

Building, Civil Engineering and
Built Environment Training Board



Manpower Update Report

Building, Civil Engineering and Built Environment Industries

2025



ACKNOWLEDGEMENT

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Introduction

Background

The Building, Civil Engineering and Built Environment Training Board (BCETB) of the Vocational Training Council (VTC) is appointed by the Government of the HKSAR. According to its Terms of Reference, the BCETB is responsible for determining manpower demand of the industries, assessing whether the

manpower supply matches manpower demand, and recommending to the VTC the development of vocational and professional education and training (VPET) facilities to meet the assessed training needs.

Under the current approach for collecting manpower information, one full

manpower survey is conducted every four years, and this is supplemented by two manpower updates. The BCETB completed its latest manpower survey in 2021. Following the release of the first manpower update in 2024, the second manpower update is completed in 2025, with findings and recommendations published in this report.

The 2025 manpower information update comprises:

(a) two focus group meetings getting the views of industry experts on the latest developments in the industries, manpower and training needs, recruitment difficulties, and measures to tackle the challenges the industries face; and

(b) desk research analysing job advertisements including job market trends and skills required in the Building, Civil Engineering and Built Environment (BCE) industries.

Objectives

The objectives of the manpower update are:

- (i) to examine the latest trends and developments of the industries;
- (ii) to explore the job market situation and training needs;
- (iii) to identify the recruitment challenges; and
- (iv) to recommend measures to meet the training needs and to ease the problem of manpower shortage.

Methodology

Overview

This update report aims to provide qualitative descriptions of the recent development of the industries through focus group meeting, supplemented by referring to some quantitative data of recruitment advertisements from desk research.

Focus Group Meeting

The focus group members are representatives from various sectors or professionals of the BCE industries, including 1. Civil Engineering / Building Sites, 2. New Building Site Contractor, 3. Electrical and Mechanical Contractor, 4. Building Repair, Maintenance, Alteration and Addition Contractor, 5. Major Estate Developer, 6. Architect, 7. Surveyor, 8. Engineer, 9. BIM Expert, 10. Construction Manager, 11. Tertiary Institution, 12. Vocational and Skills Training Course Provider, and 13. Government Department.

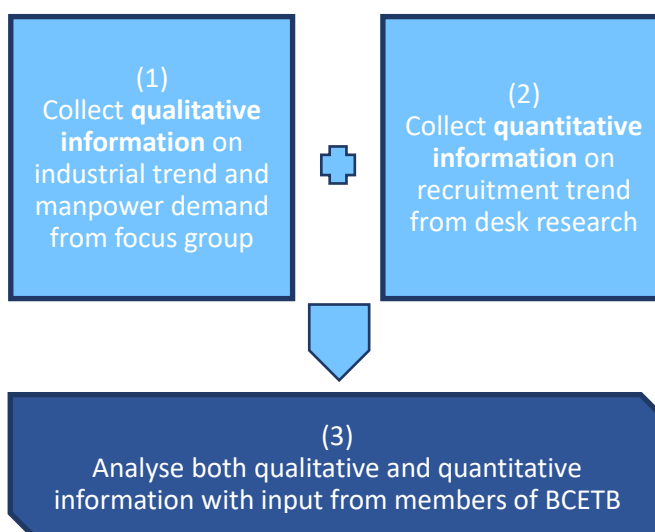
The focus group meetings were conducted on 27 and 28 November 2024 with discussion on topics selected by the Working Party on Manpower Survey of the BCETB. The discussions were recorded and transcribed to facilitate analysis.

Desk Research

Manpower information covering the period between January and December 2024 was collected through desk research. An information system was developed to capture relevant recruitment data from major online recruitment portals. Collected information was mapped against the list of companies related to the BCE industries under the Hong Kong Standard Industrial Classification devised by the Census and Statistics Department. After mapping and removal of duplicated records, a total of some 19,000 recruitment records were collected during the research period and served as indicative information of the job market trend.

Data Analysis

The analysis consists of the following three steps:



Limitations

As this is not a full manpower survey, the findings and recommendations of the focus group meeting are more qualitative and the report focuses mainly on the manpower trends. The information of job advertisements was collected from major recruitment websites and the Labour Department. Other channels, such as headhunting for managerial positions, were not covered. Since the data collected is a snapshot of a particular period without reference to any historical data, this can serve as reference information supplementary to the findings of focus group meetings.

Findings

Factors Affecting the Development of the Industries

Domestic Business Environment

High Construction Costs in Hong Kong

In response to the high construction costs in Hong Kong, the Government initiated a strategic study on construction costs in 2024 to identify the major reasons for the high construction costs and formulating strategic measures to control the construction costs. The study identified five major reasons for high construction costs in Hong Kong including labour cost; contract risk premium on construction materials and equipment; design standards and requirements; approval process; and project complexity.

Four major directions for measures to lower the construction costs have been proposed by the Development Bureau (DEVB), including (1) optimising the project procurement model to reduce risk premium; (2) reviewing the design standards and requirements to increase cost-effectiveness; (3) applying advanced technologies and construction methods to uplift productivity; and (4) streamlining the approval process to boost work efficiency.

Reduced Construction Volume in Private Sector

The focus group observed the diminished willingness of land developer to invest new projects in 2024, likely attributed to the persistently high interest rates. A decline in construction volume in the private sector was anticipated. The shrinkage of the private construction market would aggravate the financial hardship faced by the industries.

The Government continues to invest in the formation of land, infrastructure works and construction of facilities required by the community, and strives to maintain steady growth in the capital works expenditure, including the development of Northern Metropolis, the Northern Link Main Line and the Northern Metropolis Highway (San Tin Section) etc. The redevelopment projects, such as Choi Hung Estate and Sai Wan Estate, will also be taken forward.

As announced in the 2025-26 Budget, the average annual capital works expenditure will grow from about \$90 billion to about \$120 billion over the next five years. The Government will also issue bonds worth \$150 billion each year under the Infrastructure Bond Programme and the Government Sustainable Bond Programme over the next 5 years.

Development of the Northern Metropolis

The Government reveals the expedited implementation of economic and housing-related projects in the Northern Metropolis. The Northern Metropolis will gradually enter the maturity phase, with some 60,000 housing units involving 10 new public rental housing estates expected to be completed and ready for intake in the next five years. The San Tin Technopole, located at the heart of the Northern Metropolis, will become a hub for cluster Innovation and Technology (I&T) development that creates synergy with Shenzhen I&T zone. The first-stage development of the San Tin Technopole's infrastructure, including the Hong Kong-Shenzhen Innovation and Technology Park in the Loop, is expected to begin in 2026-27. The second phase of the Yuen Long South New Development Area will begin in mid-2025, and the preliminary development proposal for Ngau Tam Mei will be announced shortly.

Influx of Construction Technology Companies

Developing Hong Kong into an international Innovation and Technology (I&T) hub was high on the agenda of the Government. InvestHK attracted foreign direct investment and assisted various construction technology companies from Mainland and overseas regions in setting up or expanding their business in Hong Kong in the past year. The influx of companies focused on cutting-edge technologies, such as 3D architectural

visualisation, video image analysis, and passive radiative cooling paint, etc., could contribute to the enhancement of technological standards within the local BCE industries and create job opportunities for local manpower. However, according to the focus group, there were concerns about the tough competition faced by the local construction companies, especially when bidding for construction tenders.

Government Policies and Measures

GBA Standards on Skill Levels

The discrepancy in understanding technical requirements and regulations, as well as the consistency in the quality of deliverables, amongst the cities in the GBA region has been a concern. The Chief Executive's 2024 Policy Address announced that, in collaboration with the Guangdong Province and Macao SAR, the GBA Standards on skill levels for skilled workers and technicians in the construction sector would be established by adopting the higher standards among the three regions and covering key elements in their individual syllabi. Taking on the "One Examination, Multiple Certificate" arrangement, those who pass the examinations adopting the GBA Standards can concurrently obtain the vocational skill certificates issued by all three regions.

Construction Industry Security of Payment Ordinance

In December 2024, the Construction Industry Security of Payment Ordinance was gazetted, aiming to provide better protection for the stakeholders in the supply chains of the construction industry to receive their entitled payment on time, and seeking to help reduce the occurrence of wage arrears of workers.

Through the Ordinance, the contractual payment terms will be improved and the use of unfair payment terms such as “pay when paid” will be prohibited. An adjudication mechanism will be introduced to provide a speedy, cost-effective and binding resolution process for payment disputes in the interim. The Ordinance is applicable to construction contracts entered on or after 28 August 2025.

Funding Allocation for the Professional Development of Construction Industry

To attract more young people to join the BCE industries, the 2025-26 Budget announced that the Government and Construction Industry Council (CIC) would jointly allocate funding totalling about HK\$95 million to continue the provision of on-the-job training subsidies to trainees enrolling in part-time construction-related degree programmes over the next two academic years. About 1,000 trainees were expected to be benefited from the scheme.

In addition, the CIC would allocate around HK\$150 million to subsidise the construction industry to provide on-the-job training for about 2,500 graduates of degree programmes in the fields of engineering, architecture, surveying, planning and landscape architecture, to assist more young people in obtaining professional qualifications.

Extended Adoption of Advanced Construction Technologies

Smart Site Safety System Labelling Scheme (4SLS)

The Smart Site Safety System Labelling Scheme (4SLS) was launched by the DEVB and Construction Industry Council in May 2024 to ascertain the proper use of the Smart Site Safety System (4S) for continuously monitoring high-risk activities and driving the full adoption of 4S in both public and private works contracts, in order to further uplift the safety performance of the BCE industries. To echo the promotion of wider application of 4S, the Construction Innovation and Technology Fund (CITF) formulated standard sample packages addressing the high-risk areas in different building projects of different natures and scales, with a list of product suppliers for industries’ reference, selection and adoption.

Inspection using Drones and Artificial Intelligence (AI)

The Government has introduced aerial drone photography for inspecting the quality of external walls of high-rise buildings in recent years, which has gradually replaced the conventional visual inspection by poking heads out of windows from indoors. With the aid of AI, drones can analyse the conditions of external walls and identify the defects or cracks in building structures, paint, and problems with the condition of pipes and aluminum windows. The rectification actions can be conducted accurately through reviewing and validating the findings by site supervisors.

Research and Development through Building Technology Research Institute (BTRi)

The Building Technology Research Institute (BTRi) was established in August 2024 to spearhead the construction industry in strengthening innovative applications to enhance productivity, cost-effectiveness and site safety performance in response to Hong Kong's future infrastructure development. The BTRi will conduct research and development in innovative materials, construction methods and technologies, and establish standards, conduct testing and provide accreditation. The Modular Integrated Construction (MiC) Manufacturer Certification Scheme was launched in the same year in synergy with production bases in the Mainland, to leverage the complementarity of the construction

industries in Guangdong and Hong Kong.

Shift in Manpower Needs

The extended use of advanced tools and highly productive digital construction methods has relieved the workload of workers in repetitive, labour-dependent or potentially hazardous construction procedures. The demand for talents with expertise in certain I&T fields, such as robotics, computer sciences and electronics, for the development and deployment of advanced construction methods has risen.

Manpower Situation

Alleviated Demand of Construction Labour

The labour importation scheme for the construction sector has approved over 9,000 active quotas since its launch in 2023. The imported skilled workers have eased the severe manpower shortage in the local labour market. The DEVB examined a basket of factors and decided not to grant any quota for the fifth batch of applications in July 2024. Whilst, the scheme resumed in October 2024 with the sixth round, and the processing of the seventh round of applications has been completed in March 2025.

Imported labour with high resilience and a positive attitude at work would contribute to enhancing the productivity

of the industries. However, from the local workers' point of view, imported labour might be a threat as they weaken the competitiveness of local workers. The focus group emphasised that a balanced ratio between local and imported labours should be strictly maintained, and the employment priority for local workers should be safeguarded.

Demand of Local Manpower for Specific Roles

The focus group considered that some specific roles, such as site supervisors and safety officers which required thorough understanding and familiarisation with the workplace environment, regulations, and codes and practices of the local industries, were unsuitable to be taken up by imported manpower. The demand for local practitioners who possessed extensive

understanding of the local industry remained high for supervisory positions.

Construction Safety

Safety Awareness of Frontline Workers

The recent accidents in construction sites raised concerns about the safety awareness of frontline construction workers. Announced during the Construction Safety Week 2024, in addition to the full adoption of 4S in public works construction projects, a series of enhanced measures have been enforced with a view to promoting the adoption of the 4S in private development projects. Further to the increased penalties for occupational safety and health (OSH) offences to enhance its deterrent effect in 2023, rigorous inspections and enforcement actions were conducted by the Labour Department to combat unsafe work activities at construction sites.

Manpower Demand

Focus Group¹

Decreased Demand in Certain Job Positions

Regarding the trends and development of the industries, the focus group shared their views on the anticipated changes in manpower demand. The focus group highlighted that the reduction in

construction volume in private sector has significantly decreased the need for roles involved in the early stages of construction, particularly affecting professionals working in consulting firms. Consequently, some experienced staff have become unemployed or moved to other businesses such as education sector and start-ups, even some offering lower wages, due to the reduced opportunities in their fields.

¹ The focus group meetings were held on 27 and 28 November 2024 to collect views from industry representatives regarding the manpower situation during the interview period.

Job Positions in Demand

Nevertheless, the focus group¹ pointed out that certain job positions, especially those related to site supervision and safety, were expected to remain in demand for ongoing construction projects. Some job titles highlighted by the focus group included:

Professional / Site Supervisor / Technician

- Civil Engineer
- Construction Manager
- Project Coordinator
- Safety Officer
- Site Foreman
- Structural Engineer
- Works Supervisor

Skilled / Semi-skilled Worker

- Bar Bender and Fixer
- Carpenter
- Cement Sand Mortar Worker
- Plant and Equipment Operator
- Plumber

Additionally, the focus group emphasised the substantial demand for Electronics Engineers, IoT Specialists, Data Engineers and Programmers for the development and implementation of advanced tools and highly productive digital construction methods.

Desk Research²

Out of the relevant recruitment advertisements captured in desk research² between January and December 2024, the following principal jobs with the highest number of recruitment advertisements were identified:

Professional / Site Supervisor / Technician

- Civil Engineer
- Clerks of Works
- Construction Manager
- Project Coordinator
- Quantity Surveyor
- Safety Officer
- Site Foreman
- Structural Engineer
- Work Supervisor

Skilled / Semi-skilled Worker

- General Welder
- Bricklayer
- Painter & Decorator
- Plumber
- Leveller

² The desk research covered the period between January and December 2024, capturing relevant recruitment data from major online recruitment portals. The data presented in this report reflected the recruitment situation during that period.

Training Needs

Focus Group

The focus group considered the following skills essential for employees in the BCE industries:

Embrace Digitalisation and New Technologies

In addition to purchasing some commercially available software packages or tools, some construction companies have established their in-house digital teams. These teams usually consist of IT specialists, data / electronic engineers, BIM experts and relevant construction professionals who possessed knowledge in BIM, robotics and AI, among other areas, to drive construction digitalisation and automation internally. As digitalisation continues to grow in the BCE industries, the focus group encouraged practitioners to recognise the benefits of digital transformation and embrace it. This is particularly important for mature members, who often face greater challenges in adopting new technologies. To support this transition, relevant content in digital construction could be integrated into the curriculum of certain qualification recognition trainings, such as Technically Competent Persons (TCPs) training courses.

BIM Experts with Knowledge in AI Applications and Data Engineering

The development of AI-powered BIM workflows, generative design in BIM, and

BIM for cost and schedule optimisation has been one of the current directions for the BIM development. AI and machine learning integration is acting as a catalyst for optimisation in BIM, enabling more efficient and effective design solutions. Automation in BIM workflows is maximising the value of BIM by streamlining processes and reducing manual effort. BIM experts are expected equip themselves with knowledge in AI applications and data engineering to foster the data analysis of building information for optimising design solutions.

Soft Skills Specialised for BCE Industries

Practitioners, especially professionals and supervisors, need to excel in interpersonal interactions to ensure effective collaboration and coordination at work. The focus group recommended that training in persuasion skills, human resource management skills, and project management and supervisory skills, tailored to the context of BCE industries, will significantly enhance their competitiveness in the field.

Safety Awareness for Everyone

In addition to the safety training provided to safety officers and safety supervisors responsible for overseeing and monitoring safety performance, it is essential to enhance the promotion of safety among frontline workers. This will help improve their awareness, ability to identify potential risks, and take appropriate precautionary measures.

Pre-employment Training for Imported Labours

To ensure the quality of deliverables and facilitate the smooth integration of imported labours with local employees, the focus group suggested to offer

trainings on industry standards, code of practice, and regulations in Hong Kong, before the commencement of employment of the imported labours.

Nurture Local Supervisors

Given the notable demand of site supervisors and construction managers, it was essential to develop local manpower with a thorough understanding and familiarity with the workplace environment, regulations, and code and practices of the local industry. This will enable them to effectively fulfill in construction programming, planning, and project management.

Desk Research

In addition, new technologies / emerging skills and related job titles identified from some 19,000 advertisements are summarised in the following table.

New Technologies / Emerging Skills	Related Job Titles
Building Information Modelling (BIM)	<ul style="list-style-type: none">• BIM Manager / Engineer / Coordinator
Common Data Environment (CDE)	<ul style="list-style-type: none">• BIM Manager / Engineer / Coordinator• Engineer – Project Information• Landscape Designer (BIM Focus)
Modular Integrated Construction (MiC) Method	<ul style="list-style-type: none">• Building Services Inspector• Planning Engineer• MiC Coordinator• Structural Engineers

New Technologies / Emerging Skills	Related Job Titles
	<ul style="list-style-type: none"> • Resident Clerk of Works / Works Supervisor
Design for Manufacture and Assembly (DfMA)	<ul style="list-style-type: none"> • BIM Engineer • Design Engineer • Planning Engineer • Resident Inspector of Works
Internet of Things (IoT) / Artificial Intelligence (AI)	<ul style="list-style-type: none"> • AI Engineer • BIM Manager / Engineer / Programmer • Project Engineer • Digital Engineer
Automation / Robotics	<ul style="list-style-type: none"> • Mechanical Design Engineer • Engineer – Smart Maintenance • Project Engineer • Senior Engineer (Infrastructure Smart Solutions)
Digital Surveying / Digital Twin / Photogrammetry / Unmanned Aerial Vehicle (UAV) / Drone Scanning	<ul style="list-style-type: none"> • BIM Surveyor • Engineering Site Supervisor (Structural) • Survey Officer
Geographic Information System (GIS)	<ul style="list-style-type: none"> • Architect / Urban Planner • GIS Surveyor • Project Geologist • Digital Engineer
Environment, Social and Governance (ESG)	<ul style="list-style-type: none"> • Environmental Officer / Supervisor • Environmental Consultant (ESG)
Green Building and related certifications	<ul style="list-style-type: none"> • Engineer in Environmental / Sustainability • Environmental Consultant (Green Building / Sustainability)

Recruitment Challenges

Due to the keen competition of the market, some employers have experienced difficulties in the recruitment process. The difficulties highlighted by the focus group are summarised and related to some of the following factors:

Fluctuating Construction Volume

The reduction of construction works in the private construction sector has led to a significant loss of talent across various professions. However, due to the uncertain construction volume in the private sector for the coming years, some employers have shown hesitation in recruiting new employees to fill the vacancies.

Reduced New Entrants in Local Manpower Market

The persistently low birth rate has continued to contribute to the decline in the overall workforce of the local manpower market. This situation has been aggravated by the apathy among the younger generation in pursuing careers in the BCE industries, particularly for positions of skilled workers, which are considered dangerous and physically demanding. An ageing workforce would further constrain labour supply and exacerbate the manpower shortage in the future.

Salary and Remuneration Packages

Young generation showed higher intention to work in Government Departments which offer competitive salaries and remuneration packages. To enhance their competitiveness, SMEs and consultancy companies have offered higher salaries and remuneration packages to attract new entrants. However, companies that cannot afford the high manpower cost might encounter challenges in recruitment.

Lack of Professional Recognition for I&T Experts Working in the BCE Industries

Talents with expertise in certain I&T fields, such as robotics, computer sciences, data engineering, IoT, and electronics, have been driving the digital transformation of the BCE industries. However, the lack of professional recognition for those experts working in the BCE industries eliminated the development of the sense of belonging and hindered their retention in the BCE industries.

Retention of Non-local Graduates

Non-local graduates have the option to apply for staying and working in Hong Kong through admission schemes like the IANG and VPAS. The focus group reflected that, due to the high cost of living in Hong Kong, non-local graduates have less intention to remain in the city for work after graduation.

RECOMMENDATIONS

To meet the future development of the industries, it is considered essential for the Government, industries, education institutions and employers to provide supports and suitable training opportunities to employees / students in the following areas:

Government

Hong Kong's Long Term Development Plan

To facilitate the planning of future manpower needs of the industries, the focus group suggested that the Government could provide a comprehensive plan outlining the major public works and development in Hong Kong for the next 10 to 15 years, including the projection for construction volume and manpower needs across different roles. The focus group emphasised that the development at a steady pace would allow comprehensive manpower planning and sufficient transition period for building up the talent pool to support the development. The clear prospect of the industries could enhance job security within the industries and was favourable to attracting the engagement of young generation.

Put Additional Effort in Reducing High Construction Costs

The Government has been actively reviewing and optimising the approval processes during the design and construction stages, with the view to

reduce the manpower demands for project teams and construction costs. Apart from that, the Government could consider reviewing the design standards and requirements, which have been in place for many years, to reduce the demand for construction materials and shortening construction processes, thereby enhancing cost effectiveness.

Provide Incentive to Retain Imported Labours

Imported labours have been a solution for rapidly filling the temporary manpower gap of the BCE industries. However, due to the high cost of living in Hong Kong, some imported labours preferred leaving after working in Hong Kong for a short period, which was not beneficial for the sustainable development of industries in mid- and long-term. The Government could consider providing additional support and incentives, for example rent assistance, to attract the labours to remain and continue working in Hong Kong.

The focus group reiterated that it was critical to maintain a balanced ratio and harmony between local and imported labours. Job security of local labour should be prioritised.

Bridge the Connection with Global Market

The focus group observed that a significant number of experienced professionals and technicians had switched to other industries or faced unemployment due to the recent decline in construction volume and alleviated manpower demand. It was suggested that the Government could connect those underemployed practitioners with the vast global market for suitable career opportunities. This approach would help preserve valuable expertise within the BCE industries, as well as broaden the global perspectives of local practitioners.

Continue the Promotion of BCE Industries and relevant Vocational and Professional Education and Training (VPET)

To attract more young people to pursue VPET education as a preferred choice, the Government could continue to put effort into the publicity to secondary school students, even at the junior secondary level, and their parents to raise the profile of BCE industries and VPET, as well as promote the professionalism and diverse career opportunities available of the industries.

Further to the launch of Vocational Professionals Admission Scheme (VPAS) last year, which allowing non-local students who enrol in VPAS eligible VTC full-time Higher Diploma programmes, including the BCE-related programmes, to remain in Hong Kong for employment in the skilled trades relevant to their

programmes of study, leveraging their acquired expertise to contribute to crucial industries as technical professionals or specialists, the skilled trade coverage of VPAS has expanded for 2025/26. The VTC would make continuous effort in the implementation of this scheme with a view to attracting more non-local students to study relevant programmes in Hong Kong and contribute as a new force in the local labour market.

Industries

Further Enhance Safety Awareness and Culture

The recent accident in construction sites revealed the necessity to enhance safety awareness among frontline workers. A comprehensive safety management system should be established and strictly adhered by the entire industries to foster a strong safety culture and mitigate the potential risk of future incidents especially at construction sites. Professional institutions and trade associations could take the lead to promote the wider adoption of 4S for the stringent monitoring of safety conditions at private worksites.

Compulsory Upskilling Training Programmes

To encourage continuous professional development, the industries could implement compulsory upskilling training programmes focusing on emerging digital

construction techniques, and essential soft skills in the context of BCE industries for practitioners with different roles to keep them competitive in the evolving job market.

Strengthening the Promotion of Digitalisation, Especially to Mature Practitioners

Mature practitioners might face greater challenges in adapting to new technologies and applications in the workplace. The industries could enhance efforts in widely promoting the advantage of technologies through demonstration and experience, particularly those designed to improve construction efficiency and safety, and proactively urge the utilisation. Cultivating a growth mindset of embracing technologies among practitioners at all roles should be a focus in the long run.

Further Development of BIM

BIM development has continued evolving with the support of I&T. Beyond its current applications, the industries could proactively promote the use of AI to enhance BIM workflows. This includes using AI for data analysis of comprehensive building information to optimise design solutions. In this connection, training programmes focusing on AI applications and data engineering could be offered to enhance practitioners' capabilities and support the development of BIM.

Recognise the Professionalism of Practitioners with I&T Background

The I&T experts had made impactful contributions to the BCE industries through developing advanced tools and digital construction methods which greatly enhanced construction safety and efficiency. Professional institutions could consider extending professional recognition to these experts to acknowledge their contributions to the industries and foster the development of sense of belonging among them within the BCE industries.

Promote a Favourable Perception of the Industries

The industries should capitalise on their strengths to attract more potential young entrants, such as highlighting the competitive starting salaries for engineers. The attractive salary and remuneration package had drawn practitioners from various sectors, including logistics, retail and textile, during the pandemic. Owing to the limited channels for young generations to access industry information, it was essential for the industries to explore and leverage more popular social media platforms among young generations to disseminate the latest news and development of the industries.

The focus group believed that the development of construction technologies with AI features would be particularly appealing to the young generation.

Provide Job Opportunities for Rehabilitated Persons

The industries could consider strengthening the collaboration with the Government and NGOs in offering job opportunities for rehabilitated persons through job matching schemes, such as the “Caring Employer Scheme”. Relevant job trainings could be provided to prepare rehabilitated persons for supplying the manpower market immediately.

Offer Pre-employment Trainings to Imported Labours

To facilitate the familiarisation of imported labours to the industries, the industries and relevant authorities could consider offering intensive bridging courses to equip imported labours with essential and comprehensive knowledge of the industries, such as the standards, practices and relevant safety regulations of Hong Kong, prior to the commencement of their employment in Hong Kong.

Education Institutions

Strengthen the Understanding of BCE Industries through STEAM

STEAM education at primary and secondary levels nurtured students’ interest and capabilities in learning science and technology from an early age, as well as develop their potential in

innovation. A STEAM education initiative based on the construction industry had been implemented to offer students a multifaceted learning experience through construction, surveying, planning, horticulture, and engineering perspectives. Through utilising the learning and teaching resources, students could gain a deeper understanding of the diversity and significance of the BCE industries through hands-on experience, thereby igniting their interest in pursuing career in relevant fields in the future.

Offer New Tertiary Programmes Incorporating Emerging Technology

Tertiary education institutions should stay abreast of the latest development in the industries, and nurture talents through tertiary programmes from Higher Diploma to Master’s degree to meet the evolving manpower demand of execution and management roles. Conventional professional programmes should be timely reviewed and updated to incorporate content on emerging technologies and digitalisation, equipping the graduates with the skills and knowledge required in the rapidly changing landscape. Taking one of the new job titles captured in desk research as an example, Digital Engineer was required to possess solid understanding of BIM, GIS as well as workflow automation to perform the duties in conducting R&D in areas related to construction digitalisation.

Offer Compulsory Modules on AI Concept and Applications

The focus group shared that some universities offered compulsory modules in fundamental AI within undergraduate programmes to foster an AI mindset among students. Education institutions were advised to enhance existing training programmes by integrating compulsory modules focusing on AI and data science to equip every student with the latest concept and applications of AI and data-driven analysis.

Provide Specialised Upskilling Short Courses or Master Classes

To address the ongoing digital transformation of the BCE industries, education institutions could offer cutting-edge specialised upskilling short courses or master classes in the context of BCE industries for industry practitioners, for example drones and aerial imaging, AI inspection for construction, safety and common data environment (CDE) etc. Additionally, with more BIM software offering free licenses for training purposes, education institutions could collaborate with the industry to develop various BIM training programmes with different BIM software and emerging applications. Upskilling courses in the form of short course and master class enabled practitioners to enhance their expertise efficiently, meeting their needs to stay competitive in the evolving job market.

The courses could also be transformed

into applied learning (ApL) courses or taster programmes for secondary school students to inspire their curiosity in the prospect of the industries.

Strengthen the Collaboration with the Industries

Professional institutions have been proactively organising competitions, visits, talks and taster workshops to enrich young generations' perception of the BCE industries through authentic experiences. Education institutions, as the primary channel for young generations to access career information, could actively participate in these activities to visualise and instill a comprehensive understanding of the BCE industries to their students at an early stage, thereby inspiring their interest in pursuing career in relevant fields in the future.

Education institutions could also enhance collaboration with esteemed professional institutions of the BCE industries, such as Hong Kong Institute of Architects (HKIA), The Hong Kong Institution of Engineers (HKIE), The Hong Kong Institute of Surveyors (HKIS) etc., in organising visits to renowned award-winning architectures to foster the appreciation for the contribution of the practitioners of the BCE industries and their professionalism.

Employers

Stringent Monitoring of Safety Conditions

Fostering safety awareness and culture among employees at all levels should be given top priority. Employers were encouraged to leverage technologies, such as 4S, and allocate additional manpower for stringent monitoring and uplifting the safety conditions at construction sites. Risk assessment should be conducted by qualified safety officers before the construction projects commenced.

To emphasise the importance of safety at work, employers could consider associating safety performance with rewards and penalties. In addition to imposing penalties for safety misconduct to enhance the deterrent effect, employees who demonstrated outstanding performance in safety at work should be recognised and rewarded as a motivation to strive for excellence in workplace safety.

Create Job Security for Employees

With the increasing number of imported labour competition in the local job market has intensified, leading to concerns among local workers regarding job security and wages. Employers should prioritise job security for their local employees to foster talent retention. Furthermore, a clear career path and promotion ladder should be provided to illustrate the potential and flourishing

future opportunities of the industries.

Proactively Engage Former Employees to Re-join the Industries

In light of the pressing demand of young new entrants, the employers could actively consider engaging former employees, such as retirees and those who transitioned to other professions, to re-join the industries. Engaging former employees who were well-equipped with knowledge and skills of the industries could seamlessly and instantly supply the shortfall of manpower.

Establish Industry-wide Management Model

Subcontracting has been a long-standing practice in the local BCE industries, however, the multi-layer subcontracting blurred the accountability for assuring built quality. An industry-wide management model with clear delineation of roles and responsibilities among different parties involved and structured reporting channels could be established to promote seamless communication and foster a closer relationship among main contractors, subcontractors and labours, so as to elevate the construction efficiency and quality assurance.

Employees

Safety is a Shared Responsibility

Employees should stay vigilant about workplace safety and ensure the proper use of tools, equipment and machinery to safeguard themselves from potential harm.

Proactive to Learn

Employees should proactively keep abreast of the latest development of the industries to remain competitive in the manpower market. They were encouraged to make good use of subsidies provided by different schemes of Government for lifelong learning and career development to upgrade their knowledge and skills.