

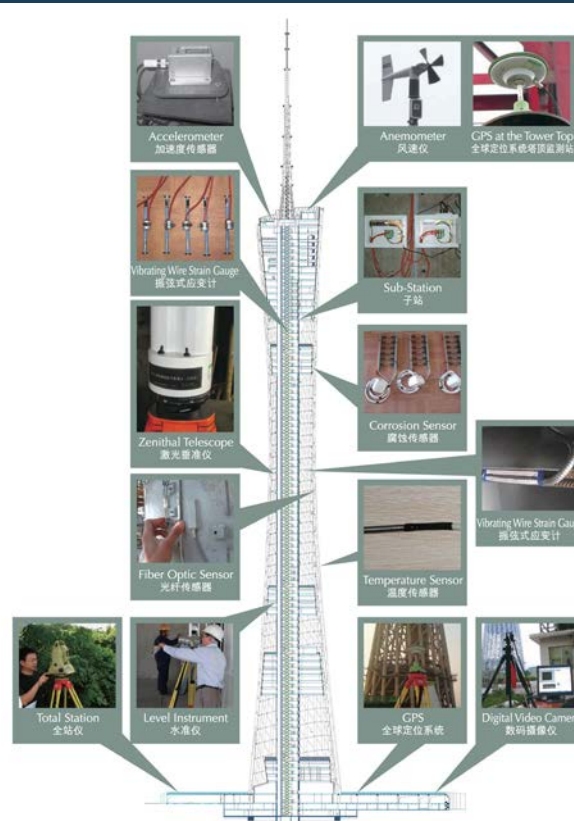


THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

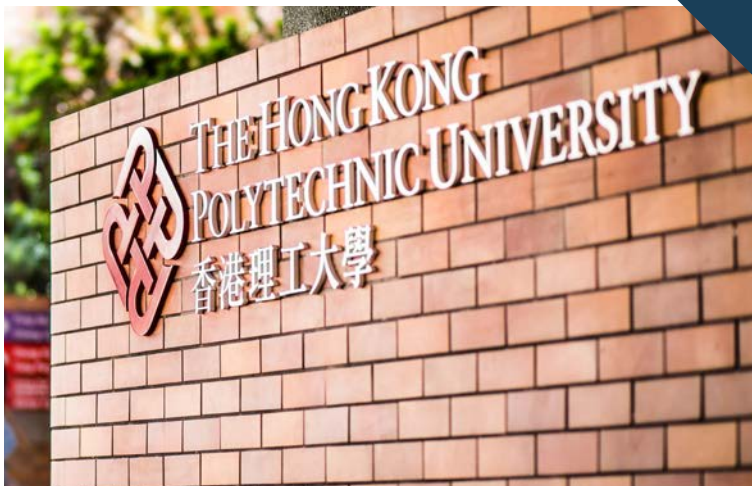


DEPARTMENT OF
CIVIL AND ENVIRONMENTAL ENGINEERING
土木及環境工程學系

Research Excellence



Department of Civil and Environmental Engineering



About CEE

As a leading department in civil and environmental engineering, we take great pride in our research excellence, high quality education as well as the power of synergy achieved by a pool of renowned scholars and professional faculty members in the field. We offer not only a broad-based and high quality interdisciplinary education in the areas of structural, geotechnical, hydraulic, transportation and environmental engineering, but also an advanced practical training enabling our students to be competent engineers in this ever-changing world.

In the QS ranking by the discipline of Civil and Structural Engineering, PolyU has been ranked top 20 worldwide consistently during the past eight years. Reflected by the H-index, the productivity and impact of our published work has also been ranked 1st for eight consecutive years. Riding on the international recognition in the rankings, we have performed particularly well in securing external research grants, including two Theme Based Research projects with a total funding of HK\$85.79 million in 2017/18 and 2018/19 and four Research Impact Fund projects with a total funding of HK\$25.86 million in 2018/19.

Our People

The Department has over 50 academic members in five academic units, including one Member of the Chinese Academy of Sciences and six Chang Jiang Scholars, supported by 15 office staff and 20 technical staff. They are serving 32 SCI journals as Editors-in-chief, Editors or Associate Editors. The Department has also six world-class scholars as our Distinguished Chair Professors and Honorary Professors.

The Department attracts quality local, non-local students to apply for our postgraduate research programmes. There are currently 234 PhD students and around 150 research staff members (Postdoctoral Fellows, Research Associates/Assistants).

Admission and Scholarship for PhD Studies

The Department admits PhD students with the normal duration of study of three years for students with an MSc degree or four years for those with only a Bachelor's degree.

	Hong Kong PhD Fellowship Scheme	General Admission
Admission Requirement	A Master degree containing a significant research component (such as a dissertation), conferred by a highly ranked university	
	PLUS A Bachelor's degree with First Class Honours (GPA > 3.6/4.3), or the equivalent, conferred by a highly ranked university.	PLUS A Bachelor's degree with First or Second Upper Class Honours (GPA > 3.0/4.3), or the equivalent, from a recognized university
	<i>* In exceptional circumstances, applicants with only a Bachelor's degree with First Class Honours, or the equivalent, conferred by a highly ranked university (internationally or nationally), may be considered.</i>	
English Language Requirement	Applicants who do not have a degree for which English was the language of instruction at a recognized university should have attained: <ul style="list-style-type: none"> - IELTS: Overall score of 6.5; or - TOEFL score of 80 (Internet-based test) or 550 (paper-based test) Validity of all English language test scores: two years after the date of the test.	
	Hong Kong PhD Fellowship Scheme (Hong Kong Government)	Postgraduate Studentship (PolyU)
Amount of monthly stipend	HK\$26,600 (US\$3,408) for the entire normal study period	HK\$18,100 (US\$2,320) (subject to review)
Tuition Scholarship	Waiving of tuition fees for the entire normal study period	Nil (local students' tuition fees are waived)
Conference and Research related travel allowance (for entire normal study period)	HK\$13,300 (US\$1,700) per year	HK\$25,000 (US\$3,200)
Associated money to support research study per normal study year	HK\$20,000 (US\$2,560)	HK\$20,000 (US\$2,560)

Application Procedures and Admission Timeline

The Department will consider applicants of the Hong Kong PhD Fellowship Scheme (HKPFS) and Postgraduate Studentship at the same time.

The application schedule is as follow:

Time	Schedule
1 September	Call for applications
1 December at Hong Kong Time 12:00 (GMT +8 hours)	Deadline for submitting initial applications to RGC by the applicants for allocation of a reference number
1 December at Hong Kong Time 23:59 (GMT +8 hours)	Deadline for submitting of full applications to PolyU
Mid December	Shortlisted applicants will be invited to attend an interview
Next March	Notification of result (for both HKPFS & CEE Studentship)

Interested applicants are highly recommended to follow the procedures below:

- Make contact with a potential supervisor before submitting your online application.
- Submit an Initial Application to the Research Grants Council (RGC) through the HKPFS Electronic System (<https://cerg1.ugc.edu.hk/hkpfs/InitApplication.jsp>) to obtain a HKPFS reference number by 1 December at Hong Kong Time 12:00 (GMT +8 hours).
- Submission of full applications to PolyU should be made via the eAdmission System (<https://www38.polyu.edu.hk/eAdmission/index.jsf>) on or before 1 December at Hong Kong Time 23:59 (GMT +8 hours).

Our Research

Staff of the Department are dedicated to carry out fundamental and application-oriented research to develop scientific, engineering and management solutions that are appropriate to sustain the urban development in densely-populated cities, such as Hong Kong, in Mainland China and other major cities in Asia.

Our excellent research performance is demonstrated and proven in the most recent QS ranking :

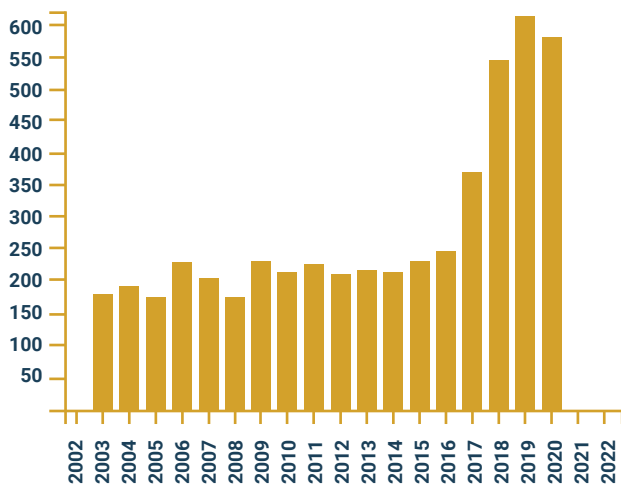
PolyU's QS World University Rankings by Subject – Engineering – Civil & Structural

Year	QS Rank	Overall	H-index Citations	Citations Per Paper	Academic Reputation	Employer Reputation
2020	19	85.9	100	94.3	86.3	74.0
2019	15	85.7	100	95.0	86.1	73.2
2018	10	86.6	100	94.9	83.9	79.2
2017	10	86.8	100	94.5	86.0	77.3
2016	12	84.3	100	94.1	76.2	85.2

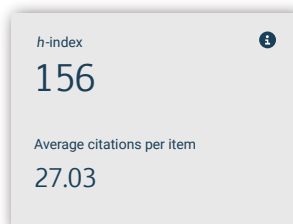
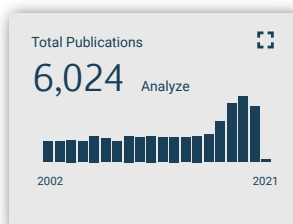
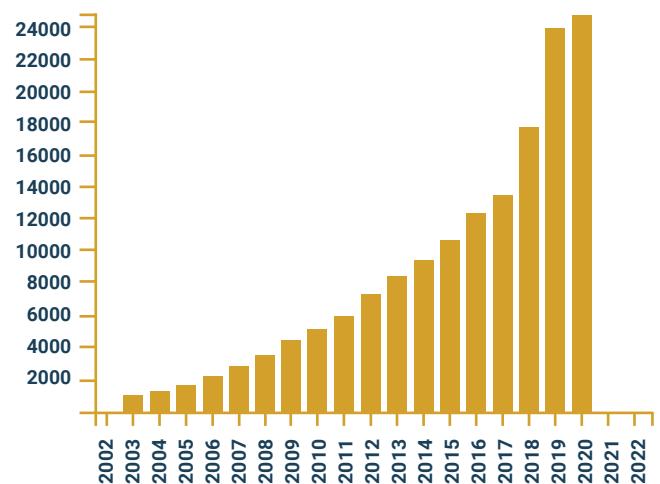
Source: <https://www.topuniversities.com/university-rankings/university-subject-rankings/2020/engineering-civil-structural>

Publications and Citations in Web of Science (as of 2020.10.12)

Total Publications by Year



Sum of Times Cited by Year



For the latest information on CEE's publications and citations, please click [here](#) or scan the QR code.



Publications
and Citations

National Engineering Centres and Joint Laboratories

- Hong Kong Branch of National Rail Transit Electrification and Automation Engineering Technology Research Centre [Link: <https://www.polyu.edu.hk/cnerc-rail/>] (Centre Director: Prof. Ni, Y.Q.)
- Hong Kong Branch of National Engineering Research Centre for Steel Construction [Link: <https://www.polyu.edu.hk/cnerc-steel/en/>] (Centre Director: Prof. Chung, K.F.)
- GIG-PolyU Hong Kong Joint Laboratory on Environmental Pollution Process and Control (PI: Prof. Li, X.D.)
- CAS IEE-PolyU Joint Laboratory for Aerosol and Environment (PI: Prof. Lee, S.C.)
- CAS- IRSM/HK PolyU Joint Laboratory on Solid Waste Science (PI: Prof. Poon, C.S.)
- Guangdong-Hong Kong-Macau Greater Bay Area Joint Engineering Research Centre for Intelligent Maintenance and Safety Operation of Transportation Construction (Representative PI: Prof. Xia, Y.)
- SUSTech-PolyU Joint Laboratory for Ocean Engineering and Technology (PI: Prof. Teng, J.G.)
- SYSU-PolyU Joint Laboratory on Corrosion Protection of Marine Infrastructures (PI: Prof. Poon, C.S.)

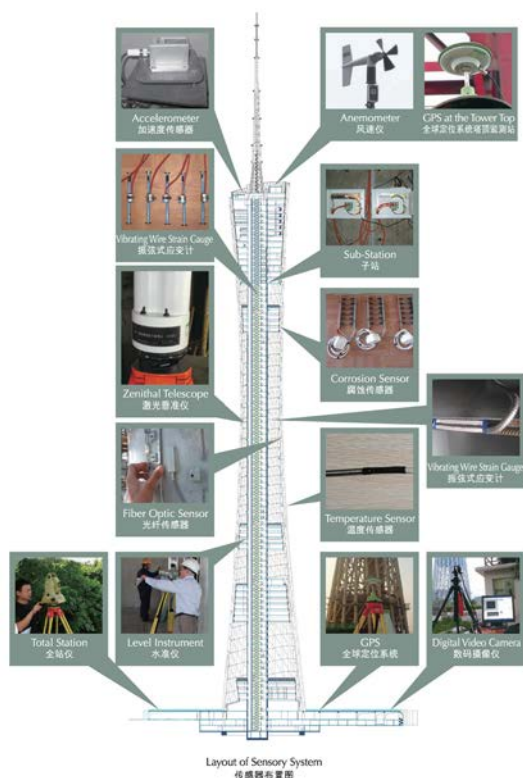
Impact Case Studies

High Performance Structures

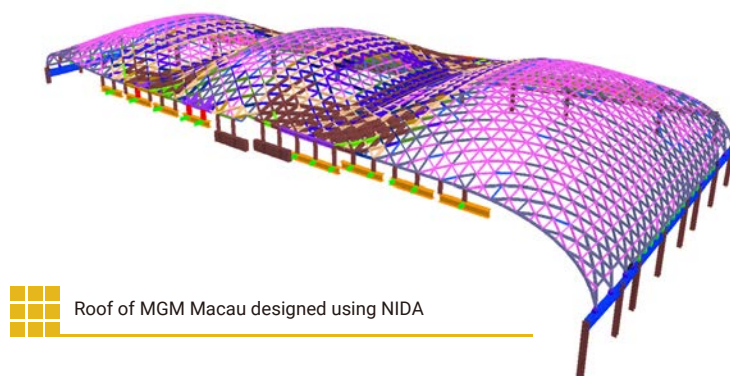
The three structural engineering research teams of the Department have conducted pioneering research in the areas of structural materials and forms, computational and design methodologies, and performance monitoring technologies.

- 1 The composite structural research team has developed systematic theories for the behavior and design of fiber-reinforced polymer (FRP)-strengthened structures. The team members also pioneered the innovative high-performance FRP-steel-concrete structures.
- 2 The steel research team has developed an innovative and practical computation and design method known as the second-order direct analysis, allowing for imperfections in practical structures.
- 3 The structural health monitoring team has developed systematic theories and techniques in system design, system identification, model updating, damage diagnosis and prognosis, infrastructure resilience and sustainability, life cycle management and rating system.

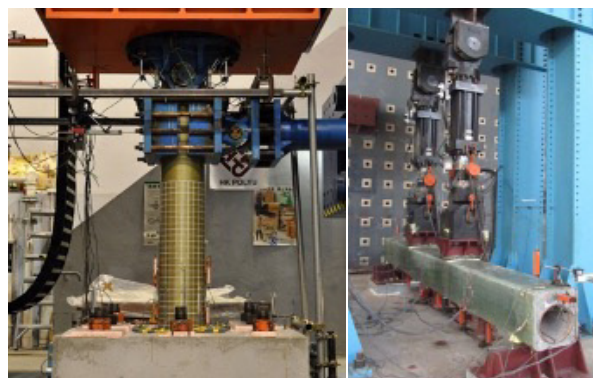
The outcomes enhance the performance of civil engineering structures in resisting harsh environments, material deterioration, and multiple hazards. The research has produced a significant impact on the international scientific and engineering communities through its direct adoption in regional and national design codes/guidelines around the world, widely utilised design software, and applications to landmark structures such as Tsing Ma Bridge and Canton Tower. It also led to a HK\$52M theme-based research project.



Canton Tower sensor layout



Roof of MGM Macau designed using NIDA



FRP-concrete-steel double-skin tubular members

Impact Case Studies (Cont'd)

Improving air quality through cutting-edge research

Ozone is the main ingredient of photochemical smog and is now the dominant air pollutant in Hong Kong and many other cities. It is also a greenhouse gas contributing to climate warning. The CEE atmospheric team have systematically investigated ozone and ozone-making ingredients and atmospheric processes shaping ozone in different regions of China. They measured gases and particles in carefully selected locations, conducted laboratory experiments, and developed state-of-the-art models to interpret the data. They were the first to investigate the long-term trend of background ozone in southern and northern China, and their finding on the rising ozone levels was adopted in the latest Inter-Governmental Panel on Climate Change's Assessment Report 5. Their findings on recent ozone changes have been a significant contribution to the Tropospheric Ozone Assessment Report, a global initiative with over 100 participating institutions. They recently studied "new" nitrogen chemistry and its important role in photochemical smog. Based on the new knowledge, they improved a three-dimensional air quality model (WRF-Chem) which is widely used by researchers and policy-makers worldwide. The improved model has been recently released to the international community, demonstrating the wide impact of their research. Their findings on long-range transport and local sources have aided the Hong Kong government in assessing its control policy on photochemical pollution in Hong Kong.



Measuring air quality with advanced instruments

Impact Case Studies (Cont'd)

Transport Smart and Infrastructure

With increasing attention on smart city development, there is a need to provide timely, reliable, safe and environment-friendly transport infrastructures in densely populated cities like Hong Kong and Singapore. The innovative technology developed by the research team of Prof. Y.Q. Ni for monitoring railway safety has been used in practice in Hong Kong, China, Singapore and Brazil. The research team is among the first to implement Optical Fibre Sensing Technology on in-service high-speed trains for online monitoring of operational safety. To enhance the sustainability of road construction, the research team led by Dr Z. Leng and Dr Y. H. Wang has developed various low-noise road surface paving technologies and investigated the recycling or up-cycling of various waste materials for pavement construction. The research on environment-friendly infrastructure materials such as recycled bitumen has led to a new design guide for using recycled materials in road pavements. To provide reliable real-time traffic information, the research team led by Prof. William H.K. Lam has developed various advanced solution algorithms for estimating the journey time and traffic speed of alternative routes on real-time basis. These developed algorithms of intelligent transportation systems (ITS) have been implemented for Hong Kong and Bangkok.



ITS Application (Speed Map Panel System) in Hong Kong



On-board monitoring of metro trains in Rio de Janeiro, Brazil

Impact Case Studies (Cont'd)

Turning Waste into Eco-construction Materials

In Hong Kong, construction and demolition waste, waste glass and timber and incinerator ash are produced in huge quantities, contributing significantly to the total amount of solid waste. The disposal of these wastes has aggravated the severe social and environmental problems due to the acute shortage of landfill and public filling capacities. Government has been encouraging the reduction and sorting of these waste through the implementation of various levies and charges, and research for recycling these wastes for beneficial use has become increasingly important.

Prof. Chi-Sun Poon has been leading a PolyU team since 2000 to develop methods to recycle these wastes. Recycled materials have been used to pave roads, make concrete, concrete blocks and architectural mortars. The research has led to a new government policy and technical specifications for the use of recycled materials in construction. Some of the developed techniques have been used to produce eco-blocks and eco-glass cement, which are now commercially available for the construction industry.



 The development of Eco-blocks



 Eco-construction materials

Impact Case Studies (Cont'd)

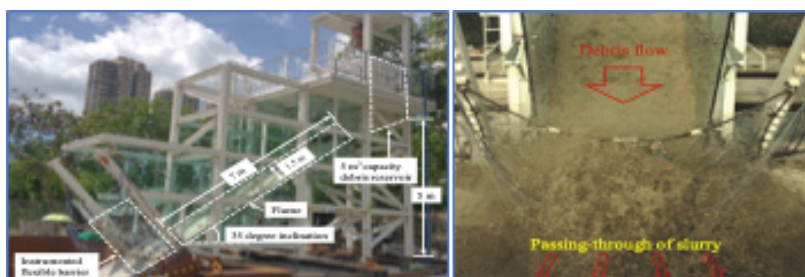
Advanced Testing, Modelling, Smart Geotechnology to Applications

① A new sustainable approach for marine reclamations in coastal cities

A team from this unit led by Professor JH YIN has been awarded a Research Impact Fund (RIF) from Research Grants Committee (RGC) of HKSAR of China for a project entitled "Study of Super-fast Large-area Economical Marine Reclamations for Housing and Infrastructural Developments in the Guangdong-Hong Kong-Macau Greater Bay Area" (HK\$14,108,800). The main objective is to study key fundamental and technical issues to develop a feasible method for super-fast large-area economical marine reclamations in the Greater Bay Area.

② Study on methods and technologies for urban geohazard mitigations in hilly regions

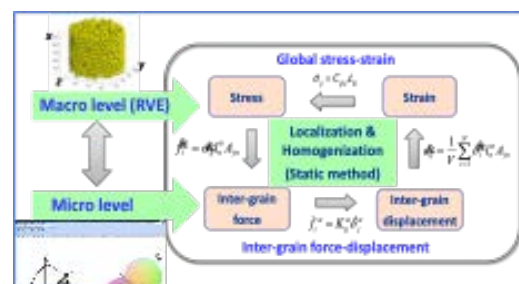
Our efforts on geohazards and mitigation relating to landslides and debris flows can be classified into two main domains: (a) physical modelling, theoretical study, and numerical analysis (FEM, DEM, material point method, etc.) on geohazards such as landslides, rockfalls, and debris flows,



and their mitigations and (b) field monitoring technologies for monitoring geohazards. A Collaborative Research Fund has been granted by RGC for building the first large-scale debris flow flume model in Hong Kong (HK\$8,208,882) (see photos).

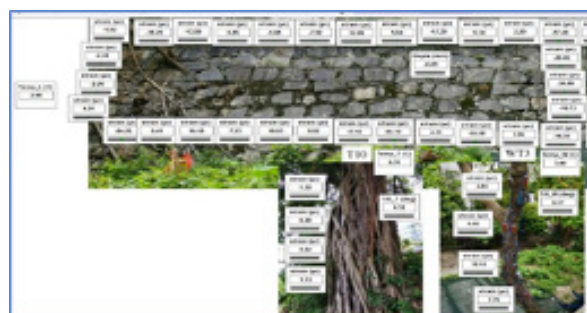
③ Multi-scale and multi-physics modelling of geotechnical structures

Due to the complicated characteristics of geotechnical structures, we develop multi-scale and multi-physics modelling in the relevant field (see figure below) (integrating the behaviour of inter-grain/aggregate contacts in all directions from micro to macro; developing a hydro-mechanical coupled numerical model; macro-element modelling of soil-structure interaction; solving large deformation problems by CEL, SPH, MPM, coupled FDM-DEM, and SPFEM).



④ Smart geotechnology for monitoring geotechnical structures including slopes, debris flows, and retaining walls with trees

Due to the complicated characteristics of geotechnical structures, we develop multi-scale and multi-physics modelling in the relevant field (see figure below) (integrating the behaviour of inter-grain/aggregate contacts in all directions from micro to macro; developing a hydro-mechanical coupled numerical model; macro-element modelling of soil-structure interaction; solving large deformation problems by CEL, SPH, MPM, coupled FDM-DEM, and SPFEM).



Examples of Major Research Projects

Theme-based Research Scheme

Photochemical Air Pollution in Highly Urbanized Subtropical Regions: from Micro Environments to Urban-terrestrial-oceanic interactions, Prof. Wang, T., HK\$33.333 million, 1 Jan 2018 – 31 Dec 2022.

Sustainable Marine Infrastructure Enabled by the Innovative Use of Seawater Sea-sand Concrete and Fibre-Reinforced Polymer Composites, Prof. Teng, J.G. and Prof. Yu, T., HK\$52.463 million, 1 Jan 2019 – 31 Dec 2023.

RGC Research Impact Fund

New prefabricated composite pavement systems for sustainable and smart-city development of Hong Kong: Key scientific and engineering solutions, Prof. Wang, Y.H., HK\$3.76 million, 30 Jun 2019 – 29 Jun 2023.

Enhancing safety, punctuality and ride comfort of railway transportation: From local metro system to global high-speed rail network, Prof. Ni, Y.Q., HK\$5.89 million, 1 Jun 2019 – 31 May 2023.

Reliability-based Intelligent Transportation Systems in Urban Road Network with Uncertainty, Prof. Lam, H.K., William, HK\$6.34 million, 30 Jun 2019 – 29 Jun 2022.

Study of Super-fast Large-area Economical Marine Reclamations for Housing and Infrastructural Developments in the Guangdong-Hong Kong-Macau Greater Bay Area, Prof. Yin, J.H., HK\$9.87 million, 30 Jun 2019 – 29 Jun 2024.

RGC Collaborative Research Fund

A Unique Multi-Functions Large-Scale Physical Model Testing Facility for Study of the Impact of Debris Flow on Flexible Barriers and Geo-Hazards in Hong Kong (CRF-Equipment), Prof. Yin, J.H., HK\$4.1 million, 30 Jun 2014 – 29 Dec 2017.

Heterogeneous Chemistry of Atmospheric Reactive Nitrogen Oxides: An Integrative Programme for Cutting-edge Science (CRF-Group Project), Prof. Wang, T., HK\$4.9 million, 1 Jun 2015 – 31 May 2018.

Thermal Desorption Aerosol Gas Chromatograph and Time of Flight Aerosol Mass Spectrometer for research on airborne particles and their impact on health and the environment (CRF-Equipment), Prof. Guo, H., HK\$4.2 million, 30 Jun 2016 – 29 Jun 2019.

Knowledge Transfer

The Department has been actively involved in transferring its expertise and developed technologies to local and regional users through the provision of specialist consultancy services. Some of the recent representative projects with contract sums over HK\$1 M are listed below:

Project Title	Client
Design, Supply and Installation of Structural Health Monitoring System for Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works	CCCC Highway Consultants Co., Ltd.
Provision of Consultancy Services for Technical Study on Application of Optical Fiber Sensing Technology in Monitoring of Masonry Retaining Walls, Stonewall Trees and Large Trees	Development Bureau, HKSARG
Study on Noise Reduction Performance of Highly Modified Friction Course at Trial Road Sections	Highways Department, HKSARG
Effect of Blasting Works to the Buildings in Cha Kwo Ling Village	AECOM Asia Co. Ltd.
Installation of Traffic Detectors on Selected Strategic Routes	Autotoll Limited
Further Investigation on the Spatial Distribution and Treatment Practice of Arsenic-containing Soil in Kwu Tung North new Development Area	Civil Engineering and Development Department, HKSARG
Collaborative Study on Feasibility of Incorporating Reclaimed Rubberized Bituminous Pavement Materials	Highways Department, HKSARG
Pilot Study on Efficiencies of Aeration Systems Using Off-gas Method at Secondary Sewage Treatment Works (STWs)	Drainage Services Department, HKSARG
Consultancy Service on the Review of Overseas Seat Belt Requirements and the Cost Benefit Analysis for Installation and Wearing Requirements of Seat Belts for all Passenger Seats on Franchised/Non-franchised Buses, Private Buses and Rear Passenger Seats on Private Light Buses, Goods Vehicles & Student Services Vehicles	Transport Department, HKSARG
Monitoring Construction Induced Vibration for the Project of Extension of Operating Theatre Block for Tuen Mun Hospital	Chevalier (Construction) Co. Ltd
Consultancy Service for Managing the Risk of the Natural Catastrophes for Heng Fa Chuen (Part A for Design of the Flood Board at Residential Block)	MTR Corporation Limited

Editorship of SCI Journals by Staff

Name of Journal	Publisher	Editor-in-chief / Editors
Accident Analysis and Prevention	Elsevier	Associate Editor Dr Sze, N.N., Tony
Advances in Structural Engineering	SAGE Publications Ltd	Editor-in-chief Prof. Teng, J.G. & Prof. Xia, Y. Editor Prof. Dai, J.G. Prof. Yu, T. Prof. Zhu, S.Y. Associate Editor Dr Chan, T.M.
Advanced Steel Construction: An International Journal	The Hong Kong Institute of Steel Construction	Editor-in-chief Prof. Chan, S.L.
Aerosol and Air Quality Research	AAGR Aerosol and Air Quality Research	Editor Prof. Guo, H.
Applied Geochemistry	Elsevier	Associate Editor Prof. Li, X.D.
Construction and Building Materials	Elsevier	Editor Prof. Poon, C.S. Prof. Wang, Y.H.
Critical Reviews in Environmental Science and Technology	Taylor & Francis	Associate Editor Dr Tsang, C.W., Daniel
Engineering Applications of Computational Fluid Mechanics	Taylor & Francis	Editor-in-chief Prof. Chau, K.W. Associate Editor Dr Duan, H.F.
Environmental Geochemistry and Health	Springer	Associate Editor Dr Tsang, C.W., Daniel
Environmental Science and Technology	ACS Publications	Associate Editor Prof. Li, X.D. Dr Wang, P.
Geomechanics and Geoengineering An International Journal	Taylor & Francis	Editor Prof. Yin, J.H.
HKIE transactions	Taylor & Francis	Associate Editor Dr Chan, T.M.
IATSS Research	Elsevier	Editor Dr Sze, N.N., Tony
International Journal of Applied Mechanics and Engineering	De Gruyter	Regional Editor Prof. Chan, S.L.
International Journal of Geomechanics	ASCE	Editor Prof. Yin, J.H.

Editorship of SCI Journals by Staff (Cont'd)

Name of Journal	Publisher	Editor-in-chief / Editors
International Journal of Smart and Nano Materials	Taylor & Francis	Associate Editor Prof. Zhu, S.Y.
Journal of Advanced Concrete Technology	Japan Concrete Institute	Associate Editor Prof. Dai, J.G.
Journal of Civil Structural Health Monitoring	Springer	Associate Editor Prof. Ni, Y.Q.
Journal of Cleaner Production	Elsevier	Associate Editor Dr Leng, Z.
Journal of Constructional Steel Research	Elsevier BV	Editor Prof. Young, Ben
Journal of Hazardous Materials	Elsevier	Associate Editor Dr Tsang, C.W., Daniel
Journal of Materials in Civil Engineering	ASCE	Associate Editor Dr Leng, Z.
Journal of Soils and Sediments	Springer Verlag	Associate Editor Dr Tsang, C.W., Daniel
Journal of Transportation Engineering Part B: Pavement	ASCE	Associate Editor Dr Leng, Z.
Journal of Vibration and Control	SAGE Publications Ltd	Associate Editor Prof. Ni, Y.Q.
Journal of Water Supply: Research and Technology – AQUA	IWA Publishing	Associate Editor Dr Duan, H.F.
Networks and Spatial Economics	Springer	Associate Editor Prof. Chen, Anthony
Science of the Total Environment	Elsevier	Associate Editor Dr Tsang, C.W., Daniel
Soil Use and Management	Wiley-Blackwell	Associate Editor Dr Tsang, C.W., Daniel
Thin-Walled Structures	Elsevier	Associate Editor Dr Chan, T.M.
Transportmetrica A: Transport Science	Taylor & Francis	Editor-in-Chief Prof. Lam, H.K., William Associate Editor Prof. Chen, Anthony
Transportmetrica B – Transport Dynamics	Taylor & Francis	Editor Prof. Lam, H.K., William

Prestigious National Awards

Year	Title	Granting Organisations	Recipient
2018	State Technological Innovation Award (Second Class Prize)	State Council of the People's Republic of China	Prof. Xia, Y.
2017	State Technological Innovation Award (Second Class Prize)	State Council of the People's Republic of China	Prof. Poon, C.S.
2016	State Scientific and Technological Progress Award (Second Class Prize)	State Council of People's Republic of China	Prof. Ni, Y.Q.
2013	State Natural Science Award (Second Class Prize)	State Council of People's Republic of China	Prof. Teng, J.G.
2012	State Natural Science Award (Second Class Prize)	State Council of People's Republic of China	Prof. Lam, H.K., William
2010	State Science and Technology Award (Second Class Prize)	State Council of People's Republic of China	Prof. Chau, K.W.

Full-time Academic Staff

Construction & Transportation Engineering



Prof. Chen, Anthony (Unit Leader)
Chang Jiang Scholar
PhD, UCI, USA

anthony.chen@polyu.edu.hk

Research Interests:

Transportation Systems
Modeling and Analysis;
Transportation Network
Reliability Analysis;
Non-motorised Transportation
Modeling



Dr Hsu, S.C., Mark
PhD, Maryland U, USA

smarkhsu@polyu.edu.hk

Research Interests:

Machine Learning in Civil
Engineering; Infrastructure and
Construction Informatics;
Life-cycle Assessment of
Infrastructure Systems



Prof. Lam, H.K., William
Chang Jiang Scholar
PhD, Newcastle U, UK

william.lam@polyu.edu.hk

Research Interests:

Transport Network Modeling
and Analysis; Intelligent
Transportation Systems; Public
Transport and Pedestrian
Studies



Dr Leng, Z.
PhD, UIUC, USA

zleng@polyu.edu.hk

Research Interests:

Sustainable Pavement
Materials and Technologies;
Nondestructive Evaluation of
Infrastructure;
Life Cycle Assessment



Dr Ma, W.
PhD, CMU, USA

wei.w.ma@polyu.edu.hk

Research Interests:

Transportation Network
Modelling; Machine Learning
and Data Mining in
Infrastructure Systems; Smart
Cities



Prof. Wang, Y.H.
PhD, Kentucky U, USA

ceyhwang@polyu.edu.hk

Research Interests:

Construction Project / Program
Management; Sustainable
Construction; Infrastructure
Systems



Dr Siu, W.Y., Barbara
PhD, HKUST


cebsiu@polyu.edu.hk

Research Interests:

Travel Time Reliability;
Travel Behavior Modeling;
Transport Planning, Public
Transport

Full-time Academic Staff


Environmental Engineering



Prof. Wang, T. (Unit Leader)
PhD, Georgia Institute of Technology, USA

cetwang@polyu.edu.hk


Research Interests:
Atmospheric Chemistry;
Air Pollution Meteorology;
Instrument Development



Prof. Chu, W.
PhD, Purdue U, USA

cewchu@polyu.edu.hk


Research Interests:
Water/Wastewater Treatment;
Industrial Effluent Treatment
and Design; Environmental
Chemistry



Prof. Guo, H.
PhD, Murdoch U, Australia

ceguohai@polyu.edu.hk


Research Interests:
Atmospheric Chemistry;
VOC Photochemistry; Organic
Aerosol and ultrafine particles



Dr Jiang, Y.
PhD, Washington U, USA

yi-cee.jiang@polyu.edu.hk


Research Interests:
Environmental
Nanotechnology; Aerosol
Technology; Advanced Water
Treatment



Prof. Lee, S.C. (Associate Head)
Chang Jiang Scholar
PhD, UC Berkeley, USA

ceslee@polyu.edu.hk


Research Interests:
Indoor Air Pollution;
Toxic Air Pollutants; Emission
Source Characterisation



Dr Leu, S.Y., Ben
PhD, UCLA, USA

syleu@polyu.edu.hk


Research Interests:
Biofuel; Biorefinery;
Bio-polymers



Prof. Li, X.D. (Dean)
PhD, Imperial College, UK

cexdli@polyu.edu.hk

Research Interests:
Air Pollution and Health;
Regional Pollution;
Contaminated Site Remediation



Prof. Poon, C.S. (Head)
Chang Jiang Scholar
PhD, Imperial College, UK

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Research Interests:
Eco-friendly Construction
Materials; Concrete
Technology; Waste Recycling
and Management



Dr Sze, N.N., Tony
PhD, HKU

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Research Interests:
Accident Prediction; Statistical
Model for Safety Analysis;
Human Behavior



Dr Tsang, C.W., Daniel
PhD, HKUST

dan.tsang@polyu.edu.hk


Research Interests:
Waste Recycling and Resource
Recovery; Contaminated Land
Remediation; Urban Water
Management



Dr Wang, P.
PhD, UCSB, USA

peng1.wang@polyu.edu.hk

Research Interests:
Environmental
Nanotechnology; Sustainable
Energy Driven Water
Production; Atmospheric Water
Harvesting



Dr Yiu, S.N., Nicole
PhD, HKPU

nico.yiu@polyu.edu.hk

Research Interests:
Occupational Safety and
Health; Quality, Safety and
Environmental Management
Systems; Auditing

Full-time Academic Staff

Geotechnical Engineering

Prof. Yin, J.H. (Unit Leader)
PhD, Manitoba U, Canada

cejhyin@polyu.edu.hk

Research Interests:

Testing Study and Constitutive Modelling of Behaviour of Soils and Soft Soil Improvement; Smart Monitoring of Geotechnical Structures Using Optical Fibre Sensors; Analyses of Consolidation Settlements and Geotechnical Structures

Dr Leung, Y.F., Andy
PhD, Cambridge U, UK

yfleung@polyu.edu.hk

Research Interests:

Interaction between Foundation and Superstructure; Optical Fibre Strain Sensing; Spatial Variability of Soil Properties

Mr Lin, H.Y.
MSc, National Sun Yat-Sen U

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Research Interests:

Sedimentology; Petrology and Petrographic Study; General Geology

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Research Interests:

Microstructure and micromechanics of soils; Multiscale and multiphysics modelling in geotechnics; Practice of artificial intelligence in geotechnics

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Research Interests:

Experimental rock physics; Digital rock physics based on micro-CT technology; Fault/joint surface roughness and frictional behaviour

Dr Zhou, C.
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Research Interests:

Fundamental thermo-hydro-mechanical behaviour of saturated and unsaturated soils; Constitutive modelling of soils; Geo-energy engineering and pavement engineering

Hydraulic Engineering

Dr Duan, H.F. (Unit Leader)
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Research Interests:

Hydraulics and Fluid Mechanics; Computational Fluid Mechanics (CFD); Water Resources Management and Risk Analysis

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Research Interests:

Hydrology; Water Quality; Artificial intelligence

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Research Interests:

Mass transport and Mixing Processes in geophysical flows; Coastal and Estuarine circulation; River Hydro-Morphodynamics

Full-time Academic Staff

Structural Engineering

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Research Interests:

Structural Health Monitoring;
Smart Materials and Structures;
Monitoring and Control in Rail
Engineering

Prof. Chan, S.L.
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Research Interests:

Steel and Glass Structures;
Nonlinear Analysis; Second
Order Direct Analysis for
Design

Dr Chan, T.M.
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Research Interests:

Tubular Structures; Steel
Structures and Steel-Concrete
Composite Structures;
Earthquake Engineering

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Research Interests:

Steel Structures; Steel-concrete
Composite Structures; Modular
Integrated Construction

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Research Interests:

Fibre-Reinforced
Polymer/Cementitious
Composites; Multi-functional
Coating for Concrete
Structures; Geopolymer

Dr Dong, Y.
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Research Interests:

Life-cycle engineering and
management; Infrastructure
reliability, risk, and resilience;
Multiple hazards and climate
change adaptation

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Research Interests:

Computational Fluid Dynamics;
Coastal Engineering

Dr Lai, S.K., Ken
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Research Interests:

Smart Materials and Structures,
Nonlinear Dynamics, Noise
Control and Mitigation,
Thermo-acoustics and
Structural Vibration Control

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Research Interests:

Seismic Design and
Strengthening; Concrete
Structures; Construction Law

Prof. Teng, J.G. (President)
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Research Interests:

Emerging Structural Materials
and Systems; Hybrid Structures
with Fibre-Reinforced Polymer
(FRP) Composites; Thin-Walled
Structures

Prof. Xia, Y. (Associate Head)
Chang Jiang Scholar
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Research Interests:

Structural Health Monitoring;
Finite Element Model Updating;
Vibration of Cables

Prof. Young, Ben (Vice President)
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Research Interests:

Cold-formed Steel Structures;
Thin-walled Structures;
Structural Stability

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Research Interests:

Infrastructure Applications of
Fibre-Reinforced Polymer
Composites; Hybrid Tubular
Structures; Strengthening of
Concrete and Steel Structures

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Research Interests:

Smart Materials and Structures;
Structural Vibration Control;
Earthquake Engineering

Our Facilities

The Department manages 25 laboratories, 2 workshops (mechanical and electronic) and 1 research centre in Shenzhen, Mainland China to support teaching, research, and service to the community. Please click [here](#) for more details.




Our Facilities


- Air Pollution Laboratory
- Advanced Environmental Microbiology Laboratory
- Atmospheric Research Laboratory
- Bioenergy Research Laboratory
- Carbon Analysis and Filter Handling Clean Room
- Computer Room
- Concrete Materials Laboratory
- Concrete Technology Laboratory
- Environmental Chamber
- Geology Laboratory
- Hydraulics Laboratory
- Laboratory for Advanced Environmental Studies
- Light Structures Laboratory
- Noise and Safety Laboratory / Semi-anechoic Chamber
- Odour Research Laboratory
- Road Research Laboratory
- Rock Mechanics Laboratory
- Smart Structures Laboratory
- Structural Engineering Research Laboratory
- Structural Dynamics Laboratory
- Soil Mechanics Laboratory
- Transport and Highway Engineering Laboratory
- Water and Waste Teaching Laboratory
- Water and Waste Research Laboratory
- Water Analysis Laboratory
- Electronic Workshop
- Mechanical Workshop
- Shenzhen Research Centre for Sustainable Infrastructure Development



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