中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LIMITED

2022
可持續發展報告
Sustainability Report

CONTENTS

General Information

2 About CSHK
5 About This Report
6 Glossary
7 Message from the Management
8 Stakeholder Engagement
14 Sustainability Management
19 Key Highlights

People

22 Occupational Health and Safety
29 Caring for Employees
32 Talent Cultivation
36 Community Investment

Environment

39 Green Building Technology
45 Environmental Management Policy
47 Responding to Climate Change
51 Resources Management
52 Environmental Training

Alliance

54 Sustainable Supply Chain
58 Collaborating with Academic Institutions
59 Quality Management
61 Intelligent Engineering Surveying Technology
63 Business and Professional Ethics
63 Customer Communication and Privacy

Key Projects for Hong Kong

65 Green Building Catalogue
66 Tseung Kwan O Desalination Plant
72 Chinese Medicine Hospital and Government Chinese Medicines Testing Institute
79 Organic Resources Recovery Centre Phase 2 (O·PARK2)

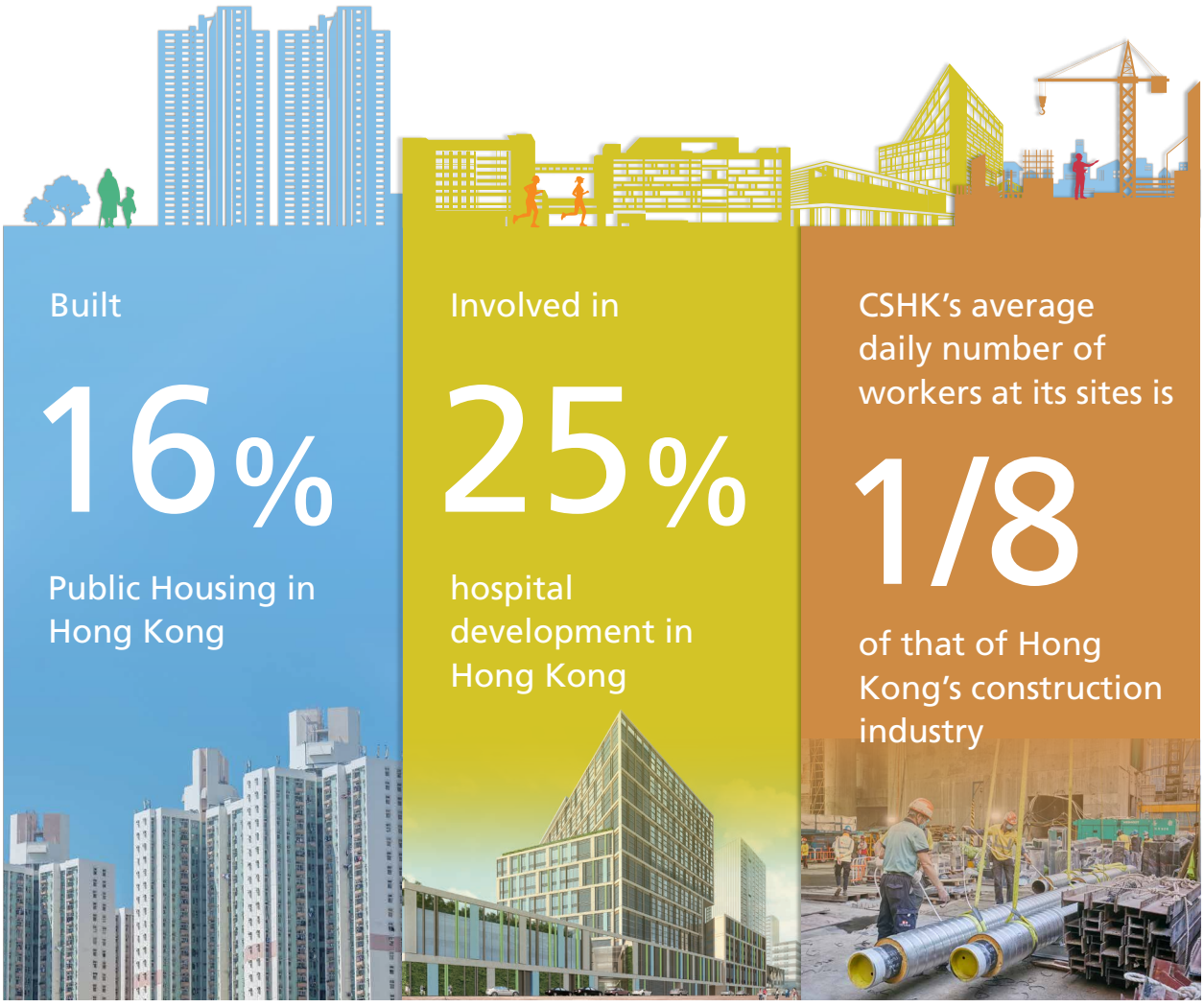
Index

85 Awards and Association Membership
87 Overview of Key Performance Indicators
96 GRI Standard Content Index

About CSHK

About the Company

China State Construction Engineering (Hong Kong) Limited (hereinafter referred to as CSHK) and its subsidiaries established their presence in the construction industry in Hong Kong in 1979. CSHK has obtained five top-tier Grade C construction licenses as Approved Public Works Contractors (commonly known as Grade C construction licenses) since its early days of establishment, actively bidding for various government projects, including "Buildings", "Port Works", "Roads and Drainage", "Site Formation" and "Waterworks". For more than 40 years, CSHK's business scope covers building construction, civil engineering, foundation engineering, mechanical and electrical engineering, medical engineering, environmental engineering and other construction-related businesses.



Corporate Structure and Business

Corporate Structure

CSHK's parent company, China State Construction International Holdings Limited, is a vertically integrated construction and investment conglomerate, and was listed on the Main Board of the Hong Kong Stock Exchange (Stock Code: 03311) in 2005. CSHK is engaged in building construction, civil engineering, foundation engineering, electrical and mechanical engineering, medical engineering, environmental engineering and other construction-related businesses.

Business Overview

Since 1979, CSHK has been operating construction businesses encompassing building construction, civil engineering, foundation engineering, site survey, electrical and mechanical engineering, among other sub-sectors, and has developed investment, architectural technology products, and information technology businesses in recent years.

Engineering Business

Building Construction

Undertaking construction projects such as public buildings, hospitals, universities, and private and public estates primarily.

Civil Engineering

Involving in projects such as site formation, highways, bridges, land reclamation, tunnels, rail transport and airport facilities and other construction projects.

Foundation Engineering

Being committed to providing design and execution services of foundation engineering works, including large-diametre bored piles, small-diametre pipe piles, steel H-piles, diaphragm walls, underground grouting, and demolitions.

Mechanical and Electrical Engineering

Engaging in engineering projects on HVAC system, electrical system, fire service system, extra low voltage electrical system, plumbing and drainage system, tunnel ventilation system, town gas system primarily.

Medical Engineering

Providing international one-stop medical and rehabilitation services for the whole lifecycle from investment and financing, medical planning, design, procurement, construction to operation, training, and consulting, thereby delivering customers with products covering life and healthcare for all ages.

Environmental Engineering

Being committed to environment related projects, including the clean-up of marine and land environments, etc.; involved in environmental protection and infrastructure projects with a total value of nearly HKD30 billion; business scope includes environmental protection, cavern and drainage projects.

Other Business

Investment

Engaged in acquisition and redevelopment of old buildings, revitalisation and redevelopment of industrial buildings, and joint venture participation in the government's open tendering of land investment projects in Hong Kong; in the United Kingdom, the United Arab Emirates, Southeast Asia and other countries and regions, focusing on investment projects on the development of student housing, real estates, industrial parks, small-scale infrastructure, and healthcare, driving the contracting business through investment.

Architectural Technology Products

Providing integrated and intelligent solutions for various types of engineering projects based on technologies such as Internet of Things (IoT), Artificial Intelligence (AI), Cloud Computing, and Building Information Modeling (BIM) through independent research, development, and re-innovation of pioneering technology.

Information Technology

Operating BIM-related businesses in Hong Kong and Macau.

Machinery

Providing machinery equipment and equipment leasing services to projects undertaken by the Group in the Hong Kong and Macau areas primarily. This includes building machinery, earthmoving machinery, foundation machinery, and more.

Insurance

Authorised by the Office of the Commissioner of Insurance of the Hong Kong Special Administrative Region (currently known as the Insurance Authority) to operate general insurance business.

About This Report

Reporting Scope

This Sustainability Report ("this Report") covers the period from 1 January 2022 to 31 December 2022. This Report covers the main businesses of CSHK, including construction and engineering, investment, architectural technology products and information technology. With the aim of presenting the sustainability performances of CSHK's construction-related businesses, KPI data in this Report includes the operational data of CSHK's construction project related business only.

Reporting Standards

This Report is prepared with reference to the Global Reporting Initiative Standards (GRI Standards) and the United Nations Sustainable Development Goals (UNSDGs), with a view to fully communicating CSHK's sustainability efforts and performance to stakeholders. A complete GRI Content Index is available at the end of this Report for stakeholder reference.

Access and Feedback

This Report is available in Chinese and English. In the event of any discrepancy between the definitions of terms used in the English and Chinese versions, the Chinese version shall prevail. Stakeholders can download this Report and the electronic versions of previous sustainability reports from the Sustainability Report section of the CSHK website. If you have any questions, comments or feedback on this Report, please contact us by email at cscec_ccd@cohl.com.

Glossary

In this Report, unless the context otherwise requires, the following terms shall have the meanings set out below:

"This Report"	This Sustainability Report
"Reporting Period"	The period from 1 January to 31 December 2022
"CSHK", "the Group" or "We"	China State Construction Engineering (Hong Kong) Limited and its subsidiaries
"CSCI"	China State Construction International Holdings Limited
"Volunteer Branch"	"Caring for Society" Volunteer Branch
"Happy Worker APP"	Happy Worker mobile application
"AI"	Artificial Intelligence
"AR"	Augmented Reality
"BEAM Plus"	Building Environmental Assessment Method Plus
"BIM"	Building Information Modelling
"BIPV"	Building Integrated Photovoltaics
"CBWD"	Combined Builders Work Drawings
"CCUS"	Carbon Capture, Utilisation and Storage Technology
"CDMS"	CDMS 4.0 Construction Dynamic Management System
"CIMS"	Construction Information Management System
"CSD"	Combined Services Drawing
"C-SMART"	C-Smart Site Integrated Management
"C-SYS+ System"	C-SYS+ Enterprise Management Data Platform
"DBO"	Design-Build-Operate
"DfMA"	Design for Manufacture and Assembly
"ESG"	Environmental, Social and Governance
"FSC"	Forest Stewardship Council
"GRI Standards"	Global Reporting Initiative Standards
"GGBS"	Ground Granulated Blast-furnace Slag
"MiC"	Modular Integrated Construction
"MiMEP"	Multi-trade Integrated Mechanical, Electrical and Plumbing
"OHS"	Occupational Health and Safety
"PEFC"	Programme for the Endorsement of Forest Certification
"QPME"	Quality Powered Mechanical Equipment
"UNSDGs"	United Nations Sustainable Development Goals
"VR"	Virtual Reality
"4S"	Smart Site Safety System

Message from the Management

To further enhance our sustainability performance, we formulated the P.E.A.K Principle in 2022 in response to the national goal of achieving carbon peak by 2030. Guided by a people-centric (People) philosophy, we care for our employees and workers and remain committed to our community. We aim to create an environmentally friendly low-carbon construction approach (Environment) and collaborate with academia and supply chain partners (Alliance) to contribute to the development of key projects in Hong Kong (Key Projects for Hong Kong), thereby working towards the goal of carbon neutrality by 2050.

Mr. Hung Cheung Shew, Danny
Chairman

Taking root in Hong Kong in 1979, CSHK has been constructing high-quality residential housing estates, commercial buildings, public constructions, hospitals, schools, and other livelihood facilities for more than four decades. Upholding the corporate spirit of "exercise caution in details and implementation, build a strong foundation to seek greater success", CSHK follows the development strategy of "today, tomorrow, and the future". Built on "construction" and "investment", the strategy incorporates "technology" for the future and integrates "operation" at the end, enabling CSHK to effectively address the growing challenges and opportunities ahead.

Profoundly aware of the importance of sustainability, CSHK has been committed to incorporating sustainable elements into our businesses. In keeping with the sustainability strategy of "Building Consensus, Promoting Innovation and Creating Value", CSHK is constantly exploring and experimenting ways to more practically integrate the sustainability concept into our operations.

At present, the construction industry faces two major challenges: labour shortage and the transition to green construction. CSHK has been actively exploring and promoting measures to tackle these challenges. We are vigorously pursuing industrialisation and digital transformation, leveraging innovative technologies to increase productivity and alleviate the impact of the manpower shortage on efficiency. CSHK employs MiC and MiMEP technologies, where prefabricated components or assembled modules are produced in factories for installation on site. This approach effectively lessens on-site construction processes, leading to reductions in construction waste, resource mismatches and carbon emissions during the construction period. It also considerably shortens on-site construction time, improving productivity and quality. In addition, we are accelerating digital transformation by integrating more operational and management aspects into C-SYS^{+}, our in-house developed enterprise data platform. This advancement strengthens our business management and corporate governance, enabling comprehensive management and utilisation of personnel, machinery and materials across various projects.

As CSHK continuously promote carbon reduction in construction, it is highly important that Organic Resources Recovery Centre Phase 2 (O·PARK2) has become the very first pilot project for achieving carbon neutrality during the construction period not only in Hong Kong, but in China at large. In 2022, CSHK also became one of the first companies to participate in carbon market trading. As we continue to drive low-carbon construction at our sites, we will closely examine our carbon reduction practices to gain insights that can be applied to all appropriate sites, with a view to embracing low-carbon transformation.

Finally, I would like to take this opportunity to sincerely thank our employees, customers, partners, investors and the general public for their interest and contribution to the Group, and look forward to your continued support. Looking to the future, we will continuously strive to integrate the sustainability concept into our businesses, introduce low-carbon technologies with an innovative mindset, and support the construction industry to transition towards a sustainable future.

Mr. Hung Cheung Shew, Danny
Chairman

Stakeholder Engagement

Stakeholder Communication

Channels for 2022 Stakeholder Engagement

CSHK recognises that effective stakeholder communication forms a crucial part of management. Through discussion with relevant departments, the Group regularly reviews and identifies key stakeholders related to our operations and engages with stakeholders through various channels such as meetings, exchange activities and questionnaires. We are committed to addressing and meeting the expectations of our key stakeholders, thereby promoting sustainability within the Group.

Management

Main Communication Channels

- Interview
- Questionnaire
- Email
- Meeting

Employee

Main Communication Channels

- Interview
- Questionnaire
- Grievance Mechanism
- Employee Event and Volunteer Activity

Developer

Main Communication Channels

- Interview
- Questionnaire
- Phone/Email

Other Developer (excl. governmental)

Main Communication Channels

- Questionnaire
- Phone/Email

Industry Association

Main Communication Channels

- Interview
- Questionnaire
- Exchange Session
- Phone/Email

Business Partner (Supplier, Sub-contractor)

Main Communication Channels

- Interview
- Questionnaire
- Meeting and Seminar
- On-site Visit
- Phone/Email

Community

Main Communication Channels

- Interview
- Questionnaire
- Phone/Email

Materiality Assessment

Materiality Assessment Process

CSHK identifies material issues through the following process, including: identification of key stakeholders; megatrends analysis; identification of impacts, risks and opportunities that may be material to CSHK; understanding stakeholders' expectations and the extent to which they are affected by the sustainability risks and opportunities through questionnaire and interviews; and materiality analysis by the management. These steps allow us to identify material sustainability issues for 2022 and future sustainability directions.

1 Identify key stakeholders

Identify key stakeholder groups for the stakeholder survey.

2 Understand global and industry megatrends

Conduct a megatrend analysis using local and international sustainability research reports and construction industry reports to provide the context for reviewing ESG risks and opportunities and to identify issues that should be prioritised for management and reporting.

3 Identify risks and opportunities that have impacts on CSHK

Identify risks and opportunities that may be material to CSHK's current and future prospects, based on the megatrend analysis, CSHK's risk inventory, sustainability strategy, policies, international sustainability standards (GRI Standards, Sustainability Accounting Standards Board (SASB), etc.), sustainability risk reports, peer sustainability risks and opportunities, construction industry studies, etc.

4 Evaluate risks and opportunities that have impacts on CSHK

Understand the views of different stakeholders on CSHK's sustainability efforts through interviews with internal and external stakeholders. Invite internal and external stakeholders to a risk and opportunity assessment questionnaire to understand the likelihood of various sustainability risks and opportunities and the extent to which they would impact CSHK's business and different stakeholder groups.

5 Prioritise the risks and opportunities that have impacts on CSHK

Analyse the questionnaire results to identify material sustainability risks and opportunities.

6 Determine materiality issues

Develop relevant sustainability issues and formulate a pool of sustainability issues with reference to local and international standards and the characteristics of the construction industry. Match the identified material risks and opportunities with the sustainability issues to finalise the material issues. Finally, the material issues are reviewed and verified by the management of CSHK.

Materiality Assessment Results

Through interviews with different stakeholder groups, we came to understand the opinions and concerns of each stakeholder group, identified potential risks and opportunities, and analyse the questionnaires results to identify the material sustainability risks and opportunities. On the questionnaire, stakeholders rate each sustainability risk and opportunity in terms of "degree of impact" and "likelihood of occurrence". These scores are then multiplied and ranked to determine the material sustainability risks and opportunities, and ultimately the material issues. The 2022 materiality assessment results are presented differently from those of 2021. This is because the 2022 assessment followed the "significance of impacts" approach in the latest GRI Standards. The table below shows the results of this approach in 2022[1].

Dealing with labour shortage

Risk

High

The competition for talent in the construction industry is increasingly fierce. The lack of skilled workers may lead to construction delays, poor quality, and affect CSHK's reputation and customer satisfaction. We may need to maintain the level of labor force through process training and the use of innovative construction methods, which may also increase the labour and economic costs of business operations.

Opportunity

Medium

By providing craftmanship training and adopting innovative construction methods, we can enhance the skills and productivity of skilled workers, which can help increase CSHK's competitiveness and long-term economic benefits of the company.

Promoting talent development in the industry

Risk

Medium

The lack of measures to attract and retain talents may lead to talent loss, recruitment difficulties, and affect the quality and progress of construction projects.

Opportunity

High

Providing employees with competitive salaries, benefits, and a good work culture can improve employee job satisfaction and loyalty, attract and retain talents, reduce recruitment and training costs, and enhance CSHK's image.

Medium

Strengthening cooperation with industry and academic groups to pass on construction experience and professional knowledge can help improve the professional level and reputation, and may increase CSHK's market share and long-term economic benefits.

[1] The degree of impact compares the sustainability risks and opportunities related to material issues and does not involve the sustainability risks and opportunities related to non-material issues.

Establishing a safety culture at work*

Risk

High

The lack of safety management and training may lead to accidents and casualties, which can have a negative impact on CSHK's image and financial situation.

Medium

The potential health and safety impacts of the work environment on employees, including work-related acute and chronic illnesses, disabilities, and fatalities, may lead to talent loss, recruitment difficulties, and affect the quality and progress of construction projects.

Opportunity

Medium

Improving occupational safety and health, enhancing the working environment for workers, and reducing accidents and employee injuries can help increase employee satisfaction and loyalty.

High

Establishing a safety-oriented work culture can enhance the image and reputation of the company, gain customer trust and long-term economic benefits, and also help meet the requirements of investors and regulatory.

Product quality and safety*

Risk

High

The product quality and responsibility in the engineering and construction industry have a significant impact on safety, and the stability of production is also related to the quality of life of local communities. Non-compliance with product quality requirements or the existence of safety hazards may cause serious damage to CSHK's reputation and brand image, and may also face legal risks.

Opportunity

High

Strengthening product quality management, ensuring the health and safety of customers and users, and making timely responses and corrections can increase customer satisfaction and trust, and enhance CSHK's competitiveness.

* Also material issues in 2021

Exploring carbon neutrality during construction phase

Risk

Low

Achieving carbon neutrality in project construction requires more investment and costs, and may face technical and market risks.

Low

CSHK needs to systematically promote the realisation of dual carbon goals, with energy conservation and clean energy development at the same time. China and Hong Kong face dual pressures in and severe challenges in energy conservation, emissions reduction, and greenhouse gas emission control. CSHK needs to actively participate in carbon trading markets, leverage green financial tools, make good use of the policy dividends of new energy development, accelerate technological innovation and product research and development in the field of new energy, and gain a competitive advantage in the low-carbon transformation.

Opportunity

Low

Achieving carbon neutrality in project construction can enhance CSHK's reputation and market competitiveness, align with the national carbon peak and carbon neutrality goals, and promote sustainable development. Developing carbon-neutral projects can also increase revenue.

Technological innovation*

Risk

High

The development of new technologies such as BIM and MiC has become mainstream in the construction and engineering industries, while the development and application of new energy technologies have also become a new trend in the field of power production. Resistance to change and a lack of understanding or commitment to technology and innovation may hinder progress. Failure to invest in technology and innovation may lead to a decrease in efficiency and competitiveness in the construction process, resulting in loss of market share.

Opportunity

Medium

Innovative technology can enhance work safety and efficiency, reduce costs, and achieve digitalisation of construction site management, enabling CSHK to stand out in a competitive market and attract customers seeking innovative solutions.

Medium

Collaborating with other businesses and organisations to share knowledge and resources can provide more effective and collaborative solutions to technical challenges.

* Also material issues in 2021

Waste management

Risk

High

Given that the circular economy model has become a trend and landfills are facing saturation pressure, it is expected that regulations on waste management will become stricter.

Opportunity

Medium

Reducing resource waste and environmental pollution can lower CSHK's cost, enhance its competitiveness, and generate long-term economic benefits.

Protecting customer and business data

Risk

Medium

Cybersecurity incidents can affect the stability of CSHK's operations, and events such as data leakage may also impact CSHK's reputation, or lead to legal action or fines.

Opportunity

Low

Strengthening data risk management and network security prevention can enhance a company's operational efficiency and reduce risk costs.

Sustainability Management

Sustainability Governance

CSHK is committed to promoting the concept of sustainability and recognises the foundational role of a sound and well-structured governance system in our sustainability practices. Therefore, we have established a sustainability governance structure with clearly defined roles at each tier to ensure that our sustainability policies and initiatives are implemented in an effective and organised manner.

CSHK Sustainability Governance System

CSHK's sustainability governance structure consists of a Sustainability Committee, a Sustainability Report Writing Committee, and a Sustainability Affairs Working Group. Each committee or working group is assigned with specific management functions and responsibilities to oversee the implementation of the Group's sustainability efforts and to drive continuous sustainability progress.

Sustainability Committee

CSHK's Chairman and President acting as the chairman

Responsibilities:
- Develop and review the sustainability roadmap
- Formulate and supervise sustainability policies
- Review and approve other sustainability initiatives

Sustainability Report Writing Committee

CSHK's Chairman and President acting as the chairman

Responsibilities:
- Coordinate works related to the sustainability roadmap
- Coordinate the development of sustainability policies
- Coordinate data collection and related work for sustainability reports
- Review sustainability reports

Sustainability Affairs Working Group

General Manager of the Corporate Communications Department acting as the team leader

Responsibilities:
- Conduct research related to the sustainability roadmap
- Conduct research related to the formulation of sustainability policies
- Support the coordination of data collection and related work for sustainability reports
- Support in reviewing the content of sustainability reports
- Review and collect information on annual highlights of sustainable development
- Other sustainability work

In addition, recognising the significant challenges posed by climate change, CSHK has pioneered a low-carbon development governance structure at decision-making and execution levels. The structure enables CSHK's senior managers to work with subsidiaries and functional departments in promoting green and low-carbon construction as well as demonstrating the Company's commitment to social responsibility and sustainability.

CSHK Carbon Neutrality and Carbon Asset Development Committee

The Chairman of the Committee is assumed by the Chairman and President of CSHK. Members of the Committee include leaders of the Engineering, Safety, Environmental Protection, Supply Chain Management, Human Resources, Quality, and Technology Innovation departments. The Corporate Communications Department manages the routine works of the Committee, with CSHK's sustainability leader acting as the Secretary. The Committee is primarily responsible for promoting and managing low-carbon construction and carbon asset development at CSHK.

CSHK Carbon Neutrality and Carbon Asset Development Working Group

The leader of the Working Group is assumed by head of the Corporate Communications Department. Members of the Working Group are key personnel from the Engineering, Safety, Environmental Protection, Supply Chain Management, Human Resources, Quality, and Technology Innovation departments, with CSHK's sustainability leader acting as the Secretary.

The Working Group is primarily responsible for assisting the Committee in its work, identifying carbon-neutral construction projects and projects suitable for carbon asset development, and preparing relevant materials and implementation plans.

Sustainability Strategy and Focus Areas

CSHK is committed to driving sustainability by implementing the sustainability strategy of "Building Consensus, Promoting Innovation, Creating Value" and incorporating sustainability elements into our business operations. At the same time, as part of CSCI, we strive to align our efforts with CSCI's sustainability roadmap. Accordingly, during the Reporting Period, we promoted the execution of action plans in five Focus Areas, aimed at achieving the relevant targets.

Sustainability Strategy

- Building Consensus
- Promoting Innovation
- Creating Value

CSHK Five Sustainability Focus Areas:

- Leading with Innovation
- Building a Sustainable Supply
- Safeguarding the Environment
- Serving the Community
- Nurturing and Supporting Talent

P.E.A.K Principle

To better articulate CSHK's sustainability efforts, we formulated the "P.E.A.K Principle" during the Reporting Period. The P.E.A.K Principle consists of the following four aspects.

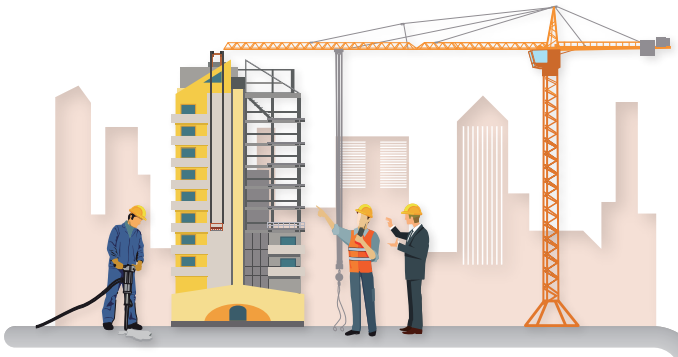
People

Environment

Alliance

Key Projects for Hong Kong

We aim to present CSHK's ESG key performance indicators and their impacts by addressing the concerns of different stakeholders.

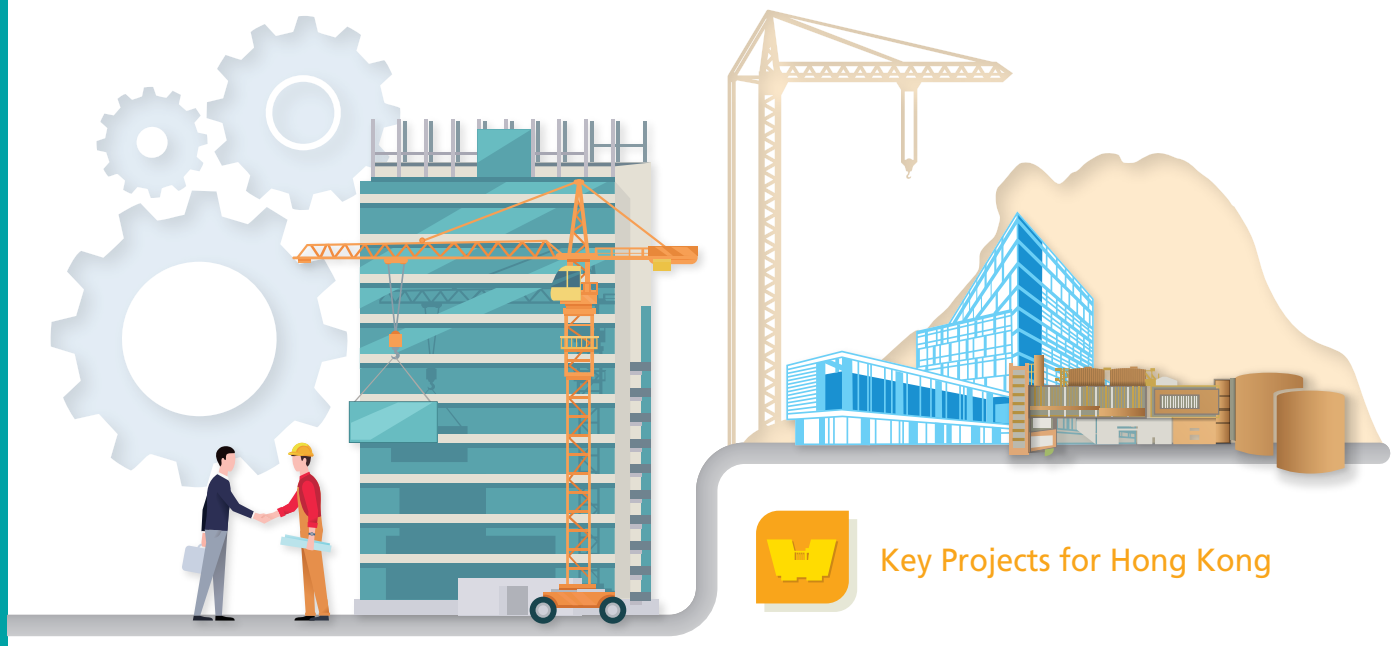


People

People are invaluable assets to businesses and society. Supporting employees in their work and life, as well as caring for various stakeholders, are critical to achieving sustainable development. We are committed to building the skills and talents of our employees so that they can excel in their roles and find fulfilment. We also provide a range of benefits for our employees and strive to create an equal and enjoyable workplace. At the same time, we have never neglected the well-being of other stakeholders. As society develops, CSHK is exploring business models that incorporate commercial and social benefits. These models will allow us to seize sustainability opportunities promptly, provide solutions to local social and environmental issues with our expertise. Through this approach, we aim to create shared value and ensure that other stakeholders feel supported and valued.

Environment

Increasingly frequent extreme weather events underline the urgency of climate action. The call for Accelerating Net Zero Action at COP27 (the 27th session of the Conference of the Parties of the UNFCCC), as well as more stringent reporting standards and regulations on carbon emissions, water and waste management, have further increased the demand for sustainable construction. As a main contractor, CSHK is dedicated to promoting low-carbon projects. In our pilot projects, we employ various carbon reduction construction techniques to minimise the impact on the environment.



Alliance

Over the years, the construction projects we have undertaken have drawn on the collaborative efforts of many parties, from the building technology and materials research and development team to the construction and operations teams. The cooperation and facilitation of the entire industry ecosystem, along with the support of governments and communities, has been essential in building consensus and promoting the healthy development of the urban and construction sectors. We actively communicate, coordinate and learn from different stakeholders to identify opportunities to work together to advance sustainability in the industry. Our aims include jointly developing and promoting sustainable building materials and technologies, and creating more liveable and sustainable buildings.

Key Projects for Hong Kong

As social structure evolves and information technology advances at a rapid pace, the traditional perception of the construction industry as being characterised by dusty, toxic and labour-intensive processes is gradually shifting towards "smart construction". Technological innovation is a key driver of development, and the widespread adoption of new technologies is transforming the construction sector fundamentally. CSHK continues to invest in smart facilities, digitising our operations and leading our employees and partners into the Construction 2.0 era. Over the past 40 plus years, we have built a wealth of iconic projects, from the Airport Passenger Terminal of Hong Kong International Airport, to the Central-Wan Chai Bypass Tunnel, to the upcoming Tseung Kwan O Desalination Plant, Organic Resources Recovery Centre Phase 2 and the Chinese Medicine Hospital, CSHK has been building key projects for Hong Kong, witnessing and being part of Hong Kong's development along the way.

Key Highlights

Sustainability Performance Highlights in 2022

P 以人為本 eople

Average training hours

8.55 hours

Injury rate per thousand employees

0 Employees

Community investment amount

$1,072,348

Volunteer hours

15,069 hours

E 環境關懷 nvironment

Greenhouse gas emission intensity (Scope 1 & 2)

3.17 tonnes of CO_2e/ HKD million

Non-hazardous waste disposal intensity

2.58 tonnes/ HKD million

Water usage intensity

28.48 m^3/ HKD million

C-SMART application

Applied in 40 projects

A

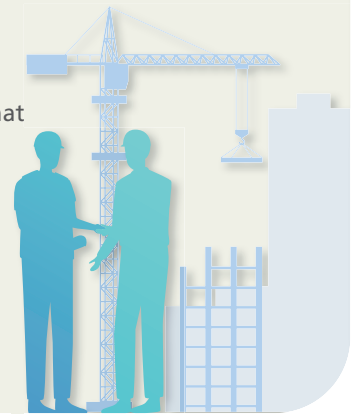
Percentage of local purchases

97%

Percentage of self-purchased wood that is FSC certified

100%

夥伴協作
lliance



K

BIM application

92% of the total portfolio are in use

BEAM Plus involvement

19 projects

建造香港
ey Projects for Hong Kong

PEOPLE

The steady growth of CSHK over the years is undoubtedly attributable to the unwavering commitment of our employees. We continuously improve our human resources management system to cultivate a dynamic, motivated and harmonious team and create a positive workplace. Moreover, we actively engage in charitable activities to give back to the community and contribute to the betterment of society.

People

Occupational Health and Safety

CSHK places high importance on the health, safety and welfare of our employees. Taking a "safety first" approach, we have a well-established occupational health and safety management system and implement stringent safety measures to ensure a safe and hazard-free workplace. Furthermore, we constantly strive to promote employees' knowledge and awareness of safety. Our employees are encouraged to participate actively in safety management, thereby contributing to a safe workplace towards "zero accidents on site".

Occupational Health and Safety System

Occupational Health and Safety Commitment

We are dedicated to ensuring the safety and health of all our people, including sub-contractors and the public affected by the construction works. We are committed to:

Establish a safe and healthy working environment of high standard

Regularly assess the safety and health hazards and risks arising from construction works

Provide safety education and training to employees

Establish effective communication and consultation channels for employees

Emphasise employee participation in the decision-making processes of the occupational health and safety management system

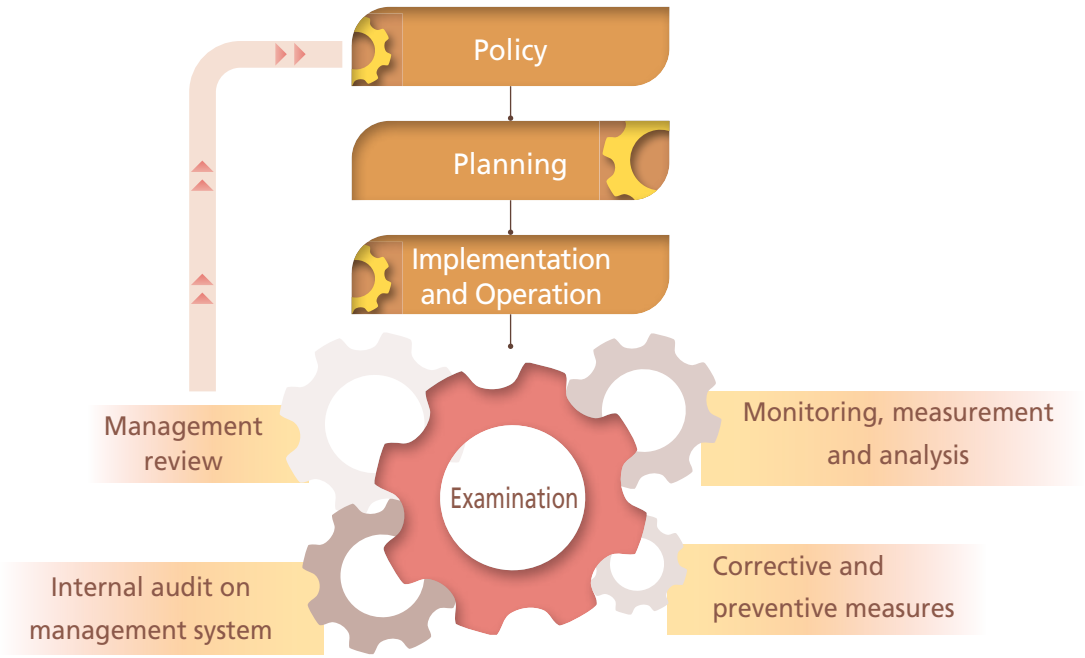
Strictly comply with regulatory and contractual requirements

Promote safe behaviour among workers through safety climate surveys

Adopt reasonable and feasible measures with innovative methods to improve safety and health performance continuously

Regular Monitoring with Established Reward and Penalty System

To prevent accidents and serious work-related incidents and continuously reduce the incidence rate of work-related injuries, we have established an occupational health and safety management system in accordance with the requirements of ISO45001:2018 Occupational Health and Safety Management System and have received the certification. All CSHK employees are safeguarded by the occupational health and safety management system. In addition, we set annual health and safety objectives and targets and conduct safety audits every six months to monitor overall performance. Our safety management work is conducted in accordance with the following processes.



The Workplace Safety Committee is responsible for the development and implementation of the Safety and Health Policy, which is reviewed at regular meetings with input from various department, and then reported to the management for approval. This approach ensures that the Policy aligns with our nature, scale, and the safety and health impacts of our operations and the products and services we provide. The CSHK Safety and Environmental Protection Department is responsible for implementing the health and safety management system and policies and reporting to the Integrated Management Committee. Each site is required to set up a Site Integrated Management Working Group, with the site manager responsible for managing the civilised construction of the site. Safety-related requirements, including production planning, monitoring and auditing, are detailed in the Safety and Health Management Working Procedures to enhance site safety management.

In addition, we have formulated the Area Responsibility System for the Safety and Environmental Management of Front-line Site Management Staff, under which sites are zoned according to the nature and staffing scale of each project, promoting the implementation of the area responsibility system for the safety and environmental management of front-line site management staff. Reward and punishment mechanisms have also been clearly defined. We have also formulated the Safety Management Regulations for Site Representatives of Sub-contractors, stipulating that site representatives of sub-contractors shall be responsible for regularly monitoring the safety of sub-contractors' workers, attending Site Safety Committee meetings, and implementing relevant requirements on safety measures. We have set up an award mechanism, where "Safety Representatives" are selected every month by the site civilisation construction team according to the monthly safety management performance of the sub-contractor representatives and the safety performance of their workers. The selected "Safety Representatives" would be awarded certificates and cash incentives.

We value the participation of employees to continuously enhance our occupational health and safety management system. Employees and employee representatives at all levels and functions are participating in developing, planning, implementing, assessing, and improving the safety and health management system. The procedures for employee participation and consultation are set out in the Safety and Health Management Manual.

Crisis Management and Employee Participation

At CSHK, we put emphasis on hazard identification, risk assessment and accident investigation. Before commencing construction works, all site departments will participate in a kick-off meeting to analyse the risks arising from various work processes, conduct regular risk assessment meetings, formulate risk assessment reports, specify safety requirements and monitoring requirements, and ensure that works are carried out in accordance with the risk assessment and safety procedures.

Employees are encouraged to report work-related hazards and hazardous conditions. They may report these matters through the Comment Box, the hotline or Happy Worker APP, and have the opportunity to be receive redeemable prize cards in accordance with Behavioural Safety Star Award Scheme. Employees are protected from dismissal, threat of dismissal or any form of discrimination for reporting safety and health incidents and potential hazards. Employees are explicitly informed during orientation that they can stop their work and evacuate an unsafe environment without being subject to disciplinary action for reporting or evacuation.

In 2022, a total of 133 workers were injured at work. The primary causes of these injuries were slips, trips, falls, stumbles, punctures and collisions with objects. To prevent the recurrence of similar incidents, we conducted incident investigations, identified corrective and preventive actions, and assigned responsible persons and deadlines in accordance with the Safety and Health Management Procedures.

We conduct risk assessment and monitor high-risk processes to minimise the occurrence of major incidents. In the event of a major incident, management will organise an investigation to determine the cause and responsibility, propose preventive measures, and document and communicate the results of the investigation to the relevant personnel to follow up improvements. Furthermore, we will also review existing safety, health and risk measures.

In addition, CSHK employs a suite of measures to minimise the risk of occupational disease among our employees, including those specified in the Employees' Compensation Ordinance. Health monitoring and medical examinations are arranged for site workers who handle carcinogenic substances, asbestos, work with compressed air or perform underground work, so as to protect employees at risk. If a worker is diagnosed with an occupational disease, the site will take measures to eliminate further exposure to hazardous substances.

Smart Safety

Responding to Potential Risks

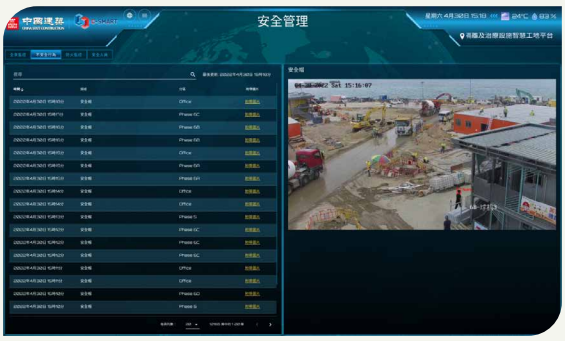
To ensure site safety, the Smart Safety System, a module of C-SMART, has been implemented on all our new construction sites in Hong Kong in a standardised and systematic manner, with features such as early warning and real-time monitoring, as well as the use of data for safety analysis. By using advanced technology, the Smart Safety System significantly reduces construction risks and on-site accidents, and enables comprehensive monitoring to address potential safety risks.

To prevent construction accidents, the Development Bureau requires the implementation of 4S for all infrastructure works with a contract value of over HKD30 million from 27 February 2023. At present, our smart safety system has met more than 80% of the requirements of the 4S standard. CSHK is developing the C-SMART 4.0 smart site module based on the Software as a Service (SaaS) cloud development platform. The module will be aligned with CSHK's business models and the traits of the C-SMART system. With full upgrade expected in 2023, C-SMART 4.0 will expand to 48 sub-functions, offering improved functionality and user experience, along with enhanced 4S capabilities to fully comply with the standard.

Below are some of the key features of the Smart Safety System:

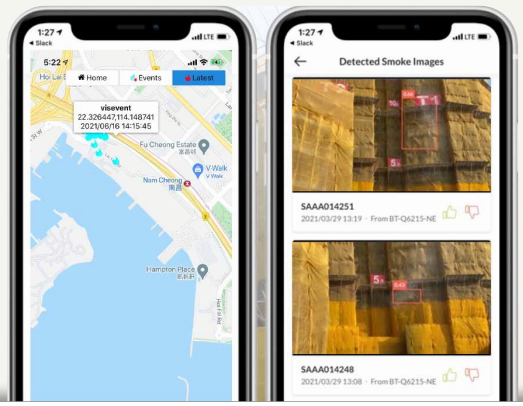
AI-based unsafe/dangerous behaviour monitoring

- Real-time remote monitoring of site conditions via surveillance cameras
- Automatically identify the safety of workers, such as whether they are wearing helmets, reflective clothing, etc.
- Prevent workers from entering hazardous areas
- Once unsafe behaviour is detected, the platform sends instant alerts and reports via mobile apps



AI-based fire monitoring

- Surveillance cameras with visible light and infrared lenses, combined with AI algorithms, detect smoke and fire locations on construction sites
- 24/7 all year round
- Once irregularities are detected, the platform triggers fire alarms and the mobile app displays fire information and location



Eagle Eye: AR live mapping

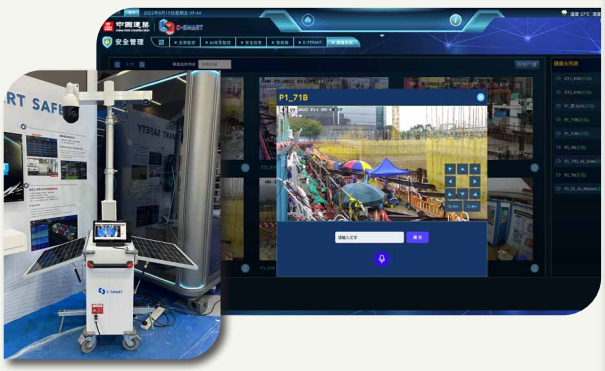
- 24 megapixel high-resolution, wide-angle and zoom lenses capture real-time movement of people and materials in key areas
- AR technology distinguishes workers, machines and equipment on site and provides real-time image fusion
- 3D monitoring technology visualises site details

Real-time drone safety inspections

- The live drone system and video streaming analysis enable real-time detection of hazardous conditions and unsafe behaviours in every corner of the site
- Equipped with visible light and infrared cameras, real-time inspections can be carried out day and night

Mobile AI platform with webcast system

- Easy-to-install all-in-one system
- Effective safety and traffic flow monitoring for temporary traffic arrangements; powered by solar panels; can be placed in locations with difficult access to power supply
- Operators in the control room can use the webcast system to remotely send voice broadcasts to help correct problems immediately

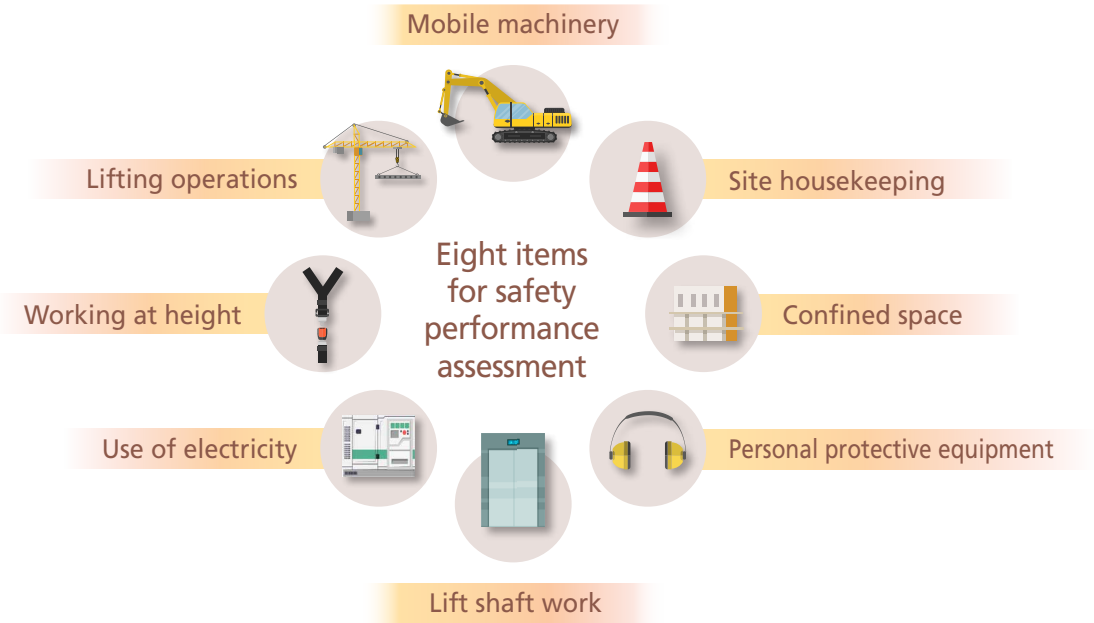


Smart Lock

- For high-risk and restricted area management
- Managers can unlock qualified workers via system settings
- Any unauthorised activation will trigger an alarm and be displayed on the C-SMART platform
- The location, performance and status of smart locks can be accessed via the platform

Safety Performance Assessment System

CSHK has developed a worker safety performance assessment system based on the eight safety performance assessment items to monitor workers' safety behaviour. Assessors deduct points from workers with unsafe behaviour according to a scoring rubric. Workers whose points are zeroed out will be banned from the site and required to complete a one-day external safety training course before re-entry is considered. Subcontractor Representatives are responsible for the unsafe behaviour of their workers. These representatives will be subject to penalty if the number of workers under their responsibility who have been zeroed out in the Worker Safety Performance Assessment System reaches a certain threshold. Through the assessment system, we aim to ensure the safety of workers and continuously improve the safety performance of our sites.



Occupational Health and Safety Training

Site Safety Training

To ensure site safety, we provide a wide range of safety and health training, including orientation, mandatory basic safety training, specialised training, site talks and management training. During the Reporting Period, we organised 13,170 training sessions, covering 615,851 participants. In addition, we carried out safety promotion initiatives in collaboration with organisations such as the Hong Kong Construction Industry Employees General Union and the Occupational Deafness Compensation Board. We regularly carry out safety promotion campaigns such as "Summer Rainbow" and "Warming the Winter" and implement monthly key safety monitoring themes. We also organise company-wide tower crane collapse precaution training and Subcontractor Owner Safety Training to improve site safety management.

During the Reporting Period, we conducted

13,170 safety training sessions

for

615,851 participants

We organised the "Behavioural Safety Star" activity at various sites, which rewards site workers who satisfy behavioural safety standards with redeemable prize cards. Site workers selected as "Behavioural Safety Star" will receive a cash incentive.

Through these measures, we aim to establish a robust safety culture and regulate the safety behaviour of site workers to ensure site safety and eliminate potential safety hazards.

"Summer Rainbow" Safety Promotion Campaign

To strengthen site safety management during high-risk seasons, we organised the "Summer Rainbow" Safety Promotion Campaign from May to September 2022, during which the following measures have been implemented.

- Organise special safety training for each month's campaign theme and high-risk processes.
- Organise comprehensive inspections every month by our safety person-in-charge, frontline management personnel, safety management personnel, sub-contractors' representatives, and other relevant personnel on the campaign themes and high-risk processes, and make improvements as soon as hidden hazards are identified.
- Require front-line management personnel to pay more attention to the health of workers. If any worker is found to be unwell, the front-line management personnel should ask the worker to leave the site and seek medical treatment in a timely manner.

May	June	July	August	September
Site Housekeeping	Safe Use of Electricity	Safety for Working Under High Temperature	Work-above-ground Safety	Crane Hoisting Safety

Caring for Employees

Talent Management

CSHK has formulated a series of strategies to nurture talents in the construction industry. We strive to provide our employees with a diverse, inclusive and enjoyable workplace, better remuneration and benefits, and more training opportunities. In this way we can increase their belongingness and attract young people to the industry.

Continuously provide competitive remuneration

By benchmarking against market indicators, we offer our employees a competitive remuneration package. We also link performance appraisal results to performance bonuses to recognise and reward exceptional employee achievement. We provide our employees with a variety of benefits, including year-end bonus, overtime work allowance, lunch allowance, travel allowance, car allowance, construction site safety operating allowance, paid annual leave, sick leave, overtime work compensatory leave, wedding leave, maternity and paternity leave, compassionate leave, examination leave, birthday leave, and care leave. Furthermore, our employees are entitled to benefits such as employee medical insurance, employee family medical insurance, wedding voucher, and long service award.

Enhance talent training

CSHK clearly lays out the promotion systems and requirements in the Employee Handbook, which provides two development paths for employees, "Management" and "Technical." This helps employees determine their development direction based on their skills to promote the sustainable growth of both CSHK and our employees. In addition, we focus on the development of our employees in various fields and promote their professional skills and knowledge through programmes such as "BIM for All" and "Thousands of People Across the River Project" to help them advance in their careers.

Encourage young talents to join the industry

Each year, CSHK works with local universities to organise information sessions and on-campus job fairs to break down stereotypes of the construction industry among young people. In addition, we have launched a number of training programmes especially for young talents, such as the "Trainee Engineer Training Scheme", the "Hong Kong 'DoubleHundred' Youth Development Programme", etc., to encourage young people to join the construction industry. We also formulated "Training and Management Measures for Core Talent" and "Training and Management Measures for Trainee Engineers" for young employees. We have established a career ladder for the youngsters to growth from young talents to core talents and finally executive talents. A robust talent development system is in place to support the implementation of our strategies and drive our reform and innovation.

Focusing on employee wellbeing

CSHK is committed to promoting a healthy workplace culture that focuses on the physical and mental well-being of our employees. Through dedicated groups such as the Volunteer Camp and clubs, we actively organise events and activities to satisfy the needs of our employees after busy work schedules. These activities not only provide employees with opportunities to relax, but also allow them to connect, build team spirit and strengthen their belongingness to CSHK.

Diversity and Inclusion

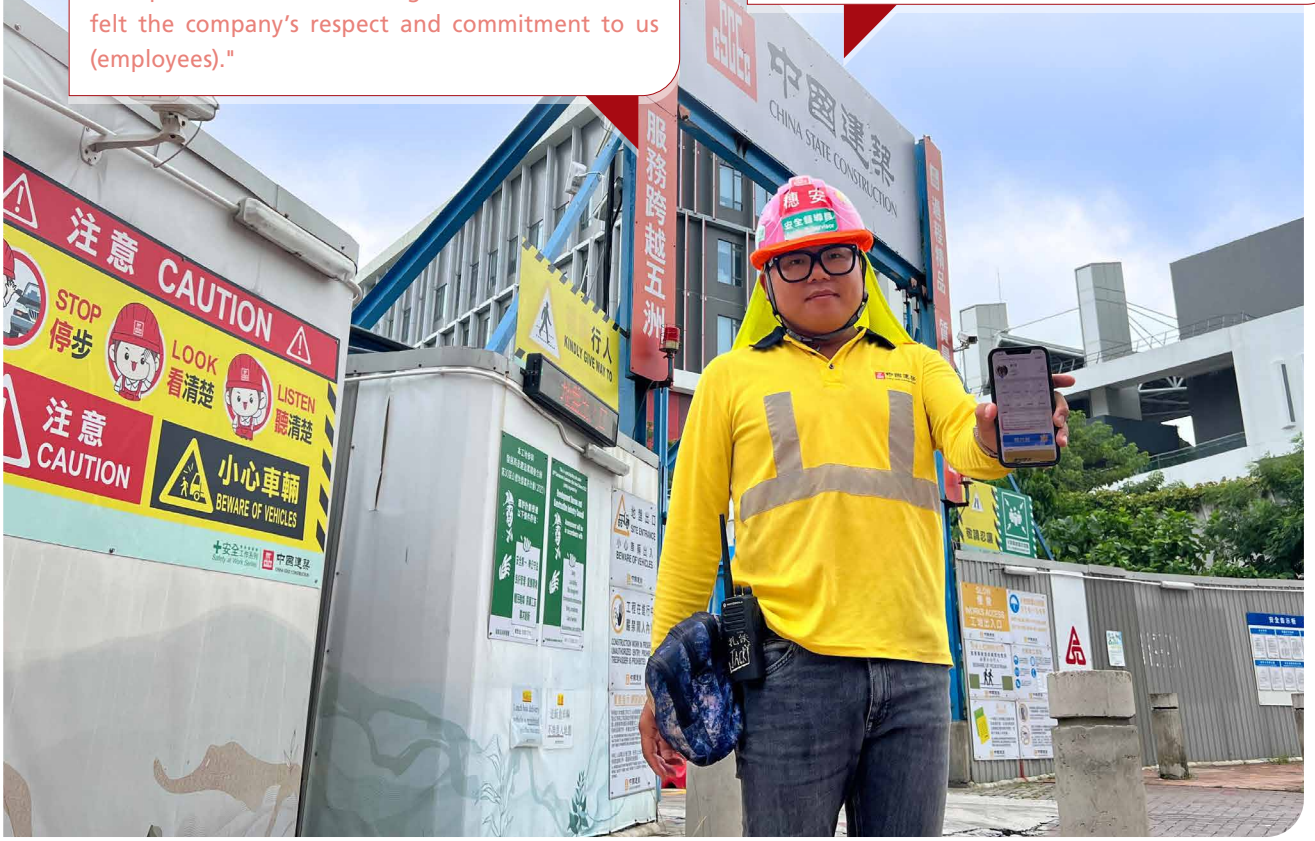
CSHK firmly believes that a diverse and inclusive workplace enables employees to fully demonstrate their strengths on professional and personal levels, which in turn promotes the long-term development of CSHK. We have established a policy for the prevention of discrimination and harassment in the Employee Handbook to ensure that the "uniform selection guidelines" are strictly enforced and that no candidate is discriminated against on the basis of age, gender, race, belief, disability, etc. The policy also includes a clear definition of workplace harassment, which includes sexual harassment and provide guidance on handling such matters. Employees are provided with sound consultation and complaint channels to ensure that their rights and interests are fully protected. All these efforts are aimed at creating a fair, lawful and equal working environment.

Happy Worker

CSHK champions a culture of safety and smart sites in construction industry safety. By upholding people-oriented management, we are committed to achieving sites with zero accidents. In 2021, we launched the Happy Workers APP for frontline workers. Designed to support workers and integrate information technology into their daily work, the app helps to streamline their workflow, enhance their safety awareness and reduce the risk of work-related accidents, thus creating a happy workplace and life for all workers.

"The company paid great attention to the Happy Worker APP for it to truly help us. When they were developing the app, the engineers came to the sites to explain its features and gather our needs. We felt the company's respect and commitment to us (employees)."

Workers can leave their comments or recommendations by using the Happy Worker APP and get rewarded with stamps in exchange for supermarket vouchers. "The supermarket vouchers are like a small gift, as a frontline worker, I feel being cared and respected from the company.



Jacky Wong, a safety supervisor at the Chinese Medicine Hospital in Tseung Kwan O, praised the Happy Worker APP as a simple, convenient and user-friendly software for daily communication at work. Workers use the APP every day to record their start times. Payroll and attendance data is also integrated in the APP. Moreover, it provides features such as work permit application, weather forecast from the Hong Kong Observatory and real-time heat stress warnings from the Labour Department.

Talent Cultivation

CSHK attaches great importance to the career development and self-fulfilment of our employees. Through the scheme of "Core Talent Pool", we identify talents with high potential and improve our talent supply chain.

Training for Young Talents

CSHK continues to nurture young people into talents in the construction industry. We have established a well-rounded, multi-level "5+3+X" young talent training system, creating more opportunities for the youth to grow and develop. To help employees unleash their potential and broaden their horizons, we also organise a variety of activities through the "China State Youth Club" to encourage employees to develop themselves outside of work for personal growth and social value creation.

During the Reporting Period, we held the "2022 Youth Enlightenment Class", an induction event for more than 100 young graduates. In addition, we organised several "Face-to-Face with Senior Management" events, in which the Chairman delivered remarks to facilitate the integration of young employees into our corporate culture and to improve their understanding of the direction of CSHK's and personal development.

Hong Kong 'Double Hundred' Youth Development Programme

Recruit 1,000 new employees in Hong Kong each year, including at least 100 fresh graduates and 100 interns, continuously creating more opportunities for young people in Hong Kong to grow and succeed.

Graduate Engineer Training Program

Targeting top-performing university graduates;

Combined with HKIE Scheme "A" Training;

Clear promotion ladder: 3 years (promoted to Engineer upon satisfactory assessment results) + 3 years (promoted to Senior Engineer upon satisfactory assessment results) + 2 years (promoted to Assistant Project Manager upon satisfactory assessment results). Minimum 6 years to Assistant Manager level, entry into core management team.

Apprentice Training Scheme

Last for three to four years;

Mainly apprentices in building construction, civil engineering, building services, quantity surveying and mechanical engineering;

Provide training in frontline supervisory skills and technical knowledge, as well as management skills.

Shadow Scheme

Aimed at passing on the experience and skills accumulated over time to the younger generation;

Identify, cultivate and provide key development opportunities for young employees with development potential

Opportunity to develop knowledge and skills in business operation and management from the top management of CSHK

Internal Training for Employees

To satisfy the needs of employee development and business development, CSHK has developed training programmes covering a wide range of areas such as quality, safety, environmental protection, policy and engineering technology. A wide range of training activities have been organised to improve the competence and expertise of our employees, thereby addressing challenges in the ever-changing market.

The Greater Bay Area Youth Exchange Programme

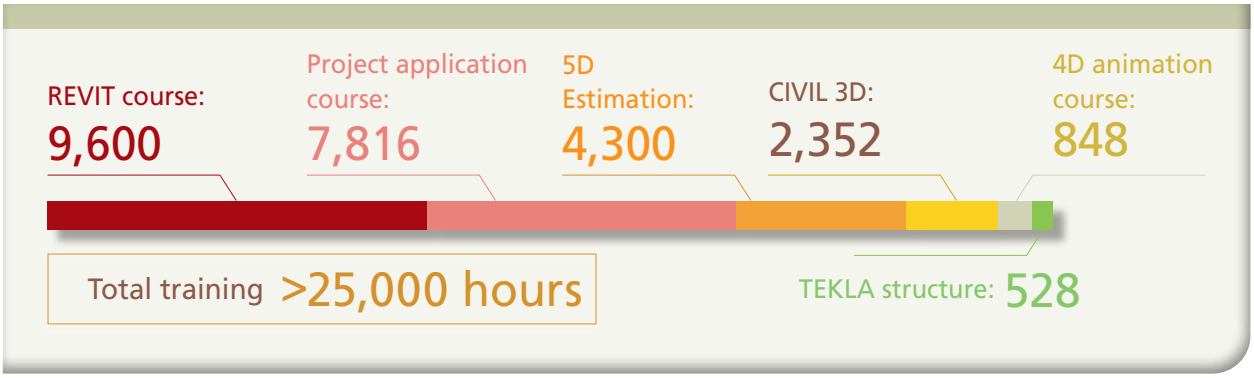
CSHK introduced the Greater Bay Area Youth Exchange Programme in 2021, aiming at sending 1,000 Hong Kong employees across the Shenzhen River to work and live in the Mainland during the "14th Five-Year Plan" period. This Programme provides promising and aspiring professionals and young people in Hong Kong with an attractive opportunity for long-term or short-term job rotation and exchange in Greater Bay Area. They are expected to contribute what they have learnt to Hong Kong and bring valuable additions to the Hong Kong construction industry.

BIM for All

As BIM technologies continue to mature, they have been applied across 92% of CSHK's construction sites during the Reporting Period. To better promote BIM applications on the sites, CSHK established a BIM Centre years ago and has established training, technical, and promotion and application systems. The goal is to cultivate extensive BIM expertise through the BIM for All Programme, thereby enhancing site efficiency. At present, we offer 11 different types of BIM courses, including architectural, structural, civil, quantity survey and management courses, for frontline staff, site engineers, site managers and senior managers. To date, the BIM for all programme has trained 1,352 people and delivered more than 25,000 hours of training.

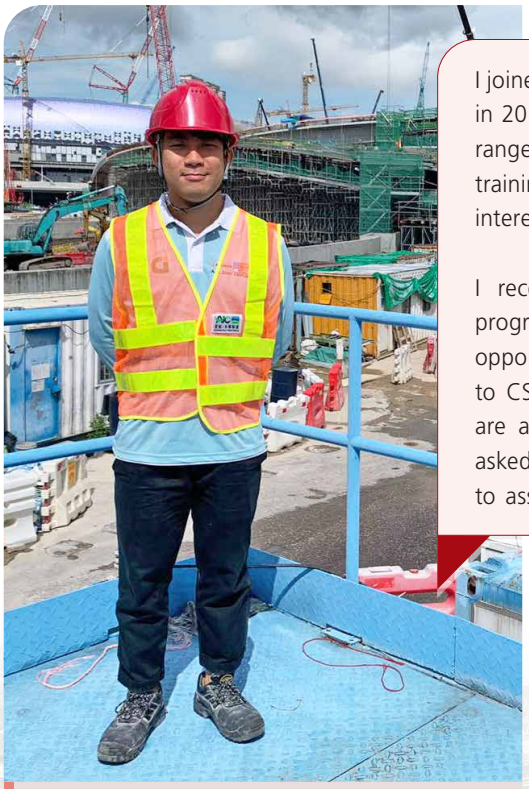
To encourage more site staff to incorporate BIM into their work, we have introduced a training incentive for the BIM for All Programme. Each year, we organise a "BIM Star" appraisal, and the five selected "BIM Stars" will be awarded an HKD 20,000 bonus in recognition of their outstanding performance. We will continue to advance the programme.

By 2023, we expect to have more than 2,000 employees trained in BIM, the number of BIM application managers to increase to 800, and the number of CIC BIM Viewer Certificate holders to account for 40% of our workforce.



Subsidising Employee Acquisition of Professional Qualifications

CSHK actively offers external training subsidies to facilitate the enhancement of employees' professional skills, encouraging them to acquire business-related professional qualifications and strengthen their professional skills in line with the evolving demands of Hong Kong's construction industry. This will enable them to create value for CSHK while enhancing their professional competitiveness. We support all employees in obtaining professional training, reimbursing the cost of training as long as it is approved by the relevant departments. We also supported them to obtain any professional qualification, at present, 30 professional associations around the world are supported.



I joined CSHK through the Trainee Engineer Training Scheme after graduation in 2017. CSHK has been hugely supportive of our development, providing a range of support and assistance. Furthermore, CSHK has provided diverse training, visits and study tours, allowing us to choose the areas we are interested in for further study.

I received a training grant from the company to attend training or programme for Continuing Professional Development (CPD). Through this opportunity, I have gradually defined my career direction. In addition, thanks to CSHK's culture of inheritance, my supervisors and mentors at the sites are always ready to answer any questions and offer support. They even asked colleagues who is the chartered engineer to give us mock interviews to assist us in obtaining the professional qualifications.

Alex Ng
Senior Engineer

Community Investment

CSCI established its Volunteer Branch in June 2019. As a member of CSCI, we uphold the purpose of "prosper Hong Kong, service society" and take on the mission of "managing happiness for society". We have been committed to leveraging our professional strengths to proactively identify and respond to the needs of the community, with a focus on serving the elderly, the youth and individuals in need. The Volunteer Branch carries out various volunteering activities following the "4+X" volunteering system of "Care for the Elderly, Contribute Your Skills, Care for Teenagers, Care for Your Home + Innovative Space", making positive contributions to the society. During the Reporting Period, more than 2,800 volunteers participated in volunteering activities, contributing more than 15,000 service hours.

During the Reporting Period, more than 2,800 volunteers participated in volunteering activities, contributing more than 15,000 service hours.

Strive and Rise Programme

CSHK has always upheld the people orientation and is committed to promoting social welfare. In particular, we have years of experience in the area of targeted youth poverty alleviation. During the Reporting Period, we actively participated in the HKSAR Government's "Strive and Rise" Programme by providing more than 60 mentor candidates, various group activities and donations. Our efforts contributed to China Overseas Holdings Limited's standing as a strategic partner of the programme's Partnership Committee. Our volunteer mentors will be paired with junior secondary school students from grassroots families for at least a year, sharing their life experiences, providing guidance on personal development and promoting positive values to help tackle intergenerational poverty. We also provide the mentees with a range of enlightening opportunities to experience cutting-edge construction technologies, stimulating their interest in construction engineering and R&D to help them better explore their future career paths.

"Thousands of Homes for Maintenance" Scheme

Utilising our expertise in construction and engineering, we initiated the Thousands of Homes for Maintenance Scheme. The scheme aims to provide volunteer home maintenance services, such as safety handrail installation, water pipe check, and sink trap cleaning for more than 1,000 households in need, including disadvantaged grassroots families and elders living alone. These seemingly simple maintenance tasks could pose a significant problem for the recipients, threatening their home safety and quality of life for a long time. Therefore, we engage in this volunteer initiative with genuine concern and empathy.

Since 2021, we have provided home maintenance services for more than 500 households, engaging more than 301 volunteers in 2022 and contributing more than 5,685 volunteer service hours.

Behind these figures lies not only the hard work and selfless dedication of our volunteers, but also our sincere concern for the livelihood of the recipients. We believe that our volunteer services not only address the practical needs of the recipients, but also bring warmth and care to them.

Disadvantaged grassroots families, elderly individuals living alone, and others in need, represent a significant segment of our society. We must not neglect their physical and mental well-being and quality of life. Therefore, we will continue to share our expertise and volunteering spirit to extend practical volunteer services to more people in need, providing them with greater help and support. Let us join hands for the harmony and prosperity of our community, so that everyone can live a safe, healthy and fulfilling life.

ENVIRONMENT

Green building is a sustainability trend in the construction industry. In order to increase sustainability of buildings, CSHK promotes the construction of green buildings through a wide range of innovative technologies and techniques to facilitate digitalisation and industrialisation in construction.

Environment

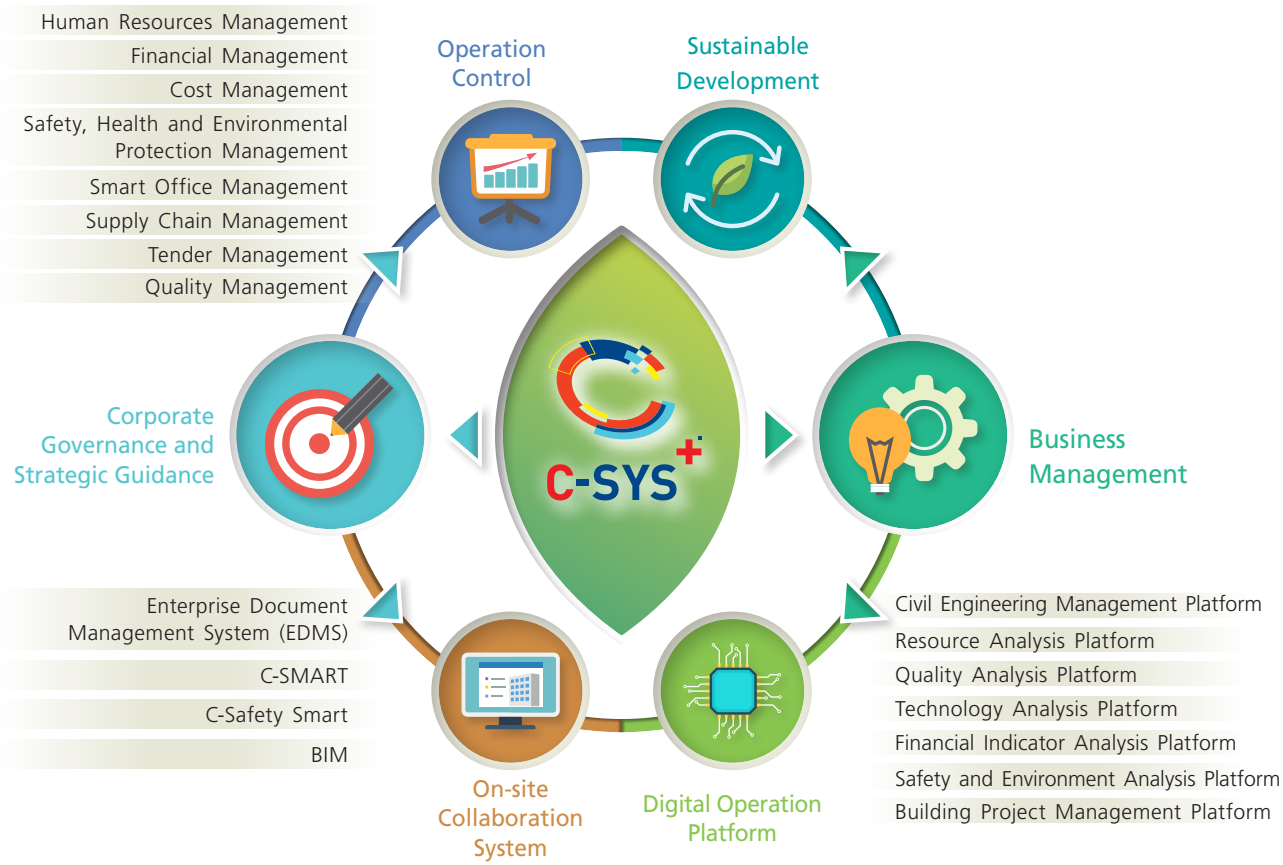
Green Building Technology

Recognising the importance of innovative technology in operation and construction, CSHK started to establish various digital management platforms to meet business needs more than a decade ago. To effectively manage the application of technology and examine the impact of technology and techniques on our operations, we have established a Technology Working Group chaired by Mr. HUNG Cheung Shew, Chairman of CSHK. The Working Group is responsible for finalising CSHK's development plan for smart management, reviewing the technology management system, the applicability and effectiveness of innovative products and techniques, and overseeing the technology work in various business areas. We hope to incorporate technology management into our operations. Therefore, we have established technology management frameworks within each of our construction businesses, vigorously promoting innovation-driven transformation. To encourage active participation in the R&D, introduction, and promotion of innovative technologies across our affiliates, departments, and construction sites, we acknowledge teams that have demonstrated remarkable achievements in technological innovation, promotion, and introduction, which motivates our employees to embrace innovative technologies.

CSHK actively explores the depth and scope of C-SYS+ System, C-SMART, BIM, MiC and MiMEP application, and adopts them in many projects, so as to improve productivity and production efficiency, and strengthen project safety and quality control.

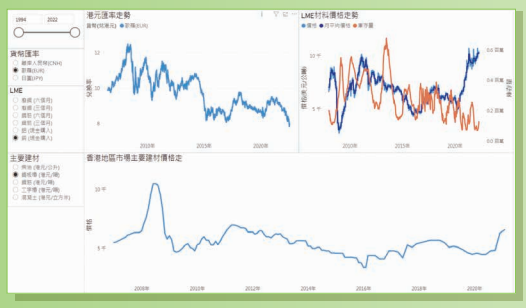
C-SYS+ System

Dedicated to comprehensive digital transformation, CSHK has been promoting digitisation upgrades based on C-SYS+ System, our in-house developed enterprise management data platform. C-SYS+ System integrates more than 30 digital management platforms of CSHK. It serves as the backbone of data transmission, effectively combining, integrating, and utilising data and resources on these platforms. It also provides timely and accurate data and information to support the decision-making of the management.



Innovative Technology and Application

- The C-SYS+ System provides innovative technologies such as data collection and analysis, AI-based data comparison and prediction, and robot development. It covers safety, quality, human resources, financial management, among other areas and improves efficiency.



Business Management & Control and Project Operation

- The C-SYS+ System and CDMS provides full-cycle and full-process management of project materials, which improves resource management and cost management.
- The C-SYS+ System can analyse material and machinery prices, wastage, and other data over the past 10 years, which helps to formulate bidding and pricing strategies.

Site Management and Collaboration

- The C-SYS+ System is an all-in-one platform of construction data. It provides accurate information on project progress as well as safety, environmental, and quality indicators, enabling flexible allocation of resources.
- The system also provides a communication channel that links CHSK with upstream and downstream partners to create synergies, which greatly reduces communication costs and misinformation.

ESG, Sustainability, and Carbon Emissions Management

- The ESG and Sustainability system uses the cloud-based carbon neutral platform to examine the effectiveness of a project's carbon emissions and carbon reduction measures, thus continuously monitoring sustainability decisions.

Continuous Upgrades and Digital Transformation

- We are expanding the functionality of the C-SYS+ System, such as adding an urban map system that presents the development potential and risk factors of each area, which provides better insights into tendering opportunities, risk management, and project planning.
- We will continue to optimise the C-SYS+ System and create various platforms to lead the digital transformation of the industry.

C-SMART

Independently developed by CSHK, C-SMART employs Internet of Things, cloud analytics, AI and other technologies to collect, aggregate and analyse site data to comprehensively manage and supervise all aspects of construction projects, thereby enhancing the efficiency of construction management and quality control. Through the C-SMART platform, we hope to improve project management, collaboration among all parties involved in the construction process, and efficient supervision at the corporate level, thus promoting the modernisation of the construction industry and reducing the environmental impact. C-SMART 3.0 provides 30 sub-functions, covering most of the ongoing projects in Hong Kong, Macao and the Mainland.

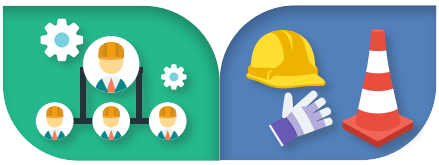
C-SMART has been used in **40** construction sites in Hong Kong.

Sub-functions

30 items

Personnel Management

- Integrated personnel management dashboard
- Head count
- Real-time worker location
- Special care workers
- High risk workers

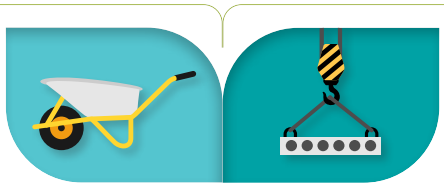


Safety Management

- E-permit
- Smart lock
- AI-based passage surveillance
- Safety management dashboard
- AI-based floor surveillance
- Panoramic surveillance cameras
- Broadcasting system
- Fire monitoring
- Safety inspection
- Tower crane safety dashboard
- Safety Star

Material Management

- Full-process material management
- Concrete management
- Rebar management
- Vehicle management

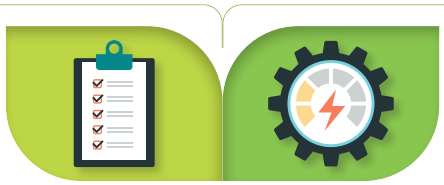


Mechanical Equipment Management

- Mechanical equipment management dashboard

Quality Management

- Technical clarification
- Quality inspection

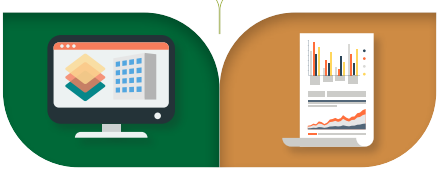


Environment and Energy Consumption Management

- Environment and energy consumption management dashboard

Site Photos

- Site gallery dashboard
- Photo comparison
- 3D Mapping
- 720 Panorama



Progress Management

- Progress overview
- Network diagram
- Matrix diagram
- BIM progress visualisation

C-SMART's Material Management and Environment and Energy Consumption Management modules enable us to understand and monitor the environmental performance of our sites, effectively managing the supply and use of materials and resources in order to reduce waste and pollutants. At the same time, the modules help us monitor and manage the energy consumption of our sites to find the best solutions to minimise energy waste.

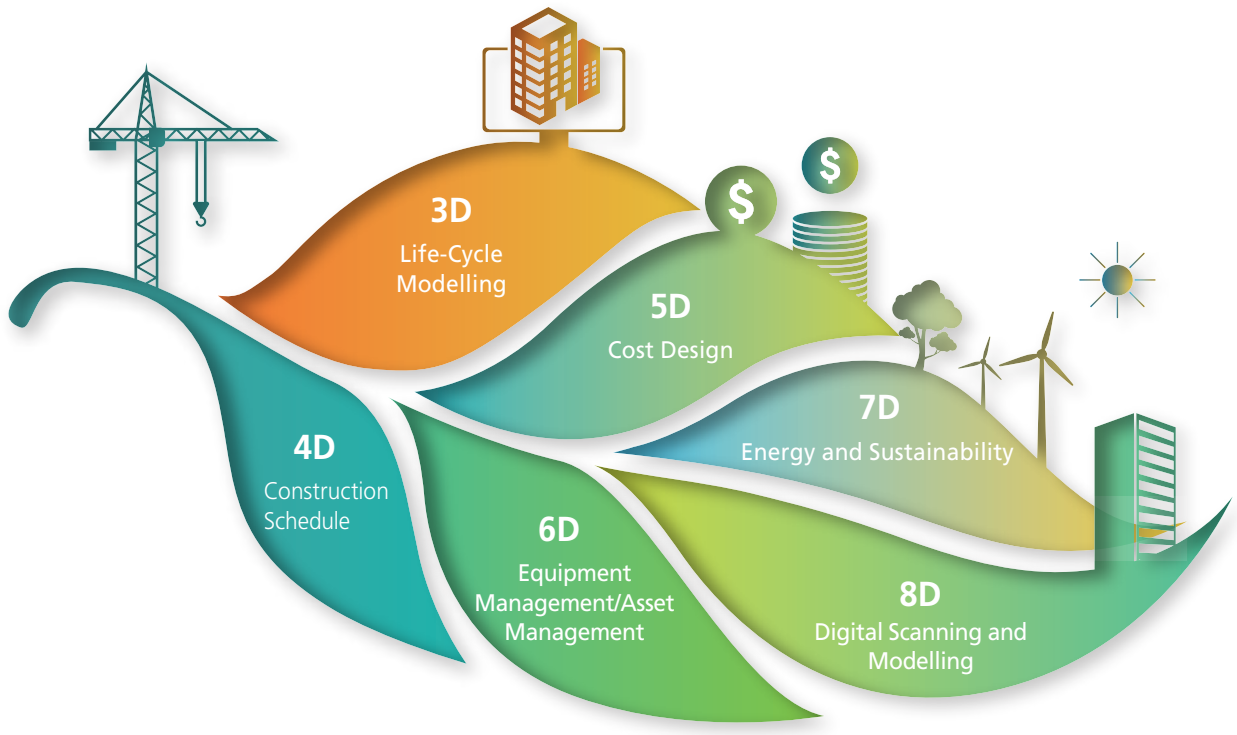
CSHK plans to further develop the C-SMART platform to include environmental management as one of the core modules. Waste performance-related capabilities will also be added to enhance integrated management.

BIM

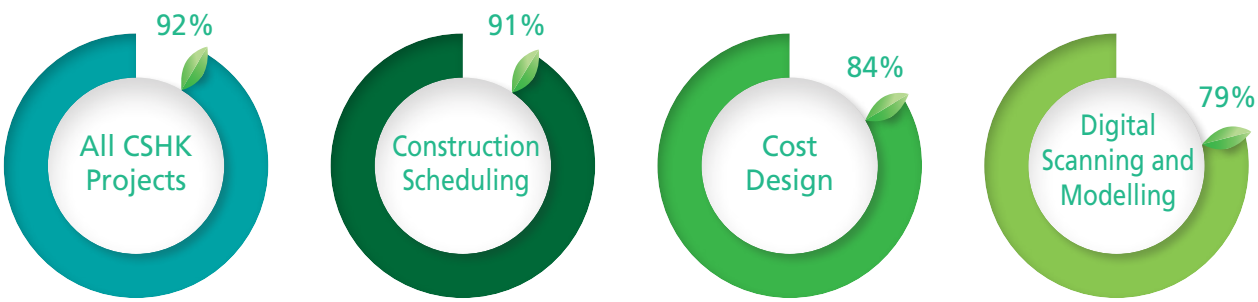
CSHK actively applies BIM technologies to major projects in order to improve construction efficiency and quality. This enables better management and utilisation of resources during design and construction, thereby reducing environmental impact. In addition, BIM technologies improve the energy efficiency of buildings by analysing the energy consumption of built assets and generate energy assessment reports at the early stage of design. This ensures accurate energy consumption estimations throughout the life-cycle of the built assets, so that the best energy strategy can be defined to minimise waste and energy costs.

On the basis of HKCIC's BIM standards, CSHK has formulated and regularly updates the CSHK BIM Standard, which is rigorously executed in new sites. Furthermore, we collaborate with universities and BIM software vendors in Hong Kong, Macao, and the Mainland, providing comprehensive support to drive digitised construction projects and data-driven management.

BIM Dimensions



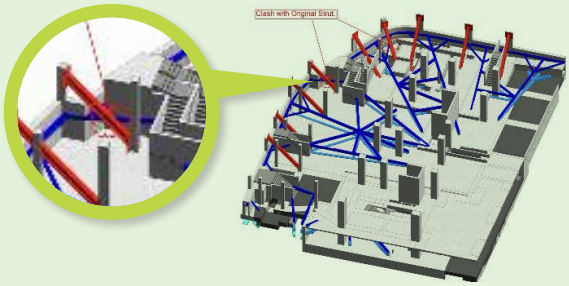
BIM Application



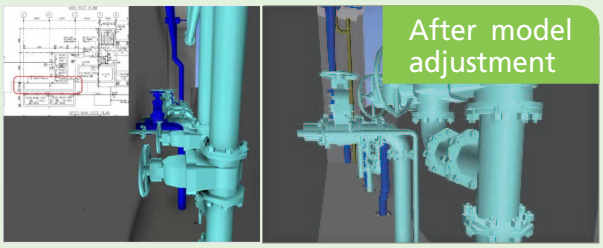
Innovation in BIM Technologies and Application

3D Life-Cycle Modelling

CSHK's 3D BIM technology can boost the design and modelling efficiency of project teams. Compared with 2D drawings, BIM models can more accurately calculate the actual operating space, thereby helping users to improve design and modelling, address potential problems, and work out the best resource strategy to reduce waste and resource costs. For example:



The BIM 3D model directly shows the collision between the excavation and lateral support and the old structural elements.



Using the 3D BIM model for the Ching Ho Estate public housing project in Fanling, the project team discovered early on that even if a valve could be installed, there would not be enough space for maintenance.

Virtual Reality and Augmented Reality

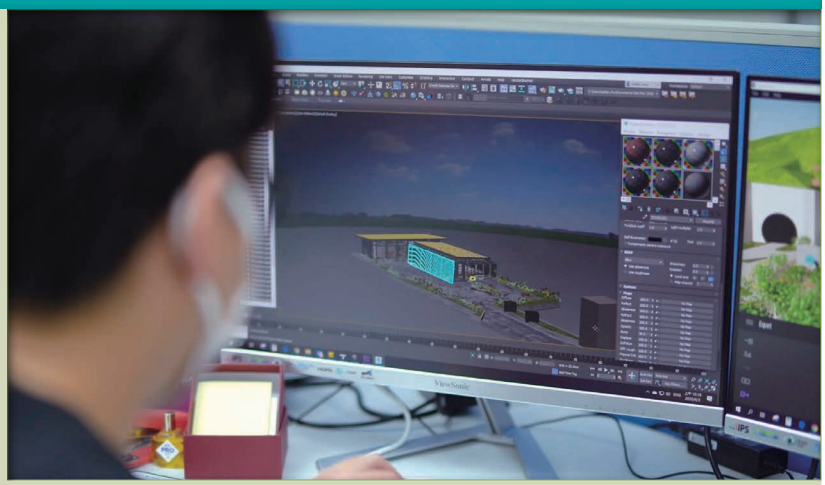
By combining BIM, VR and AR technologies, we provide 3D visualisation support to simulate the completion of a project, giving owners and users an immersive experience as if they were on site. This approach also helps to compare the actual situation on site with the BIM model to ensure a smooth construction process.

BIM Innovation Achievements

The automated modelling technologies developed by CSHK in recent years, especially the REVIT API-based automated drawing generation technology, have achieved impressive results. This technology can automate the generation of large quantities of BIM drawings and realise complex drawings such as CSD and CBWD, further improving productivity and quality.

Successful Case

This automated technology was successfully applied to the Kai Tak Hospital project, where nearly 5,500 BIM drawings were produced, saving time and money and improving project efficiency and quality. CSHK's automated technologies enjoy a wide range of application in the construction industry. The technologies help construction companies to produce BIM drawings faster and more accurately, thus improving product productivity and quality.



Industrialisation of the Construction Industry

We have made active efforts to advance the industrialisation of the construction industry in Hong Kong to improve productivity, construction efficiency and project performance. We have adopted the following modern construction methods. For example:

Design for Manufacture and Assembly (DfMA)

Improve product ease of manufacturing and assembly without compromising functionality, appearance and reliability. Design components that are easy to manufacture and assemble to reduce on-site operations and waste

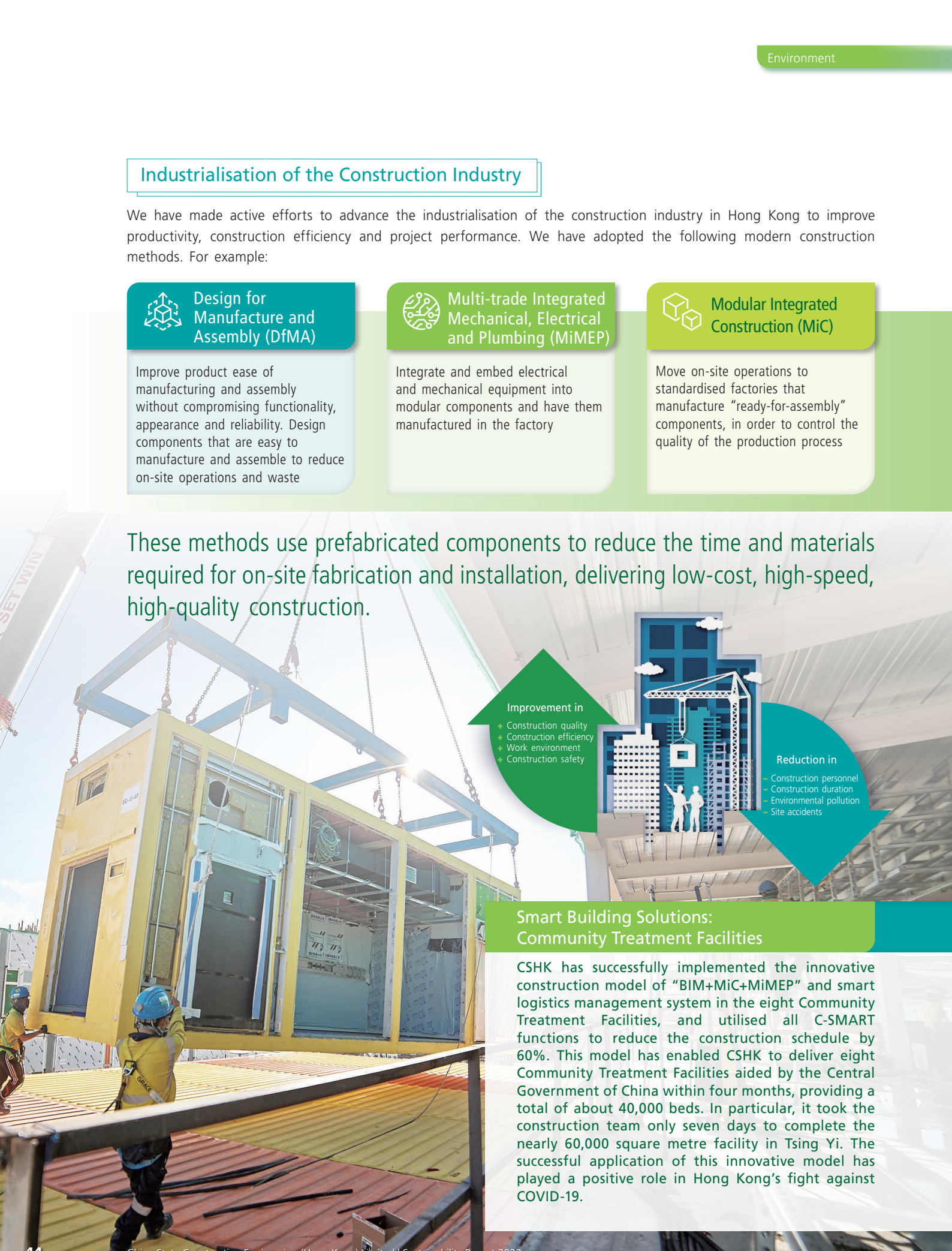
Multi-trade Integrated Mechanical, Electrical and Plumbing (MiMEP)

Integrate and embed electrical and mechanical equipment into modular components and have them manufactured in the factory

Modular Integrated Construction (MiC)

Move on-site operations to standardised factories that manufacture "ready-for-assembly" components, in order to control the quality of the production process

These methods use prefabricated components to reduce the time and materials required for on-site fabrication and installation, delivering low-cost, high-speed, high-quality construction.



Smart Building Solutions: Community Treatment Facilities

CSHK has successfully implemented the innovative construction model of "BIM+MiC+MiMEP" and smart logistics management system in the eight Community Treatment Facilities, and utilised all C-SMART functions to reduce the construction schedule by 60%. This model has enabled CSHK to deliver eight Community Treatment Facilities aided by the Central Government of China within four months, providing a total of about 40,000 beds. In particular, it took the construction team only seven days to complete the nearly 60,000 square metre facility in Tsing Yi. The successful application of this innovative model has played a positive role in Hong Kong's fight against COVID-19.

Environmental Management Policy

In addition to the help of innovative technology in the early stage and support for project management, as a main contractor, we are committed to minimising the environmental impact of our construction works. In line with international environmental and energy management guidelines, we have formulated the Environmental Policy and Energy Policy to set out our environmental commitments and effectively manage environmental issues on site.

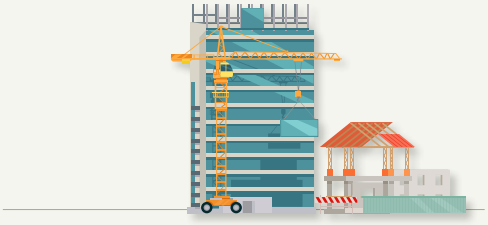
As a main contractor, we are committed to minimising the negative environmental impacts of our works.

Our Environmental Commitments	
Environmental Policy	**Energy Policy**
Comply with environmental laws and regulations Prevent environmental pollution Reduce construction waste Minimise the consumption of natural resources	Comply with energy related laws and regulations Ensure the availability of necessary resources to achieve objectives and energy targets Use energy-efficient products

Environmental Management System

CSHK has formulated a dedicated Safety and Environmental Protection Department to handle daily environmental matters in a more effective manner. In addition to overseeing the implementation of the Environmental Policy and Energy Policy at each project, the Department also assists other departments in environmental works, such as the Human Resources Department, Resource Department, and Administrative Department, and reports regularly to the Integrated Management Committee on its progress. At the site level, an integrated site management working group will be set up at each project according to the project content, which facilitates the implementation and management of on-site environmental protection.

CSHK has developed a series of management standards in accordance with the ISO14001:2015 Environmental Management System and ISO50001:2018 Energy Management System. In accordance with the requirements of the ISO14001:2015 Environmental Management System, we arrange for each site to carry out an Environmental Aspects Evaluation of its construction area every year to identify the Significant Environmental Aspects (SEA) and specify control measures for each of the SEA.



All construction sites of CSHK are required to implement the certified ISO14001:2015 Environmental Management System

To fulfil our environmental commitments, CSHK has defined six key environmental objectives for our construction sites, with quantitative annual targets for each objective. We regularly review the progress of each target and report to management the main reasons for non-achievement at certain sites and formulate appropriate solutions and improvement plans.

Reduction in timber consumption

Target in 2022

Below 125 cubic metres/ HKD 100 million turnover

98%

of sites achieved

Reduction in concrete wastage

Target in 2022

Below 5.5%

100%

of sites achieved

Reduction in rebar wastage

Target in 2022

Below 3.8%

100%

of sites achieved

Reduction in paper consumption

Target in 2022

Below 345 packs of A4 paper/HKD 100 million turnover

97%

of sites achieved

Water conservation

Target in 2022

Below 610,000 tonnes/ HKD 100 million turnover

98%

of sites achieved

Electricity conservation

Target in 2022

Below 205,000 kWh/ HKD 100 million turnover

100%

of sites achieved

To improve site conditions and environmental protection, we have formulated the Practical Guidelines for Site Health, Safety, Environmental and Epidemic Control Management, Environmental Management Procedures and Energy Management Procedures, which detail mitigation measures for various environmental aspects. To draw attention to on-site pest control and raise awareness among management personnel, we formulated the *Regulatory System Management Guidelines on Prevention of Mosquito Breeding on Construction Sites* in 2022.

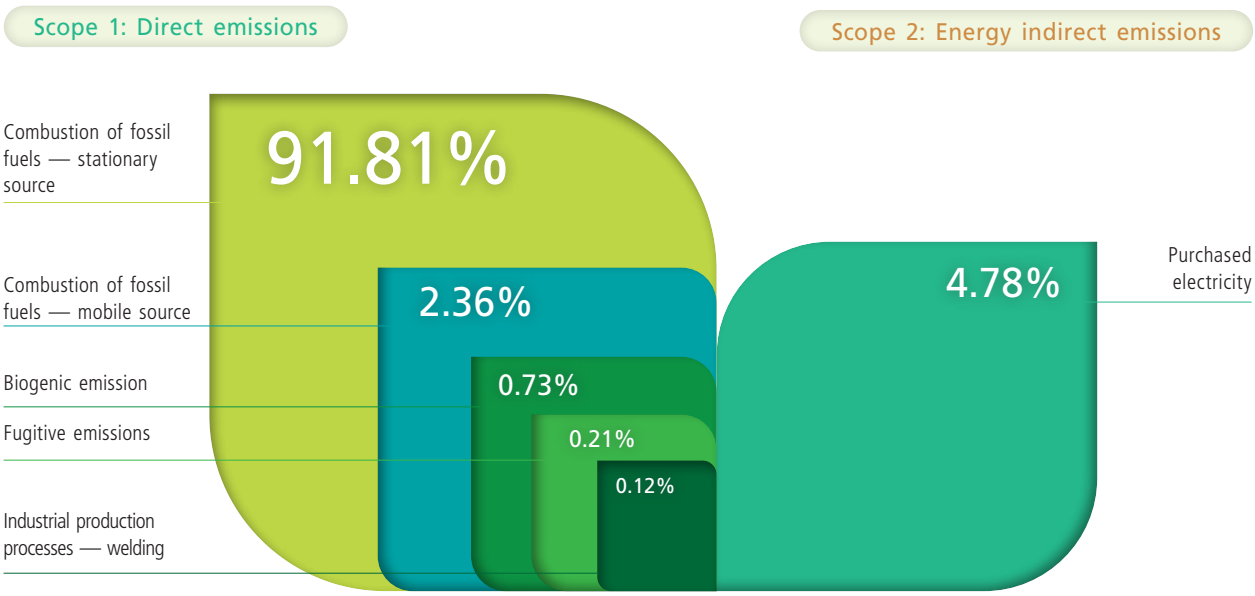
Responding to Climate Change

As a member of the construction industry, CSHK representing CSCI as a pioneer in low-carbon transition of Hong Kong's construction industry has been promoting the green transformation of the construction industry with the aim of sustainable development. In response to CSCI's carbon neutrality strategy and carbon reduction targets, CSHK has actively engaged in various carbon reduction initiatives to achieve the Group's short-term target of reducing carbon intensity by 25% by 2025 (from 2018 levels) and its long-term target of achieving carbon neutrality by 2060.

Carbon Reduction Measures

CSHK has been strengthening carbon reduction in all aspects, including project design, building material selection, construction, operation and maintenance, etc. Through various carbon reduction measures and effective energy management, we have achieved remarkable results. We are also aware of the importance of embodied carbon and are gradually improving our Scope 3 greenhouse gas disclosure. At present, the disclosure covers water usage and business air travel.

Total GHG emissions (Scope 1 & 2) in 2022



GHG

Total GHG emissions (Scope 1 & 2):

117,972.92

tonnes CO_2e

GHG

GHG emissions intensity (Scope 1 & 2):

3.17

tonnes CO_2e/HKD million

Site Electrification

Based on in-depth studies and analysis, we realised that construction sites generate massive carbon emissions that, in the long term, will exacerbate the climate change crisis. We have therefore spared no effort in promoting site electrification to create a green and sustainable future. We have also invested significant resources to enable grid connection as soon as possible or set up temporary transformer rooms to supply electricity. At the same time, we have introduced the latest Enertainer technology to replace traditional diesel generators, reducing carbon emissions at source and minimising air and noise pollution.

As of the end of 2022, we have introduced Enertainers to **8** sites, and have **136** electric machinery.

Enertainer

Enertainers offer exceptional energy storage capacity, making them ideal for powering site equipment with high power demand. In terms of site machinery, we are actively looking at alternatives to fossil-fuelled machinery and have introduced electric machinery into our projects to further drive the electrification of our sites. By the end of 2022, CSHK had a total of 136 electric machinery, including tower cranes, excavators, roof cranes and Enertainers. We have also improved the use of vehicles on site by replacing some contract vehicles with electric ones to reduce greenhouse gas emissions and improve roadside air quality. At the O·PARK2 site, for example, we purchased four electric vehicles to replace internal combustion engine vehicles.

Utilise Renewable Energy

We actively embrace renewable energy in our construction projects to improve energy efficiency and minimise environmental impact. In addition to meeting part of our electricity needs and reducing fossil fuel consumption, renewable energy helps control greenhouse gas emissions and supports our environmental goals. We seek to install solar panels in suitable locations on larger sites, such as rooftops of office buildings, car parks, entrance checkpoints, etc., to provide electricity for on-site use.

For example, at the Tseung Kwan O Desalination Plant project:

1,832 solar panels are installed

16% of the project's total energy consumption.

In addition, in projects we participate in the design process, we actively communicate with the client to encourage the replacement of semi-transparent facades with BIPV energy-generating glass walls. BIPV provides efficient energy storage and creates sustainable economic benefits through photovoltaic storage and grid integration. When sunlight strikes the curtain wall, the solar energy is absorbed and converted into electricity, which is then supplied to the building or fed into the grid. BIPV curtain walls also prevent the wall surface from overheating and reduce the need for air-conditioning, thereby reducing energy consumption.

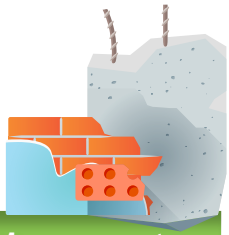
In 2022,
47 MWh
of renewable energy was generated on our construction sites.

BIPV Energy-generating Glass Walls at O·PARK2

Resources Management

Waste Management

Waste is one of the key environmental issues in Hong Kong. During the construction process, a large amount of construction waste is generated. Effective resource management can minimise waste generation and reduce operating costs. With this in mind, we have formulated the Environmental Policy and set annual environmental targets (see Environmental Management Policy for details) to minimise resource consumption, reduce waste generation and recycle and reuse waste materials wherever practicable. Meanwhile, to ensure compliant waste disposal and prevent illegal dumping, we formulated the Management Guidelines for the Disposal of Construction and Demolition Materials on Construction Sites, which specifies the disposal options and regulatory system for Construction and Demolition Materials disposal.

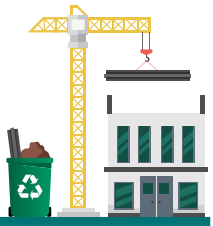


Resources Management

- Matching supply and demand of different materials on sites to reduces procurement
- Adopt C-SYS+ system to help manage and analyse resources usage
- Save materials by 25% with the adoption of DfMA method
- Reduce timber consumption by 80% with the application of MiC technologies

Reducing Waste Disposal

- Install food waste treatment equipment on sites
- Transport yard waste to Y·Park or furniture factories for upcycling
- Place waste sorting bins on sites
- Reduce concrete and rebar consumption
- Reduce construction wastes by 70% with the application of MiC technologies



Waste Recycling

- Ground surplus fill material is used for backfill in other sites.
- Install site crushers to process rock materials for concrete production
- Rebar management

Relocation of Sha Tin Sewage Treatment Works to caverns - site preparation and access tunnel construction
Upcycling of waste canal to rest room for workers

Water Management

We acknowledge the importance of water resources to the construction industry and are committed to minimising water wastage in the construction process. Our water primarily supplied from municipal and other water suppliers. Operations in Hong Kong and Macao do not face water shortages.

To enhance water efficiency, we have installed water storage tanks to harvest rainwater for reuse. In addition, water tanks are installed at the project's waste water treatment facilities outlets to collect treated effluent for dust suppression on site to minimise the consumption of water resources.

Total water consumption:

1,059,978.74

cubic metres

31% decrease from 2021

Water consumption intensity:

28.48

cubic metres/ HKD million

56% decrease from 2021

Reclaimed water:

17,599

cubic metres

Environmental Training

To ensure that we fulfil our ESG obligations in our operations, we are committed to raising the environmental awareness and expertise of our employees. To this end, we have conducted internal and external environmental training programmes.

Participants in environmental protection training: more than

1,200 person

Internal Training

- Environmental protection training at induction
- ISO50001:2018 Energy Management System training
- Environmental coordinator training
- Site-specific courses such as "Construction Noise Permit (CNP) Application"

External Training

- Professional training
- Training on Prevention of Mosquito Breeding on Construction Sites provided by Food and Environmental Hygiene Department experts

Site Worker Training

- Environmental protection training at induction
- Environmental toolbox talk
- Prevention of Mosquito Breeding on Construction Sites training

ALLIANCE

Alliance is crucial for driving the sustainable growth of the construction industry. Acknowledging the significance of partnerships, CSHK is dedicated to exploring collaborative opportunities and nurturing positive relationships with suppliers, subcontractors, and customers. By doing so, we aim to effectively advance the sustainable development of the industry while achieving mutual success.

Alliance

Sustainable Supply Chain

CSHK is committed to establishing a sustainable supply chain. We aim to ensure that all materials and products utilised in the construction process comply with environmental protection standards, promote building sustainability, and deliver top-notch services and high-quality products to our customers. To achieve this, we have established Procurement Policy and actively assessed our suppliers and sub-contractors, incorporating environmental and social responsibility factors into supplier selection, procurement processes and activities, with the ultimate goal of minimising the environmental impact of our supply chain. We also maintain constant and open communication with our suppliers and sub-contractors, providing them with training on sustainable supply chain practices, among other initiatives, to encourage and support their adoption of green practices. Through these collaborative efforts, we work towards fostering a green supply chain and contribute to the overall sustainable development of the construction industry.

We have prepared Procurement Policy and actively assessed our suppliers and sub-contractors, incorporating environmental and social responsibility factors into supplier selection, procurement processes and activities, with the ultimate goal of minimising the environmental impact of our supply chain.

Sustainable Supply Chain Performance in 2022

Sustainable procurement expenditure
HKD 142 million

Proportion of local procurement
97%

Percentage of timber purchased with FSC or PEFC certified
100%

Consumption of low-carbon concrete
86,000 cubic metres

Consumption of sustainable steel bar
2,600 tonnes

Consumption of carbon fixation bricks based on CCUS technology
64,837 pieces

Percentage of generators with QPME label
100%

Consumption of B5 biodiesel
6,856,112 litres

Electrified machinery and electric vehicles
152 units

Sustainable Building Materials

To achieve net-zero carbon emissions from construction, embodied carbon, which specifically means carbon emissions from building materials, is a major concern. In recognition of this, CSHK has been actively promoting the adoption of sustainable building materials with the aim of reducing carbon emissions, saving resources and mitigating the environmental impact caused by the construction sector.

CSHK adopts the following sustainable building materials:

Carbon fixation brick

- By leveraging CCUS technology, a revolutionary carbon sink solution at the forefront of global innovation, we can efficiently store and utilise waste carbon dioxide captured by energy companies, which help manufacture low-carbon precast concrete bricks
- Each cubic metre of CCUS-based bricks can absorb 61 kilograms of CO_2 equivalent

Potentially reduce 78% of carbon

Low carbon reinforced steel bar

- 100% recycled content
- Reduce energy use by 74% and lower air pollution by 86% compared to traditional blast furnace processes

Potentially reduce 67% of carbon

Green concrete

- Replace 60% of cement with GGBS
- GGBS is an active by-product of the steel melting process with ultra-low carbon emissions

Reduces carbon emissions by 53%

Sustainable timber

- 100% FSC/PEFC certified timber in current purchase

Ensuring effective supplier and sub-contractor management to uphold our commitment to delivering high-quality services as agreed in the contract

In addition to CSHK's internal management, suppliers and sub-contractors play a crucial role as our valued partners. Ensuring their stability and sustainability is vital to achieving our two key service objectives: providing quality services and products per the contract, as well as promoting green building practices. To effectively manage our supply chain, we carefully select reliable suppliers and maintain strong relationships with those who comply with ethical business practices in order to deliver exceptional products and services to our customers. We have implemented various policies, including Material Procurement Procedures, Procurement Policies, and Supplier Code of Conduct, which undergo regular review and continuous improvement. The following measures are implemented in our supply chain management:

Supplier List

- Suppliers of quality, safety and health, and environmental protection related materials should complete the Supplier Registration Form before being included in the supplier list
- Decide whether to include a supplier in the supplier list based on its capability, reputation, and past service performance
- Insist on "centralised procurement" and form long-term partnerships with suppliers included in the list, thus enhancing our competitiveness in the market
- Based on the assessment results, unqualified suppliers will be removed from the list, and such suppliers will not be selected.
- Any supplier that is once removed from the Supplier List must receive the approval of the General Manager of the Resource Department for reinstatement

Supplier Assessment

- Assess the management and compliance management performances in terms of quality, environment, and health and safety when approaching new suppliers
- Potential suppliers are required to achieve satisfactory results before they can be included in the supplier list and start working with CSHK
- Conduct regular comprehensive assessment of all suppliers on the supplier list every year

Supplier Punishment

- Suppliers with poor performance shall be punished in accordance with the Supplier Disciplinary Review Form after taking into account the opinions of the construction site, and relevant engineering departments, and shall be notified in writing
- Supplier performance subject to punishment: continuous failure to supply on time and in quality, failure to meet contractual obligations, breach of business ethics, breach of current statutory safety and environmental requirements resulting in prosecution against CSHK, etc.
- Suspended suppliers will only be considered for reinstatement after the period of discipline on the premise that the supplier has demonstrated its improvement, assurance measures, and monitoring approaches

Supplier Chain Risk Assessment

- Regularly evaluates and analyses risks such as prices of major materials, project requirements, and market supply and demand, compiles analysis reports and develops relevant follow-up and control measures, so as to ensure that suppliers can provide services and products that meet market expectations and standards

Code of conduct for suppliers

Set out the code of conduct requirements for suppliers in the Supplier's Code of Conduct, including:

- Comply with the laws and regulations of Hong Kong to provide quality services and products in accordance with the contract
- Comply with the policies of CSHK, including quality policy, safety and health policy, environmental policy, energy policy, etc.
- Fulfil social responsibilities, protect the rights and interests of employees and ensure equal opportunities, prohibit child labour or forced labour, emphasise a culture of integrity and uphold good business ethics such as fair trade and competition
- Manage and supervise upstream suppliers and manufacturers to ensure the quality and on-time delivery of goods

We organise annual exchange sessions and conduct satisfaction surveys on our suppliers and sub-contractors to gauge their feedback and perspectives on our collaboration.

Communication with Suppliers and Sub-contractors

To ensure effective monitoring of site material utilisation and management, as well as the fulfilment of sustainability and corporate social responsibility by our suppliers, our Resource Department conducts regular visits to major suppliers to assess their implementation. During the Reporting Period, we visited no less than 10 key suppliers for on-site assessments and meaningful communication. Furthermore, we organise annual exchange meetings with our suppliers and sub-contractors and diligently conduct cooperation satisfaction surveys to gain valuable insights into their perspectives on our partnership. We proactively consider their suggestions and requests, striving to enhance and deepen our collaborative relationship.

Collaborating with Academic Institutions

CCUS Technology

We partnered with **Zhejiang University**, which focuses on the research and development of CCUS technology, and $CLEANCO_2$, a company based on the commercialisation of this technology, to produce carbon sequestration products for the first time in a commercial project utilising the "CLEANCARBON CO_2 Mineralization" technology process.

This process efficiently utilises and store waste carbon dioxide captured from the industry into the concrete building materials, and then create carbon fixation brick, a type of carbon fixation concrete.

CSHK hopes that both parties in this collaboration can capitalise on their strengths to actively promote carbon sequestration concrete building materials and technologies, providing a viable option for the development of low-carbon building materials in Hong Kong and Macao.

Dedicated to the internationalisation of the certification and promotion of the technology of carbon sequestration bricks originated from the Mainland, CSHK and $CLEANCO_2$ have signed a strategic cooperation agreement with O·PARK2 as a trial project. We cooperate in the technical assessment of carbon emission reduction from the carbon sequestration bricks, and will continue to promote the international application of the products through quality testing by laboratories in compliance with the international quality standards and certification system.

Currently, the carbon sequestration bricks have been applied to some of the walls of the project, and it is expected that the carbon sequestration bricks will be used in more construction projects in the future, contributing to the reduction of embodied carbon in building materials and the decarbonisation of buildings.

Pavement-Installed Solar Panel

While the use of solar energy has become increasingly prevalent, it still faces numerous limitations, especially the development of pavement-installed solar panel technology. In Hong Kong, the pavement-installed solar panel technology, have a unique opportunity for generating clean energy, however because of lacking local case studies, it is not widely adopted. CSHK is committed to promoting innovative construction technologies. We have collaborated with the **City University of Hong Kong** and the **Hong Kong Polytechnic University** to initiate pilot applications of pavement-installed solar panels. This partnership enable us to evaluate the practical effectiveness of pavement solar panels.

BIM-integrated Carbon Assessment

CSHK collaborate with the professional building information modelling (BIM) team at the **Hong Kong University of Science and Technology** to integrate BIM with the Construction Industry Council's Carbon Assessment Tool (CIC-CAT which aimed to accurately forecast carbon emissions throughout the construction phase of a project.

Quality Management

Implementing the Quality Management System to Bolster User Confidence

CSHK and its major subsidiaries have obtained the ISO9001:2015 Quality Management System certification, an internationally recognised standard. We understand the crucial role of construction quality in the industry and, as such, CSHK has consistently adhered to the quality management principle of "Do it right the first time and every time". We have established, implemented, and continually improved our quality management system in accordance with the ISO9001:2015 certification requirements, ensuring a better life for users with first-class projects.

Monthly Follow-up and Improvement On Quality Risk Management

We are committed to delivering construction works of the highest quality. With this goal in mind, we have developed the Project Construction Quality Risk Assessment and Management Work Guidelines to guide each project leader to inspect, manage and timely respond to potential project risks. It is mandatory for each site to regularly conduct inspections and assessments of the effectiveness of quality risk control measures on a monthly basis. Any issues identified must be reported in writing for further investigation and improvement.

Internal and external risk factors of CSHK

Requests and expectations of stakeholders (Including relevant stakeholders or stakeholder groups; owners or owner representatives; neighbours'; users etc.)

Site environmental risks including risks related to construction environment and geology

Material and sub-contractor management risks

Quality risk assessment factors

Construction information risks

Construction quality risks

Quality risks related to pre-construction preparation, expected completion processes and results

Finished product risks

Digitalisation of Project Quality Management

We have employed cutting-edge technologies, such as CIMS and intelligent engineering measurement technology, to digitalise project quality management. This enables us to dynamically monitor and analyse the project site in real-time, thereby enhancing project quality management and efficiency.

CIMS

Committed to blending construction and innovative technology, we have been promoting the application of CIMS to projects. CIMS, an intelligent collaboration system in quality, safety, and equipment, transmits and records information beyond the traditional method, creating better efficiency and quality. The construction managers can effortlessly access CIMS via mobile apps or computers,

instantly documenting problems discovered throughout the entire process, from project inspection to owner's acceptance. They also simultaneously require the subcontractor to follow up and track the progress.

Project inspection → Owner's acceptance → Problems found → Synchronise requests for follow-up → Real-time progress tracking

Digitisation

- Record tens of thousands of problems and complaints about quality, safety, process, and acceptance
- Prepare various data analysis reports on the results, and make them available through computer devices at any time
- Achieve paperless operation

Empowerment

- Project staff to check the progress
- Enable quality inspection, safety inspection, schedule management, materials management, and equipment inspection

Efficiency Enhancement

- Send information to all stakeholders of the project team in real-time
- Timely identify problems, rearrange work schedule, and effectively control potential risks
- Design a unique mark for each process, which automatically records each link; enable real-time access to process files

Intelligent Engineering Surveying Technology

By integrating of the Internet of Things, AI, cloud computing, BIM, and various other technologies, we are able to achieve real-time dynamic monitoring and analysis in different areas of the construction process. This enables the digitisation of measurements and facilitates more scientific and timely technical decisions to support the quality management of projects, ultimately increasing efficiency and productivity.

Tower Crane Mounted Camera Mapping and Monitoring System

Conventional measuring approach:

In typical construction site operations, levels are frequently utilised to measure the amount of concrete to be consumed. Nonetheless, the manual nature of these operations and the less precise devices often lead to deviations in the process. Consequently, this results in extra time and labour costs being incurred to repair or reconstruct the structure.

Tower crane mounted camera mapping and monitoring system

The tower crane's arm is equipped with a camera that automatically captures high-resolution images of a specified area. The images are automatically stitched together for image overlay and comparison on cloud/ local servers. The tower crane's camera mapping technology has a tolerance of three millimetres or less to ensure structural accuracy.

Aerial Photogrammetry

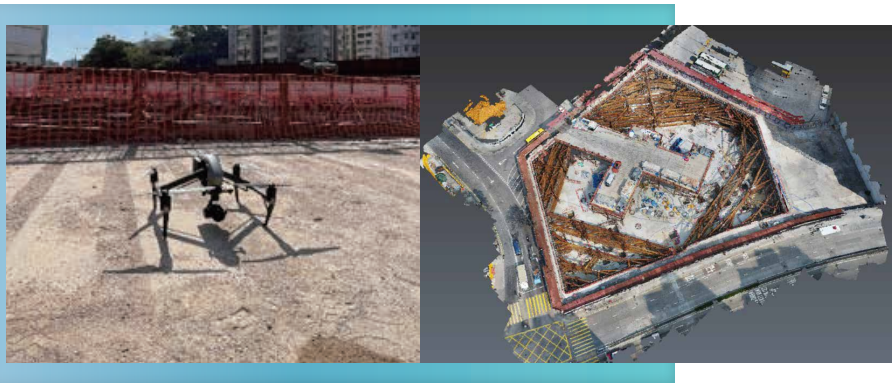
Conventional measuring approach:

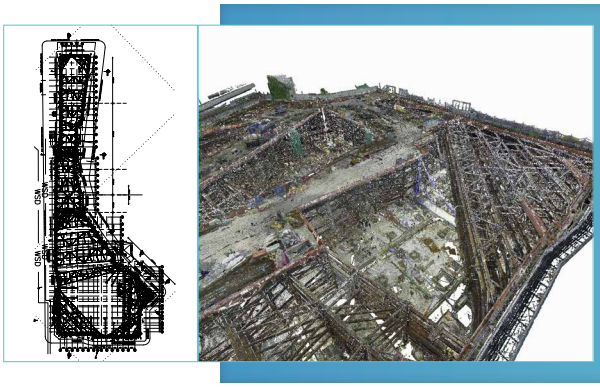
In manual measurement, additional manpower and time are needed, which hampers real-time remote monitoring of construction progress. Consequently, the efficiency of construction project quality management is compromised.

Aerial Photogrammetry:

The drone is capable of automatically capturing high-definition images from various angles to facilitate 2D progress comparisons at different stages. These images are then utilised to create centimetre-level 4D models, integrating them with the actual scenario to achieve quantitative measurements of length, width, depth, and volume. To effectively track project progress, the drone can be deployed for multi-point 360-degree panoramic imaging, enabling interactive displays of project progress.

Regular aerial photographs can record the ongoing progress of works and maintain accurate landform records.





Upon the completion of construction, aerial photography is employed to measure the site environment and update the as-built drawings for a thorough comparison between the actual construction and the original design drawings to ensure alignment and accuracy.

By selecting two sets of aerial photographs, staff members can conveniently compare the progress by dragging left and right on the screen.

Business and Professional Ethics

Compliance with Professional Ethics

A fair and compliant business environment forms the cornerstone of steady corporate development and lays the foundation for companies, employees, customers, and partners to trust each other. To foster a good corporate culture, we have formulated a number of policies and measures to regulate the integrity of our management personnel. For example, the responsible persons and key management personnel of all projects are required to sign the Project Integrity Commitment every year to promote a corporate culture of compliance and integrity in all projects.

In addition, to ensure professional quality management, we have established a quality management framework and set out the responsibilities and powers at all levels in the Quality Management Mannual. We also continued to organise publicity and promotional activities to communicate our quality system. We summarised the key points of the system and derived a 4X100 system, which stipulates that we must honour our commitments, stick to our goals, implement our measures, aim at continuous improvement, perform selfcheck on 100% of key processes. At both site and corporate level, we strive to implement professional quality management and ensure continuous quality improvement to create a better living environment for users.

In addition, to raise the awareness of integrity and honesty of all employees, we have set out in our Employee Handbook our code of ethics and discipline. Those policies and standards cover anti-corruption, anti-bribery, illegal gifting, conflict of interest and more. All employees are subject to strict compliance with the aforementioned policies and standards. In order to effectively monitor and prevent business malpractice, we have established a mechanism for reporting any misconduct to the Human Resources Department when employees detect suspicious behaviour. We assure strict confidentiality regarding the identity of all informants to safeguard them against unfair dismissal or any form of retaliation.

Training on Anti-Corruption

We firmly believe that continuous training can enhance the understanding of ethical risks and good practices of our employees. Therefore, we organise anti-corruption training on a regular basis specially focusing on our industry with the purpose of raising employees' awareness and competence in this crucial area.

Customer Communication and Privacy

CSHK places great importance on customer satisfaction. To achieve this, we continuously expand channels to communicate with customers and respond to their feedback, aiming to establish and maintain positive and harmonious relationships with customers. Any customer can give his or her feedback through letters, phone calls, and e-mails, among others. To deal with customers' opinions and complaints, we have implemented Customer Opinion and Complaint Handling Work Procedures. This procedural document outlines the scope of complaint handling, the responsibilities of the units concerned, and procedures for handling and documenting complaints. Staff members from departments, subsidiaries, and construction sites are required to classify complaints into three types: those from the owners, those from external parties, and those from the media. Meanwhile, they should take timely steps to handle complaints and describe in detail the follow-up results to continuously improve customer satisfaction.

During the Reporting Period, a total of 4,937 employees underwent thorough anti-corruption training, accumulating 4,937 training hours. These remarkable figures vividly demonstrate our unwavering commitment and determined stance in combatting corruption.

KEY PROJECTS

FOR HONG KONG

The construction industry is one of Hong Kong's pillar industries and plays a vital role in the city's economic development. As a member of the industry, CSHK spares no effort in delivering quality buildings and infrastructures to contribute to Hong Kong's urban development and modernisation.

Key Projects for Hong Kong

Taking root in Hong Kong for more than 40 years, CSHK has undertaken over 800 projects, including a wide range of high-quality residential housing estates, commercial buildings, public constructions, hospitals, schools, and other livelihood facilities. We walk hand in hand with Hong Kong's progress, side by side with local residents.

Green Building Catalogue

CSHK employs innovative technologies and sustainable construction methods wherever possible in our projects to maximise the sustainability of the structures. Below are the green building projects that CSHK has been involved in.

Green Building Standard and/or Rating	Name of Project	Developer
BEAM Plus New Buildings Version 1.2 — Platinum (Provisional)	Design, Build and Operate of Tseung Kwan O Desalination Plant	Water Supplies Department
	New Acute Hospital at Kai Tak Development Area	Hospital Authority
	Organic Resources Recovery Centre Phase 2	Environmental Protection Department
BEAM Plus New Buildings Version 1.2 — Gold (Provisional)	Sky Bridge connecting Terminal 1 and the North Satellite Concourse	The Airport Authority Hong Kong
	Redevelopment of Kwong Wah Hospital (Phase 1)	Hospital Authority
	Public Housing Development at Tuen Mun Area 54 Sites 3 & 4 (East)	Hong Kong Housing Authority
	Redevelopment of Kowloon Tsai Swimming Pool Complex	Leisure and Cultural Services Department
	Public Housing Development at Ching Hong Road North, Tsing Yi, Phase 1 and Phase 2	Hong Kong Housing Authority
	Public Housing Development at Hang Tai Road, Ma On Shan Area 86B Phase 1	Hong Kong Housing Authority
BEAM Plus New Buildings Version 1.2 (Registered)	Relocation of Sha Tin Sewage Treatment Works to Caverns	Drainage Services Department
	Public Housing Development at Lei Yue Mun Phase 4, at Yan Wing Street, Yau Tong	Hong Kong Housing Authority
	The Development of Hostel and Academic Building Complex at Hong Kong Baptist University	Hong Kong Baptist University
	Redevelopment of Our Lady of Maryknoll Hospital	Hospital Authority
	Residential Development at 1-11 Au Pui Wan Street Project, Fo Tan	Centralcon (Fo Tan) Company Limited
	Residential Development at NKIL 6575, Kai Tak	Macfull Limited
BEAM Plus New Buildings Version 2.0 (Registered)	Public Housing Development at Tung Chung Areas 109	Hong Kong Housing Authority
	Chinese Medicine Hospital	Architectural Services Department
	Government Chinese Medicines Testing Institute	Architectural Services Department
	Construction of Heritage Conservation and Resource Centre	Leisure and Cultural Services Department

Producing Potable Water Using Reverse Osmosis:

DESIGN, BUILD AND OPERATE OF

TSEUNG KWAN O DESALINATION PLANT

Water production capacity at

135,000

cubic metres in Phase 1

Supply

5%

of daily fresh water consumption in Hong Kong

Future water production capacity of

270,000

cubic metres/day

Climate Adaptation: Usher in the Era of Proactive Water Production in Hong Kong

The Tseung Kwan O Desalination Plant is the biggest livelihood project implemented by the Water Supplies Department through a DBO contract. Upon completion, the project will become the first reverse osmosis desalination plant in Hong Kong to come into operation, with a daily production capacity of 135,000 cubic metres of fresh water, which will satisfy about 5% of Hong Kong's fresh water demand, and will provide strategic water security for Hong Kong's optimisation of its water structure, balancing of its water scarcity, as well as the sustainable development of its economy and society. The project is expected to produce 270,000 cubic metres of fresh water per day upon full completion.

Reverse Osmosis, A Low-Energy Technology

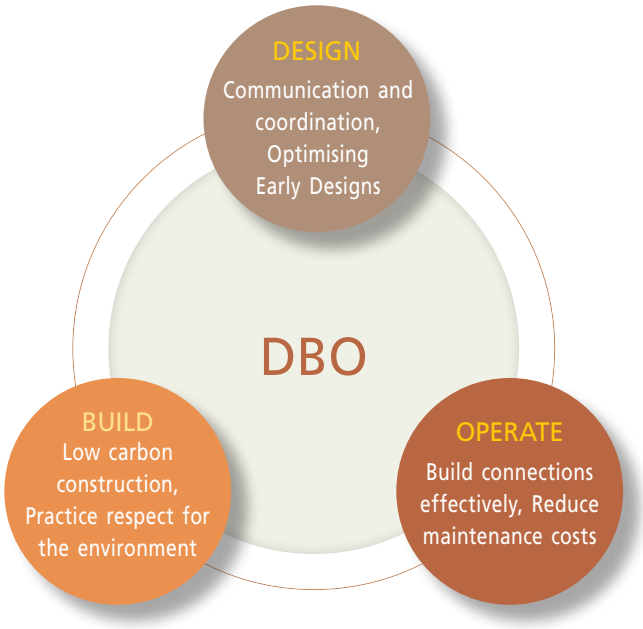
The Tseung Kwan O Desalination Plant employs the reverse osmosis technology to produce fresh water. Under high pressure, water molecules in seawater pass through the reverse osmosis membrane, while salts such as sodium ions and chloride ions are blocked, realising the separation of water and salt and producing fresh water for drinking. Industry-leading core equipment such as high-pressure pumps, reverse osmosis membranes, and high-efficiency energy recovery devices are used to greatly reduce energy consumption and increase the freshwater conversion rate.

Reverse osmosis technology is the first time being used in Hong Kong. It was a great challenge for the project team in terms of design, construction and delivery schedule.

Design, Build and Operation (DBO) Model to Promote Project Sustainability

The project team carried out the whole process of green building design for the DBO model, adhering to the principles of human-centeredness, site-specificity and resource conservation, effectively utilising natural light and natural wind to reduce the building's energy consumption, adopting green construction techniques, and enhancing the selection of green building materials to achieve a win-win situation in terms of economic benefits and ecological benefits

Designed to qualify for a BEAM Plus Platinum rating, the project focuses on low-carbon design and green construction. It adopts renewable energy and low energy processes, and fully embraces sustainable construction solutions such as MiC, DfMA and MiMEP. The overall assembly rate reaches 40%, practicing the concept of green and low-carbon construction.



The project involves seawater inlet and outlet of desalination plant. The project adopts micro tunnel land-to-sea pipe jacking construction scheme for water inlet and drainage pipe, considering that the water inlet is located in the coral protection area, the project team continuously marks and inspects the coral on the seabed for protection during the construction period, and innovatively adopts the two schemes of non-drainage receiving wells and prefabricated steel cofferdam receiving wells for the water inlet and drainage outlets to complete the retrieval of the equipment of the jacking machine in the sea, so as to effectively guarantee the progress of the construction and the safety, and also to greatly minimise the impacts of the cofferdam construction on the surrounding marine ecology and environment, and meanwhile, demonstrating the advantages of the DBO mode which is conducive to the saving of the construction time of the project.

Project Overview:

Developer: Water Supplies Department, Hong Kong SAR Government
Undertaken by: AJC Joint Venture
Contract: Design, Build and Operate
Commencement: December 2019
Estimated Completion: End of 2023

Extensive Use of Modular Structures to Achieve Low-carbon Production and Construction

In order to effectively shorten the construction cycle, strengthen quality control, enhance project safety and minimise carbon footprint, the project adopts sustainable construction solutions such as MiC, DfMA and MiMEP in all aspects, with an overall assembly rate of 40%. The MiC method was adopted for the site office and pedestrian screening corridors, while the 648 pieces of factory external wall panels, 255 pieces of nullahs and 80 pieces of staircases were constructed using the fair-faced concrete and the DfMA method without the need for painting and decorating. In addition, E&M equipment such as 12 sets of reverse osmosis units, 8 sets of energy recovery units, 2 sets of lime saturators and chemical dosing facilities were constructed using the MiMEP method.

Off-shore Assembly and On-site Installation of Large Support Components

Safe

12 reverse osmosis components

The project procures parts from all over the world and carries out prefabrication and assembly of reverse osmosis components at the Nantong Factory in Jiangsu Province, and then the large prefabricated components are transported by sea from Nantong, Jiangsu Province to the project site in Hong Kong, realizing the simultaneous construction of structural plant and mechanical and electrical equipment, which significantly shortens the construction cycle and effectively solves the construction difficulties such as shortage of labor resources, logistics and transportation, and site constraints, etc., and provides a high level of protection to the safety and quality.

Time-saving

5 large CO_2 storage tanks

16 metres in height, 4 metres in diameter and 48 tonnes in weight. Assembled off-site, the modular components are transported to the site by cargo ship before being transported by trailer to their permanent location for installation.

Sustainable Temporary Buildings to Extend Material Life

A comprehensive life cycle assessment was carried out during the design and planning phase to facilitate the adoption of sustainability measures to reduce resource consumption.

Solar power system

The project installed 1,832 solar panels for self-generation and self-consumption, generating 16% of the total energy used during the operation phase. During the construction phase, some of the solar panels were pre-installed in the temporary office buildings as a source of electricity for daily office use.

Permanent carriageway as temporary construction access

Completion of permanent carriageway construction in advance of project construction and as a means of access during construction would eliminate the need for additional construction and demolition of traditional temporary carriageway and reduce construction waste.

Technology for Environmental Monitoring during Construction

Sea, Land and Air Lenses

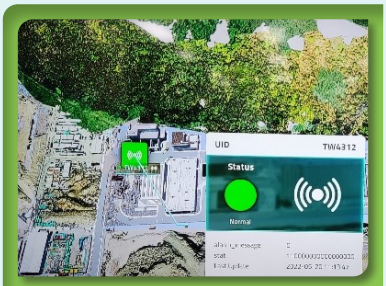
Underwater drones are used to inspect the silt screens and assist ecologists in monitoring coral growth on the seabed.

Aerial cameras are used to regularly monitor rare plant habitats around the site to reduce the workload on ecologists during site visits.

Tseung Kwan O Desalination Plant

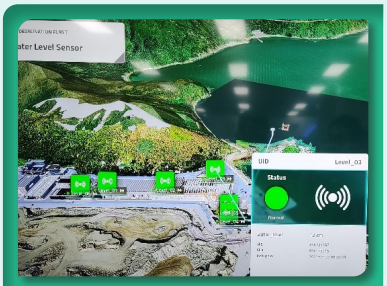
Smart Site Management & Real-time Environmental Data Analysis

The smart site management platform within the C-SMART system collects real-time data from environmental sensors for analysis.



Water tanker location sensor (GPS)

Indoor air quality sensor



Drainage water level sensor

Hong Kong's First Chinese Medicine Hospital:

CHINESE MEDICINE HOSPITAL AND GOVERNMENT CHINESE MEDICINES TESTING INSTITUTE

Gross floor area approximately

190,000

square metres

Designed with

400

beds

Expected to serve

310,000

outpatients per year

FIRST CHINESE MEDICINE HOSPITAL IN HONG KONG TO ADVANCE CHINESE MEDICINE DEVELOPMENT

The hospital will have 400 beds, 70 consulting rooms and 40 treatment rooms. It is expected to be able to serve about 310,000 outpatients per year.

As the main contractor for the Chinese Medicine Hospital and Government Chinese Medicines Testing Institute project, CSHK recognises the importance of the development of Chinese medicine to Hong Kong's healthcare system and is thus committed to assisting the Hong Kong Government in overcoming the architectural challenges of building Hong Kong's first Chinese Medicine Hospital. The hospital will have 400 beds, 70 consulting rooms and 40 treatment rooms. It is expected to be able to serve about 310,000 outpatients per year. As Hong Kong faces the pressing issue of an ageing population, Chinese medicine has emerged as an alternative medical option for many. Supported by the government's efforts to promote its growth, Chinese medicine has become an important part of our healthcare system, assuming a pivotal role in primary care.

Project Overview:

Developer: Architectural Services Department, Hong Kong SAR Government
Undertaken by: China State Construction Engineering (Hong Kong) Limited
Contract: Design and Build
Commencement: June 2021
Estimated Completion: Q2 2025

The Chinese Medicine Hospital is estimated to complete construction by 2025 and is expected to contribute to the healthcare reform in Hong Kong. The Government Chinese Medicines Testing Institute adjacent to the hospital will specialise in testing and scientific research on Chinese medicines, with a view to advancing Chinese medicine and promoting Chinese medicine culture. The project aims to bring quality healthcare services to Hong Kong residents, which is expected to contribute to the development of Chinese medicine in Hong Kong and the Greater Bay Area in the long run.

Building + Construction, BEAM Plus Platinum Rating

With a site area of approximately 60,000 square metres and a gross floor area of approximately 190,000 square metres the project commenced construction in June, 2021. The project is designed to achieve a BEAM Plus 2.0 Platinum rating and a China Green Building 2 Star rating, underscoring the sustainability of the project. The project was undertaken through a Design + Build approach. In the initial phases of planning and design, we held a series of meetings with the users and owners to facilitate the sustainability targets. Incorporating Chinese medical culture into the design, and aiming to raise public awareness of Chinese medicine, the project envisaged a unique community facility that serves as both a hospital and a museum.

Traditional Chinese Medicine Culture Delicately Woven into Architectural Design

In this project, Chinese culture and Chinese medicine elements are artistically incorporated in the architectural design. Designed along the concept of "Unity of Heaven and Man, the Way follows Nature", the project incorporates the natural terrain, mountains, gardens, as well as elements of virtue and moral cultivation to create a unique layout. The lobby of the Chinese Medicine Hospital features a circular ceiling design, with abstract depictions of the Yangtze River and the Yellow River on the floor, embodying the "Heaven, Earth and Man" concept inherent in Chinese medicine. In addition, the circular ceiling stages an interplay of light and shadow from different angles of sunlight throughout different months, symbolising how human beings align their routines with natural rhythms, poetically representing the harmony between man and nature. Located in the central hall, the "Floral Screen" draws inspiration from a hundred-drawer cabinet, ingeniously blending traditional Chinese architectural elements. It showcases the distinctive traits of traditional Chinese medicine and embodies the holistic philosophy inherent in Chinese medical practices, underlining the profound cultural legacy. In general, the design aims to showcase the culture of Chinese medicine in every corner, offering visitors a captivating cultural feast.

Introducing special cultural corridors to raise public awareness of traditional Chinese medicine, showcasing hospital and museum under one roof

As a key platform to popularise Chinese medicine in Hong Kong, the Chinese Medicine Hospital is distinguished by its special cultural corridors. Each floor features two display areas on Chinese medicine culture (horizontal) and Chinese medicine history (vertical), showcasing diverse cultural concepts and dynasties related to Chinese medicine.

Moreover, the Government Chinese Medicines Testing Institute houses five Chinese medicine specimen laboratories, namely Chinese Herbal Medicine Original Plant Specimens, Herbal Medicine Materials Specimens, Pickled Herb Specimens, Shredded Herb Specimens, and Proprietary Chinese Medicines Specimens. The layout of these laboratories is designed to be transparent, allowing visitors to observe research activities either through glass partitions or by directly entering the laboratories. The people-oriented design concept aims to make Chinese medicine knowledge more accessible, enabling individuals to incorporate it into their physical and mental well-being, and thus realise the practical and humanistic values of Chinese medicine.

Chinese Medicine Laboratory

Chinese Medicine History Area

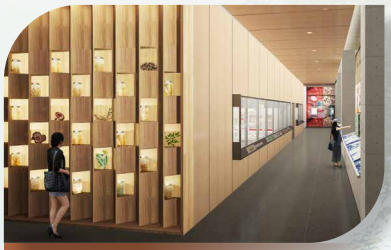
Showing its evolution in different dynasties

Education Corridor

Chinese Medicine Culture Area

Showing different concepts of Chinese medicine culture

Chinese Medicine Laboratory



Education Corridor

Presenting an intelligent hospital that delivers exceptional personalised medical services.

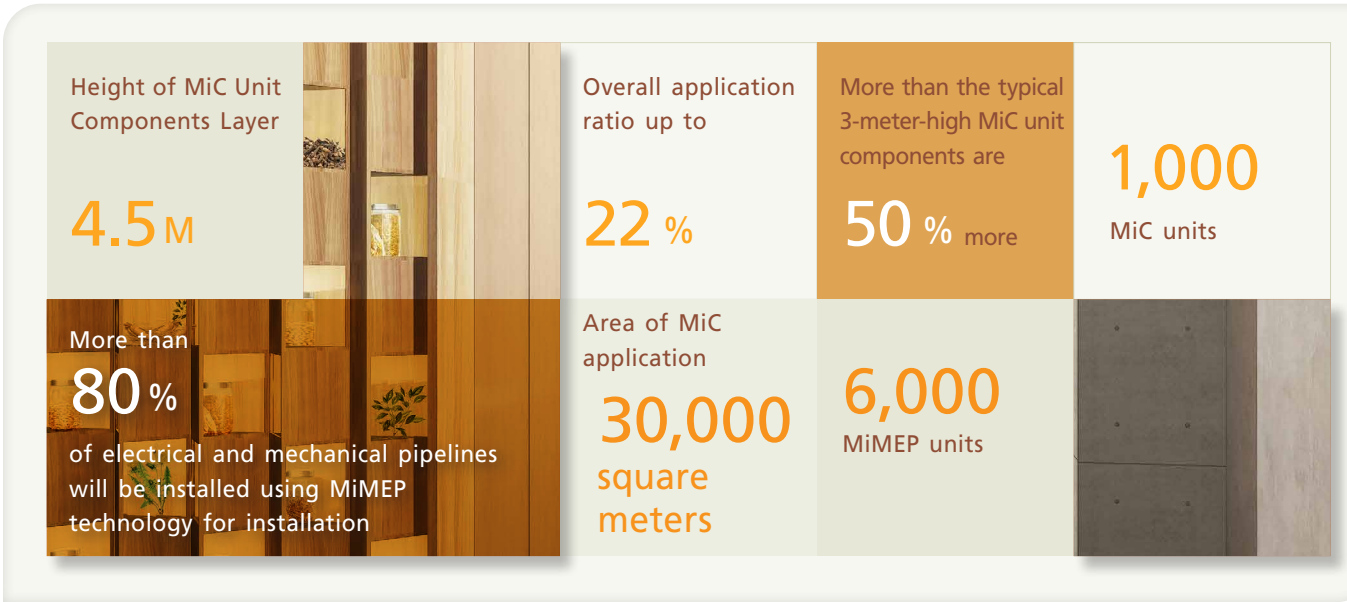
Besides the core mission of popularising Chinese medicine culture, the Chinese Medicine Hospital is dedicated to becoming a patient-centric healthcare facility delivering superior, secure, and convenient personalised medical services, evolving into an intelligent hospital that embodies the essence of Chinese medicine.

Applying our self-developed C-SYS+ System for efficient real-time site management

Implementing digitalised operations to enhance the efficiency of healthcare teams

Chinese Medicine Hospital will leverage automation systems, 5G technology, and Internet of Things to streamline inter-ward and inter-departmental operations, bolstering operational efficiency, minimising errors, and alleviating staff workload so as to cultivate an optimal working environment. The mobile app related will offer one-stop services, real-time analyses, and seamless arrangement of outpatient procedures. By accurately tracking and matching service demand and supply, the process will mitigate waiting times, eliminate unnecessary procedures, and enhance user-friendliness. This commitment ensures that both staff and patients receive the utmost care, exemplifying our patient-centric approach and dedication at this hospital.

FIRST MiC-BUILT MULTI-STOREY HOSPITAL IN HONG KONG



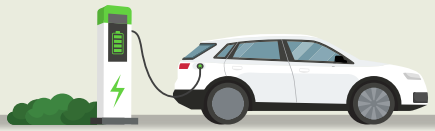
Pushing the boundaries of MiC technology as a green building innovator

Apart from being a catalyst in advancing local Chinese medicine services, education, training, and innovation, the Chinese Medicine Hospital is also a pioneer in promoting green building. This groundbreaking project marks Hong Kong's first multi-storey hospital constructed using MiC technology. The project team has successfully surmounted the challenges associated with MiC technology, such as storey height and location limitations, revolutionising its application in the construction of taller-than-average hospital wards and over 180 different room sizes. This remarkable technological breakthrough further is evidenced by the MiC units which reach up to 4.5 metres in height, a 50% increase compared to the conventional 3-metre units.

More than 1,000 MiC units are manufactured off-site, and the technology is applied to more than 30,000 square metres of floor space, which is also applied to a wide range of room types at an exceptionally high rate. The overall application rate is 22%, exceeding industry benchmarks.

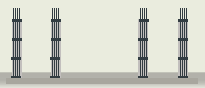
Furthermore, over 80% of the electrical and mechanical pipelines will be installed using MiMEP technology. Over 6,000 MiMEP unit components will be extensively integrated throughout corridors, wards, air-conditioning rooms, electrical rooms, and moxibustion rooms, among others. This implementation will greatly enhance project efficiency and safety, while minimising the generation of dust, noise, and construction waste – hence significantly reducing the project's environmental impact.

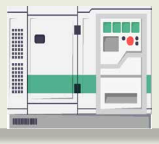
Sustainable Procurement,
Reducing Embodied Carbon



Purchase two electric vehicles to replace petrol-fueled vehicles

Purchase reinforcing steel bars with **97%** recycled content



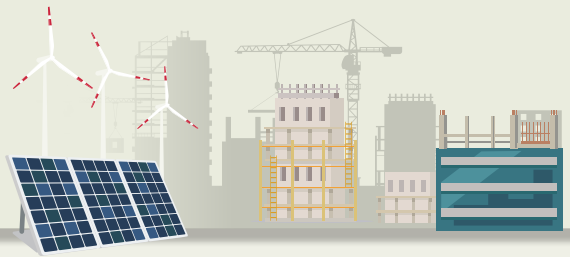


Purchase CLP and AMPD battery storage system to replace diesel generators

Purchase green concrete with **35%** PFA

Purchase nanocoatings for roofs to insulate heat and reduce air-conditioning consumption

Purchase wind and solar power generator for construction sites



Purchase BIPV system for site office and future building construction to generate electricity to supplement the existing power supply system

With its distinctive cultural heritage, environmentally friendly construction, and intelligent operations, the Chinese Medicine Hospital delivers comprehensive medical services to patients. It exemplifies a people's hospital that not only upholds its rich cultural legacy but also embraces future-oriented medical technologies.

Hong Kong's First Carbon Neutrality Construction Project:

ORGANIC RESOURCES RECOVERY CENTRE PHASE 2 (O·PARK2)

Reduced

4,396

tonnes of carbon in the construction process by 2022

Equivalent to the carbon absorption by

191,133

trees in one year

Carbon reduction rate reached

24%

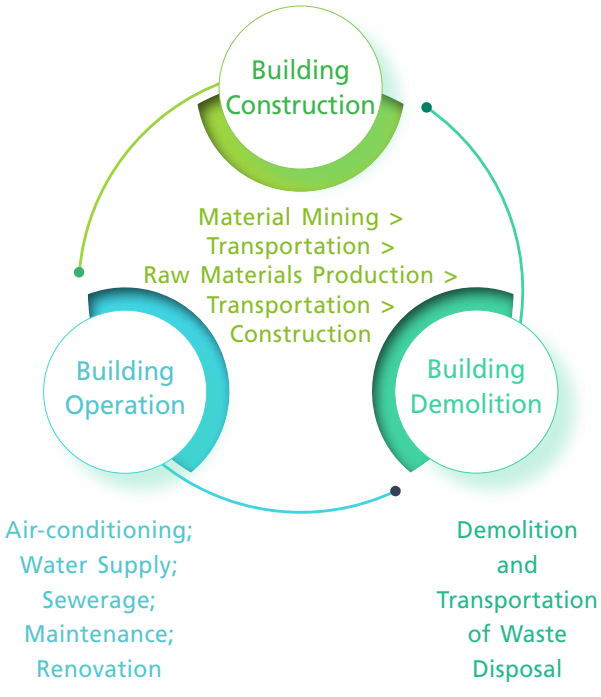
REDUCING EMBODIED CARBON WITH SUSTAINABLE BUILDINGS

The construction industry is an important stakeholder in Hong Kong's social development. As a member of this industry, we are duty-bound to promote Hong Kong's sustainability as we build projects for the city. Statistics show that buildings contribute approximately 39% of the world's carbon emissions, with the construction phase alone accounting for 11% of these emissions. The embodied carbon footprint during construction significantly impacts the journey and goals toward carbon neutrality. There is ample scope for optimisation in reducing carbon emissions throughout the construction and operational phases.

In O·PARK2, Hong Kong's first project to achieve carbon neutrality during construction, CSHK has embraced a comprehensive approach, which includes low carbon construction techniques and a technologically advanced project management system. Apart from committed carbon reduction efforts during the construction period, CSHK utilised carbon credits to offset the remaining carbon emissions, ultimately achieving carbon neutrality during project construction.

O·PARK2 has gained international recognition, with Hong Kong receiving the first United Nations Award — Champion Award of the UNIDO Global Call 2022, awarded by the United Nations Industrial Development Organisation.

Building Life Cycle



HONG KONG'S LARGEST ORGANIC RESOURCE RECOVERY FACILITY

Process up to
300
tonnes of source-separated organic food waste

Its surplus power can satisfy nearly
~5,000
households

Reduce
67,000
tonnes of carbon per year

Project Overview:

Developer: Environmental Protection Department, Hong Kong SAR Government
Undertaken by: AJA Joint Venture
Contract: Design, Build and Operate
Commencement: September 2019
Estimated Completion: Early 2024
Technology used: Anaerobic digestion to convert food waste into electricity and fertiliser

Roadmap to Carbon Neutrality in Construction Phase

Phase-in carbon neutrality target achieved: In 2022, we completed the first carbon trading for Organic Resources Recovery Centre Phase 2, reaching our phase-in carbon neutrality target up to June 2022.

1. Planning

- Make Commitment to carbon neutrality
- Verify carbon emission
- Formulate carbon reduction plan

2. Design

- Visualise project design using BIM technology

3. Construction

- Use green building materials
- Deploy electrification and renewable energy sources
- Applying the cloud platform for smart data collection and management for carbon neutrality

4. Realising Carbon Neutrality during Construction

- Participation in carbon emissions trading, purchase of carbon credits

Carbon reduction performance

Eco-friendly concrete:

replaced 60% of cement in concrete with ground granulated blast-furnace slag (GGBS)

Carbon fixation blocks:

based on CCUS technology, made low-carbon concrete blocks with CO_2 captured from energy companies, realising efficient CO_2 storage and utilisation

Wind energy:

wind power generation to supplement renewable energy supply

Bioenergy:

Biodiesel made from waste cooking oil

Electric vehicles:

supported and practised green transport

Low carbon reinforced steel bar:

Low carbon reinforced steel bar: made the rebar with **100%** recycled content

BIPV glass:

paired CdTe thin film solar cell module with integrated photovoltaic charging and energy storage machine for storing green electricity

Solar energy:

intelligent photovoltaic system to power offices and electric cars

Battery energy storage system (BESS):

collaborated with China Light and Power Company Limited to develop a battery storage system

80% cost saved

68% carbon reduced

VARIOUS INNOVATIVE TECHNOLOGICAL APPROACHES TO CARBON REDUCTION

The First Building in Hong Kong to use Negative Carbon Blocks

01

Advanced technology

CCUS technology is a cutting-edge technology to address climate change.

02

Hong Kong's first

Hong Kong's first application of CCUS technology in an engineering project

03

Powerful carbon absorption

Every 1 cubic metres of carbon fixation block can reduce 61 kilograms of CO_2 emissions, which is equivalent to the carbon absorption of a tree in three years.

04

Boundless promise

Globally recognised as one of the most promising carbon emission reduction technologies, it is expected to be applied widely around 2035

Self-developed carbon neutrality platform

Functions

This management platform with automated carbon accounting and display is built in accordance with the international standard ISO14064, enabling accurate traceability of carbon reduction measures throughout the entire process.

Features

This platform provides big data analysis of carbon emissions that helps O·PARK2 to develop carbon assets during the operation, thus realising carbon emissions management throughout the whole life cycle.

HKEX's first carbon trading projects

On October 28, 2022, Hong Kong Exchanges and Clearing Limited (HKEX) successfully launched CoreClimate, an international carbon market. CSHK proudly joined as one of the pioneering participants, marking a significant milestone in Hong Kong's history.

To achieve its carbon neutrality goal until June 2022, O·PARK2 actively purchased 24,389 tonnes of carbon credits from forestry projects. This commendable action has positioned Organic Resources Recovery Centre Phase 2 as the inaugural success story of CoreClimate's initial batch of carbon offsetting transactions.

APPENDIX

Awards and Association Membership

Key Awards

CSHK was recognised for its exceptional achievement in the O·PARK2 smart low-carbon building project. As a result, it received the prestigious accolade of Global Winner in the Smart Agriculture and Food category in the UNIDO Global Call 2022. Notably, CSHK was the sole construction company to secure a victory in this year's competition

CSHK has been awarded the Proactive Safety Contractor Award by the Hong Kong Construction Association, showcasing the industry's recognition of our safety measures

Organic Resources Recovery Centre Phase 2, constructed by CSHK, won the Gold Award in the Hong Kong Awards for Environmental Excellence (HKAEE). CCHK's achievement in attaining carbon neutrality during the project's construction phase has also been lauded by the industry

Tseung Kwan O Desalination Plant Phase 1 Project won the Hong Kong Construction Common Data Environment Award — Special Mention Award sponsored by the Construction Industry Council, highlighting the application of our integrated digital common platform in improving project management, collaboration, quality and productivity contribution

The Hong Kong Palace Museum Project, constructed by CSHK, received the Gold Award in the Best Infrastructure, Community, and Civil Building at the MIPIM Asia Awards 2022

Awards secured by companies

Award	Won by	Issued by
Global Winner of UNIDO Global Call 2022	China State Construction Engineering (Hong Kong) Limited	United Nations Industrial Development Organization
01 Gold Medal Awards — Outstanding Major Contractor	China State Construction Engineering (Hong Kong) Limited	HK01
01 Gold Medal Award — Outstanding Building Intelligence Technology Applications	Transcendence Company Limited	HK01
Company with Contribution to the 25th Anniversary of the Return of Hong Kong	China State Construction Engineering (Hong Kong) Limited	Metro Broadcast
Greater China Super Brand Awards 2022	China State Construction Engineering (Hong Kong) Limited	East Week
Leader "9+2" Guangdong, Hong Kong and Macao Greater Bay Area Best Enterprises Awards	China State Construction Engineering (Hong Kong) Limited	Hong Kong Ta Kung Wen Wei Media Group, the Hong Kong Chinese Enterprises Association, Greater Bay Area Fintech Promotion Association
The Hong Kong ICT Awards 2022	China State Construction Engineering (Hong Kong) Limited (C-SMART)	Organised by the Office of the Government Chief Information Officer (OGCIO) and hosted by Hong Kong industry associations and professional bodies
Corporate Innovation Index Award Ceremony and Forum 2022 – Corporate Innovation Index Top 20 Constituent Companies	China State Construction Engineering (Hong Kong) Limited	APIB, CUHK Business School
The 23rd Construction Safety Awards: Competition on Safety Culture — Excellence Award for Best Safety Culture Subcontractor	China State Construction Engineering (Hong Kong) Limited	Occupational Safety & Health Council
Special Commendation 2021–2022 – Outstanding Carbon Neutrality Construction Company	China State Construction Engineering (Hong Kong) Limited	Hong Kong Economic Times
LEVEL 3 Label	China State Construction Engineering (Hong Kong) Limited	Hong Kong CarbonCare InnoLab
CarbonCare® Label	China State Construction Engineering (Hong Kong) Limited	Hong Kong CarbonCare InnoLab
HKCA Construction Safety Award	China State Construction Engineering (Hong Kong) Limited	Hong Kong Construction Association
HKCA Active Construction Safety Promotion Contractor Award	China State Construction Engineering (Hong Kong) Limited	Hong Kong Construction Association

Membership

Association	Member	Membership
Hong Kong Green Building Council	China State Construction Engineering (Hong Kong) Limited	Bronze Sponsor
China Civil Engineering Society	China State Construction Engineering (Hong Kong) Limited	Member
China Association of Building Energy Efficiency — Green Hospital Professional Committee	China State Construction International Medical Industry Development Co., Limited	Executive member
Cleanrooms and Associated Controlled Environments and Laboratory Professional Committee of China Association for Engineering Construction Standardization	China State Construction International Medical Industry Development Co., Limited	Executive member
Hong Kong Federation of Electrical And Mechanical Contractors Limited	China State Mechanical & Electrical Engineering Limited	Member
The Hong Kong Air Conditioning and Refrigeration Association Ltd.	China State Mechanical & Electrical Engineering Limited	Member
Hong Kong Electrical Contractors' Association Ltd.	China State Mechanical & Electrical Engineering Limited	Permanent board member
The Association of Electrical and Mechanical Engineering (HK) Ltd.	China State Mechanical & Electrical Engineering Limited	Member

Overview of Key Performance Indicators

Key Performance Indicators in 2022

Environmental Performance

Air Emissions[2]

Air pollutants	Emissions in 2022	Unit
Nitrogen oxides (NOx)	2,896,847.60	tonne
Sulphur oxides (SOx)	190,495.35	tonne
Respirable suspended particulates	203,633.29	tonne

Greenhouse Gas Emissions[3]

Scope	Source of emissions	Emissions in 2022		Unit
Scope 1: Direct emissions[4]	Combustion of fossil fuels – stationary source	108,314.43	112,335.09	tonne of CO_2e
	Combustion of fossil fuels – mobile source	2,783.31		
	Fugitive emission	244.80		
	Industrial production processes – welding	136.75		
	Biogenic emission	855.79		
Scope 2: Energy indirect emissions	Purchased electricity	5,637.83	5,637.83	tonne of CO_2e
Total GHG emissions (Scope 1 & 2)		**117,972.92**		**tonne of CO_2e**
Total GHG emissions (Scope 1 & 2, by revenue)		**3.17**		**tonne of CO_2e/HKD million**
Scope 3: Other indirect emissions[5]	Water Consumption	454.48	454.48	tonne of CO_2e
	Air business travel	0		
Total GHG emissions (Scope 1, 2 & 3)		**118,427.40**		**tonne of CO_2e**
Total GHG emissions (Scope 1, 2 & 3)		**3.18**		**tonne of CO_2e/ HKD million**

[2] Sources of air emissions include diesel generator and vehicle emissions, with reference to AP-42: Compilation of Air Emissions Factors published by the U.S. Environmental Protection Agency for diesel generator emission factors, and EMEP/EEA Air Pollutant Emission Inventory Guidebook — 2016 published by the European Environmental Agency for vehicle emission factors.

[3] The quantification process and emission factors referenced the Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong compiled by the Environmental Protection Department and the Electrical and Mechanical Services Department of Hong Kong, SME Carbon Audit Toolkit compiled by the University of Hong Kong and the City University of Hong Kong, and international standards such as ISO14064–1 and the GHG Protocol.

[4] Including emissions from fire suppression systems and refrigerants at our operations during the Reporting Period. Fugitive GHG emissions from the use of HFC-R410a, one of the controlled substances in Annex A of the Montreal Protocol, are about 0.17 tonnes of CFC-11 (trichlorofluoromethane) equivalent.

[5] The GHG emission from water consumption only includes those produced from the operations in Hong Kong.

Energy Consumption

Type	Consumption in 2022	Unit
Gasoline	6,355.64	MWh
Diesel	42,807.85	MWh
B5 biodiesel	354,705.67	MWh
LPG	307.67	MWh
Acetylene	560.04	MWh
Purchased electricity	12,675.21	MWh
Total energy consumption	**417,412.08**	**MWh**
Energy intensity (by revenue)	**11.22**	**MWh/HKD million**
Renewable energy	**46.51**	**MWh**

Waste Generation

Type		Waste Generated in 2022	Unit
Hazardous waste generated			
Hazardous waste — Handled by qualified contractor		4.84	tonne
Hazardous waste — Recycled		1.60	tonne
Total hazardous waste		**6.44**	**tonne**
Hazardous waste intensity (by revenue)		**0.00017**	**tonne/HKD million**
Non-hazardous waste generated			
Construction waste	Disposal at landfill	60,421.83	tonne
	Recyclable waste	33,638.13	tonne
	Recycled as concrete aggregate	562,227.02	tonne
	Recycled as filler	444,455.70	tonne
	Yard waste	241.41	tonne
	Disposal at public fill bank	6,941,260.85	tonne
Other non-hazardous waste	Disposal at landfill	35,637.69	tonne
	Recycled	675.27	tonne
Total non-hazardous waste		**8,078,557.90**	**tonne**
Non-hazardous waste intensity (by revenue)		**217.08**	**tonne/HKD million**
Non-hazardous waste disposal intensity (by revenue)		**2.58**	**tonne/HKD million**
Recycling rate		**99%**	

Water Consumption and Sewage Discharge

Type	Consumption/Discharge in 2022	Unit
Water consumption		
Total water consumption[6]	1,059,978.74	cubic metre
Water consumption intensity (by revenue)	28.48	cubic metre/HKD million
Sewage discharge		
Surface water (Direct discharge into natural water bodies (sea, rivers or lakes) after treatment in sewage treatment facility)[7]	159,887.00	cubic metre
Discharge into stormwater drains after connecting with the municipal pipeline network	349,713.13	cubic metre
Discharge into communal sewers after connecting with the municipal pipeline network	63,731.42	cubic metre
Direct seawater discharge (after treatment at sewage treatment facilities) into the sea	176,336.00	cubic metre
Total water discharge	749,667.55	cubic metre
Water discharge intensity (by revenue)	20.14	cubic metre/HKD million
Water reused		
Total water reused[8]	17,599.00	cubic metre

6 Including drinking water provided by CSHK to contractors on site.

7 Including wastewater produced during construction at construction sites; relevant wastewater has been treated by on-site sewage treatment machines (settlement of suspended solids and neutralisation) and discharged into stormwater drains in accordance with standards and requirements stipulated in the sewage license.

8 Reused at CSHK's construction sites and not used by other organisations.

Raw Materials Consumption

Type	Consumption in 2022	Unit
Supplied by CSHK		
Concrete	1,182,293.12	cubic metre
Cement mortar	14,792.30	cubic metre
Reinforced steel bar	199,291.70	tonne
Steel beams	22,714.18	tonne
Iron sheet piles	7,890.24	tonne
Cement	188,537.00	tonne
River sand	120,387.89	tonne
Stones	338,704.38	tonne
Industrial oxygen	72,287.60	tonne
Steel pipe	2,811.10	tonne
FSC and PEFC certified timber purchased	9,571.00	tonne
Paper	153.83	tonne

Social Performance

Employment

	Type		2022	Total in 2022
Current employees[9]	Gender	Male	4,222	5,403
		Female	1,181	
	Geographical location	Hong Kong	5,403	
		Other	0	
	Age group	30 or below	1,093	
		31–40	1,537	
		41–50	1,185	
		51 or above	1,588	
	Employment rank	Senior	11	
		Middle	52	
		Executive	401	
		General employees	4,939	
Monthly paid employees	Gender	Male	3,121	3,802
		Female	681	
	Age group	30 or below	939	
		31–40	1,291	
		41–50	800	
		51 or above	772	
Permanent employees	Gender	Male	3,121	3,802
		Female	681	
	Geographical location	Hong Kong	3,802	
		Other	0	
Temporary employees	Gender	Male	1,101	1,601
		Female	500	
	Geographical location	Hong Kong	1,601	
		Other	0	
Full-time employees	Gender	Male	4,222	5,403
		Female	1,181	
	Geographical location	Hong Kong	5,403	
		Other	0	
Part-time employees	Gender	Male	0	0
		Female	0	
	Geographical location	Hong Kong	0	
		Other	0	

[9] Total number of employees as of 31 December 2022.

	Type		2022	Total in 2022
Non-guaranteed hours employees	Gender	Male	0	0
		Female	0	
	Geographical location	Hong Kong	0	
		Other	0	
Other workers[10]	–	–	14,600	14,600
Number of new hires	Gender	Male	967	1,204
		Female	237	
	Age group	30 or below	452	
		31–40	439	
		41–50	195	
		51 or above	118	
Rate of new hires[11]	Gender	Male	31%	32%
		Female	35%	
	Age group	30 or below	48%	
		31–40	34%	
		41–50	24%	
		51 or above	15%	
Number of employee turnover[12]	Gender	Male	810	978
		Female	168	
	Age group	30 or below	381	
		31–40	372	
		41–50	155	
		51 or above	70	
Rate of employee turnover[13]	Gender	Male	26%	26%
		Female	25%	
	Age group	30 or below	41%	
		31–40	29%	
		41–50	19%	
		51 or above	9%	

10 Including contractors/sub-contractors, interns, volunteers, and other workers whose workplace or work content is controlled by CSHK.

11 Rate of new hires = (Number of new hires in 2022/Number of current employees on 31 December 2022) × 100%.

12 Employee turnover refers to contracted employees who left CSHK at their own request.

13 The calculation of rate of employee turnover includes monthly paid contracted employees only. Rate of employee turnover = (Number of employee turnover throughout 2022/Number of monthly paid employees as of 31 December 2022) x 100%.

Health and Safety[14]

		Total in 2022
Employees	Number of work-related injuries	0
	Work-related injury rate per 1,000 persons	0
	Work-related injury ratio[15]	0
	Number of work-related serious injuries[16]	0
	Work-related serious injury ratio[17]	0
	Number of work-related fatalities	0
	Work-related fatality rate per 1,000 persons	0
	Lost days due to work-related injury or occupational diseases	0
	Lost day rate[18]	0
	Absent days	0
	Absentee rate[19]	0
	Number of working hours[20]	12,670,794
Other workers	Number of work-related injuries[21]	133
	Work-related injury rate per 1,000 persons	6.64
	Work-related injury ratio[15]	0.45
	Number of work-related serious injuries[16]	26
	Work-related serious injury ratio[17]	0.09
	Number of work-related fatalities	0
	Work-related fatality rate per 1,000 persons	0
	Lost days due to work-related injury or occupational diseases	0
	Lost day rate[18]	0
	Absent days	0[22]
	Absentee rate[19]	0
	Number of working hours[20]	59,265,120
Total	Lost time injury rate (LTIR)[23]	0.37

14 There were no employees or other workers with occupational diseases at CSHK during the Reporting Period.
15 Work-related injury ratio = (Number of recordable work-related injuries/Working hours) × 200,000.
16 Injuries where recovery to pre-injury condition is not possible or not expected within six months.
17 Work-related serious injury ratio = (Total number of work-related serious injuries/Working hours) × 200,000.
18 Lost day rate = (Total number of lost days/Original number of total working hours) × 200,000; total number of working hours measured by 8 hours per working day.
19 Absentee rate = (Number of absent days/Original number of working days) × 100%.
20 Estimated on the basis of the number of working hours per employee per working day, which is 7 or 8 hours per day depending on the location of the employee.
21 Including the number of work-related fatalities.
22 Some other workers are paid on a daily basis, and their work-related injuries are covered by insurance. Their employers would provide a replacement in the event of a work-related injury, so there were no lost work days.
23 LTIR = (Recordable work-related injuries of all workers/Working hours of all workers) × 200,000.

Training and Development[24]

			2022	Total in 2022
Training percentage	Gender	Male	100%	100%
		Female	100%	
	Employment rank	Senior	100%	
		Middle	100%	
		Executive	100%	
		General employees	100%	
Average training hours	Gender	Male	8.9	8.55
		Female	7.4	
	Employment rank	Senior	19.6	
		Middle	23.6	
		Executive	9.6	
		General employees	8.3	
Percentage of employees who received performance review[25]	Gender	Male	74%	70%
		Female	58%	
	Employment rank	Senior	100%	
		Middle	94%	
		Executive	99%	
		General employees	68%	

[24] Including turnover of employees who received training during the Reporting Period.

[25] Percentage of employees who received performance review = (Employees who received regular performance and career development reviews/ Current employees) x 100%.

Parental Leave

			2022	Total in 2022
Employees entitled to parental leave	Gender	Male	4,222	5,403
		Female	1,181	
Employees who took parental leave	Gender	Male	62	77
		Female	15	
Employees who returned to work after parental leave ended	Gender	Male	62	77
		Female	15	
Employees who were still employed 12 months after their return to work	Gender	Male	51	62
		Female	11	
Return to work rate[26]	Gender	Male	100%	100%
		Female	100%	
Retention rate[27]	Gender	Male	65%	58%
		Female	41%	

Supply Chain Management[28]

	Number in 2022
Number of suppliers	544

Community Investment

	Number in 2022	Unit
Total amount of investment	1,072,348	HKD
Number of participating volunteers	2,829	person time
Number of volunteer participation hours	15,069	hour

26 Return to work rate = (Total number of employees that did return to work after parental leave/Total number of employees due to return to work after taking parental leave) × 100%.

27 Retention rate = (Total number of employees retained 12 months after returning to work following a period of parental leave/Total number of employees returning from parental leave in the prior reporting period) x 100%.

28 CSHK applies standardised supplier recruitment, management and monitoring practices to all suppliers of the same kind to ensure fairness in the system.

GRI Standard Content Index

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
GRI 2: General Disclosures 2021	**Organization and Its Reporting Practices**			
	2–1	Organizational details	About CSHK	2
	2–2	Entities included in the organization's sustainability reporting	Reporting Scope	5
	2–3	Reporting period, frequency and contact point	About This Report The Group's Sustainability Report is issued on an annual basis. This report is published in September 2023.	5
	2–4	Restatements of information	There are no restatements of information in this Report.	–
	Activities and Workers			
	2–6	Activities, value chain and other business relationships	About CSHK Sustainable Supply Chain There are no significant changes in the location of suppliers, the structure of the supply chain or the relationships with suppliers.	2 56-57
	2–7	Employee	Social Performance	90-91
	2–8	Workers who are not employees	Social Performance The Group's construction projects involve workers who are not directly employed. These workers primarily work for contractors and/or sub-contractors.	90-91
	Governance			
	2–9	Governance structure and composition	Sustainability Management	14-15
	2–10	Nomination and selection of the highest governance body	Omitted due to confidentiality reason. As a private company, detailed information about the Board of Directors, the selection process and the composition of the Board are considered confidential and are not disclosed to the public.	–
	2–11	Chair of the highest governance body	Message from the Management	7
	2–12	Role of the highest governance body in overseeing the management of impacts	Sustainability Management	14-15
	2–13	Delegation of responsibility for managing impacts	Sustainability Management	14-15

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
	2–14	Role of the highest governance body in sustainability reporting	Sustainability Management	14-15
	2–15	Conflicts of interest	As a subsidiary of CSCI, the process for avoiding and mitigating conflicts of interest of our highest governance body follows that of CSCI. Please see CSCI's 2022 Annual Report for details: https://manager.wisdomir.com/files/409/2023/0427/20230427164501_17949800_tc.pdf	–
	2–16	Communication of critical concerns	CSHK's decision committees, each of which is participated in by the Group's senior management, meet regularly, with the heads of the relevant departments communicating with senior management on the relevant critical concerns during the meetings.	–
	2–17	Collective knowledge of the highest governance body	CSHK's senior management attends other seminars and/or reads materials on ESG topics to further enhance their expertise.	–
	2–18	Evaluation of the performance of the highest governance body	As a subsidiary of CSCI, the process for performance review and remuneration policies of our highest governance body follows that of CSCI. Please see CSCI's 2022 Annual Report for details: https://manager.wisdomir.com/files/409/2023/0427/20230427164501_17949800_tc.pdf	–
	2–19	Remuneration policies		–
	2–20	Process to determine remuneration		–
	2–21	Annual total compensation ratio	Annual total compensation ratio: 21.0 Annual total compensation change ratio: 0.80	–

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
	Strategy, Policies and Practices			
	2–22	Statement on sustainable development strategy	Message from the Management	7
	2–23	Policy commitments	Stakeholder Engagement Occupational Health and Safety System Talent Management Environmental Management Policy Compliance with Professional Ethics	8 22 29-30 45 63
	2–24	Embedding policy commitments	Occupational Health and Safety System Talent Management Environmental Management Policy Compliance with Professional Ethics	22 29-30 45 63
	2–25	Processes to remediate negative impacts	CSHK has formulated the Management System for Internal Reporting of Safety Incidents, which details the process for reporting and handling safety incidents. Complaint channels are also specified in the Employee Handbook.	–
	2–26	Mechanisms for seeking advice and raising concerns	As outlined in the Employee Handbook, employees can consult the appropriate departments with questions about different policies.	–
	2–27	Compliance with laws and regulations	In 2022, we did not violate any laws, regulations or voluntary agreements.	–
	2–28	Membership associations	Membership Associations	86
	Stakeholder Engagement			
	2–29	Approach to stakeholder engagement	Stakeholder Engagement	8-9
	2–30	Collective bargaining agreements	The Group does not have a collective bargaining mechanism.	–
GRI 3: Material Topics 2021	3–1	Process to determine material topics	Materiality Assessment Process	9
	3–2	List of material topics	Materiality Assessment Results	10-13
Technological innovation				
GRI 3: Material Topics 2021	3–3	Management of material topics	Green Building Technologies	39

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
Exploring carbon-neutral construction				
GRI 3: Material Topics 2021	3–3	Management of material topics	Environmental Management Policy Responding to Climate Change	45-46 47-50
GRI 305: Emissions 2016	305–1	Direct (Scope 1) GHG emissions	Environmental Performance	87
	305–2	Energy indirect (Scope 2) GHG emissions	Environmental Performance	87
	305–3	Other indirect (Scope 3) GHG emissions	Environmental Performance	87
	305–4	GHG emissions intensity	Environmental Performance	87
	305–5	Reduction of GHG emissions	Carbon Reduction Measures Environmental Performance	47-50
	305–6	Emissions of ozone-depleting substances (ODS)	Environmental Performance	87
	305–7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Environmental Performance	87
Waste Management				
GRI 3: Material Topics 2021	3–3	Management of material topics	Environmental Management Policy Resource Management	45-46 51
GRI 306: Waste 2020	306–1	Waste generation and significant waste-related impacts	Resource Management	51
	306–2	Management of significant waste-related impacts	Resource Management	51
	306–3	Waste generated	Environmental Performance	88
	306–4	Waste diverted from disposal	Environmental Performance	88
	306–5	Waste directed to disposal	Environmental Performance	88
Managing Labour Shortage				
GRI 3: Material Topics 2021	3–3	Management of material topics	Talent Management	29
GRI 401: Employment 2016	401–1	New employee hires and employee turnover	Social Performance	92
	401–2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Talent Management	29-31
	401–3	Parental leave	Social Performance	95

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
Establishing a Safety Culture at Work				
GRI 3: Material Topics 2021	3–3	Management of material topics	Occupational Health and Safety	22-24
GRI 403: Occupational Health and Safety	403–1	Occupational health and safety management system	Occupational Health and Safety System	22-23
	403–2	Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety System	24
	403–3	Occupational health services	Smart Safety	25-26
	403–4	Worker participation, consultation, and communication on occupational health and safety	Occupational Health and Safety System	24
	403–5	Worker training on occupational health and safety	Occupational Health and Safety Training	27-28
	403–6	Promotion of worker health	CSHK has a comprehensive healthcare program and has purchased employment insurance in accordance with the law. We also provide a variety of activities such as ball games and cooking workshops to promote the physical and mental health of our employees.	–
	403–7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety System	25-26
	403–8	Workers covered by an occupational health and safety management system	Occupational Health and Safety System	23
	403–9	Work-related injuries	Occupational Health and Safety System Social Performance	24 93
	403–10	Work-related ill health	Occupational Health and Safety System Social Performance	24 93

Sustainability Reporting Standards	Disclosures		Reference/Explanation/Reason for Omission	Page Number
Promoting Talent Development in the Industry				
GRI 3: Material Topics 2021	3–3	Management of material topics	Talent Cultivation	32-35
GRI 404: Training and Education 2016	404–1	Average hours of training per year per employee	Social Performance	94
	404–2	Programs for upgrading employee skills and transition assistance programs	Internal Training for Employees Subsidising Employee Acquisition of Professional Qualifications	34-35
	404–3	Percentage of employees receiving regular performance and career development reviews	Social Performance	94
Product Quality and Safety				
GRI 3: Material Topics 2021	3–3	Management of material topics	Quality Management	59-62
GRI 416: Customer Health and Safety	416–1	Assessment of the health and safety impacts of product and service categories	Quality Management	59-60
	416–2	Incidents of non-compliance concerning the health and safety impacts of products and services	In 2022, CSHK did not violate laws and voluntary agreements concerning the health and safety impacts of our products and services.	–
Protecting Customer and Business Data				
GRI 3: Material Topics 2021	3–3	Management of material topics	Customer Communication and Privacy	63
GRI 418: Customer Privacy 2016	418–1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	In 2022, CSHK did not receive any complaints concerning breach of customer privacy or loss of customer information.	–