 2nd Prize at the Built Environment Case Competition 2021.

WOH HUP – Distinguished Lectures

Professor Emeritus Antoine E. Naaman, Department of Civil and Environmental Engineering, University of Michigan was invited to give 2 Woh Hup Distinguished Lectures:

- 1) The Path to Ultra-High Performance Fiber Reinforced Concrete: Five Decades of Progress (18 Feb)
- 2) Ferrocement and Thin Reinforced Cement Composites: from Lambot to Nervi to the present (22 Feb)

Left photo: Professor Quek Ser Tong presented a plaque to **Professor Emeritus Antoine E. Naaman**.



Donors

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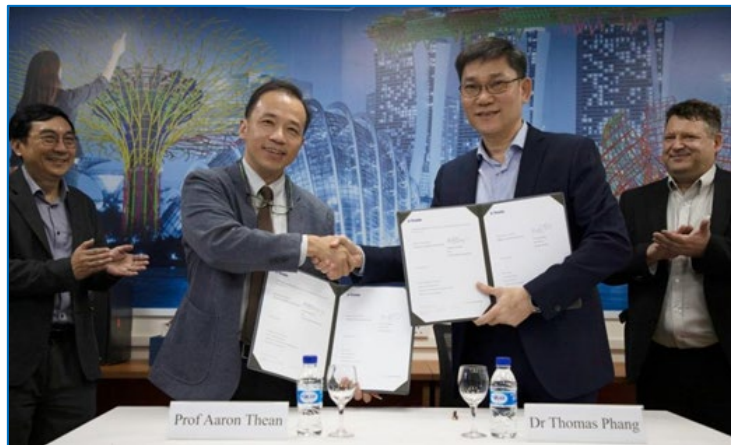


Photo credit: NUS CDE

Above photo: Professor Aaron Thean, Dean of NUS College of Design and Engineering, presented the signed MOU alongside Professor David Chua Kim Huat, Director, Digital Urban Infrastructure Laboratory, NUS CDE, with Dr Thomas Phang, Area Director of Trimble Solutions SEA and Mr Jari Heino, Vice President and General Manager of Trimble Finland.

Activities

“A green cement for Sustainable Development” Seminar, hosted by **Centre for Advanced Materials and Structures**, CEE took place on 30 Aug. The purpose of this event is to invite policy makers, industrial players and academic researchers to discuss a holistic solution to these challenges, through the development of a novel construction material named LC3, tailored for these challenges in Singapore and in the region.

This cementitious material, namely LC3 (limestone calcine clay cement), can reduce the demand of Ordinary Portland Cement through upcycling the local marine clay and construction waste. The material has equal strength as Ordinary Portland Cement, but a halved embodied carbon and an enhanced durability in marine environment. Nearly 100 participants from local construction industry, concrete institutes, academia and public agencies participated in the seminar. There was a vibrant discussion on the pathways of implementing LC3 in Singapore construction practice.

The event was organized in joint effort with pioneer researchers from EPFL (**Professor Karen Scrivener**) and IIT Delhi (**Professor Shashank Bishnoi**). See more details [here](#).

CEE Department Dinner, 23 Sep 2022, Raffles Marina Country Club



Stay Connected!

The [NUS Department of Civil & Environment Engineering](#) has several ways to stay up-to-date connection with you on our activities and accomplishments. Please subscribe to our social media channels. We have active [Facebook](#), [LinkedIn](#), and [Instagram](#) accounts. Join us, interact, and share!