THE HONG KONG INSTITUTION OF ENGINEERS
香港工程師學會

Young Members Committee
青年會員事務委員會

AUSTRALIA

OVERSEAS DELEGATION 2025

OPTIMIZING THE HARMONY OF SUSTAINABILITY AND TECHNOLOGY



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CHAPTER 1
MESSAGE



Ir Eric S C MA

President, the HKIE

Warmest congratulations to the delegation led by the Young Member Committee (YMC) of the Hong Kong Institution of Engineers (HKIE) on their inspiring and successful visit to Australia! It was truly a pleasure to accompany the team and see their achievements firsthand.

This year, the YMC embarked on a remarkable journey to Melbourne and Canberra, guided by the United Nations Sustainable Development Goals (UN SDGs), particularly SDGs 7, 9, and 11. These are not mere aspirations but tangible efforts unfolding in real time. From the innovative hydrogen technology at the Toyota Hydrogen Center and the University of Melbourne, to the sophisticated systems of the Melbourne Train Control Centre, and the ambitious North East Link tunnel megaproject, the delegation encountered engineering daring and ingenuity at every turn.

Canberra welcomed us with an equal spirit of transformation. The Light Rail Project and insightful exchanges with Engineers Australia showcased a capital city embracing sustainability not as a concept, but as a lived commitment.

Beyond these site visits, I had the pleasure of meeting many of our vibrant young engineers who are already making significant contributions to Australia's rapidly evolving infrastructure and energy sectors. Their stories which rooted in Hong Kong yet thriving abroad, serve as a powerful testament to the global reach and impact of our Institution.

The YMC delegation's meticulous planning, inquisitive engagement, and boundless energy left a lasting impression. Their pursuit of knowledge was not only admirable but infectious. They have once again proven themselves a dynamic community of aspiring professionals, ready not only to learn from the world but to shape it.

Hong Kong may not yet have a hydrogen-powered rail or a renewable energy hub of comparable scale, but it is rich with bright, bold minds engineers who dare to imagine and are equipped to deliver a better tomorrow.

Congratulations again to the delegation on a rewarding and impactful journey. Wishing you continued success, and I look forward to reconnecting at future HKIE events.



Ir Alice K T CHOW

Senior Vice President, the HKIE

I have always firmly believed that technology is a powerful catalyst for sustainability. This year's delegation to Australia has reinforced this belief, as the country demonstrates remarkable technological advancements in renewable energy, especially in hydrogen-based electricity production, as part of its commitment to a carbon-neutral future.

A particularly impactful aspect of the delegation was engaging with leading research institutions. I was glad to join some of them, including a visit to RMIT University. We toured research facilities such as the Sustainable Hydrogen Energy Laboratory (SHEL) and the Laboratory for Innovative Fluid Thermal Systems (LIFTS), both of which are undertaking pioneering work in sustainable technologies. The focus on hydrogen energy especially resonated with all of us, as Hong Kong is also actively exploring green hydrogen as a key strategy in its transition away from fossil fuels to achieve carbon neutrality by 2050.

Another highlight was our visit to the North East Link tunnel construction site in Melbourne. This transformative infrastructure project is set to redefine the city's transport network. I'm especially proud that the Construction Manager of this massive project, Alex Chan, comes from Hong Kong, exemplifying how our engineering professionals are trusted and recognized on the global stage.

My congratulations to Delegation Manager, Carmen Lam for leading the delegation, and to all members for contributing to the resounding success of this trip. I encourage everyone to apply the knowledge and insights gained to drive innovation and sustainability in Hong Kong and beyond. You represent the future, destined to shine not only locally but also globally, and we are all proud of your potential.



Ir Prof. Frank F CHAN
Vice President, the HKIE

2024 is the warmest year on record, and a year of extreme climate events. With the mission to decode Australia's integration of advanced technology with sustainable practices, and to explore transformative applications for Hong Kong, the YMC Delegation 2024 set sail with the theme "Optimizing the Harmony of Sustainability and Technology".

The Delegation examined in detail the United Nations Sustainable Development Goals with particular focus on Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation and Infrastructure), and Goal 11 (Sustainable Cities and Communities). Upon arrival at Australia, the Delegation immersed themselves in where innovation meets with natural wonders. Apart from visiting cutting-edge renewable energy facility and green infrastructure, appreciating Australia's unique ecosystem that integrates technological solutions in harmony, the delegates learn and grow together through sharing of knowledge, observation and experience as a team.

Their command and fluency in linking technology with sustainability reflects extensive prior study and preparation. The seamless planning and coordination to get the most out of the entire study tour, with active participation and mutual support from every member speak for themselves the remarkable "esprit de corps". The future is going to be shaped by those who make the best use of technology for the harmonious co-existence of humanity and nature. While the study tour came to an end, the journey to a sustainable future is right here, awaiting us all.



Ir Rupert K Y LEUNG
Vice President, the HKIE

The recent delegation to Melbourne and Canberra, led by the Young Members Committee (YMC), marks a significant milestone in the career development of our young delegates, who have returned with valuable lessons in sustainable practices and renewable energy advancements. Their efforts, both in preparation in advance and in getting nourished from exchange with local expertise, highlight the potential for transformative change in Hong Kong's urban future.

I am certain that witnessing Australia's commitment to eco-friendly infrastructure and reducing carbon footprint has left a lasting impression on our young engineers. This exposure has empowered them to drive innovations in projects that align with global sustainability goals. I extend my heartfelt appreciation to the participants and, in particular, to Delegation Manager, Ms Carmen Lam.

Looking ahead, I encourage our young engineers to leverage these insights to push Hong Kong toward a more sustainable tomorrow. Congratulations on this achievement, and I eagerly anticipate our continual collaboration in future HKIE events.



Ir Edmund K H LEUNG

Past President, the HKIE

Once again, I feel honoured and privileged to be invited as an Advisor of the HKIE YMC Overseas Delegation for 2025.

I note the visit this year will be to Australia, and as I recall this is probably the third HKIE YMC visit to this country, the first one being held in the late 1980 and the second one in mid 2000, which I had the benefit of attending in both delegations.

Australia is in the Asean Pacific and was previously part of the British Commonwealth and therefore has a close relationship to Hong Kong, both in trade and in culture. It is a vast country with a low population which is almost a direct opposite to us. Visiting it will let us see the vast difference in city layouts and the infrastructure, but equally, there must be some examples that will inspire us and can be adopted for use in Hong Kong.

Hopefully, our delegates can bring back the most up-to-date knowledge and case studies to share with others in our Institution members and their peers.

It is also important to remember that this delegation, in a lot of ways, represents Hong Kong and every opportunity must be used to promote our good image. We are doing well, especially in our transport and power infrastructure, and we should tell our friends our success stories.

I take this opportunity to congratulate the members of this delegation for their excellent planning. I trust they will find the visit informative and enjoyable and bring back a lot of insights and inspirations to help them in their future projects.

Seeing is believing, and these exchanges and visits will be immensely useful, not only to our delegates, but to all of us.



Ir Dr. Otto L T POON, BBS, OBE

Past President, The HKIE

Exploring Melbourne and Canberra has been a rewarding journey for our young engineers, showcasing Australia's remarkable strides in sustainable urban development and renewable energy solutions. The dedication of the Young Members Committee (YMC) in orchestrating this delegation has yielded impressive outcomes, reflecting the talent and enthusiasm of our future engineering leaders.

Australia's innovative approaches—integrating green infrastructure with advanced transport networks—offer a blueprint for enhancing Hong Kong's environmental resilience. The insights gained into sustainable city design and clean energy systems are poised to spark creative solutions back home. I take great pride in the 15 participants who embraced this opportunity, alongside the advisors and team who ensured its success.

My hope is that this experience ignites a passion for sustainable engineering among our professionals. I urge you to share these learnings widely with peers and the broader HKIE community, fostering a movement toward greener urban landscapes and inspiring the next wave of engineers to think boldly.

I congratulate Ms Carmen Lam for organizing and leading successfully this year's YMC Delegation to Australia.



Ir Peter C K CHAK

Chairman, CPDC, the HKIE

I extend my warmest congratulations on the resounding success of the HKIE YMC 2025 Overseas Delegation to Australia. Your dedication to the theme “Optimizing the Harmony of Sustainability and Technology” exemplifies the HKIE’s commitment to pioneering engineering leadership. By concentrating on UNSDGs 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), and 11 (Sustainable Cities and Communities), you have strategically aligned with global priorities where technology and sustainability converge.

Australia’s leadership in renewable energy integration, smart industrial innovation, and resilient urban design provided an unparalleled learning landscape. I commend your resolve to extract best practices for Hong Kong’s unique context – whether in deploying visionary sustainable solutions or retrofitting infrastructure for climate resilience. Equally vital was your role as ambassadors: fostering international partnerships and showcasing Hong Kong’s engineering excellence while promoting the HKIE In our rapidly evolving profession, this delegation embodies the essence of Continuing Professional Development. You haven’t just acquired technical knowledge; you’ve honed the visionary mindset needed to navigate the intersection of technology and ecological responsibility. In particular, your teamwork and concerted effort are instrumental in bringing a model of success. These experiences will resonate through your careers, empowering you to engineer solutions that serve both humanity and our planet.

My sincere gratitude to Delegation Manager Ms Lam Ka Man, and every participant. May you all keep your momentum rolling in pursuit of continuing professional development. May the insights gained in Australia ignite transformative action in Hong Kong, propelling us toward a future where technology and sustainability thrive in harmony.



Ir William W L LUK

Chairman of International Affairs Committee, the HKIE

I am writing to share my heartfelt gratitude for the opportunity to serve as advisor for the Australia Delegation Trip 2025, and to provide reflections on our enriching visit to Melbourne, particularly our engagements with the University of Melbourne and RMIT. The trip was a testament to the committee's commitment to fostering global connectivity and professional growth, and I am eager to share insights that can inform our future initiatives.

Key Reflections from the Trip

Our visits to these universities offered a compelling window into Australia's academic and professional ecosystems. We gained insight on their emphasis on interdisciplinary research and industry collaboration was striking. Their applied innovation hubs demonstrated how vocational training can drive tangible societal impact. These institutions highlighted a common thread: education and practice must evolve in tandem with global challenges like climate change and technological disruption.

For our young members, observing these models firsthand underscored the importance of global literacy in engineering. The interactions with Australian peers and faculty revealed that success in our field increasingly hinges on cross-cultural collaboration, adaptability, and a willingness to embrace emerging technologies.

My advice for the YMC's Way Forward

1. Deepen Institutional Partnerships:
Build on the connections forged during the trip to establish long-term collaborations (e.g., joint research projects, joint seminars) with University of Melbourne and RMIT, and other international institutions. These partnerships can provide our young members with ongoing access to cutting-edge knowledge and horizon-wide networks.

2. Integrate Global Insights into Local Programs:
Translate the lessons from Melbourne into YMC's initiatives. For example, develop workshops on sustainability-driven engineering or industry-academia collaboration models to equip members with tools to address Hong Kong's unique challenges, such as urban densification and carbon neutrality goals.

(Cont.)

3. Amplify Cross-Sector Engagement:
Encourage young members to engage with both academic and industry stakeholders locally, mirroring the Australian emphasis on bridging theory and practice. Partner with corporations to create mentorship programs or hackathons that tackle real-world problems, fostering innovation and employability.

For young members, the trip highlighted three critical takeaways:

- Embrace Lifelong Learning: Stay abreast of global trends in tech (e.g., AI, IoT) and sustainability to remain competitive.
- Cultivate a Global Mindset: Seek opportunities to work across borders, as engineering challenges increasingly require international solutions.
- Advocate for Impact-Driven Work: Prioritize projects that align with UN Sustainable Development Goals, as seen in Melbourne's focus on equitable and resilient infrastructure.

The Australia Delegation Trip was more than a visit tour; it was a catalyst for reimagining how HKIE can empower its members to thrive in a globalized world. I encourage the YMC to organise to build on this momentum by making international exposure a cornerstone of our young members' development. Together, we can nurture a generation of engineers who are both technically proficient and globally conscious - ready to shape the future of our profession.



Ms. Carmen K M LAM
Delegation Manager
Deputy Chairman, YMC, the HKIE

With a spirit of curiosity and a commitment to expanding our profession's boundaries, the HKIE YMC journeyed to Australia in 2025, building on insights from our 2024 delegation to Sweden. We focused on "Optimizing the Harmony of Sustainability and Technology" — exploring holistic solutions shaping tomorrow's urban environments.

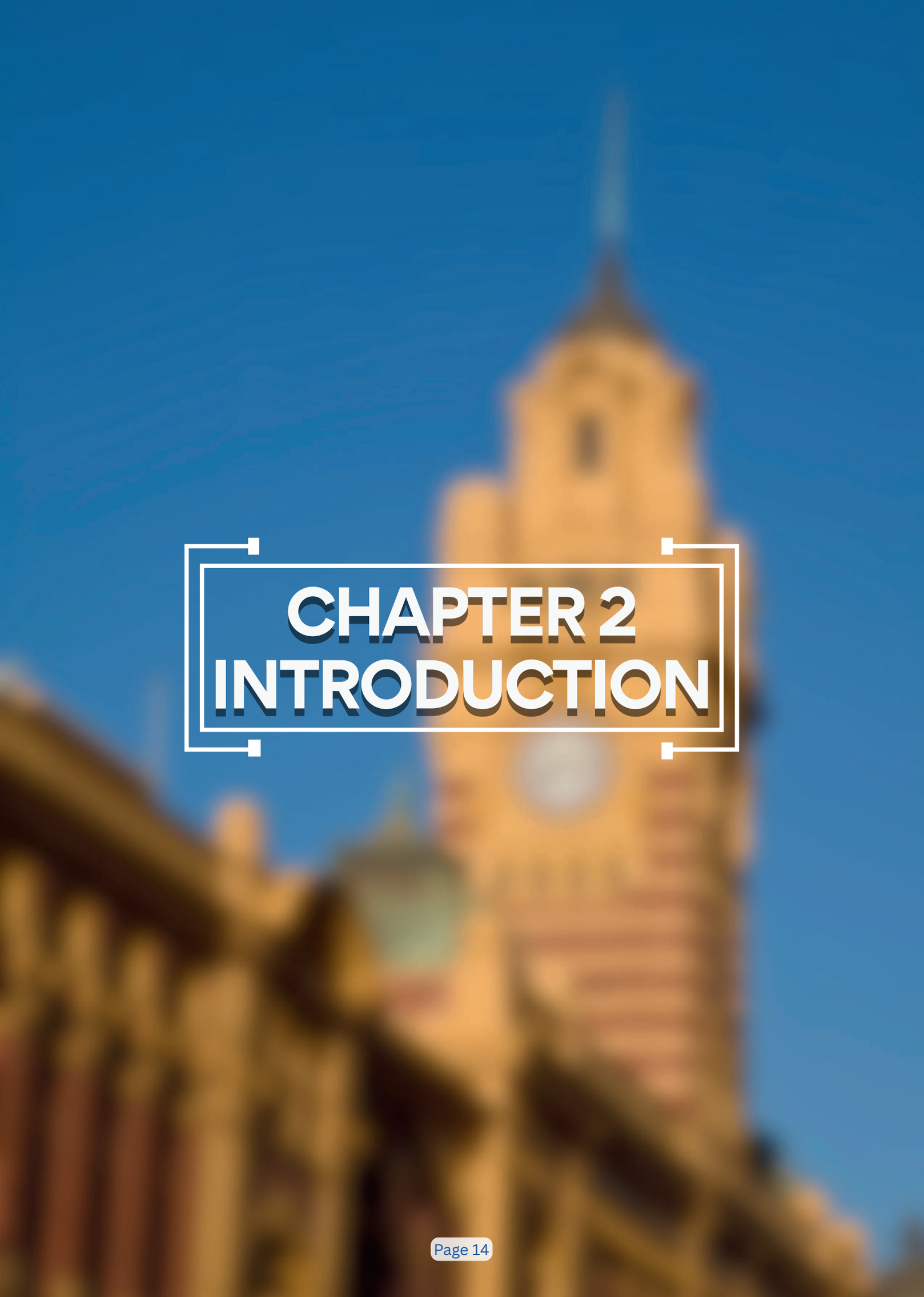
The delegation immersed itself in the intersection of engineering and the United Nations Sustainable Development Goals (UNSDGs), particularly Affordable and Clean Energy (Goal 7), Industry, Innovation, and Infrastructure (Goal 9), and Sustainable Cities and Communities (Goal 11). Australia's sustainability ethos and innovative engineering provided an inspiring backdrop. We saw firsthand how cutting-edge energy systems, urban planning, and circular economy models drive progress toward global goals.

Our learning was enriched through discussions, site visits, and knowledge exchanges with Swedish experts, highlighting the importance of collaboration and continuous learning in sustainable engineering. Incorporating these experiences into our work strengthens our resolve to advance the UNSDGs and meet the evolving needs of our profession.

As Delegation Manager, I am proud of each delegate's dedication and enthusiasm. Their commitment to confronting global challenges is commendable. I also extend heartfelt thanks to our Delegation Advisors for their support, guidance, and invaluable insights, which enriched every aspect of our study.

From my perspective as YMC Deputy Chairman, it has been an honour to lead this initiative. I am deeply grateful to our sponsors, HKIE executives and all who supported us. Special thanks to our Deputy Managers, Ms. Terry TAY and Ms. Emmi CHEUNG, for their tireless work ensuring a rewarding experience.

To the delegates of the 2025 YMC Delegation to Australia, congratulations on your achievements. May this knowledge and the relationships forged empower you to redefine our profession, champion sustainable engineering, and shape lasting, vibrant cities for generations to come.



CHAPTER 2
INTRODUCTION



ABOUT THE DELEGATION

Since 1991, YMC has been organizing delegations to different parts of the world with the following objectives:

* To widen the vision and horizon of young engineers;
* To appreciate the latest engineering practices around the globe and assess their applicability of these practices in Hong Kong;
* To promote Hong Kong and its engineering practices;
* To enhance the relationship between HKIE and overseas institutions.

These objectives can be achieved through the Delegation and a series of local seminars and visits held before and after the Delegation.

DELEGATION THEME

In pursuit of a future where sustainability and technology work seamlessly hand in hand, our delegation ventured to Australia under the theme “Optimizing the Harmony of Sustainability and Technology.”

This report documents our exploration of how cutting-edge innovations and sustainable best practices can be integrated to address pressing global challenges.

With a focus on SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 11 (Sustainable Cities and Communities), we sought to understand how various sectors collaborate to create resilient, efficient, and environmentally conscious urban environments. Our visits encompassed discussions with academic institutions, industry leaders, and local authorities who shared their experiences in merging renewable energy solutions, forward-thinking infrastructure designs, and inclusive community development strategies. The insights gained underscore the importance of adopting a holistic perspective—one that recognizes the interconnected nature of technology and sustainability. By incorporating renewable energy sources, prioritizing innovative designs that minimize environmental impact, and emphasizing community well-being, Australia demonstrates how advanced technologies can elevate sustainability efforts.

This report presents the key findings and transformative ideas gathered throughout our journey, hoping to inspire equivalent initiatives that will help shape more dynamic, sustainable, and inclusive cities in Hong Kong and beyond.

WHY AUSTRALIA?

Australia has made remarkable progress in renewable energy, with approximately 40% of its electricity generated from renewable sources. The creation of a renewable energy zone highlights the country's dedication to sustainable power generation. Furthermore, technological advancements, especially in hydrogen-based electricity production, are fostering innovation within the energy sector. In its efforts to address climate change, Australia has established ambitious goals, targeting a 43% reduction in greenhouse gas emissions by 2030 relative to 2005 levels. Additionally, the nation has committed to achieving net zero emissions by 2050, as stipulated in the Climate Change Act of 2022, reinforcing its pledge to a carbon-neutral future.

By selecting Australia as our destination, we aim to learn from a nation that has demonstrated outstanding performance in key areas of sustainable development and has played a pivotal role in shaping global environmental policies.

COMPOSITION OF DELEGATES

Similar to previous YMC overseas delegations, an overwhelming response was received during the recruitment of delegates in December 2024. Fifteen delegates were selected from a group of elite young members by advisors through interviews. These delegates are professional engineers, graduate engineers and students who come from a wide range of engineering disciplines, including Chemical, Civil, Electrical, Logistics and Transportation, and Mechanical. They work in different sectors of engineering professions, ranging from government departments, public organizations, consultancies and contractors. The delegates represent the broader young engineering community in Hong Kong.









CHAPTER 3
AREA OF STUDY

SUSTAINBLE DEVELOPMENT GOAL 7: AFFORDABLE AND CLEAN ENERGY



Can Energy Storage Power Hong Kong's Carbon-Neutral Future?

Hong Kong stands at a critical juncture in its energy transition, where the role of energy storage systems will determine the success of its carbon neutrality ambitions. As the city targets net-zero electricity generation before 2050 and plans to cease coal use by 2035, energy storage emerges as the linchpin connecting renewable energy aspirations with grid reliability demands.

Current Energy Storage Landscape

Hong Kong's existing energy storage infrastructure relies heavily on fossil fuels—coal stockpiles at power plants, diesel reserves for aviation and maritime industries, and gasoline at refueling stations. However, this carbon-intensive approach contradicts the city's decarbonization goals. The transition requires a fundamental shift toward clean energy storage technologies that can provide both short-term grid services and long-term energy security.

Technological Diversification and Applications

The future energy storage ecosystem demands a portfolio approach, with different technologies addressing varying temporal needs. Battery Energy Storage Systems (BESS) are gaining prominence in Hong Kong. BESS is most cost-competitive and effective for short-term, intra-day energy services, with maximum discharge duration typically be up to 8 hours. CLP is planning a landmark 100MW utility-scale installation at Castle Peak Power Station by 2028. Hong Kong International Airport has already demonstrated BESS viability for peak shaving and emergency backup, achieving substantial economic benefits through load management. This is exemplified by Hong Kong's access to 600MW capacity from the Guangzhou pumped storage facility until 2034. This cross-border arrangement demonstrates how regional cooperation can enhance energy security while leveraging economies of scale. Hydrogen storage offers unique advantages for long-term, large-scale energy storage, with durations ranging from weeks to inter-seasonal demand. Hydrogen is particularly promising for decarbonizing hard-to-abate sectors such as heavy transport, aviation, and maritime industries, and for enabling the import of net-zero energy beyond Hong Kong’s borders. Hong Kong's 2024 hydrogen development strategy outlines four key pillars: improving legislation, establishing standards, market alignment, and prudent advancement. Strategic partnerships with Greater Bay Area cities like Foshan could provide cost-effective hydrogen supply chains, reducing infrastructure investment requirements for Hong Kong.

Energy storage stands as the critical enabler for Hong Kong’s carbon-neutral future, bridging the gap between ambitious renewable energy targets and the operational realities of a reliable power grid. As the city phases out coal and accelerates its clean energy transition, a diversified storage portfolio—encompassing batteries, pumped hydro, and hydrogen—will be essential. Strategic investments in utility-scale BESS, continued regional cooperation for pumped hydro, and the prudent development of hydrogen infrastructure position Hong Kong to enhance grid resilience and decarbonize hard-to-abate sectors. Ultimately, the successful integration of advanced energy storage technologies will determine whether Hong Kong can achieve its net-zero ambitions while maintaining economic competitiveness and energy security for decades to come.

SUSTAINABLE DEVELOPMENT GOAL 9: INDUSTRY, INNOVATION, AND INFRASTRUCTURE



SDG 9 focuses on building resilient infrastructure, promoting inclusive and sustainable industrialisation, and fostering innovation—goals highly relevant to our city's development.

Learning from the Toyota Australia Hydrogen Centre

One highlight was visiting the Toyota Australia Hydrogen Centre in Melbourne. This facility, transformed from an old car manufacturing plant, uses on-site solar photovoltaics to produce green hydrogen, powering public transportation. Australia's abundant renewable energy resources make it an ideal model. Hong Kong, blessed with ample sunlight, could adopt similar technology. By harnessing solar energy, we could produce hydrogen to reduce reliance on fossil fuels, enhancing air quality. Moreover, repurposing underutilised industrial zones into renewable energy hubs could revitalise these areas, aligning with SDG 9's aim of sustainable industrialisation.

Insights from the North East Link Tunnels Project

Another key experience was visiting the North East Link Tunnels project in Victoria. This infrastructure initiative will cut daily truck traffic by 15,000 vehicles and reduce travel times by up to 35 minutes, showcasing resilient infrastructure under SDG 9. What impressed us most was the noise control measures. The construction site was remarkably quiet, and during noisy operations such as piling, nearby residents were offered hotel stays. Hong Kong, with its dense population and frequent construction, could benefit significantly from such community-friendly practices. Implementing similar strategies would minimise disruption, improve quality of life, and strengthen public support for infrastructure projects.

Applying Lessons to Hong Kong

By adopting Australia's innovative approaches—green hydrogen production and considerate construction methods—Hong Kong can advance SDG 9. These strategies would drive sustainability, foster innovation, and enhance resident well-being, paving the way for a more resilient and inclusive future. Comparatively, developing large scale renewable energy plants that consumes large hectares of flat lands is not economically justifiable for Hong Kong. As such, instead of constructing solar farms and battery systems, Hong Kong shall make a good use of her edge in advanced research capabilities.

Hydrogen will be critical as the carrier of green energy in the coming decades, while the technologies, such as the storage tanks and energy conversion cycles, have been developing and its associated hazards and risks are undermining. To transform Hong Kong as a low carbon city, we shall actively promote innovation in technology, products, application and business models; focus on breaking through the technological bottlenecks of the hydrogen energy industry, while establishing comprehensive safety standards suitable to Hong Kong's urban development and natural geographical environment to ensure that the hydrogen energy industry meets the safety requirements as the foundation of future application.

SUSTAINBLE DEVELOPMENT GOAL 11: SUSTAINABLE CITIES AND COMMUNITIES



Sustainable Development Goal 11 (SDG 11) aims to "Make cities and human settlements inclusive, safe, resilient and sustainable" by 2030. It recognizes the rapid urbanization globally and the challenges cities face, such as slums, inadequate housing, environmental impacts, and disaster risks.

Insights from the North East Link Tunnels Project

The Australian North East Link project addresses SDG 11—Sustainable Cities and Communities—through a comprehensive sustainability approach integrated into its planning, design, construction, and operation phases. Key ways it contributes include:

Enhancing Urban Connectivity and Reducing Congestion

The project has committed to ambitious greenhouse gas emissions reduction targets, including:

- Achieving at least 30% reduction in carbon emissions during construction compared to baseline levels.
- Using at least 50% renewable energies for electricity in construction.
- Targeting net zero emissions in the operation and maintenance phases.
- Employing 100% renewable electricity during tunnelling construction.

These measures align with Victoria’s broader climate change strategy and contribute to making cities more resilient and environmentally sustainable.

Resource Efficiency and Circular Economy Initiatives

North East Link incorporates resource efficiency by reducing energy, water, materials, and waste throughout its lifecycle. For example, it uses recycled plastic bollards made from end-of-life construction materials, diverting waste from landfill and reducing embodied carbon emissions. The project also optimizes design to reduce concrete and steel use, such as removing a basement level in the Motorway Control Centre and using mass timber structures.

Urban Ecosystem Protection and Enhancement

The project actively protects and enhances natural environments by creating new green spaces and parklands equivalent to five Melbourne Cricket Grounds along Banyule Creek, a 2-km tree-lined boulevard, wetlands along the Yarra River and Koonung Creek, and landscaping with native plants. These efforts support biodiversity, improve urban liveability, and contribute to SDG 11’s emphasis on inclusive, safe, and green urban spaces.

Applying Lessons to Hong Kong

Hong Kong is committed to deploying smart and green mass transit systems in new development areas like East Kowloon and Kai Tak, incorporating green technologies and reducing emissions. This aligns with North East Link’s focus on reducing carbon emissions and promoting sustainable transport.

Hong Kong has formulated a comprehensive roadmap to popularize electric vehicles (EVs), aiming to cease new registrations of fuel-propelled and hybrid private cars by 2035 or earlier, and expanding EV charging infrastructure extensively. Trials of hydrogen fuel cell vehicles and green transformation of public buses and taxis are also underway. This mirrors North East Link’s ambitious emissions reduction and renewable energy use targets.

CHAPTER 4
LOCAL EVENTS



Technical Seminar on Sustainable Construction Materials

On 10th March 2025, a technical seminar was held at the HKIE Headquarters, where attendees were introduced to the innovative use of “engineered bamboo in sustainable architecture”, presented by Ir Dr. Goman Ho. The seminar attracted a diverse audience, who were eager to learn about sustainable building practices and the potential of bamboo as an eco-friendly material. Ir Dr. Goman Ho began the seminar by discussing the significant potential of bamboo as a sustainable building material. He highlighted its lightweight structure, exceptional strength, and various environmental benefits. By integrating bamboo into construction practices, the industry can significantly reduce its carbon footprint, establishing bamboo as a viable alternative to traditional materials.

Key Topics Discussed

1. Lifecycle and Environmental Impact

Goman provided an in-depth analysis of bamboo’s rapid growth and carbon sequestration capabilities, making it an exemplary choice for eco-friendly construction. He emphasized how bamboo’s renewability and minimal energy requirements during production enhance its sustainability.

2. Comparative Advantages

The seminar included a comparative analysis of bamboo against conventional materials, illustrating its lower environmental impact and superior energy efficiency. This segment highlighted the potential for bamboo to play a crucial role in the future of sustainable architecture.

3. Innovative Applications

A significant focus was placed on the “Bamboo Pavilion” project, which serves as a prime example of both the aesthetic and practical applications of engineered bamboo. Goman illustrated how this project effectively demonstrates bamboo's versatility and structural integrity.

The seminar successfully illuminated the transformative potential of engineered bamboo in the construction industry. Goman’s insights inspired attendees to explore sustainable materials in their engineering practices, paving the way for innovative building solutions in Hong Kong. This pioneering seminar marks a crucial step in advancing the dialogue on sustainable architecture. The knowledge and experiences shared can be replicated in future projects, promoting the use of eco-friendly materials in the construction sector.



Technical Seminar on Hong Kong's First Green Hydrogen Production Project

A hybrid seminar was taken place at the HKIE Headquarter on 17th March 2025, during which attendees were introduced to the Hong Kong's first green hydrogen production project presented by The Hong Kong & China Gas Corporation Limited and Veolia.

The Hong Kong and China Gas Company Limited (Towngas) and Veolia have signed a memorandum of understanding to develop the first green hydrogen project in Hong Kong at the South East New Territories Landfill Extension (SENTX) in Tseung Kwan O on 18 June 2024. The first batch of locally produced green hydrogen is expected to be available in 2025.

Given the abundant availability of landfills in Hong Kong, there is a sufficient supply of landfill gas. Consequently, a "Waste-to-Energy" strategy is implemented to harness the excess biogas and convert it into green hydrogen. Located at the South East New Territories Landfill Extension (SENTX) in Tseung Kwan O, this pioneering project introduces a new hydrogen production unit, completed with hydrogen transmission facilities and a refuelling station. The technology used is steam methane reforming, which operates through three key stages: pre-treatment, hydrogen production, and hydrogen utilisation. During the pre-treatment stage, impurities such as particulates, water, hydrogen sulphide, and siloxanes are carefully removed to ensure clean biogas. The purified gas then undergoes steam methane reforming and the water-gas shift reaction to produce hydrogen efficiently. The hydrogen produced is transported to the refuelling station for use in transportation and also loaded into tube trailers for power generation purposes. Since this hydrogen is generated from the breakdown of organic waste in the landfill, it is classified as green hydrogen - a clean and sustainable energy source.

This project marks the first application of this advanced technology in Hong Kong. It is designed to produce around 330 kilograms of hydrogen daily, which is enough to fuel seven to eight hydrogen buses for one day.

This pioneering green hydrogen project has marked a significant move in Hong Kong's green hydrogen energy development. Once successfully implemented, the relevant experience and technology can be replicated in other landfills and application scenarios, making good use of biogas to produce green hydrogen as a sustainable fuel.



Technical Visit to CIC - Zero Carbon Park

On 23rd March 2025, the overseas delegation team visited CIC–Zero Carbon Park (CIC - ZCP), Hong Kong's first zero-carbon building, for an insightful tour. The visit provided the team with an appreciation of zero/ low carbon building and advanced technology adoption in sustainable structures.

The park aims to raise awareness of the importance of green building design locally and internationally and aspires to boost the public's ecological values and encourage living a low-carbon lifestyle.

How the Building Works?

The CIC-ZCP generates on-site renewable energy from photovoltaic panels and a tri-generation system using biofuel made of waste cooking oil and target to achieve zero net carbon emissions on an annual basis. Beyond the common definition of a zero carbon building, CIC-ZCP exports surplus energy to offset embodied carbon of its construction process and major structural materials.

ZCP's Design Strategies

- Active Systems: The energy efficient active systems in CIC-ZCP result in a 25% of energy saving compared to a similar building of the current standard design.
- Passive Design: Design includes building orientation, window placement, skylight installation, insulation and building materials, or specific elements of a building, such as windows and window shades, the various passive design measures lead to 20% energy saving compared to a similar building of the current standard design.
- Renewable Energy: On site from solar energy by photovoltaic (PV) panels and from biofuel (one kind of biomass) made of waste cooking oil.
- Landscaping, Microclimate and Water Management Systems, Local Carbon Construction and Materials.





Technical Seminar on the Adoption of Building Information Modelling (BIM) and Digital Twin Technology for Building Lifecycle Management and the Built Asset Environment

The Technical Seminar was held on 25th March 2025, which introduced the principles of Building Information Modelling (BIM) and Geographic Information System (GIS)-centric Digital Twin technologies, along with the implementation processes for owner-operated facilities in Hong Kong. The practical applications of these technologies across various disciplines were emphasized and their benefits in enhancing Architecture, Engineering, Construction, Operation (AECO), and Repair, Maintenance, Alteration, and Addition (RMAA) to cover the entire building lifecycle through digital engineering solutions were also highlighted.

Design and Construction Using Building Information Modelling (BIM)

Practical uses of BIM in design include design review and visual prototyping. For example, the Tianjin CTF Finance Centre implemented design optimization, while the Louvre Abu Dhabi utilized a 3D model to create tender documentation and assemble a 1:1 scale prototype directly from the BIM model. In construction, BIM applications encompass sequence planning, clash detection analysis, modular construction, and digital simulation. For instance, Swire Properties effectively used 4D scheduling to optimize construction processes and communicate complex sequences to tenants. Additionally, BIM facilitates modular MEP coordination and the production of fabrication drawings, making it ideal for areas with heavily congested services.

Asset Management Using Digital Twin

A Digital Twin is a digital replica of a physical environment created from real-time data by integrating information from multiple sources, including Internet of Things (IoT) sensors, simulations, machine learning, reasoning, and AI. The technology offers a single source of truth, human-centric visualization, and explainable predictability.

For example, the Hong Kong International Airport employs an integrated Indoor and Outdoor Model for asset management. The indoor BIM model is validated using point-cloud data to create an as-built representation, while the outdoor mesh model is generated from billions of data points collected through LiDAR scanning. Applications in asset management include retail shop management, passenger flow management, and predictive maintenance.

Conclusion

The seminar explored how BIM enhances design and construction processes through practical applications. The integration of Digital Twin technology in asset management was particularly emphasized, highlighting the importance of adopting digital engineering solutions to improve the entire building lifecycle.



Technical Visit to kNOw Carbon House

On 5th April 2025, the delegation team visited kNOw Carbon House, located in Wanchai. This initiative aims to promote the government's plans for the region to achieve carbon neutrality by 2050. To enhance public education and awareness about carbon neutrality, the building has been reconstructed from the old Wan Chai Post Office by the Environmental Movement Committee. This venue will serve as a hub for learning about sustainable practices and fostering community engagement.

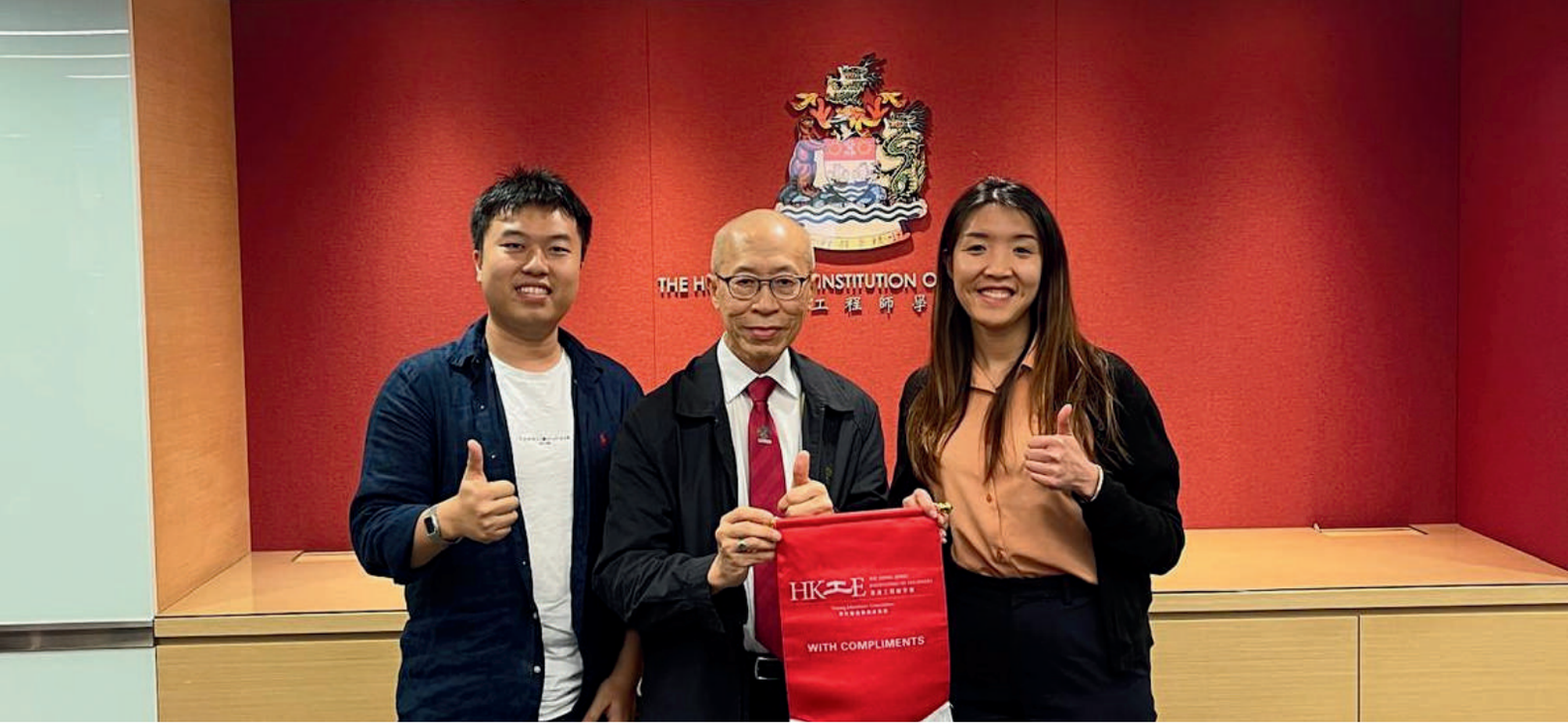
Principle of kNOw Carbon House

kNOw Carbon House features a character named "Big Waste", whose purpose is to educate citizens about adopting a low-carbon lifestyle in their daily routines, encompassing aspects such as clothing, food, housing, and transportation. The exhibition hall encourages visitors to develop low-carbon habits and learn about four key carbon reduction strategies: net-zero power generation, energy-efficient green buildings, waste reduction, and sustainable transportation. Through interactive displays and informative sessions, visitors can explore how their choices impact the environment and discover practical solutions for reducing their carbon footprint.

Conclusion

This tour helped engineers refresh their knowledge on the topic of carbon neutrality. In addition to exploring new energy opportunities, waste reduction is also fundamental. In the past, Hong Kong only implemented a three-color separation bin scheme. Thanks to the hard work of the Environmental Protection Department (EPD), glass bottles, electronic appliances, beverage cartons, and food waste can now be recycled. The visit highlights the government's dedication to civic education and environmental sustainability.





Technical Seminar on Low Emissions Power for Hong Kong

With the increasing world challenges of climate change, there is a growing need for low emissions power and Hong Kong has pledged to reduce its emissions to reach carbon neutrality in its Climate Change Action Plan 2025. Held on 17th April 2025, in this seminar, Ir Richard Fung, who has served in the nuclear power industry for 40+ years, introduced the current profile of low emissions power in Hong Kong, and shared his views on the practical opportunities available for the city to reach the objectives.

Nuclear Energy: Pros & Cons

Nuclear Energy is considered to be part and parcel for Hong Kong to achieve carbon neutrality, due to its high supply reliability, low operating cost and nearly zero carbon emission. However, it was socially challenged owing to catastrophic consequences of nuclear incidents happened previously such as Chernobyl disaster and Fukushima nuclear accident.

Nuclear Energy is safe to be used so long as it is well managed. The data presented during the seminar showed us that the deaths per unit of electricity generated by fossil fuels are around 5-25 times higher than that of unclear, including post nuclear incident and indirect deaths. The reason behind is that the combustion of fossil fuels contributes to air pollution while nuclear will not.

The key to make use of nuclear energy to reduce carbon emission, while minimizing its potential detrimental risk, is to adopt a structured and decent risk management system, which suppresses the risk of occurrence and consequence of incidents.

Conclusion

In conclusion, the transition to low emissions power is vital for Hong Kong's sustainable future and climate commitments. By phasing out coal, expanding the use of natural gas, and significantly increasing renewable energy capacity, Hong Kong is charting a clear path toward carbon neutrality by 2050. This transition not only addresses urgent environmental challenges but also enhances energy security and supports economic growth through innovation and green technology development. However, achieving these goals requires continued government leadership, regulatory support, and active collaboration with the private sector and the community. Emphasizing energy efficiency alongside clean energy deployment will be essential to maximize emission reductions. Ultimately, Hong Kong's low emissions power strategy exemplifies a pragmatic and forward-looking approach to balancing environmental responsibility with reliable and affordable electricity supply.



Technical Visit to I. Park 1 South Lantau Information Office

Introduction

On 26th April 2025, a technical visit was conducted to the information office of I·PARK1, with nearly 20 participants. This is a rare opportunity for us to get to know one of the important environmental infrastructure projects in Hong Kong in person.

Overview of I·PARK1

I·PARK1 aims to significantly reduce the volume of mixed municipal solid waste while recovering useful resources, thereby minimizing landfill use. The facility employs advanced engineering techniques, particularly high-temperature incineration, to effectively process waste.

Key Highlights

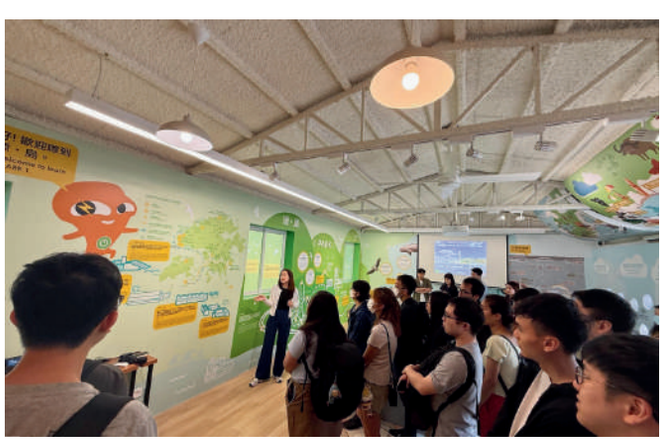
During the visit, attendees learned about innovative methods such as non-dredged reclamation, which helps to mitigate environmental impact. Interactive exhibits showcased the facility's boiler and flue gas treatment systems, offering participants a comprehensive understanding of its operations.

Environmental Conservation

An environmental corner highlighted the unique ecosystems of South Lantau, including Silver Mine Bay and Chi Ma Wan, emphasizing ongoing conservation efforts. Participants grasped the importance of sustainable practices in waste management and learned about the facility's role in supporting Hong Kong's long-term environmental goals.

Conclusion

The visit underscored the significance of integrating advanced technologies with ecological conservation, positioning I·PARK1 as a model for future waste management initiatives. Overall, this technical visit enhanced understanding of I·PARK1's operations and reinforced the critical role such projects play in fostering a greener and more sustainable future for Hong Kong.





Technical Webinar on Carbon Credits: A Market-Driven Solution to Climate Change

A technical webinar was conducted on 29th April 2025 (Tuesday) via Zoom, featuring Mr. Bill Tsang, Chair of the Standard and Best Practices of ESG Committee at The Hong Kong Institute of Environmental, Social and Governance (HKIESG), to discuss carbon credits as a market-driven solution to climate change. The session explored their growing relevance in Hong Kong and China among escalating environmental challenges.

Carbon Credit

The webinar provided a comprehensive overview of carbon credits, emphasizing their role in achieving carbon neutrality. Participants gained insights into the global carbon trading market, which is expanding due to robust regulatory frameworks and increasing voluntary participation. Key criteria for selecting high-integrity carbon credits were highlighted, including additionality, permanence, and robust quantification, as outlined by the Core Carbon Principles (ICVCM).

The session detailed project types, such as renewable energy and afforestation, and stressed the importance of prioritizing emission reductions, aligning with the Oxford Principles for Net Zero Aligned Carbon Offsetting (revised 2024). Practical guidance was offered on individual offsetting through the UN Carbon Offset Platform, which enables users to calculate emissions, select projects, and obtain certifications.

The webinar also addressed corporate motivations, such as reducing carbon footprints and enhancing brand image while cautioning against greenwashing to ensure genuine environmental impact.

This webinar equipped attendees with essential knowledge to navigate carbon credit strategies effectively. By highlighting global trends, rigorous selection criteria, and practical applications, it reinforced the critical role of carbon offsetting in Hong Kong's journey toward carbon neutrality by 2050, fostering sustainable practices across sectors.



CHAPTER 5
OVERSEAS EVENTS

FACTORY VISIT TO CARLTON BREWHOUSE

INTRODUCTION

On 3rd May 2025, the overseas delegation team visited the Carlton Brewhouse located in Victoria. Carlton Brewhouse is an iconic destination that combines rich brewing heritage with a modern beer garden experience. As part of the historic Carlton & United Breweries (CUB) site, which dates back to the mid-19th century and has been central to Australian beer culture since 1904, Carlton Brewhouse not only celebrates a storied past but also embraces sustainable brewing practices aimed at reducing environmental impact by 2025.

RENEWABLE ENERGY USE

Carlton Brewhouse sources 100% of its purchased electricity from renewable energy, a goal it is on track to achieve by 2025. This is largely enabled by a 12-year Power Purchase Agreement with BayWa r.e., which supplies 74,000 MWh annually from the Karadoc solar farm in northern Victoria. This solar farm, the largest in northern Victoria at 664 acres, powers the brewery and is a major step in CUB's transition to renewable energy, reducing reliance on fossil fuels and lowering carbon emissions.





Carlton Brewhouse has also installed thousands of solar panels on its brewery roofs, contributing to onsite solar generation. This onsite solar power supports the brewery's operations and aligns with CUB's broader sustainability strategy to reduce energy costs and secure a sustainable energy supply.

SUSTAINABLE BREWING PRACTICES

The Carlton Brewery emphasizes eco-friendly brewing practices, focusing on reducing water usage significantly and working toward zero waste to landfill by 2030. The brewery also aims to cut operational carbon emissions in half and reduce supply chain emissions by a third by 2025. Packaging initiatives include increasing recycled content and moving towards recyclable, reusable, or compostable materials, excluding caps and labels.



VISIT TO UNIVERSITY OF MELBOURNE

INTRODUCTION

A technical presentation took place at the University of Melbourne on 5th May 2025, during which Dr. Shanaka Kristombu introduced research on mega-scale liquid hydrogen (LH2) storage and transportation infrastructure to the HKIE-YMC delegates.

RESEARCH OVERVIEW

Dr. Shanaka Kristombu presented research on mega-scale LH2 storage and transportation infrastructure at the University of Melbourne. The project supports Australia's response to rapid global warming, advancing SDG 7 by promoting clean hydrogen energy. Dr. Kristombu highlighted Australia's aim to lead global hydrogen exports, driven by rising clean energy demand, fostering innovation under SDG 9 to meet international energy needs efficiently.

RESEARCH PROGRESS, CHALLENGES AND SOLUTIONS

The project involves design optimization, material testing, and infrastructure scaling. Tanks are engineered to maintain LH2 at below -253°C, preventing boil-off losses. Advanced insulation systems, including vacuum-sealed layers, ensure thermal efficiency and structural integrity. These designs address heat ingress challenges, incorporating safety valves to manage pressure, supporting SDG 7's clean energy solutions through reliable storage and transportation systems.

Material testing leverages CERN's Large Hadron Collider and NASA's methodologies, evaluating multilayer vacuum insulation and carbon-fiber composites for durability and reduced boil-off. Techniques from liquefied nitrogen gas storage are adapted to manage LH2's low density and high volatility. These cost-effective, robust materials enhance infrastructure resilience, supporting SDG 9's focus on innovative industrial solutions.

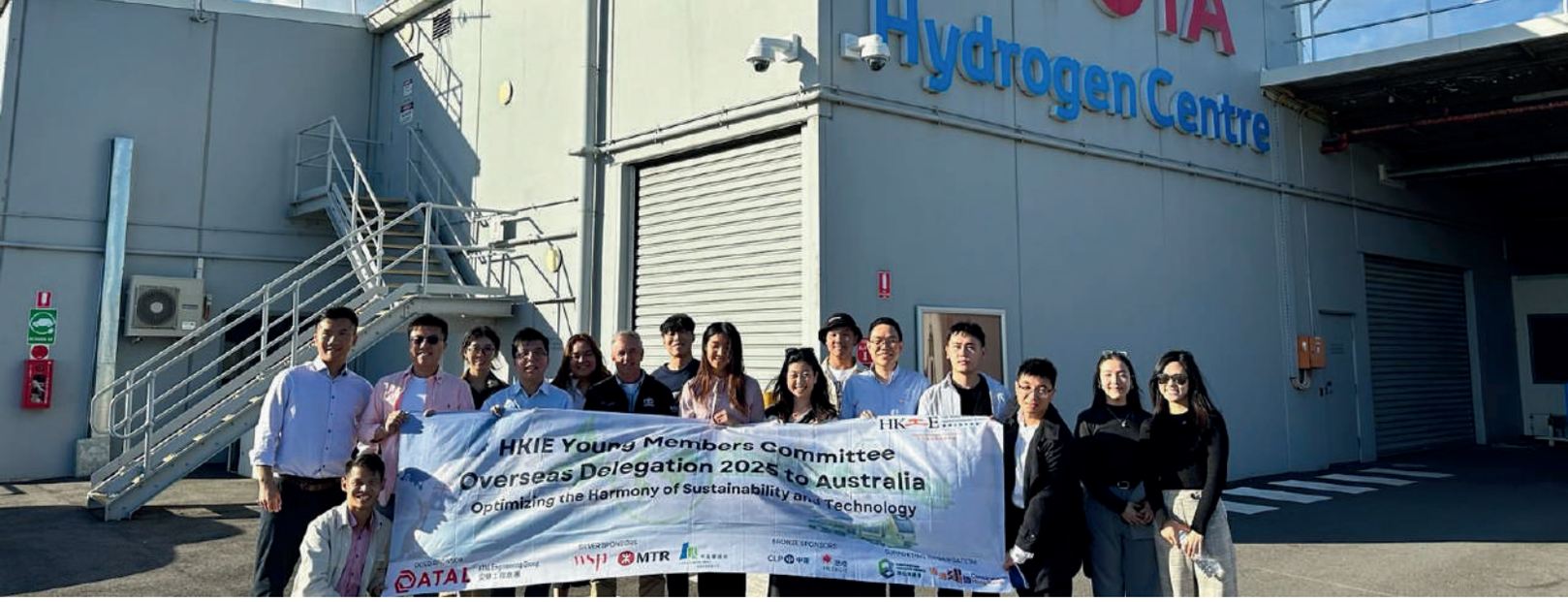
Scaling LH2 infrastructure faces high costs, safety concerns due to hydrogen's flammability, and cryogenic stability issues. Modular tank designs enable incremental expansion, reducing initial costs. Automated monitoring systems detect leaks, and liquid nitrogen-based cooling maintains low temperatures. These solutions ensure safety and economic viability for global markets, aligning with SDG 9's industrial advancements.

APPLICATIONS

A mega-scale LH2 facility can store thousands of tonnes of hydrogen, supporting shipping, aviation, and heavy industry. In Hong Kong, LH2 could power buses, ferries, or industrial microgrids, reducing emissions and advancing SDG 11's sustainable urban systems. The project integrates CERN and NASA expertise, offering a scalable model for global hydrogen markets, adaptable to compact urban settings like Hong Kong.

CONCLUSION

This visit provided critical insights into LH2 storage and transportation infrastructure, advancing SDG 7 through clean hydrogen energy. Dr. Kristombu's research, aligned with SDG 9, drives innovation in storage systems by addressing technical challenges with advanced materials and modular designs. For Hong Kong, LH2 could support sustainable transport and industrial applications, contributing to SDG 11 by fostering greener urban environments. The project's innovations, such as cost-effective insulation and scalable infrastructure, can be replicated globally, promoting LH2 as a sustainable energy source. This visit underscored the importance of global collaboration in achieving SDG-aligned energy transitions, offering valuable knowledge for Hong Kong's decarbonization efforts.



VISIT TO TOYOTA HYDROGEN DEMONSTRATION IN MELBOURNE

How does industry accommodate industrial transformations? The visit to Toyota Hydrogen Demonstration in Melbourne provide a successful story in managing changes in the automotive industry. Owing to multiple factors including labour costs and supply chain issue, Toyota close it's automotive manufacturing line in 2017. Instead of a complete closure on its manufacturing plant, the company decided to invest in the production base in order to accommodate the needs of its business development on their products, with demonstration of hydrogen vehicles applications. The entire Toyota base consists of various parts, including hydrogen production facilities, design center, community education center and service center. Each facility serves for the purpose of either promoting hydrogen vehicles to the industries or supporting sales or maintenance of current vehicle products.

HYDROGEN RE-FUELING STATION FOR LEASED HYDROGEN VEHICLES

Hydrogen facilities on site do not only serve as re-fueling facility for vehicle users, it also demonstrates standard facilities for hydrogen production, storage and re-fueling. From energy acquisition through solar panels or the grid to the re-fueling station, a full supply chain of hydrogen is set at the hydrogen demonstration center. Local stakeholders can borrow the standard design, in part or as a whole, for setting up their own hydrogen station.

Other challenges will be the public's perception of safety. Owing to explosive property of hydrogen, hydrogen vehicles were perceived to be dangerous. Public's concern on safety is the major hurdle in promoting hydrogen vehicles. Apart from leasing hydrogen vehicles to provide firsthand user experience, the Hydrogen Demonstration also focuses on education on hydrogen vehicle technologies. The hydrogen Demonstration showcases vehicular parts of hydrogen powered cars. Visitors can then visualize multiple safeguards in safety in hydrogen vehicles.

Finally, as a success story to the local community, the facility must cater for other sustainable development goals. While market and technological changes are inevitable, the center provides training and education for their employees. By securing job opportunities for current staff, the hydrogen demonstration center also supports the local community in return. Toyota also takes responsible steps towards developing new hydrogen businesses, while maintaining proper vehicle alteration services on conventional vehicles in the center. A smooth transition to a new technology application will ensure decent work on production for a healthy economic contribution to the local community.



SITE VISIT TO MELBOURNE RENEWABLE ENERGY HUB

INTRODUCTION

On 6th May 2025, the overseas delegation team visited the The Melbourne Renewable Energy Hub (MREH). Equis has launched the Melbourne Renewable Energy Hub (MREH), a globally significant energy storage precinct located 25km northwest of Melbourne's commercial business district. Fully developed, MREH will be a 1.2GW/2.4GWh Battery Energy Storage System (BESS). MREH will be one of the biggest batteries in the world and capable of servicing more than 1,100,000 households for four hours.

OBJECTIVES AND OVERVIEW

The primary objective of the MREH is to improve the stability and reliability of the energy grid while facilitating the transition to renewable energy sources. By incorporating a BESS and enhancing transmission infrastructure, the project aims to mitigate network congestion and improve overall energy efficiency. The MREH not only addresses immediate energy demands but also aligns with long-term environmental goals, positioning Victoria as a leader in sustainable energy practices.

DEVELOPMENT PHASES

The development of the MREH is structured in several key phases. The initial phase focuses on opportunity identification, where assessments of network strengths and resource availability are conducted. This thorough evaluation ensures that the project aligns with strategic environmental objectives and community needs.

Following this, the design and engineering phase emphasizes comprehensive planning. Stakeholder engagement is crucial, as the project seeks to minimize environmental impacts while maximizing community support. The involvement of local communities and government bodies fosters a collaborative approach, enhancing the project's acceptance and effectiveness.

CONTRACTUAL FRAMEWORK

The success of the MREH is also attributed to its robust contractual framework. Partnerships with major entities such as Tesla and AusNet Services ensure that the project is backed by industry leaders. These structured agreements facilitate compliance and operational efficiency, laying a solid foundation for the project's long-term viability.

FUTURE BENEFITS

Looking ahead, the MREH promises numerous benefits. It will enhance system restart capabilities, improve voltage control, and provide a framework for collaboration with regulatory bodies like the Australian Energy Market Operator (AEMO). As the demand for reliable renewable energy grows, the MREH stands to play a crucial role in shaping the future of energy in Victoria.

CONCLUSION

In conclusion, the Melbourne Renewable Energy Hub is a significant step towards a sustainable energy future for Victoria. Through its innovative approach to integrating renewable technologies and fostering community collaboration, the MREH addresses both current challenges and future energy needs. As construction progresses and key milestones are achieved, the MREH is poised to become a cornerstone of Victoria's renewable energy landscape, ensuring a cleaner and more reliable energy supply for generations to come.



COMPANY VISIT TO AURECON MELBOURNE

We are honored to visit the headquarter of the renowned consultant company, Aurecon, in Melbourne. Our delegates and experienced engineers in Aurecon had had a great chance to share and discuss the projects in Hong Kong and Australia.

MEGA PROJECTS FROM AURECON

One of the interesting projects shared by Mr. Holloway is the Victorian Big Battery system, which is a 300 MW grid scale battery storage located in the northwest of Geelong, Australia. Currently, renewables contribute to 35% of the total electricity generation in Australia, while their supply reliability always fluctuate depending on the environmental conditions such as sunlight and wind profile. To cater for more renewables to achieve carbon neutrality, the big battery system will play a key roll in stabilizing the power supply by storing renewables when its generation is in surplus, while providing power in the course of surged demand.

HONG KONG HIGHLIGHTS

Apart from presentations from Aurecon, our delegates had also shared the projects they are working on, one of which is the Third Runway System (3RS) project presented by Michelle. To cater for the anticipated looming flight demand, a 3800m new runway has been constructed and associated systems such as automatic people mover, baggage handling, and Terminal 2 extension has been delivering. Michelle introduced the deep cement mixing process to construct the foundation of the 3RS, which is effective to minimize the impact to the habitat of the Chinese White Dolphins.

Wonderful ideas had been exchanged among delegates and Aurecon engineers. Thank you for the support from Aurecon so that we can have such a great discussion.





VISIT TO THE CONTROL CENTER OF METRO TRAIN MELBOURNE

VISIT OVERVIEW

Lead warmly by MTM's staffs, our delegation travelled by train from Flinders Street Station to Sunshine Station to tour the Sunshine Signalling Control Centre on 6th May 2025. The centre is undergoing a critical upgrade to the Alstom Cityflow 650 Communications-Based Train Control (CBTC) system, a project pivotal for integrating Melbourne's new Metro Tunnel (scheduled to open in late 2025) with the existing rail network. This transformation aims to replace Melbourne's legacy fixed-block signalling—a system dating to the 1920s—with cutting-edge moving-block technology.

TECHNICAL ADVANCEMENTS AND OPERATIONAL IMPACT

The CBTC upgrade leverages Alstom's Cityflow 650 platform to enable dynamic train separation through real-time data exchange between trackside equipment and onboard train units. A key achievement demonstrated during our visit was the reduction of train headways from 3 minutes to just 90 seconds during peak hours, with future plans to achieve 60-second intervals. This is made possible by the system's ability to harmoniously integrate legacy trains (retrofitted with track-mounted balises for position reporting) and new CBTC-enabled trains (equipped with onboard computers for autonomous speed control). The dual-layered communication backbone ensures zero single-point failures while maintaining operational safety during disruptions.

The signalling control team emphasized how CBTC's Automated Train Operation (ATO) functionality optimizes acceleration and braking patterns, reducing energy consumption compared to conventional signalling. This efficiency aligns with Victoria's renewable energy targets, as the system dynamically adjusts to grid conditions, prioritizing off-peak electricity from solar and wind sources.

STRATEGIC ALIGNMENT WITH UNSDGS

This project exemplifies tangible progress toward multiple Sustainable Development Goals. For UNSDG 9 (Industry, Innovation, and Infrastructure), the CBTC deployment represents a leap in resilient infrastructure, enhancing network capacity without laying new tracks. Alstom's technology transfer to MTM also builds local expertise, fostering innovation ecosystems (SDG 9.5). The energy-optimized operations directly support UNSDG 7 (Affordable and Clean Energy). By synchronizing train movements with Victoria's renewable energy peaks, CBTC minimizes reliance on fossil fuels during high-demand periods.

DELEGATION EXPERIENCE

During the technical demonstration, a poignant moment was witnessing a legacy train seamlessly share tracks with a CBTC-enabled metro train—an achievement made possible through balise-based position reporting for non-equipped rolling stock. The team also detailed their phased implementation strategy, ensuring zero service disruption during the transition.

ACKNOWLEDGEMENTS

We extend profound gratitude to Ms. Kate Higgins (MTM Communications Advisor) for her arrangement on this visit , and to Mr. Albert Jubian (MTR Executive General Manager) for his insightful sharing towards the Australian local practices. The signalling control engineering staff demonstrated exceptional professionalism, embodying the collaborative spirit driving this transformative project.

COCKTAIL RECEPTION

INTRODUCTION

On 6th May 2025, the YMC overseas delegation team was invited to the Cocktail Reception at Zagame's house hotel café. Under the accompany of presidential delegation team, we visited HKIE Melbourne branch and engineers in Australia. Zagame's house provided a cozy environment for old partners to catch up their past and new joiners for ice breaking. Around 80 participants joined the cocktail reception, including HKIE executives and officers, YMC's delegation team, HKIE members in Melbourne, Hong Kong engineers who are working and living in Melbourne, and Melbourne engineers. During the reception, the participants shared their personal stories, working experience, the thoughts of working in different cities.

RECEPTION HIGHLIGHT

The receptions started with the speech, given by HKIE President Ir Eric S.C Ma. Ir Ma highlighted that the association is celebrating its 50th anniversary. He reported the HKIE annual dinner was held on 3rd April 2025 in Hong Kong, it is part of the 50th anniversary celebration gala of the institution, with over 1,800 attendees, including several key officials of HKSAR.

Ir Ma then shared the development of the mutual recognition framework agreement that expands development opportunities for engineers in the People's Republic of China. He also then introduced the next



President, Ir Alice Chow, who will assume the presidency on 24th June 2025. She will be the first female president in HKIE's history. Alice Chow introduced President Ir Ma for establishing this year's theme: "Grow the Nexus, Link the Links". This theme emphasizes the role of engineers as connectors, linking the mainland and the world, promoting the flow of global engineering talent, and deepening collaboration among practitioners from various regions.

While maintaining these admirable traditions, she advocated for the incorporation of four new concepts defined by "RICE": Resilience, Innovation, Certainty, and Equity. She envisioned future engineering professionals not only possessing engineering qualifications and knowledge but also transforming that knowledge into solutions that meet societal needs, resulting in commercially applicable industrial products. She referred to this type of talent as "engineer-entrepreneurs."





VISIT TO RMIT UNIVERSITY

Established in 1887 as the Working Men's College, RMIT's City Campus has grown into a global university renowned for its industry-aligned education and cutting-edge research. Situated in Melbourne's CBD, the campus blends heritage architecture—like the iconic Building 1, a former watchhouse—with futuristic structures such as the geometric Swanston Academic Building. RMIT prioritizes sustainability, with initiatives like its carbon-neutral roadmap and the integration of recycled materials into campus infrastructure. The university's focus on practical skills over theoretical abstraction has made it a leader in fields like engineering, IT, and design, attracting a diverse cohort of over 50,000 students from 150+ countries.

SUSTAINABLE HYDROGEN ENERGY LABORATORY (SHEL)

Dr. Shahin Heidari presented RMIT's research effort in hydrogen developments under the Sustainable Hydrogen Energy Laboratory (SHEL). The SHEL has been devising innovative hydrogen energy solutions since the early 2000s. The laboratory focuses on developing hydrogen technologies to complement intermittent renewables across stationary and mobile applications, requiring cross-disciplinary engineering and science expertise. Some of SHEL's notable investigation include novel hydrogen storage and transport solutions, integrated renewable hydrogen systems, and novel materials for hydrogen storage, fuel cells and electrolysers.

UNITISED REGENERATIVE FUEL CELLS (URFCS) PROJECT

SHEL's URFC project represents an alternative approach to energy storage. The SHEL has been developing a kilowatt-scale prototype portable power supply in collaboration with industry partners. The URFCs operate as electrochemical devices that combine the function of both an electrolyzer and fuel cell.

The system function in two modes: Charging mode – Acting as an electrolysis cell for splitting water into hydrogen and oxygen using electricity; Discharging mode – Acting as a fuel cell for generating electricity from stored hydrogen. Unitized regenerative fuel cells (URFCs) offer significant reductions in mass and volume compared to traditional hydrogen systems that utilize separate electrolyzers and fuel cells. As a result, they present promising opportunities for integration into electrical energy storage systems across various terrestrial and space applications.

BENEFITS AND APPLICATIONS

Both hydrogen technologies under the investigation by RMIT present as innovative approaches to energy storage, and emerges as promising condidates for deployment in Hong Kong. For the URFCs, it can potentially solves one of the major constraints for deploying hydrogen as an energy storage solution, which is the footprint constraint. Whilst for proton battery, the storage medium utilizes abundant carbon instead of scarce lithium resources, with complete recyclability of components. The compact, efficient design makes these systems particularly suitable for Hong Kong's dense urban environment and limited space constraints. Our visit to the RMIT electricity and electronic laboratories provided an invaluable hands-on learning experience that bridged theoretical knowledge with practical engineering applications. The tour showcased state-of-the-art facilities that demonstrate how modern electrical engineering education integrates cutting-edge technology with fundamental principles. The power electronics laboratory presented comprehensive facilities for studying electrical energy conversion principles. We examined various power electronic devices including SCRs, MOSFETs, IGBTs, and TRIACs, which are fundamental components in modern power systems. The laboratory experiments covered single-phase and three-phase rectification, DC-DC converters, and inverter systems, providing practical understanding of power conversion theory.



SITE VISIT TO NORTH EAST LINK

On 7th May 2025, the overseas delegation visited the North East Link in Melbourne. Currently under construction, the North East Link connects the M80 Ring Road to the Eastern Freeway, improving connectivity and reducing travel times by up to 35 minutes. The project also facilitates the underground passage of about 15,000 trucks, forming one of the longest twin road tunnels in Victoria, consisting of 6.5 km of tunnels that link Melbourne's freeway network while protecting homes and sensitive environmental areas.

TUNNEL CONSTRUCTION – TUNNEL BORING MACHINES (TBM)

The delegation was first briefed by the project manager, followed by a comprehensive site visit. A special feature of the North East Link is that 1.9 km of the overall tunnel length is constructed using Tunnel Boring Machines (TBMs), which replace conventional cut-and-cover methods and trenches. This approach reduces disruption and creates more room for parklands and wetlands. Two mega-sized TBMs, with a diameter of 15.6 m, a weight of 4000 tonnes, and a length of 90 m, have been deployed. The deepest section of the tunnel reaches 46 m underground, with a particularly challenging area being the tunneling through the Yarra River, where soft clay is present.

A 550-tonne gantry crane is positioned at the launching shaft to assist with operations and assembly. An acoustic shed is used to manage the dirt produced from tunneling, while a separate shed stores the concrete segments for the tunnel walls. At the front of the TBM is the cutter head, which functions as a rotating drill capable of tunneling through rock six times harder than concrete. The TBMs operate 24/7, moving up to 15 m per day. Each day, 125 precast segments are installed, and 400 m^3 of grout is laid behind these segments.

The excavated dirt is transported to the acoustic shed at Windsor Reserve using a continuous enclosed conveyor belt, and this material is subsequently relocated or reused for the project. Once tunneling is complete, asphalting and mechanical engineering works will commence.

GREEN FEATURES

Green initiatives are key highlights of the North East Link project. In addition to tunnel construction, the project includes new parklands, wetlands, and improved bike and walking paths. A notable feature is the 2-hectare Yarra Link green bridge over Bulleen Road, designed to be planted with indigenous trees, grasses, and shrubs. New wetlands will be established along the Yarra River and Koonung Creek, including an 1,800 m^2 wetland that honors the cultural landscape of the Wurundjeri people and serves as an Indigenous knowledge-sharing precinct for Melbourne. Additionally, a tree planting program ensures a 1:2 ratio; for every tree removed, at least two new trees will be planted. This includes extensive indigenous planting in the new parklands and wetlands, with more than 30,000 trees to be planted. The project has also received accolades for its commitment to sustainability, such as using 100% renewable power during construction, supplementing concrete with low-carbon recycled materials, and aiming for net-zero emissions in its operation and maintenance.

CONCLUSION

The project adopts innovative approaches to infrastructure development while prioritizing environmental sustainability. The use of Tunnel Boring Machines (TBMs) for constructing the tunnels significantly minimizes disruption, allowing for better integration with the surrounding ecosystem. This visit reinforced the importance of integrating advanced construction techniques with sustainable practices in modern infrastructure projects.



VISIT TO ENGINEERS AUSTRALIA

INTRODUCTION

On 8th May 2025, the overseas delegation team visited Engineers Australia (EA) office in Canberra. Engineers Australia (EA), known formally as the Institution of Engineers, Australia, is an Australian professional body and not-for-profit organisation whose purpose is to advance the science and practice of engineering for the benefit of the community. Engineers Australia is Australia's recognized organization for accreditation of professional engineering qualifications under the Washington Accord. As of 2022, EA has 115,000 members, which includes 31,000 students. Young Engineers Australia (YEA), established in 1998, is the largest subgroup within Engineers Australia, representing over 40,000 student and graduate members under 35. Structured around a National Committee and divisional branches, YEA focuses on professional development, advocacy, and fostering innovation through initiatives like the Virtual Elevation Careers Expo, which connects young engineers with top employers. The group also pioneer leadership opportunities, such as the Young Engineers Shadow Board, allowing emerging professionals to influence Engineers Australia's strategic decisions directly.

WHAT DID WE LEARN?

The visit started with an introduction given by Ms. Angela Harrison, General Manager Canberra (ACT), Engineers Australia. Ms. Harrison, has briefly shared the vision and mission of the organization and the typical path to become professional engineer in Australia. Additionally, Mr. Michael Liu, Project Engineering Officer in ACT Government provided an impressive presentation on the Canberra light rail stage 2 project. ACT Light Rail Stage Two is a light rail project that will run from Civic in Canberra to Woden in the southern suburbs, via the Parliamentary Triangle. This will provide an extension to Stage One, which runs from the Canberra CBD to Gungahlin in the northern suburbs.

WHAT DID WE DO?

In addition to learning from Engineers Australia, our delegates also shared their own engineering experiences. Carmen Lam, Deputy Chairman of the YMC Delegates, introduced the Hong Kong Institution of Engineers - Young Members Committee (HKIE-YMC), outlining the organization's mission and the itinerary of this remarkable trip. Following her, Terry Tay, Charles Lam, and Leo Chung shared their personal engineering stories and insights across various disciplines.

CONCLUSION

The engaging discussions with Australian engineers, as well as experienced Hong Kong engineers Dr. Sing Lok Chou and Ir. Paul Chan, sparked inspiration within the delegation, encouraging them to carry forward transformative ideas. The exchange and dialogue with the Engineers Australia group were both fruitful and insightful.





TECHNICAL VISIT TO LIGHT RAIL PROJECT

INTRODUCTION

We were honoured to tour the Canberra Light Rail site and attend a briefing on this outstanding transport infrastructure project. Alongside track-laying, the team has built gently sloping fill embankments to raise the road surface, integrate the track bed and blend seamlessly into the urban landscape. Because the alignment slices through a densely built environment, an Environmental Impact Statement was produced to control noise, protect heritage assets and preserve biodiversity.

PROJECT BACKGROUND

The Canberra Light Rail Project is a major public transport initiative in Australia's capital. Stage 1, a 12-kilometre line from Gungahlin to the city centre (Civic), opened in April 2019 with 14 stops. It was designed to reduce car dependency, support urban renewal, and promote sustainable travel. Stage 2A, extending the line to Commonwealth Park, is under construction, with Stage 2B planned to reach Woden. The network forms the backbone of Canberra's long-term vision for a connected, low-emission city.

BRIDGE DEMOLITION ENGINEERING SOLUTION

One of the project's biggest challenges was demolishing two heavily trafficked bridges without crippling central-district traffic. To achieve this, engineers devised a staged closure and diversion strategy that met three non-negotiable criteria:

1. Minimum vehicle speed
2. Minimum number of vehicle lanes
3. Pedestrian and cyclist continuity

PROJECT PURPOSE & COMPARISON BETWEEN HONG KONG CASE

During our Q&A, we knew more about the success and the rationale behind building such a large infrastructure. The project leadership was clear: this isn't just about providing more Park & Ride spaces. The real goal is a travel mode shift—encouraging Canberra residents to trade car trips for frequent, reliable public transport and, in doing so, reduce carbon emissions. They also stressed that, compared with Hong Kong's approval process, Canberra demands a longer approval period before construction can start.

CONCLUSION

Seeing these resilient, community-focused and environmentally robust processes firsthand has deepened our appreciation for sustainable transport infrastructure. We're inspired to bring the same level of detail, stakeholder collaboration and adaptive engineering to Hong Kong's upcoming light rail project!





VISIT TO NATIONAL ZOO & AQUARIUM

INTRODUCTION

Towards the end of the trip in Canberra, the delegation team visited the National Zoo & Aquarium (NZA), exploring different wildlife in Australia and reflecting on engineering aspects related to sustainability, infrastructure development, biodiversity conservation, and ecological balance.

BIODIVERSITY CONSERVATION

NZA houses a remarkable diversity of species, including both native Australian fauna and international wildlife. It was particularly impressive the the habitat designs effectively mimic the natural environments, which promote species-specific behaviors and reduce stress among the animals. NZA's active participation in breeding programs for endangered species underscores its commitment to global biodiversity conservation. From an engineering perspective, future projects could benefit from incorporating advanced ecological engineering techniques to enhance habitat replication. Additionally, implementing IoT devices for real-time monitoring of animal health and behavior could significantly improve conservation strategies.

SUSTAINABILITY INITIATIVES

Operational sustainability is a key focus for NZA, which employs several effective practices. The installation of solar panels has reduced reliance on non-renewable energy sources, and rainwater harvesting systems support irrigation, showcasing a strong dedication to resource conservation. There are also undergoing opportunities to upgrade existing infrastructure with energy management systems to further enhance energy efficiency and developing a comprehensive waste recycling program to further improve operational sustainability and minimize environmental impact.

INFRASTRUCTURE DEVELOPMENT

Recent enhancements to NZA's infrastructure include the development of the AdventureLand, designed to promote environmental education among the younger generations. The specialized animal enrichment areas facilitate natural behaviors, which are critical for animal welfare. Looking ahead, future projects might consider using recycled and locally sourced materials in construction to significantly minimize the carbon footprint associated with new developments.

ECOLOGICAL BALANCE

NZA implements nature-based solutions to maintain ecological balance, such as integrated pest management strategies that reduce chemical use while preserving biodiversity in the surrounding flora environment. Educational programs play a vital role in fostering visitor awareness of ecological interdependence. Incorporating green infrastructure such as green roofs and permeable pavements can enhance biodiversity and effectively manage stormwater. Conducting ecosystem services assessments will also help quantify the benefits provided by green spaces within NZA.

CONCLUSION

The National Zoo & Aquarium serves as a model for integrating sustainability into infrastructure and operations, aligning closely with the United Nations Sustainable Development Goals (SDGs), which promotes the conservation of ecosystems and biodiversity. For Hong Kong, a city facing rapid urbanization and environmental challenges, NZA's practices offer valuable insights. Emphasizing biodiversity conservation and sustainable resource management can help Hong Kong address its environmental sustainability goals. By fostering partnerships for educational outreach and conservation efforts, Hong Kong can strengthen community engagement in protecting its unique biodiversity.



CHAPTER 6
CONCLUSION

Our planet is undergoing profound changes, driven by the rapid pace of technological innovation and an urgent global commitment to sustainability. As more and more people migrate to urban areas, cities face intense pressure on their infrastructure, natural resources, and ecosystems. Overcrowding, insufficient housing, heightened energy demand, and traffic congestion are just a few of the critical problems confronting urban environments today. Striking a balance between fulfilling the needs of a growing city population and mitigating environmental impacts is a daunting but essential challenge.

The overexploitation of natural resources is a direct consequence of unsustainable production practices and consumer habits. This depletion not only threatens the fragile equilibrium of our ecosystems but also endangers the well-being and livelihoods of communities reliant on these resources. Climate change is another pressing concern that calls for immediate action. Increasing global temperatures, frequent extreme weather events, and rising sea levels already affect communities worldwide. Efforts to curb greenhouse gas emissions and adapt to shifting climate patterns are paramount in securing the future of our planet.

Alongside environmental issues, social and economic sustainability must also be tackled. Persistent inequalities, social marginalization, and poverty undermine stability and overall social welfare. Cultivating a sense of community, celebrating cultural diversity, and promoting social cohesion are vital for creating cities that are resilient, dynamic, and inclusive.

The 2025 Overseas Delegation to Australia, guided by the theme “Optimizing the Harmony of Sustainability and Technology,” offered valuable perspectives and charted a clearer path for future progress. Australia’s accomplishments in constructing sustainable urban spaces have illuminated the attitudes and strategies essential for building a brighter tomorrow. A key insight from the delegation involved examining how Australia’s smart city initiatives foster public health and well-being. By leveraging technology and data-driven approaches, Australian cities have been able to more effectively manage resources, improve transport options, and boost overall urban efficiency. From “Vision Zero” and intelligent transport systems to digital platforms for public engagement, Sweden has provided further examples of how technology can be harnessed to develop greener and more livable cities.

Additionally, Australia’s focus on renewable energy and efficient resource management has become a benchmark for sustainable development. Delegates observed firsthand how clean energy technologies, such as solar power and carbon capture, have been seamlessly integrated into urban infrastructures. This commitment to cutting carbon emissions and transitioning to a low-carbon economy has reduced environmental harm while simultaneously opening up new economic prospects and enhancing residents’ quality of life.

A further highlight of the delegation’s observations is the essential role of holistic planning and the integration of multiple factors in shaping sustainable cities. Australia has implemented an inclusive approach that addresses environmental, social, and economic considerations. The concept of mind-mapping—where ideas are visualized and interconnected—proved invaluable in this process. By encouraging cooperation and interdisciplinary thinking, Australian cities have been able to craft inventive solutions for the complex challenges of urban development.

Ultimately, the future of our urban landscapes hinges on embracing fresh, imaginative ideas and maintaining a forward-looking perspective. The delegation demonstrated that sustainable cities are not an unattainable dream but a practical objective. By tapping into the knowledge gained from this visit, young engineers can chart a hopeful trajectory for the growth of their own cities. Working together, we can develop urban centers that support and enrich the well-being of present and future generations. Now is the time to seize this opportunity, forging vibrant, livable, and resilient cities that stand as global exemplars for a sustainable tomorrow.



CHAPTER 7
ANNEX



Ir Eric S C MA

President, the HKIE

Ir Eric MA was the President (Session 2024/2025) of The Hong Kong Institution of Engineers. He was the Chief Executive Officer and an Executive Director of New World Development Company Limited and NWS Holdings Limited, 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 the Executive Vice President, Civil & Infrastructure, Asia Pacific, of AECOM prior to joining the HKSAR Government.



Ir Alice K T CHOW

Senior Vice President, the HKIE

Alice has over 30 years of multidisciplinary engineering experience, she specialises in management consulting, blending technical expertise with commercial insight. Alice has successfully led numerous award-winning projects, including airports, hospitals, data centres, and innovative technology initiatives. She is an Arup Fellow, the firm's highest recognition for technical and professional achievement. She is also an Arup Trustee as appointed by the Arup Group Limited Board to direct Arup's business.

Alice is a Senior Vice President of the Hong Kong Institution of Engineers (HKIE), she is Fellow of the HKIE, Institution of Civil Engineers, Institution of Structural Engineers, Association for Project Management and Hong Kong Institute of Facility Management. Her community service includes roles as a Council Member at Hong Kong Metropolitan University, Chair of the Advisory Board for Service-Learning at Lingnan University, and a member of various advisory committees focused on innovation and development.



Ir Prof. Frank F CHAN

Vice President, the HKIE

Ir Prof Chan is a Fellow of the Hong Kong Academy of Engineering. He is a Hong Kong Deputy to the National People's Congress, a member of the Council and the Court of the University of Hong Kong, an Honorary Advisor of the Hong Kong Federation of Electrical and Mechanical Contractors and the Hong Kong Civil Servants General Union. He is the former Secretary for Transport and Housing, and prior to that, the former Director of Electrical and Mechanical Services. Ir Prof Chan received his BSc(Eng) and MBA from the University of Hong Kong, and Master in Medical Physics from the University of Aberdeen, UK.



Ir Rupert K Y LEUNG

Vice President, the HKIE

Ir Rupert Leung graduated with a bachelor degree in civil engineering from the University of Hong Kong and has obtained his diploma of engineer from the National School of Public Works, France. He is the Senior Director of Operations of Halcrow China Limited. Over his career, Ir Leung has been involved in a large variety of projects, ranging from infrastructure and property development to landslip prevention and slope maintenance, with project locations spreading over Hong Kong, mainland China, Middle East, Australia and Southeast Asian countries.

Ir Leung has been actively contributing to affairs of the Institution and the engineering profession. He served as Geotechnical Division Chairman in Session 2014/2015. He was an Elected Ordinary Member of the Council from 2020 to 2024 and was elected Vice President in 2024.



Ir Dr. Otto L T POON, BBS, OBE

Past President, the HKIE

Ir Dr Poon is a Chartered Engineer with over 50 years of E&M engineering experience. He is the Founder and Chairman of ATAL Engineering Group. Over the years, he has been participating in public services both to the community and the engineering profession. He is a Past President of the Hong Kong Institution of Engineers, Past President of Hong Kong Academy of Engineering, Past Chairman of Advisory Committee of the School of Energy and Environment of City University of Hong Kong and Life President of Hong Kong Federation of Electrical and Mechanical Contractors. Presently, he serves as the Honorary President of Hong Kong Fire Services Officers Association, Honorary Advisor of the Institution of Public Private Partnerships, Advisor of Hong Kong Alliance of Technology and Innovation, Member of Advisory Committee of the Department of Electrical & Electronic Engineering of the University of Hong Kong, Member of the International Advisory Committee of Research Institute for Sustainable Urban Development, Member of the International Advisory Committee of Smart Cities Research Institute and Member of Steering Committee of Research Institute for Climate-Resilience Infrastructure (RICRI) of Hong Kong Polytechnic University, and Member of Otto Poon Center for Climate Resilience and Sustainability of Hong Kong University of Science and Technology.



Ir Edmund K H LEUNG

Past President, the HKIE

Edmund Leung is a long time Past President of HKIE but remains passionate in nurturing young engineers. He was conferred Hon Fellowshp of HKIE in 2024.

He graduated as a mechanical engineer and started as a power station engineer, but moved to the construction industry, having led many transport infrastructure projects in planning, design and construction activities over the last 4 decades, including various stages of the Hong Kong Mass Transit Railway System and others in the region, and many road and tunnel projects in Hong Kong.

He was active with public services, and have served the Town Planning Board, Airport Authority Hong Kong, Energy Advisory Committee and Chairman of the Drinking Water Safety Advisory Panel, among others.

He was awarded OBE in 1996, JP in 1997 and SBS in 2010.



Ir Peter C K CHAK

Chairman, CPDC, the HKIE

Ir CHAK had worked in the Hong Kong and China Gas Company Limited with over 40 years of gas engineering experience. He is a Fellow of the HKIE and IGEM (Institution of Gas Engineers and Managers). He actively serves the Hong Kong and community engineering profession. He is currently the Chairman of Continuing Professional Development Committee of the HKIE. He was a Council Member of the HKIE and Chairman of MIS Division, MIS Discipline and Gas & Energy Division. Also, he was a Council Member of IGEM and a member of IVE Engineering Advisory Board, a Departmental Advisory Committee member and Industrial Advisor of the Department of Systems Engineering and Engineering Management at the City University of Hong Kong. Also, he is a member of a few Government committees.

Ir William W.L. Luk is a distinguished civil engineer with extensive experience in large-scale infrastructure projects. He is recognized as a Fellow Member of the Hong Kong Institution of Engineers and currently serves as Deputy CEO at Chun Wo Construction Holdings Company Ltd. In addition to his senior leadership role, Luk is an Executive Member and Council Member of the HKIE for Session 2024/2025, championing the institution's strategic direction. As Chairman of the HKIE International Affairs Committee and Past Chairman of the HKIE Civil Division, Luk has led various initiatives to expand professional collaborations worldwide. He also contributes to developing the next generation of construction professionals as a Management Board Member of the Hong Kong Institute of Construction and a Training Board Member of the VTC BCE. Luk's commitment to excellence and innovation makes him a respected figure in the engineering community.



Ir William W L LUK

Chairman, International Affairs Committee, the HKIE



MS. LAM KA MAN, CARMEN

Delegation Manager

Carmen Lam is a passionate and dedicated civil engineer with expertise in structural engineering and project management. She holds a Bachelor of Engineering in Civil Engineering and a Master of Science in Structural Engineering from the University of Hong Kong. With years of professional experience, Carmen is currently an engineer at Gammon Construction Limited, one of the leading contractors in Hong Kong and across Asia.

Carmen is deeply committed to sustainability and innovation in engineering. She is a Certified ESG Planner and has completed the Advanced Executive Diploma in ESG Strategy and Innovation for Net-Zero. Her dedication to environmental stewardship and sustainable practices was recognized through the "Outstanding Green Achiever" award at the Hong Kong Awards for Environmental Excellence (HKAEE) in 2023.

Terry is an engineer specializing in chemical engineering, with valuable experience in the energy sector. Over the past years at CLP, a leading power company in Hong Kong, she has progressed through various roles, demonstrating a strong commitment to continuous learning and professional development.

Terry holds both a master's and bachelor's degree in chemical engineering from the University of Cambridge, effectively combining academic knowledge with hands-on experience in the industry. As a committee member of the Hong Kong Institution of Engineers Young Members Committee, she is dedicated to fostering collaboration and supporting the engineering community.

Driven by a passion for innovation and sustainability, Terry aims to contribute positively to the field by addressing complex engineering challenges. By leveraging technical expertise and problem-solving skills, she seeks to find effective solutions that create a meaningful impact in the energy sector and beyond.



MS. TERRY TAY

Deputy Manager (Overseas)



MS. CHEUNG CHEUK YING, EMMI

Deputy Manager (Local)

Emmi holds a bachelor's degree in Architectural Engineering from City University of Hong Kong and currently works as an Assistant Resident Engineer on a tunnel project. She specializes in fire services as well as plumbing and drainage systems, applying her technical expertise to ensure these critical infrastructure elements meet safety and operational standards within complex underground environments.

As a dedicated team player with exceptional communication skills, Emmi excels at coordinating with multidisciplinary teams, contractors, and stakeholders to facilitate smooth project execution. Her proactive approach and attention to detail help maintain high-quality standards and compliance with rigorous fire safety and engineering requirements specific to tunnel construction. She is also passionate about continuous learning and contributing to innovative engineering solutions that enhance tunnel safety and functionality, making her a valuable asset to any infrastructure project.



MR. NG MAN SING, SAM

Secretary

Sam Ng is a Construction Support Engineer at MTR Corporation, starting his career in Electrical Engineering, with a focus on power system upgrade and brownfield replacement. He has engaged in the mega scale project of upgrading and strengthen the power system of MTR urban lines, which has been serving the network for over 45 years. Sam serves as a committee member of the Young Members Committee of Hong Kong Institution of Engineers, and the Secretary of the Organizing Commitee of the Overseas Delegation to Australia.



Ir CHUNG SZE HO, LEO

Treasurer

Leo Chung is a Senior Engineer at Leighton Contractors (Asia) Limited with over five years of experience in civil and geotechnical engineering. He has been deeply involved in large-scale building and infrastructure projects, including North District Hospital expansion, Boardwalk underneath Island Eastern Corridor, and Tseung Kwan O–Lam Tin Tunnel. He has in-depth exposure in various fields including tunnelling, marine works, temporary works design and construction and site setup arrangements. Leo is also a member of The Hong Kong Institution of Engineers in Civil Discipline.



MR. YEUNG CHUN FUNG, ANSON

Local Affair Officer

Anson completed his bachelor's degree in electrical engineering at Hong Kong Polytechnic University and is currently pursuing a master's degree in the same field, focusing on railway professions. After graduation, he joined MTR Corporation Limited as a graduate engineer. He is now participating in the ‘Scheme A’ program, rotating through different departments within Hong Kong Transport Services. In his future career, he will be involved in train design and procurement in the Technical & Engineering Services department.

During his delegation visit to Australia, Anson explored the application of the mixed mode of CBTC and fixed block signaling in the Melbourne Metro, as well as the development of the Melbourne's Suburban Rail Loop. This visit provided him with new insights into railway signalling systems and urban planning for major transport in Australia’s CBD. He believes this enriching experience will be crucial in shaping a more efficient, sustainable, and equitable traffic network in Hong Kong.



MR. LAM TSZ LONG, ANTHONY

Local Affair Officer

Anthony is a Graduate Engineer at MTR Corporation Limited. He holds a Bachelor of Engineering in Mechanical Engineering from the University of Hong Kong (HKU) and will commence a Master of Science in Energy Engineering at HKU next year. Since graduation, Anthony has been participating in the 'Scheme A' training program, rotating through various departments within Hong Kong Transport Services. He is currently focusing on rolling stock maintenance within RSMD, specializing in locomotives and auxiliary vehicles. These engineering vehicles, equipped with cranes, aerial platforms, and scissor platforms, are vital for supporting infrastructure and overhead line maintenance, ensuring the reliability and safety of railway operations.

Recently, through a delegation, Anthony engaged with Metro Trains Melbourne staff to discuss fleet operations, maintenance, CBTC signaling systems, and cultural differences between railway operations in Hong Kong and Melbourne. This enriching experience has further deepened his appreciation for the global railway industry.

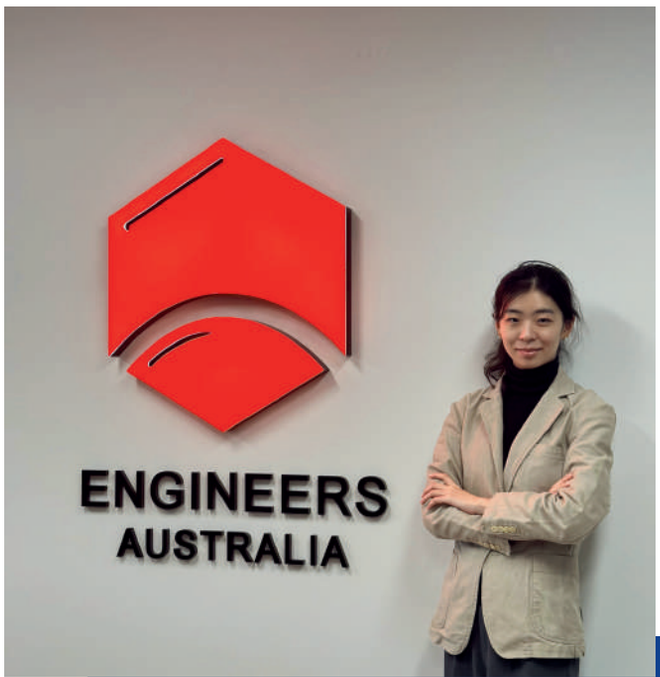


MS. CHIEW CHEN LU MICHELLE

Local Affair Officer

Michelle graduated from the University of Hong Kong with a Bachelor of Engineering in Civil Engineering and is currently pursuing a Master of Science in Engineering (Civil Engineering) at the same university. She works as a Graduate Engineer at the Airport Authority Hong Kong, where she participates in aerodrome design and airport expansion projects, fostering her keen interest in sustainability and technology.

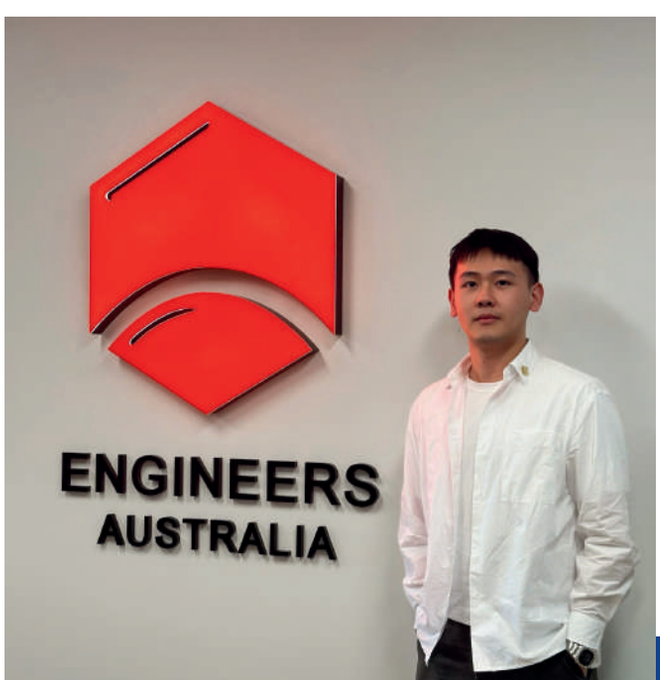
Michelle is eager to join the delegation to Australia to enhance her knowledge of sustainable practices, collaborate with industry experts, and contribute to impactful solutions for the future. She also aims to appreciate Hong Kong's sustainability initiatives.



MS. XUE QI MEI, CHIMELIS

Local Affair Officer

Chimelis holds a Bachelor's degree from Shanghai Maritime University and a Master's degree from City University of Hong Kong. She is currently serving as an Assistant Engineer in the Infrastructure Team at WSP (Asia) Limited, where she supports project management in government-led feasibility studies for housing developments. As a delegate of the YMC Overseas Delegation 2025, she aspires to broaden her global perspective and deepen her understanding of civil engineering and sustainable energy solutions.



MR. WU KONGJIE, JACKSON

Local Affair Officer

Jackson Wu holds a Master's and a Bachelor's degree in Building Services Engineering from the Hong Kong Polytechnic University. Currently a Graduate Engineer at AECOM, he has two years of project engineering experience in electrical, ELV, and lift system design for government, commercial, and residential projects. Jackson has strong project management, coordination, and communication skills, developed through collaboration with clients, architects, end users, utility companies, and contractors. He is committed to enhancing his expertise, having completed the RCx Practitioner (Level 2) training and the BIM Basic Modelling Course.

Additionally, he engages in engineering events and serves as an Honorary Mentor for the HKIESC at The Chinese University of Hong Kong. He has participated in the HKIE Sichuan and Beijing Delegation and organizes seminars and events as the Local Affairs Officer for the HKIE Overseas Delegation to Australia. Jackson aspires to become a professional engineer and contribute to a sustainable future.



MR. LAM TSZ KAI, CHARLES

Overseas Liaison Officer

Charles Lam is a Senior Sustainable Development Officer at Swire Properties Limited, bringing over six years of experience in building services and environmental engineering, with a strong focus on corporate sustainability and ESG management. He has led the publication of various Sustainability Reports for two major real estate developers, demonstrating expertise in carbon management, waste and water management, environmental compliance, and sustainable supply chain management. Charles serves as a committee member of the HKSAR Environmental and Conservation Fund (Cap. 450) and the Advisory Committee on Water Supplies. He holds professional credentials as a Chartered Engineer, Chartered Environmentalist, and Chartered Water and Environmental Manager.

Hin Lee is an Engineer at AECOM Asia Company Limited with four years of experience in structural and geotechnical engineering. He has contributed to a wide range of public and private building projects, specializing in cost-effective solutions and detailed structural and geotechnical design. His work often involves advanced analysis, including dynamic and wind load assessments. One of his major projects is the Chai Wan Government Complex and Vehicle Depot, where he played a key role in all stages of the construction. He is also a Chartered Structural Engineer and a Member of the Institution of Structural Engineers.



MR. LEE SIU HIN

Logistics Officer



MS. NG CHEUK SZE JESSY

Overseas Liaison Officer

Jessy holds a bachelor's degree in electrical engineering with a Sociology minor and a Master's in Power Engineering from The University of Hong Kong. As a substation construction engineer, she applies her experience in transmission power networks to manage projects thoughtfully. Jessy skilfully coordinates contractors, oversees project timelines, and adapts flexibly to challenges, ensuring safety and efficiency in every task. In 2023, she was honored with second place in the HKIE Trainee of the Year Award, a recognition she deeply appreciates. Jessy actively volunteers in her community and advocates for sustainability and environmental protection through practical efforts. In her free time, she enjoys yarn works, learning new languages, and brings her warm, engaging presence to emceeing. Her thoughtful and creative nature shines through in both her professional contributions and personal passions.

Jasper is an Assistant Engineer based with Arup Hong Kong's Energy Infrastructure and Advisory team. He holds a MEng in Chemical Engineering from the University of Manchester (the city where his long-supported football team is at!) and gained industrial experience with the H21 hydrogen gas network projects while studying in the UK.

Since graduation, Jasper has been developing his career advancing the energy transition in Hong Kong and the APAC region. He is currently developing Hong Kong's first-of-its-kind green fuels import infrastructure, utility-scale battery energy storage systems, hydrogen power applications in buildings, and advising on coal transition strategies. Recently, he is developing knowledge in carbon capture storage and utilization, alternative fuels, and industrial decarbonisation.



MR. HO HO TING, JASPER

Overseas Liaison Officer



MR. SEOW JIN RONG

Logistics Officer

JR holds a First-Class Honours Bachelor's degree in Transportation Systems Engineering from The Hong Kong Polytechnic University, with a minor in Pilot Ground Theory. As an Assistant Engineer in AECOM's Land Supply/Municipal - Traffic and Transport Planning team, his work includes Traffic Impact Assessments (TIAs), road alignment design, traffic microsimulation, parking studies, and signage design.

He is particularly dedicated to people-centric transport planning, integrating land use considerations into transportation system design to enhance overall societal value. He believes fostering international cultural and technical exchanges enables local practitioners to innovate beyond conventional practices and shape a better future.





Ms. Carmen K M LAM
Delegation Manager
Deputy Chairman, YMC, the HKIE

During our recent overseas delegation to Australia, we were fortunate to witness first-hand how cutting-edge technology is harnessed to achieve sustainable development. The forward-looking urban planning strategies, coupled with collaborative efforts from universities and private enterprises, illustrate Australia's robust commitment to shaping a more resilient and environmentally conscious society. Our visits revealed impressive advancements in clean energy, smart infrastructure, and innovative research, offering valuable insights for enhancing our own practices in Hong Kong.

Another highlight of the trip was meeting fellow Hong Kong professionals who have migrated to Australia and now play influential roles in key engineering projects. It was deeply inspiring to see their expertise so highly regarded on the global stage, reflecting the commendable reputation of Hong Kong's engineering community.

I would like to highlight the indispensable support I received from my diligent and enthusiastic young team. Their hard work, ranging from research efforts to organizing local seminars to liaising with overseas organisations and companies, made this fruitful trip possible. This journey not only widened our horizon but also reinforced our determination to help Hong Kong transition into a smarter and greener future.



MS. TERRY TAY

Deputy Manager (Overseas)

Participating in the Overseas Delegation to Australia has been an incredibly rewarding experience. From desktop studying, local events, to engagement with overseas engineering firms and industries, this journey has fostered a sense of shared purpose. Through different visits and discussions throughout the tour, it gave me an invaluable opportunity to explore sustainable practices and innovations in Australia, making a reflection of how we can learn from world's best practices.

Australia's weather of natural resources gave us a remarkable opportunity for exploring innovation energy solutions. Especially developments in hydrogen economy, witnessing initiatives like the research on liquid hydrogen carrier at University of Melbourne and the studies and industrial implementations on hydrogen fuel-celled vehicles and solar-powered hydrogen electrolysis devices, it is evident that Australia is committed to balancing economic growth with sustainable practices, striving to work for human development whilst minimizing environmental impacts.

I am mostly inspired by the dedication of Australia to wildlife conservation. It has been unforgettable to have acknowledgement of the country towards the traditional owners and the natural wildlife. The integrity of sustainability into infrastructure aligns closely with the UNSDGs. I am eager to integrate the insight and knowledge gained from this delegation into my professional endeavors. The experience has been enlightening and impactful and I look forward to applying these in the pursuit of a more sustainable future.



MS. CHEUNG CHEUK YING, EMMI

Deputy Manager (Local)

I was deeply honoured to join the overseas delegation organised by HKIE-YMC for the first time as Deputy Manager (Location). This valuable experience allowed me to see sustainable engineering practices and innovative technologies in Australia. Through site visits and sharing, I was inspired by how sustainability and technology work together to create environmentally friendly and forward-thinking engineering solutions, especially related to the United Nations Sustainable Development Goals (UNSDGs) 7, 9, and 11.

Among all the visits, the North East Link (NEL) project was my favourite. As an engineer working on tunnel projects, visiting NEL helped me understand how a similar project is managed in a different place. NEL is a leader in sustainability for infrastructure. I was impressed by their efforts to reduce carbon emissions and use renewable energy during construction. They also use recycled materials like rubber barriers and plastic bollards to reduce waste and support the circular economy. After this visit, I hope to bring some of these sustainable practices to Hong Kong. This delegation has broadened my view and motivated me to promote green engineering in our local projects.

I am delighted to be part of this overseas delegation, engaging in a diverse range of events that have broadened my perspective and enriched my understanding. Throughout this journey, I have had the invaluable opportunity to interact with advisors and fellow participants, whose insights and experiences have truly inspired me.



MR. NG MAN SING

Secretary

I am truly pleased to have the opportunity to represent Young Engineers in Hong Kong for a delegation aimed at learning and exchanging ideas on developing a sustainable city from the perspectives of both Hong Kong and Australia. Under the theme of Optimizing the Harmony of Sustainability and Technology, the organizing committee and I invested significant effort from the initial planning stages, through logistical confirmations, and into the journey itself.

A standout highlight was the North East Link Tunnels project in Victoria, which seeks to connect the Eastern Freeway with new 6.5km tunnels stretching from Bulleen to Watsonia. Alex Chan, the project's construction manager, provided insights into the background and progress of the tunnelling operations, and led us to the work site where the TBM had its breakthrough! I was struck by the organized site management and the active participation of the workers, whose feedback and concerns were taken seriously, and who were also deeply involved in preparing the method statements. I believe this represents a smart strategy we can learn from and implement.

While both Hong Kong and Australia are striving for carbon neutrality, they are pursuing this goal in different manners due to their unique constraints and considerations. Australia, with its abundant renewable resources, is focusing on enhancing renewable energy generation and developing grid-scale battery systems. In contrast, Hong Kong, facing limitations in renewable resources, is looking to import clean energy as practical solutions. I believe that Hong Kong and Australia has great potential to collaborate in terms of energy and sustainable city development.

In conclusion, this delegation offered valuable insights into different engineering fields, integrating elements of sustainable development that correspond with Australia's developmental needs. I would like to extend my gratitude to the partners from Australia who assisted our delegation, as well as the organizing committee. Without their support, we would not have experienced such an inspiring journey that genuinely broadened my horizons.



Ir CHUNG SZE HO, LEO

Treasurer

The HKIE Overseas Delegation 2025 to Australia was an enlightening experience, offering valuable insights into hydrogen technology, infrastructure development, and sustainable practices. In this visit, we visited engineering sites from the perspective of infrastructure, energy facilities and academics.

The North East Link project showcased infrastructure development in Australia, including re-launching earth pressure balance TBM in different tunnel sections for efficient tunnel construction. In this project, we also learnt about how Hong Kong Engineers practices professionally across the border. Recognising local practices, impacts to local community, and labour's welfare needs, the project team has successfully developed partnership towards delivery.

At the Toyota hydrogen demonstration, we observed how enterprise transforms to cope with new development trends in businesses, while creating sustainable contributions to the local communities with continued job opportunities. On the other hand, Melbourne Renewable Hub displayed the city's commitment to renewable energy sources. Large scale Battery Energy Storage system ensures a stable power supply to Melbourne through accommodating variation in power generations of renewable energy sources throughout the day.

From research and development, our visit to the University of Melbourne and RMIT University has shown how government policies can lead research directions. These Universities develop different technological doctrine on generation, storage and transportation of hydrogen. With Australian's resourceful advantage on renewable energy generations, research in hydrogen export technology may forge a sustainable energy industry for the future.

To conclude, this delegation offered exposures in different engineering discipline, with elements in sustainable development that suits development needs in Australia. However, regardless on project type, partnership towards goals is the essentials for success and a sustainable outcome. Engineers should also manage stakeholders in our jobs, while providing technically competent solutions to the society.



MR. YEUNG CHUN FUNG, ANSON

Local Affair Officer

It is my pleasure to be part of the 2025 overseas delegation in Australia. From organizing local events to designing publications and coordinating study groups with teammates from various divisions and backgrounds, the delegation has been filled with joy and friendship.

As one of the countries rich in natural resources, Australia provides an excellent platform for different enterprises to explore and implement new energy solutions. From the development of liquid hydrogen carriers in universities to the practical application of fuel-efficient electric vehicles in the automotive industry, it is clear that Australia is pushing renewable energy into a new era. Starting from planning to design and construction, Australia is striving to achieve a balance between maximizing earnings and minimizing energy expenditures.

In terms of energy efficiency, Melbourne's Suburban Rail Loop connects suburbs, reduces travel times, and ensures that the city grows in the right places. It provides citizens living in the outer suburbs with an alternative way to connect different railway lines, relieving pressure on central Melbourne.

I am impressed by Australians' intelligence and ambition to build an eco-friendly environment, as well as their commitment to protecting wildlife. The vision of carbon neutrality may be achievable through innovation and breakthroughs. I cannot wait to apply the knowledge and perspectives gained from this delegation to my work. Once again, heartfelt thanks to all my teammates, advisors, and HKIE for making this delegation smooth, fruitful, and meaningful.



MR. LAM TSZ LONG, ANTHONY

Local Affair Officer

It is my honored to participate in the HKIE-YMC overseas delegation to Australia, joining a group of talented young engineers from Hong Kong for an enriching week in Melbourne and Canberra. This opportunity allowed us to engage with Australian engineering professionals and academics, visiting leading research institutions and infrastructure projects. It was an invaluable platform to share insights into Hong Kong's engineering landscape while learning from Australia's innovative approaches to technology and sustainability.

Our itinerary included visits to esteemed organizations such as Engineers Australia, the University of Melbourne, RMIT, and Aurecon, where we exchanged knowledge on engineering practices. The technical tours were particularly enlightening, covering sites like the Toyota Ecopark H2, metro and light rail projects, and the Melbourne Renewable Energy Hub. The highlight for me was the Toyota Ecopark H2, where I encountered a hydrogen fuel cell for the first time. Exploring its operational principles, observing the tank's design, and understanding its integration into a functional product was truly inspiring. The visit also clarified the distinctions between hydrogen, battery, hybrid, and conventional diesel or gasoline vehicles, highlighting hydrogen's role as a cutting-edge technology driving the global transition to sustainable energy.

As a delegate and co-organizer, I gained profound insights into sustainable engineering. Discussions with Australian experts highlighted their strong commitment to human-centric sustainability, particularly in prioritizing workers' rights and safety. Their meticulous safety planning and use of robotics for high-risk tasks were exemplary. Hong Kong could enhance its practices by integrating safer design principles from project inception, improving communication between teams, and adopting automation for hazardous tasks. I also recognized that projects, whether temporary infrastructure developments or long-term shifts to renewables, require careful societal impact assessments and robust risk mitigation strategies to minimize disruption. This delegation deepened my appreciation for balancing technical innovation with human considerations in engineering. I am deeply grateful to the organizers for this transformative 7-day experience, which provided fresh perspectives and valuable professional connections. I am eager to share these insights with my colleagues in Hong Kong to contribute to the continued growth of our engineering community.



MS. CHIEW CHEN LU MICHELLE

Local Affair Officer

The visit to Melbourne and Canberra was truly blissful.

I was particularly drawn to the North East Link, a large-scale infrastructure project consisting of 6.5 km of twin tunnels connecting the M80 Ring Road and the Eastern Freeway. This was my first time seeing mega-sized Tunnel Boring Machines (TBMs) in person and it was amazing to witness concepts I learnt in textbooks come to life. We were briefed by a project manager from Hong Kong, which highlighted the contributions by Hong Kong engineers on a global scale. I was also impressed by Australia's dedication for workers' rights and environmental protection.

At the Melbourne Renewable Energy Hub and Toyota Ecopark, I gained a more comprehensive understanding about Battery Energy Storage Systems (BESS) and hydrogen vehicles. This is particularly relevant as we gradually transition to renewable power at the Hong Kong International Airport, with BESS and hydrogen vehicles being key sustainability initiatives.

One of the most memorable experiences was presenting on the expansion of Hong Kong International Airport (HKIA) at Aurecon. It provided an invaluable opportunity to network with young engineers from Australia and gain insights into their working culture and ongoing projects, which includes Melbourne Airport's plans for a third runway.

Through this delegation, I recognized the merits of both Australia and Hong Kong, enriching my perspective on sustainable practices in engineering. With the experience I have gained, I hope to contribute positively to Hong Kong and the world as a whole.

Beyond engineering, I was mesmerized by the blend of nature and cityscape, being so close to nature while in the city, with green spaces just minutes away. I am very grateful to have joined this delegation and feel humbled to have shared this experience with fellow delegates from various disciplines, from whom I have much to learn. And of course, I will always cherish the memories of seeing a rainbow in Melbourne and a sky full of stars in Canberra.



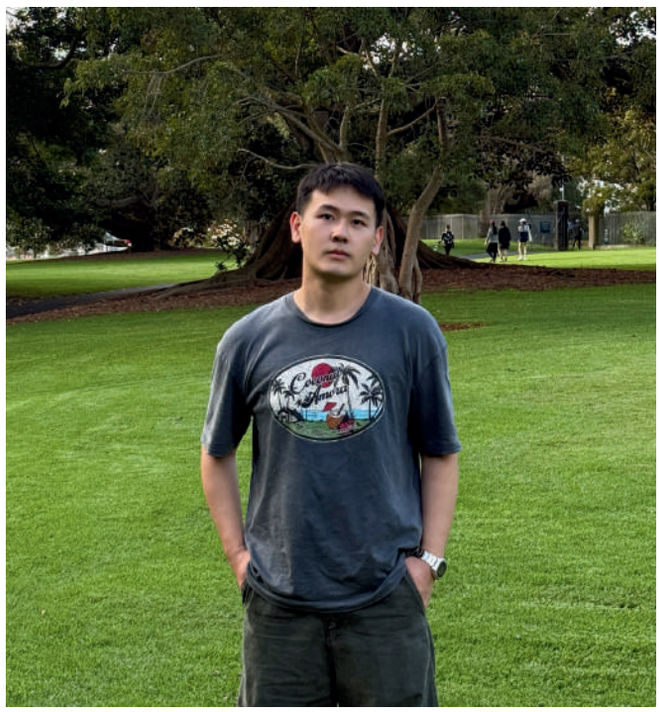
MS. XUE QI MEI, CHIMELIS

Local Affair Officer

The YMC Overseas Delegation 2025 to Australia was an incredibly memorable and enriching experience where I have encountered with many nice people and stunning landscapes. Through this journey, I not only expanded my technical knowledge but also grew personally through close collaboration with teammates and local parties. These experiences have undoubtedly broadened my horizons and strengthened my commitment to becoming a forward-thinking professional engineer.

During the delegation, we participated in a series of insightful technical visits and seminars that underscored the critical role of sustainability in engineering and urban development. Discussions with local experts and interactions with peers provided an excellent platform for knowledge sharing and cross-cultural exchange, reinforcing the value of collaborative innovation in tackling global challenges.

I would like to express my heartfelt gratitude to the advisors and fellow delegates for their encouragement and support throughout this journey. I am sincerely looking forward to applying the insights and inspiration gained from this delegation to promote sustainable, resilient, and innovative engineering practices in my future career and life.



MR. WU KONGJIE, JACKSON

Local Affair Officer

I had the privilege of being part of the HKIE-YMC overseas delegation to Australia. Along with a group of young elite engineers from Hong Kong, we travelled to Melbourne and Canberra for in-depth exchanges and learning with local academic leaders in the engineering field. We visited research institutions and key infrastructure, actively absorbing new knowledge while sharing the stories of Hong Kong.

In Australia, we visited engineering institutions such as Engineers Australia, the University of Melbourne, RMIT, and Aurecon to share insights about engineering in Hong Kong. They also shared their valuable experiences and anecdotes from Australia. We participated in technical tours of the Carlton Brewhouse, Toyota Ecopark H2, metro and light rail projects, and the Melbourne Renewable Energy Hub, gaining a wealth of knowledge about new technologies and project experiences. One of the most impressive visits was to Toyota Ecopark H2, where I gained in-depth insights into the applications of hydrogen energy. I had the opportunity to see the internal structure of hydrogen electric vehicles and understand both the advantages of hydrogen energy and the challenges it faces.

Additionally, we explored Phillip Island and the National Zoo, where we directly experienced their commitment to sustainable development. An unforgettable evening was the cocktail event in Melbourne, where the HKIE President provided us with extensive information about engineering developments in Hong Kong. I also had the opportunity to engage in conversations with professional engineers from various disciplines.

Lastly, I would like to express my gratitude to all the organizers of this event. The 7 days delegation in Australia has been incredibly beneficial for me, and I have also made many like-minded friends during this experience. I hope to share what I've learned and seen with my engineering colleagues in Hong Kong. I look forward to seeing the engineering community in Hong Kong continue to thrive.



MR. LAM TSZ KAI, CHARLES

Overseas Liaison Officer

Attending the YMC delegation tour to Australia was a truly eye-opening experience for me as a young environmental engineer. The theme, “Optimizing the Harmony of Sustainability and Technology,” resonated with my own aspirations to see Hong Kong become a leader in sustainable urban development. One of the most inspiring moments was visiting the Toyota Australia Hydrogen Centre in Melbourne. Witnessing how an old car manufacturing plant could be transformed into a cutting-edge green hydrogen facility powered by solar photovoltaics made me realize the immense potential for innovation within existing infrastructure. It sparked my imagination about what could be possible in Hong Kong, a city with ample sunlight and many underutilised industrial sites. If we could harness our solar resources to produce hydrogen locally, we could significantly reduce our reliance on fossil fuels and take a major step towards cleaner air and a greener future.

Another highlight was the North East Link Tunnels project in Victoria. I was particularly impressed by their commitment to minimizing the impact of construction on nearby communities. The proactive noise control measures, including offering hotel stays to residents during noisy operations, demonstrated a level of care and consideration that I feel is often lacking in Hong Kong’s infrastructure projects. With our city’s high population density and frequent construction activities, adopting such community-friendly practices could greatly improve residents’ quality of life and foster stronger public support for sustainable development.

Reflecting on these experiences, I am more convinced than ever that Hong Kong has much to gain by embracing both technological innovation and social responsibility. Australia’s approach to integrating renewable energy and considerate infrastructure development aligns perfectly with SDG 9, and I believe these lessons can help us build a more resilient, inclusive, and forward-thinking city. This delegation has inspired me to advocate for these changes in my own professional journey, and I am excited about the possibilities that lie ahead for Hong Kong’s sustainable transformation.



MR. LEE SIU HIN

Logistics Officer

Participating in the HKIE Overseas Delegation to Australia allowed me to truly appreciate the professionalism of our engineering field as a practical structural engineer. During the visit, I explored various Australian construction projects, research initiatives, and sustainable developments. I also had the opportunity to meet local engineers and learn about their culture, while working with an excellent team that reinforced my personal growth and strengthened my identity as an engineer.

I was particularly impressed by the hydrogen project at the University of Melbourne and the Toyota Hydrogen Demonstration. These projects showcased the latest developments in electric vehicle technology and underscored how innovative technologies can change industry practices and everyday life. This experience reminded me that innovation and research not only enhance our quality of life but also support sustainable development. I aim to carry this mindset into my future work and academic pursuits for the practical adoption of innovative technology in our engineering field of Hong Kong such as MiC.

Another memorable experience was the cocktail reception with HKIE President Eric Ma. At this event, I met Australian engineers across a wide age range—from younger peers to experienced professionals —and from a diverse range of engineering disciplines. Their insights on local engineering culture and customs helped me understand how these factors influence industry development and demonstrated the importance of mutual support among engineers in achieving common goals and fostering social progress.

In summary, the delegation provided me with a wide range of new experiences. I had the opportunity to engage with projects across different engineering fields and connect with both emerging and seasoned professionals. Completing this meaningful event with a group of dedicated young engineers changed my views of the profession and inspired my future career path. I now hope to promote innovative engineering solutions and support sustainable development of Hong Kong engineering industry as a young structural engineer for our future!



MS. NG CHEUK SZE JESSY

Overseas Liaison Officer

I am deeply honored and grateful to have participated in this transformative delegation, an experience that profoundly inspired and humbled me as an engineer. The journey illuminated engineers' critical role in global energy transition and sustainable development, filling me with awe and determination. Australia's leadership in hydrogen energy, particularly at Toyota Hydrogen Centre, sparked my excitement for its potential to revolutionize Hong Kong's energy landscape, despite its early stage. Aurecon shared with us different projects with high variety and expertise, igniting my passion for innovative infrastructure solutions aligned with SDG 9. Canberra's light rail, with its greenery-focused design, deeply moved me, reflecting SDG 11 and inspiring visions of greener Hong Kong cities.

The international engineering community's openness left me profoundly touched. At Toyota, RMIT, Aurecon, and Engineers Australia, engineers' willingness to share insights and challenges fostered a collaborative spirit that warmed my heart and motivated my growth as a young engineer. Returning to Hong Kong, I'm filled with a sense of responsibility to apply hydrogen technology, diverse project expertise, and environmental design. This journey was a technical and emotional awakening, fueling my commitment to global sustainability. I eagerly anticipate future exchanges to drive engineering innovation forward with renewed purpose.



MR. HO HO TING, JASPER

Overseas Liaison Officer

Having organised and participated as a delegate in this delegation trip to Australia, I gained valuable technical insights into innovative sustainable technologies. Site visits and discussions with local and Australian experts deepened my understanding of current advancements in sustainability in both Hong Kong and Australia.

A key takeaway was the emphasis on the human element in sustainable development and decarbonisation. I was particularly impressed by Australia's strong culture of labour rights and its commitment to worker well-being. Their rigorous approach to planning and demonstrating labour safety sets a strong example.

Hong Kong can learn from this by promoting inherently safer design throughout the project lifecycle, enhancing communication between operators and managers, and leveraging advanced robotics for high-risk operations. I also realised that any development, whether a temporary street closure for a new rail line or a permanent shift away from fossil fuels, is inherently disruptive. Thorough assessment of societal impacts and effective risk mitigation strategies are essential. People must always be at the forefront of development. Overall, this delegation broadened my perspective on sustainable engineering and underscored the importance of integrating both technical and human considerations in future projects.



MR. SEOW JIN RONG

Logistics Officer

I am grateful and honoured to be given the opportunity to join this delegation to Australia. As an early-career transportation professional, observing industry evolution is critical – particularly how technology and sustainability are transforming practice. In this era of engineering advancement, international knowledge exchange enables practitioners like myself to innovate beyond local conventions.

The NEL project exemplified stakeholder collaboration, with extended pre-construction public engagement and builder involvement in safety protocols. This highlights holistic sustainability: environmental, financial, and social. Australia's commitment to people-centric transport was equally impressive, evident in their CBTC signalling upgrades which observed at Melbourne Metro's Sunshine Centre and remarkable Canberra's light rail project, given the country's car-centric, sparse population.

I was particularly inspired by Australia's dedication to wildlife conservation and Indigenous recognition. Witnessing communities balance development with ecological stewardship was invaluable. My sincere gratitude to our Australian hosts and delegates for making this transformative experience possible.

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Engineers Australia

ACT Government

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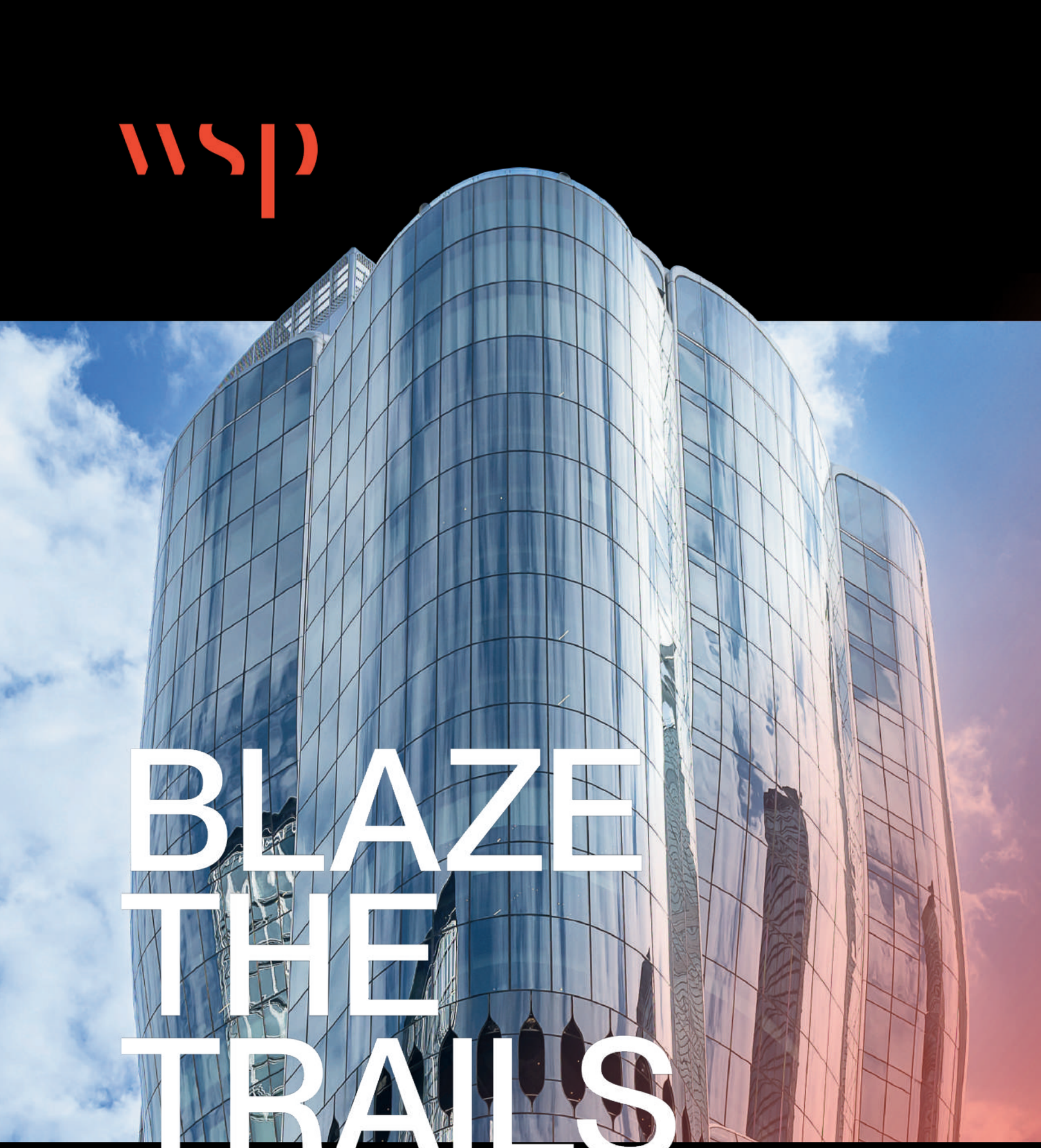
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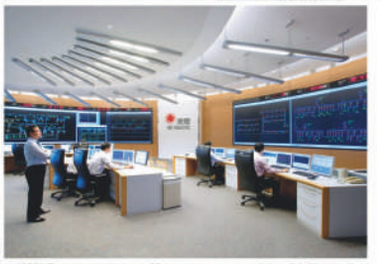
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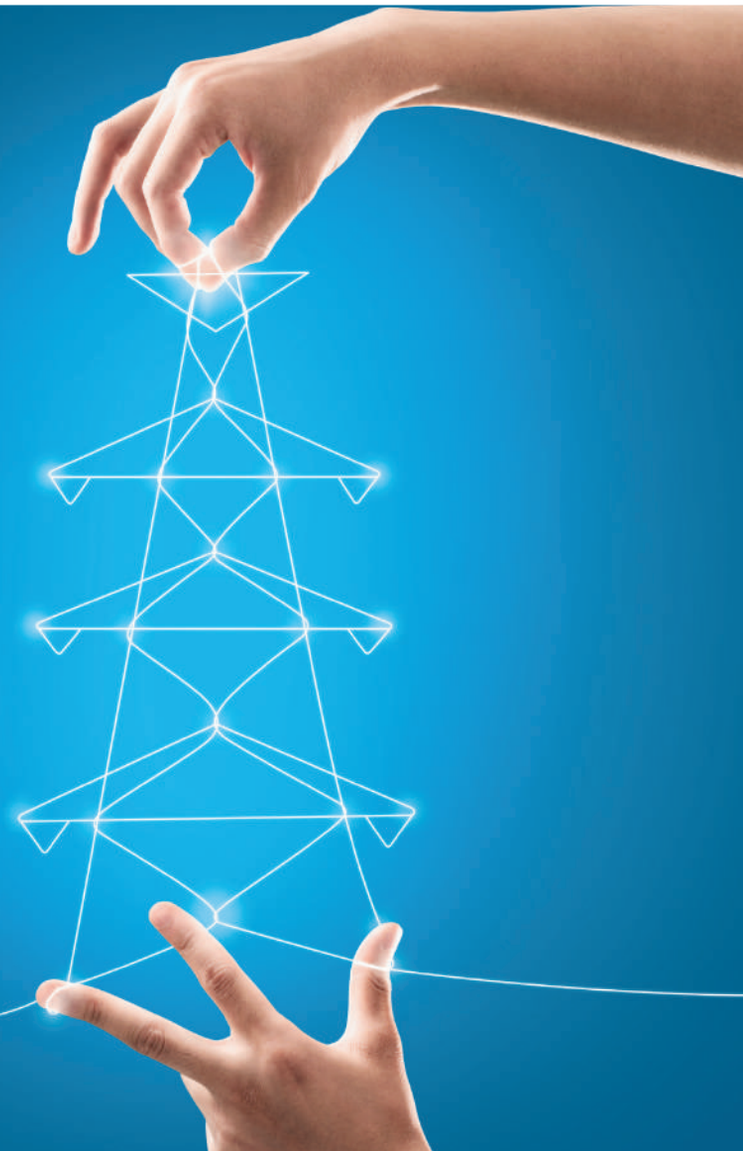
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