

"It was the best of times, it was the worst of times." As we reflect over the past year, I am immersed with a sense of pride at how the Construction Industry Council (CIC) and the wider construction industry have come together and shown great resilience and adaptability in the face of unprecedented challenges. Together, we have survived the pandemic and continued to drive progress in technology, sustainability and workforce development.

With hindsight, it is without doubt that the COVID-19 pandemic has had a near catastrophic impact on Hong Kong's construction industry. Despite this, the CIC has stayed committed to supporting the industry and workers' welfare in this dark period. I am, therefore, thrilled to present our 2022 CIC Annual Report as we turn those huge challenges into opportunities, and act as the guiding light to lead the construction industry to a much brighter future.



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Empowering the Industry with Innovation to Revive and Thrive

The CIC welcomes the Administration's 2022-23 Policy Address. We will enhance construction productivity to support the government's land and housing supply as well as infrastructure projects, while promoting the adoption of innovative technologies such as Modular Integrated Construction (MiC) and Multi-trade Integrated Mechanical, Electrical and Plumbing (MiMEP). We will continue to prioritise construction safety and hold webinars, summits and expos to enhance professional development, drive the local economy, and contribute to the sustainable economic and social development of Hong Kong.

We believe that our unwavering efforts to facilitate the industry's technological development will overcome the hurdles we need to face and help us to emerge even stronger in the years to come, as we focus on enhancing manpower, safety and innovation in Hong Kong's construction industry through technological innovation.

In today's rapidly evolving world, it is essential to recognise that traditional approaches alone, such as education and awareness changes, may be insufficient to drive the upgrading of standards in the construction industry. We must continue to innovate and leverage new technologies to increase productivity, enhance safety and minimise construction cost. The year 2022 saw us take significant steps to enhance the above through the integration of various kinds of technologies, take the area of precasting as an example on improving safety and efficiency in the construction industry. By building components and designing and casting structures off-site, we can create a controlled environment that reduces the risk of accidents on construction sites. To achieve this, we must embrace technological changes, shift including shifting more work off-site thus reducing on-site time, adopting high productivity construction, which consolidates various

technologies to streamline the construction process. I am glad to tell that the industry has stated to apply innovative technologies such as digital and robotic tools, MiC, Common Data Environment (CDE), Building Information Modelling (BIM) and Design for Manufacture and Assembly (DfMA). Presently, over 90 MiC projects have been undertaken in Hong Kong, more than 20 of which have been completed. The Design for Safety (DfS) initiative has also been introduced to improve diversity, productivity, sustainability and safety performance at all levels and for a range of personnel.

The CIC is also keen to promote technology adoption in the construction industry. The Construction Industry Innovation and Technology Fund (CITF) has been instrumental in advancing safety in the construction industry by providing support for the development and implementation of AI technologies. Established by the Development Bureau in October 2018, CITF has funded various projects aimed at improving worksite safety. With a cumulative approved amount of HK\$795,656,646 and 985 beneficiaries, including 580 SMEs, the fund has made a significant contribution to the industry. The 2022-23 Budget saw an additional HK\$1.2 billion allocated by the Government, signalling the industry's recognition of the CITF's impact. These projects have introduced cutting-edge technologies, such as smart safety helmets that detect potential safety hazards and alert workers in real-time.

By harnessing the power of smart technologies, we can ensure that Hong Kong, as a global leader in the construction industry, will continue to thrive under continual capital investment in the Hong Kong construction sector and adopting the best technological advancement.

Strengthening Our Workforce with Respect to Their Safety and Welfare

Our priority throughout 2022 has been construction workers' welfare. In collaboration with the Development Bureau, we launched the Construction Industry Caring Campaign 1.0 & 2.0, providing over HK\$51,404,100 in financial support to 13,712 workers. The CIC also provided scholarship awards to family members of registered construction workers to demonstrate our commitment to worker development. As part of our pandemic-response initiatives, we also issued a COVID-19 risk management guideline for construction sites, launched several industry COVID-19 testing days and produced promotional materials on vaccination and risk management for sites.

CIC also holds the safety and well-being of all workers in the construction industry dear to our hearts. It is unacceptable to witness double-digit fatal accidents on construction sites every year. We should never underestimate the daily risks and hazards that our workers face. To address this issue, we have implemented several measures to improve safety and reduce incidents.

Our efforts included conducting the first Master Class on Temporary Works, hosting a series of webinars, such as on safe gondola operations, and observing silent tributes to those who lost their lives in construction accidents. We have also organised the "Construction Industry Caring Cup" between the Development Bureau and the Construction Charity Fund Integrated Service Centre football teams to raise funds for family members of workers affected by construction site accidents.

We also published safety materials on various topics, including work-above-ground operation, scaffold, platform erection and dismantling, lifting operation and electrical works. For example, the CIC released the "Guidelines on Site Safety Measures for Working in Hot Weather" to provide guidance to the construction industry on measures that may be taken to protect construction workers during times of high temperatures, and on "Safety Roles and Responsibilities of Key Stakeholders in the Hong Kong Construction Industry" to encourage the practice of "Safety is Everybody's Business."

The Construction Safety Summit 2022 held in November, supported by 46 organisations, was also a success. Our "Life First" promotional campaign, now in its third year, gained widespread support from the industry, with nearly 80 clients, 180 contractors and 430 work projects participating. In addition, our Safety Walk initiative has been effective in inspiring top management to visit construction sites to demonstrate their commitment to the safety of all staff. These measures have enabled us to foster a culture of construction safety, resulting in a reduction in the number of accidents at construction sites.

A Paradigm Shift towards Efficiency and Sustainability

As an industry that heavily relies on manpower, the Hong Kong construction industry is facing a significant challenge in 2022 due to a shortage of steelworkers. The traditional approach to employing human technicians and professionals has resulted in a scarcity of skilled workers. Specifically, there is a continual shortage of tile workers, painters and electricians for internal tasks. However, the lack of innovation in this area has made it difficult to overcome this bottleneck. Through embracing innovative solutions, such as automation and digitalisation, the CIC hopes that the industry can reduce its dependence on manual labour and become more efficient and sustainable. The CIC's efforts will play a pivotal role in driving the Hong Kong construction industry towards a brighter future in terms of manpower allocation.

As the construction industry faces this issue of reduced manpower and the need to increase efficiency in several areas, we have adopted advanced technologies that can significantly minimise manpower compared to similar practices in other cities. One such technology is Building Information Modelling (BIM), which has expedited and

improved our construction design structure, saving approximately 8,000 man hours. Another innovative approach we are using is MiC, which allows us to conduct equipment and operational testing off-site, reducing on-site design and construction time, and minimising manpower needs. Site supervision is also a manpower-intensive task, requiring numerous technicians and supervisors to monitor progress, safety, work completion and quality. To address this, we are utilising AI, which can predict, detect and fix issues at an early stage, again cutting manpower needs.

The CIC calls for a paradigm shift in the construction industry towards embracing innovative methods such as Modern Methods of Construction (MMC) to increase efficiency and reduce labour-intensive work. Collaboration between the private and public sectors is critical in promoting AI-based technology, such as MiC. This aligns with CIC's Construction Digitalisation Roadmap, aimed at improving productivity, safety, sustainability and quality of life. To achieve these goals, the CIC has implemented the Construction Digitalisation Charter, signed by 59 organisations, to develop an organisational digitalisation roadmap towards meeting a series of 2026 targets. This includes the adoption of Building Information Modelling (BIM), Construction Data Exchange (CDE), Smart Site Management System and more. To facilitate this digital transformation, the CIC has published three Beginner's Guides on Construction Digitalisation, aimed at helping particularly small and medium enterprises (SMEs), to adopt Smart Site Digital Platform, BIM and Common Data Environment for Information Management using BIM. The recent launch of the ConTech Accelerator and the signing of Memorandums of Understanding (MOUs) with 20 leading industry stakeholders, such as Cyberport and Huawei, for digital and low carbon construction tech, as well as with higher education institutions, demonstrate the CIC's commitment to promoting sustainable and efficient construction practices.

The CIC has also expanded its resources and adopted new means to teach students and train staff in AI-based technologies like Mi-Infinity and BIM. The Tonkin Street Redevelopment project, set to be completed in 2023, is the first private residential project that uses MiC-based construction. The project's successful completion will be used to promote the benefits of MiC-based construction,

such as improved quality control. In addition, the CIC has released the TCQ report "Improving Time, Cost and Quality Performance of the Hong Kong Construction Industry" to encourage productivity. By embracing modern technologies and innovative methods like MiC and BIM, construction processes can be streamlined, leading to significant cost savings and improved quality of the final product while reducing the need for manpower.

Moreover, the CIC has been expanding its Registered Specialist Trade Contractors Scheme to include "Building Drainage Installation", implementing integrity management registration requirements and upgrading suspended ceiling and tower crane trades. These will enhance the capabilities and professionalism of registered specialist trade contractors, with the CIC offering online Induction Workshops for stakeholders to understand the registration requirements and transition arrangements for different designated trades.

Rejuvenating the Industry through Young Talents and Healthy Lifestyle

The CIC is deeply committed to attracting young, digitally savvy talent to join our workforce and drive the digital transformation of our industry. To achieve this, we have undertaken several strategic initiatives and campaigns. These include creating innovative digital tools that streamline construction processes, developing advanced digital training programmes for recruiting and partnering with leading educational institutions to promote the benefits of developing a career in construction.

Comparing with other industries, the construction industry's working environment and safety incidents are not attractive at all to young talents. We bear the responsibility to make that change. To achieve this, we have initiated an industry-wide publicity campaign called "Design for Future, Build for Life" in collaboration with other organisations. The campaign aims to promote the construction industry while fostering strong connections and promoting the use of technology to enhance safety and working conditions. Concurrently, the CIC offers various master classes on topics such as MiC, CDE,

EXECUTIVE DIRECTOR'S REPORT

temporary works and DfS for project managers. We believe this initiative is a crucial step in creating a safer and more sustainable construction industry in Hong Kong.

As the industry pioneer who sets the precedent for other institutions and corporates to follow in enhancing employees' welfare, the CIC is proud to be the first statutory body to implement the 4-day alternate working arrangement starting from July 2022. Such practice not only enhances productivity and promote work-life balance; it also allows our employees to spend more time with loved ones and pursue personal interests. This initiative has proved highly successful, with 92% of staff reporting that the new arrangement has enhanced their work-life balance. We have achieved this without compromising on KPIs for individual workers while successfully reducing workloads. Furthermore, 91% of staff reported that they have transformed their work patterns to work smarter. We commenced preparation work for this arrangement early in 2022, including a "Work Smarter Campaign" to gain support from staff and Line Managers. We believe this approach will enable us to attract and retain young talent in the industry and contribute to the growth and success of the construction sector. The new arrangement has also helped foster a kinship spirit among our staff, encouraging them to support each other's work. Though there were challenges in implementing this new arrangement, we have promptly and effectively addressed them, cementing our position as pioneers in the market.

Focusing on work-life balance as mentioned, we have also organised several sports competitions to encourage colleagues to pursue a healthy life. Via different competitions, 47 football teams from the industry partook in the annual "Construction Industry 5-a-side Football Competition", 20 basketball teams in the "Construction Industry Basketball League 2022" Finals and 250 players in the "Construction Industry Table Tennis Competition 2022". The CIC has also launched the Construction Industry Volunteer Award Scheme to recognise contributions to the community from 54 construction practitioners, instilling a caring culture amongst the volunteers.

A "Course on National Affairs for Construction Young Persons" was launched to nurture young construction leaders, in which mainland experts, government officials, and renowned industry leaders were invited to share with 30 enrolled students on topics such as national

development and macro perspective as well as professional development, aimed at enhancing Hong Kong young middle-level construction management's understanding of the development of Mainland.

The CIC is committed to providing diverse and effective opportunities for career advancement in the construction industry. The CIC offers approximately 29 programmes under the Hong Kong Institute of Construction (HKIC) that are accredited as Qualifications Framework Level 2 to Level 4. In 2022, the total number of students enrolled in the HKIC full-time and part-time programmes was 53,162, demonstrating their popularity. To further enhance opportunities for young professionals, the CIC signed a Memorandum of Intent (MOI) with the Hong Kong Institute of Construction Managers in November 2022. Additionally, the CIC remains committed to creating more uplifting venues like the Lam Tei Training Ground, which began operating in September 2022. The newly launched English class of the 'Certificate for Ground Investigation Assistant' programme was created in 2022 to assist non-Chinese speakers in joining the construction industry after completing HKIC's training. Moreover, LAM Man-chun, a graduate of HKIC Diploma in Construction (Metal Works & Welding), won the Medallion for Excellence in Welding at the WorldSkills Competition 2022, demonstrating the excellence of the CIC's programmes and the potential for personal and professional growth in the construction industry.

Aside from these programmes, the CIC has officially launched the Hong Kong Construction Common Data Environment Award and renewed MOUs with higher education institutions to introduce construction digitalisation content to their curriculums and equip students with the necessary knowledge of BIM and construction digitalisation before joining the construction industry. The Inaugural "BIM Education Symposium" has also been organised to provide opportunities for local higher education institutions to share their achievements and good practices in BIM education. Moreover, the Celebration of BIM Achievement 2022 has been co-organised by the CIC to invite students and practitioners from various tertiary institutes and organisations to participate in the seven categories, garnering a total of 67 winners with the chance to experience and adopt construction digitalisation.

The triennial Construction Innovation Expo (CIExpo) 2022 has also been highly successful in bringing together local practitioners, suppliers and technology companies, providing an ideal platform for networking and collaboration. With a focus on showcasing the latest technology and innovation in the construction industry, CIExpo 2022 also hosted the Field Innovation Award and the Sustainability Award, recognising and promoting innovative and sustainable practices in the industry.

Conclusion

At the CIC, we firmly believe in the importance of promoting innovative technology in the construction industry attracting young talent to join our workforce and create a positive image of the industry in Hong Kong.

The CIC has several new initiatives and plans in store for the coming year, including CEO forums, showcasing cutting-edge technology, developing guidelines and daily mechanisms for frontline workers, promoting sustainability practices and offering master classes on various topics. This commitment to sustainable development is exemplified by the adoption of the iBEAM Unison smart waste management tool. Developed by BEAM Society Limited and supported by the Construction Industry Council Research and Technology Development Fund, iBEAM Unison is an innovative data platform that enhances the exchange of green building data, promoting sustainable construction practices and reducing waste in the industry. To continue this momentum, the CIC will be promoting sustainable practices and industry technologies through initiatives such as the CIC Global Construction Sustainability Conference & Exhibition 2023, Sustainable Construction Award, webinars, conferences and exhibitions. The recently launched Sustainable Finance Certification Scheme has been effective, with 17 assessors trained and accredited under SFCS in the first half of 2022, increasing the total number of assessors to 29.

Looking ahead, the CIC is committed to further strengthening its communication network in the Greater Bay Area (GBA) through new initiatives such as setting up the Mainland Liaison Office and offering courses on National Affairs for Construction Young Persons. These efforts are crucial to facilitating collaboration and exchange with the GBA and beyond, while driving innovation and progress in the construction industry. With these plans in place, the CIC is poised to make even greater strides in promoting sustainable development and shaping the future of the construction industry in the region.

In addition to driving innovation and sustainability, the CIC intends to promote a positive image of the construction industry through a soft video campaign showcasing the positive impact of construction on society. The CIC also includes the latest technology and knowledge in its training courses and invites SMEs to learn from them.

Overall, the CIC would step up its efforts and gear towards uniting the construction industry via driving innovation, sustainability and excellence through its various initiatives and plans.

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