



中國建築國際集團有限公司

CHINA STATE CONSTRUCTION INTERNATIONAL HOLDINGS LIMITED

(於開曼群島註冊成立之有限公司)
(Incorporated in the Cayman Islands with limited liability)

Leaping Towards

a Sustainable Future

2022 Sustainability Report



Building Happiness and *Leading the Trend*

Tide, born from the ocean, and
leads the **ocean** forward

With the guidance of China Overseas' Leading Culture, we go together with "one country, two systems" policy and resonate with the "reform and opening-up" of China

Hong Kong-rooted, China-based. Global-oriented,
Keep going beyond, Lead the trend, Stand at the forefront



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About the Group



ABOUT THE GROUP

China State Construction International Holdings Limited (“CSCI”) has been engaging in the construction business in Hong Kong since 1979 and was listed on the Main Board of The Stock Exchange of Hong Kong Limited (stock code: 3311) in 2005. Over the past nearly 40 years, CSCI and its subsidiaries (collectively, the “Group”) have developed extensive business operations in Mainland China, Hong Kong, Macau, and overseas markets. With the goal of becoming a new type of building industrialization group with strong international competitiveness, the Group adheres to a “technology-empowered” strategy and has developed a business model integrating “technology + investment + construction + asset operation”.

Group Structure



中國建築國際集團有限公司

CHINA STATE CONSTRUCTION INTERNATIONAL HOLDINGS LIMITED

Mainland China¹

- Infrastructure Investment
- Operation of Infrastructure Assets
- General Contracting and Prefabricated Construction
- Other Construction Related Business

Hong Kong²

- Building Construction
- Civil Engineering Works
- Foundation Engineering Works
- Mechanical and Electrical Engineering Works
- Investment driven Contracting Business
- Other Construction Related Business

Macau³

- Building Construction
- Foundation Engineering Works
- Mechanical and Electrical Engineering Works
- Investment driven Contracting Business
- Other Construction Related Business

Others⁴

- Curtain Wall System*
- Operation Management Business*

¹ Operate through China State Construction International Investment Limited ("CSCIL"), China Overseas Construction Limited ("China Overseas Construction"), China State Construction Hailong Technology Company Limited ("CSC Hailong"), and China State Construction International Asset Management Limited ("CSIAM") under CSC

² Operate through China State Construction Engineering (Hong Kong) Limited ("CSHK") under CSC

³ Operate through China Construction Engineering (Macau) Company Limited ("CCE Macau") under CSC

⁴ Operate through a listed subsidiary, China State Construction Development Holdings Limited ("CSC Development" Stock Code: 0830)



About the Group

Having years of experience developing the Guangdong-Hong Kong-Macau Greater Bay Area, the Group promotes business expansion, continuously optimises business structure and project quality, and maintains a steady growth in performance. Meanwhile, the Group is committed to scientific research and innovation, as well as utilizing industry-leading technological capabilities to develop high-quality projects, striving to become a leading global comprehensive construction and infrastructure investment firm.

There have been
182 new contracts
signed by the Group during
the Reporting Period,
totaling
HKD
160.73 billion

revenues of
HKD
101.98 billion
gross profits of
HKD
14.02 billion
representing a
31.9% and **17.0%**
increase compared with the previous year.

Through its building and infrastructure investment business, which contributes significantly to socio-economic development, the Group strives to contribute tangible economic benefit to the community, and it is dedicated to sharing the value it creates with all stakeholders.

Investment

Completed projects:
114



Building Construction:

Conducts construction work on private and public buildings, educational institutions, hotels, and commercial properties.

New signed projects:
182



Civil Engineering:

Undertakes civil engineering projects for the government, including bridge construction, tunnel construction, roads, harbor engineering (reclamation), site leveling, and water treatment plants.

Ongoing projects:
347



Energy:
177,639 mhw



Water consumption:
8,075,644 m³



Clean technology research and development⁵:
RMB 117.26 million



Infrastructure Investment:

The Group's core business is infrastructure and affordable housing investment, including highways, municipal engineering, public buildings, and affordable housing.

Number of approved patents:
165



Total number of employees:
15,346



Capital is raised through various channels, including corporate bonds, bank loans, sustainable linked loans, etc., and long-term cooperation with public and private customers, suppliers, subcontractors,



Mission
We manage happiness.

Philosophy
Quality assurance,
value creation

Corporate Spirit
Integrity, innovation,
transcendence,
"win-win"

Thermal Power Plant:

Mainly operates the Huanggu Thermal Power Plant in Shenyang.

Curtain Wall System:

Provides one-stop curtain wall and building exterior solutions for property development projects.

Bridge Management:

Mainly operates the Nanjing No.2 Yangtze River Bridge.

Prefabricated construction:

Provide modular integrated architectural design, research and development, production, general contracting, and testing solutions for the entire industry chain.

Economic Value

Direct economic value generated:

HKD 101.98 billion



Project cost:

HKD 87.96 billion



Salary and welfare expenses:

HKD 6.41 billion



Payment to the government:

HKD 2.29 billion



Payment to shareholders:

HKD 2.24 billion



Charitable donations:

HKD 1.177 million

⁵ Related technologies include industrial automation, reuse and recycling of waste, waste treatment, desalination and information technology optimization.

Message from the Chairman



Mr. Zhang Haipeng
Chairman and Executive Director
Sustainability Committee Member

While the global economy continues to recover in 2022, we cannot ignore the risks and challenges behind economic growth. Global energy and supply chain pressures remain high; frequent extreme weather and geopolitical instability lead to global market volatility; inflation is becoming increasingly severe; and the global economic recovery in the post-epidemic era is asynchronous, by which contradictions brought are increasingly prominent. All these put the sustainability of global economic and social development under great pressure. The construction industry, as an important industry contributing to global economic and social development, is also facing pressure and challenges. The Group is actively addressing these challenges and hopes to maintain its position as a leader and pioneer in the construction industry by improving its environmental, social, and governance performance, leading the industry and all parties and stakeholders in its value chain to achieve sustainability.

The Group is pleased to present to all stakeholders the 2022 Sustainability Report, which details its sustainability performance of the year. Upholding the sustainability vision of “developing into a world-class and sustainable corporation concentrating on international construction and infrastructure investment” and the sustainability mission of “leading the trend with innovation, building a life of happiness”, the Group promotes sustainability and shoulders social responsibilities, integrating green, low-carbon, talent development, good governance, and contribution to society the concepts of into its business and operations.

The Group actively promotes sustainability, proactively disclosing its social responsibility, balancing short-term and long-term objectives, formulating sustainability policies that align with its business goals, and strategically promoting related initiatives. It strictly adheres to laws, regulations, and relevant policies of the regions in which it operates, and follows the “green development” principle, the “people-oriented” management approach and the “safety and quality first” construction plan, actively participating in social welfare and maintaining good neighborly relations, creating maximum value for all stakeholders. The Group has formulated seven sustainability approaches, including Compliance, Green Development, People-oriented Approach, Safety First, Quality First, Supply Chain Management, and Community Care, and has established the relevant sustainability policies. To achieve its sustainability vision and mission, the Group has established five focus areas in its sustainability roadmap, namely safeguarding the environment, building a sustainable supply chain, nurturing and supporting talent, serving the community, and leading with innovation, and has set a series of goals and actions to guide its future sustainability efforts.

Message from the Chairman

The Group is actively responding to the national “dual carbon” goal and vigorously promoting carbon neutrality transformation. It is reducing carbon emissions generated during the construction process through different measures, undertaking emission reduction responsibilities, and accumulating low-carbon construction technology and experience to establish competitive advantages. Additionally, the Group is committed to promoting the use of lower-carbon and environmentally friendly design schemes and building materials in the construction industry chain, leading the industry towards a low-carbon future. Starting with the Hong Kong market, the Group established a governance structure under CSHK for carbon neutrality and carbon asset development, covering decision-making and implementation levels. This allows senior management to work together with subsidiaries and functional departments to coordinate and take responsibility for low-carbon construction. The Carbon Neutrality and Carbon Asset Committee of CSHK is responsible for promoting and managing the company’s low-carbon construction and carbon asset development matters at the decision-making level, fully supporting the development of the Hong Kong carbon trading market and laying the foundation for Hong Kong’s carbon neutrality. The Group’s first carbon-neutral project during the construction phase, Hong Kong Organic Resource Recycling Center Phase II (“O-Park 2”), won the global championship of the UNIDO Global Call 2022 organized by the United Nations Industrial Development Organization, providing a good demonstration and case for the world in sustainability.

The Group recognizes that science and technology innovation will deeply integrate into all aspects of society, making innovation the core driving force of enterprise development. The Group adheres to the development concept of “innovation, coordination, green, openness, and sharing” and uses the approach of “keeping close to development, deepening reform, independent innovation, and strengthening incentives” to implement science and technology management work, making technological progress provide the basis for the Group’s business expansion. The Group has independently developed the Carbon Neutral Cloud Platform and C-SYS+ system to improve management efficiency through digitalization, and actively adopts MiC and BIM technologies, promoting sustainability in business operations, project quality, construction safety, environmental protection and carbon emissions reduction.

The Group continuously strengthens its corporate governance performance to maintain high standards of business ethics, a healthy corporate culture, and good corporate governance principles in order to enhance its international sustainability rating. For six consecutive years, the Group has been selected as a constituent stock of the FTSE4Good Index. In 2022, the Group was awarded the “2022 Environmental Leap Forward Award” by the CDP Global Environmental Information Research Center for the first time, reflecting the Group’s industry-leading management capabilities in sustainability issues such as climate change.



GOING FORWARD, THE GROUP WILL CONTINUE TO PRIORITIZE THE IMPLEMENTATION OF LOW-CARBON BUILDING TECHNOLOGIES IN ALL ITS PROJECTS, WHILE ALSO FOCUSING ON STRENGTHENING ITS CORPORATE MANAGEMENT SYSTEM, ENHANCING THE CONSTRUCTION OF TALENT TEAMS, AND DEVELOPING AND APPLYING INNOVATIVE TECHNOLOGIES TO ITS OPERATIONS. BY DOING SO, THE GROUP IS COMMITTED TO TRANSITIONING TO A CARBON-NEUTRAL FUTURE, ACHIEVING THE DOUBLE CARBON GOAL, AND LEADING THE INDUSTRY TOWARDS A SUSTAINABLE FUTURE THROUGH ITS EXEMPLARY SUSTAINABILITY PERFORMANCE.



- 2022 Environmental Leap Forward Award



Road to Carbon Neutrality





Facing the Carbon Strategy for the Future

The Intergovernmental Panel on Climate Change (IPCC) has stated in its five recent large-scale scientific assessments that global temperatures have risen by approximately 1.0°C over the past century, largely due to human activity. According to reports from international organizations such as the Global Adaptation Commission, climate change disasters will cause global economic losses of over 300 billion U.S. dollars in 2020. In addition, over 120 million people will fall into poverty by 2030 due to climate change. Based on these statistics, climate change appears to be an urgent and severe crisis that requires a collaborative effort on the part of all humanity to be addressed. A total of 56 countries, accounting for almost 70% of global emissions, have announced their intention to reach carbon neutrality by the middle of this century to address the challenges of climate change. To ensure sustainability and long-term prosperity of human society, countries will accelerate the promotion of low-carbon and green industrial revolutions. As a result of the green and low-carbon transformation, there is now a global trend and a new high ground for economic, technological, and institutional competition in the future.

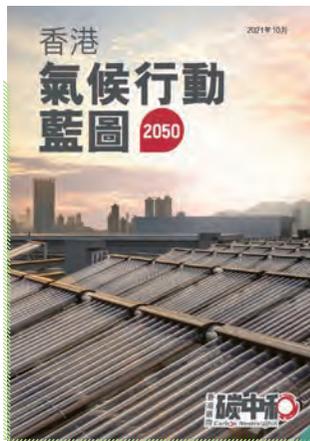
China has successively issued the “State Council’s Notice on Printing and Distributing the Action Plan for Peaking Carbon Emissions Before 2030” and the “Policy and Action on Climate Change in China (2021)”, which clearly define the goals and specific action plans for peaking carbon emissions before 2030 and achieving carbon neutrality before 2060. Additionally, the Hong Kong Special Administrative Region government has released several long-term environmental plans, including the “Climate Action Plan 2050” and “Clean Air Plan 2035”, as well as the “Resource Circulation Plan 2035” and “Roadmap for Popularizing Electric Vehicles”. These initiatives seek to promote the development of new energy technologies and low-carbon technologies, achieve carbon neutrality by 2050, and assist in reaching the national “dualcarbon” target.



State Council’s Notice on Printing and Distributing the Action Plan for Peaking Carbon Emissions Before 2030



Policy and Action on Climate Change in China (2021)



Climate Action Plan 2050



Clean Air Plan 2035



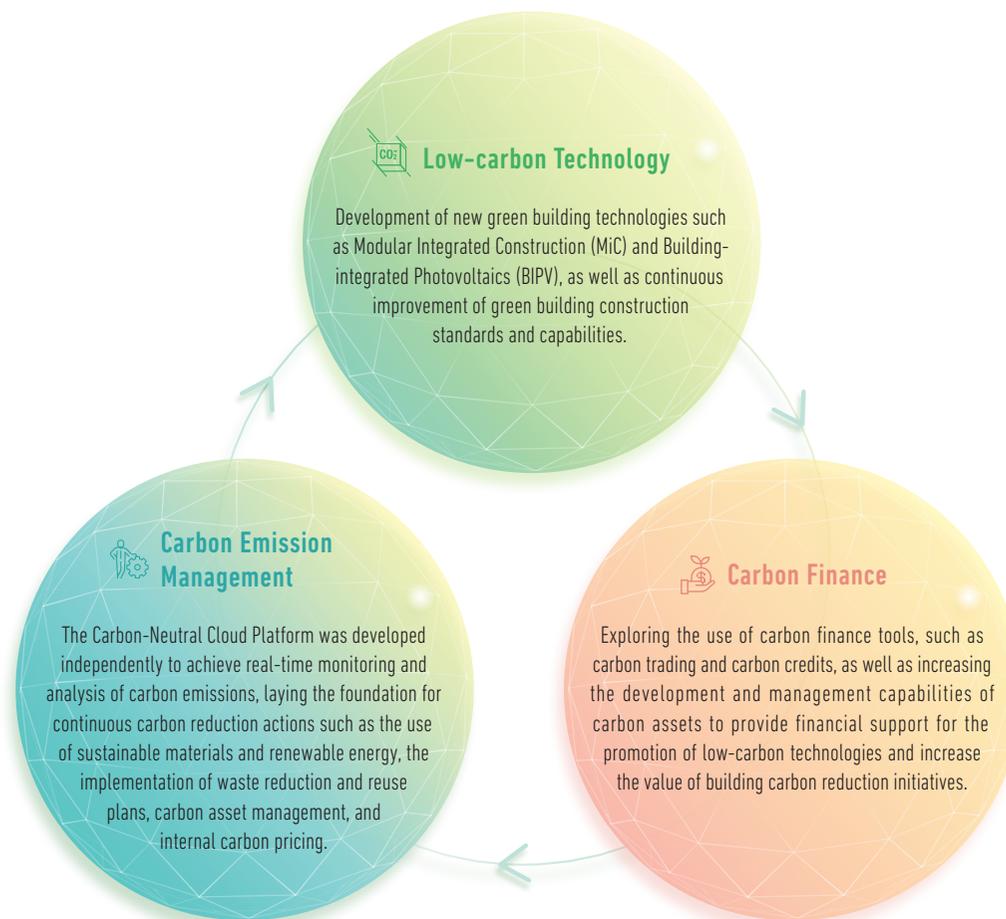
Resource Circulation Plan 2035



Roadmap for Popularizing Electric Vehicles

Road to Carbon Neutrality

In the context of the global trend of green and low-carbon transformation and the historical process of carbon peaking and carbon neutrality, enterprises play an important role in implementing low-carbon strategies. Construction industry carbon emissions account for 40% of the global total and 50% of China's total. As a leading construction company, our transition to a low-carbon economy presents both challenges and opportunities. Although it faces an increasingly strict regulatory environment and the gradual expansion of carbon pricing mechanisms, it also has significant opportunities to reduce energy costs, expand business models, and enhance corporate competitiveness. To achieve a successful transformation towards a low-carbon economy, the Group has been laying out its strategy since the early stage, researching market trends, investing resources to better respond to changes and promote the development of low-carbon products, gradually establishing carbon strategies that are consistent with the company's vision, business goals, and values, and advancing step by step towards the goal of carbon neutrality, from scientifically assessing its own carbon emissions, strengthening carbon data management, to research and development and promotion of low-carbon technologies, and actively participating in the carbon market.



CO₂

Low-carbon Technology

The Group is committed to developing and applying new building technologies, vigorously expanding the market for prefabricated buildings, and gradually applying MiC in projects in the Guangdong-Hong Kong-Macau Greater Bay Area since 2018. The MiC allows the construction site to quickly complete the entire construction project by assembling each stereo space unit like "building blocks." Each unit completes decoration, plumbing, electromechanical, and other processes in the factory, and wastewater and waste materials can be recycled in the factory, saving material and water use, greatly reducing construction waste, construction carbon emissions, and material waste. Through the application of BIPV technology, building projects can achieve low carbon emissions during operation. This technology integrates solar power generation products into buildings, ensuring efficient energy storage in buildings through light storage, direct current, or grid connection, and continuously creating economic benefits afterwards.



• Construction using MiC



Carbon Emission Management

High-quality carbon emission data is an important foundation for evaluating emission reduction policies, formulating emission control strategies, and managing carbon assets. The Carbon Neutral Cloud platform introduces blockchain and Internet of Things technology, which automatically obtains data such as energy consumption. This ensures the accuracy of the data and establishes an important foundation for other functions to be performed. For example, by analysing big data technology, the Carbon Neutral Cloud platform can identify changes in energy consumption, improving the carbon neutralization accounting process. In addition, the Carbon Neutral Cloud platform can automatically generate carbon emission calculation and analysis reports from the system to assist the Group in obtaining GB 55015 and ISO14064 certification to achieve the goal of its carbon reduction strategy. In addition, to promote the standardised development of industry carbon accounting, the Carbon Neutral Cloud platform refers to many literature patents and papers to establish an accurate carbon factor database and lay a foundation for a unified methodology. In terms of practical engineering applications, the Carbon Neutral Cloud platform brings together decades of emission reduction cases in the construction industry. By analysing factors such as scenario practicability and input-output ratio, it can provide the best emission reduction plan in different scenarios, and comprehensively assist the company in planning emission reduction plans. It also cooperates with the application of new technologies to establish emission reduction models to explore the effects of applying emerging emission reduction technologies and lead the industry in emission reduction. Currently, the Carbon Neutral Cloud platform is being promoted and used in Hong Kong, Macau and mainland China, including O-PARK2, Macau Senior Apartment Housing, and the headquarters base in Qianhai, China, and other projects.



Carbon Finance

First carbon asset transaction

with the purpose of

carbon emission offset

The Group actively seizes the opportunity in the nascent carbon finance markets in Mainland China and Hong Kong. It foresees that many new financing opportunities will be created in the future, including emission rights trading, carbon financial derivatives, carbon futures, and carbon pledge financing. The Group will allocate resources to develop and manage carbon assets. Currently, the Group has taken the lead with the O-PARK2 project, exploring the feasibility of developing carbon assets in green buildings and during the construction period, and made the first carbon asset transaction with the purpose of carbon emission offset on Core Climate, an international carbon trading platform of Hong Kong Stock Exchange for physical economy enterprises to participate in the Hong Kong carbon market. The Group is actively researching internal carbon pricing to increase emission reduction motivation, reduce carbon emission costs, and create more potential carbon asset development projects.

In addition, the Group understands that carbon strategy execution requires the cooperation of the entire value chain. Therefore, the Group actively promotes the green transformation of the supply chain, incorporates sustainability concepts into supply chain management, and formulates the "Sustainability Procurement Guidelines" to specify the Group's green procurement requirements. When procuring materials, the Group carefully considers product design, material sourcing, manufacturing, logistics, and product end-of-life management. In addition, to promote the development of a green supply chain, the Group has established Sunrise Green Technology Limited to be responsible for the procurement of green materials.

By formulating a long-term strategy that integrates low-carbon technology, data management, and carbon finance, and cooperating with stakeholders such as suppliers, the Group considers multiple aspects including technology, funds, policies, and markets, hoping to lead the low-carbon transformation of the construction industry.

Milestone in Achieving Carbon Neutrality

2012–2016

- Established a Corporate Social Responsibility (CSR) Committee and a CSR Report Committee to disclose annual sustainability performance, including carbon emissions, in accordance with the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines G4 and the Environmental, Social and Governance (ESG) Reporting Guide of Appendix 27 of the Stock Exchange.

2017

- Developed a sustainability data electronic system to assist in the collection and management of environmental and social performance data
- Upgraded the sustainability reporting standard to the GRI Guidelines to enhance information disclosure scope and transparency, following international reporting trends

2018–2019

- Established a Sustainability Committee and formulated sustainability policies, including “Green Development,” at the Group level
- Began promoting and applying Modular Integrated Construction (MiC)



Road to Carbon Neutrality

2020

- Released a Sustainability Roadmap Framework and identified "Excellence in Environmental Management" as a focus area
- Invited third-party verification agencies to verify greenhouse gas emissions in the report
- Certified by the Hong Kong Construction Industry Council's "Sustainable Finance Certification Program" as one of the first 16 accredited institutions

2021

- Upgraded to a Marble Sponsor Member of the Hong Kong Green Building Council
- Became China's first TCFD-supporting organization in the construction industry
- Trial of "Construction Period Carbon Neutrality" — O·PARK2

2022

- Collaborated with the Hong Kong Stock Exchange's international carbon trading platform, Core Climate, to complete the first carbon asset transaction with the purpose of carbon emission offset
- Completed the nation's first MiC modular high-rise building made of concrete and the first BIM digital delivery MiC project throughout its lifecycle — the Longhua Talent Housing Project in Shenzhen



O-PARK 2

As the first construction project in China to achieve carbon neutrality during construction period, O-PARK2 has set a benchmark for sustainability in the construction industry from project design, material selection, construction, and operation and maintenance, considering carbon emissions throughout the building's lifecycle. Additionally, CSCI has been using the ESG cloud platform since 2017, and transformed it into a carbon-neutral platform to accelerate the Group's green transformation. At the same time, CSHK and HKEx facilitated the first carbon trade, hoping to lead the industry in recognizing and utilizing financial means to stimulate carbon reduction, guiding all parties in the construction industry to jointly develop a carbon-neutral transformation.



O·PARK2 selected

100% recycled steel bars

The carbon reduction potential

reaches

67%

The Use of Low-carbon Technology and Materials

Traditionally, construction waste is rarely recycled and mostly disposed of through landfilling and incineration, causing environmental damage. In addition, traditional steel bars produced from iron ore mining cause severe damage to nature, causing air and water pollution. Traditional steelmaking mainly uses blast furnaces, and the raw materials of blast furnaces include iron ore and coke. The pre-processing of those raw materials releases a high level of carbon dioxide. Moreover, the production process of traditional steel bars consumes a large amount of energy and causes severe pollution.

Cement is an essential building material, but its production process releases large amounts of harmful gases such as carbon dioxide, sulfur dioxide, and nitrogen oxides, exacerbating climate change. In addition, cement production requires a significant amount of water resources and produces wastewater containing heavy metals, nitrogen, phosphorus, and other harmful substances, which affect aquatic life and human health. To reduce carbon emissions and environmental pollution caused by traditional building materials, CSHK actively practices green procurement, prioritizing the purchase of nearby and environmentally friendly materials, strictly according to the quantity of site applications and project needs to reduce resource waste and additional carbon emissions. As a carbon-neutral project throughout its lifecycle, O·PARK2 actively seeks out low-carbon building materials in the market to achieve its carbon-neutral goals.

The Use of Recycled Steel Bars

O·PARK2 uses recycled steel bars made from 100% recycled materials, which are melted by an electric arc furnace, using a high-voltage power supply system to pass current through an artificial graphite electrode and waste steel raw materials to produce a high-temperature arc, melting the waste steel. Compared to traditional blast furnace processes, this method reduces energy consumption by 74% and air pollution by 86%, reducing damage to nature and promoting social and economic development needs. The carbon reduction potential of 100% recycled steel bars selected by O·PARK2 is up to 67%.



- Photovoltaic power generation window wall system



- Photovoltaic power generation window wall system BIPV unit curtain wall

Building-integrated photovoltaics (BIPV)

O·PARK2's low-carbon building exhibition hall uses BIPV technology in its glass curtain wall, which enhances the building's aesthetics and increases its practicality. When sunlight shines on the glass curtain wall, it absorbs solar energy directly and converts it into electricity, which can supply the building or the power grid. At the same time, the BIPV glass curtain wall can prevent the temperature of the walls from getting too high, and reduce air conditioning loads, thus reducing energy consumption.

O·PARK2 uses

GGBS to replace

60% cement

The carbon reduction potential reaches

53%

each cubic meter of CO₂ mineral carbonation curing concrete building blocks can absorb

61 kg of carbon dioxide emissions

equivalent to three years of carbon absorption by an adult tree reduction potential is

78%

Green Concrete

Among all concrete components, cement has the highest carbon emissions, and it can be partially replaced by other substances. O·PARK2 uses green concrete, which replaces 60% of cement with ground granulated blast furnace slag (GGBS). GGBS is an active solid waste by-product of steelmaking, which has ultra-low carbon emissions that can replace some cement in reducing the carbon emissions generated by concrete. In addition, after using green concrete, we found that the product's resistance to chemical substances has been improved, extending the building's life and assisting sustainability.

CO₂ Mineral Carbonation Curing Concrete Building Blocks

Carbon capture, utilization, and storage (CCUS) technology is a cutting-edge research field in global carbon sequestration technology. O·PARK2 uses CO₂ mineral carbonation curing concrete building blocks based on CCUS technology in the brick wall structure of the project's administrative building, achieving low-carbon concrete block manufacturing by efficiently capturing and utilizing CO₂ waste gas from energy companies. Based on calculations, each cubic meter of CO₂ mineral carbonation curing concrete building blocks can absorb 61 kg of carbon dioxide emissions, equivalent to three years of carbon absorption by an adult tree, with a reduction potential of 78%.

Carbon-neutral Cloud Platform and Carbon Trading

The Group has begun using the ESG cloud platform since 2017 and been transforming it into a carbon-neutral cloud platform starting with O·PARK2 to assist the Group's green transformation comprehensively. The carbon-neutral cloud platform is designed for the construction industry, combining cutting-edge technologies such as blockchain, artificial intelligence, the Internet of Things, and big data to form a carbon-neutral solution for the building's entire lifecycle. As a one-stop data management and analysis tool, it includes many functional modules such as carbon emission prediction, carbon emission statistics, and emission reduction statistics. Currently, the carbon-neutral cloud platform can achieve more than 95% data automation, providing enterprises with a whole lifecycle carbon footprint monitoring and assisting enterprises in digital low-carbon transformation.



Carbon fixation bricks based on CCUS technology Wall



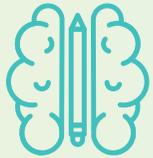
Wall made of the carbon fixation bricks (taken at O-PARK2 site)

The establishment of the carbon-neutral cloud platform is a milestone for the Group's carbon-neutral journey, and the Group's excellent low-carbon technology and IT management talents tirelessly work to improve the Group's carbon-neutral plan. By using the carbon-neutral cloud platform, the Group also achieves its first carbon offsetting trade on the HKEx's Core Climate international carbon trading platform. The Group hopes to lead the industry's low-carbon transformation by leveraging the development of Hong Kong carbon trading.



Cloud Platform dashboard





CORE
CLIMATE

Core Climate is a voluntary carbon trading platform that lists carbon credit products from internationally accredited carbon projects around the world, including carbon avoidance, reduction, and removal projects. The platform currently offers various carbon reduction projects verified by international standards, covering forest restoration, renewable energy, and forest conservation, among others. All projects listed on Core Climate are certified and comply with international standards, such as Verra's Verified Carbon Standard (VCS), which is highly regarded.

O-PARK2's total carbon emissions
by the end of June 2022

24,389 tons

Achieving a reduction of

4,240 tons

Exceeding the expected
carbon reduction of

3,198 tons

in the carbon neutrality commitment

All transactions in this trade are conducted through Core Climate, including the purchase and offset of carbon credits. CSCI calculated and verified O-PARK2's total carbon emissions by the end of June 2022, which was 24,389 tons, achieving a reduction of 4,240 tons, exceeding the expected carbon reduction of 3,198 tons in the carbon neutrality commitment. To achieve true carbon neutrality, CSCI purchased 24,389 tons of carbon credits to offset the remaining carbon emissions after O-PARK2's efforts to reduce carbon emissions, using high-quality forestry carbon assets to assist in carbon offsetting during the project's construction period.



Low-carbon Promotion and Education

As the first carbon-neutral demonstration project in Hong Kong, O-PARK2 has taken on the responsibility of promoting and educating the building industry on low-carbon transformation. In 2022, O-PARK2 hosted over 60 visiting and research activities, receiving more than 1500 visitors, including State-owned Assets Supervision and Administration Commission of the State Council ("SASAC"), the Hong Kong Productivity Council, Business Environment Council ("BEC"), HKEx, and the University of Hong Kong. These visiting and research activities not only helped the public gain a deeper understanding of the carbon-neutral construction and operation of O-PARK2, but also enhanced the communication and cooperation between the Group and relevant institutions and organizations. Represented by O-PARK2, the Group will continue to innovate in building design, energy utilization, green technology, and actively participate in international green building organizations and group activities, sharing the latest green building technologies and experiences, and promoting the popularization and development of low-carbon projects.



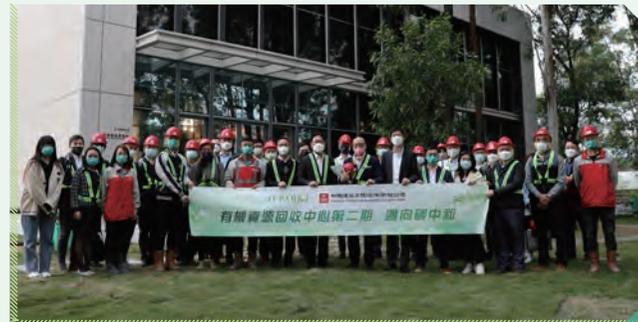
Officers from SASAC visited O-PARK2



1



2



3

- 1. The representative of HKEx visited the site and presented the awards
- 2. Members of BEC paid a visit
- 3. Hong Kong Construction Materials Association visited O-PARK2



Longhua Talent Housing Project

The Longhua Talent Housing Project (referred to as the "Longhua Project") is located in Longhua District's Zhangkengjing Block, Shenzhen. The project plans to use 6,028 MiC modules to construct five 28-story, 99.7-meter-high affordable housing buildings with a total construction area of 158,000 square meters, of which the MiC construction area accounts for 115,000 square meters. It is expected to provide 2,740 units of affordable rental housing. As the first concrete modular integrated building in China with a height of nearly 100 meters, the project took less than a year to complete. The construction would have taken two to three years if conventional methods were used.



a total construction area of

158,000
square meters

of which the MiC construction area accounts for

115,000
square meters

provide

2,740 units of
affordable rental housing

the **First**
concrete modular

integrated building in China with
a height of nearly 100 meters

The Longhua Project is the first high-rise residential development in China to use the concrete MiC system and the first to utilise BIM's entire life cycle digitalization. Using advanced technologies in new building industrialization, the entire life cycle of the project is designed in a green and intelligent manner. Due to the high integration of the concrete MiC system, higher interface precision is required. To ensure accurate spatial relationships between each system, the Group utilises BIM forward design. The Longhua Project also uses patented lifting methods and designs dedicated and fast-adjustable lifting equipment for assembly in order to improve construction efficiency and industrial production precision. In addition, we use intelligent precision verification systems and traceable digital management platforms to achieve fine, intelligent construction and management.

Due to the project's location at the foot of the mountain and the uneven terrain, traffic conditions are complicated. To manage site layout and precise traffic dispatching, the Group utilises smart traffic dispatching methods combined with the C-Smart smart construction site platform. We utilise the advantages of EPC engineering and general contracting management in order to comply with the tight construction schedule and adopt digital management technologies in order to facilitate factory processing and on-site construction simultaneously, resulting in rapid construction completion.

Three Firsts



- 
 Modular High-rise Buildings with Concrete MiC Technology
- 
 Fastest Construction Speed for High-rise Affordable Housing
- 
 BIM Digital Delivery of MiC Projects for Full Life Cycle

Construction Philosophy

The Longhua project is based on the philosophy of integration, industrialisation, intelligence, and greening. It combines the advantages of MiC construction technology and construction management to create a demonstration project for MiC.



Integration

- Systematic integration of MiC concrete system
- Integration of MEP DfMA

Industrialisation

- 80% of on-site work completed by industrial manufacturing
- High-quality industrial workers

Intelligence

- C-SMART intelligent construction platform
- BIM technology and MES system
- Intelligent management

Greening

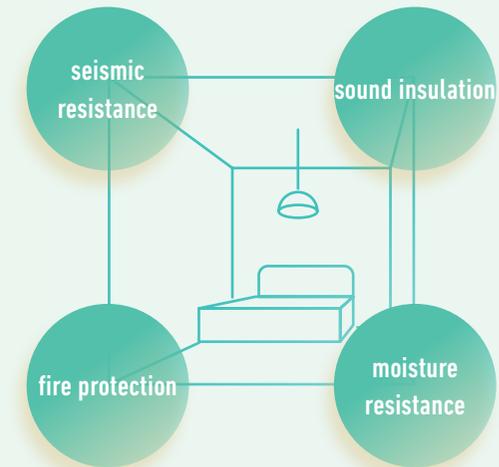
- Implementation of low-carbon concept, accounting for carbon emissions
- Green construction technology throughout the entire process

Application of Concrete MiC

The Longhua project uses the Concrete MiC integrated building system, combining Concrete MiC modular construction, prefabricated balcony components, and aluminum large formwork + climbing scaffolding system. For the basement, the Longhua project adopts an assembly-type basement fast construction system composed of prefabricated high-performance foundation mold shells, fully prefabricated frame structures, and double-sided prefabricated composite retaining walls. The DfMA fast construction system is used on the roof mechanical and electrical room of the Longhua project.

By utilizing the MiC, the Longhua project has overcome the bottleneck associated with concrete module construction technology that is typically used for low- and medium-rise seismic structures. It combines cast-in-place concrete shear walls and connecting beams with concrete MiC fast construction technology, which offers significant advantages in terms of seismic resistance, sound insulation, fire protection, and moisture resistance. The Longhua project has achieved the production of standardised three-dimensional molds for mass production, and decoration can also be completed within the factory at one time.

Cast-in-place concrete shear walls and connecting beams with concrete MiC fast construction technology



Green Building and Low-carbon Environment

During the construction process, waste is inevitably produced. The Group will implement resource utilization and sustainability concepts throughout the project cycle, and achieve emission reduction targets through waste reduction, classification, treatment, and recycling, and details are as follows:

Measures	Materials
Backfilling utilization	Waste soil
Crushing for use in roadbed cushion layer	Concrete pile heads
Specialized recycling, utilization, and processing	Pastic packaging, waste batteries, waste diesel, waste saw blades, etc.
On-site repair and reuse or specialized recycling and utilization	Templates, wooden boards, wire, metal brackets, etc.
Resource recycling and utilization	Ceramic tile scraps, stone scraps, broken bricks, damaged sanitary ware, damaged concrete manhole covers, etc.
Waste station centralised treatment	Gypsum board, paint buckets, paint, glass, etc.
Specialized processing plant value recovery	Wires, cables, waste fire hoses, woven bags, mechanical and electrical pipes, etc.

The Longhua project has applied green construction technology throughout the whole process, and has achieved remarkable results in low-carbon and environmental protection:

Waste

Construction waste is reduced by



compared to conventional construction methods

Material loss

Material loss is reduced by



compared to conventional construction methods

Carbon Emission Intensity

Carbon emission intensity is reduced by



compared to the benchmark building

Energy Consumption

Energy consumption is reduced by



compared with the national standard

Wastewater

The discharge of wastewater is



in compliance with the standard

For more information, please scan





Macau Senior Apartment Housing

To care for the elderly living in tenement buildings, the Macau SAR government is developing and building the first senior citizen apartment project. CCE Macau is responsible for constructing elderly homes with elevators, public parking lots, and high-voltage substations, which are expected to be completed early 2024. After completion, the project will provide 1,815 open apartments for Macau's elderly, with a total building area of 125,000 square meters, and a 6,000-square-meter green platform. The project also includes commercial use ground floor space underground. The elderly homes will introduce smart elderly care,

smart homes, and barrier-free environments, etc., in order to provide a safe and comfortable environment for the elderly. The project also provides support services for health care, including emergency medical support, elderly health clinics, and specialty outreach medical services, to ensure the health of the elderly. In addition, the elderly homes will be facilitated with social service facilities, such as elderly day care centres, day care services, home care and support services, emergency support, and elderly nursing homes, to provide a diversified living environment.

The Macau Elderly Homes is the first public engineering project built using prefabricated construction in Macau, laying the foundation for promoting prefabricated components in the new city area in the future. The project has applied multiple green construction technologies and plans to cooperate with the Macau University of Science and Technology to carry out research on the topic of "Research on Zero-waste Technology and Carbon Reduction Effects of Prefabricated Buildings in the Macau Area," providing a decision-making basis for future low-carbon construction.

Zero-waste Construction Sites

Macau faces the severe problem of landfill saturation for construction waste, as construction waste accounts for 80% of the total waste volume. In order to strengthen solid waste treatment, the Macau government has established waste reduction and recycling as one of its core missions. The Macau Environmental Protection Five-Year Plan and the Solid Waste Resource Management Ten-Year Plan have been developed, and the construction waste management system will be reviewed within the next four years, and a recycling industrial park will be established to pre-process recyclable materials.

In support of Macau's waste reduction and recycling mission, the Group actively participates in the development of zero-waste construction sites to minimise construction waste generation and maximise recycling. As part of the zero-waste construction site pilot program, the elderly homes project actively explored the feasibility of mainland waste reduction technology in Macau, and will summarise the waste reduction experience for the Macau industry to use as a reference. It is intended to achieve a building waste discharge (excluding project debris and engineering slurry) of less than 200 tons per 10,000 square meters on a construction site. The elderly homes project strives to reduce waste by reducing construction waste from the source, comprehensively using the waste, recycling it in a classified manner, promoting reductions in carbon emissions, and disposing of the waste.

After completion

the project will provide

1,815 open apartments
for Macau's elderly

a total of

6,000 square-meter
green platform

Reuse of Old Piles

To save building materials, the elderly homes have directly reused approximately 200 old PHC prestressed pipe piles and approximately 30 old 3m diameter cast-in-place piles within the scope of the project. These piles meet design requirements of strength, integrity, and bearing capacity, thereby avoiding the generation of building waste from clearing old piles and reducing the number of new piles needed.

Lifting and Adjustable Elevator Shaft Inner Formwork

As part of the support, reinforcement, and protection system for the elevator shaft of the elderly homes complex, a lifting and adjustable inner formwork is utilised, which prevents the need for manual construction of formwork platforms or the assembly of simple operation platforms on site. Lifting and adjustable elevator shaft inner formwork is manufactured in the factory, which facilitates material saving and high efficiency by reducing material loss and improving material utilization.

Classified Recycling

CCE Macau project team plans to implement fine classification and disposal of construction waste. Construction site construction waste is classified and processed according to metal, inorganic non-metal, wood, plastic, and other categories, to reduce waste.

directly reused approximately

200

old PHC prestressed pipe piles

30

old 3m diameter cast-in-place piles



Empowering Technology

CCE Macau is actively exploring the use of innovative technology to manage construction waste to improve waste sorting and recycling efficiency, which includes the introduction of IoT waste weighing smart scales and the development of a cloud platform to manage construction waste statistics. In this way, fine and efficient management can be achieved.

IoT Waste Weighing Smart Scale

By pushing solid waste onto the weighing platform and selecting its type via the touch screen on the application terminal, the operator can take a picture of the solid waste as soon as the weighing value has stabilised. After displaying weight and image data on the screen, the data is automatically transmitted via 4G IoT card to the cloud platform to complete the weighing process. With the system, users are able to query real-time weighing data, data reports, and merchant management information from their personal computers or mobile devices. The smart scale provides traceable and accurate waste sorting, weighing, and statistics, thereby enhancing informatization, efficiency, and standardization of waste sorting and recycling management, and reducing personnel resources.



Cloud Platform for Managing Construction Waste Statistics

CCE Macau is currently investigating the establishment of a cloud platform for managing construction waste statistics based on the smart construction site management platform. By utilizing the cloud platform for managing construction waste statistics, waste reduction measures may be monitored. Conversely, the cloud platform can identify the types and output of construction waste at various stages, providing reference data for future new construction projects, establishing scientifically sound and reasonable waste reduction targets, and achieving fine and efficient management of construction waste that is quantifiable and traceable. Currently, CCE Macau is discussing with the carbon neutral cloud platform R&D team of the Group the feasibility of developing a construction waste carbon emission statistics platform.

Life Cycle Assessment

For the purpose of evaluating the impact of elderly homes on carbon reduction of construction waste, the Group conducted a life cycle assessment to quantify waste production. Being aware of its social responsibilities, the Group will continue to actively seek and attempt to adopt low-carbon waste reduction measures, providing a significant demonstration effect of carbon reduction throughout the construction value chain, accumulating management experience for the sustainability of the industry, and promoting technological innovation and application.

Statistical Boundary of Carbon Emission and Reduction Verification Based on LCA





Shenyang Huanggu Thermal Power Plant

China's thermal power industry relies primarily on coal as a source of energy. More than 10 billion square meters of urban areas are heated by coal-fired power plants, which account for 68% of the country's electricity supply. However, it also contributes to 42% of the country's carbon emissions. The coal-fired thermal power industry is subjected to the dual pressures of ensuring energy supply and reducing carbon emissions under the "dual-carbon" target. It is difficult to significantly improve the operational efficiency of major equipment in the thermal power energy industry, including boilers, turbines, auxiliary machinery, and heat networks, after decades of development. Therefore, exploring methods of improving the overall operational efficiency of thermal power systems and achieving coal reduction and carbon reduction through clean and efficient means is not only an urgent need for thermal power enterprises to reduce costs and increase efficiency, but also an important matter for implementing the carbon peak target.

Shenyang Huanggu Thermal Power Plant (“Huanggu Thermal Power”), one of the Group’s subsidiaries, is actively innovating and exploring emission reduction methods from management, engineering, and technological perspectives in order to achieve green and sustainability. To assist in power regulation while ensuring heating capacity, Huanggu Thermal Power has proposed a strategy of heat-based electricity and precise control. Huanggu Thermal Power has also improved the combustion technology and waste heat recovery technology to enhance the efficiency of energy utilization. Moreover, it dynamically adjusts operation methods and heating parameters in response to environmental and temperature changes, which results in a significant reduction in water, electricity, and coal consumption. Considering that the heating area increased by 150,000 square meters compared to the previous year, raw coal consumption decreased by 25,000 tons, and various costs were reduced by RMB 15 million.

Moreover, Huanggu Thermal Power actively utilises new digital technology to promote green and low-carbon development in the face of intelligent, networked, and interconnected manufacturing processes, thereby creating a data cloud platform through the use of digital sensors, digital instruments, and data subsystems. Through the use of this platform, the Group will be able to collect comprehensive data on heat sources, secondary heat networks, and weather conditions. The unit operates in a highly efficient state in real-time and reduces manual input by accurately controlling the heating capacity of each building and community in real time, achieving optimal energy consumption distribution and accurate prediction, and precisely regulating energy production.

while the heating area increased by 150,000 square meters compared to the previous year,

raw coal consumption

decreased by **25,000** tons

various costs were reduced by

RMB 15 million

Huanggu Thermal Power has promoted energy-saving and emission-reduction projects this year, and has successfully operated the boiler intelligent control system (ACS) on boilers 6 and 7. With the help of ACS, boilers 6 and 7 are expected to save 3,988.09 tons of standard coal and 198,100 kWh of electricity in 2023 based on the test data collected in November and December.

Furthermore, Huanggu Thermal Power has also completed the transformation of the second network balance technology, covering an area of 1.6 million square meters. As a result of the relevant transformation, the heat exchange station has improved the efficiency of heat exchange, increased the heating area without increasing the capacity of heating, and has reduced the amount of heat consumed by 2-4.5% and the amount of electricity consumed by 3-10%. Customer satisfaction and complaints have also been improved as a result of improving heating quality.

Through these innovative measures, residents in the region have been provided with more efficient and energy-efficient heating and power, and Huanggu Thermal Power has realised a net surplus of carbon rights under the national carbon emissions trading system, developing and managing the Group's carbon assets through experience in the development and management of carbon assets.

Future Outlook

Due to its high energy consumption and high carbon emissions, reducing carbon emissions in the construction industry is undoubtedly an important step towards carbon neutrality for the world. Despite the fact that the building carbon market is still in its exploratory phase, the Group follows the country's guidance on the industry and technology, believing that carbon's asset attributes will accelerate in the future. Therefore, taking green industry upgrading as a breakthrough, the Group will improve its capability to develop and manage carbon assets to achieve its own carbon reduction and drive downstream and upstream supply chain carbon reductions. For this reason, the Group will continue to invest in building materials, energy, and innovative technologies, as well as participating in the construction of the upstream and downstream industries of green building materials, and enhancing innovation in products and methods for reducing carbon emissions. Under the support of blockchain technology, the promotion and application of the carbon-neutral cloud platform will strengthen data collection, organization, and feedback, ensure traceability and fairness of emission reduction data, and improve and refine the quantification of carbon emissions across the entire life cycle of buildings. As a result of the Group's continuous promotion of low-carbon technology and quantitative data-related research, it will fully seize the opportunities of fiscal support policies and related carbon financial product policy openings, and will conduct internal carbon pricing research, using financial models to assist in achieving the Group's carbon neutrality strategy, improving adaptability and competitiveness, and contributing to a comprehensive transition to zero emissions in society.

expected to save

3,988.09 tons
standard coal

electricity

198,100 kWh

reduced the amount of

heat consumed by

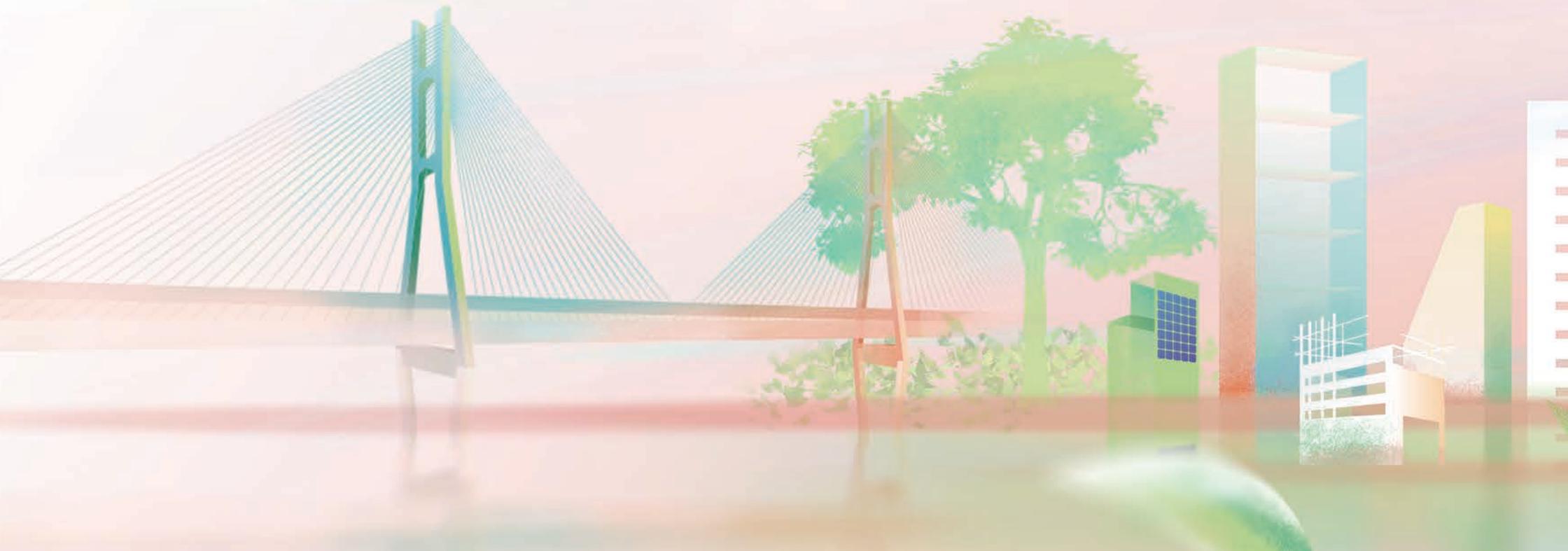
2-4.5% ▼

electricity consumed by

3-10% ▼

Strengthening Corporate Governance

The Group is committed to improving its governance level as it is closely related to its ESG performance. The Board of Directors is responsible for the overall strategy and performance of the Group, while also overseeing the development of business, financial performance, and governance. The Group actively promotes diversity among its board members in order to avoid a tendency to “groupthink,” provide a more objective and balanced viewpoint, and assist the Group in implementing its business plans and sustainability strategies.





Strengthening Corporate Governance

As stakeholders' expectations for corporate governance and governance structures have increased in recent years, the Hong Kong Stock Exchange has also revised its "Corporate Governance Code." In the second half of 2021, the Group began selecting female directors and appointed Ms. Wong Wai Ching as an independent non-executive director on March 25, 2022. The Group intends to adjust the composition of the Board of Directors in line with the best international and Hong Kong corporate governance standards in order to further enhance corporate governance effectiveness.

When selecting directors, the Group considers not only their skills and experience in architecture and finance, but also their development and social trends in recent years. Thus, the Group will pay particular attention to candidates who possess experience in risk management and technology-related fields. Since the Group has a growing business and investment portfolio in the Mainland, it is also looking for candidates who have a Mainland background. A comprehensive analysis of the opinions of multiple parties will be conducted by the Group when selecting and appointing directors.

Training programs are available to Board members to develop their professional competencies and innovative technologies so that they can promote the development of the Group in a more comprehensive manner. Whenever necessary, the Legal Affairs Department will invite legal advisors to explain relevant laws and regulations, as well as updates to the Hong Kong Stock Exchange's listing rules. Directors may also be required to meet certain continuing professional development requirements as members of professional associations. In order to gain knowledge of the latest construction and engineering technologies, the Group arranges for directors to visit project sites. The Group also provides directors with opportunities to participate in training for state-owned enterprise cadres on the Mainland to gain an understanding of national policy directions and market trends.

In order to assess the effectiveness of the Board's operation, both internal and external perspectives are examined and evaluated. Regular inspections are conducted by the Group's Audit and Supervision Department in order to determine the level of governance within the Board of Directors. The governance measures are also assessed internally by internal committees and risk management teams. Aside from this, the Group attaches great importance to ESG ratings by international organisations and communicates continuously with external investors through its Financial Business Department to implement governance methods that adhere to international standards.

For more information about the Board of Directors and its corporate governance, please refer to the "Corporate Governance Report" in the Group's 2022 Annual Report.

Sustainability Governance Structure

The Board of Directors has established a Sustainability Committee and has planned to revise the composition and structure of the committee to strengthen the leadership of sustainability affairs, including enhancing governance and reporting, as well as strengthening the role of addressing climate change in business to assist the group in seizing sustainability opportunities. The following figure illustrates the structure and responsibilities of the committee's subcommittees and working groups:



Sustainability Approach and Policy

The Group refers to the sustainability strategy to develop and publish sustainability policy. The Sustainability Committee oversees the implementation of policies by relevant department heads and maintains communication with employees to ensure policy implementation. Based on business conditions and external trends, the committee evaluates the effectiveness of policies annually and makes timely suggestions for revisions to the board of directors in response.

Strategy	Description	SDGs
Compliance	Maintain good corporate governance, establish a sound anti-corruption system, continuously strengthen legal risk prevention and control, comply with various laws, regulations, and policies in the company's business location, and ensure sustainability of the Group.	
Green Development	Coexist with green development, develop in harmony with ecology, save and use resources, reduce the negative impact of construction on the environment, and reduce carbon emissions from construction through scientific management and improved building technology.	
People-oriented	Employee development is the top priority, fully integrate employees' personal pursuits into the Group's long-term development, focus on personnel selection, training, and employment, and provide employees with good development space, a complete training system, competitive compensation and benefits, and incentive systems, create a safe, healthy, and sunny work environment for employees.	
Safety First	Maintain good management practices, adhere to the construction policy of safety first and prevention-oriented, improve the safety management system, prevent accidents, and eliminate serious accidents and violations.	
Quality First	The Group abides by the contract and ensures quality, continuously reviews and improves its quality management system, and strives to "alright for one time, alright for all times" to provide customers with excellent services and quality products.	
Supply Chain Management	Adhere to the idea of "comparing goods from three sources, green procurement", prioritise the purchase of nearby and environmentally friendly materials, expect business partners to comply with the Group's sustainability policy and include it in the business partner code of conduct as a guide.	
Community Care	Make efforts to give back to the community where the business is located, participate in improving related livelihood construction, provide emergency assistance services, accurately help the poor, encourage employees to actively participate in social welfare activities, and achieve good neighborly relations in the community.	

During the Reporting Period, the Group has developed and revised the following policies in order to enhance its governance capabilities and ensure compliance with legal, ethical, and social standards.

<p>Anti-corruption Policy</p> <p>The Group is committed to combating corrupt practices and safeguarding a fair competition environment for the enterprise. Under this policy guidance, the Group will establish a sound corruption reporting system and strengthen the training of relevant personnel to enhance their risk awareness and professional ethics.</p> <p>https://www.csci.com.hk/pdf/202301111749_en.pdf</p> <p><i>For more information, please scan</i></p> 	<p>Whistleblowing Policy</p> <p>The Group provides clear reporting channels to allow individuals to report improper behaviour freely and protect their rights.</p> <p>https://www.csci.com.hk/pdf/202301111800_en.pdf</p> <p><i>For more information, please scan</i></p> 	<p>Water Resource Management Policy</p> <p>The Group has established several directions to strengthen the protection and management of water resources, and promotes the assessment of water resource risks to minimise business impact on water resources.</p> <p>https://www.csci.com.hk/pdf/Water_Resources_Management_Policy_en.pdf</p> <p><i>For more information, please scan</i></p> 	<p>Sustainable Procurement Policy</p> <p>The Group strengthens the management and monitoring of the supply chain to avoid negative environmental impacts of products and services as much as possible. In addition, the Group will actively train and publicise sustainable procurement to enhance the environmental awareness of employees and suppliers.</p> <p>https://www.csci.com.hk/pdf/Sustainable_Procurement%20Policy_en.pdf</p> <p><i>For more information, please scan</i></p> 	<p>Board Diversity Policy</p> <p>The Group supports gender diversity among board members and sets timely gender ratio goals for the Board. In addition, the Group will ensure that the selection of directors considers the necessary skills, experience, and diverse perspectives for business needs, and ensure that directors can devote sufficient time and make contributions to the Group.</p> <p>https://www.csci.com.hk/pdf/201406040947304_en.pdf</p> <p><i>For more information, please scan</i></p> 	<p>Shareholder Communication Policy</p> <p>The Group ensures timely solicitation and understanding of shareholder opinions, and adds online communication methods to shareholders when convening shareholder meetings.</p>	<p>Board Independence Mechanism</p> <p>The Group will make the existing measures to ensure the independence of the board of directors into regulations and ensure that the nomination committee will conduct an annual review of the Board's independence.</p>
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Sustainability Roadmap

In recent years, the Group has continued to strengthen its investment in sustainability, establishing a sustainability vision, mission, and focus areas, while actively promoting multiple initiatives and projects. Taking into account various factors and the characteristics of the industry and its own business, the Group has formulated a sustainability roadmap. As part of its sustainability roadmap, the Group has identified concrete goals and practical actions that will guide future efforts to continuously improve sustainability.

Assuring sustainable performance, receiving praise and recognition from all stakeholders, and influencing the industry towards sustainability.



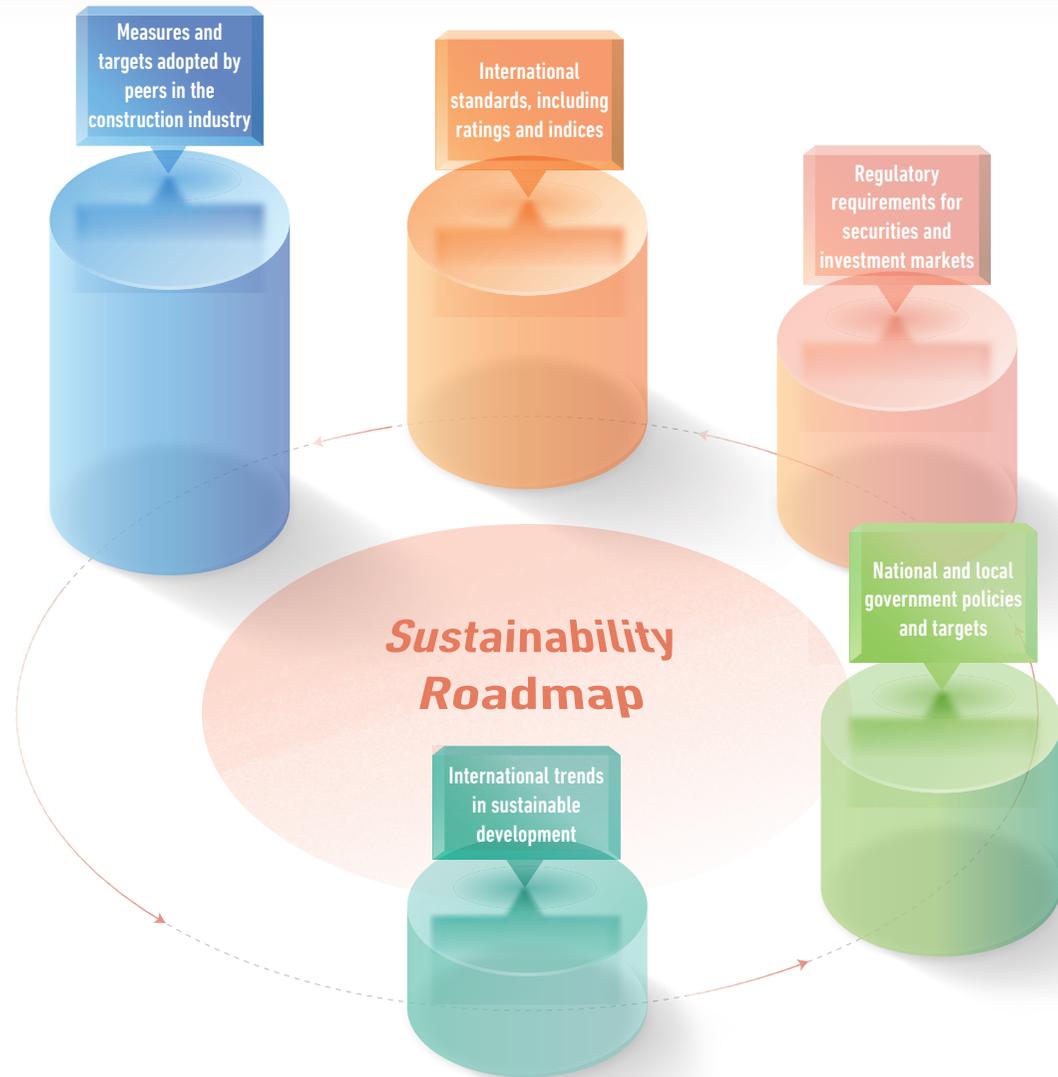
Sustainability Vision

To establish a world-class and sustainable international construction and infrastructure investment enterprise.



Sustainability Mission

Lead innovation trends, build a happy life.



The Group has identified five areas of focus based on its vision and mission for sustainability, and has established goals and actions for each area to guide its future work. In the table below, a summary of the Group's performance in the focused areas is provided. For more details on the goals and actions, please refer to the respective chapter homepages.

Focus Area		Policy	Measure	Target Indicator
Excellent Environmental Management	Carbon neutrality transformation	■	■	■
	Green construction	■	■	■
Building a Sustainable Supply Chain	Supply chain management	■	■	■
	Sustainable materials	■	■	■
Support talent development	Talent attraction and retention	■	■	■
	Employee training	■	■	■
	Occupational safety	■	■	■
Give back to society	Community investment	■	■	■
	Employment opportunities for vulnerable groups and young people	■	■	■
Strategic development	Technological innovation	■	■	■

■ Fully completed ■ Partially completed ■ Work in progress

Sustainability Risks and Opportunities

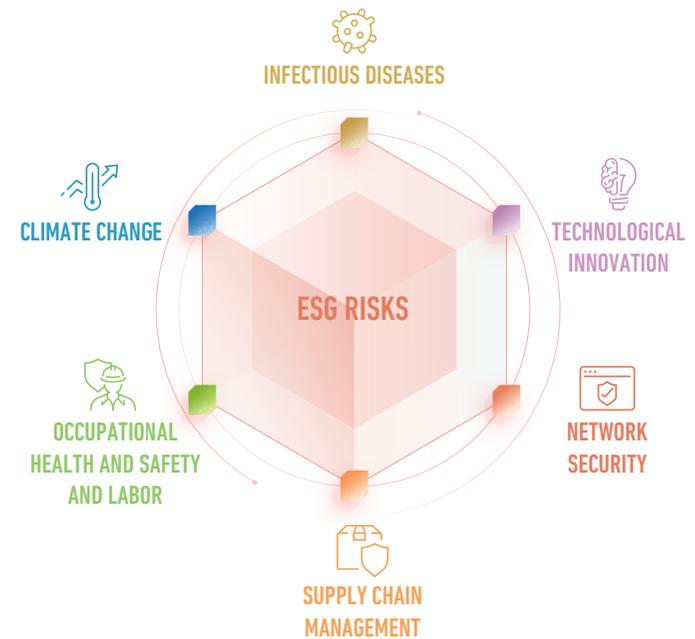
To ensure the Group's reputation and interests, enhance business resilience, and create a solid foundation for long-term business expansion, the Group emphasises the establishment of a risk management and internal control system. For this purpose, the Group has developed a comprehensive risk management framework and clearly defined roles and responsibilities in accordance with it. The Group's risk control team is responsible for identifying the principal risks facing each operating department, assessing the impact of strategic, financial, market, and operational risks, and implementing monitoring measures. Each department has to submit regular reports to the team in order to identify risks and enhance management. The Audit Committee reviews the Group's risk management system and internal control system regularly through the Audit Department, reports its findings to the Board of Directors, and continuously improves the risk management system as needed. To enhance employee risk management capabilities, the Group also promotes

employee risk awareness training in order to ensure that risk management and internal control systems are implemented effectively. For details on the Group's risk management, please refer to the "Corporate Governance Report" in the Group's 2022 annual report.

There has been an increase in public awareness of sustainability risks in recent years. Climate change and the pandemic have intensified people's concerns regarding environmental and social risks. As part of the Group's sustainability governance, these risks play a key role. The consequences of not managing them effectively may erode the Group's efforts in sustainability, damage its accomplishments in the past, and even erode its position as a leader in the industry.

As part of its efforts to effectively manage relevant risks, the Sustainability Committee works closely with other committees and departments within the Group in order to share information, make wise decisions, and take appropriate action. The Sustainability Committee also communicates with external stakeholders such as investors, customers, and regulators to understand their expectations and concerns, better identify and manage risks, and ensure that the Group is consistent with their expectations and regulatory requirements. In addition, the Sustainability Committee continuously evaluates and improves its methods for managing sustainability risks, including monitoring the effectiveness of risk management strategies and making adjustments when necessary. By continuously improving its methods, the Sustainability Committee can help ensure that the Group is capable of responding to current and future sustainability risks while maintaining its leading position in the market.

The Group identified and evaluated six ESG risks that have a significant impact on its business in 2020, namely infectious diseases, occupational health and safety and labor, technological innovation, climate change, supply chain management, and network security. This year, the Group continued to carry out corresponding risk management plans to address these ESG risks. For details on relevant work, please refer to the "Sustainability Risks" section in the Group's 2021 "Sustainability Report."



In terms of climate risks, the Taskforce on Climate-related Financial Disclosures (TCFD) has recommended that the Group implement the recommendations, identify physical and transitional risks, and develop clear strategies for mitigation and response to climate change to enhance climate resilience. The climate scenario analysis for the Hong Kong region has been completed. This following table summarises the Group's work on the four core elements of TCFD, namely governance, strategy, risk management, and indicators and goals.

Governance

Board of Directors

To ensure the Group's ESG performance always meets its goals and commitments, the Board of Directors oversees the Group's ESG matters, including monitoring strategies and initiatives related to climate risks and opportunities. The Sustainability Committee, composed of Board members and reporting to the Board, is responsible for managing the Group's sustainability agenda, strategies, policies, and performance.

Management

Based on the opinions of the Sustainability Affairs Working Group, the Compliance and Risk Committee and Operations Management Committee are responsible for planning and implementing climate-related initiatives, tracking the Group's progress in carbon neutrality, low carbon construction, circular economy, and other related matters, and reporting to the Sustainability Committee on these matters.

The Sustainability Affairs Working Group is composed of representatives from various functional departments, including financial services, investor relations, risk management, and other related functions. The working group is responsible for tracking emerging ESG trends and issues to assist committees and subcommittees in developing policies and implementing measures. Concerning climate risks, the working group continues to monitor new risks and opportunities related to extreme weather events, climate regulatory actions, carbon taxes, renewable energy, net-zero building design, and supply chain flexibility.

Strategy

TCFD emphasises two main types of climate risks: physical risks and transition risks. Physical risks may include extreme weather events such as droughts or floods, as well as the long-term impacts of rising global average temperatures. Transition risks may include the transition towards a low-carbon economy, new regulations, and innovations in energy efficiency.

In the climate scenario analysis for the Hong Kong region, the Group has identified several climate-related risks and opportunities that may have potential impacts on the business.

Physical risks	Description:					
<p>Business continuity</p> <p>Risk types: acute and chronic risks</p> <p>Time horizon: short to long term</p> <p>Probability: Likely</p> <p>Impact level: Low</p>	<table border="1"> <thead> <tr> <th>Scenarios</th> <th>Representative Concentration Pathway(RCP)</th> <th>Description</th> </tr> </thead> </table>			Scenarios	Representative Concentration Pathway(RCP)	Description
	Scenarios	Representative Concentration Pathway(RCP)	Description			
	<p>High emissions</p>	<p>RCP 8.5</p>	<p>Continuing emissions at the current rate will result in no change. In this scenario, it is expected that the temperature will rise by over 4°C by the year 2100.</p>			
<p>Medium emissions</p>	<p>RCP 4.5</p>	<p>Taking strong mitigation actions to reduce emissions to half of current levels by 2080 is more likely to result in a temperature increase of over 2°C by the year 2100.</p>				

Strategy (Continued)

The risk levels of the Group are generally consistent in two scenarios. The Group's assets and operations in Hong Kong face low risks, with the biggest risk factor being coastal flooding that may be caused by extreme precipitation, storms, and increased average precipitation. Other risks, such as wildfires and water pressure, have an extremely low risk in the region.

Transitional Risk

Description:

Regulatory Compliance and External Commitments

Risk Type: Policy and Regulation
Timeframe: Medium to Long-term
Likelihood: Possible
Impact level: Medium to High

The Group may need to alter our processes, products, and services in order to comply with local, national, or international climate change regulations. The Group has already established targets for reducing greenhouse gas emissions and achieving other sustainability goals. The failure to meet relevant targets or to reduce business impacts on the environment, or the perception of a failure to take responsible action on climate change, may result in negative publicity and adversely affect the Group's business and reputation. In addition, the Group may be subject to liability, fines, or business suspension in the future for failing to comply with or being accused of failing to comply with various laws and regulations, including environmental regulations.

The Group will further assess the 2060 carbon neutrality target's contribution to maintaining global warming below the 2°C commitment in the Paris Agreement and its ability to mitigate future carbon pricing and regulatory impacts on its business, so targets and action plans will be adjusted appropriately in a timely manner as needed.

Strategy (Continued)

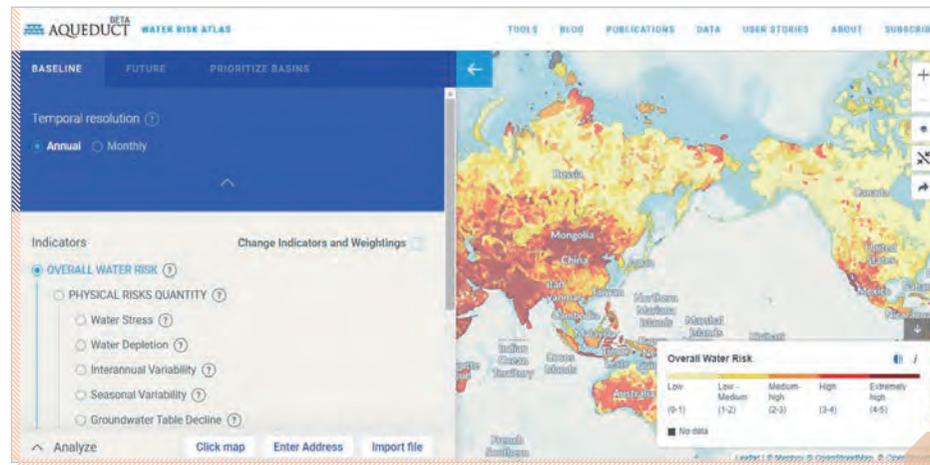
Transitional Risk	Description:
<p>Carbon Pricing Risk Type: Market Timeframe: Medium to Long-term Likelihood: Possible Degree of Impact: Medium to High</p>	<p>Under the Paris Agreement, governments around the world will take measures to reduce greenhouse gas emissions, which is expected to result in an increase in carbon prices related to emissions trading systems, carbon taxes, fuel taxes, and other policies. The Group uses enterprise carbon pricing tools of professional institutions to quantify risks and understand the potential future financial impact under high, medium, and low carbon price scenarios from now to 2050. According to the analysis, the carbon pricing risks related to upstream emissions in Scope 3 are the largest contributors to the Group's overall carbon pricing risks in both the 4°C and 2°C scenarios, which may result in a significant increase in procurement costs. Under high carbon price scenarios, unmitigated risks may increase operating expenses and reduce the Group's operating profit margin.</p> <p>Among other methods, the Group will minimise these impacts by promoting low-carbon behaviors, developing low-carbon technologies, and procuring green materials.</p>

We will enhance our internal procedures and improve our response capabilities, and we will regularly assess the impact of climate risks to ensure they are under control. For details on future measures targeting specific impacts, please refer to the "Climate Change Mitigation" section of the Group's 2021 Sustainability Report.

Risk management

The Group's overall risk management strategy is disclosed in the "Corporate Governance Report". Following TCFD's recommendations, the Group engaged an international consultant team to conduct a climate risk assessment in order to identify and evaluate transitional and physical risks in light of climate scenarios of 2°C and 4°C as well as related short, medium, and long-term timeframes. We summarised the results of these analyses in terms of time span, magnitude, and likelihood in order to assist in the risk management process.

The Group also uses World Resources Institute ("WRI") Aqueduct Water Risk Atlas to assess current water risks at each operating location on an annual basis. Climate impacts and future scenarios are taken into account when assessing these water risks.



- The Group uses WRI's Aqueduct tool to conduct current water risk assessments for each site of operation annually

Metrics and targets

The Group has established a long-term goal of achieving carbon neutrality by 2060, as well as a short-term goal of reducing carbon intensity by 25% by 2025 as compared with 2018. To manage costs and environmental impacts, the Group is also analyzing energy, water, and waste data and measures for the purpose of developing quantifiable reduction targets by 2025.



Investment and Achievements in Sustainability

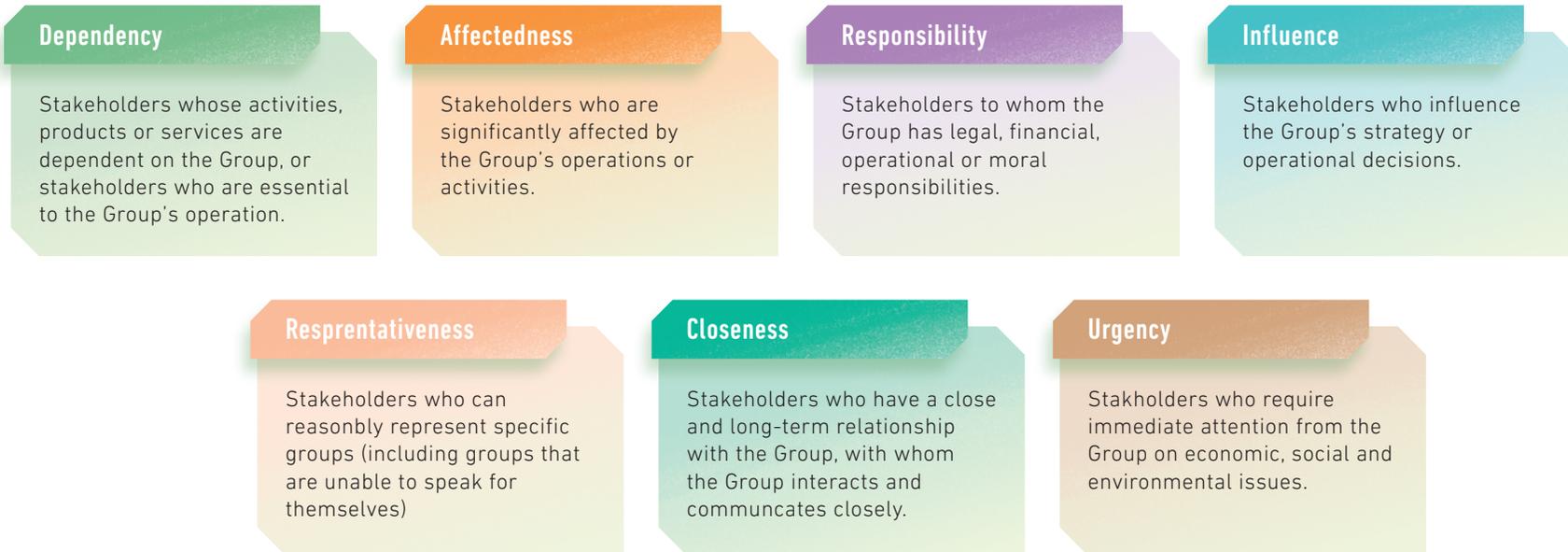
- Selected as a constituent stock of the FTSE4Good Index for six consecutive years
- 2022 Environmental Leap Forward Award from CDP Global Environmental Information Research Center
- Outstanding Contribution to Carbon Neutrality in the Hong Kong International Carbon Market and participation in the first batch of institutions in the new carbon market platform by Hong Kong Exchanges and Clearing Limited
- First place in “Best Environmental, Social and Governance” in Industrials Small & Midcap Sector by Institutional Investor
- Global Champion in Agriculture and Food Sector for UNIDO Global Call 2022 (O-PARK2) (CSHK)
- Low Carbon Innovation Workshop — awarded the Low Carbon Care Environment, Social and Governance (ESG) Label for seven consecutive years and the highest LEVEL 4 label rating for five consecutive years (3311) and Low Carbon Care Star Label (3311, China State Construction Engineering (Hong Kong) Limited)
- O-PARK2 — awarded the highest “Carbon Neutral” rating for Low Carbon Care Building (Material) Label and Low Carbon Care Building (Process) Label
- First recipient of the “Outstanding Environmental, Social and Corporate Governance Performance Acknowledgement Scheme” by Hong Kong Economic Times
- “Sustainability” category — Platinum award of the “Huafu Excellence Investor Relations Awards 2021”
- First recipient of the “Excellence Certificate for Environmental, Social and Governance Reporting” by the Hong Kong Management Association in 2022

Stakeholder Engagement

Maintaining close communication with stakeholders is crucial for any business to achieve sustainability, and this is especially important to the Group. Over the years, the Group has continuously strengthened its communication with stakeholders, establishing positive and sustainable cooperative relationships. Through this relationship, the Group can better understand stakeholders' needs and expectations, formulate more precise business strategies, and fully consider stakeholders' interests in daily operations and decision-making processes to achieve mutual progress and development for the enterprise and society.

Stakeholder Analysis

An enterprise is composed of various types of stakeholders who have different roles and responsibilities. Its operation and development will also have an impact on stakeholders. The Group identifies the main stakeholders using the seven criteria in AA1000SES:



According to the above criteria, the Group has identified the main stakeholders and categorized them into six categories: employees, investors, customers, suppliers or subcontractors, government and regulatory bodies, and community groups. The Group has been communicating with internal and external stakeholders through various channels. The following table summarizes communication channels, their concerning issues, and the relevant sections of this Report:

Main Stakeholders	Concerning Issues	Communication Channels
 Employees	<ul style="list-style-type: none"> • Employment management system • Safe and healthy working environment • Training and development • Labor relations • Anti-corruption 	<ul style="list-style-type: none"> • Email notifications • Internal meetings • Training courses • Group communications • Complaint channels
 Investors	<ul style="list-style-type: none"> • Safe and healthy working environment • Employment management system • Anti-corruption • Training and development • Labor relations 	<ul style="list-style-type: none"> • Shareholder meetings • Annual reports, interim reports, and other announcements • Performance roadshows and reverse roadshows • Investor conferences • Indexes and ratings
 Customers	<ul style="list-style-type: none"> • Energy • Materials • Innovative technology and applications • Intellectual property • Preventing anti-competitive behavior 	<ul style="list-style-type: none"> • Bid meetings • Project briefings • Gatherings and industry group activities

Main Stakeholders	Concerning Issues	Communication Channels
 <p>Suppliers or subcontractors</p>	<ul style="list-style-type: none"> • Customer privacy • Anti-corruption • Safe and healthy working environment • Preventing anti-competitive behavior • Innovation technology and application 	<ul style="list-style-type: none"> • Procurement procedures • Audit and evaluation • Performance monitoring • Supplier/subcontractor meetings
 <p>Government and regulatory bodies</p>	<ul style="list-style-type: none"> • Economic performance • Market performance • Employment management system • Labor relations • Preventing child or forced labor 	<ul style="list-style-type: none"> • Public consultation • Working meetings • Reflecting opinions through industry associations
 <p>Community groups (e.g. professional organizations, media, and NGOs)</p>	<ul style="list-style-type: none"> • Materials • Procurement behavior • Waste • Water resources and wastewater • Biodiversity 	<ul style="list-style-type: none"> • Seminars and workshops • Media conferences and press releases • Community surveys • Cooperative hosting and participation in public welfare activities

Identification of Key Issues

To ensure that crucial sustainability information is provided to stakeholders, the Group has been regularly inviting stakeholders to participate in surveys since 2015 to identify the prioritization of sustainability issues, as well as to understand stakeholders' expectations of the Group's sustainability work. To prepare for this year's sustainability report, the Group continued to appoint sustainability consultants to conduct stakeholder communication activities and completed a materiality assessment through four steps.

Steps	Actions
Preparation Identify sustainability-related issues	Sustainability consultants refer to international and local reporting standards, as well as the results of past communication activities, to update the sustainability issues list, and identify 37 issues related to the Group's business in the three categories of "Economy", "Environment", and "Society".
Identification Collect stakeholders' feedback	Invite internal and external stakeholders to participate in interviews and surveys to collect their opinions on each issue.
Evaluation Identify material issues	Assess the importance of issues to stakeholders, the impact of the Group's business on society, the economy, and the potential positive contributions of the Group to sustainability in order to establish a substantive matrix.
Verification Confirm the assessment result	Identify 13 substantive issues based on two screening criteria: "extremely important to stakeholders and high impact on the Group" (issues in the upper right of the matrix) and "high potential positive contribution to the Group" (issues with the largest icon shape in the matrix). The Sustainability Committee has reviewed and confirmed the results.

The sustainability issues list and the materiality matrix are shown below:

This Report is designed and written with the purpose of evaluating the 13 identified material issues and assisting the Group in its strategic planning and resource allocation.



Material Issues	Impacted Area						Impact and Response
	Employees	Investors	Customers	Suppliers and Subcontractors	Government and Community groups regulatory bodies	Community groups	
24 Safe and healthy working environment	■	■	■	■	■		Nurturing and Supporting Talent
23 Labour relations	■	■		■			Nurturing and Supporting Talent
22 Employment management system	■			■			Nurturing and Supporting Talent
25 Training and development	■			■			Nurturing and Supporting Talent
5 Anti-corruption	■	■	■	■	■	■	Compliance
7 Prevention of child and forced labour	■			■	■		Compliance
3 Customer privacy	■	■	■	■	■		Compliance
26 Diversity, equal opportunities, and anti-discrimination	■			■			Nurturing and Supporting Talent
36 Customers and the public health and safety	■	■	■	■	■	■	Compliance
10 Waste	■	■	■	■	■	■	Excellent Environmental Management
17 Green design			■	■	■		Excellent Environmental Management
16 Carbon neutral construction			■	■			Excellent Environmental Management
1 Respect for human rights and indigenous rights	■			■	■	■	Compliance

Participating Organisations

Hong Kong	Macau	Mainland China
The Hong Kong Chinese Enterprises Association – Construction Industry Committee	The Macau Chinese Enterprises Association	Sichuan Association for Construction Quality and Safety Supervision
The Hong Kong Construction Association	Associação Geral do Sector Imobiliário de Macau	Chengdu Construction Quality Association
Construction Industry Council	School of Business Advisory Board, Macau University of Science and Technology	Yunnan Construction Industry Association
Occupational Safety and Health Council	Macau Construction Industry Association	Foshan Shunde District Village Industrial Park Upgrading and Reconstruction Association
Vocational Training Council	Macau Association of Building Contractors and Developers	Hubei Province Department of Housing and Urban-Rural Development Engineering Projects Approval System Reform Committee
Labour Advisory Board	Macau Construction Association	Shenzhen Municipal Housing and Construction Bureau Prefabricated Building Specialists
Hong Kong Institute of Environmentalists	Macau Wo Kuong Advancement Association	Guizhou Youth Federation
The Employees' Compensation Insurance Residual Scheme Bureau Limited	Association of Study of Environmental Science and Technology of Macau	Shanxi Youth Federation
Employees Compensation Insurer Insolvency Bureau	Macau Construction Safety Association	
Development Bureau Joint Sub-committee on Streamlining of Development Control		
Registered Contractors' Disciplinary Board Panel		

Safeguarding the Environment

The Group is committed to building a high-quality and sustainable supply chain, achieving a balance of economic, environmental, and social benefits, promoting sustainability performance up and down the Group's value chain, and providing excellent services and quality products to customers.





Safeguarding the Environment

Targets and Actions

ASPECTS/ TARGETS

2022 PERFORMANCE

ACTIONS

Carbon-neutral transformation



Long-term

carbon reduction goal — reach carbon neutrality by 2060

Near-term

carbon reduction goal — reduce carbon intensity by 25% in 2025 compared to 2018 (carbon emissions/turnover)

9.13

tonnes / HK\$ million⁶
a decrease of
51% compared to 2018.



Provide low-carbon training to all employees every year

98%

of business-related employees received low-carbon training, an increase of 8% compared to 2021.



Provide low-carbon training for new hires

89%

of business-related new employees received low-carbon training, an increase of 7% compared to 2021.



Hong Kong's adoption rate of low-carbon and environmentally friendly generators — to reach 100% by 2026

> 60%

- Establish a Low Carbon Strategy Committee in 2022
- Support customers in reducing their carbon footprint
- Choose pilot projects and include low-carbon audits in the environmental review process

- Implement carbon assessments during the construction phase of pilot projects
- Publish a climate strategic development blueprint that aligns with the Paris Agreement, and adjust products and services in response to climate change
- Conduct external carbon verifications
- Collaborate with suppliers and other business partners to promote low-carbon construction
- Provide low-carbon training for employees

⁶ Verified by the British Standards Institution (BSI).

ASPECTS/ TARGETS

2022 PERFORMANCE

ACTIONS

Green Construction



Formulate a group-wide water resources management policy by 2022

Policy has been formulated



Hazardous Waste Reduction Intensity (the number of production/turnover)

0.001 metric tons/HK\$ million
a decrease of 99% compared to 2021



Increase non-hazardous waste recycling

2.54%



Reduce landfill or incineration waste intensity (production/turnover)

6.45 metric tons/HK\$ million



Reduce water consumption intensity (water consumption/turnover)

79.2 cubic meters /HK\$ million
a decrease of 17% compared to 2021



Reduced energy intensity (energy consumption/turnover)

5.44 MWh//HK\$ million
a decrease of 53% compared to 2021

- Reduce diesel fuel use at construction sites
- The project should be powered by power companies as early as possible
- Increase recycling and improve on-site practices
- Reduce and recycle construction site waste, especially materials from civil engineering activities, and reuse excavated materials for backfilling or environmental restoration of the site
- Further promote the use of solar photovoltaic panels

Green Design

The Group actively promotes green design, hoping to incorporate environmental protection concepts into project design to reduce the overall carbon emissions of buildings. The Group carefully designs from multiple aspects such as building materials, greening, lighting, and water use, aiming to integrate buildings into the surrounding environment and practice green and environmentally friendly design, even in future construction and operation.

Case Study

O-PARK2

O-PARK2 adopts the “BEAM Plus v1.2” platinum rating of the Hong Kong Green Building Environmental Assessment as its design standard. The environmental protection concept of carbon reduction has been integrated into the design stage, and the use of concrete has been reduced by 7.8% in the structural design process. In addition, solar panels are installed on the roof and BIPV power glass is used, making the park a group of power-generating buildings and a benchmark for green buildings. In the design of the pre-processing building, the Group selected a natural ventilation and natural lighting scheme, used large-scale display skylights to reduce indoor lighting equipment, and installed vertical louvers to block western sun exposure to reduce energy consumption during operation. To reduce carbon emissions during construction, O-PARK2 actively uses low-carbon building materials, such as low-carbon steel bars, green concrete, CO2 mineralized maintenance concrete blocks, etc. For more details, please refer to the “Road to Carbon Neutrality” chapter.



- BEAM Plus v1.2

Case Study

The Chinese University of Hong Kong Medical Centre

As the main contractor for Hong Kong's first non-profit private hospital project for design and construction, CSHK maintained close communication with the design team to implement green design. The Chinese University of Hong Kong Medical Centre was awarded the final Platinum rating of the BEAM Plus New Buildings Version 1.2 for its green building and environmental assessment. To avoid the windscreen effect and increase air convection, the Group placed a sky garden in the middle of the building during the design stage. The greening area of the project is as high as 20%. The large-scale vertical greening and sky garden can alleviate the urban heat island effect. In addition, according to the computational fluid dynamics simulation, the sky garden effectively increases air flow on the lee side, reduces the heat island effect, and improves air quality. At the same time, the project uses the Overall Thermal Transfer Value (OTTV) glass on the exterior walls of the building, which is light transmissive and effectively reduces thermal radiation. It reduces the load on the air conditioning system, thereby achieving energy-saving and carbon reduction.



Green Construction

Environmental Management System

To more effectively manage environmental issues in business operations, the Group has established an environmental management system and related standard operating procedures. The Group's Sustainability Policy outlines its approach to managing key environmental issues such as the treatment of emissions, the use of resources, the conservation of natural resources, and climate change. In addition, the Group strictly complies with environmental laws and regulations, contracts, and other relevant requirements to reduce construction waste and natural resource consumption, preventing environmental pollution. To establish an environmental management system more tailored to the operational location, the Group requires all subsidiaries to comprehend the environmental characteristics and needs of their respective locations, so as to implement specific management strategies that meet the requirements. The Group continues to consolidate and improve its management systems and mechanisms, and implements environmental protection measures in its daily operations. Environmental management systems within the Group are in accordance with ISO14001:2015, and its main subsidiaries have successfully passed internal and/or external audits within the past year to ensure the effectiveness of these systems.

To minimize the impact on the surrounding environment, the Group implements a construction plan and review system, and holds a review meeting before construction to ensure that the construction plan includes appropriate and effective environmental protection measures. To implement the environmental management system, the Group's Safety Management department is responsible for handling environmental management-related matters, including but not limited to:

- Develop the Group's annual and long-term environmental plans
- Review and maintain environmental management plans for various projects
- Supervise the implementation of environmental protection measures during construction
- Promote new environmental protection technologies

The Group strives to achieve compliance with building regulations through comprehensive and stable management practices. The Group is committed to digitizing, refining, and smartening construction site management, and improving natural resource utilization efficiency to avoid generating construction waste that strengthens the environmental management performance of construction sites. To reduce construction carbon emissions, the Group has developed and implemented a Green Procurement Policy to reduce the environmental impact of the supply chain and promote the development of green construction through practical measures



ISO14001:2015

Air Emissions

The Group is committed to improving air pollution prevention and control efficiency and reducing air emissions by enhancing the effectiveness of desulfurization and denitrification equipment in power plants, as well as using automatic spray heads to sprinkle water and control dust during construction processes, thus controlling the emission of air pollutants from the source. In 2022, the Group's air pollutants were mainly nitrogen oxides, accounting for 73% of the total emissions, mainly from the use of fossil fuels in power plants, construction sites, and company vehicles. Air pollution emissions from various categories have decreased significantly since 2021.

Greenhouse Gases and Energy

To assess and disclose greenhouse gas emissions ("GHG"), the Group has been recording and monitoring data from its business activities. The Group's GHG emissions quantification process and emission factors refer to the national standards and guidelines of the People's Republic of China⁷, the guideline prepared by the Environmental Protection Department and the Electrical and Mechanical Services Department of Hong Kong⁸, the guideline complied by the University of Hong Kong and the City University of Hong Kong⁹, as well as the international standards ISO 14064-1 and the Greenhouse Gas Protocol. The data disclosed by the Group is categorized by region to provide stakeholders with a comprehensive carbon footprint and a review of the Group's performance.

To ensure the reliability and accuracy of GHG data, the Group continues to engage external consultants this year, the British Standards Institution (BSI), to verify GHG data in accordance with ISO 14064-3 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements. The Group has verified data for 10 projects in Hong Kong, Macau, and mainland China during the reporting period, and is considering expanding the scope of data verification to other projects in the future.

According to the assessment of greenhouse gas emissions, the Group's main source of emissions, accounting for 81.2%, is Scope 1 emissions from fossil fuel combustion, with CSC Development accounting for 88.1%. Scope 2 emissions from purchased energy sources account for 10.4%, with CSCIICL and office projects emitting the highest proportion, around 44.6%. To achieve energy-saving and emission reduction targets, the Group used solar energy and energy-saving lamps at construction sites, which produced and used 45.19 MWh of renewable energy.

Nitrogen oxides

489,489 kg
(↓ 80%)

Sulphur oxides

152,500 kg
(↓ 51%)

Respirable Suspended Particulates (RSP)

28,198 kg
(↓ 81%)

⁷ Guidelines for Accounting and Reporting Greenhouse Gas Emissions China Public Building Operation Units (Enterprises) (Trial) and Guidelines for Accounting and Reporting Greenhouse Gas Emissions Other Industrial Enterprises (Trial)

⁸ Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong prepared by the Environmental Protection Department and the Electrical and Mechanical Services Department of Hong Kong

⁹ SME Carbon Audit Toolkit compiled by the University of Hong Kong and the City University of Hong Kong

The total GHG emissions in Scope 1 are divided into the following categories:

GHG	Hong Kong	Macau	Mainland China	CSC Development	Total	Unit
Scope 1: Direct GHG emissions	19,264.0	39,609.4	39,207.2	727,687.7	825,768.4	Tonnes of CO ₂
Carbon dioxide (CO₂)	2,879.5	2,317.5	7,993.1	727,453.2	740,643.4	Tonnes of CO ₂
Methane (CH₄)	63.9	1.0	2.1	0	67.1	Tonnes of CO ₂
Nitrous oxide (N₂O)	31.8	23.6	0	0	55.3	Tonnes of CO ₂
Hydrofluorocarbons (HFCs)	16,288.8	13,291.3	13,892.4	234.5	43,707.0	Tonnes of CO ₂
Perfluorocarbons (PFCs)	0	0	0	0	0	Tonnes of CO ₂
Sulphur hexafluoride (SF₆)	0	0	0	0	0	Tonnes of CO ₂
Bromotrifluoromethane (BTM)	0	23,976.0	17,319.6	0	41,295.6	Tonnes of CO ₂

During the reporting period, the total energy consumption of the Group was 554,857 MWh, with CSC Development having the highest energy consumption due to the use of coal in the Huanggu Thermal Power Plant, accounting for 64.6% of the total. Other main types of energy include externally purchased electricity and power, with CSCIL using the most, accounting for 46.4% of the related energy consumption.

The Group will continue to evaluate, record, and disclose GHG emissions and energy usage data, and will continue to review the effectiveness of current measures to assist in further developing its energy efficiency and energy-saving objectives in the future.

Water Resources

Water is a precious resource on earth, and the Group is committed to conserving and reusing water in its operations. The water resources used by the Group are mainly supplied through municipal water supply or other public or private enterprises, so there are no problems with water sources. According to WRI's Aqueduct Water Risk Atlas, 69.1% of water withdrawal of the Group is not from water stressed regions, 91.2% discharges are freshwater.

To improve the efficiency of water resource usage, the Group collects rainwater for use during operations. In addition, the Group installs sedimentation tanks and sewage treatment facilities at construction sites to recycle the sewage as much as possible. Nearly 495,309 cubic meters of wastewater from the Group's projects have been reused, mainly for dust reduction on construction sites. Due to the nature of the construction industry, the Group inevitably produces domestic, construction, and industrial wastewater. All wastewater from the Group is treated and discharged in accordance with local laws and regulations, and appropriate wastewater treatment facilities have been installed in the projects.

Nearly

495,309 cubic meters

wastewater from the Group's projects have been reused

Source Category of water withdrawal	Amount of water consumed/discharged	Unit
Surface water	654,435	Cubic meters
Groundwater	1,461,246	Cubic meters
Sea water	1,555	Cubic meters
Municipal water supply or third party water	5,958,408	Cubic meters
Total water consumption	8,075,644	Cubic meters
Water consumption density (by turnover)	79.2	Cubic meters/ million HKD

Effluent destination	Amount of water consumed/discharged	Unit
Surface water (discharged to natural water bodies (rivers or lakes, etc.) after being treated by sewage treatment facilities)	188,609	Cubic meters
Groundwater (discharged into groundwater after being treated by sewage treatment facilities)	10,505	Cubic meters
Seawater (discharged into the sea after being treated by sewage treatment facilities)	185,551	Cubic meters
Communal stormwater drains (discharged after being connected to the municipal pipe network)	755,308	Cubic meters
Communal sewers (discharged after being connected to the municipal pipe network)	1,007,172	Cubic meters
Total water consumption	2,147,144	Cubic meters
Water consumption intensity (by turnover)	21.1	Cubic meters/ million HKD

Waste

To reduce waste and increase resource efficiency, the Group continues to focus on design, process, and material management, and strictly adheres to the relevant regulations for handling hazardous and non-hazardous waste in the construction, production, and offices in its operating location. As for harmless waste materials such as engineering demolition materials and factory scrapped concrete components, the Group sets up special areas for storage on construction sites or within factories. Waste sorting is done first, and then cleaning and transportation are carried out according to regulations, with efforts made to recycle soil and demolition materials. Hazardous waste, including chemical waste, is entrusted to qualified units for processing.

Category	Amount of waste generated	Unit
Hazardous waste		
Construction site-excavated materials exceeding heavy metal standards	21	Metric tons
Construction site- excavated materials contaminated by petroleum products	10	Metric tons
Level-3 polluted marine sediment	0	Metric tons
Other hazardous waste	120	Metric tons
Non-hazardous waste		
Inert construction and demolition materials	667,640,638	Metric tons
Non-inert construction and demolition materials	17,611,007	Metric tons
Other non-hazardous waste	447,578	Metric tons

Disposal Method	Amount of hazardous waste generated	Amount of non-hazardous waste generated	Unit
Reuse	30	0	Metric tons
Recycling	0	17,400,894	Metric tons
Upcycling	0	202	Metric tons
Combustion (being sent to incinerators)	0	1,943	Metric tons
In-situ storage	30	0	Metric tons
Landfill (being to landfills)	0	655,546	Metric tons
Landfill (being sent to public fill reception facilities of the government)	31	607,440,134	Metric tons
Reuse as filler		59,034,256	Metric tons
Reuse as concrete aggregate	0	1,166,248	Metric tons
Processed by qualified contractors	60	0	Metric tons
Marine dumping ¹⁰	0	0	Metric tons
Total waste	151	685,699,223	Metric tons
Waste intensity (by turnover)	0.001	6,723.86	Metric tons per million HKD

¹⁰ A marine dumping permit has been obtained.

Green Awareness

The Group understands that all environmental measures require joint practice of employees, business partners, and customers. To raise employees' environmental awareness, environmental management has been included in the performance evaluation of all projects and employees. Employee bonuses, promotions, and salary increases are all based on environmental performance. To enhance employees' common environmental awareness and management capabilities, the Group regularly arranges and holds various environmental-related trainings, including green building and construction, construction noise permit application training, etc., to let employees understand environmental-related laws and regulations, technology, products, and other knowledge, and to consolidate their green environmental awareness.

Building a Sustainable Supply Chain

The Group is committed to building a high-quality and sustainable supply chain, achieving a balance of economic, environmental, and social benefits, promoting sustainability performance up and down the Group's value chain, and providing excellent services and quality products to customers.





Building a Sustainable Supply Chain

Target and Action

ASPECTS/TARGETS

2022 PERFORMANCE

ACTIONS



In 2022, establish a group-level “Sustainable Procurement Guidelines”

Completed policy development



In 2023, develop a “Sustainability Initiative” applicable to the Group’s suppliers and subcontractors

Work in progress



Each business division holds two relevant employee training sessions every year

Each business division holds two employee training sessions



Each business division holds one supplier and subcontractor training/seminar every year to convey the group’s sustainability requirements

Conducted one training session for the top 100 suppliers in the Group in terms of purchasing volume



By 2025, 100% of the wood purchased by CSHK will be FSC/ PEFC certified

99.9%¹¹



Establish a green and low-carbon material procurement platform

Set up Sunrise Green Technology Limited to purchase green low carbon materials and equipment for the Group

- Establish group-level policies and measures for protecting forests
- Set targets for reducing material loss during manufacturing and distribution
- Through incentive mechanisms, encourage suppliers and contractors to meet the group’s safety and environmental protection requirements and continuously improve their social responsibility performance
- Support the “Registered Specialist Trade Contractor System” of the Hong Kong Construction Industry Council and give priority to hiring registered contractors
- Link the supply chain with the United Nations Sustainability Goals (SDGs)
- Provide sustainable supply chain training for relevant employees
- Provide sustainable supply chain training for suppliers and contractors

¹¹ The data has been verified by the British Standards Institute (BSI).

SUPPLY CHAIN MANAGEMENT

To ensure that suppliers meet the required quality standards, CSHK has formulated the “Procurement Policy” and “Supplier Code of Conduct” to manage supply chain risks. To reduce resource waste and carbon emissions, CSHK strives to select suppliers with good business ethics and corporate social responsibility, as well as procuring goods that are nearby, environmentally friendly, and ordered according to demand. The Group has also established an approved supplier list and maintains long-term cooperative relationships with suppliers to enhance its competitive position. Furthermore, the “Materials Procurement Work Procedure” stipulates that safety, health, and environmental factors must be considered when selecting suppliers, and their performance is regularly evaluated and reviewed to update the supplier list to manage supply chain risk effectively.

During the Reporting Period, the Group revised its “Sustainability Procurement Policy” to clarify the board’s responsibility for sustainable procurement to reduce environmental, social, and economic risks associated with procurement and supply chain management. The Board is responsible for setting short-term and long-term sustainable supply chain management objectives as well as monitoring and evaluating the implementation of procurement-related action risk management plans, policies, and performance measures.

The Group will give priority to suppliers and subcontractors who meet the following criteria:

- Support the Construction Industry Council’s “Registered Specialist Trade Contractor Scheme” and prioritise hiring registered contractors;
- Promote the connection between supply chains and the United Nations Sustainability Goals (SDGs);
- Prioritise selecting suppliers who support environmental awareness and develop green processes and technologies.

To ensure compliance and continuous improvement, the Group regularly reviews the environmental, social, and governance performance of the supply chain and procurement process. The Group encourages suppliers and subcontractors to collaborate on relevant risk management plans and goals in order to implement sustainable supply chain risk management. In addition, to deepen employees’ understanding of sustainable supply chain, the Group provides sustainable supply chain training and guidance to relevant employees, suppliers, and subcontractors to assist them in gaining professional knowledge and skills in sustainability and environmental procurement.

Procurement of Sustainable Materials

To promote the development of a sustainable supply chain, the Group has established a low-carbon materials and products database.. Procurement of related green and low-carbon products is managed through the CDMS system, which includes contract management, inventory records, and payment processing, to ensure data accuracy and completeness. The Group has also developed targets and action guidelines for the use of project materials and equipment, with the aim to follow the best sustainable practices in every step.



TARGETS FOR PROCUREMENT OF SELF-OWNED ELECTRIC VEHICLES:



INNOVATIVE GREEN BUILDING MATERIALS:

Encourage the use of carbon-sequestering precast concrete (i.e. sand bricks, concrete blocks, stone slabs, etc.) on construction sites. Such products are produced by patented carbon dioxide capture, utilization, and storage (CCUS) technologies, will contribute to a future "net zero" industrial economy.



GENERATOR AND MACHINERY RENTAL:

- Gradually increase the proportion of storage generators/ shovels from 2023 onwards to reduce diesel consumption and improve energy efficiency. Diesel generators with NRMN Euro III certification will account for 70% from 2023 onwards, increasing by 10% per year thereafter to 100% by 2026.
- All crane trucks will be Euro V and less than 10 years old.



COPY PAPER:

Use environmentally certified and recycled paper in all offices, and encourages construction sites to use.



PLYWOOD AND GREEN SQUARE:

Use environmentally certified plywood and wood squares.



PRIORITY WILL BE GIVEN TO THE USE OF LOCALLY QUARRIED STONE.



REUSE OF OLD STEEL.



OFFICE FURNITURE:

All office furniture is made from E1-rated wood.



EMPORARY LIGHTING:

LED lighting is used for temporary lighting at all construction sites.

Nurturing and Supporting Talent

Employees are valuable assets of the enterprise, and attracting and cultivating talents is the key to the prosperity and development of the group. To reward the contributions of employees, the group has established a sound employment system, a safe working environment, and comprehensive training and development, sharing the achievements of the group with employees.



Nurturing and Supporting Talent

Target and Action

ASPECT/TARGET

2022 PERFORMANCE

ACTION

Talent acquisition and retention



Percentage of personal performance review for monthly paid employees

100%
by 2022

95%
up 4% from 2021



Employee turnover rate **below**

25%
by 2025

23%
up 3% from 2021

- Establish a performance-based compensation system for monthly paid staff
- Include learning and development plans in the performance review of senior and middle management
- Improve internal job mobility
- Expand recruitment programs, including the Haizhizi and Sea's Recruits programs at the group level, and the programs of business divisions
- Conduct an anonymous employee satisfaction survey



ASPECT/TARGET

2022 PERFORMANCE

ACTION

Staff training



Training percentage of monthly paid employees



- Provide a variety of training for staff and help them acquire future-oriented skills



Average training hours of monthly paid employees



- Enhance training related to sustainability

Occupational safety



Occupational injury rate below



- Establish a mechanism for subcontractor workers to report safety hazards



Annual safety and health training covers



¹² The data includes the Group's employees and outsourcers, etc., and has been verified by the British Standards Institution (BSI).

Work Safety and Health

Health and safety are key issues in the construction industry. The Group is committed to obtaining the support of employees and partners through good health and safety management, and winning the trust of customers and the public. The Group takes various measures and advanced technologies to minimise safety hazards and protect the safety and health of employees, business partners, customers, and the public. The Group has established the "Production Safety Supervision Management System" and the "Production Safety Responsibility List", which clearly define the responsibilities of all departments and personnel of the Group. "Production Safety Supervision Management System" regulates different types of subsidiaries and projects with safety management methods, establishes management requirements for safety production planning, training, technology, costs, hazard identification and risk assessment, equipment safety, safety inspection and hazard investigation, emergency management, subcontractors, and occupational health for the four categories of businesses: construction, professional technology, infrastructure investment, and operation. It also explains the process of managing safety accidents, safety assessments, and continuous improvement.

The occupational safety and health management system of the Group meets internationally recognised standards, and its subsidiaries are working on obtaining ISO45001 certification. CSHK and CCE Macau general managers review, update, and publish their safety and health policies every year, including safety and health commitments and safety management objectives.

To further improve the occupational safety and health system, the Group has established a Safety Management Department, chaired by the Chief Executive Officer, to lead other keys stakeholders, including Vice Presidents, Finance Director, Security Director, and Assistant Director of Human Resources of its subsidiaries, etc., adopting the principle of "safety first, prevention first, comprehensive management", making decisions on the Group's overall security management system. The decisions of Safety Management Department are implemented by each member of the Department in accordance with his or her area of responsibility. The Safety Director and the Safety Management Department (the "Safety Management Supervision Department") are responsible for monitoring the implementation and reporting regularly to the Board and the Safety Management Department.

SAFETY MANAGEMENT DEPARTMENT

- Implement national and local safety management regulations and policies
- Implement the Group's safety management system and management measures
- Listen to safety production reports, formulate the Group's safety production goals and medium- to long-term development plans
- Approve the annual safety production work plan and ensure the investment in safety production expenses
- Improve the Group's safety production rules and operating procedures
- Organise safety production assessments for departments and subsidiaries of the Group
- Develop the Group's safety production education and training plan
- Develop and improve the Group's safety accident emergency response plan

The Group organised several meetings to deploy safety hazard inspections during the Reporting Period, in order to ensure a high level of safety in production work, conveyed important instructions and work arrangements from leaders across the company to safeguard employees and the company's assets. The Group also implements key supervision and special inspections for key regions (such as Guangdong, Hong Kong, and Macau, Anhui Hefei, etc.), key projects (such as China Construction Group's qualifications winning projects, large investment projects, and 3311-level safety risk projects), and key moments (such as statutory holidays, the "July 1st" Hong Kong return anniversary, and around the "20th National Congress"), and deploys special rectifying actions for firefighting, infrastructure, tower cranes, and high support formwork safety hazards to ensure the comprehensive promotion of safety hazard inspections. At the same time, the Group strengthens the effectiveness of "same-city joint inspections", implements reporting from the last position, takes immediate action to eliminate hazards, and covers 100% of inspections for 3311-level and business division-level risk projects throughout the year.

The Group provides safety education and training to its employees, and establishes effective communication and consultation channels with them to reduce accidents. Additionally, the Group regularly assesses the hazards and risks to safety and health resulting from construction projects, improves workers' safety behaviors through safety climate surveys, and adopts reasonable and feasible measures and innovative methods to continuously improve safety and health performance.

Nurturing and Supporting Talent

Workers' feedback and opinions are helpful in improving the safety and health system. Employees are encouraged to report potential safety management loopholes through various channels and to stop any harmful health projects to assist the Group in implementing a safe production process. Nevertheless, the Group pledges to maintain the confidentiality of the reported content in order to protect the rights of the relevant personnel. After investigation, if the report is true, appropriate rewards will be given to the reporter.

During the Reporting Period, a total of 152 employees and workers were injured at work, and there was one accidental death caused by a traffic accident. The most common causes of injuries were slipping, tripping, falling, hitting, stabbing, and colliding with objects. Safety management procedures and local laws and regulations were followed by the Group in determining remedies and compensation for the parties involved. Detailed procedures for handling accidents and work-related injuries were also formulated by the Group. Investigation of serious accidents, documentation of accident processes, photographs, drawings, witness testimony and improvement suggestions are all part of the process to prevent similar accidents from occurring in the future.

Aside from improving safety production management and occupational disease prevention, the Group also pays special attention to employees' physical and mental health, as well as providing medical benefits such as life, accident, medical, and dental insurance, as well as arranging and subsidizing physical examinations. We encourage our employees to develop healthy lifestyle habits, relieve work pressure, and balance their work and personal lives. Additionally, the construction site routinely checks older workers and measures their blood pressure in order to remind them to take care of their health



Employment and Treatment

Upholding the human resources mission of “To Assemble the Enterprising Ones and Motivate the Promising Ones” of COHL, the Group has formulated human resources management policies and systems, which are implemented by the Human Resources Department. The Group provides competitive salary and benefits for employees, regularly reviews the compensation system, establishes a talent pool, implements performance incentives, and forms a talent team. As of December 31, 2022, the Group has employed a total of 15,346 full-time employees. Among them, 15,312 are full-time staff, and 34 are part-time staff.¹³ The statistical distribution of employees is shown below:

			MALE	FEMALE				
TOTAL NUMBER OF EMPLOYEES								
By employment contract	Unlimited term/ permanent	Hong Kong	4,201	1,194				
		Macau	660	214				
		Mainland China	553	165				
		CSC Development	1,336	244				
	Fixed term/ temporary	Hong Kong	254	2				
		Macau	241	44				
		Mainland China	2,270	584				
		CSC Development	2,890	494				
			MALE	FEMALE	HONG KONG	MACAU	MAINLAND CHINA	OTHER REGIONS ¹⁴
Total number of employees			11,268	2,266	4,500	766	7,757	292
Rate of employee turnover (monthly paid)			23%	20%	26%	11%	23%	30%

¹³ All are CSC Development's employees

¹⁴ Including USA, Canada, UK, Portugal and Dubai.

Employment System and Welfare

To safeguard the rights and interests of employees, the Group signed employment contracts with employees that comply with the laws of the operating location. The Group strictly adheres to relevant laws and regulations, including the Labour Law of the People's Republic of China, the Labour Contract Law of the People's Republic of China, the Employment Ordinance of Hong Kong and the Labour Relations Law of Macau, and establishes corresponding procedures in the personnel recruitment process, reviewing the identity cards and other documents of the applicants, and making every effort to prevent the employment of child labor; the Group eil also confirm the job willingness of the applicants to eliminate forced labour.

The Employee Handbook of the Group outlines the rights and responsibilities of employees, as well as their wages, working hours, leave, and benefits. In addition to basic wages and statutory benefits, according to region and employee category, the Group provides various types of leave, including paid annual leave, marriage leave, funeral leave, exam leave, and birthday leave, offers subsidies and benefits, such as relocation allowances, professional qualification subsidies, employee canteen or meal subsidies, congratulations gifts, corporate pensions, and long-service awards, and also purchases medical insurance for employees. Furthermore, the Group values and cares for its employees' families. Employees' family members can apply to participate in the Group's medical welfare plan, and the premiums of employees whose job grades and seniority meet certain conditions will be fully subsidized by the Group. If employees have any questions or disputes related to employment, they can file a complaint with the leadership through their immediate supervisor, department head, or human resources department. Additionally, employees can participate in organizations such as the Hong Kong Construction Industry General Union to promote fair and reasonable employment conditions in the industry.

Performance Evaluation and Promotion System

The Group places emphasis on constructing a talent ladder, promoting young talent, cultivating reserve cadres, providing equal career advancement opportunities for employees, and conducting fair and scientific performance appraisals. Currently, four members of the senior management team (22%) and 111 regional company management team members (39%) are Generation X. The Group has also implemented "promotion assessment" and "emergency promotion" for employees and officers in areas such as epidemic prevention and control, business expansion, and business transformation and change.

To meet the needs of the Group's rapid development and employee career growth, the Group has benchmarked the management practices of world-class and domestic enterprises and adopted the "MAPS" (Management, Administration, Professionals, Sales) job grade system that takes into account both the management and professional technical channels. It caters to the needs of guiding outstanding employees to pursue excellence and continuous improvement in different businesses, regions, and fields, ultimately achieving mutual benefits for the Group and individuals.

Every year, the Group conducts a talent inventory to assess key positions and competency requirements for different businesses based on their development status and future planning, evaluating the professional competence, management ability, and personal career development of employees in key positions, in order to fully understand the talent matching situation for key core positions in the Group. The Group is actively building a reserve talent pool and implementing a succession plan in response to identified talent gaps. During this process, it prioritizes reserving talents for key positions based on various internal training mechanisms, such as internal promotion, job rotation and transfer, leadership training, and overseas dispatch, in order to maximize the effectiveness of the existing talent resources.

Subcontractor Employment Management System

The construction industry involves a large number of subcontractors, and the Group is committed to protecting relevant workers' rights and interests. As a result, the Group has labour officers on construction sites who conduct labour-management review meetings with all subcontractors on a regular basis. They are responsible for handling labour relations matters, including receiving complaints from workers, maintaining attendance records in the registration system, overseeing subcontractor wages, and managing and supervising subcontractor labour rights. Additionally, labour officers are responsible for ensuring that all types of contractors and subcontractors are complying with legal requirements in their employment activities, and regularly checking the registration information of workers in order to prevent issues related to child labour or forced labour.

The Group encourages workers on its sites to report unfair treatment. Surveys are conducted proactively to determine whether workers have encountered situations that harm their interests, such as wage arrears. A notice listing complaint channels is also posted in prominent locations on construction sites to ensure workers are aware of their rights and how to obtain assistance.

Employee Communication Channels

The Group values its employees' valuable opinions and actively communicates with them through various channels to build mutual trust. Team building and employee care activities are conducted by the Group to enhance the sense of belonging among its employees. Also, the Group publishes internal newsletters to keep employees informed of new developments and strengthen their cohesion, resulting in an effective collaborative team.

Diversified and Equal Working Environment

We are committed to equal opportunity and aim to provide a safe, inclusive, diverse, and non-discriminatory working environment for all employees, regardless of their background. In accordance with the Group's "Prevention of Discrimination and Harassment Policy", recruitment, salary, promotion, transfer, training, dismissal, and layoff decisions are based on "uniform selection criteria", which considers the true job needs considering the employee's experience, education, skills, and other legal factors. To protect excellent talents with diverse characteristics and backgrounds, the policy clearly defines harassment and provides examples as well as methods for employees to file complaints and handle harassment or discrimination.

Training and Development

To respond to the rapidly changing business world, the Group actively establishes a talent pool and echelons, and actively implements talent development plans through internal and external training to enhance employees' competitiveness and professional skills while combining group business expansion with personal employee development to improve employees' sense of belonging and identity.

The Group's policy documents such as the Employees Manual, the Training Manual, the Human Resources Management System, and the Training Working Procedures explain the purpose and function of training, and specify the requirements for internal and external trainings. To strengthen employees' professional knowledge, tap into their potential and work enthusiasm, the Human Resources Department formulates annual training plans based on the Group's development needs, employee assessments, questionnaire surveys, and senior management discussions, and is responsible for conducting internal standard courses. The content revolves around the following six categories, aiming to ensure that employees receive comprehensive development:



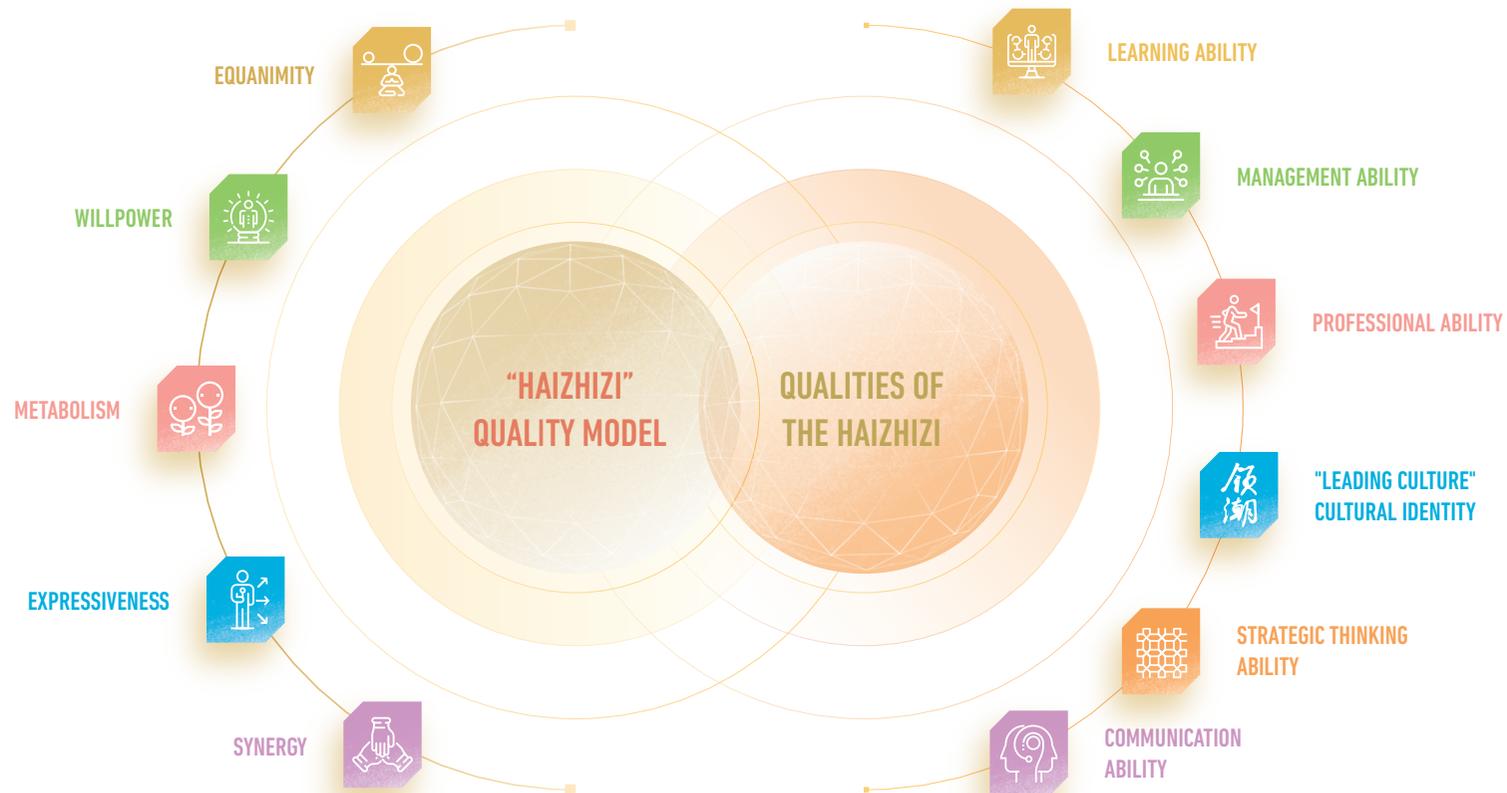
Furthermore, the Group provides external course subsidies for employees and has established educational subsidies for employees seeking diplomas or degrees related to their jobs. Using internal and external approaches, the Group continuously cultivates excellent and comprehensive talent.

For the purpose of cultivating a high-quality cadre force and studying company development issues, the Group has established the Xiangjiang Management Institute to provide training for senior management, key personnel, and young students. It offers comprehensive courses and invites senior leaders and external lecturers to teach backbone students time management, leadership, emotional management, and other skills. Two series of training courses are available to young students in engineering management and functional management. The Xiangjiang Management Institute concentrates on strengthening innovation and governance capabilities, broadening students' international perspectives, and fostering corporate culture to meet the Group's strategic development needs. Students are guided in establishing correct values by the institute, and belief education is provided to support the development of excellent behaviour. The Group is also working on the construction and management of a knowledge base, which consists of a variety of training content, question banks, courseware, and videos, as well as work guidelines, engineering summaries, and research reports. Several workshops and external exchange visits are also organised by the Group to encourage employees to share their learning achievements and to further develop themselves.

To facilitate the integration and development of Hong Kong professionals into the Greater Bay Area, the Group has developed the "Qianhai Experience Program," which selects Hong Kong employees from all ages to experience work and life in the Greater Bay Area. Meanwhile, the Group supports the Group's "Thousand People Across the River Project," which promotes Hong Kong professionals' integration into the Greater Bay Area by sending 1,000 Hong Kong personnel across Shenzhen River to work in Mainland China during the 14th Five-Year Plan period. The Group offers a platform for professionals and young people in Hong Kong with potential and aspirations to work in the Greater Bay Area for 3-5 years or for short-term rotations and exchanges, and then return to Hong Kong to make a contribution. By providing them with high quality, broad vision, and an understanding of Hong Kong's overall development, the Group hopes that they will become patriotic and Hong Kong-loving construction talents who make valuable contributions to the industry of Hong Kong.

Nurturing and Supporting Talent

With the theme of "Building Dreams, Infinite Possibilities," the Group has launched the "Haizhizi Campus Recruitment Program" to develop management talent. The Group offers specially tailored training programs to help management trainees advance in their careers and grow together with the Group. The Haizhizi program is based on five systems of recruitment management, training management, incentive management, performance assessment, and pressure management, with the goal of developing "Haizhizi" into an international professional manager who is versatile, comprehensive, and proficient in management within three to four years.



Serving the Community

The Group upholds the concept of taking from society and giving back to society, actively giving back to the community, participating in public welfare, and benefiting the neighborhood.



Target and Action

ASPECT/TARGET

2022 PERFORMANCE

ACTION

Community investment



Community projects organised/
co-organised/participated —
at least

80 projects
per year by 2025

165 projects



Employee volunteer hours —
increase by

15 %
in 2025 compared
to 2020

16,931 hours **37** % more than in 2021



Employee volunteer attendance —
increase by

15 %
in 2025 compared
to 2020

3,690 attendances **14** % decrease from 2021



Community investment amount —
increase by

15 %
in 2025 compared
to 2020¹⁵

HKD **415,800**¹⁶ 3% more than that in 2021

- Link community investment policies to United Nations Sustainability Goals (SDGs)
- If there are communities around the project, project personnel should be responsible for community communication to understand the needs of the local community.
- Provide generous learning subsidies to encourage students from low-income backgrounds.

Employing opportunities for disadvantaged groups and young people



Number/amount of apprenticeship —
30 places per year for young apprentices with low-income background from 2022 onwards

19 apprentices were subsidised¹⁷

¹⁵ Converting volunteer hours to money, the 2020 standard has been re-estimated as follows: Volunteer hours in 2020 are worth approximately HKD 2,875, and the community investment amount reported in 2020 is approximately HKD 1,157, for a total of approximately HKD 4,032.

¹⁶ Including about HK\$2,570,000 equivalent salary of volunteer hours.

¹⁷ The Group was allocated 19 apprentices from the "Apprenticeship Training Scheme" of the Hong Kong Construction Industry Council. The Group is willing to sponsor more apprentices to join the construction industry.

Together, We Fight the Virus

A major objective of the Group's epidemic prevention projects is to enhance society's ability to prevent epidemics and lessen their effects. The epidemic prevention situation in Hong Kong faced its most severe test in over two years due to the fifth wave of outbreaks that occurred during the reporting year. With the belief that "Together, we fight the virus" and that "Time is life," the Group overcame difficulties and urgently constructed eight medical facility projects, providing approximately 40,000 isolation beds.

Using the "Modular Integrated Construction" (MiC) method, the Chuk Yuen Bay and Kai Tak community isolation facilities were completed and delivered within 122 days of construction, in which prefabricated components and the majority of finishes were completed in the factory, reducing the overall construction time. Chuk Yuen Bay's isolation facility is two stories high, and Kai Tak's isolation facility is four stories high and equipped with elevators, with each unit having an independent toilet and bathroom. We completed the first six community isolation facilities within 29 days, located in Tsing Yi, Qian Xintian Shopping Centre, Hong Kong-Zhuhai-Macao Bridge, Hong Kong Port Artificial Island, Ma Shi Road, Fanling, Hung Shui Kiu near Ji Bo Ling Road, and Yuen Long Tam Mei. Among them, the Tsing Yi community isolation facility was built in just seven days, creating a "Hong Kong construction miracle."

urgently constructed eight
medical facility projects

providing approximately

40,000 isolation beds



Kai Tak's isolation
facility

4 stories high

equipped with



elevators



independent
toilet



independent
bathroom



- Kai Tak cruise terminal community isolation facility



- Spray nano coating and install air fresheners equipped with high-efficiency air particle screening (HEPA) or photocatalytic air treatment technology in the site office

Additionally, the Kai Tak cruise terminal community isolation facility and Chuk Yuen Bay community isolation facility were designed to accommodate their use during and following the epidemic period, thereby solving the housing problem for approximately 20,000 individuals by serving as isolation facilities during the epidemic and converting them into transitional housing for society with a few modifications in the future.

To protect the site's environment and the health of engineering personnel, the Group assigned an epidemic prevention director to the site to oversee epidemic prevention responsibilities and measures on personnel entry, site access, and epidemic prevention on-site. By implementing measures such as grid construction and limiting the number of personnel working in the same area simultaneously, the epidemic was isolated from the project. In addition, the Group introduced technological products to aid in preventing construction epidemics, including setting up an electronic health declaration platform for convenient employee management, spraying nano coatings and installing air fresheners equipped with high-efficiency air particle screening (HEPA) or photocatalytic air treatment technology in the site office to ensure the health and safety of project workers.

Community Care

Business operations are dependent on society, and the Group actively fulfils its corporate responsibility by giving back to the community, participating in public welfare, and enhancing the quality of life in the neighbourhood. The Group has built a number of infrastructure projects that have improved the lives and economies of the local residents, but the construction process has also had a significant impact on the surrounding communities.

To minimise interference with residents' normal working hours, the Group prepares a community participation plan before the project begins. For some projects, the Group also recruited public relations personnel to maintain active communication with nearby residents, local councillors, and government departments, establish good community relations, and establish a hotline for community consultation. The contact information was also posted outside the construction site as a means of collecting feedback and ensuring timely reporting and resolution of potential problems.

CSCI has established the "CSCI Caring for the Community Volunteer Branch", which systematically organises community construction work and anticipates becoming one of the largest and most influential charities in Hong Kong. The volunteer branch is led by the Group's management and CSHK, with the aim of providing professional services to the community, coordinating volunteer activities, allowing employees to contact the community, care for society, and build the Group's brand. By improving the organizational structure of the volunteer branch, establishing work norms and incentive mechanisms, and promoting a volunteer culture within the Group, the Group is continuously improving the management efficiency of the volunteer branch. In addition to the expectation that more employees and their families, customers, and social groups will join public welfare undertakings, bringing together patriotic and Hong Kong-loving forces, and fostering a positive energy within the community.

Serving the community

The volunteer subgroups have the “4+x” themes of “Care for the Elderly”, “Contribute your Skills”, “Care for Teenagers”, “Care for your Home” and “Innovative Space”, continuously giving play to their main business advantages, understanding social needs related to housing repairs, urban development, and environmental protection, and focusing on serving the elderly, youth and those in need. During the reporting year, the Group’s volunteer participation in Hong Kong exceeded 2,800 people, with over 15,000 service hours, for which it received the “Hong Kong Volunteer Award 2022 Enterprise (Volunteer Hours) Gold Award” from the Civil Affairs and Youth Bureau and the Volunteer Work Development Bureau.

number of people of the Group’s volunteer participation in Hong Kong

exceeded **2,800**

over

15,000 service hours



Case Study

Strive and Rise Program



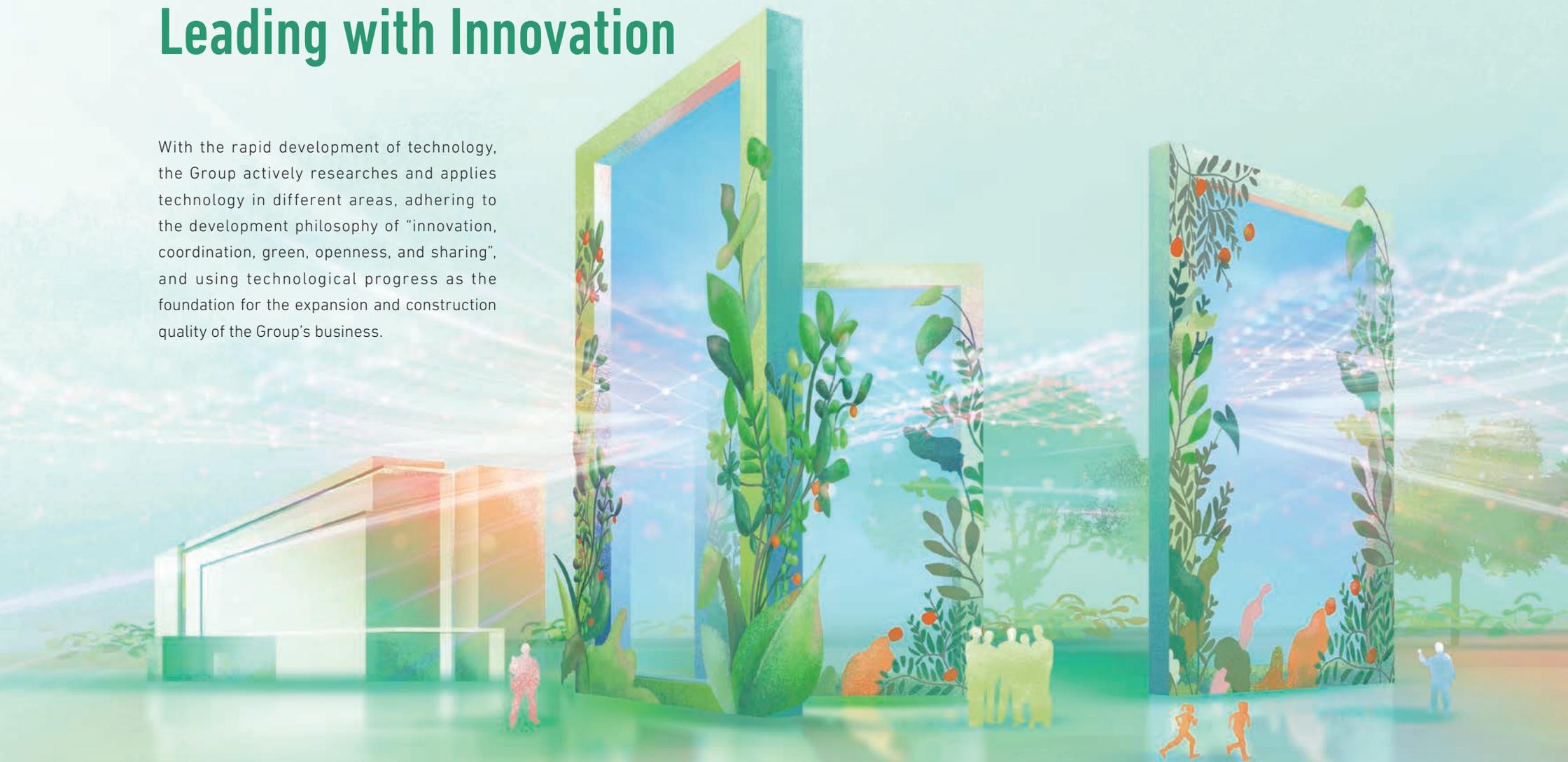
The Group Volunteer Branch continues to leverage its long-term experience in targeted poverty alleviation for young people and has explored more ways to do so. The Group actively participated in the Strive and Rise Program initiated by the HKSAR Government this reporting year, providing over 60 candidate mentors, a variety of group activities, and donations to help it become a strategic partner of the program's partner committee. Students from grassroots families were partnered with volunteer mentors for at least one year, sharing life experiences and providing guidance on personal development planning and establishing positive values, thereby contributing to the alleviation of intergenerational poverty.



The Group will continue to participate extensively in the economic development and improvement of the livelihoods of Hong Kong residents, both within and outside of business, continuing to encourage more employees, family members, customers, and social groups to practice social responsibility together, and bringing positive energy to society.

Leading with Innovation

With the rapid development of technology, the Group actively researches and applies technology in different areas, adhering to the development philosophy of "innovation, coordination, green, openness, and sharing", and using technological progress as the foundation for the expansion and construction quality of the Group's business.



Target and Action

ASPECT/TARGET

2022 PERFORMANCE

ACTION

Technological innovation

R&D investment



annual turnover by 2025

2.5%

Continue to invest in science and technology

- Utilise R&D funding from external sources to develop innovative technologies
- Develop new products and services in collaboration with academic institutions
- Invest in and support start-ups strategically
- Use BIM widely in new contracts
- Utilize technologies such as MiC, BIM, and DfMA to reduce on-site construction time, resulting in safer and more efficient projects
- Increasingly use and integrate various technologies, such as AI, IoT, big data, VR, and AR

Number of research and application projects of innovative technologies



20 projects per year from 2022 onward

Focus on the research and development of innovative technologies, and apply at least 21 advanced technologies and engineering methods to projects by 2022.



Increase the number of patents, engineering methods, and papers year by year, while maintaining the development of scientific and technological innovation.

Obtain 19 national and provincial engineering methods and 165 patents by 2022. Also, publish a total of 67 independent or joint research papers in influential academic journals.

training rate in innovative concepts and tools will be achieved



by 2025 among scientists and technologists

100%

9,790 technology related staff received training.

INNOVATIVE TECHNOLOGIES

To enhance our core competitiveness, the Group has established a “Science and Technology Management System” designed to improve management systems and organizational structures, standardise policies for technology development planning, work plans, performance appraisal, result management, and increase investment in R&D incentives, in order to enhance our core competitiveness. Additionally, the Group’s senior management team has established a technology innovation leadership group responsible for formulating technology development strategies and guidelines, which are implemented by the technology management committee and carried out by the technology management department on a daily basis. The Group formulates an annual innovation project plan, and sets a budget for it, allowing subsidiaries to propose technical needs and issues that are launched after approval. The project teams summarise and verify innovation achievements at each stage based on R&D progress. The Group will recognise outstanding projects and select them for participation in external technology awards.

Collaboration between Industry and School

The Group's Architectural Technology Research Institute has seven research centres to promote the development of building technology:

THE ASSEMBLY PREFABRICATED CONSTRUCTION RESEARCH CENTRE

has a professional team across the whole industry chains, including design, manufacturing, construction, materials, and so on. Its main topics are the MiC system of concrete and steel structure, prefabricated construction, new building materials. This centre focuses on key technologies in the whole process of prefabricated construction.

THE BUILDING INFORMATION MODEL RESEARCH CENTRE

studies the complete process of integrating application of BIM Technology, and explore new scenarios where BIM+ is applicable. The centre is devoted to technical training, standard development, and building component libraries. It integrates information on building materials, installation progress, and cost management into the practical application of BIM technology through developing plug-ins, using computer software, and combining AR and scanning technologies.

INTELLIGENT CONSTRUCTION RESEARCH CENTRE

incorporates 5G, VR, AI, IoT, robotics, block chain and other technologies to independently develop the C-Smart intelligent site series of products. This centre is committed to build an integrated digital construction platform that aims at real-time and comprehensive engineering management. The Group owns independent intellectual property right of C-Smart.

MEDICAL CONSTRUCTION RESEARCH CENTRE

with a professional team of medical planning, design, construction, operation and maintenance, is dedicated to the construction technology research of modern hospitals that meet international standards and the modular hospital. This centre supports the medical construction projects and accumulates medical related construction technologies.

THE HOTEL CONSTRUCTION RESEARCH CENTRE

focuses on the key technology of large modern hotels that meet international standards. It summarises previous hotel projects, enhances project management and coordination capabilities, and innovates key construction technologies so as to upgrade the level of hotel construction then enhance market competitiveness.

INFRASTRUCTURE ENGINEERING TECHNOLOGY RESEARCH CENTRE

consists of 4 sub centres, for road and bridge engineering technology, infrastructure investment model innovation, safety technology and new green construction technology. This centre studies core construction technologies such as the control of subgrade settlement and deformation, tunnel engineering in complex geological environment, undersea immersed tunnel engineering, highway construction and maintenance, and large-scale environmental protection facilities construction.

INTELLIGENT CURTAIN WALL RESEARCH CENTRE

conducts R&D of complex curtain wall standardised design, intelligent production, and efficient installation of complete sets of technology. It upgrades the existing products and applies new technologies to enhance the technological level of curtain walls production and construction through combining the market demand and emerging materials.

To promote the exchange of industry and academia for green construction, the Group and Harbin Institute of Technology (Shenzhen) jointly established the "Harbin Institute of Technology-3311MiC Cooperation Research and Development Centre", which focuses on the core technology of MiC. The Group has also collaborated with iFlytek to explore core technologies such as Artificial Intelligence technology management for international hospitals and modular schools, taking advantage of iFlytek's technical expertise in AI smart hospitals and AI smart education. Furthermore, the Group is promoting cooperation with the Environmental Flame Retardant Material Application Engineering Technology Centre of the University of Science and Technology of China (USTC) to jointly research and promote high-performance environmentally friendly flame retardant materials to reduce application costs.



■ "Harbin Institute of Technology-3311MiC Cooperation Research and Development Centre"

Moreover, CSCI'S Low-carbon Research and Development Center and Rapid Construction Research Institute held an unveiling ceremony this year, research on low-carbon and construction technologies are conducted. As a think tank for green transformation of the construction industry, CSCI intends to collaborate with mainland China's scientific research institute, universities, and social associations.

DIGITAL ECOLOGY

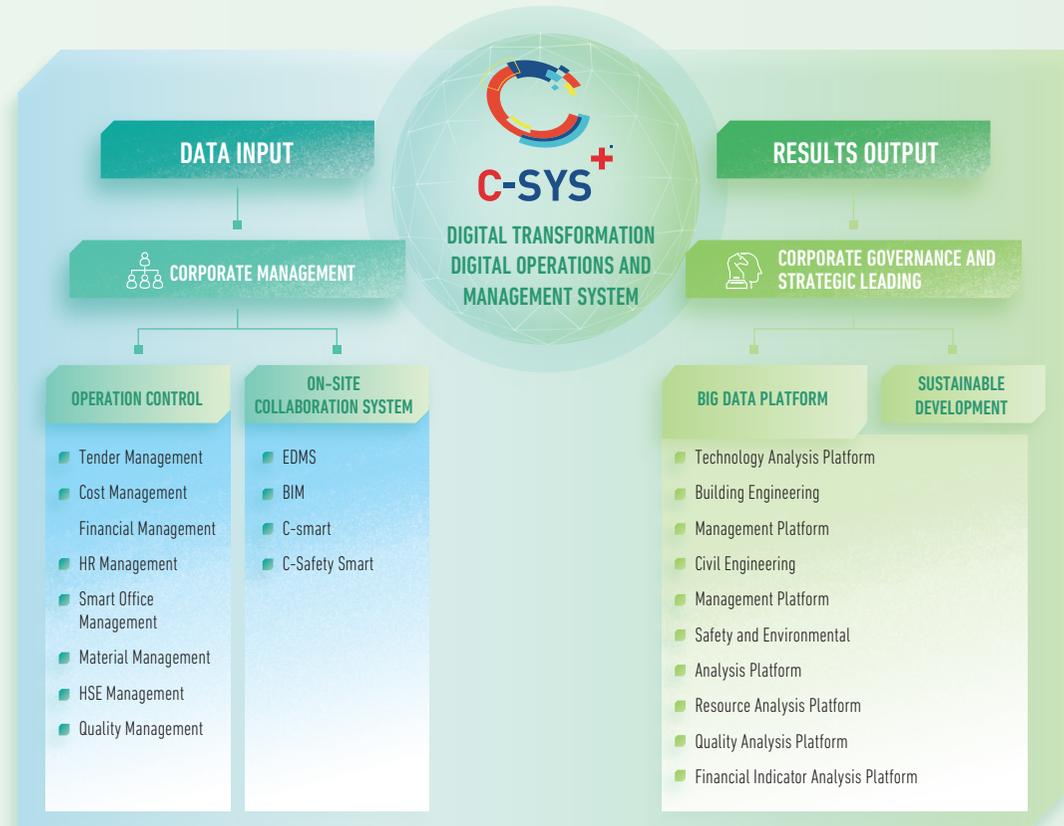
To improve governance efficiency, the Group actively promotes digital ecology and has launched C-SYS+ and C-Smart to fully digitise daily operations.



C-SYS+

C-SYS+ is independently developed by CSHK, with the design goal of online business, digital management, intelligent decision-making, and collaborative innovation. As an innovative digital management system in the construction industry, the system integrates the company's different management platforms, introduces advanced technologies such as data collection, analysis, AI comparison, prediction, and robot development, and covers multiple management areas. C-SYS+ automatically collects and organises internal and external data through the system and platform connecting various departments and business areas, timely and accurately constructs intelligent decision-making models, and covers a wide range of dimensions, including cost, schedule, quality, etc., breaking the information island between departments and laying a foundation for company governance and strategic guidance. In addition, the C-SYS+ system actively builds an ESG sustainability system, incorporates a carbon neutral big data cloud platform, updates greenhouse gas emissions quantity and distribution, and combines analytical functions to assist decision-makers in comprehending the Group's carbon emissions and carbon reduction measures.

For more information, please scan





C-Smart

To digitise, refine, and intelligently manage construction site management, C-Smart combines technologies such as augmented reality (AR) and virtual reality (VR) to provide all-round and full-cycle supervision to ensure construction quality and on-site construction scheduling. C-Smart integrates technologies such as facial recognition, IoT, artificial intelligence, and cloud computing in order to collect comprehensive and automated construction site information, and then aggregate it into a management platform. After analyzing the information through the platform, it can assist in construction management and decision-making, as well as achieve all-round intelligent monitoring and comprehensive management of personnel, safety, environmental protection, progress, materials, and other aspects of construction engineering. Additionally, the Group continues to improve C-Smart, enabling digital delivery and intelligent transportation by connecting the entire process logistics management from factory production to on-site logistics management, such as MiC. We will continue to improve the C-Smart smart construction site platform, connect the entire process of design, production, transportation, construction, and operation, and promote the digital transformation of the construction industry.

C-Smart functions include the following:

-  Safety helmet that can automatic clock in/off
-  Fire monitoring
-  Material management and license plate recognition
-  Machinery and equipment
-  Environmental and energy management



• C-Smart dashboard

Advanced Architecture Technology

MiC is a modern building technique based on the “assemble first, install later” principal, using prefabricated building components from factories to assemble and install on site. This method significantly reduces on-site construction processes, minimises the impact of weather conditions, labor resources, and construction site limitations, and is conducive to managing construction quality, enhancing productivity, safety, and sustainability in the construction industry. Through the use of its technology, the Group has been able to transfer 90% of the traditional construction process to smart factories.

The features and benefits of MiC are as follows:

INDUSTRIALISATION:

Traditional manual on-site construction process is transferred to a factory, where standardised designs and automated machinery are used for mass production, structure, decoration and equipment are integrated, and HVAC, electrical, fire protection, and other equipment are prefabricated. The productivity, accuracy and quality are improved simultaneously.

GREENING:

Since production processes are transferred to factories, dust and noise on construction sites is greatly reduced. Building materials are used more efficiently therefore less wastage and facilitate reuse through modular design and in factory environment. Aluminium or plastic templates can be reused multiple times. Construction waste can be reduced to one-fourth of the traditional method, and it is easier to recycle wastewater in the factory than on site.

ECONOMISATION:

Construction duration can be shortened by 80% compared to traditional construction, reducing management costs and financial interest expenses, generating more profits with an earlier opening and accelerating payment collection, and reducing uncontrollable risks. The total project labour can be reduced by 20%. As material loss and construction waste are also reduced so raw material costs are lower. The design or specifications of the module can be applied to other projects. Temporary buildings can be disassembled and reassembled for reuse.

INFORMATIONISATION:

BIM and C-Smart Intelligent Site System are used to manage the production. The BIM creates the digital twin of the building, which can be used to navigate to equipment and systems, view information and documents in real time, and facilitate the construction process and operation. Combined with IoT technology, it could also be used in maintenance. The Intelligent Site System combines AR, VR and other technologies to provide comprehensive, fullcycle monitoring to ensure production and on-site construction command.

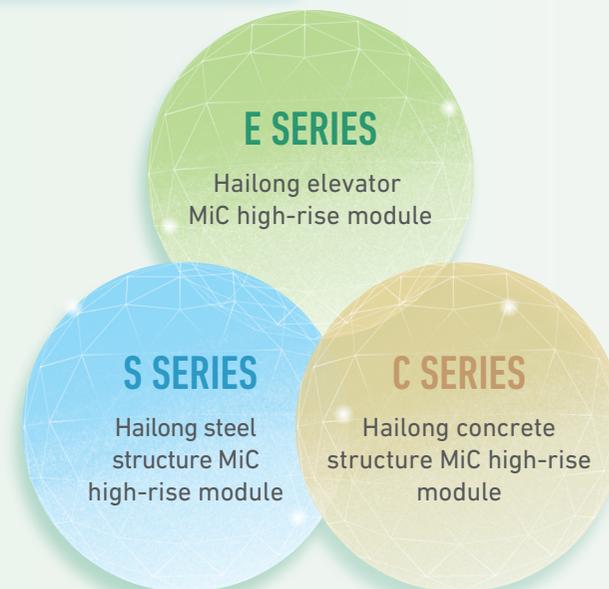
COMPARED WITH CONVENTIONAL CONSTRUCTION MODE, MiC:



- Reduce construction waste by 70%
- Reduce construction carbon emissions by 50%
- Reduce material waste by 25%
- Save 90% of construction period
- Achieve 64% reduction in average daily field staff

During the Reporting Period, the Group released the “Hailong Model” MiC series building products. The series is divided into three categories: E series — Hailong elevator MiC high-rise module; S series — Hailong steel structure MiC high-rise module; and C series — Hailong concrete structure MiC high-rise module. Unlike domestic modular buildings that are mostly low-rise buildings no higher than 7 floors, these three products can be used for high-rise permanent buildings up to hundreds of meters high and have sufficient wind and earthquake resistance, representing the advanced level of modular construction technology in the world. Currently, the three products and technologies have been successfully applied in projects. For example, the Group successfully won the bid for the Shandong Yantai high-rise MiC hotel project, which will become the tallest modular building in the country after completion; The Guangdong Shenzhen Longhua Zhangkengjing block project is the first high-rise concrete MiC project in mainland China; and the Shenzhen Middle School (Nigang Campus) project, which uses the new MiC elevator product, has been selected as a pilot project for new building industrialization by Shenzhen leaders. In addition, the Group has successfully developed MiC sewage treatment equipment, helping the Group to develop environmental protection business.

Hailong Model MiC series



For more information, please scan:



Case Study

Shenzhen Baguang Ecological International Hotel

Shenzhen Baguang Ecological International Hotel consists of seven 7-story hotels or dormitories and five 18-story hotels or dormitories, along with auxiliary facilities such as medical waste disposal and sewage treatment facilities, covering an area of more than 250,000 square meters. A maximum of 3,800 isolated individuals and 600 staff members can be accommodated during the epidemic period. After the epidemic is over, the project will be converted into a permanent dormitory for Ocean University students.

The project was completed in 136 days with the assistance of digital building energy consumption simulation software and parametric design optimization tools. As a result of the project, carbon emissions were reduced by 67% during the construction phase, 26% during the operation phase, and approximately 17,655 tons of carbon emissions were saved during demolition.



■ Shenzhen Baguang Ecological International Hotel

During the construction phase

carbon emissions were reduced by

67%

during the operation phase

26%

17,655 tons

carbon emissions were saved during demolition

Case Study

Shenzhen Middle School (Nigang Campus) Student Dormitory Elevator Addition Project Building

The project involves the installation of elevators in four existing high-rise dormitories for students. There were two elevators installed in each dormitory building, making a total of eight 1.6T elevators. 108 MiC modules were utilized in the project, which was assembled in a factory using a 100% automated assembly line, incorporating elevator tracks, doors, and decorative elements. By independently developing slip energy-absorbing main and secondary connection nodes for the main and secondary structure and vertical connection nodes for the stacking box, China Construction Hai Long ensured the overall building's wind and earthquake resistance safety performance. Furthermore, the project utilized millimeter-level tolerances in construction instead of standard centimeter-level tolerances, and developed the MiC high-precision positioning system independently, ensuring an efficient and precise assembly of the module, thereby enhancing the project's industrialization.



■ Shenzhen Middle School (Nigang Campus) Student Dormitory Elevator Addition Project Building 1

A total of **eight 1.6T elevators**

utilized

108 MiC modules

which was assembled in a factory using a

100% automated assembly line

Case Study

Shenzhen Middle School (Nigang Campus) Student Dormitory Elevator Addition Project Building 1 *(Continued)*

As part of the production of the MIC module units, the group used the intelligent factory management platform, which can automate scheduling, visualize production progress, inspect two-dimensional code traceability, and manage the full chain of production. The project also has a positive demonstration effect in terms of green construction. Generally, traditional construction projects' waste emissions can reach up to 600 tons/10,000 square meters. However, the project's target for construction site building waste is only 25 tons/10,000 square meters, which is significantly lower than the national "14th Five-Year Plan" target of 200 tons/10,000 square meters and the "Green Construction Evaluation Standard" of 300 tons/10,000 square meters. Additionally, the project effectively recovers excess potential energy during light-load elevator up and heavy-load elevator down by installing energy feedback devices in the elevator machine room and feedback the recovered energy to the elevator's local power grid, with a feedback utilization rate of about 20%.



project's target
**construction site
building waste**

only **25** tons/10,000 square meters

lower than

"Green Construction Evaluation Standard"

300 tons/10,000 square meters

the national
"14th Five-Year Plan" target

200 tons/10,000 square meters

the project effectively recovers excess potential energy during light-load elevator up and heavy-load elevator by installing energy feedback devices in the elevator machine room and feedback the recovered energy to the elevator's local power grid

feedback utilization rate of about 20%

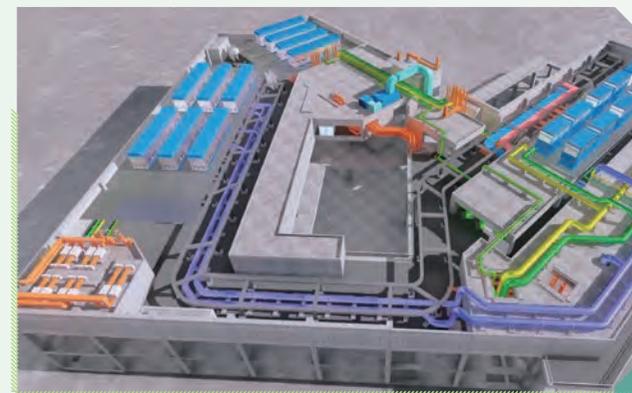
Developing Innovative Technology

We will continue to invest in the development and application of innovative technology in the future, foster academic-industry collaboration, and conduct in-depth research with industry experts to determine the future development prospects of domestic BIM software to support our strategic objectives. The Group will also continue to develop MiC rapid construction technology and research new products. Additionally, the Group intends to actively promote the development and application of BIPV technology, continue to improve research and development capabilities for the design and construction of complex glass curtain walls, seize market opportunities, and promote digital transformation in the construction industry by utilizing core technology for complex glass curtain walls.

The Group will also recruit and manage talent teams in accordance with the main direction and key areas of science and technology to strengthen the innovation and management capabilities of science and technology personnel and consolidate the culture of innovation.

Building Information Modeling

BIM is a digital technology-based method for architectural design, construction, and management. BIM integrates information from various stages of a construction project, including design, engineering, construction, and maintenance, by creating a 3D model which can be simulated, analyzed, and managed. The application of BIM improves work efficiency and quality, reduces errors and repetitive work, and significantly lowers the cost and risk of construction projects. The Group extensively uses BIM in fields such as architecture, engineering, and manufacturing.



Intelligent Curtain Wall System

The Group has developed the core technology for the design and manufacture of hyperbolic curtain walls, established an automated testing system and a three-dimensional warehouse, and helped the Group win the world's largest single-unit contract for architectural curtain wall projects. It is also expected that the Group's research on glass cold bending technology will have a revolutionary effect on the industry. Moreover, the Group has developed a third-generation window wall system that is powered by photovoltaic energy (BIPV unit curtain wall), effectively integrating innovation into the entire industry chain, completing research and development of BIPV products for building facades, as well as promoting the construction of multiple template buildings.

The "Light S" developed by the Group is a new type of lightweight imitation stone photovoltaic component, which represents a major innovation in the field of "integrated photovoltaic wall surfaces" with only 4mm thick. In addition to being beautiful and thin, "Light S" is also stable and has properties such as fire resistance and wind resistance. Furthermore, the "Light S" photovoltaic facade is capable of generating an average of 7,000 kilowatt-hours of electricity per year, which can power three households for an entire year. As a result of the installation of one wall, 7 tons of carbon dioxide emissions can be reduced, equal to the planting of 21 trees. This can help promote a green and low-carbon transformation in the construction industry.

the "Light S" photovoltaic facade is capable of generating an average of

7,000 kilowatt-hours of electricity per year

As a result of the installation of one wall, **7 tons of carbon dioxide emissions can be reduced**

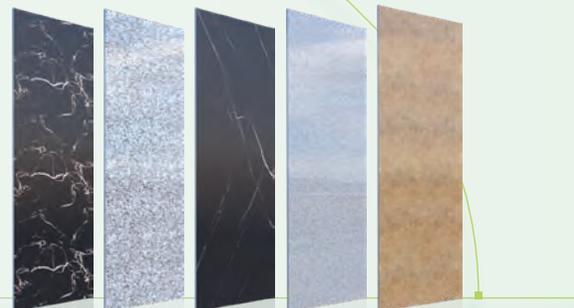
equal to the planting of

21 trees 

This can help promote a green and low-carbon transformation in the construction industry.

Light S

- Good-looking
- Thin
- Only 4mm Thick



■ Light S Series

CSHK has established a “Quality Management Working Group” to implement construction quality management, which is responsible for advising senior management on quality management policies and measures, preparing, and reviewing annual quality audit plans, and improving management systems and quality performance continuously. CSHK has also developed the “Quality Management Manual” and “Standard Work Procedures”, which include quality-related topics such as bid management, contract management, project planning, and accident reporting. In addition, CSHK has developed a “Project Critical Construction Process Quality Control Program”, which specifies specific inspection content and construction requirements for multiple key construction processes in housing, civil engineering, foundations, and electromechanical engineering. It employs triple inspection and verification to improve quality monitoring and construction site quality.

At the same time, the quality management system of CCE Macau includes the “Quality Manual” “Procedural Documents”, and “Operation Guidelines”. CCE Macau conducts an annual review of the quality management system to ensure that the system is appropriate and adequate, and also hires third-party certification centres

to conduct external audits of the system to confirm that the system complies with laws and regulations and has the ability to meet contract requirements, reasonably expect to achieve established goals, and identify potential areas for improvement. In addition, the Group checks whether each department, each construction site, and management comply with relevant management requirements, timely identifies problems and analyses causes, and takes corrective and preventive measures. The Group strictly supervises its implementation to ensure the continuous and effective operation and continuous improvement of the management system.

To further ensure construction quality, both CSHK and CCE Macau implement comprehensive management reviews on construction sites and implement a “red/yellow card” system to warn underperforming sites and their managers and to reward high performing sites. CSCI has the “Engineering Management System”, which sets up a management structure and defines the responsibilities of each department and position, and specifies work requirements and procedures for contractors, contracts and costs, project progress, quality technology, safety and environmental protection, and other aspects.

Compliance



Highlight



Adoption of “Anti-corruption Policy”



Adoption of “Whistleblowing Policy”

Number of people trained in anti-corruption and integrity total of



Number of hours spent on anti-corruption and integrity training total of



Integrity and Anti-Corruption

The Group adheres to the principles of integrity and anti-corruption, and is committed to maintaining the highest standards of governance and ethics, as well as opposing all forms of corruption, including but not limited to bribery, extortion, fraud, and money laundering. As stated in the “Employees Manual” and “Anti-corruption Policy”, the Group strictly prohibits its employees from using their positions to solicit or accept benefits, as well as providing guidance on handling conflicts of interest and accepting hospitality. Employees are required to notify their supervisors and the Human Resources Department if they are aware of any potential conflicts of interest. For the purpose of preventing corruption, fraud, or deception, employees are prohibited from using their job or position for private business contracts, providing convenience to relatives and friends, or profiting from conflicts of interest. Employees who violate these codes of conduct will be subject to disciplinary action or termination, while those who violate laws and regulations will be referred to the appropriate judicial authority. Senior management must sign a “Letter of Integrity Responsibility” and a “Pledge of Integrity in Practice” for key positions, taking responsibility for any corrupt behaviour that occurs under their supervision.

The Group has formulated “Management Methods of Letters” to establish channels for reporting illegal and irregular acts, including letters, hotlines, and networks. Information leaks and omissions are strictly prohibited, and the Group has established procedures for government inspections and audits of its work processes and reports, including the format and timing of these documents. All reports will be forwarded to the Group’s compliance oversight department for processing and review. The Group will take disciplinary action if the report is true, and in severe cases termination may be the result. Suspected violations will be referred to local law enforcement agencies for investigation. Moreover, the Group has adopted a “Whistleblowing Policy” to help detect and prevent improper behaviour, fraud, or unethical behaviours.

By establishing compliance officers and compliance oversight officers, establishing coordination teams for integrity construction and anti-corruption work, and organizing integrity promotion activities such as anti-corruption videos, employee warning education, and promoting the principles of integrity and anti-corruption through various media, the Group actively promotes a culture of integrity and anti-corruption. The Group also invites the Hong Kong Independent Commission Against Corruption to provide anti-corruption training to new employees in the construction industry, focusing on the industry's situation and most recent corruption cases. A total of 20,256 integrity and anti-corruption training sessions have been conducted by the Group's subsidiaries, representing a total of 3,055 hours of training.

Respect for Human Rights

We strictly adhere to the "UN Guiding Principles on Business and Human Rights" to protect our employees from any form of forced labour. The Group is also aware that construction will have an impact on the surrounding residents. As part of our commitment to respecting indigenous rights, the Group evaluates the impact of its construction before it begins and seeks to minimize it.



Prevention of child or forced labour

The Group follows established procedures for verifying the identity of applicants during the recruitment process, as well as asking applicants to sign job application forms to confirm their personal commitment to the position. The Group has dedicated site labour directors at each site, who are responsible for managing and supervising the legal compliance of various contractors and subcontractors in employment activities, as well as regularly checking worker registration information in order to prevent child or forced labour issues.



Respect indigenous rights

Most of the Group's business operations are located in cities, and the construction process inevitably causes noise and traffic impacts on local residents. We conduct impact assessments prior to starting any project and formulate corresponding measures to mitigate the negative impact on local residents through third-party certification. Additionally, the Group has a mechanism for listening to public opinion and assigns commissioners to deal with residents affected by construction sites.

Integrity and anti-corruption training sessions

conducted by the Group's subsidiaries

20,256

A total of

3,055 hours of training

Abide by Business Ethics

The Group values the combination of business acumen and ethical cultivation, and is committed to creating a mutually beneficial and fair business environment, maintaining good relationships with employees, peers, suppliers, and customers.



Fair competition

The Group insists on fair competition, opposes monopolistic and malicious competition, and ensures that business activities comply with various anti-unfair competition laws and regulations. The Group is also committed to promoting benign competition among peers as well as creating a fair competitive environment for suppliers. Employees are expected to conduct all business dealings with integrity and fairness, as well as to avoid any conduct that may be viewed as anti-competitive. Suppliers are strictly prohibited from engaging in bid-rigging or other improper practices during the bidding process, and the list of eligible suppliers is periodically evaluated and updated. All suppliers are also required to confirm in writing that they adhere to business ethics and fair competition. The Group's internal monitoring system assesses relevant procedures on a regular basis to ensure compliance with legal requirements. It identifies high-risk behavior that may constitute anti-competition, establishing guidelines and procedures as necessary.



Customer privacy

Based on ISO27001, the Group has developed an information security management system that specifies prudent methods for collecting, processing, storing, and using information to mitigate the risk of information disclosure. The Group provides appropriate training and support to employees to increase their awareness of information security and respond to national cybersecurity education activities. Furthermore, the Group tests and updates its information system infrastructure and security measures continuously, and tests the security of its information system through network attack simulations to protect the privacy of customers, business partners, and employees.



Protection of intellectual property

The Group places a high priority on the protection of its own intellectual property and that of third parties. The Group applies for patents for new technologies, techniques, and research in a timely manner and engages consulting firms when necessary to provide guidance to protect its interests. Construction projects also involve numerous intangible assets, such as patents and technologies. To demonstrate the Group's respect for intellectual property, the Group and its business partners follow the Employee Handbook and Intellectual Property Management Measures.



Compliant advertising and promotion

To protect consumer rights and maintain market order, the Group attaches great importance to the compliance of advertising and promotion. To ensure stakeholders have access to sufficient and accurate information, the Group has established a dedicated department that regulates brand positioning, media management, brand activities, and the disclosure of market information.

Regional Sustainability Performances Highlights



Hong Kong

Key Performance¹³

 Economic performance	Revenue	HKD 37,214,275 thousand
 Social performance	Total number of employees	5,651
	Monthly paid employees turnover rate	27%
	Work-related injuries	6.6/1,000 workers
	Average training hours of monthly paid employees	12.2 hours/person
 Environmental performance	Greenhouse gas emissions intensity	2.1. tones CO ₂ -e/ million HKD
	Non-hazardous waste intensity	244.6 tones / million HKD
	Energy intensity	0.5 MWh/million HKD
	Water intensity	25.2m ³ /million HKD

O·PARK2



The Hong Kong Chinese Medicine Hospital



¹³ Include the data of CSHK

Annual Environmental Protection Target

Based on the Guidelines for the Calculation of Environmental Indicators and the procedures for the Control of Materials Shrink, CSHK has set environmental indicators and targets, and set resource conservation targets for the Hong Kong Headquarters, which will be reviewed and approved by the Group’s General Management Committee.

CSHK, Construction sites and offices 2023 Environmental and Energy Management metrics:

Environment and energy management target	Environmental Management Indicators in 2022	Environmental Management Indicators in 2023
Environmental management metrics		
Reduce wood use on site	Less than 125 cubic meters/100 million HKD turnover	Less than 120 cubic meters/100 million HKD turnover
Reduce paper use on site	Less than 345 packs of equivalent A4 paper/100 million HKD turnover	Less than 340 packs of equivalent A4 paper/100 million HKD turnover
Water saving on site	Less than 56 thousand/100 million HKD turnover in general construction site	Less than 55 thousand/100 million HKD turnover in general construction site
	Less than 610 thousand/100 million HKD turnover in pile grinding site	Less than 600 thousand/100 million HKD turnover in pile grinding site
Electricity saving on site	Less than 205 thousand/100 million HKD turnover	Less than 200 thousand/100 million HKD turnover
Reduce concrete loss	Less than 1.5% in general construction site	Less than 1.5% in general construction site
	Less than 5.5% in pile grinding site	Less than 5.5% in pile grinding site

Environment and energy management target	Environmental Management Indicators in 2022	Environmental Management Indicators in 2023
Reduce rebar loss	Housing sites below 3.8%	Housing sites below 3.8%
	Civil work sites below 2.3%	Civil work sites below 2.3%
	Base site is below 3.3%	Base site is below 3.3%
Save electricity in the office	Annual electricity consumption per square meter decreased by 1.0% (i.e.<113kWh/m ²) compared to 2021	Annual electricity consumption per square meter decreased by 1.0% (i.e.<112kWh/m ²) compared to 2022
Save paper in the office	3% less than the average total paper used in 2019–2021	3% less than the average total paper used in 2021–2022
Recycle the computer and its equipment	Recycle all computers	Recycle all computers
	Recycle all monitors	Recycle all monitors
	Recycle all hard drives and other accessories	Recycle all hard drives and other accessories
	Recycle all printer cartridges	Recycle all printer cartridges
Waste paper recycling	Recycle all waste or old paper	Recycle all waste or old paper
Energy management metrics		
Total office saves power	Annual electricity consumption per square meter is 1.0% less than 2021 (i.e. <113 kWh/m ²)	Annual electricity consumption per square meter is 1.0% less than 2022 (i.e. <112 kWh/m ²)
Continuous improvement of the energy performance indicator (EnPI) for construction work	2.0% improvement in energy performance indicators (EnPI)	2.0% improvement in energy performance indicators (EnPI)
Get the latest information on energy-efficient products	Visit the annual International Environmental Expo	Visit the annual International Environmental Expo
	Share the latest energy-saving product information	Share the latest energy-saving product information
Use energy-saving lighting products	Use T5 or LED light pipes in newly built site offices	Use T5 or LED light pipes in newly built site offices

The Hong Kong Chinese Medicine Hospital

The Group undertakes the construction of the Hong Kong Chinese Medicine Hospital, the first Chinese medicine hospital in Hong Kong. The project comprises a 9-storey building with 400 beds for inpatient and outpatient services. It is expected to provide 250 inpatient beds, 90 day beds, 40 pediatric beds, and 20 clinical trial and research centre beds, with an annual service volume of approximately 310,000. The hospital will also assist the government's Chinese medicine testing centre in establishing reference standards for Chinese medicine testing methods, supporting research on Chinese medicine identification and testing methods, and establishing internationally recognized certification reference standards for Chinese medicine safety, quality, and testing methods. In addition, the hospital will provide daytime medical services, rehabilitation and other specialized medical services, pharmacy services, diagnosis, medical procedures, and auxiliary services.

The project uses the MiC method and applies Modular OT technology, with over 2,000 prefabricated components expected to be used throughout the entire project. In addition, the C-SMART intelligent construction site management platform is used during the construction process, fully utilizing intelligent monitoring, visual management, and digital management to implement smart construction and improve engineering management levels.

The First Chinese Medicine Hospital in Hong Kong

with **400** beds
for inpatient and
outpatient services

An annual service volume of

approximately
310,000



Focus on Youth Development

The Group firmly believes that young people are the hope of Hong Kong's future, and therefore, we have always attached great importance to youth development. Among them, CSHK has launched the "Double Hundred Youth Development Program", which includes at least 100 graduates and 100 interns among the 1,000 new employees recruited in Hong Kong each year. We adhere to the talent concept of "To Assemble the Enterprising Ones and Motivate the Promising Ones" and have established a comprehensive and multi-level "5+3+X" youth talent training system, continuously creating more opportunities for Hong Kong youth to grow and succeed.

To allow employees to expand their potential and broaden their thinking, the company also organizes diversified activities through the "CSHK Youth Club", encouraging employees to continuously equip themselves outside of work, achieve personal development, and create social value.

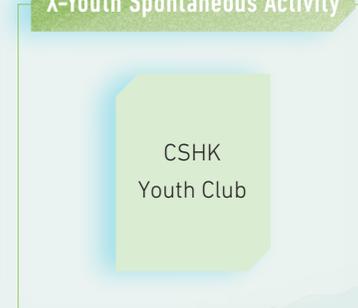
Five Professional Development Package



Three Distinctive Learning Experience



X-Youth Spontaneous Activity



Regional Sustainability Performances Highlights

Hong Kong

This year, the company focused on organizing activities such as the “CSHK 2022 Youth Launch Class” and “Executive Face-to-Face”, where company executives explained the company’s strategy and youth talent training system, allowing young talents to better understand the company’s development direction and providing them with more support and guidance for their personal development.



Macau

Key Performance

 Economic performance	Revenue	HKD 10,541,700 thousand
	 Social performance	
 Environmental performance	Total number of employees	1,159
	Monthly paid employees turnover rate	14%
	Work-related injuries	0.5/1,000 workers
	Average training hours of monthly paid employees	6.1 hours/person
 Environmental performance	Greenhouse gas emissions intensity	5.2 tonnes CO ₂ -e/million HKD
	Non-hazardous waste intensity	45.0 tonnes/million HKD
	Energy intensity	2.3 MWh/million HKD
	Water intensity	124.8 m ³ /million HKD

¹⁵ Including the data of CCE Macau.

Macau Senior Apartment Housing



Macau Cotai Healthcare Complex



The Galaxy Macau Casino Resort Phase IV

Macau New Neighbourhood



Macau

The Galaxy Macau Casino Resort Phase IV

The Group has been awarded a contract worth HKD 12.63 billion for the fourth phase of Galaxy Macau Resort and Casino ("Galaxy Phase IV"). The project marks the first collaboration between the Group and Galaxy Entertainment, and is the highest contract value for a wholly-owned project in the Group's history. The Galaxy Phase IV project covers an area of 108,000 square meters with a building area of 526,000 square meters, integrating seven hotels, theaters, water parks, and other entertainment facilities, making it one of the world's leading integrated resorts. The main structure includes five tower buildings, three podiums, and two basements, with the highest tower being 32 stories. The project started in June 2021 and is planned to be completed by May 2024.

This year, CCE Macau subcontracted the curtain wall project of Galaxy Phase IV to CSC Development, realizing the synergy of China Construction. The contract is worth up to HKD 2.24 billion and will become the largest single curtain wall contract in the world. CCSC Development has undertaken many projects such as Wynn Palace, MGM Cotai, and The 13 Hotel, and is also constructing Parq Resort & Casino in Vancouver, Canada. These projects not only demonstrate the outstanding technical capabilities and market competitiveness of CSC Development but also lay the foundation for the company's dominant position in the Hong Kong and Macau markets. The Galaxy Phase IV project will further strengthen CSC Development's absolute leading position in the Hong Kong and Macau markets and enhance its brand and market influence in the global curtain wall market.



Building a Green Smart City

The 13th International Infrastructure Investment and Construction Forum (IIICF) “Taking Multiple Measures to Build a Green Smart City in Macau” parallel forum will be held in Macau in 2022, with over 100 Hong Kong, Macau, and Mainland China business representatives and industry elites attending. The Group deeply integrates the concept of “Ecological priority, Green development” into the entire process of investment, planning, design, construction, and operation, and researches and develops a series of key green building technologies, forming an extremely low-energy consumption, zero-carbon building technology system. The Group hopes to deepen cooperation with the Macau government to promote high-quality construction of major infrastructure and livelihood projects and assist in the high-quality development of Macau’s economy and society. At the same time, through the exchange results of the forum, the Group aims to target the forefront of green and low-carbon fields, strengthen key technology innovation, jointly enhance green building capabilities, and promote deeper connectivity and common development between Macau and Mainland China, taking multiple measures to build a green smart city in Macau.



Macau

BEYOND Expo Sustainability Summit

At the BEYOND Expo 2022, five industry summits were established, namely Global Investment, Consumer Tech, Sustainability, Healthcare, and Web3. The Group actively participated in the discussions and publicly announced its commitment to sustainability. The summit also served as the CSCI 2022 Technology Conference, during which the Group launched several cutting-edge technologies for carbon reduction and management were launched, including the MiC series building products, "Light S" series photovoltaic curtain wall products, desalination technology product, and C-SMART 3.0 series products, promoting the development and application of technologies in the construction industry and contributing to the goal of carbon neutrality. (For more details on the MiC series building products and "Light S" series, please refer to the chapter on strategic development.)

Desalination technology product provides an effective solutions for water resource shortages in coastal areas. This technology has been applied in the construction of the largest desalination plant in Hong Kong, the Tseung Kwan O Desalination Plant. Desalination technology product use an internationally leading reverse osmosis water treatment process and adopts the DfMA concept to provide design and installation of large equipment components and prefabricated plant components. During the design and construction stages, BIM technology is applied in multiple dimensions, and a digital and intelligent safety construction and supervision management system is implemented.

At the conference, CSC Hailong received the IMPACT AWARDS WINNERS award for its MiC product, confirming the success of its efforts in building technology. The Group will continue to vigorously develop MiC technology, expand its application scope to promote the development of building technology.



Caring for the Elderly

In recent years, the CCE Macau Volunteer Team has carried out a series of volunteer activities such as typhoon relief, caring for families in need, reducing property rent, caring for the elderly living alone, and repairing homes and furnishings, which have been fully recognized by all sectors of society. This year, in response to the impact of the epidemic on the physical and mental health of the elderly, Sophia Loi, Deputy General Manager of CCE Macau, led the volunteer team to hold the “Autumn Warmth — Caring for the Elderly in the Community” event at the Women’s General Association of Macau Yikang Centre. During the event, volunteers led more than 160 elderly people to do hand exercises to stretch their muscles. They also sang nostalgic songs and played fun games to make the elderly feel the community’s care and attention in a joyful atmosphere. At the same time, volunteers also donated more than 3,000 masks and more than 1,000 boxes of antigen tests to the Yikang Centre to fully protect the health of the elderly.

Furthermore, CCE Macau has organized multiple “Community Care and Harmony with Love, and Barrier-free Housing for 100 Households” activities to further assist elderly people who live alone or elderly couples who lack family care. Through this activity, volunteers not only visited and comforted the elderly, but also used their professional skills to conduct indoor repairs and improve the living conditions of the elderly.



Mainland China

Key Performance²⁰

 <p>Economic performance</p>	Revenue	HKD 48,631,132 thousand
 <p>Social performance</p>	Total number of employees	3,572
	Monthly paid employees turnover rate	8%
	Work-related injuries	1.6/1000 workers
	Average training hours of monthly paid employees	16.5 hours/person
 <p>Environmental performance</p>	Greenhouse gas emissions intensity	2.7 tonnes CO₂-e/million HKD
	Non-hazardous waste intensity	13,898.5 tonnes/million HKD
	Energy intensity	2.0 MWh/million HKD
	Water intensity	74.5 m³/million HKD

Shandong Yantai Health Station



Wuxi Health Station



Shenzhen Longhua Talent Anju Project



²⁰ Including data of CSCIL, China Overseas Construction, CSC Hailong, and CSIAM

Shandong Yantai Health Station

The Shandong Yantai Health Station is the first facility to implement the “combination of usual and epidemic periods” and large permanent isolation center with epidemic prevention capabilities in Shandong Province. The project covers a total construction land area of 25,241 square meters and a total construction area of about 116,896.73 square meters, including epidemic prevention command, isolation rooms, supporting facilities, and multifunctional rooms, ect., a total of 1,044 rooms that could facilitate the provision and storage of epidemic prevention materials. The facility not only achieves the separation of isolation areas and working areas, but also provides separate access for isolation personnel and service personnel.

In the future, the project will combine epidemic prevention functions with the public supporting function of the “usual period” area according to the consideration of the entire life cycle and sustainable utilization, in order to achieve effective interchange and articulation of functions. It can be used as talent apartments and eco-hotels.

The project has leveraged advanced technology and green construction practices of the Group to conduct modular construction using MiC rapid construction technology. The MiC steel box + steel frame system features 352 MiC boxes assembled with a minimum assembly rate of 80%. The C-SMART intelligent management platform, intelligent tower crane monitoring system, and BIM technology have been instrumental in shortening the construction period and reducing overall costs on the basis of ensuring engineering quality and safety.



China

Guizhou Zhengxi Expressway

Located in Zunyi City, Guizhou Province, Zhengxi Expressway is 130.37 kilometers long, with 9 interchanges, 217 bridges (56 kilometers), 25 tunnels (35 kilometers), with a bridge-tunnel ratio of 64.12%. It is an important part of the Dejiang-Xishui Expressway, which the first "horizontal" in the Guizhou Provincial Expressway Network Planning "six horizontals, seven verticals, eight links and four rings". The karst landform area in northern Guizhou has serious geological problems such as caves, underground rivers, faults, rock dissolution, coal and gas outburst, and mud gushing. In addition, the expressway is rich in ecological resources along the route, passing through three nature reserves and two provincial scenic spots, making environmental coordination extremely difficult. The Group upholds the three major concepts of "safety first and people-oriented", "ecological and environmental protection and sustainability", and "openness, transparency and innovation" to establish a ESG-based project management framework.

Strict standards and clear procedures are established in the design, construction, and operation stages of this challenging and intricate expressway project. When constructing high-risk gas tunnels, professional institutions for geological forecasting, monitoring and measurement, and gas monitoring are organized in advance to prevent potential risks. Real-time monitoring and automatic detection systems are used throughout the entire construction process to monitor gases and other harmful substances in the tunnel, ensuring zero serious injuries and safety accidents. The use of BIM technology allows the construction team to analyze various quality problems in advance and formulate preventive and corrective measures.



China

Regarding environmental protection, the project took steps to minimize disturbance to the ecological environment. It optimized the route as much as possible, reduced the earth excavation area by approximately 25%, recycled about 110,000 cubic meters of topsoil and transformed the disposal site into a park and other public facilities, effectively repurposing 72.28 acres of land. Additionally, through the process of “replanting and re-greening”, the project planted 12,000 trees, adding 193,300 square meters of woodland and greenery. Furthermore, through technical and management innovation, the project saved 10,500 tons of standard coal, which is equivalent to the electricity consumption of residents in Guizhou Province for 9 days. It also reduced 23,800 tonnes of carbon emissions, which is equivalent to the carbon sequestration of 1,026 mu of forest for one year.

The project has won the Environmental Protection Award, the only Global Road Achievement Award (GRAA) from the International Road Federation (IRF Global) in 2022 by promoting green transformation and upgrading through “technology empowerment”. This award is one of the most prestigious honors in the international road industry and represents the highest achievement in technical development and management. It includes 12 individual awards in environmental protection, design, research and development, and each individual award is only awarded to one project globally. This marks the first time that the Group and Guizhou has won this international honor in China, which is of great significance for China’s infrastructure to go global.



China

Rural Revitalization

The Group actively participates in rural revitalization projects and promotes coordinated development between urban and rural areas. It undertakes both large and small infrastructure projects throughout the country to facilitate the transformation and upgrading of rural industries. By means of a range of public welfare initiatives, the Group promotes economic development and social progress in rural areas, improving the quality of life and happiness of rural residents.

Education Assistance



Shaanxi Company organized its employees to form the “Dream Building Team” and conducted a public welfare activity called “Building Dreams and Happiness, Delivering Warmth” for left-behind children at Longquan Mingri Experimental Primary School in Jingyang County, Shaanxi Province. During the activity, members of the “Dream Building Team” taught the children about the origin of the Dragon Boat Festival, as well as the patriotic love and childlike innocence of Qu Yuan. They also led the children in singing songs and making handicrafts. As a token of appreciation for Shaanxi Company’s years of care and concern for left-behind children, representatives from Mingri Experimental Primary School presented them with the “Love Enterprise” plaque.

Consumption Assistance

In 2022, the Group has participated in rural revitalization through “buy for help” and purchased chicken, soybean oil, beef, and other agricultural products from Fujian Province and Gansu Province for employee benefits for projects that have canteens. The total expenditure exceeded RMB250,000 with the aim of promoting rural consumption, increasing sales, and expanding the market for agricultural products.

Promoting rural consumption, increasing sales, and expanding the market for agricultural products

The total expenditure
exceeded RMB **250,000**

Caring for Community

During the Chinese New Year, Shandong Company partnered with the Communist Youth League of Laixi City, the Wancheng Street Office of Laixi City, and the Liujiacun New Village Committee to carry out a Spring Festival condolence activity. They visited and consoled elderly people in need in Liujiacun New Village, sending them New Year’s blessings. Representatives of Shandong Company’s Laixi project employees brought supplies such as peanut oil and rice to retired old cadres, rural poor and disabled people, and elderly persons living alone, and sent them deep care and sincere blessings. They also proactively inquired about the old people’s family, life, and health conditions, reminded them to pay attention to their health, and encouraged them to face life with an optimistic attitude.



About this Report

CSCI is committed to implementing sustainability concepts in its daily operations, integrating green and low-carbon, talent development, good governance, and contributing to society into its corporate culture. The Group actively communicates with stakeholders and publishes the "Sustainability Report" every year, disclosing work progress and related performance, aiming to showcase the Group's policies, measures, and performance comprehensively and diversely in the economic, environmental, and social aspects, and to further understand the Group's development strategy and commitment to sustainability. The "2022 Sustainability Report" (this "Report") outlines the Group's investment and achievements in environmental, social, and governance aspects, to enable stakeholders to understand the Group's development and operational policies, and provides an opportunity for the Group to understand their opinions and needs, in order to develop corresponding policies to respond to and meet their expectations.

Reporting Period and Scope

The reporting period of this Report is from January 1, 2022, to December 31, 2022 (the "Reporting Period"), consistent with the reporting period of the Group's annual report. The Report covers the Group's business in Mainland China, Hong Kong, and Macau, and includes performance data for CSC Development. CSC Development (stock code: 00830) also separately issued an "Environmental, Social and Governance (ESG) Report" that stakeholders can refer to for detailed ESG policies and measures. This Report does not contain data on joint ventures or associates that are not led by the Group.²¹

Reporting Standards and Principles

This Report complies with the Environmental, Social and Governance Reporting Guide (the "ESG Guide") published by SEHK and is prepared in accordance with the GRI Standards: Core option, published by the Global Reporting Initiative. The Report is also prepared with reference to the GRI Sustainability Reporting Guidelines G4 version, "Disclosure for the Real Estate and Construction Sector" ("GRI CRE"). The complete contents index of the "ESG Guide" and "GRI Standards" is attached to the end of this Report for reference by stakeholders.

²¹ The Group holds less than 50% interest.

Content Management

The Group has established a Sustainability Report Editorial Committee to coordinate the reporting works. The Group continuously updates its ESG cloud platform, provides trainings to responsible staff and answers their queries. An independent sustainability consultant, Hong Kong Sustainability Strategic Advisory, has been commissioned to assist the Group in stakeholder engagement, materiality assessment, data collection and quantification, and content compilation. The Group strives to present accurate, reliable and complete information in this Report.

Deloitte Touche Tohmatsu provides an independent assurance to this report as a third party. This report has been reviewed by the Sustainability Committee and approved by the Board for release in April 2023.

Publication

This Report is published electronically in both English and Chinese. In case of any discrepancy in the meaning of wording between the English text and the Chinese text, the Chinese text shall prevail. Both versions are available from the sustainability section of the website of CSCI, and the "HKEXnews" website of the Hong Kong Exchanges and Clearing Limited. A summary of this Report is also issued in the Group's WeChat official account. Stakeholders can keep abreast of the Group's sustainability initiatives through these channels.

Feedback

Through this Report, the Group looks forward to facilitating communication with stakeholders. You are cordially invited to give your views. The Group believes that feedback from stakeholders is essential in helping the Group leap towards a sustainable future. If you have any questions or suggestions about this Report or the Group's sustainability, please email the Group at csci_esg@cohl.com.

About this Report

In the preparation of this Sustainability Report, the Group adopts internationally recognised reporting principles and responds as follows to ensure reasonable decision-making on the content of the Report and to ensure the quality of the disclosed information.

Stakeholder Inclusiveness	The Group identified key stakeholders with reference to the AA1000 Stakeholder Engagement Standard. It engaged with stakeholders through various means, such as interviews, focus group discussions and questionnaires, to gather their views and expectations, to determine the content of this Report, and make responses accordingly.
Sustainability Context	The Group pays attention to international trends and peer practices and describes in its Report the relationship between its business and the economic, environmental, and social conditions of the regions where it operates. The Report also describes the impacts and contributions of the Group's subsidiaries in each region through case studies.
Materiality	The Group identified material topics by integrating various standards, guidelines and industry considerations and prioritised them through engaging internal and external stakeholders. These topics are then addressed in this Report
Completeness	This Report covers the significant economic, environmental and social impacts of the Group on all material topics and avoids omitting information concerned by its stakeholders
Accuracy	The Group has established internal control and review procedures to ensure the accuracy and reliability of the Report.
Balance	This Report discloses both the positive and negative aspects of the Group's performance, and describes not only the achievements but also the challenges it is facing.
Clarity	This Report strives to be concise and easy to understand for stakeholders. Its presentation is aided by visuals such as graphics and tables
Comparability and Consistency	The Report uses consistent statistical and disclosure methodologies as in previous years. It also defines the reporting scope with consistent considerations, allowing stakeholders to make meaningful comparisons with the performance in previous years
Reliability	The Group has set up a system to collect the information required for reporting and obtained external third-party assurance, carbon audit and KPIs verification of the Report
Timeliness	This year, the Group publishes both the Annual Report and Sustainability Report at the same time, with the same Reporting Period, to provide stakeholders with timely disclosures of latest performance of the Group.
Quantitative	This Report covers measurable key performance indicators and targets, together with comparative data, where appropriate

Deloitte

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INDEPENDENT LIMITED ASSURANCE REPORT ON SELECTED SUSTAINABILITY INFORMATION IN CHINA STATE CONSTRUCTION INTERNATIONAL HOLDINGS LIMITED'S SUSTAINABILITY REPORT 2022

TO THE DIRECTORS OF CHINA STATE CONSTRUCTION INTERNATIONAL HOLDINGS LIMITED

We have undertaken a limited assurance engagement of certain sustainability information (the "Selected Sustainability Information") of China State Construction International Holdings Limited (the "Company") and its subsidiaries (hereafter collectively referred to as "CSCI" or the "Group") for the year ended 31 December 2022, as included in The Stock Exchange of Hong Kong Limited (the "HKEx") ESG Reporting Guide. Content Index of the Group's sustainability report for the year ended 31 December 2022 ("Sustainability Report").

The aim of this engagement is to provide a limited assurance conclusion on Selected Sustainability Information which has been prepared in accordance with KPI A1.1 and KPI A1.2 of Appendix 27 to the Main Board Listing Rules "Environmental, Social and Governance Reporting Guide" of the HKEx (the "Selected Reporting Criteria") as disclosed in the Sustainability Report.

CSCI's Responsibility

CSCI is responsible for the preparation of the Selected Sustainability Information in accordance with the Selected Reporting Criteria as disclosed in the Sustainability Report. This responsibility includes the design, implementation and maintenance of internal controls relevant to the preparation of Selected Sustainability Information and that is free from material misstatement, whether due to fraud or error.

Our Independence and Quality Management

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the Hong Kong Institute of Certified Public Accountants (the "HKICPA"), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Hong Kong Standard on Quality Management 1 "Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements" issued by the HKICPA, which requires the firm to design, implement and operate a system of quality management including policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

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Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Selected Sustainability Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with Hong Kong Standard on Assurance Engagements 3000 (Revised), Assurance Engagements Other Than Audits or Reviews of Historical Financial Information ("HKSAE 3000 (Revised)") issued by the HKICPA. That standard requires that we plan and perform this engagement to obtain limited assurance about whether the Selected Sustainability Information is free from material misstatement.

A limited assurance engagement undertaken in accordance with HKSAE 3000 (Revised) involves assessing the suitability in the circumstances of CSC's use of Selected Reporting Criteria as the basis for the preparation of the Selected Sustainability Information, assessing the risks of material misstatement of the Selected Sustainability Information whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Selected Sustainability Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. Within the scope of our work we performed amongst others the following procedures:

- Gaining an understanding of the Company's systems through interview with management responsible for sustainability management and reporting systems;
- Reviewing the systems and procedures to capture, collate, aggregate, validate and process source data for the assured performance data included in the Sustainability Report;
- Performing analytical tests and detailed testing for the Selected Sustainability Information on a sample basis; and
- Reviewing the Selected Sustainability Information against the Selected Reporting Criteria as set out in the Sustainability Report.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether CSC's Selected Sustainability Information has been prepared, in all material respects, in accordance with the Selected Reporting Criteria as disclosed in the Sustainability Report.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that CSC's Selected Sustainability Information for the year ended 31 December 2022 is not prepared, in all material respects, in accordance with the Selected Reporting Criteria as disclosed in the Sustainability Report.

Purpose and Restriction on Distribution and Use

This report is made solely to Board of Directors of the Company in accordance with our engagement letter dated 20 April 2023 for the purpose of providing a limited assurance conclusion on the Selected Sustainability Information in the Sustainability Report. As a result, the report may not be suitable for another purpose. For the avoidance of doubt, all duties and liabilities (including without limitation those arising from negligence) to third parties, are specifically disclaimed. The Contracts (Rights of Third Parties) Ordinance does not apply, and only the signing parties to the engagement letter contract have any rights under it.



Deloitte Touche Tohmatsu
 Certified Public Accountants
 Hong Kong
 April 26, 2023



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Verification Credential

This is to verify that BSI Hong Kong has conducted a KPIs verification for:

China State Construction International Holdings Limited

Verified KPIs Summary (1-Jan-2022 to 30-Dec-2022) as following:

- 1) KPI1 - Green House Gas (GHG) Emission Intensity (Scope 1+2)
Total GHG emission divided by Revenue
= 9.13 tCO₂-e/ million HKD
- 2) KPI2 - FSC or PEFC certified wood purchase percentage
FSC or PEFC certified wood purchased divided by total wood purchased (x100)
= 99.9%
- 3) KPI3 - Work-related injury rate per 1,000 workers
Number of work-related injuries divided by monthly cumulative average number of employees and subcontracted workers (x1,000)
= 4.0 per 1,000 workers

Signed on behalf of BSI:

Mr. Stephen Yu
Chief Operating Officer – Hong Kong

Last Assessment Date: 2023-04-26

Note:

This verification credential is for the exclusive use of the verification credential holder and is provided pursuant to the agreement between BSI's and its client. BSI responsibility and liability are limited to the terms and conditions of the agreement. BSI assumes no liability to any party, other than to the client in accordance with the agreement for any loss, expense or damage occasioned by the use of this verification credential. Only the client is authorized to copy or dispute this verification. Any use of the BSI name or one of its marks for the sale or advertisement of the tested material, product or services must first be approved in writing by BSI. The issuing of this verification credential does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any related product.

Information and Contact: BSI Pacific Limited, 23rd Floor, Cambridge House, Taikoo Place, 979 King's Road, Island East, Hong Kong





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2023-04-14

China State Construction International Holdings Limited
28/F, China Overseas Building
139 Hennessy Road
Wan Chai
Hong Kong

Greenhouse Gas Emission Verification

British Standards Institution (hereinafter referred to as BSI) was engaged to complete GHG verification to the 10 projects managed by China State Construction International Holdings Limited (hereinafter referred to as CSCI) and completed on 11st April 2023. The aim of this verification was to provide a reasonable assurance on the completeness and accuracy of the data consolidated in the GHG Emissions Inventory by CSCI.

Verification Scope

The independent verification activity covers the greenhouse gas emission data for the period from 1 January 2022 to 31 December 2022 of CSCI. The organizational boundary was established following the operational control approach, which only limited to 10 construction sites from engineering business:

- 1) Contract no. HY/2020/07 Widening of Castle Peak Road Between Kwun Tsing Road and Hoi Wing Road
- 2) Design and Construction of Chinese Medicine Hospital and Government Chinese Medicines Testing Institute in Tseung Kwan O
- 3) Contract No. DC/2020/05 Relocation of Sha Tin Sewage Treatment Works to Caverns - Main Caverns Construction
- 4) Contract no. 20190687 Construction of Public Housing Development at Ching Hong Road North, Tsing Yi, Phase 1 and 2
- 5) Design and Construction of Apartments for the Elderly on Avenida do Nordeste
- 6) Construction of the upper cover of Galaxy Macau Phase 4
- 7) Guizhou Zhengxi Highway Project, Zunyi City, Guizhou Province, China
- 8) Construction Project of COHL Headquarters Base, Shenzhen City, Guangdong Province, China
- 9) Construction Project of Far East Heng Fai Facade (Zhuhai) Limited

British Standards Institution
BSI Pacific Limited
23/F, Cambridge House, Talkoo Place,
979 King's Road, Island East, Hong Kong

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Website: bsigroup.com/en-HK



- 10) Block E-01-02, Zhongyangtu Unit, Yangshuangpian District, Wenzhou, Zhejiang, China

Verification Methodology

Within the verification scope, BSI reviewed the activity data and supporting evidence of the selected samples out of the 10 construction sites. BSI obtained supporting evidence to assess greenhouse gas inventory by conducting interviews and data collection with the relevant personnel of CSCI. The verification was conducted in accordance with ISO 14064-3:2019 'Greenhouse gases Part 3: Specification with guidance for the verification and validation of greenhouse gas statements'. Materiality threshold of ±5% was adopted for this verification.

BSI verification team did not take part in the GHG data preparation process.

The following opinion was recommended by the verification team.

- No material error or omission was identified in the GHG Emission Inventory. There is no misstatement for GHG calculation. The direct and indirect greenhouse gas emission from 10 construction sites of CSCI for the period from 01-Jan-2022 to 31-Dec-2022 are as below,

Greenhouse Gas Emission	Tonnes of CO ₂ equivalent
Direct Greenhouse Gas Emissions	1442.64
Indirect Greenhouse Gas Emissions	17213.45
Biogenic Greenhouse Gas Emissions	139.58
Total Greenhouse Gas Emissions	18795.67

- Data quality was considered acceptable in meeting the principles as set out in ISO 14064-1:2018.

Signed on behalf of BSI:

Stephen Yu
Chief Operating Officer – Hong Kong

British Standards Institution
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Environmental Performance

Air Emissions

Category	CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	Unit
Nitrogen oxides	67,791	54,769	86,124	248,087	31,339	1,379	489,489	kg
Sulphur oxides	4,433	3,602	5,590	136,784	2,014	77	152,500	kg
Respirable suspended particulates	4,766	3,851	9,399	6,597	3,464	120	28,197	kg

Greenhouse Gas Emissions²²

Scope	Emission source	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total	Unit
					CSC Development	Construction & CSC Hailong			
Scope 1: Direct emissions ²³	Combustion of fossil fuels — stationary source	2,540	2,087	4,124	724,456	2,280	140	735,627	tonne of CO ₂ -e
	Combustion of fossil fuels — mobile source	435	246	1,270	732	119	59	2,861	
	Fugitive emissions ²	16,289	37,267	31,214	235	0	0	85,005	
	Industrial production processes — welding	0	10	0	0.13	0	0	10	
	Carbonate	0	0	0	2,265	0	0	2,265	
Scope 2: Energy indirect emissions	Purchased electricity	7,499	14,362	46,995	21,884	4,381	4,710	99,831	tonne of CO ₂ -e
	Purchased heat	0	0	153	0	5,657	0	5,810	
	Total GHG emissions (Scope 1 & Scope 2)				931,409				tonne of CO ₂ -e
	GHG intensity (Scope 1 & Scope 2, by revenue)				9.13				tonne of CO ₂ -e/HKD million

²² GHG emissions quantification process and emission factors refer to the national standards and guidelines of the People's Republic of China (Guidelines for Accounting and Reporting Greenhouse Gas Emissions China Public Building Operation Units (Enterprises) (Trial) and Guidelines for Accounting and Reporting Greenhouse Gas Emissions Other Industrial Enterprises (Trial)), Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong prepared 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 the international standards ISO 14064-1 and the Greenhouse Gas Protocol.

²³ Including emissions from fire suppression systems and refrigerant emissions within the reporting scope. While fugitive GHG emissions from BTM (bromotrifluoromethane) used in fire suppression systems are not included in the six Kyoto Protocol GHG categories, they are included in this carbon assessment to provide a true and fair picture of GHG-related information. BTM is one of the controlled substances listed in Annex A of the Montreal Protocol, with a conversion factor of approximately 1.0 metric ton of CFC-11 (trichlorofluoromethane) equivalent.

Summary of Key Performance Indicators

Scope	Emission source	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total	Unit
					CSC Development	Construction & CSC Hailong			
Scope 3: Other indirect emissions ²⁴	Industrial production processes — welding (contractor)	36	112	280	0	0	0	428	tonne of CO ₂ -e
	Stationary combustion (contractor)	48,663	1,044	31,704	0	5	0	81,416	
	Waste paper disposal	2,402	Not available	Not available	Not available	Not available	Not available	2,402	
	Water consumption	400	Not available	Not available	Not available	Not available	Not available	400	
	Sewage treatment	81	Not available	Not available	Not available	Not available	Not available	81	
	Air business travel	0	3	82	83	60	2	230	
Total GHG emissions (Scope 1, Scope 2 & Scope 3)					1,016,366				tonne of CO ₂ -e
GHG intensity (Scope 1, Scope 2 & Scope 3, by revenue)					9.97				tonne of CO ₂ -e/HKD million

²⁴ The GHG emissions from waste paper disposal, water consumption and sewage treatment only include emissions generated from operations in Hong Kong.

Hazardous Waste

Category	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total	Unit
				CSC Development	Construction & CSC Hailong			
Total hazardous waste	24.93	0	70.93	19.50	35.83	0	151.19	tonne
Hazardous waste intensity (by revenue)	0.001							tonne/HKD million

Non-hazardous Waste

Category	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAMt	Total	Unit	
				CSC Development	Construction & CSC Hailong				
Non-hazardous waste generated	Inert C&D materials	8,899,617	353,420	658,350,415	7,450	29,736	0	667,640,638	tonne
	Non-inert construction waste	199,027	32,588	17,371,511	4,596	3,285	0	17,611,007	
	Other non-hazardous waste	5,174	88,333	137,235	207,103	9,731	2	447,578	
Total non-hazardous waste	685,699,223							tonne	
Non-hazardous waste intensity (by revenue)	6.723.9							tonne/HKD million	

Energy

Category	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total	Unit	
				CSC Development	Construction & CSC Hailong				
Gasoline	917	978	5,058	586	616	456	8,611	MWh	
Diesel	10,358	8,017	3,949	1,954	4,441	105	28,824		
Liquefied petroleum gas	0	0	569	175	197	270	1,211		
Liquefied natural gas	0	0	19	0	0	0	19		
Pipeline gas	0	0	390	0	0	0	390		
Acetylene	0	30	20	84	202	0	336		
Natural gas	0	0	1,125	556	4,584	0	6,265		
Lignite	0	0	0	2,041,357	0	0	2,041,357		
Methanol	0	0	215	0	0	0	215		
Purchased electricity	16,726	24,194	82,404	38,373	7,682	8,259	177,639		
Purchases heating	0	0	386	0	14,285	0	14,671		
Sold electricity	0	0	0	(79,546)	0	0	(79,546)		
Sold heating	0	0	0	(1,645,134)	0	0	(1,645,134)		
Total energy consumption				554,857					
Energy intensity (by revenue)				5.4					MWh/HKD million
Renewable energy	43	0	2	0	0	0	45		MWh

Water

Category	CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	Unit
Total water consumption ²⁴	937,706	1,315,503	3,171,848	2,198,516	377,046	75,025	8,075,644	cubic metre
Water consumption intensity (by revenue)				79.2				cubic metre/ HKD million
Total sewage discharge	905,256	115,620	867,717	57,087	199,841	1,623	2,147,144	cubic metre
Water discharge intensity (by revenue)				21.1				cubic metre/ HKD million
Total water reused ²⁵	42,913	8,300	30,293	362,501	51,302	0	495,309	cubic metre

Packaging Materials for Finished Products

Category	CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	Unit
Total consumption of packaging materials	1.2	14.3	184.6	216.5	30.8	0	447.4	tonne
Packaging Material Intensity (by revenue)				0.004				tonne/HKD million

²⁴ Including freshwater supplied to contractors at construction sites by the Group.

²⁵ Reused in construction sites of the Group, not used by other organisations.

Use of Raw Materials

Category		CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total	Unit
					CSC Development	Construction & CSC Hailong			
Non-renewable materials	Concrete	888,847	655,185	6,052,829	985	282,811	0	7,880,657	cubic metre
	Cement mortar	2,611	7,091	209,991	215	1,008	0	220,916	cubic metre
	Reinforced steel bar	147,567	136,071	2,544,067	163	33,362	0	2,861,230	tonne
	Steel beams	9,793	22,423	7,141	352	10	0	39,719	tonne
	Iron sheet pile	2,271	9,821	11,071	0	15	0	23,178	tonne
	Wooden sheet pile	391	1,041	323,349	0	0	0	324,781	tonne
	Cement	159,870	15,151	150,815	191	85,655	0	411,682	tonne
	River sand	13,326	2,098	149,521	0	131,512	0	296,457	tonne
	Stones	55,004	4	140,225	0	263,110	0	458,343	tonne
	Bricks	3,339	19,286	257,423	0	2,084	0	282,132	tonne
	Concrete floor materials	0	33	398	0	0	0	431	tonne
	Aluminium products	0	41	5,689	89,464	169	0	95,363	tonne
	Steel products	182	179	14,442	22,922	53	0	37,778	tonne
	Silica gel	0	0	131	2,680	0	0	2,811	tonne
	Glass	0	27	17,810	77,903	4	0	95,744	tonne
	Timber for packaging	0	8	48	971	23	0	1,050	tonne
	Other timber	14	1,337	89,801	0	965	0	92,117	tonne
Other Steels	1,363	1,289	1,891	0	5,439	0	9,982	tonne	
Steel tubes	2,742	4,447	1,780,537	0	5,807	0	1,796,273	tonne	
Paper	500	23	2,252	14	21	2	2,812	tonne	
Renewable materials	Bamboo flooring	0	0	295	0	0	0	295	tonne
	Cotton insulation material	0	0	8	0	0	0	8	tonne

Social Performance

Employment

Statistics		CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total
Gender	Male	4,455	903	1,876	4,226	815	133	12,408
	Female	1,196	256	505	738	157	86	2,938
Age group	30 or below	1,243	315	725	1,659	456	20	4,418
	31-40	1,600	353	1,298	1,653	339	81	5,324
	41-50	1,209	231	268	1,069	120	102	2,999
	51 or above	1,599	260	90	583	57	16	2,605
Current employees ²⁶	Employment rank							
	Senior	18	6	6	16	8	0	54
	Middle	74	14	231	30	51	10	410
	Executive	497	195	1,123	376	259	209	2,659
	General employees	5,062	944	1,021	4,542	654	0	12,223
Region	Hong Kong	5,609	0	0	507	29	0	6,145
	Macau	40	866	0	4,152	2	0	5,060
	Mainland China	0	285	2,381	33	941	219	3,859
	USA	0	0	0	103	0	0	103
	Canada	0	0	0	169	0	0	169
	Others ²⁷	2	8	0	0	0	0	10

²⁶ Total number of employees as of 31 Dec 2022.

²⁷ Including UK, Portugal and Dubai.

Summary of Key Performance Indicators

Statistics			CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total
Other workers ²⁸	Gender	Male	14,600	6,766	376	171	869	0	23,046
		Female		0	120	30	114	0	
Monthly paid employees ²⁹	Gender	Male	3,358	877	1,870	4,215	815	133	11,268
		Female	697	106	505	715	157	86	2,266
	Age group	30 or below	1,094	263	719	1,724	456	20	4,276
		31-40	1,354	306	1,298	1,673	339	81	5,051
		41-50	824	215	268	1,027	120	102	2,556
		51 or above	783	199	90	506	57	16	1,651
	Employment rank	Senior	15	6	0	16	8	0	45
		Middle	74	14	231	30	48	10	407
		Executive	493	195	1,123	376	259	209	2,655
		General employees	3,473	768	1,021	4,508	657	0	10,427
	Region	Hong Kong	4,013	0	0	458	29	0	4,500
		Macau	41	690	0	33	2	0	766
		Mainland China	0	285	2,375	4,156	941	219	7,976
		USA	0	0	0	103	0	0	103
		Canada	0	0	0	169	0	0	169
Others ²⁷		1	8	0	11	0	0	20	

²⁸ Including contractors, subcontractors, interns, and other workers whose workplace or work content is controlled by the Group.

²⁹ Total number of monthly-paid employees as of 31 Dec 2022. In order to align with the Group's roadmap for setting target statistics, data related to new hires, lost employees, and training is only applicable to monthly-paid employees.

Summary of Key Performance Indicators

Statistics			CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total
New hires	Gender	Male	861	144	276	1,815	202	0	3,298
		Female	197	22	54	315	64	0	652
	Age group	30 or below	448	86	215	1,057	184	0	1,990
		31-40	369	47	107	761	68	0	1,352
		41-50	158	20	8	269	13	0	468
		51 or above	83	13	0	43	1	0	140
Rate of new hires ³⁰	Gender	Male	26%	16%	15%	43%	25%	0%	27%
		Female	28%	21%	11%	44%	41%	0%	22%
	Age group	30 or below	41%	33%	30%	61%	40%	0%	45%
		31-40	27%	15%	8%	45%	20%	0%	25%
		41-50	19%	9%	3%	26%	11%	0%	16%
		51 or above	11%	7%	0%	8%	2%	0%	5%

³⁰ Rate of new hires = (Number of new hires in 2022 / Number of monthly paid employees as of 31 Dec 2022) x 100%

Summary of Key Performance Indicators

Statistics			CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total
Number of employee turnover	Gender	Male	894	127	81	1,430	104	10	2,646
		Female	183	14	49	170	22	7	445
	Age group	30 or below	395	62	67	802	63	4	1,393
		31-40	398	49	54	520	37	12	1,070
		41-50	163	18	5	193	14	1	394
		51 or above	121	12	4	85	12	0	234
	Region	Hong Kong	1,068	0	0	72	9	0	1,149
		Macau	9	76	0	1	0	0	86
		Mainland China	0	65	130	1,440	117	17	1,769
		USA	0	0	0	71	0	0	71
		Canada	0	0	0	16	0	0	16
		Others	0	0	0	0	0	0	0

Summary of Key Performance Indicators

Statistics			CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	
Number of employee turnover ³¹	Gender	Male	27%	14%	4%	34%	13%	8%	23%	
		Female	26%	13%	10%	24%	14%	8%	20%	
	Age group	30 or below	36%	24%	9%	47%	14%	20%	33%	
		31-40	29%	16%	4%	31%	11%	15%	21%	
		41-50	20%	8%	2%	19%	12%	1%	15%	
	Region	51 or above	15%	6%	4%	17%	21%	0%	14%	23%
		Hong Kong	27%	0%	0%	16%	31%	0%	26%	
		Macau	22%	11%	0%	3%	0%	0%	11%	
		Mainland China	0%	23%	5%	35%	12%	8%	22%	
		USA	0%	0%	0%	69%	0%	0%	69%	
		Canada	0%	0%	0%	9%	0%	0%	9%	
		Others	0%	0%	0%	0%	0%	0%	0%	

³¹ Rate of employee turnover = (Number of employee turnover in 2022 / Number of monthly paid employees as of 31 Dec 2022) x 100%.

Health and Safety³²

Statistics	CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total
Number of recordable work-related injuries	0	0	1	8	6	1	16
Work-related injury rate ³³	0	0	0.04	0.14	3.69	219.30	0.10
Number of high-consequence work-related injuries ³⁴	0	0	0	0	0	1	1
High-consequence work-related injury rate ³⁵	0	0	0	0	0	219.30	0.01
Number of work-related fatalities	0	0	1	0	0	0	1
Work-related fatality rate ³⁶	0	0	0.04	0	0	0	0.01
Lost days due to work-related injuries	0	0	0	604	206	106	916
Number of hours worked ³⁷	12,670,794	2,948,000	4,835,204	11,363,298	325,520	912	32,143,728

³² The Group did not have any employees or other workers who suffered from occupational diseases during the year.

³³ Work-related injury rate = (Number of recordable injuries / Original number of total working hours) × 200,000.

³⁴ An injury that cannot or is not expected to recover fully to pre-injury health status within 6 months.

³⁵ High-consequence work-related injury rate = (Number of high-consequence injuries / Original number of total working hours) × 200,000.

³⁶ Work related fatality rate = (Number of work-related causality / Original number of total working hours) × 200,000.

³⁷ Estimated by number of hours worked per employee per working day, 7 to 9 hours per day depending on the employee's location.

Summary of Key Performance Indicators

Statistics	CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total		
				CSC Development	Construction & CSC Hailong				
Other Workers ²⁸	Number of recordable work-related injuries	133	4	0	0	0	137		
	Work-related injury rate ³³	0.45	0.02	0	0	0	0.28		
	Number of high-consequence work-related injuries ³⁴	26	2	0	0	0	28		
	High-consequence work-related injury rate ³⁵	0.09	0.01	0	0	0	0.06		
	Number of work-related fatalities	0	0	0	0	0	0		
	Work-related fatality rate ³⁶	0	0	0	0	0	0		
	Lost days due to work-related injuries	0 ³⁸	692	0	0	0	692		
	Number of hours worked ³⁷	59,265,120	34,857,800	992,000	402,000	1,744,976	97,261,896		
Total Workforce	Lost time injury rate (LTIR) ³⁹		0.37	0.02	0.03	0.14	0.58	219.30	0.24

³⁸ Some other workers are paid on a daily basis and are covered by insurance in case of injury. Replacement will be arranged by their employers, so there is no loss of working days.

³⁹ LTIR = (Number of recordable injuries of total workforce / Original number of working hours of total workforce) x 200,000

Training and Development⁴⁰

Statistics			CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	
Training percentage	Gender	Male	100%	100%	75%	100%	92%	100%	95%	
		Female	100%	100%	77%	100%	98%	100%		
	Employment rank	Senior	100%	100%	N/A	100%	100%	N/A		100%
		Middle	100%	100%	61%	100%	33%	100%		71%
		Executive	100%	100%	75%	100%	100%	100%		89%
		General employees	100%	100%	79%	100%	95%	N/A		98%
Average training hours	Gender	Male	12.2	4.7	13.3	44.8	27.1	1.0	24.9	
		Female	12.5	17.4	15.8	45.6	26.2	1.0	24.4	
	Employment rank	Senior	25.2	5.3	N/A	85.3	58.4	N/A	50.5	
		Middle	28.2	7.1	14.2	35.1	78.3	1.0	25.3	
		Executive	9.6	1.4	12.2	43.5	31.4	1.0	16.4	
		General employees	12.2	7.2	15.4	44.9	21.1	N/A	26.9	

⁴⁰ Including data of employee turnover who has received training in the Reporting Period.

Supply Chain Management⁴¹

Statistics		CSHK	CCE Macau	CSCIICL	China Overseas			Total
					CSC Development	Construction & CSC Hailong	CSIAM	
Number of suppliers	Hong Kong	527	0	0	58	30	0	615
	Macau	0	125	0	3	6	0	134
	Mainland China	13	2	620	782	1,797	85	3,299
	Others ⁴²	4	0	0	447	0	0	451
								4,499

⁴¹ The Group consistently applies supplier recruitment, management and monitoring practices to all suppliers of the same category to ensure fairness of the system.

⁴² Including USA, Canada, UK, Portugal and Dubai.

Anti-corruption⁴³

Statistics		CSHK	CCE Macau	CSCIICL	China Overseas		CSIAM	Total
					CSC Development	Construction & CSC Hailong		
Number of people receiving information on anti-corruption policies and procedures	Governance body							9
	Senior	18	3	7	16	8	0	52
	Middle	65	10	103	30	15	11	234
	Executive	441	0	607	339	121	177	1,685
	General employees	4,421	0	465	3,059	260	0	8,205
								10,176
Percentage of people receiving information on anti-corruption policies and procedures	Governance body							100%
	Senior	100%	50%	100%	100%	100%	N/A	96%
	Middle	88%	71%	45%	100%	29%	100%	57%
	Executive	89%	0%	54%	90%	47%	85%	63%
	General employees	87%	0%	46%	67%	40%	N/A	67%
								66%

⁴³ Including data of employee turnover who has received information or training in the Reporting Period.

Summary of Key Performance Indicators

Statistics		CSHK	CCE Macau	CSCIICL	China Overseas			Total
					CSC Development	CSC Construction & CSC Hailong	CSIAM	
Number of people receiving anti-corruption training	Governance body							9
	Senior	18	3	7	16	8	0	52
	Middle	65	10	104	30	15	11	235
	Executive	441	0	604	258	121	177	1,601
	General employees	4,421	0	467	2,762	221	0	7,871
								9,759
Percentage of people receiving anti-corruption training	Governance body							100%
	Senior	100%	50%	100%	100%	100%	N/A	96%
	Middle	88%	71%	45%	100%	29%	100%	57%
	Executive	89%	0%	54%	69%	47%	85%	60%
	General employees	87%	0%	46%	61%	34%	N/A	64%
								64%
Average anticorruption training hours	Governance body							3
	Senior	1.0	3.0	12.8	4.1	5.0	N/A	4.0
	Middle	1.2	2.9	4.8	6.3	2.0	3.3	3.8
	Executive	1.2	0	4.5	3.7	2.0	7	3.0
	General employees	1.7	0	26.2	2.4	1.2	N/A	3.8
								3.7

Community Investment

Statistics	CSHK	CCE Macau	CSCIICL	CSC Development	China Overseas Construction & CSC Hailong	CSIAM	Total	Unit
Total amount of investment	1,072,348.0	35,144.0	43,196.5	0	436,642.0	0	1,587,330.5	thousands HKD
Number of participating volunteers	2,829.0	39.0	435.0	183.0	204.0	0	3,690.0	number of people
Number of volunteer participation hours	15,069.0	14.0	720.0	788.0	340.0	0	16,931.0	hour

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Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)	Relevant Chapter (Page Number)	Remarks
A. Environmental		
Aspect A1: Emissions		
General Disclosure	Information on: <ul style="list-style-type: none"> (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste 	Sustainability Approach and Policy (46–47), Green Construction (70) <p>Important laws and regulations applicable to the Group include the Environmental Protection Law of the People’s Republic of China, the Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution, the Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes the Air Pollution Control Ordinance, the Water Pollution Control Ordinance, the Waste Disposal Ordinance, the Noise Control Ordinance, the Environmental Impact Assessment Ordinance, the Marine Dumping Ordinance of Hong Kong, and the Environmental Framework Law and Construction Waste Management System of Macau. These laws and regulations provide clear requirements for the emission of exhaust gases and greenhouse gases, the discharge of pollutants into water and land, and the generation of hazardous and non-hazardous waste. Any violation of laws and regulations may result in regulatory agencies imposing fines, suspending operations, and/or taking legal action against the Group.</p> <p>During the Reporting Period, CSHK had two cases of violating the Noise Control Ordinance in 2021 that have been convicted. CSHK also has one case of violating the Water Pollution Control Ordinance, which will be convicted in 2023. The Group has remedied the situation in accordance with the law and will strengthen its management to ensure compliance with relevant emission laws and regulations.</p>

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
A1.1	The types of emissions and respective emissions data.	Environmental Performance (145)	
A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions and, where appropriate, intensity.	Environmental Performance (146–147)	
A1.3	Total hazardous waste produced and, where appropriate, intensity.	Environmental Performance (148)	
A1.4	Total non-hazardous waste produced and, where appropriate, intensity.	Environmental Performance (148)	
A1.5	Description of emissions target(s) set and steps taken to achieve them.	Safeguarding the Environment (66–67, 71)	
A1.6	Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them.	Safeguarding the Environment (66–67, 75)	
Aspect A2: Use of Resources			
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials.	Sustainability Approach and Policy (46–47), Green Construction (70)	
A2.1	Direct and/or indirect energy consumption by type in total and intensity.	Environmental Performance (149)	
A2.2	Water consumption in total and intensity.	Environmental Performance (150)	

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Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them.	Safeguarding the Environment (66–67, 71–72)	
A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.	Safeguarding the Environment (66–67, 73)	During the Reporting Period, the Group did not have any problems in sourcing water that is fit for purpose.
A2.5	Total packaging material used for finished products and, if applicable, with reference to per unit produced.	Environmental Performance (150)	
Aspect A3: The Environment and Natural Resources			
General Disclosure	Policies on minimising the issuer's significant impact on the environment and natural resources.	Sustainability Approach and Policy (46–47), Green Design (68–69), Green Construction (70)	
A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	Green Design (68–69), Green Construction (70)	
Aspect A4: Climate Change			
General Disclosure	Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer.	Road to Carbon Neutrality (14–18) Sustainability Risks and Opportunities (52–56)	
A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.	Road to Carbon Neutrality (14–18) Sustainability Risks and Opportunities (52–56)	

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)	Relevant Chapter (Page Number)	Remarks
B. Social		
Aspect B1: Employment		
General Disclosure	Information on: <ul style="list-style-type: none"> (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare. 	Sustainability Approach and Policy (46–47), Employment and Treatment (89–91) <p>Important laws and regulations applicable to the Group include the Labor Law of the People’s Republic of China, the Labor Contract Law of the People’s Republic of China, the Employment Ordinance of Hong Kong and the Labor Relations Law of Macau. These laws and regulations cover the requirements for remuneration and dismissal, recruitment and promotion, working hours, holidays, equal opportunities, diversity, anti-discrimination and other treatment and benefits, and clarify the statutory obligations and responsibilities of employers.</p> <p>The Group complies with relevant laws and regulations. During the Reporting Period, the Group found no illegal cases related to employment.</p>
B1.1	Total workforce by gender, employment type, age group and geographical region.	Social Performance (152–153)
B1.2	Employee turnover rate by gender, age group and geographical region.	Social Performance (156)

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
Aspect B2: Health and Safety			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	Sustainability Approach and Policy (46–47), Work Safety and Health (86–88)	Important laws and regulations applicable to the Group include the Safety Production Law of the People’s Republic of China, Occupational Disease Prevention and Control Law of the People’s Compensation System for Accident and Occupational Disease Damage. These laws and regulations set clear requirements for production and business units and employers to provide a safe working environment and protect employees from occupational hazards. The Group complies with relevant laws and regulations. During the Reporting Period, the Group did not find any violations related to health and safety.
B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	Social Performance (157–158)	There was one work-related fatality in 2022 and one work-related fatality in 2021, with rates of 0.006 and 0.007, respectively. There were no work-related fatalities in 2020.
B2.2	Lost days due to work injury.	Social Performance (157–158)	
B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	Work Safety and Health (86–88)	

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
Aspect B3: Development and Training			
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	Training and Development (92-94), Regional Sustainability Performances Highlights (129-130)	
B3.1	The percentage of employees trained by gender and employee category.	Social Performance (159)	
B3.2	The average training hours completed per employee by gender and employee category.	Social Performance (159)	
Aspect B4: Labour Standards			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour	Respect for Human Rights (122)	Important laws and regulations applicable to the Group include the Labor Law of the People's Republic of China, the Law of the People's Republic of China on the Protection of Minors, the Hong Kong Employment Ordinance and the Macau Labor Relations Law. These laws have clear provisions on the prevention of child labor or forced labour, and elaborate on the legal responsibilities of employers. The Group complies with relevant laws and regulations. During the Reporting Period, the Group found no violations related to labor standards.
B4.1	Description of measures to review employment practices to avoid child and forced labour.	Respect for Human Rights (122)	
B4.2	Description of steps taken to eliminate such practices when discovered.	Not Applicable	During the Reporting Period, the Group found no irregularities in its operations.

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Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
Aspect B5: Supply Chain Management			
General Disclosure	Policies on managing environmental and social risks of the supply chain.	Sustainability Approach and Policy (46-47), Supply Chain Management (81)	
B5.1	Number of suppliers by geographical region.	Social Performance (160)	
B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	Supply Chain Management (81), Social Performance (160)	
B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	Supply Chain Management (81)	
B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	Procurement of Sustainable Materials (82)	

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)	Relevant Chapter (Page Number)	Remarks	
Aspect B6: Product Responsibility			
General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	Sustainability Approach and Policy (46-47), Quality Assurance (117-118), Abide by Business Ethics (123)	<p>Important laws and regulations applicable to the Group include the Company Law of the People's Republic of China, the Patent Law of the People's Republic of China, the Hong Kong Buildings Ordinance and the Personal Data (Privacy) Ordinance. These laws and regulations provide clear requirements on health and safety and privacy matters of products and services.</p> <p>The Group complies with relevant laws and regulations. During the Reporting Period, the Group did not discover any illegal cases related to product liability</p>	
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Not Applicable	During the Reporting Period, the Group did not recall any products or services due to safety and health reasons.
B6.2	Number of products and service-related complaints received and how they are dealt with.	Not Applicable	During the Reporting Period, the Group did not receive any definite complaints about products and services that have a significant impact on operations.
B6.3	Description of practices relating to observing and protecting intellectual property rights.	Abide by Business Ethics (123)	
B6.4	Description of quality assurance process and recall procedures.	Quality Assurance (117-118)	
B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	Abide by Business Ethics (123)	

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
Aspect B7: Anti-corruption			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	Sustainability Approach and Policy (46-47), Integrity and Anti-Corruption (121)	<p>Important laws and regulations applicable to the Group include the Anti-Unfair Competition Law of the People's Republic of China, the Anti-Money Laundering Law of the People's Republic of China, the Criminal Law of the People's Republic of China, the Prevention of Bribery Ordinance of Hong Kong and the Criminal Code of Macau. These laws provide clear regulations on the prevention of bribery, extortion, fraud and money laundering, and clarify the legal responsibility of everyone to maintain social integrity and fairness and stop unfair competition.</p> <p>The Group complies with relevant laws and regulations. During the Reporting Period, the Group did not discover any illegal cases related to anti-corruption.</p>
B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	Not Applicable	During the Reporting Period, no corruption lawsuits were brought against the Group or its employees and were concluded.
B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	Integrity and Anti-Corruption (121-122)	
B7.3	Description of anti-corruption training provided to directors and staff.	Social Performance (162)	

Main Areas, Aspects, General Disclosures and Key Performance Indicators (KPIs)		Relevant Chapter (Page Number)	Remarks
Aspect B8: Community Investment			
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	Sustainability Approach and Policy (46-47), Community Care (99-100)	
B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	Serving the Community (96-101), Regional Sustainability Performances Highlight (135,140-141)	
B8.2	Resources contributed (e.g. money or time) to the focus area.	Social Performance (163)	

GRI Standards Content Index

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
GRI 101: Foundation 2016 (excluding any disclosures)			
General Disclosures			
GRI 102: General Disclosures 2016			
Organisational profile			
102-1	Name of the organisation	About the Group (4)	
102-2	Activities, brands, products, and services Operational	About the Group (4-5)	During the Reporting Period, the Group did not have any products and services banned in any market.
102-3	Location of headquarters	About the Group (4)	
102-4	Location of operations	About the Group (5)	
102-5	Ownership and legal form	About the Group (4-5)	
102-6	Markets served	About the Group (4-7)	Detailed markets, customers and project type information are available in CSCI's Annual Report 2022.
102-7	Scale of the organisation	About the Group (4-7), About this Report (142)	Detailed financial and operating point information is set out in CSCI's Annual Report 2022.

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
102-8	Information on employees and other workers	Employment and treatment (89-94)	The Group's construction projects engage with workers are not directly employed by the Group. They mainly work for contractors and/or subcontractors. There were no significant changes in the total number of employees during the Reporting Period.
102-9	Description of the organisation's supply chain	Building a Sustainable Supply Chain (81)	
102-10	Significant changes to the organisation and its supply chain	Not Applicable	There were no significant changes to the Group and its supply chain in the Reporting Period.
102-11	Precautionary Principle or approach	Sustainability Approach and Policy (46-47) Sustainability Risks and Opportunities (50-51)	
102-12	External initiatives	Road to Carbon Neutrality (18), Sustainability Approach and Policy (46-47), Investment and Achievements in Sustainability (57)	
102-13	Memberships of associations	Participating Organizations (63)	
Strategy			
102-14	Statement from senior decision-maker	Message from the Chairman (8-11)	
Ethics and Integrity			
102-16	Values, principles, standards and norms of behaviour	Sustainability Approach and Policy (46-47), Compliance (121-123)	

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Governance			
102-18	Governance structure	Sustainability Governance Structure (45)	Please refer to CSCI's Annual Report 2022 for details.
Stakeholder engagement			
102-40	List of stakeholder groups	Stakeholder Engagement (56-59)	
102-41	Collective bargaining agreements	Not Applicable	The Group does not currently have a collective bargaining mechanism in place.
102-42	Identifying and selecting stakeholders	Stakeholder Engagement (61-62)	
102-43	Approach to stakeholder engagement	Stakeholder Engagement (58)	
102-44	Key topics and concerns raised	Stakeholder Engagement (62)	
Reporting practice			
102-45	Entities included in the consolidated financial statements	About this Report (142)	Please refer to CSCI's Annual Report 2022 for details.
102-46	Defining report content and topic Boundaries	About this Report (142)	
102-47	List of material topics	Stakeholder Engagement (62)	
102-48	Restatements of information	Not Applicable	This report did not include restatements of information from previous reports.
102-49	Changes in reporting		This report has no major changes in reporting.
102-50	Reporting period	About this Report (142)	

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
102-51	Date of most recent report	Not Applicable	The most recent report was the 2022 Sustainability Report, published on 29 April 2022.
102-52	Reporting cycle	About this Report (142)	
102-53	Contact point for questions regarding the report	About this Report (143)	
102-54	Claims of reporting in accordance with GRI Standards	About this Report (142)	
102-55	GRI Content Index	GRI Standards Content Index (178-189)	
102-56	External assurance	About this Report (143), Assurance Statements (164-167)	
Material Issues			
Anti-corruption			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement(62), Integrity and Anti-Corruption (121-122)	
103-2	The management approach and its components		
103-3	Evaluation of the management approach	Integrity and Anti-Corruption (121-122)	
GRI 205: Anti-corruption 2016			
205-3	Confirmed incidents of corruption and actions taken	Not Applicable	During the Reporting Period, the Group did not have any confirmed incidents of corruption, nor were the Group or its employees prosecuted for corruption.

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Waste			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Green Construction (75)	
103-2	The management approach and its components	Green Construction (75)	
103-3	Evaluation of the management approach		
GRI 306: Waste 2020			
306-1	Waste generation and significant waste-related impacts	Green Construction (75)	
306-2	Management of significant waste-related impacts	Green Construction (75)	
306-3	Waste generated	Green Construction (75-76), Environmental Performance (152)	
Employment Management System			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Employment and Treatment (89-91)	
103-2	The management approach and its components	Employment and Treatment (89-91)	
103-3	Evaluation of the management approach		
GRI 401: Employment 2016			
401-1	New employee hires and employee turnover	Social Performance (154-156)	

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Labour Relations			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Employment and Treatment (89-91)	
103-2	The management approach and its components	Employment and Treatment (89-91)	
103-3	Evaluation of the management approach		
GRI 402: Labor/Management Relations 2016			
402-1	Minimum notice periods regarding operational changes	Not Applicable	The Group's minimum notice period regarding operational changes is typically two weeks.
Safe and Healthy Working Environment			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Work Safety and Health (86-88)	
103-2	The management approach and its components	Work Safety and Health (86-88)	
103-3	Evaluation of the management approach		

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
GRI 403: Occupational Health and Safety 2018			
403-1	Occupational health and safety management system	Work Safety and Health (86-88)	
403-2	Hazard identification, risk assessment, and incident investigation		
403-3	Occupational health services		
403-4	Worker participation, consultation, and communication on occupational health and safety		
403-5	Worker training on occupational health and safety		
403-6	Promotion of worker health		
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships		
403-8	Workers covered by an occupational health and safety management system	Not Applicable	All workers in the Group are protected by occupational health and safety management systems. Additionally, all projects in Hong Kong and Macau have obtained the ISO45001 Occupational Safety and Health Management System certification.
403-9	Work-related injuries	Work Safety and Health (86-88), Social Performance (157-158)	

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Training and Development			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Training and Development (92-94)	
103-2	The management approach and its components	Training and Development (92-94)	
103-3	Evaluation of the management approach		
GRI 404: Training and Education 2016			
404-1	Average hours of training per year per employee	Social Performance (159)	
Diversity, equal opportunities, and anti-discrimination			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Cultivating Talents-Employment and treatment (91)	
103-2	The management approach and its components	Cultivating Talents-Employment and treatment (91)	
103-3	Evaluation of the management approach		
GRI 405: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	Cultivating Talents-Employment and treatment (91)	

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Prevention of Child Labour or Forced Labour			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62)	
103-2	The management approach and its components	Respect for Human Rights (122)	
103-3	Evaluation of the management approach		
GRI 408: Child Labour 2016			
408-1	Operations and suppliers at significant risk for incidents of child labour	Not Applicable	During the Reporting Period, the Group did not identify any operations and suppliers that are at significant risk for incidents of child labour.
GRI 409: Forced or Compulsory Labour 2016			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Not Applicable	During the Reporting Period, the Group did not identify any operations and suppliers that are at significant risk for incidents of forced or compulsory labour.
Respect for Human Rights and Indigenous Rights			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Respect for Human Rights (122)	
103-2	The management approach and its components	Respect for Human Rights (122)	
103-3	Evaluation of the management approach		

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
GRI 411: Rights of Indigenous Peoples 2016			
411-1	Incidents of violations involving rights of indigenous peoples	Not Applicable	No incidents of violations involving rights of indigenous peoples was reported during the Reporting Period.
Health and Safety of Customer and Public			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Work Safety and Health (86-88), Quality Assurance (117-118)	
103-2	The management approach and its components	Work Safety and Health (86-88), Quality Assurance (117-118)	
103-3	Evaluation of the management approach		
GRI 416: Customer Health and Safety 2016			
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Not applicable	There were no cases of non-compliance relating to health and safety impacts of products and services during the Reporting Year.

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Customer Privacy			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Stakeholder Engagement (62), Abide by business ethics (123)	
103-2	The management approach and its components		
103-3	Evaluation of the management approach	Compliance-Abide by Business Ethics (123)	
GRI 418: Customer Privacy 2016			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Not applicable	The Group did not receive any complaints concerning breaches of customer privacy and losses of customer data during the Reporting Period.
Material issues not covered by the GRI Standards			
Green Design			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Green Design (68-69)	
103-2	The management approach and its components	Road to Carbon Neutrality (21,24), Green Design (68-69)	
103-3	Evaluation of the management approach		

GRI Standards	Content	Relevant Chapter (Page Number)	Remarks
Carbon Neutral Construction			
GRI 103: Management Approach 2016			
103-1	Explanation of the material topic and its Boundary	Green Construction (70-76)	
103-2	The management approach and its components	Road to Carbon Neutrally (21), Green Construction (70-76)	
103-3	Evaluation of the management approach		



中國建築國際集團有限公司

CHINA STATE CONSTRUCTION INTERNATIONAL HOLDINGS LIMITED

(於開曼群島註冊成立之有限公司)

(Incorporated in the Cayman Islands with limited liability)