



土木工程拓展署
Civil Engineering and
Development Department



2018

2010

2004

2021

2004

2005

2024



CEDD Construction Revolution Summit 2024

— CEDD 'n I Week
24 June

Civil Engineering and Development Department



Introduction

The Civil Engineering and Development Department (CEDD) celebrates its 20th Anniversary this year. CEDD was established on 1 July 2004 through amalgamation of the former Civil Engineering Department and the Territory Development Department.

As a works department under the Development Bureau of the Hong Kong SAR Government, CEDD is committed to delivering top-notch engineering services to meet the evolving needs of our city. Our diverse range of services encompasses provision of land and infrastructure, environment and sustainability services, port and marine services as well as geotechnical services.

Besides Headquarters, CEDD has two functional offices and five development offices. As a functional office, Civil Engineering Office is responsible for infrastructural works, port works, landfill management and implementation of Greening Master Plan. Geotechnical Engineering Office is another functional office which manages slope safety of Hong Kong and provide geotechnical services. Meanwhile, the East, South, West and North Development Offices are responsible for the land development and associated works, infrastructure development, strategic studies, etc. in their respective areas. Lastly, the Sustainable Lantau Office is responsible for implementing development projects and conservation plans of the Lantau Island and other outlying islands.

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19 - 32 Past Projects

Rundown

| Time | Topic / Theme | Speaker |
|-----------------------|-------------------|--|
| 9:30 a.m. - 9:35 a.m. | Opening Video | |
| 9:35 a.m. - 9:40 a.m. | Welcoming Remarks | Ir Michael H S FONG, JP Director Civil Engineering and Development Department |
| 9:40 a.m. - 9:45 a.m. | Kick Off Ceremony | |
| 9:45 a.m. - 9:55 a.m. | Photo Taking | |

AM Session Visions for Construction Industry – Building a Smart, Green and Resilient City

| | | |
|-------------------------|---|---|
| 09:55 a.m. - 10:25 a.m. | Integration of R&D into Construction Practice | Prof. Xiang-dong LI Dean, Faculty of Construction and Environment Hong Kong Polytechnic University |
| 10:25 a.m. - 10:45 a.m. | Morning Break | |
| 10:45 a.m. - 11:15 a.m. | The Impact of Generative AI on the Construction Industry | Dr Tim WARK Global AI Lead AECOM |
| 11:15 a.m. - 11:45 a.m. | Data Driven Intelligent Operation and Maintenance of Urban Municipal Infrastructure | Dr Yang DONG Assistant Chief Engineer of Research Institute Shanghai Municipal Engineering Design Institute (Group) Co., Ltd. |
| 11:45 a.m. - 12:15 p.m. | Engineering a Smarter, Greener Future | Dr Janet YOUNG Director General and Secretary Institution of Civil Engineers |
| 12:15 p.m. - 12:35 p.m. | Panel Discussion | Facilitator : Ir C K HON, GBS, JP Speakers : Dr Janet YOUNG Dr Tim WARK Dr Yang DONG Prof. Xiang-dong LI |
| 12:35 p.m. - 12:40 p.m. | Appreciation Trophy Presentation | Presenter : Ir Michael H S FONG, JP Director Civil Engineering and Development Department |
| 12:40 p.m. - 2:15p.m. | Lunch Break | |

PM Session Driving Major Projects

| | | |
|-----------------------|---|---|
| 2:15 p.m. - 2:45 p.m. | Challenges and Opportunities in Northern Metropolis and Kau Yi Chau Artificial Islands | Ir Michael H S FONG, JP Director Civil Engineering and Development Department |
| 2:45 p.m. - 3:15 p.m. | Governance of Mega Infrastructure Projects | Ir Carl Michael DEVLIN Capital Works Director MTR Corporation Limited |
| 3:15 p.m. - 3:35 p.m. | Tea Break | |
| 3:35 p.m. - 4:05 p.m. | The Global Productivity Challenge: Delivering Sustainably to Meet Current and Future Requirements | Mr Steve LEWIS Partner & Head of Infrastructure, Major Programs and Construction Advisory Ernst & Young Transactions Limited |
| 4:05 p.m. - 4:35 p.m. | Delivery Partner and Collaborative Delivery Models | Mr Davendra DABASIA Chief Operating Officer for Consultancy Mace Group |
| 4:35 p.m. - 4:55 p.m. | Panel Discussion | Facilitator : Ir Eric S C MA, GBS, JP Speakers : Ir Michael H S FONG, JP Ir Carl Michael DEVLIN Mr Steve LEWIS Mr Davendra DABASIA |
| 4:55 p.m. - 5:00 p.m. | Appreciation Trophy Presentation | Presenter : Ir Michael H S FONG, JP Director Civil Engineering and Development Department |
| 5:00 p.m. - 5:05 p.m. | Closing Remarks | |

Welcome Message



" Our vision of building a smart, green, and resilient city is rooted in the fundamental principle of sustainable development."

Ir Michael H S FONG, JP

Director

Civil Engineering and Development Department

Over the past two decades, the Civil Engineering and Development Department (CEDD) has demonstrated a firm commitment to engineering excellence in infrastructure and urban development, playing a pivotal role in transforming Hong Kong into an Asia's world city. As the Director of CEDD, I greatly appreciate the efforts of our dedicated colleagues contributing to the remarkable achievements in shaping Hong Kong including engineering advancements.

The construction industry has long been a driving force behind the economic and social development of Hong Kong. As highlighted in the Chief Executive's 2023 Policy Address, our commitment to investing in infrastructure remains steadfast. The Northern Metropolis and the Kau Yi Chau Artificial Islands, along with numerous infrastructure and urban development projects in the pipeline, serve as the key drivers for the continuous development of Hong Kong. CEDD has been taking the lead in the construction industry through wider adoption of innovative technologies to enhance productivity, construction quality, and construction site safety.

Our vision of building a smart, green, and resilient city is rooted in the fundamental principle of sustainable development. Sustainability considerations are integral to all stages of our construction projects, aligning with government strategies towards carbon neutrality and climate resilience, such as



the Hong Kong Climate Action Plan 2050, Clean Air Charter, Carbon Reduction Charter, and more.

CEDD recognize the importance of strengthening the communication and collaboration with the academia and construction industry. By leveraging the synergy between UGI collaborations i.e. the collaborations between University, Government and Industry, we have been developing and adopting nature-based solution in our engineering services to create a more liveable and climate-friendly city while achieving co-benefit for the environments and the human well-being.

This full-day Summit brings together esteemed representatives from the construction industry, international experts in research and technology, and business leaders from across the globe. They will share their visions for the construction industry and their experiences in driving major projects. The knowledge shared during this event paves the way towards a smarter and more sustainable future.

I would like to extend my sincere appreciation to the honourable speakers and facilitators for their invaluable contributions and support to this event. Your presence and contributions are highly valued, and my best wishes to all participants for a successful and rewarding Summit.

Biography

Ir Fong, currently serving as the Director of Civil Engineering and Development, plays a crucial role in leading the Department's efforts in advancing Hong Kong's new town development and land supply projects. Among these projects, the Northern Metropolis and the Lantau Tomorrow Vision stand out as the primary drivers for Hong Kong's social and economic growth.

Throughout a span of 30 years, Ir Fong has held various positions within different works departments and the Development Bureau (DEVB). These include Assistant Secretary of DEVB, Assistant Director/Projects and Development of the Drainage Services Department, Deputy Project Manager of the West Development Office of Civil Engineering, and Head of the Development Department (CEDD), Sustainable Lantau Office of CED. Ir Fong has gained wide recognition within the construction industry for being a dedicated advocate of construction safety and innovative technologies.

Session 01 Visions for Construction Industry – Building a Smart, Green and Resilient City



Dr Janet YOUNG

Director General and Secretary
Institution of Civil Engineers

Engineering a Smarter, Greener Future

Throughout humanity's history, engineering and innovation have been synonymous. This hasn't changed – but the scale and complexity of engineering challenges have.

Modern infrastructure services – the energy, transportation, communication, and water networks upon which people depend – must serve a growing population, contribute to a growing economy, and respond to the growing threats of climate change and biodiversity loss.

It's estimated that by 2050, 70% of the world's population will live in urban areas. To deal with competing social, economic, and environmental demands, cities will need to be smarter, greener, and more resilient to future challenges.

So, how can the construction industry of today deliver the city of tomorrow?

Janet Young, Director General of the Institution of Civil Engineers (ICE), will discuss the critical role that civil and infrastructure engineers can play in delivering a smarter, greener future. This keynote speech will explore:

- The challenge that natural disasters and extreme weather events pose to modern infrastructure networks, emphasising the significance of systems thinking and integrated resilient design principles and strategies in the delivery of major infrastructure.
- The value of technological innovation and transformation in construction, including the role of digitalisation, data analytics, and artificial intelligence in optimising construction processes, enhancing efficiency, and improving project outcomes.
- The importance of sustainability in infrastructure delivery, and of projects that consider environmental impacts early in, and throughout, the project lifecycle.
- The work the ICE is doing to qualify, support, and inspire the current and next generation of engineers to deliver smart, green, resilient infrastructure.

Biography

Janet Young, Director General and Secretary, Institution of Civil Engineers.

Dr Janet Young joined the ICE as director general and secretary in January 2023. She has extensive experience in the built environment sector, having most recently worked in the Cabinet Office where she was head of the Government Property Profession, leading the profession and driving the agenda for the property and estates function.

She has also been global director of estates for the British Council, director of estates for the Ministry of Justice, and head of asset management in the Foreign and Commonwealth Office.

She is a Major Projects Leadership Academy graduate of the Saïd Business School, and a fellow of the Institution of Civil Engineers, Institution of Royal Engineers, and Royal Institution of Chartered Surveyors. Her PhD, Towards Zero Energy Buildings, looked at the challenges and solutions for low carbon and energy developments.



Dr Tim WARK

Global AI Lead
AECOM

The Impact of Generative AI on the Construction Industry

In the past 18 months, the world has seen an explosion in the adoption of generative AI and large language models by individuals and organizations. Latest advances in GPT models have opened the door to a new era in the use of natural language as the interface between humans and computers, while also providing the ability to search and reason over large, unstructured data sets.

In this presentation, Dr Wark will explore how this latest generative AI wave is forecast to rapidly accelerate the digital transformation of the construction industry and shift the model from time and materials to a focus on value and outcomes. He will also discuss how data will become increasingly central to the core business models and creation of value across the entire AEC industry.

Biography

Dr Tim Wark is the Global AI Lead for AECOM. In this role he is responsible for leading AECOM's enterprise AI strategy which is a key 'enabler' for both transforming the organisation's operating model as well driving forward as how it delivers value to clients. Prior to this he was Regional Digital Director for AECOM Australia New Zealand and part of the regional executive team. He has over 25 years experience in technology research and development and commercialisation in both the public and private sectors where he has had held a range of different executive roles.

Tim holds a PhD in Computer-Science from the Queensland University of Technology and is a graduate from Harvard Business School's Executive Leadership Program as well as a Graduate of the Australian Institute of Company Directors. He had previously held the positions of Adjunct Professor at Queensland University of Technology and has also been a Visiting Scholar at University of California Berkeley. He has also previously sat on the Board of the Open-Data Institute Australia as well as the Technical Advisory Board for the Australian Computer Society (ACS).



Data Driven Intelligent Operation and Maintenance of Urban Municipal Infrastructure

In recent years, China's national and local government development strategies and plans have put forward higher requirements for building livable, resilient, and smart cities, and improving the scientific, refined, and intelligent management level of cities. Municipal infrastructure serves as the foundation and carrier of the development of a city, and the traditional operation and maintenance management mode of the infrastructure can no longer meet the needs of refined urban management in the new situation.

Intelligent operation and maintenance has become a new management mode for urban municipal infrastructure since it has the characteristics of automated management, visual operation and maintenance, and data-driven decision-making. It can greatly strengthen the complexity management of municipal infrastructure operation and improve the level of refined management through the application of technologies such as the IOT, cloud computing, big data, and artificial intelligence.

This presentation will introduce the digital construction policies and plans of urban municipal facilities, key technologies and typical cases of intelligent operation and maintenance of municipal infrastructure, and future prospects. Based on the goal and requirements of refined urban municipal infrastructure management, the focus will be on the operation and maintenance standard systems, digital twin bases, monitoring network systems, model and algorithm systems, and business application systems involved in the data driven intelligent operation and maintenance work.

Dr Yang DONG

Assistant Chief Engineer of Research Institute

Shanghai Municipal Engineering Design Institute (Group) Co., Ltd.

Biography

Dong Yang, Ph.D., Senior Engineer, Assistant Chief Engineer of Research Institute, Shanghai Municipal Engineering Design Institute (Group) Co., Ltd., Member of the Youth Workers Committee of China Urban Water Association. Dr Yang Dong has been engaged in the research and practical work of key technologies in the field of smart and resilient municipal infrastructure, and has led and participated in over 30 scientific research projects.

As the project leader of the drainage system hydraulic model construction in the central urban area of Shanghai, one of the largest drainage system hydraulic models in China, she solves technical difficulties including data correction, calibration, verification, integration and

application of the model and actively participate in the compilation and promotion of the technical standards of the Shanghai drainage system construction. Through key technologies exploration, her team has achieved core iconic achievements including system risk evaluation technologies and smart municipal operation and maintenance platforms.

Dr Yang Dong has won honors and awards such as Typical Cases of Smart Water Management by Ministry of Housing and Urban-Rural Development of the People's Republic of China, Special Prize of Science and Technology Award of China Urban Water Association, Excellent Cases of Smart Water Conservancy in Shanghai, Shanghai Youth Science and Technology Rising Stars and the City Star of Shanghai Urban Governance Youth Talent Innovation Competition (Digital Smart Water Service).



Prof. Xiang-dong LI

Dean, Faculty of Construction and Environment

Hong Kong Polytechnic University

Integration of R&D into Construction Practice

Innovative technology development is important in sustainable urban development for Hong Kong. In the presentation, several new R&D projects at PolyU will be introduced. Waste glass is a major component in the solid waste stream, and it can be utilized as aggregates, powder and activator forms to produce various concrete products, such as low-carbon glass cement, architectural and self-leveling mortar, high strength permeable concrete, ultra high-performance concrete, etc. The combined use of these materials can successfully develop a high-performance lightweight concrete in modular integrated construction (MiC) applications. To combat the deterioration problem of concrete structures in coastal/marine environments due to corrosion, the use of fibre-reinforced polymer (FRP) to replace steel reinforcement in concrete structures has attracted significant attention. FRP is well known for its many advantages including excellent corrosion resistance, high strength-to-weight ratio and tailorability in material properties. Furthermore, the use of FRP reinforcement in concrete structures opens a new avenue for concrete production with the direct use of locally available seawater and sea-sand for marine infrastructure, thereby offering compelling economic and environmental advantages through savings in freshwater and material transportation cost as well as reduced river-sand mining. We also explored nature-based technologies for urban infrastructure and coastal shoreline in order to achieve better livable environments and carbon neutrality.

Biography

Prof. LI is currently the Dean of the Faculty of Construction and Environment, Director of the Research Institute for Sustainable Urban Development, Ko Jan Ming Professor in Sustainable Urban Development, and Chair Professor of Environmental Science and Technology at the Hong Kong Polytechnic University. His major research interests include regional environmental pollution, urban environment, and remediation of contaminated soils. His recent research projects have mainly focused on environmental changes in the fast-developing regions. Prof. LI's research team has been engaged in the study of trace metals and organic pollutants in atmospheric particles, soils, sediments, and biological samples, including their impacts on human health and ecological systems. He has been

the principal investigator of numerous research projects funded by RGC, NSFC, and the UGC Area of Excellence Scheme. He has published more than 250 papers, mostly in leading international journals. Prof. LI is the author of more than ten publications listed among the top 1% most cited papers in Environment/Ecology by the ISI database. His current research topics consist of the emissions, transport and environmental fate of metal and organic pollutants, and the environmental loadings and implications of emerging pharmaceutical related contaminants in surface environments. He is Deputy Editor of ACS Environmental Au, and an associate editor of Environmental Science and Technology (ES&T).



Facilitator of Panel Discussion

Ir C K HON, GBS, JP

**Former Permanent Secretary for
Development (Works)**

HKSAR Government



Biography

Ir Hon holds a Bachelor of Science degree in Engineering and a master degree in Public Administration from the University of Hong Kong. He also holds a degree in Bachelor of Laws (external degree) from the University of London. He is a fellow of the Hong Kong Institution of Engineers, Institution of Civil Engineers and Hong Kong Academy of Engineering Sciences.

Ir Hon joined the civil service after graduating from the University of Hong Kong in 1980. He had worked in different engineering works departments before his retirement as Permanent Secretary for Development (Works), HKSAR Government in 2018. In the earlier dates of his engineering career, he was instrumental in the completion of a number of major infrastructural projects including the Strategic Sewage Disposal Scheme Stage I, various flood alleviation projects and Central-Wanchai Bypass. More recently during his tenure in the Development Bureau, he instigated regeneration of the construction industry by advocating the “Construction 2.0 – Time to change” Roadmap.

Ir Hon joined the Hong Kong Institution of Engineers as Chief Executive and Secretary from 2020 to 2023. During this period, he mapped out and pursued vigorously various necessary changes for the professional organization.

Since mid-2023, Ir Hon has been appointed as a member of the Board of Directors of the Hong Kong Science and Technology Parks Corporation.



Session 01

Visions for Construction Industry



Ir Michael H S Fong, JP

Director

Civil Engineering and Development Department

Challenges and Opportunities in Northern Metropolis and Kau Yi Chau Artificial Islands

The Civil Engineering and Development Department (CEDD) has been spearheading infrastructure construction and land supply projects to support the housing, social and economic development of Hong Kong. Among them, the Northern Metropolis (NM) and Kau Yi Chau Artificial Islands (KYCAI) are two important mega projects being undertaken by CEDD.

The NM covers a total area of about 30,000 hectares in the Yuen Long District and North District and their neighbouring areas, with a population of about 2.5 million and creation of some 500,000 new jobs. The KYCAI, will provide about 1,000 hectares of land for development of highly liveable and sustainable communities, and a new Central Business District, accommodating about 500,000 to 550,000 people and providing some 270,000 job opportunities. New strategic railways and highways will also be built to enhance the connectivity between NM and KYCAI developments, as well as strengthening their connection with the Greater Bay Area.

Amidst these immense opportunities, these projects are fraught with huge challenges in the areas of construction cost, workforce, supply of materials and productivity etc.. Among others, innovation and advancements in construction materials, construction methods and digital technology etc. are key to addressing these challenges.

CEDD is committed to creating sustainable and liveable communities. A suite of sustainable development strategies as well as smart, green and resilient facilities will be put in place in these two projects. Moreover, proactive conservation, eco-recreation and urban-rural integration measures will be fully explored and implemented.

Cross-organizational collaboration is the engine to drive technological developments and to rise up to the upcoming challenges. We look forward to working together hand in hand with different experts and organisations in accomplishing these mega projects.

Biography

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Throughout a span of 30 years, Ir Fong has held various positions within different works departments and the

Development Bureau (DEVB). These include Assistant Secretary of DEVB, Assistant Director/Projects and Development of the Drainage Services Department, Deputy Project Manager of the West Development Office of Civil Engineering, and Head of the Development Department (CEDD), Sustainable Lantau Office of CED. Ir Fong has gained wide recognition within the construction industry for being a dedicated advocate of construction safety and innovative technologies.



Ir Carl Michael DEVLIN

Capital Works Director

MTR Corporation Limited

Governance of Mega Infrastructure Projects

Major infrastructure projects by their very nature are large scale and complex. They have bespoke issues, risks and challenges that may require more sophisticated project management, procedures, and governance approaches. Delivering such projects is intrinsically difficult. They are routinely asked to deliver against aggressive timeframes and constrained budgets set early in their lifecycle and to meet the high expectations of a wide group of stakeholders.

In this presentation, Ir Carl Devlin, Capital Works Director at MTRCL will with the use of case studies explore why 'Project Governance' is one of the key pillars of major project success. He will unpack what governance is and what it is not and explore the critical components of governance structures deployed on mega infrastructure projects to different levels of success.

To conclude, Carl will introduce the initiatives being adopted in MTR's new wave of projects to enhance governance, drive more timely decision making, and increase the certainty of project outcomes.

Biography

Mr Devlin joined the Company as Deputy Director – Capital Works on 2 November 2021. He has been the Capital Works Director and a Member of the Executive Directorate since 1 August 2022.

Mr Devlin is responsible for leading the Capital Works Business Unit and overseeing the Company's capital works portfolio, covering new railway extensions and operations projects.

Mr Devlin possesses extensive experience across a range of large-scale, complex and multi-disciplinary projects in different sectors including transport, rail and civil infrastructure, aviation, energy, oil and gas. He has a strong project management background with solid business leadership experience and has worked successfully with stakeholders and international

companies in the United Kingdom, New Zealand, Australia, United States of America, Canada and Japan. Before joining the Company, Mr Devlin was General Manager, Rail & Mass Transit of Waka Kotahi New Zealand Transport Agency. Prior to that, from 2015 to 2018, he was the Executive Director of Construction for Horizon Nuclear Power in the United Kingdom and Programme Director for Transport for London, United Kingdom, from 2013 to 2015. He previously held senior leadership roles with Laing O'Rourke, BAA plc and Bechtel Infrastructure.

Mr Devlin is a Fellow Member of The Hong Kong Institution of Engineers and a Chartered Member of Engineers Ireland. He holds a Bachelor of Engineering degree in Civil Engineering from University College Cork in Ireland.



Mr Steve LEWIS

**Partner & Head of Infrastructure,
 Major Programs and Construction
 Advisory**

Ernst & Young Transactions Limited

The Global Productivity Challenge: Delivering Sustainably to Meet Current and Future Requirements

The delivery of sustainable development is crucial for tackling pressing global issues, including climate change, urbanization, and social inequality. However, the global productivity challenge poses a significant obstacle to achieving these goals.

The complexity and interconnected nature of sustainable development creates coordination challenges involving multiple stakeholders, regulatory frameworks, and technical requirements. These complexities often result in delays, cost overruns, and inefficiencies, impeding productivity gains.

To overcome these obstacles, a comprehensive approach is needed. This entails investing in innovation and technology to optimize project planning, design, and construction processes. Leveraging digitalisation, technology AI and advanced analytics can streamline resource allocation, enhance decision-making, and reduce construction time and costs. Integrating sustainability considerations throughout the project lifecycle, such as promoting renewable energy, resource efficiency, and circular economy principles, can yield long-term economic, social, and environmental benefits.

Promoting collaboration and knowledge sharing among stakeholders is critical in addressing productivity challenges. International cooperation, and capacity-building initiatives facilitate the transfer of best practice, expertise, and resources across borders. Creating a supportive policy and regulatory environment that incentivizes sustainable development investment and streamlines approval processes can accelerate progress.

Biography

Steve is an experienced Chartered Surveyor, EY Partner, EY Global head of Infrastructure Technology and EY Hong Kong head of Infrastructure Advisory & Capital Projects.

Steve works with organisations at a strategic, programme and project level in both the private & public sectors in the UK, China, Middle East and across the wider APAC region.

Steve has extensive experience advising on a range of fast-moving and complex projects in a variety of roles spanning the asset lifecycle and as a lead adviser on a large range of infrastructure and other built asset construction and operation programmes. Steve has

held roles in Government, quasi-Government and private sector programmes including the provision of advice in respect of infrastructure digitalisation and technology enabled development and operation, setting up complex projects and managing all elements of delivery, operation, construction, asset management, procurement and contract strategy, risk management, project controls structures, systems and methodologies and major programme organisational design.

Steve has long been an advisor to both the Hong Kong and the UK Government on how various advances in delivery solutions such as procurement innovation, delivery model and organisational design, technology and digitalisation in the built environment can drive improved project and asset performance from social,



Mr Davendra DABASIA

**Chief Operating Officer
 for Consultancy**

Mace Group

Delivery Partner and Collaborative Delivery Models

Major programmes and projects are complex in nature and too frequently are delivered late, over budget and under deliver against the expected benefits case. Currently there are headwinds which need to be navigated by industry as well as areas of opportunity to improve commercial outcomes. In inflationary marketplaces elements which lead to increased costs need to be carefully controlled more so now than ever whilst opportunities to enhance value maximised.

The learning gained from delivering major programmes across the globe reinforces the importance of building on alternative delivery models and exploit attributes which have enabled positive outcomes in order to continue to evolve and enable more sustainable and predictable outcomes in this pivotal decade of major programmes and projects delivery.

Biography

Davendra Dabasía's practical expertise in delivering major construction programmes and projects spans two decades and five continents. During his career at Mace, he has honed his skills in programme and project delivery, through a close involvement with infrastructure, sports and events, growing the company's transport offering and more recently, leading the growth of Mace's offer into new geographies.

As COO for Consultancy, Davendra is responsible for driving Mace Consult's performance, alongside building our global delivery capability and best practice across our markets and geographies.

Davendra is a delivery partner expert, who has successfully represented major international programmes - including Lima 2019 Pan American Games, Olympic Park Legacy Transformation and Go Expansion - developing strong relationships with clients built on openness, trust, and collaboration.

With a focus on driving best practice across Mace's consultancy services, Davendra works with hubs across the world to drive knowledge sharing, collaboration and better connect and promote our delivery partner approach with clients.



Facilitator of Panel Discussion

Ir Eric S C MA, GBS, JP

Senior Vice President

The Hong Kong Institution of Engineers

IrEricS@hkie.org.hk

Biography

Ir Ma is an Executive Director and Chief Operating Officer of New World Development Company Limited. Before that, he was an Executive Director and CEO of NWS Holdings Limited. Ir Ma was the Acting CEO of Hong Kong-Shenzhen Innovation and Technology Park Limited and Principal Consultant of the Hong Kong Science & Technology Parks Corporation. Ir Ma was previously the Secretary for Development of the HKSAR Government, overseeing policy areas ranging from urban planning to heritage conservation, and addressing the supply-demand imbalance in land and housing. He was Executive Vice President, Civil & Infrastructure, Asia Pacific, of AECOM prior to joining the HKSAR Government.

He is the senior vice president of The Hong Kong Institution of Engineers. He is a member of General Committee, chairman of Real Estate & Infrastructure Committee, and a member of Audit Committee of the Hong Kong General Chamber of Commerce. He is a member of the Council of The Chinese University of Hong Kong and a member of the Court of the City University of Hong Kong; an Adjunct Professor of the Department of Civil and Environmental Engineering, Faculty of Construction and Environment of The Hong Kong Polytechnic University; an Adjunct Professor of the Department of Real Estate and Construction, Faculty of Architecture of The University of Hong Kong; and an Honorary Professor of School of Science and Technology of Hong Kong Metropolitan University.



Session 02

Driving Major Projects

Past Projects

Civil Engineering and Development Department was established in 2004 through amalgamation of the Civil Engineering Department and the Territory Development Department. The major services include the following :

Geotechnical Services, Provision of Land and Infrastructure ,
Port and Marine Services, Environment and Sustainability Services

2004



Man Tung Road



Roundabout at Man Kwong Street /
Man Yiu Street

Greening Master Plans

Under the Greening Master Plan (GMP), the Civil Engineering and Development Department has established the greening themes for each district and planted over 30,000 trees and 8,700,000 shrubs in urban areas and the New Territories in phases from 2007 to 2023.



Please scan
the QR code for
more details

2007



Road T3



Road T3

Sha Tin New Town Road T3

Road T3 is a dual two-lane carriageway about 2 km long connecting Route 8 - Sha Tin Heights Tunnel in the west and Tai Po Road (Sha Tin Section) in the east. It provides a direct connection for through traffic between West Kowloon and New Territories East.

2007



Route 8 Approaches



Route 8 Shatin Heights Tunnel

Route 8 - Sha Tin Heights Tunnel and Approaches

Sha Tin Heights Tunnel is a dual 3-lane vehicular tunnel approximately 1 km in length. The Approaches consist of the main approach road linking to Road T3 and two single-lane slip road viaducts, each about 500 m long, connecting to Che Kung Miu Road.



Grasscrete



Inflatable Dam

Yuen Long Bypass Floodway

The 3.8-km long Yuen Long Bypass Floodway intercepts about 40% of the runoff in the Yuen Long catchment area. The intercepted flow is diverted to Kam Tin River and then discharged to the Deep Bay. An artificial wetland of 7 hectares to the north of the floodway confluence with Kam Tin River was created.

2008



Project Details

Penny's Bay

Penny's Bay Infrastructure Development

CEDD completed the major infrastructure works of the Hong Kong Disneyland at Penny's Bay, Lantau, including reclamation, roads from North Lantau to Penny's Bay, one ferry pier, two public transport interchanges, one police post, a fire station cum ambulance depot, a special featured inspiration lake recreation centre, drainage and sewerage works and associated landscaping works.

2010



Stabilised Natural Slope



Rigid Barrier at Pinehill

Landslip Prevention and Mitigation Programme

CEDD launched the rolling Landslip Prevention and Mitigation Programme (LPMitP) in 2010 to dovetail the Landslip Preventive Measures Programme. The rigid barrier constructed under LPMitP at Pinehill in Tai Po successfully retained the debris of a natural hillside landslide occurred in September 2023 and protected the facilities at the toe of hillside.

2009



Choi Wan Road and Jordan Valley (Before Construction)



Choi Wan Road and Jordan Valley (After Construction)

Project Development at Choi Wan Road and Jordan Valley

The areas of about 20 ha near Choi Wan Road and Jordan Valley were formed by CEDD for housing development, seven schools and district open space. Slopes and retaining walls were constructed. Also, the associated works including construction of footbridges, flyovers, provision of associated drainage, sewerage and landscaping works were carried out.

2012



Central Waterfront Promenade

Central Reclamation Phase III

Reclaimed land of about 18 ha between Central Reclamation Phase I and Lung King Street area were formed under this project. Reprovisioning of waterfront facilities, construction of blue-green infrastructures and establishing of a continuous waterfront promenade were also completed.

2014



Sam Mun Tsai Waterfront Cycle Track



Tsuen Wan Waterfront Cycle Track Section

New Territories Cycle Track Network

CEDD strives to develop the New Territories Cycle Track Network with an aim of connecting the scattered cycle tracks in the New Territories East and West and to provide more choices for public

2016



Pak Shek Kok in 2010



Pak Shek Kok in 2014

Pak Shek Kok Development

Pak Shek Kok development, which is located at the south of Tai Po new town and alongside Tolo Highway, involves a Science Park, housing developments, strategic recreation facility and tertiary education expansion.

2017



Completion of Reclamation Works in 2023



Tung Chung New Town Extension

Tung Chung New Town Extension - Reclamation and Advance Works

The Works, commenced in 2017, include reclamation at Tung Chung East by non-dredging methods to form about 130 hectares land; construction of 4.9km seawalls including 3.8km eco- shorelines, namely mangrove eco-shoreline, rocky eco-shoreline and vertical eco-shoreline.



Anderson Road (Before Construction)



Anderson Road (After Construction)

Rehabilitation of Anderson Road Quarry

Anderson Road Quarry is located on the south-western ridge of Tai Sheung Tok on the Kowloon Peninsula. CEDD rehabilitated the quarry site from March 1997 to July 2017. This rehabilitation project not only produced a lot of rock products for the construction industry, but also created about 40 hectares scarce land for housing and other developments.

2019



Project Details



Heung Yuen Wai Highway

Heung Yuen Wai Highway

Heung Yuen Wai Highway (HYWH) is approximately 11-km long, which comprises approximately 4.8-km Lung Shan Tunnel, 0.7-km Cheung Shan Tunnel, 4.5-km viaduct and 1-km at-grade roads. HYWH connects the Fanling Highway and the Heung Yuen Wai Boundary Control Point, facilitating residents living near Sha Tau Kok, Ta Kwu Ling, and Ping Che in accessing Fanling, Sheung Shui, Tai Po, and Kowloon.

2021



Kai Tak Sky Garden



Kai Tak Sky Garden

Kai Tak Sky Garden

The Kai Tak Sky Garden is situated at the former runway of Kai Tak with an approximate length of 1.4 km. The design incorporates elements of aviation to pay tribute to the former airport. Over 80 different species of flowers and trees are planted in the garden to create an enjoyable experience for the public. The four zones of the central linking walkway are respectively themed around the seasons of spring, summer, autumn and winter with each zone densely stocked with a variety of seasonal plants that highlight the vegetation diversity of Hong Kong.

2020



Landscape Regeneration of Lantau Mountain Camp



Lantau Conservation Fund

The Lantau Conservation Fund was set up to promote conservation of Lantau, and to pursue minor local improvement works in villages and communities in support of conservation initiatives. The Fund supports projects that would contribute to the overall conservation of Lantau, raise community awareness on the conservation of Lantau, and engage the community to put conservation into practice, in order to foster a quality living environment for the current generation and beyond.



Rectangular Tunnel Boring Machine



Kai Tak-choi Hung Subway

The first rectangular tunnel boring machine - Kai Tak – Choi Hung Subway

To enhance connectivity between Kai Tak Development and the Choi Hung area, CEDD constructed Kai Tak – Choi Hung Subway, connecting Shing Kai Road and Choi Hung Estate. This technological advancement using the first rectangular tunnel boring machine for construction works has many benefits, such as enhancement of works safety and construction quality, as well as effective management and control of construction risks.

2021



Photomontage of Lok Ma Chau Loop



Photomontage of Lok Ma Chau Loop

Development of Lok Ma Chau Loop – Main Works Package 1

The project mainly comprises site formation of about 80 ha of land within the Lok Ma Chau loop and engineering infrastructure works supporting Phase 1 development of the Hong Kong-Shenzhen Innovation and Technology Park.



Anderson Road Quarry Site



Off-Site Pedestrian Connectivity Facilities

Development of Anderson Road Quarry Site

Anderson Road Quarry is located at the southwest ridge of Tai Sheung Tok in East Kowloon. The site formation works was completed, providing a platform of about 40 ha for development of housing, open space, schools, and associated government, institution and community facilities. The off-site pedestrian connectivity facilities and road improvement works were completed in phases from 2021 and 2023 respectively to tie in with the population intake.

2022



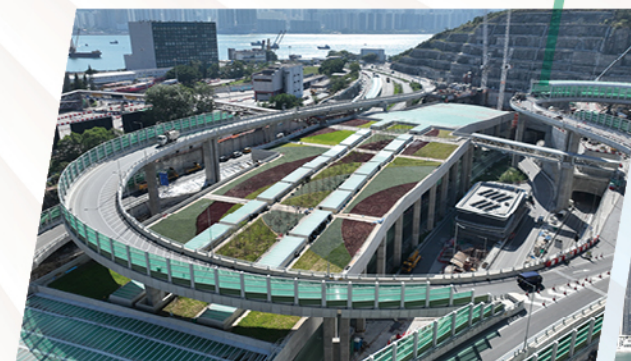
Pak Kok Pier



Energy Saving Roof Cover

Pier Improvement Programme

Pier Improvement Programme improves some public piers in remote rural areas of the New Territories and outlying islands in phases. The first completed project Pak Kok Pier on Lamma Island commissioned in 2022.



Tseung Kwan O - Lam Tin Tunnel



Cross Bay Link

Tseung Kwan O - Lam Tin Tunnel and Cross Bay Link

The Tseung Kwan O - Lam Tin Tunnel and Cross Bay Link form a new trunk road linking Tseung Kwan O and the urban area, which is an alternative route to the existing Tseung Kwan O Tunnel to help divert the traffic to and from Tseung Kwan O, and meet the traffic demand arising from the continual development in Tseung Kwan O.

2023



Joint Cavern Development



Joint Cavern Development at Anderson Road Quarry

Joint Cavern Development is the first non-infrastructure related development project in cavern. It is the first cavern development project adopting Modular Integrated Construction (MiC). There are also provision of piazza, roof gardens and viewing deck for public enjoyment.

2024



Boardwalk under Island Eastern Corridor



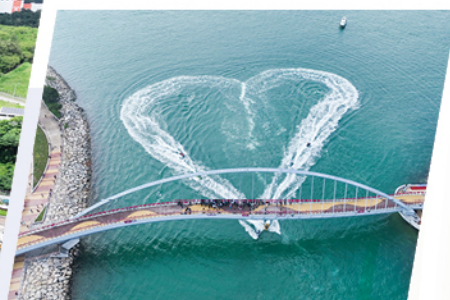
Boardwalk under Island Eastern Corridor

The project is located underneath Island Eastern corridor, with approximately 2.2 km long connecting Causeway Bay and Quarry Bay. Besides, the concept of "Citywave" is adopted to develop a pleasant landmark with 8 thematic sections, comprising a "serenity zone" and a "mobility zone". It will be co-used and co-shared by pedestrians, joggers, cyclists, pet owners and other visitors.

2024



Tseung Kwan O Promenade Southern Bridge



Tseung Kwan O Promenade Southern Bridge

Southern Bridge is a footbridge of about 150m long to enhance pedestrian connectivity between promenade areas at both sides of Eastern Channel of Tseung Kwan O. The form of Southern Bridge is akin to waves rippling between Junk Bay and Eastern Channel. Southern Bridge adopted Grade S690QL high-strength steel in their steel bridge structures.



Long Valley Nature Park



Long Valley Nature Park

Long Valley, located between Sheung Yue River and Shek Sheung River in Sheung Shui, is a freshwater wetland of high ecological value in Hong Kong with various habitats. It is home and the breeding ground for different kinds of birds. As part and parcel of the Kwu Tung North and Fanling North New Development Area (NDA) project, some 37 ha of land in Long Valley will be developed into a nature park for conserving and enhancing the ecologically important environment.

2024



Infrastructure at West Kowloon Cultural District



Integrated Basement

Infrastructure Works and Integrated Basement for West Kowloon Cultural District

Various Public Infrastructure Works are implemented by CEDD to tie in with the phased development of West Kowloon Cultural District (WKCD) and enhance the connectivity between the WKCD and the nearby area. Also, the diverse and harmonious architectural elements of the Austin Road Subway Beautification Works exhibit the aesthetic features of the instrument and music of the Chinese Opera and rejuvenate an existing infrastructure into a public space with artistic character.



Project Details



Area 54, Tuen Mun

Formation, Roads and Drains in Area 54, Tuen Mun

CEDD has been carrying out land formation works and associated infrastructure works to support public housing development and community facilities. In Area 54 of Tuen Mun, about 12.7 ha of land has been formed for public housing development of Yan Tin Estate, Ching Tin Estate and Wo Tin Estate which have been completed for population intake.

2024



Kau Yi Chau Artificial Islands

The Kau Yi Chau Artificial Islands, located within the expanded Harbour Metropolis, can provide about 1,000 ha of land for meeting part of the medium to long-term land requirement of Hong Kong.

Northern Metropolis Development



Hung Shui Kiu / Ha Tsuen New Development Area (West) (HSK/HT)

Interconnect with the Qianhai Cooperation Zone to become a “modern service centre” providing professional services and modern logistics as well as serving as a regional commercial centre.



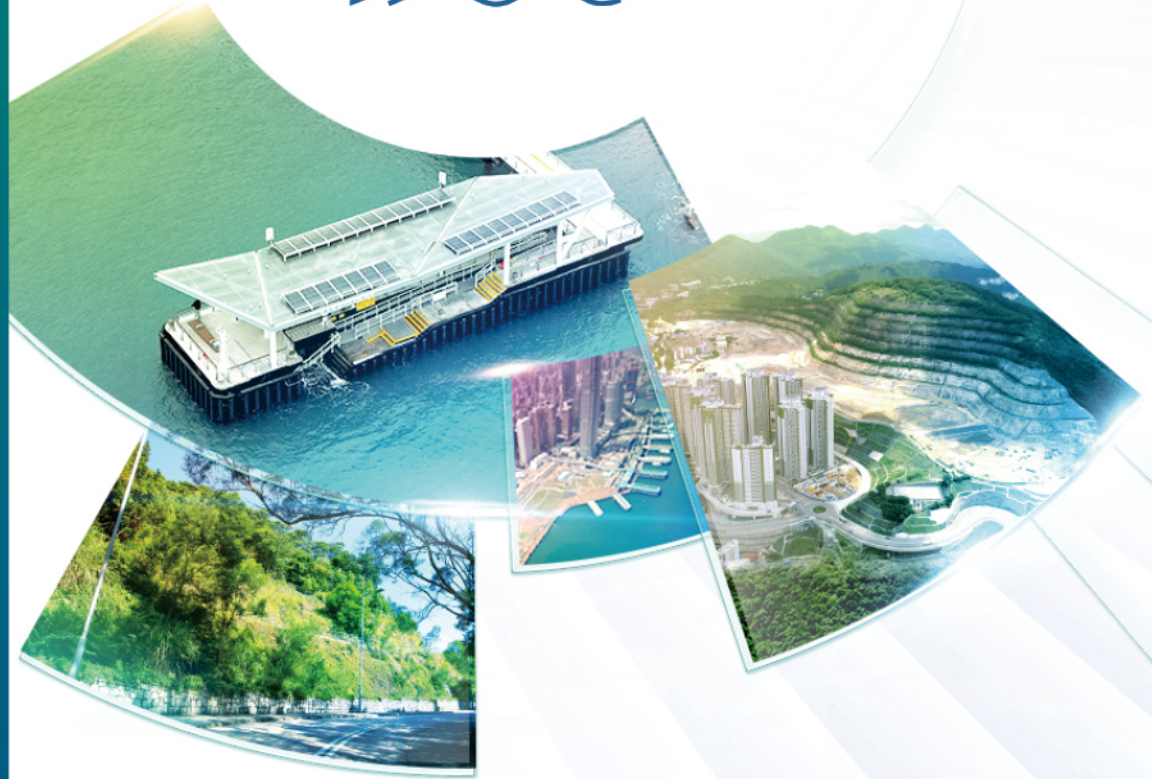
Kwu Tung North / Fanling North New Development Area (East) (KTN/FN)

Total area of about 612 ha for provision of a mix of housing types as well as basic infrastructure and community facilities to accommodate an additional population of about 226,700 and create about 53,100 new jobs.



San Tin Technopole (Centre) (STT)

Strategically positioned to be a hub for clustered I&T development that creates synergy with Shenzhen I&T Zone. Contribute to the development of the South-North dual engine (finance – I&T), and become a new community for quality, healthy and green living.



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