



香港大學
土木工程系

Department of
CIVIL ENGINEERING
The University of Hong Kong



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Head's Message

PROFESSOR W. PAN

Since the establishment of The University of Hong Kong and the Faculty of Engineering in 1912, the Department of Civil Engineering has nurtured many brilliant leaders in the civil engineering discipline and made significant contributions to the local and overseas community. To address future challenges, the Department is always looking ahead to enhance its goals in education, research and knowledge exchange in order to keep abreast of the ever-changing demands of society. The current development of the Department synchronizes well with the needs of creating the next generation of industrial and scholarly leaders in civil engineering. This has been evident in the faculty qualifications and strategic expertise, world-leading research breakthroughs, pioneering role in interdisciplinary education, solid industrial collaboration with an innovative nature, strong outreach momentum contributing to community engagement, and high recognition reflected by the ranking outcome.

Today, the Department has 30 academic staff, around 400 undergraduate and 600 postgraduate students. The Department provides versatile programmes including the Bachelor of Engineering degree in Civil Engineering; Master of Science in Engineering (Civil Engineering); Master of Science in Engineering (Infrastructure Engineering and Management); Master of Philosophy (MPhil) and Doctor of Philosophy (PhD).

The innovative 4-year undergraduate curriculum is designed to equip students with knowledge beyond the traditional civil engineering subjects. Recently, we have introduced a new course on "Artificial intelligence in civil engineering", which has been well received. Building Information Modelling (BIM) is a tool that is increasingly being used in all building projects in Hong Kong. We have also introduced an elective course on "BIM management for civil engineering", giving our students the opportunity to learn more in depth knowledge. Other than these hot topics, we also offer the double degree in Business; the minor programme in Urban Infrastructure Informatics and three focuses on Environmental Engineering; Smart Transportation and Logistics; and Urban Informatics.

Our Department has two strategic research focuses: (a) Modular Integrated Construction (MiC) and Digital Technology and (b) Sustainable and Smart Infrastructure.

The accelerated urbanization and rapid economic growth have witnessed an increasing demand for resources, ranging from housing, clean water, energy to various infrastructure systems. Climate change and infrastructure systems are closely tied together and minimizing the greenhouse gases footprint of these systems is key to mitigating climate change.

Civil infrastructure systems are a backbone of society, and they are also major users of energy that needs to be reduced for a more sustainable development. Infrastructure systems are also vulnerable to climate change such as increasing frequency and intensity of extreme conditions. How to make infrastructure systems more sustainable and resilient to extreme conditions caused by climate change (e.g. typhoons, storms, earthquakes, elevated temperatures, floods, and landslides) is essential to the safety and welfare of our society, especially because Hong Kong is in a coastal area and prone to typhoons. Addressing these challenges calls for innovative approaches, such as MiC, BIM and digital building engineering, and green technology.

Our research integrates the key areas including climate change, carbon neutrality, MiC, sustainable infrastructure, and digital building engineering, water and environmental engineering. It also encompasses all components of civil engineering: from a fundamental understanding, through assessment of impacts, to the development of improved or new technologies and solutions.

The Department has continuously attracted top students and earned a good reputation in both academia and industry. We ranked the 13th globally under the QS University Subject Ranking 2025 in the subject area of Civil and Structural Engineering. With the continued growth in the local construction industry, there is a great demand for civil engineers and many opportunities for young and enthusiastic civil engineers to participate in the infrastructure developments in Mainland China and overseas. The Department of Civil Engineering will continue to devote itself in improving our teaching, research, knowledge exchange and community service for the betterment of our society.

Teaching & Learning

UNDERGRADUATE PROGRAMME

In line with the changing roles of civil engineers, the undergraduate programme is now becoming more versatile. Besides the main stream civil engineering programme, students may also take a minor programme from a range of disciplines, such as Accounting, Finance, Economics or Urban Infrastructure Informatics. A double degree in BEng in Civil Engineering and Bachelor of Business Administration (BBA) is also available. All programmes are fully accredited by The Hong Kong Institution of Engineers. At HKU, we emphasise on creative and critical thinking and problem-solving skills, and our Department will continue with the fine tradition of nurturing the next generation of leaders in the civil engineering profession through our undergraduate programme.





POSTGRADUATE PROGRAMMES

Research Postgraduate (RPg) Programmes

The Department offers world-class RPg programmes for degrees of Doctor of Philosophy (PhD) and Master of Philosophy (MPhil). RPg studies are supervised by leading researchers in various areas of civil engineering, including environmental, geotechnical, structural, transportation engineering and construction engineering and management. Outstanding candidates may be nominated for prestigious scholarships/fellowships, such as the HKU Presidential Fellowship and the Hong Kong PhD Fellowship. To find information about potential research supervisors, please refer to https://www.civil.hku.hk/h2_acstaff.html.

Taught Postgraduate (TPg) Programmes

The Master of Science in Engineering (Civil Engineering) Programme is a part-time / full-time postgraduate programme providing advanced education in the field of civil engineering. The programme aims at providing in-depth theoretical and practical education for graduates aspiring to pursue professional careers in civil engineering, and for practising civil engineers to advance and update their knowledge. The General Stream provides students with a platform to acquire multi-disciplinary knowledge in Environmental Engineering, Geotechnical Engineering, Infrastructure Project Management, Structural Engineering and Transportation Engineering. Three specialised streams of studies are also offered in Environmental Engineering, Geotechnical Engineering and Structural Engineering.

The Department recently launched a new Master of Science in Engineering (Infrastructure Engineering and Management) (IEM) Programme, with first student intake in the 2025-26 academic year. It is a part-time / full-time postgraduate programme with an aim to equip students with advanced knowledge and skills in intelligent and innovative infrastructure engineering, construction and management. There are two specialisation streams, namely 'Digital Infrastructure' and 'Infrastructure Project Management'. The curriculum covers a wide range of topics, including Artificial Intelligence, Building Information Modelling, Automation and Robotics, Computer Vision, Infrastructure Diagnosis and Prognosis, Megaproject Management, Modular Integrated Construction, etc. The programme is designed to prepare students for successful professional careers in a rapidly evolving construction industry, emphasizing innovation, sustainability and technology integration.

Research Activities



« Stonecutters Bridge »

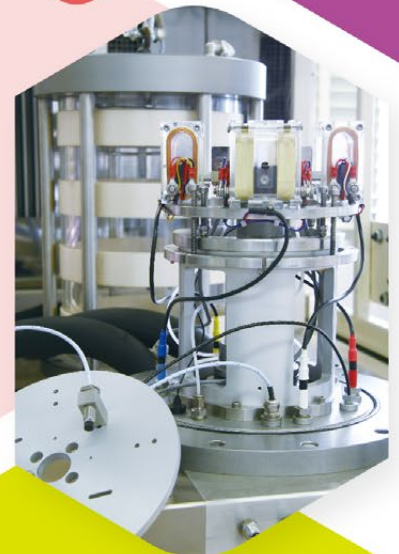
STRUCTURAL ENGINEERING

Computational mechanics; finite element and finite strip analysis; earthquake engineering; tall buildings; modular buildings; bridge engineering; concrete technology and reinforced concrete structures; fibre-reinforced polymer composites; steel structures and fire resistance of metal structures; concrete-filled composite structures; soil-structure interaction; computer-aided design/analysis; strengthening and repair of civil engineering infrastructure; RC structures under fire; semi-rigid joint connections; structural defect detection and quantification; low-carbon construction materials; durability and sustainability of infrastructure.

GEOTECHNICAL ENGINEERING

Soil/structure interaction - foundation engineering, tunnelling, cavern engineering, monitoring; rock and slope engineering - landslide investigation, mitigation; ground improvement; geoenvironmental engineering; soil mechanics – micromechanics, unsaturated soils, functional soils; soil dynamics – liquefaction, earthquake ground response, dynamic soil-structure interaction; advanced testing – field testing, field studies, laboratory testing; numerical modelling of geomaterials – constitutive modelling, continuum modelling, discrete element modelling; energy infrastructure – offshore wind energy, geothermal energy, carbon sequestration and storage.

Resonant column testing system for soil dynamics research »





WATER AND ENVIRONMENTAL ENGINEERING

Hydrology; environmental hydraulics and fluid mechanics; climate extremes; natural hazards; water quality modeling; advanced water and wastewater treatment; environmental biotechnology; solid and hazardous waste management; material resources recovery; environmental impact assessment.

TRAFFIC AND TRANSPORTATION ENGINEERING

Bike sharing and network design; continuum modeling in transportation; dynamic traffic assignment; green and smart transportation; public transportation; road safety; taxi; traffic and pedestrian flows; traffic management and control; traffic signals; transportation demand modeling; transportation, land use and the environment; transportation logistics; transportation network design; transportation network reliability and resilience; transportation systems engineering.



The Hong Kong Transportation System »

CONSTRUCTION ENGINEERING AND MANAGEMENT

Smart and sustainable construction engineering and management; modular integrated construction (MiC), prefabrication, project delivery, construction productivity and performance, innovative construction technologies, lean construction; net zero carbon, lifecycle assessment, circular construction; smart and sustainable infrastructure, infrastructure asset management; construction informatics, construction automation and robotics, digital twin, building information modeling, AI for construction.

« HKU Centre for Innovation in Construction & Infrastructure Development (CICID) Celebrates 20th Anniversary with “Capacity, Innovation, Smart and Sustainability” Conference



Recent Research Projects

DEBRIS FLOW DISASTER RECONSTRUCTION USING DIFFERENTIABLE MODELLING

The United Nations estimates that landslides kill thousands of people and cause at least 20 billion USD in damage annually. Debris flows are soil-water mixtures that travel long distances at high velocities. The most significant hazard posed by debris flows is the displacement and burial of objects with victims trapped inside. Displaced objects make rescue efforts considerably more challenging (Fig. 1). In 2006, rescuers in Guinsugon, Philippines, wasted the first six days excavating in the wrong location because the entire village was displaced 600 m downstream. The UN reports that for every 1 USD invested in risk reduction, 15 USD is saved in post-disaster recovery costs. However, there remains a dearth of knowledge and tools available for use in the most critical early stages of search and rescue operations. Existing understanding of the displacement and burial mechanisms of debris flows remains limited, existing methods for disaster reconstruction are time-consuming and existing prediction models for recovery do not explicitly simulate the physics between flow and objects.

Prof. Clarence E. Choi was recently awarded Collaborative Research Fund project from the Research Grants Council of Hong Kong, one of the world's largest experimental flumes will be used to model the scale-dependent behaviours of debris flow and produce unique evidence of how damaged objects are displaced and buried. Experimental results will then be used to validate and calibrate a GPU accelerated two-phase material point method and discrete element method coupling framework for debris flow simulation. The solver will be used to rapidly simulate scenarios beyond those modelled experimentally. The solver will then be equipped with differentiable modelling to enable rapid forward and backward simulations using limited post-disaster information for accurate object path prediction and terminal location of buried objects (Fig. 2). Uncertainty analysis will be conducted to dynamically combine the uncertainties identified and quantified with field observations to speed up and improve predictions.

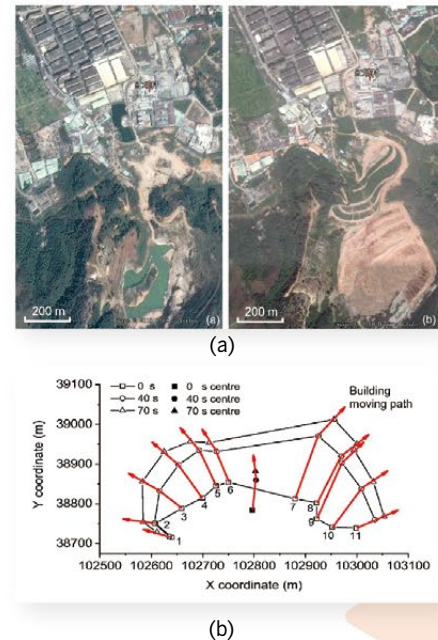


Fig. 1. 2015 Shenzhen landslide (Luo *et al.* 2019) (a) before and after failure; (b) displaced structure path

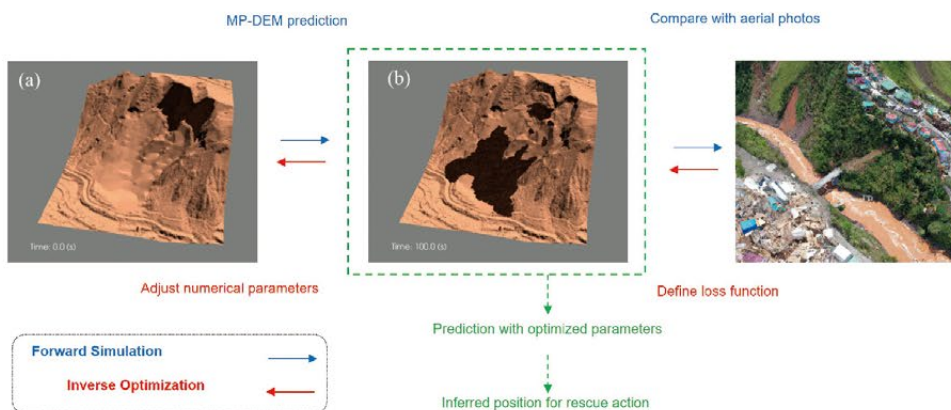


Fig. 2. Forward and inverse MPM simulation of landslide on realistic terrain



« Discharge of dry weather flows »

TACKLING DRY WEATHER FLOWS THROUGH SMART SENSING

Urban stormwater drainage systems are designed primarily to handle rainwater, but they often carry water even during dry weather. These dry weather flows (DWF) come from various urban activities such as street cleaning, car washing, and sometimes unauthorized discharges. These flows usually contain high-level of pollutants and can significantly impact the quality of receiving waters such as rivers and harbors.

This research project aims to enhance the monitoring and management of DWF in Hong Kong using advanced technology. The project involves developing an intelligent monitoring system that combines Internet of Things sensors with machine learning algorithms. These smart sensors will be strategically placed in selected drainage outlets to continuously measure both water quantity and quality in real-time. The innovative aspect of the project lies in its ability to use machine learning and smart city technology to automatically distinguish between regular rainfall runoff and various sources

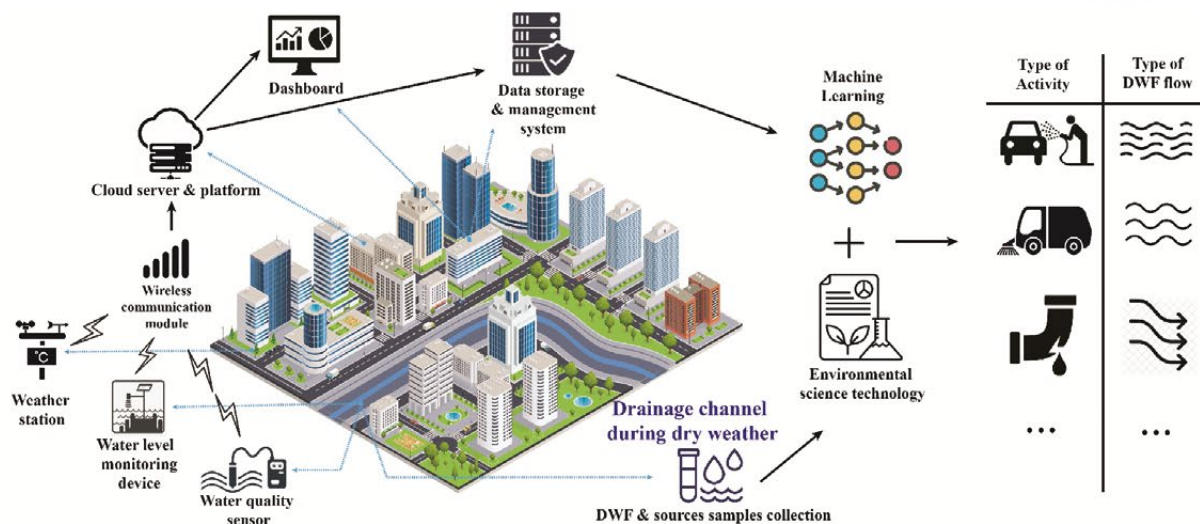
within DWF in real-time, which exhibit distinct characteristics in their flow patterns and pollution concentration levels.

This research brings together expertise from urban drainage engineering, smart sensing technology, and artificial intelligence to create a more efficient and smart water management system. The outcomes will contribute to better environmental protection and support Hong Kong's development as a smart city with sustainable urban water management practices. This research has received the support from Innovation and Technology Fund of Hong Kong (ITS/036/23MX).



On-site dry weather flow sampling »

≈ Framework for smart sensing of dry weather flows





≡ Lab prototype

HYBRID POSE ADJUSTMENT (HyPA) ROBOT FOR ASSEMBLY PROCESS IN MODULAR INTEGRATED CONSTRUCTION (MiC)

Impacts & Benefits: This project will enhance safety and reduce labor in the MiC assembly process. Currently, it requires 5-7 workers operating at height, under large-scale and heavy modules, or at blind spots with elevated risks of collision and falling, particularly during extreme weather conditions. In addition, this project will improve the precise control of MiC modules for efficient and quality-assured installation. The current assembly process relies on crane operators' mechanical operations in cooperation with installation workers' assistance by manually pulling and dragging the attached rope, which struggles with collaborative tasks, e.g., module alignment, positioning, balanced lifting, and high-precision connections.

Research Aim: To design and develop a HyPA robot for achieving safe, quality-assured, and productive assembly of large-scale and heavy modules under complex construction environments in Hong Kong and other parts of the world.

Key Objectives with Innovations:

(1) To design and configure optimal HyPA robot through modeling MiC assembly process and HyPA behavior mechanism, analyzing motion space of crane-HyPA-environment, configuring HyPA topology, developing HyPA servo system; (2) To develop novel collaborative control methods and precision compensation mechanisms with optimal sensor network for HyPA; (3) To develop multi-sensing-based positioning and alignment methods with LiDAR and multi-vision camera; (4) To develop the engineering prototype with evaluation method, experimental platforms, and pilot tests for maximizing its impacts.

This project has received support from the Innovation and Technology Fund.



« Conceptual design with tower crane

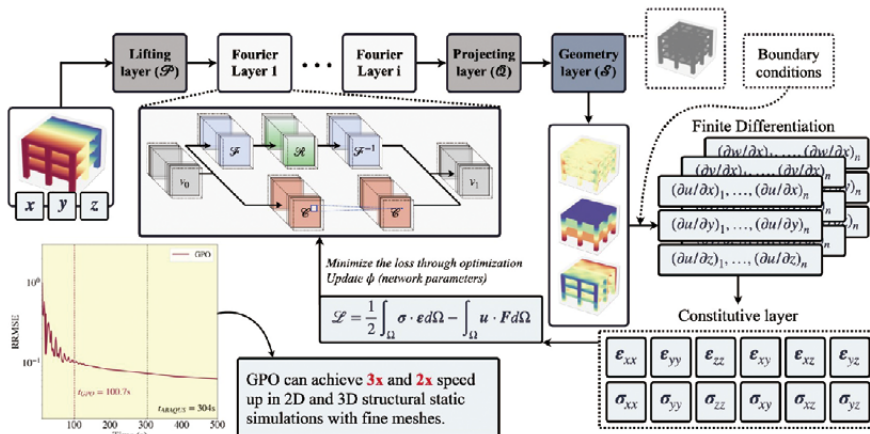
MECHANICAL DIGITAL TWIN OF HIGH-PERFORMANCE STEEL-CONCRETE COMPOSITE MODULAR BUILDINGS

Modular Integrated Construction is an innovative construction methodology using factory assembly followed by on-site installation. The steel-concrete composite modular structures are novel structural form to efficiently leverage the high tensile strength of steel and compressive strength of concrete. Composite modular structures achieve significantly improved mechanical performance under severe earthquake or Tropical Cyclones. To optimize energy saving and carbon footprint, we developed novel steel-concrete composite modular systems and designed module substructure tests at HKU Civil Laboratory. We conducted in-depth research on Advanced High Strength Steel-Ultra High-Performance Concrete composite modular structures for ultra-high-rise buildings, with steel yield strength above 1200 MPa and concrete compressive strength of 150 MPa.

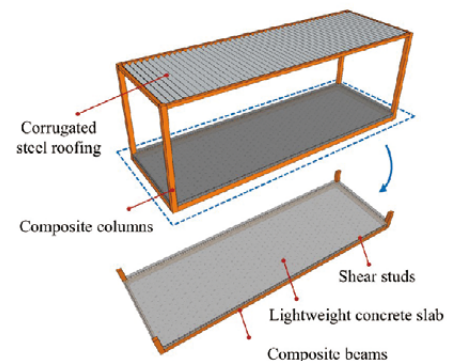
We are developing and promoting a variety of steel-concrete composite modular structural from ordinary strength to ultra-high-strength material to meet practical engineering needs in Hong Kong and beyond. Because the industry may have limited understanding of true mechanical performance of modular buildings, conservative design tends to be adopted in the actual design. We are developing novel Geometry Physics Operators to serve as mechanical digital twin of modular structures to learn the mechanical performance under severe earthquake and Tropical Cyclones and to achieve real-time bi-directional mapping between physical world and AI. Preliminary results demonstrate that under pre-training with limited data, the inference speed of digital twin achieves over 8000× speedup compared to traditional nonlinear finite element benchmarks. Without training data, the inference speed still achieves over 30× acceleration at same accuracy. We will advance the development of bi-directional virtual-physical mapping digital twins to accelerate design optimization and performance cognition in modular buildings.

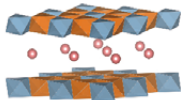
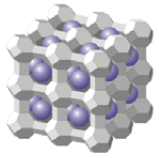
We are grateful of the financial support from the Innovation and Technology Fund (ITS/041/23MX) and the National Natural Science Foundation of China Young Scientists Fund (52408221).

≡ Schematic of the geometry physics neural operator (GPO) solver

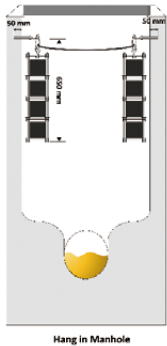
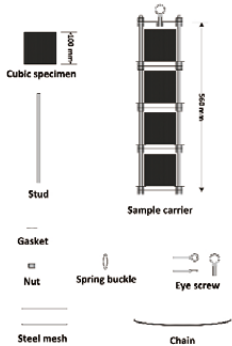


≡ Schematic of steel-concrete composite module units



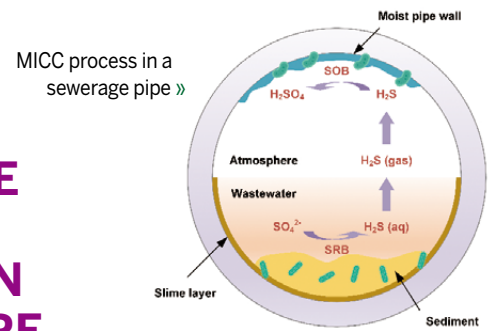
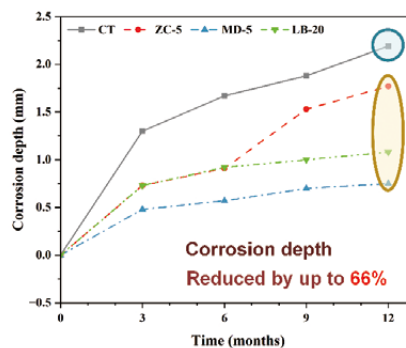
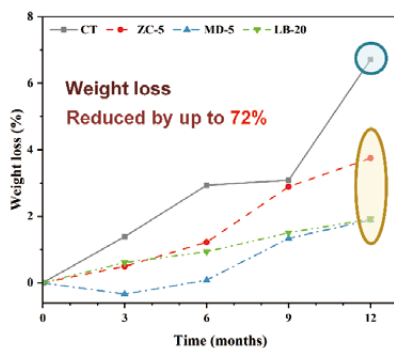


Chemical structure of selected antimicrobial admixtures



Site trial setup

Degradation progression of site trial samples. CT is the reference concrete without addition of antimicrobial admixture; while ZC-5, MD-5, and LB-20 are our developed antimicrobial concrete)



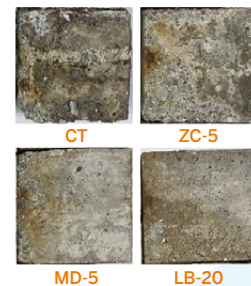
ANTIMICROBIAL ADMIXTURE TECHNOLOGY FOR BIOCORROSION CONTROL IN CONCRETE INFRASTRUCTURE

The global sewage network spans a length more than 100 times the circumference of the Earth. Concrete used in these sewage treatment systems is often exposed to complex environments that foster microbial growth, leading to significant degradation through microbial activity. This biodegradation drastically reduces the infrastructure's lifespan from the intended 100 years to merely 30 to 50 years. Besides economic losses, microbially induced concrete corrosion (MICC) produces harmful gases, primarily hydrogen sulphide, which pose serious health risks to workers and operators in wastewater systems. Consequently, developing sustainable long-term solutions to mitigate the biocorrosion of concrete structures is imperative.

Antimicrobial admixtures, which can be directly incorporated into concrete during mixing after pre-dispersion, are increasingly favoured for MICC mitigation due to their ease of handling and versatility. This study investigates the engineering properties and MICC resistance of concrete enhanced with selected conventional and novel antimicrobial admixtures through

laboratory and field testing. Laboratory results demonstrated the significant influence of the type and dosage of antimicrobial admixtures on concrete performance. Based on these results, three types of antimicrobial admixtures were selected for site trials due to their superior antimicrobial effectiveness and favourable engineering properties.

After a 12-month placement in Hong Kong's sewage environment, concrete mixed with the selected antimicrobial admixtures exhibited distinct advantages in highly corrosive environments compared to the control samples. Specifically, there was a reduction in weight loss by up to 72% and a decrease in corrosion depth by up to 66%. The study's findings indicate that antimicrobial admixture technology hold significant promise for application in sewerage systems, potentially slowing down concrete corrosion, enhancing durability, and extending the service life of concrete structures. This work has received supports from the Drainage Service Department (Agreement No. HKI 01/2022) and Research Grant Council (Grant No. 17200719).



Surface condition of concrete samples after a 12-month site trial (CT is the reference concrete without addition of antimicrobial admixture; while ZC-5, MD-5, and LB-20 are our developed antimicrobial concrete)

Student Activities

Civil Annual Dinner 2024 »

CIVIL ENGINEERING SOCIETY

Civil Engineering Society (ENS) was established in 2001. As a student-run and academic-oriented organization, the society strives to assist members in both their academic and career development and is committed to promoting welfare. Furthermore, the society serves as a bridge between members and the Department of Civil Engineering, along with external bodies. The society is also dedicated to promoting civil engineering to the public.

The activities organized are generally categorized into three areas: academic, social, and welfare. For academic activities, events such as visits and talks were held to help members gain a deeper understanding of the daily operations of infrastructure, ultimately enhancing their competitiveness. On the social side, Superpass Day was held to help members reduce stress, foster stronger connections, and increase their sense of belonging to the Society.



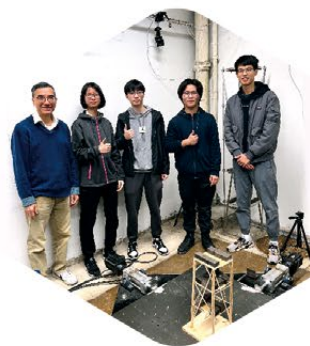
« Binnies
Recruitment Talk »

The upcoming major events include the Orientation Series, Civil Annual Dinner, and Welfare Week. These events not only aim to promote civil engineering to participants but also facilitate fresh undergraduates to adapt to university life.

THE SHAKING TABLE COMPETITION

The annual Shaking Table Competition, organized by the Department of Civil Engineering and Project Mingde Student Association (PMSA), has evolved into a hallmark event since its inception in 2021. This competition serves as a platform for students to demonstrate their engineering skills and creativity in designing earthquake-resistant models. Participants are tasked with the challenge of constructing models using only limited materials such as balsa wooden sticks and super glue, pushing the limits of their design capabilities within a strict 7-day preparation period.

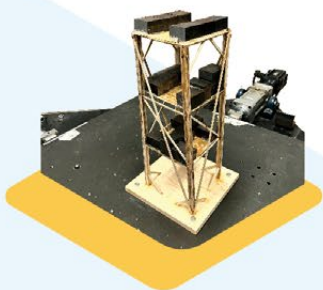
The competition reaches its climax during the rigorous testing phase on a shaking table, where the structures are subjected to simulated earthquake forces to assess their resilience. Teams then present their creations to a panel of judges, articulating their engineering concepts and design strategies with precision and clarity.



Team B Champion and Judge »

Beyond the realm of Civil Engineering, students from diverse engineering disciplines including Mechanical Engineering, Computer Science, Science, Architecture, Economics, and Finance have actively participated in this prestigious competition over the years. The success of the event underscores the Department's unwavering dedication to fostering innovation, collaboration, and excellence in shaping the next generation of engineering leaders.

« Team B Model »



Group photo of HKU representatives and local »
students at the opening ceremony



EXPERIENTIAL LEARNING – PROJECT MINGDE

Project Mingde is a pioneer program of experiential learning to provide our students with the opportunity to apply and utilize their knowledge and skills gained in the classroom to hands-on multidisciplinary Civil Engineering projects in the process of becoming competent and accountable engineers. Also through participation in real-life projects, students understand the needs of the society; learn how to communicate with different parties and to contribute to the society with their own efforts and expertise. This experience will not only fortify their confidence and interests in the Civil Engineering discipline but also give them a sense of satisfaction while caring for the society.

Since 2003, over 600 university students, teaching staffs and alumni have deeply involved into nine projects in Mainland China namely the Mingde Building, the Gewu Building, the Zhengdong Jie Kindergarten, the Chaoyang Bridge, the Mingde Pan Cultural and Community Centre, the JWDA Building, restoration of the Tencun Bridge, restoration of the Wangdong Bridge, and the Duling Educational and Cultural Centre, six projects in Vietnam namely the Sanitation Facilities at Tan Hung Secondary School, the Cuong Chinh Secondary School Library, the Trung Dung Primary School Library, the Sanitation Facilities at Trung Dung Secondary School, the Trung Dung Secondary School Swimming Pool, and the kitchen at Luong Noi Primary School, as well as one project in Myanmar, the feasibility study for a low impact water supply system at a school site in Dagon Seikkan Township.

« The new Duling Educational and Cultural Centre



13 undergraduates participated in the »
construction work



« Children were enjoying lunch
cooked in the new kitchen



Mainland China

Project Mingde successfully completed several projects in Mainland China, with the latest being the Duling Educational and Cultural Centre. The first visit to the site was in 2017. Duling Primary School provided not only primary education (Grades 1 to 6) but also pre-school education, serving a total of 193 students. During the visit, cracks were found in the existing teaching block. It was restored by adding additional structural members to improve its stability. Additionally, based on discussions with local villagers and a needs analysis of early childhood education in the region, a kindergarten was proposed to accommodate more children under the age of 6. The Duling Educational and Cultural Centre, comprising a kindergarten, teachers' quarters, and a community centre, was completed during and after the COVID-19 pandemic. The opening ceremony was held on October 20, 2023. With the cheers of the crowd, the Centre was officially handed over to Duling Primary School for operation.

Vietnam

Project Mingde collaborated with Faculty of Social Sciences and World Vision Vietnam to launch a Vietnam Summer Internship Program in summer with 13 undergraduates (10 students from the Department of Civil Engineering, 3 from the Faculty of Social Sciences) participated in this program, which consisted of three components: (1) construction of a kitchen; (2) voluntary teaching; and (3) needs assessment within local villages. A kitchen was built to enhance the safety and sanitation inside the primary school area for facilitating education for Luong Noi commune and supporting the child. With the knowledge learnt in class, our students put understandings into practice. Throughout the construction, they gained some hands-on experiences, had a full understanding of the entire construction procedure, and played a role as resident site staff to communicate with different stakeholders of the project. In addition, they offered life skill lessons to the local school children, and conducted a needs assessment of the satellite school nearby.

Summer Camp

In addition, we organized a summer camp every summer. Our students spent their time in our built schools for voluntary teaching and providing health care services. It was an extraordinary experience for them to sleep at the school in a remote village without electricity at night and hot water supply, and now they have a better understanding on the poor living condition of local villagers in impoverished regions. This kind of opportunity moves our students out from an extreme comfort zone within a glass house and allows them to reflect on their situations and the value of life in a different light. Their insights are thus widened and deepened, their personal characters strengthened.



Voluntary teaching
at school in the
summer camp



INTERNSHIP PROGRAMMES

All civil engineering undergraduate students have to complete at least 4 weeks of internship and the Mandatory Basic Safety Training (MBST) course as part of the Bachelor of Engineering Civil Engineering degree programme. Most students would take their training in Hong Kong while some would go abroad. They usually work as engineers' assistants with consultants or contractor firms. In recent years, students have had some new training programmes held in Beijing, Shanghai and Shenzhen.



« Students visiting Central Kowloon Route »

SITE VISITS AND FIELD TRIPS

Field trip to Cape D'Aguilar »



Site Visit to Central Kowloon Route - Kai Tak West »



« Students visiting a foundation construction site in Hong Kong »
Fieldwork measurement of soil permeability »



Student Awards

Mr. Chun Wing Edison, Pak won First Prize at HKIE Trainee of the Year Award 2023

Mr. Pak, a 2021 BEng graduate and 2024 MSc graduate of the Department of Civil Engineering, has been honoured with the prestigious First Prize in the Hong Kong Institution of Engineers (HKIE) Trainee of the Year Award 2023.

The Trainee of the Year Award, established by the HKIE, aims to acknowledge Scheme “A” trainees who have demonstrated exceptional achievements and contributions to training, the HKIE, and Hong Kong society. Each year, up to three individuals are selected for their outstanding performance in Scheme “A” training.

During the prize presentation ceremony, Mr. Pak received the certificate and trophy plate from the HKIE President Ir Dr. Barry Chi-Hong Lee, alongside Director of Civil Engineering and Development Ir Hok Shing Fong, in recognition of his remarkable accomplishments.



Ms. Wentao Zhu (PhD student supervised by Dr. Xiao Li) has won the Best Paper Award at the 2024 International Conference on Construction and Real Estate Management (ICCREM). The paper is titled “A blockchained work package system (BC-WPS) for progress payment and delay claims”. This research designs a work package-based delay claims mechanism and presents a smart contract-based procedure for executing progress payments and delay claims. In addition, a reputation mechanism is proposed to incentivize timely project delivery and encourage collaboration. Finally, the BC-WPS’s effectiveness is validated through real-world projects, indicating it can automate the work package-based payment management process efficiently and securely.



Mr. Chen Chen (MPhil student supervised by Dr. X Li) won the Best Innovation and Impact Award at the iCCPMCE-2024, 2nd International Conference on Construction Project Management and Construction Engineering in Sydney, Australia. The awarded paper is titled “Integrating IoT and Blockchain to Monitor Embodied Carbon of Modular Buildings”. This paper introduces a platform that integrates IoT and blockchain technology to monitor and calculate carbon emissions during the construction process of a Modular Building.

This conference is jointly organized by the School of Engineering, Design and Built Environment, Western Sydney University, Global Circle for Scientific, Technological and Management Research (GCSTMR) (as its 7th World Congress), and the International Council for Research and Innovation in Building and Construction (CIB) Working Commission W065 Organisation and Management of Construction. Only five papers stood out, four of which won the Best Theme Paper Award, and only one paper gained the Best Innovation and Impact Award.



Mr. Tak San Chris, Lau, our undergraduate with First Class Honors from the class of 2024, received the prestigious HKIE Structural Division Best Student Award 2024, an esteemed annual award established and organized by the Structural Division of The HKIE, with generous sponsorship from prominent structural engineering firms in Hong Kong, aiming to recognize and encourage outstanding undergraduate students who have demonstrated excellent academic results and high level of competence in structural engineering. Chris is currently pursuing his MSc(Eng) in Civil Engineering while actively contributing to the industry as a civil engineering graduate, and this award highlights his strong commitment, technical competence, and dedication to the structural engineering profession.

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UNDERGRADUATE PROGRAMMES

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POSTGRADUATE PROGRAMMES

**Taught Postgraduate Programme (MSc) –
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**Research Postgraduate Programme (MPhil/PhD) –
Dr. H. Ye**

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