



2021

China Resources Cement Holdings Limited

## **Social Responsibility Report**

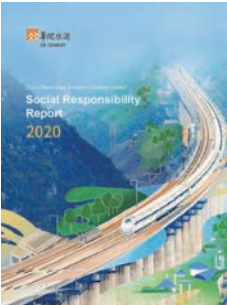

















# Foreword

Reporting Frequency	This report is published on an annual basis and is the ninth Social Responsibility Report which China Resources Cement Holdings Limited published to the public.
Reporting Period	Unless otherwise specified, this report covers the period from 1 January 2021 to 31 December 2021, with some contents extended beyond the stated period.
Description of References	For ease of reference, "CR Cement", "the Company" or "we" mentioned in this report all stand for "China Resources Cement Holdings Limited and its subsidiaries" collectively.
Basis of Reference	"GRI Sustainability Reporting Standards" of Global Reporting Initiative "The Guide for Business Action on the United Nations Sustainable Development Goals (SDGs)" "Guidance on Social Responsibility Reporting" of GB/T36001-2015 "Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited (HKEX ESG Guide) "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0)" of Chinese Academy of Social Sciences "Guidance on Social Responsibility of Cement Enterprise", "Guidance on Social Responsibility Reporting of Cement Enterprise" and "Social Responsibility Evaluation Index System of Cement Enterprise" of China Cement Association "China Resources Group Management Measures for Social Responsibility"
Data Description	The data in this report is sourced from the official documents and statistical reports of CR Cement, and the consolidated financial statements were audited by Ernst & Young. The Company undertakes that there are no misrepresentations, misleading statements or materials omissions in the contents of this report.
Preparation Procedures	To ensure completeness, authenticity and balance of contents, this report was prepared with reference to the abovementioned standards by taking such steps as industry benchmarking, questionnaire surveys, information collection, review on the information collected, report drafting, and final review by the management.
Access to this Report	The electronic versions in Chinese and English are available on the website of the Company.
Contact	Website: www.crcement.com Email: crcement@crc.com.hk

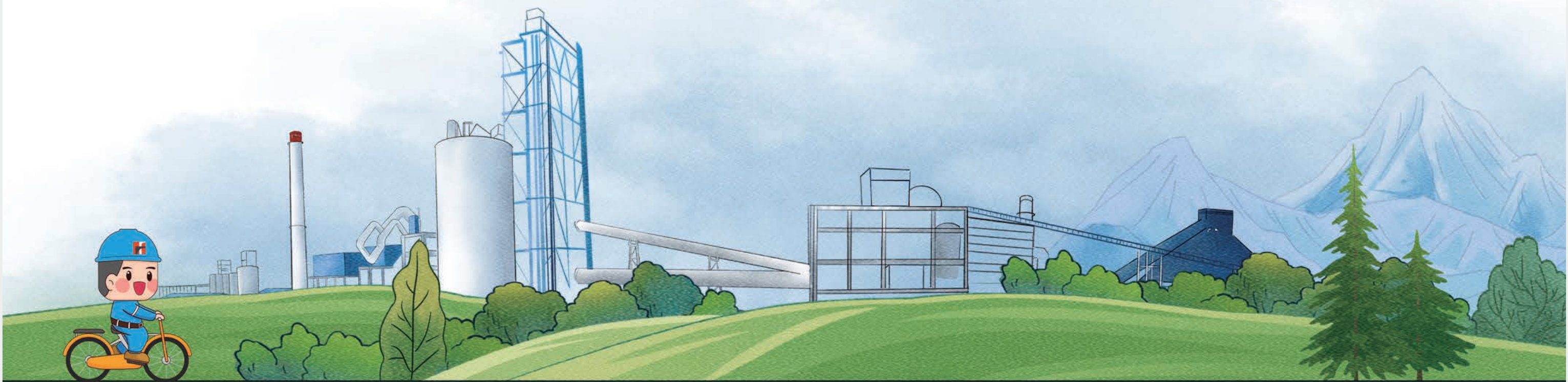
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## List of Previous Reports

			
2020 Social Responsibility Report (★★★★★) 	2019 Social Responsibility Report (★★★★★) 	2018 Social Responsibility Report (★★★★★) 	2017 Social Responsibility Report 
			
2016 Environmental, Social and Governance Report 	2015 Social Responsibility Report 	2014 Social Responsibility Report 	2013 Social Responsibility Report 



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# A Letter to Stakeholders



## Dear Stakeholders,

Time and tide wait for no man, and the 2021 Social Responsibility Report of CR Cement has been presented to you as expected.

In the past year of 2021, in the face of multiple challenges such as the complex and difficult international environment and domestic epidemic, the national economy continued to recover and develop, achieving a promising start to the "Fourteenth Five-Year". In order to promote the co-prosperity and symbiosis of enterprises and the society, CR Cement accurately grasped the new development stage, thoroughly implemented new development philosophies, and accelerated the construction of a new development paradigm. At the same time, the Company planned for the "Fourteenth Five-Year" blueprint, persistently reviewed corporate social responsibility from a strategic perspective and rooted social responsibility in the whole process of operations and development of the Company.

During this year, we broke through our original business scopes and expanded our strategic areas so that our cornerstone for development had been further consolidated.

Based on the strategic goal of "Building Another China Resources Cement" during the "Fourteenth Five-Year" period, we optimized the business portfolio, reorganized the operating regions, and created four business segments including basic building materials, structural building materials, functional building materials and new materials to comprehensively lay out for the emerging industry. We obtained the mining rights of 11 aggregates quarries and accelerated the business layout to consolidate the core competitive advantages. We continuously expanded new businesses such as engineered stone, tile adhesive and white cement to create new industry highlights. We also entered into Hunan, Chongqing and Shaanxi regions to open up new "battlefields" for our strategic areas.

During this year, we deepened reforms, benchmarked against first-class standards and vigorously pushed forward technological innovations to strengthen the development momentum of the Company.

We thoroughly carried out the "Three-Year Action for the Reform of State-Owned Enterprises". We built a system to benchmark against world-class management with improvement indicators, summarized and released the corporate cultural concept system, steadily kicked off the reform in organizational structure and cadre personnel system, and Hong Kong Business Division has become an important window for the Company to seize new development opportunities in Hong Kong, which had have further stimulated and released the potential of reform effectiveness. In addition, the Company adhered to self-reliance and self-improvement in regard to technologies. We continuously improved the innovation mechanism and supporting measures and seamlessly increased the investment in research and development, which included establishing the Technology and Innovation Department, incorporating Shenzhen Runfeng Intelligent Technology Co., Ltd., successfully submitting the major integration and innovation special

project of "5G+ Industrial Internet", and launching the "lighthouse factory" project in order to continuously improve the technological ecology, accelerate digital and intelligent transformation and hasten the empowerment of the whole value chain.

During this year, we continued to strengthen the EHS management, constructed the paradigm of "Greater Environmental Protection", making our development model more sustainable.

We increased the investment in environmental protection, enhanced the level of environmental protection and risk prevention, formulated the "Strategic Plan for Control of Carbon Emissions", set up targets for carbon peaking and carbon neutrality, as well as established a leading group for carbon emissions management to coordinate the launch of control on carbon emissions and effectively promote the green, low-carbon and sustainable development of the Company. Meanwhile, we started the construction of "garden factories" and improved the standards for construction of green factories. We profoundly advanced energy-saving and emissions reduction such that energy consumption and total emissions of main pollutants were greatly reduced. In addition, we vigorously developed circular economy. Great effectiveness was shown in the industrialization of utilization of mining waste resources and the composite treatment of wastewater. As such, green has become a vivid background for the Company's high-quality development.

During this year, we upheld the idea of being people-oriented, bearing in mind the responsibility of a central state-owned enterprise to enforce such responsibility.

We maintained the bottom line of safety, adhered to the principle of "No Safety, No Production", and strengthened the integration between the Internet, intelligent technologies and production safety. In order to affirm the Company's determination to cultivate talents and to protect employees' blissfulness, we smoothened the career channel, improved the salary and welfare system, paid attention to employee's occupational health and established the "Gratitude Fund". Moreover, we took the initiative to share the development achievements of the Company and jointly built a happy and magnificent community by insisting on public welfare, persistently contributing to the society, continuously participating in rural revitalization, supporting the construction of communities and participating in charity and disaster relief.

Go where our hearts go. At present, the changes of the world, the times, and the history are unfolding in an unprecedented way. On the new journey to the Second Centenary Goal, we will focus on the Company's "Fourteenth Five-Year" strategic goals and emphasize on the three main themes of "Promoting Development, Grasping Innovation, Stabilizing Operation". We will continue to learn and practice, to be realistic and to create effectiveness. In order to realize the goal of "Building Another China Resources Cement" by the end of the "Fourteenth Five-Year" period, we will be proactive in making the first good move!

# About CR Cement

China Resources Cement Holdings Limited was incorporated in 2003. It is a listed company in Hong Kong under the central state-owned enterprise China Resources Group (stock code: 1313.HK).

Business segments focus on the fields of basic building materials, structural building materials, functional building materials and new materials, giving full play to the synergistic advantages of various businesses. CR Cement is a large-scale and competitive cement, clinker and concrete producer in Southern China.

Ranked third in the 2021 "Comprehensive Strength Rankings of Chinese Cement Listed Companies" by the China Cement Association.

Included in 5 indices including the Hang Seng Composite Index, the Hang Seng China-Affiliated Corporations Index, the Hang Seng China High Dividend Yield Index, the Hang Seng Composite Industry Index (Properties & Construction) and the Hang Seng Composite MidCap Index.

Ranked second in the 2021 Chinese Corporate Social Responsibility Development Index – Building Materials Industry.

# Business Segments



## Basic Building Materials

- Cement
- Aggregates



## Functional Building Materials

- Engineered Stone
- Tile Adhesive
- White Cement



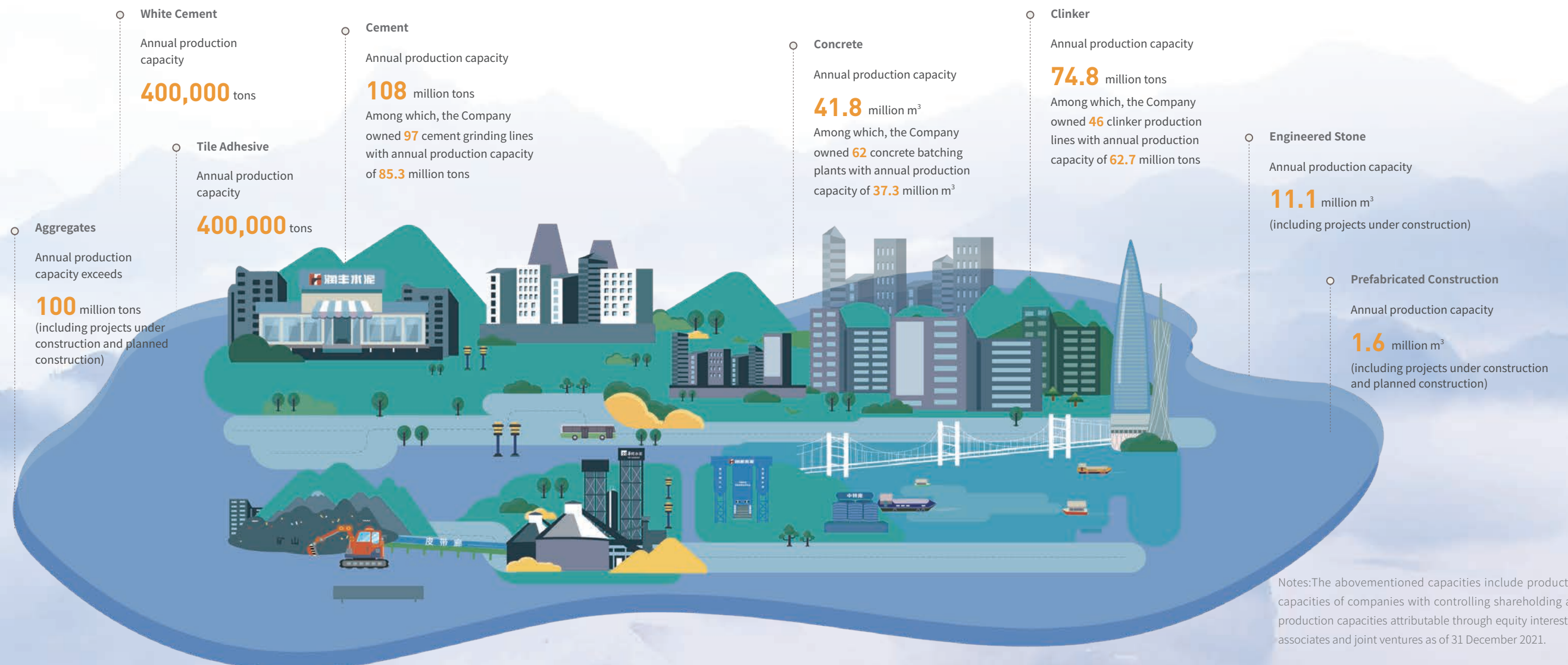
## Structural Building Materials

- Concrete
- Prefabricated Construction



## New Materials

- Calcium-based
- Silicon-based
- Basalt





## Business Distribution

As of 31 December 2021, the Company operated **97** cement grinding lines and **46** clinker production lines with annual production capacities of **85.3** million tons of cement and **62.7** million tons of clinker respectively; and owned **62** concrete batching plants with annual production capacity of **37.3** million m<sup>3</sup> concrete.

In addition, through our equity interests of certain associates and joint ventures, the Company owned a total of **79** cement grinding lines, **30** clinker production lines and **20** concrete batching plants with total annual production capacities of **66.4** million tons of cement, **37.0** million tons of clinker and **9.5** million m<sup>3</sup> of concrete. These production capacities are located in Guangdong, Hong Kong, Fujian, Yunnan and Inner Mongolia. The respective annual production capacities attributable to the Company according to our equity interests of these associates and joint ventures were **22.4** million tons of cement, **12.1** million tons of clinker and **4.5** million m<sup>3</sup> of concrete.

### ● Cement and clinker production plants operated by the Group

- |             |            |              |                  |
|-------------|------------|--------------|------------------|
| 1 Lianjiang | 2 Fengkai  | 3 Luoding    | 4 Yangchun       |
| 5 Huizhou   | 6 Guigang  | 7 Wuxuan     | 8 Hepu           |
| 9 Luchuan   | 10 Pingnan | 11 Fuchuan   | 12 Longyan Caoxi |
| 13 Yongding | 14 Longyan | 15 Zhangping | 16 Heqing        |
| 17 Jinsha   | 18 Anshun  | 19 Fulong    | 20 Changzhi      |

### Cement and clinker production plants with co-processing projects

- Operated by the Group    ○ Associates and joint ventures
- |              |                  |             |              |
|--------------|------------------|-------------|--------------|
| 1 Tianyang   | 2 Shangsi        | 3 Nanning   | 4 Hongshuihe |
| 5 Changjiang | 6 Longyan Yanshi | 7 Midu      |              |
| 8 Zhushui    | 9 Yuebao         | 10 Fengqing |              |

### ■ Cement grinding lines operated by the Group

- |             |            |            |                 |
|-------------|------------|------------|-----------------|
| 1 Zhanjiang | 2 Dongguan | 3 Shantou  | 4 Fangchenggang |
| 5 Wuzhishan | 6 Jinjiang | 7 Quanzhou | 8 Lianjiang     |

### Cement and clinker production plants owned by associates and joint ventures

- Yunnan Cement    ○ Fujian Cement    ○ Mengxi Cement

### Cement grinding lines owned by associates and joint ventures

- Yunnan Cement    □ Fujian Cement    □ Mengxi Cement
- ★ Concrete batching plants operated by the Group
- ★ Concrete batching plants owned by associates and joint ventures

### Aggregates projects

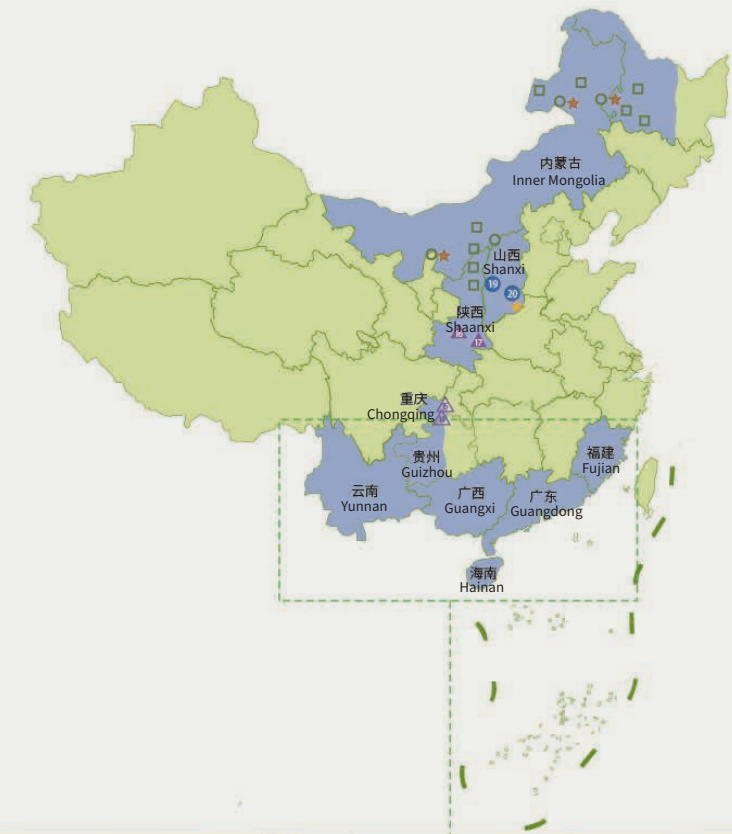
- ▲ Operated by the Group    △ Associates and joint ventures
- |                     |              |                   |             |
|---------------------|--------------|-------------------|-------------|
| 1 Fengkai*          | △ Deqing     | 3 Tianyang        | 4 Shangsi*  |
| 5 Shangsi Pingguang | 6 Nanning    | △ Hengzhou        |             |
| 8 Wuxuan*           | 9 Wuping*    | 10 Nanping*       | 11 Tunchang |
| 12 Ding'an          | 13 Weishan   | 14 Qijiang Shihao |             |
| 15 Qijiang Anwen    | 16 Tongchuan | 17 Luonan         |             |

### Prefabricated construction projects

- |             |           |            |                         |
|-------------|-----------|------------|-------------------------|
| 1 Zhanjiang | 2 Fengkai | 3 Jiangmen | 4 Dongguan <sup>#</sup> |
| 5 Baize     | 6 Nanning | 7 Guigang  | 8 Ding'an               |

\*Under construction

<sup>#</sup>Associates



Product Brands



- **Application:** Basic building materials & structural building materials
- "Runfeng Cement" was launched on 28 June 2016 and ranked **117<sup>th</sup>** in the "China's 500 Most Valuable Brands" with a brand value of RMB **51,958** million in 2020.



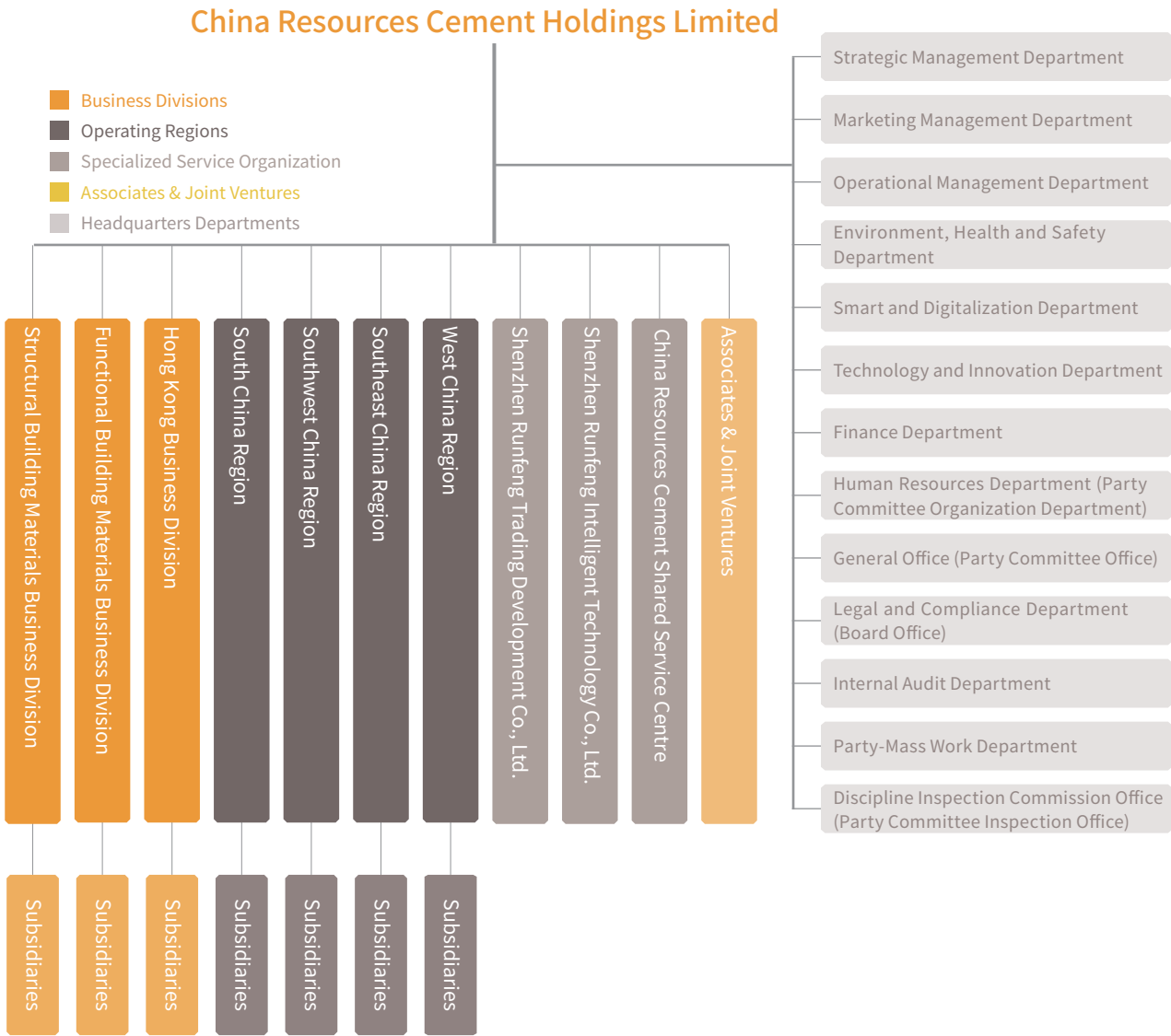
- **Application:** Functional building materials
- Sub-brand of "Runfeng Cement"
- Special cement for high-end renovation



Examples of Construction Projects

Hong Kong	Hong Kong International Airport, Hong Kong International Finance Center, Hong Kong Tsing Ma Bridge, Ting Kau Bridge
Guangdong	Hong Kong-Zhuhai-Macao Bridge, Shenzhen Airport, Shenzhen Yantian Port, Shenzhen Mixc, China Resources Tower (Spring Bamboo Shoots), Guangzhou-Shenzhen Expressway, Guangshen-Yanjiang Expressway, Canton Tower (Small Waist), Guangzhou Metro, Foshan Metro, Shantou-Shanwei Railway, Northern Industrial Park of Zhaoqing Hi-Tech Zone, Zhanjiang High-Speed Rail, Shenzhen-Zhongshan Bridge, Taipingling Nuclear Power Plant, Lufeng Nuclear Power Plant
Guangxi	Nanning Mixc, Guangxi Xijiang Shipping Hub, Nanning Airport, Qinzhou-Beihai Expressway, Bailongtan Hydropower Station, Nanning-Guangzhou High-Speed Rail, Guiyang-Nanning High-Speed Rail, Nanning-Chongzuo Railway, Datengxia Water-Control Project, Nanning Metro, Longmen bridge, Hezhou-Bama Expressway
Fujian	Xiamen Cross-Strait Financial Center, Zhangzhou-Yong'an Expressway, Xiamen Yuzhou University City, Xingguo-Quanzhou Railway, Zhangzhou Nuclear Power Plant, Xiapu Nuclear Power Plant, Zhejiang Sanao Nuclear Power Plant, Fuzhou-Xiamen High-Speed Rail
Hainan	Wenchang Spacecraft Launch Site, Hainan Island Ring Expressway, Changjiang Nuclear Power Plant, Wenchang-Lingao Expressway
Yunnan	Lijiang-Shangrila Railway, Guangtong-Dali Railway, Lincang Airport, Shangrila-Lijiang Expressway, Dianzhong Water Diversion Project, Chuxiong-Dali Expressway, Nanjian-Jingdong Expressway, Heqing-Guanpo Expressway, Yuxi-Mohan Railway, Lincang-Qingshuihe railway
Guizhou	Jiaan Dam, Maotai Airport, Jiangjin-Xishui-Gulin Expressway, Renhuai-Zunyi Expressway, Guiyang-Jinsha-Gulin Exressway
Shanxi	Taiyuan-Jiaozuo Railway, Reconstruction of G209 National Highway, Reconstruction of G341 National Highway, Sichuan-Tibet Railway, China-Laos Railway

Organizational Structure



Hong Kong-Zhuhai-Macao Bridge



Canton Tower (Small Waist)



Culture Concept



The "Fourteenth Five-Year" Corporate Culture System of China Resources Cement

Corporate DNA

Dedicated to the Great Rejuvenation of the Chinese Nation  
Determined to create a better life for the people  
Duty-bound to achieve economic prosperity for the country

Value

Honest and trustworthy  
Performance-driven  
People-oriented  
Win-win collaboration

Mission

To provide high-quality products and services and systematic solutions to the public, promote green development, lead digital transformation, thereby building an everlasting business

Philosophy

Dedication to serve the country  
Pioneer with courage in innovation  
Persistence in advancing  
Strive continuously to be stronger

Vision

To become a respected world-class building materials company

Organizational Atmosphere

Sincerity, Solidarity,  
Open-mindedness, Proactivity

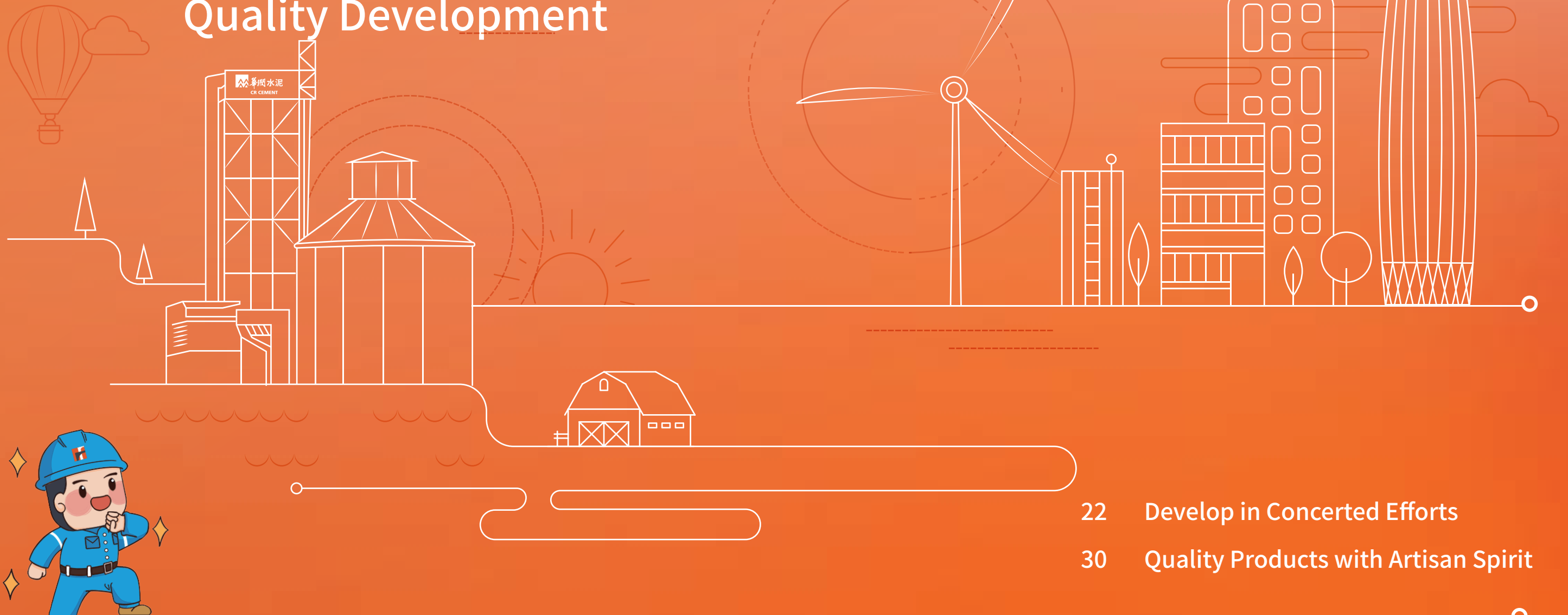
CR Cement in 2021

January	CR Cement acquired approximately <b>58.8%</b> equity interests of DongGuan Universal Classical Material Ltd. Together with our equity interests in the associate Universal Marble & Granite (Dongguan) Co., Ltd., approximately <b>75.3%</b> of equity interests of DongGuan Universal Classical Material Ltd. is attributable to the Company in aggregate.
June	The production line for the inorganic engineered stone at Labin City, Guangxi commenced operation.
July	CR Cement held the kick-off meeting cum signing ceremony of the Lighthouse Factory Project in Fengkai, Guangdong.
September	CR Cement acquired <b>95%</b> equity interests of Shaanxi Xinhuada Building Materials Co., Ltd., marking the official implementation of the Company's first aggregates project in Shaanxi Province.
October	CR Cement invested in <b>70%</b> equity interests of Deqing Yingqi Building Materials Co., Ltd. Its white cement products will form a synergistic effect with the Company's existing functional building materials business.  CR Cement officially commenced operation of two tile adhesive production lines with total planned annual production capacities of approximately <b>400,000 tons</b> in Fengkai County, Guangdong.
November	CR Cement released the "Fourteenth Five-Year" corporate culture concept system.  CR Cement was elected as the Honorary Secretary of Hong Kong Construction Materials Association.  CR Cement jointly formed Tongchuan Runxin New Material Co., Ltd. with Tongchuan Huinengxin Energy Co., Ltd., and increased our shareholding to <b>99%</b> in December 2021, further expanding the Company's aggregates business layout in Shaanxi Province.
December	CR Cement and the People's Government of Suxian District, Chenzhou City, Hunan Province held a signing ceremony for the Suxian District Green Building Materials Industrial Park and the Green Circular Economy Industrial Park, cum the commencement ceremony for the technological upgrade project of Liangtian Cement's clinker production line with daily production capacity of <b>5,000 tons</b> .



# Cultivating from Solid Foundation

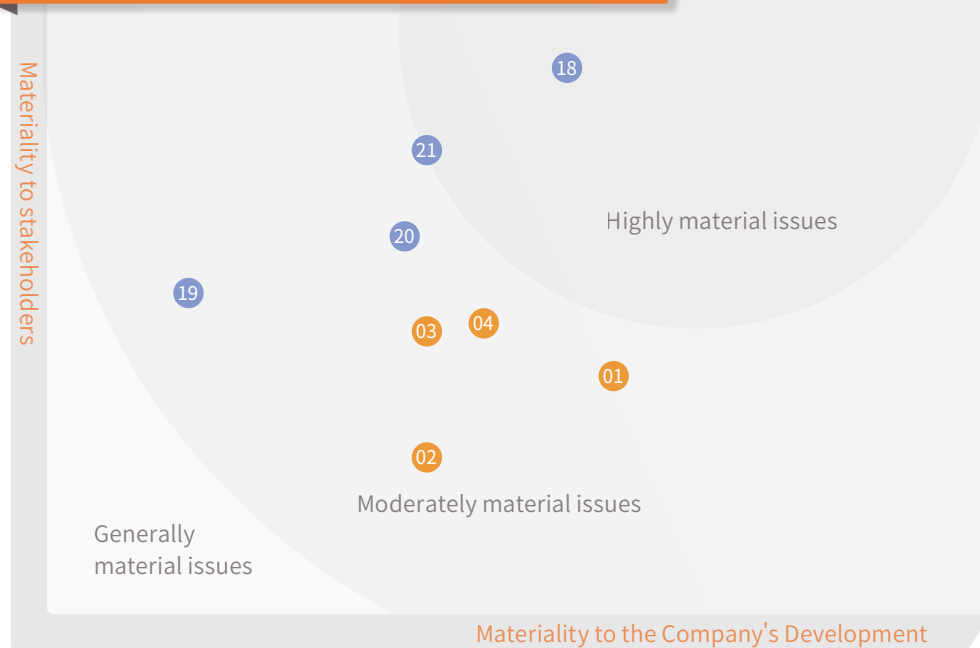
## Begin a New Era of High-Quality Development



- 22 Develop in Concerted Efforts
- 30 Quality Products with Artisan Spirit



Major substantive issues addressed in this chapter:



01 Management efficiency, operational results and enterprise value

02 Corporate governance and risk management

03 Integrity management and promotion of anti-corruption

04 High-quality development, transformation and upgrade

18 Product and service quality management

19 Management of intellectual property rights and transformation of achievements in scientific research into practical applications

20 Product and service innovation

21 Rights, interest and satisfaction of customers

HKEX ESG Indicators in This Chapter:

B6/B6.1/B6.2/B6.3/B6.4/B6.5/B7/B7.2/B7.3

CASS-CSR4.0 Indicators in This Chapter:

M1.1/M1.2/M1.3/M1.4/M1.5/M1.6/M1.7/M1.8/M2.1/M2.2/M2.3/M2.4/M2.5/  
M2.6/M2.7/M2.8/M2.9/M2.10/M2.11/M2.12/M2.13/M2.14/M2.15/M2.16/M2.17/  
M2.18/M3.1/M3.5/S1.1/S1.2/S1.3/S1.4

GRI Standards Indicators in This Chapter:

102-2/102-6/102-16/102-24/103-2/205-3/301-3/404-2/416-1/416-2/417-1/417-2/  
417-3/418-1

National "Fourteenth Five-Year" Plan:

China will accelerate the improvement of the modern enterprises system with Chinese characteristics, deepen the diversified ownership reform of state-owned enterprises, improve state-owned assets supervision system focusing on capital management, deepen the reform of state-owned capital investing and operating companies, adhere to the core position of innovation in overall national modernization construction, and take self-reliance and self-improvement in technology as the strategic support for national development. In addition, the focus of economic development will be placed on real economy, unswervingly building a strong country in manufacturing, product quality and cyberspace, as well as a digital China whilst promoting the upgrade of industrial base and the modernization of industrial chain to improve the economic quality efficacy and core competitiveness.

CR Cement's Actions:

CR Cement had always adhered to the coexistence of reform and development, and firmly seized opportunities of the era. In order to construct a sound operation system, we strengthened corporate governance, insisted on compliance with laws and regulations, and emphasized on risks prevention and control internally, while deeply observing demands with adherence to customer orientation externally and determination to create excellent product quality and ultimate service experience. A good start for the high-quality development for the "Fourteenth Five-Year" period had been achieved.

CR Cement and SDGs





## Story on Responsibility

# Let Customers Meet a Better Self in the Name of Growth

From railways to expressways, from high-rise buildings to bungalows, from sturdy dams to magnificent bridges, cement serves as a binder to bond construction materials together and strengthen buildings. Through projects and cooperation, CR Cement and our customers have become close partners.

## CR Cement is Always Met on the Journey

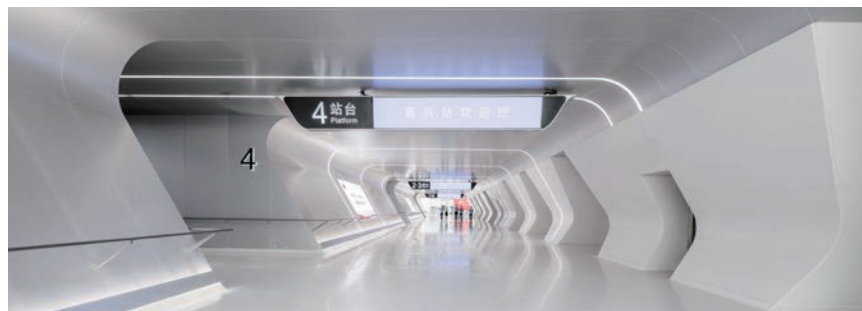
First constructed in 1907, Jiaxing Railway Station became an important historical witness of the opening of the First National Congress of the Communist Party of China upon the arrival of a group of representatives of the National Congress at Jiaxing through rail in 1921. In 2021, the reconstructed Jiaxing Railway Station was renowned as "the most beautiful railway station". With simple white walls and dense greenery, Jiaxing Station is the first "railway station in the forest" and "sunken railway station". This station applied modern minimalist construction materials, and the floor was extensively tiled with environmentally friendly inorganic engineered stone for the first time. The renowned "Jiaxing White" is the engineered stone of CR Cement.

If it is said that Jiaxing Railway Station had witnessed history and vicissitudes of over a century, then the China-Laos Railway has smoothened the channels for cooperation and development in the new era. On 3 December 2021, two trains simultaneously departed from Kunming Railway Station of China and Vientiane Railway Station of Laos, marking the official full operation of the China-Laos Railway after the long and arduous construction for 11 years. China and Laos smoothly completed the strategic connection of "changing from a land-locked country into a land-linked country". This road had been built with 1.5 million tons of "Runfeng" high-quality low-alkali cement products.

Sichuan-Tibet Railway which thoroughly implements the national strategy of governing Tibet, Hainan Island Ring Expressway which promotes the construction of the Hainan Free Trade Port, Shenzhen-Zhongshan Bridge which serves the construction of the Guangdong-Hong Kong-Macao Greater Bay Area... All along, CR Cement has been responding construction requirements arising from harsh geographical conditions with high-quality cement. It was the distributor customers who have been working side by side with CR Cement for many years to offer us the opportunities to participate in these projects.



China-Laos Railway



Underground Waiting Hall of Jiaxing Railways Station

## Higher Level of Cooperation is Common Growth

During the celebration of the 5th "Runfeng Cement" brand anniversary on 28 June 2021, Miss Huang Di, a representative of a distributor from Guangxi, had told her story with CR Cement.

Huang Di's parents operate a trading company in Guangxi. Since CR Cement entered the Guangxi market and acquired Hongshuihe Cement in 2001, they had been maintaining good cooperation with CR Cement as a distributor. In 2020, Huang Di graduated and returned to China. She looked forward to the Guangdong-Hong Kong-Macao Greater Bay Area, left her parents again and came to Shenzhen alone but unexpectedly, this "journey" has brought her life drastic "changes". "After arriving at Guangdong, I realized the superb development of the Greater Bay Area. Even more amazingly, figures of China Resources and Runfeng can be seen everywhere with construction. So I decided to stay." Before that, she had worked as a red wine importer and a customized travel planner. This time, she decided to follow her parents' footsteps and became a distributor of CR Cement "to surround CR Cement, to understand CR Cement, to observe and learn the operation of the cement market".

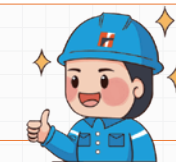
"I had worked at every role from project negotiation to shipment and receipt of goods to better understand the needs of my customers," Huang Di said. From one-person start-up to the initial establishment of the team, Huang Di and her team grew step by step. According to Huang Di, during the cooperation with CR Cement, what impressed her the most was the little details of the Company's customer management which have always touched people's hearts. "CR Cement views distributors as partners whom they would grow together, and proactively pays close attention to customers' aspirations."



During the sharing, Huang Di also said, "I want to use 'bridge' to represent my current work. Bridges have great implications to Chinese people. A bridge can help everyone to get a step closer to home, and also closer to their dreams. Bridges carry Chinese people's dreams and represent our hopes. Being the main supplier of the Hong Kong-Zhuhai-Macao Bridge, CR Cement had built this great bridge. It takes several years to build a

bridge, so does a project. In my opinion, our generation should not be labelled as the second-generation rich or the second-generation entrepreneur. Instead, we are a new generation who innovate and create on the basis of inheritance. Deep down my heart, wherever our generation comes from, we can shine from where we are stationed. We will absorb local characteristics, improve our capabilities, and eventually contribute to the society."

### Concept behind the story:



"Dedication to the great rejuvenation of the Chinese nation, determination to create a better life for the people, duty bound to achieve economic prosperity for the country" are the DNA of CR Cement, and "people-oriented" is one of the values of CR Cement. Over the years, CR Cement has contributed to the national rejuvenation, people's blissfulness and the national prosperity through excellent product quality. For a long time, CR Cement had adhered to the customer-oriented philosophy, heeded and understood our customers, seized their needs, safeguarded their interests, reflected their values and mutually shared our development achievements with customers.



## Develop in Concerted Efforts

CR Cement adheres to the concept of sustainable development, constantly enhances the internal governance structure, and strengthens the construction of the Company's policies so as to build a modern enterprise with intensive management, quality and efficiency.

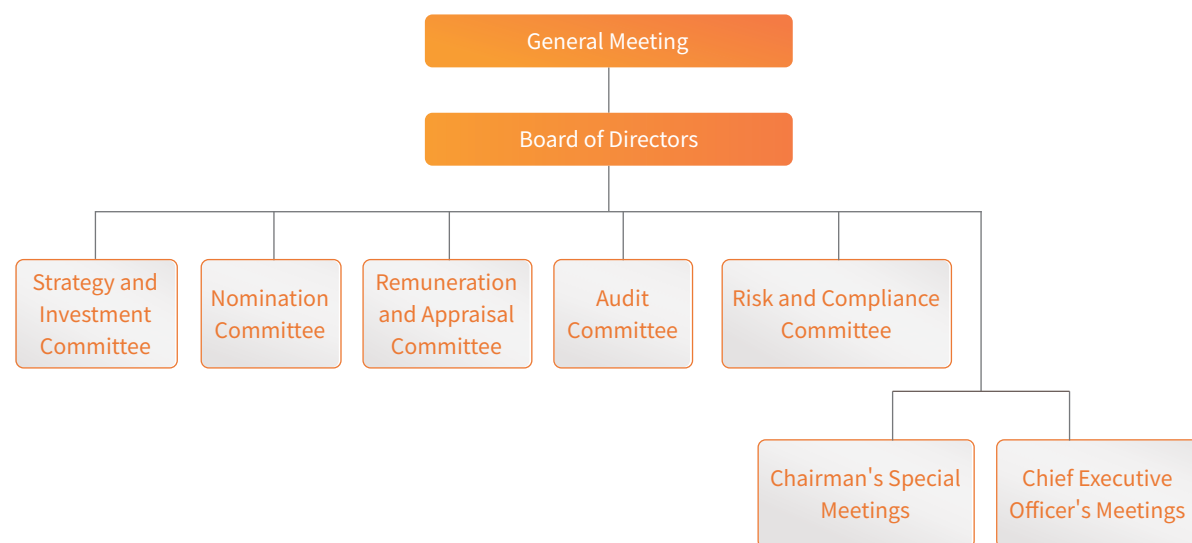
### Consolidate the Base of Governance

#### Policy Construction

CR Cement persistently coordinates and advances the construction of policies and systems, improves the standardization and effectiveness of policy management, continuously improves the governance system, and advances the capabilities of corporate governance. In 2021, the Company revised and compiled the "Operating Manual for Powers and Responsibilities", established the ledger for the "First Issues", sorted out work process, and held 8 special meetings to study major decisions and deployments such as "dual carbon" targets, "dual control" on energy consumption, production safety and talents.

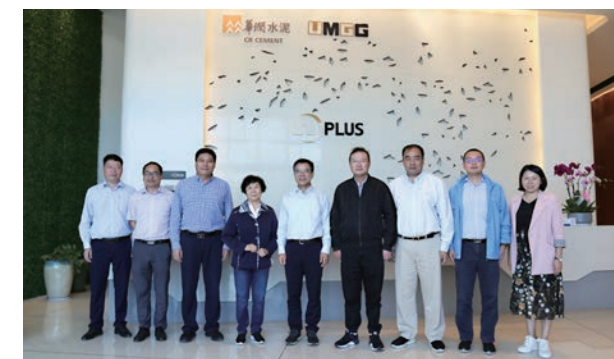
#### Structure of the Board of Directors

The Board of Directors and its committees of CR Cement were established in strict compliance with the Articles of Association, the Listing Rules, and the "Corporate Governance Code" set out in Appendix 14 of the Listing Rules. The Board is the major decision-making body of the Company, with the function of "formulating strategies, making decision and preventing risks", and is responsible for the creation and supervision of corporate culture. The Board has been fully built with non-executive directors being the majority, and has fully executed the key functions and power of making mid-long term development decisions, selecting and recruiting senior management, performance appraisal for senior management, managing remuneration of senior management, managing salary allocation of employees and managing major financial matters. Directors diligently perform their duties, actively participate in meetings of the Board and Board Committees, objectively make decisions that are in the best interests of the Company, and give due consideration to the opinions of minority shareholders and stakeholders during the decision-making process. In 2021, the Company held 1 Annual General Meeting and 6 Board meetings.



#### Case Study Visit to Guangdong Region of Non-Executive Directors

In late October, non-executive Directors of CR Cement, Mr. Zhu Ping, Mr. Chen Kangren and Mr. Yang Changyi, and an independent non-executive Director, Madam Zeng Xuemin, accompanied by the Chief Executive Officer, Mr. Ji Youhong, went on study visits of production plants and companies in the South China Region including DongGuan Universal Classical Material Ltd. and DongGuan RunYang United Intelligent Manufacturing Company Limited in Guangdong.



At DongGuan Universal Classical, the Directors visited R&D office, molding workshop of engineered stone, maintenance area, polishing lines, boutique exhibition hall and sandbox for factory plan to understand situations on the cost structure, production management and staffing of production lines. They also had discussions with the management team of the company. During the meeting, the Directors proposed to accelerate the development process of new materials, expeditiously improve the business layout, optimize the construction of sales system and actively advance the report of new high-tech enterprises.

## Compliance and Operation

#### Organizational Security

In order to effectively organize CR Cement to carry out corporate management according to laws, internal control and risk management and to promote the implementation of targets of the "Fourteenth Five-Year" strategic plan, in accordance with the actual management needs and the requirements of functional and structural optimization from China Resources Group, and after careful study, CR Cement decided to establish the "Leading Group for Corporate Management According to Laws, Risk Control and Compliance Management of CR Cement" and revoked the original "Internal Control and Risk Management Committee" and the "Leading Group for Corporate Management According to Laws and Compliance Work". Members of the leading group are members of the Chief Executive Officer's meeting, who are mainly responsible for organizing and launching works related to corporate management according to laws, management on risk, internal control and compliance. The Legal and Compliance Department acts as the secretariat of the leading group, and is responsible for the overall planning, organization, coordination and promotion of implementation of various works.

#### Policy Security

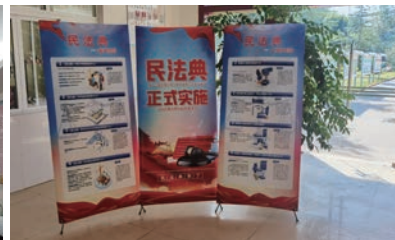
In order to further establish a sound mechanism for compliance management, CR Cement formulated and issued "Compliance Management Policy (Trial)" of the Company, "Guidelines for Personnel in Key Positions on 'Interim Measures for Regulating the Management of External Shareholding Investment and Business Activities by Managerial Staff' " of the Company, "Special Work Supervision Plan on Issues of Connected Transactions, External Shareholding Investment and Business Activities by Managerial Staff and Personnel in Key Positions" of the Company, and "Guidelines for the Whistle-Blowing Management on Compliance Work" of the Company. We also carded internal regulations and policies in the fields of corporate governance, investments, mergers and acquisitions, as well as tendering and procurement, formulated lists of compliance obligations and completed the import of compliance obligations (involving external laws and internal regulations) into the LMS (legal management) system.

## Compliance Check

CR Cement actively launched compliance review to verify the reporting situation of managerial staff and personnel in key positions on connected transaction, external shareholding investment and business activities and conducted a review on the form of reported contents. We also launched special check on the issues of connected transactions, external shareholding investment and business activities by managerial staff and personnel in key positions, and established a special supervision working group. In addition, we launched special rectification on the issues of "shadow companies" and "shadow shareholders". Based on the aforementioned special checks, no violations were found on the issues of connected transactions, external shareholding investment and business activities of managerial staff and personnel in key positions, as well as "shadow companies" and "shadow shareholders".



Midu Cement launched the themed activity of "Better Life with the Companionship of the Civil Code"



Special training on corporate governance and system design of powers and responsibilities

## Compliance Training

CR Cement organized multiple compliance training and legal knowledge popularization activities which mainly include the propagation and training on "Compliance Management Policy (Trial)" of the Company, "Interim Measures for the Management of Connected Transactions by Managerial Staff" of the Company, and "Interim Measures for Regulating the Management of External Shareholding Investment and Business Activities by Managerial Staff" of the Company, training on "CR Cement Legal Knowledge Lecture", special training on the "Civil Code", legal knowledge popularization on the "National Security Education Day", special training on Xi Jinping's thoughts on the rule of law, and propagation of the Constitution. Through the aforementioned compliance training and legal knowledge popularization activities, the legal and compliance awareness of the Company's employees had been effectively aroused and the legal and compliant operation of enterprises of all levels at CR Cement had been regulated and expedited.

## Compliant Information Disclosure

CR Cement gives high priority to maintaining effective, transparent and constructive communications with shareholders and other investors as it is the core principles of corporate governance. Information disclosure is an important window for investors and the public to obtain information about listed companies. It is also the basic requirement for maintaining honest and transparent communications. CR Cement strictly abides by the regulatory and compliance requirements of the listing regions in fulfilling our disclosure obligations and making disclosure on the Company's operating information or governance information to shareholders, investors and other stakeholders in accordance with the principles of authenticity, accuracy, timeliness and reliability. In order to ensure shareholders' exercise of their rights in an informed manner, a shareholders' communication policy of the Company has been formulated. A dedicated investor relations team has been established as the primary contact of the Company with shareholders, investors and analysts. The Company actively responds to daily inquiries from shareholders and investors, and publishes important information on the Company's website and its official website for corporate communications for equal and timely access by all stakeholders. The Company also holds presentation meetings for investors after the release of annual results and interim results via telephone conference, video conference or on-site manner to ensure that overseas shareholders and investors can timely and adequately understand the Company's business operations and future development strategies.



2021 Annual Results Presentation

The Company keeps close contact with the investment community and maintains stable and effective communications with shareholders and investors. The Company regularly participates in activities including investor meetings, roadshows and investor conferences to enhance communications and exchanges with shareholders and investors. In 2021, apart from results roadshows, the Company had participated in 11 investor forums and conducted more than 100 investor meetings, which enabled communications with over 730 domestic and international fund managers and analysts.

- In 2021, in addition to results roadshows, the Company had participated in **11** investor forums
- Conducted more than **100** investor meetings
- Communicated with over **730** domestic and international fund managers and analysts

## Case CR Cement improved the system of "Accountability for Violations" and strengthened its propagation

Since 2019, the Company gradually enhanced the working mechanism and system process of accountability for violations. In 2021, we formulated and revised six relevant policies and guidelines including the "Guideline for the Preliminary Verification of Liability for Illegal Operation and Investment" of the Company.

In order to strengthen the propagation of the system of accountability for violations, we produced the video of "Propagation and Case Sharing of the System for Accountability for Violations", and published it on the "China Resources Learning and Innovation Centre APP". This course was compulsory for members of the Chief Executive Officer's Meeting, personnel in key positions and middle-level managerial staff (1,198 in total), and was opened to all employees. As of the end of 2021, approximately 2,200 employees completed their study on this course.



## Protect the Rights and Interests of Medium and Minority Shareholders

CR Cement organizes and convenes general meeting in strict compliance with the Listing Rules, the Articles of Association and other relevant requirements to ensure that general meeting passes resolutions in a fair and open manner for protecting and safeguarding the rights and interests of shareholders. Medium and minority shareholders can exercise their voting rights through participation in the general meeting in person or by proxy, making inquiries or suggestions to the board of directors, as well as through nomination of a person for election as a director or convening extraordinary general meetings in accordance with the requirements of the Articles of Association. Shareholders can also put forward inquiries or suggestions to the board of directors in writing, by email, or by attending general meeting.



On 14 May 2021, CR Cement convened Annual General Meeting (Hong Kong Venue)



## Risks Prevention

CR Cement always puts the prevention and resolution of major risks in a prominent position, and had established a relatively sound working mechanism for internal control systems. Meanwhile, CR Cement conscientiously implements the decisions and deployments of governments at all levels regarding the prevention and resolution of major risks and the promotion of high-quality development, and improves the internal control system and risk management by multiple measures. As of the end of 2021, no major risk events occurred throughout the year.

### Internal Control Management

In 2021, the Company established the Internal Control and Risk Management Committees at all production plants of its subsidiaries, which are responsible for the internal control and risk management of the Company. Checks on the implementation of internal control were rolled out and measures such as training on internal control and risk management were combined to improve the capability of self-inspection of risks by frontline units. At the year end, the Company organized 115 subsidiaries to conduct self-assessment of effectiveness on internal control to achieve full coverage of self-assessment on internal control and three-year full coverage of supervision assessment.

In the meantime, the Company also launched internal control audit for the fast-growing aggregates business. We optimized policies including the investment management policy and the construction standards for large-scale aggregates projects and established talent-sharing pool for project construction so as

to promote compliance management and control, improve efficiency and support the healthy development of new businesses.



Internal control management training at Fengkai Cement

### Risk Management

CR Cement continuously improves risk management through regular assessment, risk monitoring and risk training.

#### Regular assessment



We conduct overall risk assessment every year, select the annual top ten risks of the Company and formulate risk response measures.

#### Risk monitoring



We monitor changes in the top ten risks and major risk events every quarter, and take timely countermeasures. We strengthen risk prevention and control, establish a customer credit management system for risk management of accounts receivables, dynamically track customers' situations, and achieve early warning of risks when it arises.

#### Risk training



We organized risk training for 600 participants including the Company's management, and employees of each level from operating regions and productions plants.

## Integrity Construction

### Integrity Management

CR Cement persistently promotes the major responsibilities for implementation of integrity and compliance, as well as anti-corruption. In 2021, the Company revised and promulgated 4 probity policies including the "Guidelines for Responses of Upright Opinions of the Senior and Middle-Level Managerial Staff" of the Company and the "Work Guidelines for Clarifications on Untrue Whistle-Blowing and Prosecution" to further construct sound probity policies and systems for deepening upright corporate building. "Major supervision" was extended to the basic-level through establishing the "major supervision" system with multi-departmental collaboration, setting up the leading group, and launching pilot projects at basic-level units.



Heqing Cement set up the mailbox for integrity whistle-blowing

### Probity Education

CR Cement always places strong emphasis on and continuously strengthens the work for integrity cultivation and probity education of the directors and employees. The Legal and Compliance Department of the Company regularly provides anti-corruption information to the directors to ensure the directors grasp the latest requirements of applicable laws and regulations. In 2021, two alert education conferences at headquarters level were organized, with approximately 1,700 participants in key and sensitive positions including procurement, finance and sales in participation. Various units of the Company organized 162 sessions of alert education, reaching 7,515 participants in total. 236 sessions of integrity education were conducted, reaching 7,659 participants in total. Among which, 4 sessions of integrity alert education were organized for counterparties in cooperation including suppliers, distributors and joint ventures, reaching 1,294 participants in total to continuously reinforce the effects of integrity alert education. The Company also launched integrity talks with the senior management with 5 participants and collective integrity talks with 576 participants. Daily confiding conversations were initiated with 377 staff. Senior and middle-level managerial staff and staff involved in sensitive roles were organized to sign 1,877 sets of the "Commitment Letter on Integrity and Self-Discipline" in total. 620 responses to upright opinions were issued. In addition, through the establishment of integrity publicity columns, the launch of "integrity education delivered to door", and the production of posters and micro-videos about integrity, integrity reminders and multiple forms of integrity propagation were regularly launched to create a unified atmosphere of advocating integrity.

In 2021,  
**2** alert education conferences at headquarters level were organized by the Company

**162** sessions of alert education were organized at all levels of units

**236** sessions of integrity education were conducted



The Second Alert Education Conference

## Improve the Quality and Efficiency of Operation

CR Cement accurately grasped the new development stage, thoroughly implemented the new development philosophy and built a new development paradigm, while closely revolving around the annual theme of "seeking development, enhancing quality, and seizing innovation". In the meantime, we benchmarked against global first-class enterprises, deepened the reform of state-owned enterprises, strengthened, optimized and expanded the basic building materials and functional building materials businesses, steadily developed the structural building materials business, incubated and cultivated the new materials business, and actively responded to the challenges from dual carbon targets and dual control on energy consumption in order to inject new vitality into the Company's high-quality development and add new momentum.

## Deepen the Reform of State-owned Enterprises

In 2021, combined with actual circumstances, CR Cement organized studies and discussions which focused on improving corporate governance, optimizing equity structure, promoting organizational reform, enhancing R&D and innovation capabilities, accelerating digital empowerment, and launching diversified ownership reform of state-owned enterprises in order to form a checklist for division of labour of reform actions. We grasped key points, mended shortcomings, strengthened weaknesses, specified the time for completion and accelerated tasks completion to ensure the successful completion of reform missions on time. During the year, the Company conducted the fourth senior management training and conducted in-depth studies surrounding on the themes of "strategic positioning and business model", "industrial portfolio, investment development and strategies for national key regions", "organizational management and control" and "execution of China Resources culture during the Fourteenth Five Year". The management visited, investigated and studied in 31 cities including Guangdong, Hunan and other provinces to gather consensus for the layout of the "Fourteenth Five-Year" period.

In addition, we benchmarked against global first-class cement enterprises, examined our gaps and deficiencies from multiple dimensions, improved on the basis of the previous comprehensive operation management index system, and established a global first-class indicator system so as to achieve quality, efficiency and growth through benchmarking and help the Company to advance towards the goal of becoming a world-class building materials company.



The structural building materials business division convened strategic seminar

## Accelerate Transformation and Upgrade

CR Cement actively seized development opportunities of new businesses to fully leverage on the synergetic advantages of cement, concrete and aggregates. We comprehensively laid out the business of basic building materials, functional building materials and structural building materials, and achieved new breakthroughs in fields such as engineered stone business to consolidate the core competitiveness of the Company and lay a solid foundation for the development of new businesses.

In 2021, the Company obtained the mining rights of a total of 11 mines in Deqing of Guangdong, Wuxuan, Nanning, Hengzhou and Shangsi of Guangxi, Nanping of Fujian, Tunchang of Hainan, Qijiang of Chongqing, and Luonan and Tongchuan of Shaanxi through bidding, acquisitions and equity participation. Upon completion of construction of all projects, the annual production capacity of aggregates controlled by the Company through its subsidiaries is expected to reach 84.9 million tons and the annual production capacity of aggregates attributable to the Company according to our equity interests of associates and joint ventures will reach approximately 16.4 million tons.

In terms of aggregates, Universal Classical owned one production line of inorganic engineered stone with planned annual production capacity of approximately 600,000 m<sup>2</sup> in Dongguan, Guangdong, and is expanding one production line of inorganic engineered stone

### Explanation

Tile adhesive is a new type of material for modern decoration. It is mainly used in the fixing of decorative materials such as tiles, vitrified bricks, marbles and engineered stones.



### New breakthroughs have been achieved in business scopes and new expansions have been achieved in strategic regions:

- We broadened business scopes, achieved breakthroughs in engineered stone, tile adhesive and white cement businesses;
- We expanded strategic territory by entering Hunan, Shaanxi and Chongqing;
- We served national strategies and focused on the layout of strategic regions such as Southern China, along and the south of the Yangtze River.
- We achieved breakthroughs in the disposal of Northern China assets: the sale of 72% equity interests and loans of Shanxi China Resources Fulong Cement Limited completed in March 2022.

with planned annual production capacity of approximately 1.5 million m<sup>2</sup>. In addition, the Company is building two production lines of inorganic engineered stone in Laibin, Guangxi with total planned annual production capacities of approximately 3.0 million m<sup>2</sup>. The above projects are expected to commence operation in the second half of 2022. In March 2022, the Company acquired 75% equity interests of Guangdong Borrego New Material Technology Co., Ltd. The company has four production lines of engineered stone in operation in Lianzhou, Guangdong, with total planned annual production capacities of approximately 6.0 million m<sup>2</sup>.

In October 2021, the Company officially commenced operation of two fully-automated tile adhesive production lines with total planned annual production capacities of approximately 400,000 tons in Fengkai, Guangdong.



Production commencement ceremony of the tile adhesive production plant at Fengkai

### Case The agreement signing and execution of the Suxian District Green Building Materials Industrial Zone and the Circular Economy Industrial Zone

On 24 December 2021, CR Cement and the People's Government of Suxian District, Chenzhou City, Hunan Province had held a grand signing ceremony for Suxian District Green Building Materials Industrial Zone and Green Circular Economy Industrial Zone cum the groundbreaking ceremony for the technological upgrade project of the clinker production line with daily production capacity of 5,000 tons at Liangtian Cement.



The groundbreaking ceremony

The Suxian District Green Building Materials Industrial Zone and Circular Economy Industrial Zone project are designed to serve the development strategy of the rise of Central China and the Yangtze River Economic Belt, respond to the adjustment of the national industrial structure and the supply-side structural reform, as well as about the major projects for the development of the Guangdong-Hong Kong-Macao Greater Bay Area. These also about the development strategies of "Three Highlands and Four New Missions" in Hunan Province and "One Pole and Six Districts" in Chenzhou City and are the major projects for achieving high-quality development of Suxian District, which boost CR Cement to achieve the strategic development targets of the "Fourteenth Five-Year" period.



"The agreement signing and groundbreaking of the project today embarked the official substantial construction phase of new projects invested by China Resources Group in Chenzhou. Adhering to the principle of win-win cooperation, priority in ecology and green development, CR Cement will work with Chenzhou government together to develop its projects in Chenzhou into first-class model projects so as to achieve both economic and social benefits, and dedicatedly compose a new and magnificent chapter in the process of the socio-economic development of Hunan, as well as the development history of China Resources Group and CR Cement."

Mr. Li Fuli, the then Deputy General Manager of China Resources Group and the then Chairman of the Board of Directors of CR Cement said in his speech





## Quality Products with Artisan Spirit

CR Cement adheres to the customer-oriented concept, insists on providing excellent-quality products and services with artisan spirit, injects new vitality into product iteration and upgrade and company development with innovation and digital transformation, and satisfies more diversified needs of customers with warm services and dedication to become a building materials company with excellent branding and favored by the public.

## Emphasize on Technology and Innovation

### Innovation Management

CR Cement views technology and innovation as one of the core corporate competitiveness. We continuously improve the innovation management system and enhance the corporate capabilities in R&D and innovation. In 2021, the Company issued the "'Fourteenth Five-Year' Plan for Technology and Innovation", "Notice on Specifying the Statistical Methods and Requirements for R&D Investment" and "Management Measures for the Working Group of China Resources Cement Technology Research and Development Centre", and established a database of industry experts to effectively foster the communications and guidance of industry experts and master cutting-edge technologies. Moreover, we actively participated in the establishment of China Resources Institute of Carbon Neutrality and set up a professional team to launch technological research on carbon neutrality. The new laboratory in Guangxi completed relocation and officially commenced operation, providing CR Cement with more efficient services for lean operation, energy saving and emission reduction. In 2021, the Company's total R&D investment amounted to RMB336 million, and the intensity of R&D investment was approximately 0.9% (intensity of R&D investment equals to R&D investment divided by turnover).

In 2021, the Company's total R&D investment amounted to RMB

**336** million

The intensity of R&D investment was approximately

**0.9** %



The unveiling of new laboratory in Guangxi

### Technological R&D

Focusing on market demand and industry prospects, CR Cement continues to emphasize on research and development of products and services. In 2021, the subordinated Technology Research and Development Centre had completed the development of technology roadmaps for energy saving and consumption reduction for 9 production lines including Fengkai Cement, Nanning Cement, Guigang Cement and Shangsi Cement. The upgrade for ultra-low emissions of nitrogen oxides at Huizhou Cement was completed. Independent development and research of co-processing technology by use of rotary furnace was initiated at Hepu Cement and Heqing Cement. The upgrade for automation of grinding aid production lines and the optimization for the

prescriptions of functional grinding aid were completed, which had been promoted for use at various cement production plants in Guangdong and Guangxi.

In addition, the Technology Research and Development Centre provided support for the development of new businesses. In response to the government's "dual carbon" targets, it actively developed tile adhesive, high-performance inorganic engineered stone products, low-clinker cement and carbon-absorbing cementitious materials. Among which, the Centre focused on overcoming various pain points and difficulties of inorganic engineered stone products, resulting in better performance compared to similar products in the market. The development of the production prescription for tile adhesive had been completed and the products had been launched to the market. Research had been launched in three directions of carbon emissions reduction, carbon capture and carbon utilization. In addition, the subordinated China Resources Cement Technology R & D Co., Ltd., led by the Southeast University, China and together with 10 units including Tongji University, China, successfully applied for the special project of "Key Production Technology and Demonstration Application of High-Performance Cementitious Materials with Low Environmental Burden" under the national key R&D plan of "High-End Functional and Intelligent Materials". They had also undertaken the project topic of "Full-Lifecycle Ecological Design Theory and Whole-Process Multi-Dimensional Monitoring, Evaluation, Management and Control System Cementitious Materials with Low Environmental Burden".



Mr. Wang Xiangming, Chairman of China Resources Group, visited China Resources Cement Technology Research and Development Centre

## Intellectual Property Rights

CR Cement paid keen attention to the protection of intellectual property rights and independent innovation. Through the continuous and thorough implementation of the "Policy on Management of Intellectual Property Rights" of the Company, we launched intellectual property management in an effectively and orderly manner following the mechanism of "unified coordination, classified responsibility, centralized management, double-line reporting". Meanwhile, we effectively executed the "Policy on Management of Patents" and the "Guidelines for Brand Protection" of the Company to continuously promote the Company's internal mechanism for operational management of intellectual property and strengthen protection on the achievements and ownership of intellectual property rights during the processes of product R&D and technological upgrade, which provided strong security and service to the Company during the processes of R&D, production, operation and sales.

In terms of management and protection of trademarks, the Company continued to work on the registration, right confirmation and protection of trademarks including "Runpin", "Runfeng" and "Wangpaigongjiang". Meanwhile, we collected information on the use of important trademarks in the cement industry and sales regions, and fully cooperated with the administrative authorities in the defense of our trademark rights and crackdown on counterfeit goods. In 2021, the Administration for Market Regulation in Yulin City, Guangxi dealt with one trademark infringement incident of "Wangpaigongjiang", and had ordered the relevant units involved to be prohibited from the infringement act.

In terms of software copyrights, in 2021, CR Cement obtained four computer software copyrights and received copyright registration certificates for the driver version of big cement application, the seller version and buyer version of software, and the big cement software, which had fostered the speedy and stable launch of the digital platform for sales and marketing model.

In terms of patent management, discovery and innovation, following the incorporation of patent technology into the annual appraisal for excellent operational management of the Company for the first time in 2020, the number of patent applications of the Company continued to increase. As of the year end of 2021, the Company held 237 patent licenses, including 32 inventions and 205 utility models.



Digital Transformation

CR Cement continued to consolidate the foundation of informatization, achieved breakthroughs in the pilot trial of new business production system and full coverage of informatization in new production plants. We deepened the digital transformation by fully launching a digital marketing platform for the cement business, as well as standardizing and automating reports to help reduce the burden of production plants. Meanwhile, the Company accelerated the intelligent development through commencing the lighthouse factory project in Fengkai, promoting intelligent applications such as online monitoring of equipment, advanced control of kiln grinding, and quality management and achieving full coverage of intelligent logistics at all cement production plants. "5G+ Industrial Internet" was successfully declared and undertook the special projects of integration and innovation. A stable system was guaranteed through improving the operations and maintenance services, network security, management and governance, and the organizational talent guarantee system. Professional training on intelligentization and digitalization was carried out to promote the organizational optimization of functions and corporatized operations.

In the meantime, through innovation of model, digitalization of business and servitization of process, digital project construction was basically completed. By using platform management tools, algorithm modeling and scene design, CR Cement will continue to promote the intelligentization and digitalization of supply chain, and build multiple business structures for online freight centres, financial risk control system and electronic transactions of bidding and procurement.

In 2021, the Company continued to promote smart operation through completing online propagation, training and online works of cement businesses in seven operating regions, and empowering the digital business transformation of marketing model through online logistics platforms and financial functions.

Extended Reading:



China Resources Group successfully organized the first Central State-Owned Enterprises Digital Transformation Summit



CR Cement shared on the topic of "Digital Transformation, Convergent Innovation and Empowerment Development" at the "Sub-Forum on 5G+ Industrial Internet Convergent Innovation" of the first Central State-owned Enterprises Digital Transformation Summit

Case The launch of the construction project of the "5G+ Industrial Internet" platform

In October 2021, the launch ceremony of the construction project of the "5G+ Industrial Internet" platform was held at the headquarters of CR Cement in Shenzhen. The Company actively promotes the application of 5G technology, and is carrying out the infrastructure construction of the new-type network "5G+ industrial Internet". A dedicated 5G network encompassing 5 provinces including Guangdong, Guangxi, Fujian, Hainan and Guizhou will be constructed. Lightweight 5G modules will be researched and developed based on cement technique to meet the requirements for stability and security of networks for cement production and to facilitate the construction of intelligent cement factories. Currently, the dedicated 5G network at the production plant in Tianyang had completed construction. At the same time, the Company is carrying out the construction of the 5G+ industrial Internet platform. After completion of construction, the platform will connect production lines, equipment, vehicles and remote experts in real time to improve the efficiency and quality of production and operation. Currently, the Company has completed the construction of 10 applications in the 5 major scenarios of digital mining areas, security monitoring, intelligent industrial zones, intelligent production lines and data collection.



Tianyang Cement

Intelligent Factories

We continue to promote the intelligent manufacturing pilot project at the production plant in Tianyang. On the one hand, we expanded the scope and application of intelligent video equipment for online monitoring and implemented intelligent video projects. On the other hand, we implemented projects such as digital mines and intelligent laboratories to enhance production and operation efficiency and reduce equipment failure rates.

The "lighthouse factory" project under construction by the Company in Fengkai was officially rolled out in July 2021, and had now entered the full implementation phase. Currently, 5G coverage of factory areas are under construction. Centred on 7 application scenarios and 1 industrial Internet platform of the whole-process intelligent manufacturing plan, we will improve the intelligent construction and digital transformation and upgrade of factory areas, enhance the efficiency of quality inspection and reduce consumption of resources to promote green production.

The Company had achieved 100% coverage of the platform for sharing auxiliary materials and spare parts at its cement production plants to facilitate the refined management of inventories.

As of the end of 2021, the cumulative transaction volume of the platform reached approximately

32.6 million tons

Nearly 15,000 registered users of the platform

Approximately 29,000 vehicles (vessels) settled

Smart Marketing

The digital marketing platform has been promoted to customers at all sales regions in Guangdong and Guangxi, and is rolling out the promotion and launch of such platform in Hainan, Yunnan Guizhou, Fujian and Shanxi regions. We developed seven new functions including internal allocation of shipping, supply chain finance and App for carriers, and formed a technical team to undertake the technical operations of the digital marketing platform. As of the end of 2021, the cumulative transaction volume of the platform reached approximately 32.6 million tons, with nearly 15,000 registered users of the platform and approximately 29,000 vehicles (vessels) settled.

Smart Logistics

The "Smart Logistics Card" system had 100% coverage at the cement production plants, which improved the shipping efficiency of production plants by approximately 30% and reduced the average labour costs in shipping by approximately 50%. At the same time, we had completed the design of intelligent logistics plan, functional development and testing for concrete and aggregates. The "Smart Card" system was rolled out in production plants at Wuhe Station of Nanning Concrete, Ledong Concrete of Hainan and Wuxuan Aggregates of Guangxi.





November 2021

- CR Cement was honoured with CR Group "2020-2021 Demonstrative Intelligent and Digital Enterprise"
- Tianyang Cement was honored with "2020-2021 Model Intelligent and Digital Unit"
- CR Cement's independently researched and developed whole-process advanced process control system was honored with "2020-2021 Excellent Intelligent and Digital Project"
- Fully-automated operating system of residual heat recovery generators was honored with "2021 Best Project in Industry + Intelligent Innovation Acceleration Camp"



All-staff Innovation

CR Cement adheres to the concept of innovation-driven and is committed to providing a good innovation atmosphere for employees. In 2021, to further expand the scope of incentives and standardize standards for innovation incentives, we adjusted the number of awards for innovative achievement from 13 to 26, while compiling innovative talents training plans. We also held the sixth "Runfeng Cup" Innovation Competition cum the 2021 Innovation Conference, and formulated a free and open innovation organization, the "Runkechuang" programme and promotion plan for innovation project.

In November 2021, the "2022 Innovation Project Plan" was released, which proposed to promote 40 innovative projects and formulate 158 promotion plans.

Case Level 1 and Level 2 training for the Theory of Inventive Problem Solving for Innovation (TRIZ)

In 2021, in order to improve the awareness and ability of employees in innovation, CR Cement actively held innovative training such as the TRIZ for innovation and innovative thinking. As of the end of 2021, the Company had trained 165 talents through the international MATRIZ, including 100 Level 1 talents and 65 Level 2 talents.



Case The Sixth "Runfeng Cup" Innovation Competition cum the 2021 Innovation Conference was convened

In March 2021, CR Cement launched the sixth "Runfeng Cup" Innovation Competition, resulting in a total of 496 innovative projects (200 Innovation Achievement Awards and 296 Creative Innovation Awards), among which, 112 outstanding projects entered the finals. The competition had attracted more than 2,500 participants.



Product Quality Assurance Quality Management

CR Cement is in strict compliance with the Product Quality Law of the People's Republic of China. In addition, we formulated the "Management Manual" (Quality Management Series) of the Company, in which there are clear and stringent requirements on managing every details of production process, including the management quality standards of materials, coal, raw materials and clinker. The "Management Measures for Grinding Agents" and the "Management Standards of Coal Sampling and Preparation" of the Company standardize the quality acceptance inspection and use of incoming raw fuel materials. Repairs and maintenance, inspection requirements, operating guidance, environmental configuration and filing records of laboratory equipment are all standardized and covered in the management manual to secure product quality. During the year, in order to better adapt to the changes of cement products and meet the market demands, CR Cement had revised the quality standards and formed the "Product Quality Standards" and the "Control Standards for Raw Materials, Fuel and Semi-Finished Products". All production plants of the Company had passed the ISO 9001:2015 Quality Management System Certification. Coverage rate was 100%.

In addition, the Company established a system for quality control throughout the whole process covering raw materials, process control, product delivery and after-sales services, which organized production in strict compliance with standards including those for auxiliary materials of raw materials, techniques, semi-finished products, finished products, packaging and inspection. Quality of input materials was controlled in every connected step of production. The production process of clinker and cement was supervised and tested on a 24-hour basis for implementing comprehensive quality management.

## Extended Reading

### Quality Inspection Process of CR Cement



On 23 July

Fengkai Cement was awarded the certificate of "5A Good Standardizing Practice for Enterprises" by the Hong Kong Quality Assurance Agency.



On 9 July

Fengkai Cement was awarded the "Guangdong-Hong Kong-Macao Quality Product Certification" by the Guangdong-Hong Kong-Macao Greater Bay Area Quality and Brand Standardization Laboratory of the Guangdong University of Finance and Economics.

### Quality Improvement

In 2021, CR Cement continuously launched the Action for Quality Improvement through tracking product quality and carrying out research studies on product and service quality such that we can listen to customers' opinions, serve customers practically, solve the issues encountered on products and services, and strengthen the attention of operating regions to product quality. In the meantime, in order to establish customers' association between the brand and quality and interpret the "quality positioning of Runfeng" s dedication to providing high-quality products and services", the Company shot the "Runfeng" brand image promotional video which was released and fully disseminated on the Internet at the brand anniversary celebration to create a high-quality brand image for Runfeng Cement.

#### Tracking product quality



Each operating region organized blind examinations and analysis on product quality every quarter, regularly collected customers' feedback on the Company's products and summarized the feedback to the headquarters to help to improve product quality.

#### Carrying out research studies on product and service quality



Questionnaire surveys were conducted on product and service quality in Guangdong and Fujian regions such that differences between "Runfeng" and other mainstream brands in the market were sorted out, problems were sorted and rectified, and quality improvement could be driven from market side.

### Product Recall

**In 2021**  
no products sold or shipped were subject to recalls for safety and health reasons.

CR Cement strictly controls product quality. We had set up standards to manage quality incidents, identify and diagnose the incidents, provide solutions to handle substandard products, compensation standards, recall mechanism and process flow. If we discover and confirm that substandard products have left our factories or there are serious quality issues in the process of using the products, we would immediately inform the relevant customers to stop using or isolate that batch of products, organize recall on that batch of products if unused, confirm and compensate damages to customers. We will also conduct investigation and analysis on the quality incidents, formulate rectification measures and account for responsibilities, and verify the rectification results.



## Provide Quality Service

### Service Management

CR Cement continued to establish and improve the customer service system, and improved the customer service management system according to regional characteristics, including customer service content, customers' complaint handling process, market products sampling, as well as production and marketing coordination. We configured professional customer service personnel, regularly visited customers, exchanged product technology with customers, explained product related knowledge, and listened to customers' opinions and suggestions. Training activities for key users were organized, while promoting the fronting of customer service, providing customers with pre-sales, sales and after-sales services, and guiding civil customers to standardize the use of cement products. We tracked customers' feedbacks and aspirations, conducted satisfaction survey of customers, and continuously improved product and service quality to enhance customers' satisfaction.

### Protection on Rights and Interests

#### Fair Trade

Adhering to the concept of "integrity operation", CR Cement is committed to creating a just, open and fair commercial atmosphere. The Company attaches great importance to the rights and interests of consumers, and provides consumers with a transparent consumption environment by means public disclosure of pricing information. We regularly carry out training to sales personnel, strengthen the professional quality of employees, and strictly prohibit odious incidents such as compulsory sales.

#### Protect Right to Know

In strict accordance with the requirements of national laws and regulations, CR Cement introduces product performance and potential problems in the product manual in detail to ensure that consumers could fully understand product knowledge. Relevant instructions and tips are printed on the outer packaging bag of the product to reduce potential problems caused by improper use. Customer training meetings are organized. Product propagation and explanation activities are launched to convey product performance and usage methods in a realistic manner. We introduce common problems of cement application to customers, and give guidance on specific usage issues such as raw material preservation, concrete prescription and construction habits.

#### Information Protection

CR Cement treats customer data as core trade secrets. Customer data is in strict confidence and independent files pursuant to the relevant management requirements including the "Regulations on Managing Confidentiality Work" and the "Management Measures on Trade Secrets" of the Company. Designated staff are in charge of data collection, filing and update. We also set up corresponding access rights to ensure security of customer data.

The Company established the Smart and Digitalization Department with the general manager of the department as the person-in-charge to provide basis of policies and technical support to protection of data risks. The Company implemented management standards and technical specifications including the "Measures on Cyber-Security Management" and the "Technical Standards on Cyber-Security" to steadily advance the construction of protection capability according to the blueprint with balanced emphasis on security management and technical protection. The Company strengthened the width and depth in protection capability of information system, conducted drills of cyber-security attack and defense, and constructed the capabilities for regular monitor, early alert, analysis and handling to enhance identification of cybersecurity risks and capability on emergency handling. We reinforced protection on data transmission and terminal data to secure safe and useable data of business and customers.

In 2021, there was no occurrence of cyber-security incidents or cases of breach of customers' privacy rights.

### Crackdown on Counterfeit and Shoddy Products

CR Cement attaches great importance to the protection of intellectual property rights, persistently promotes the registration of trademark, right confirmation and registration of copyright in accordance with the law, and vigorously cracks down on counterfeit and rights protection. The Company established a traceable supervision system for product quality which integrates the weighbridge and packaging system into the enterprise resource planning system, and ensured each bag of cement delivered from factories was printed an identification code so as to provide technical support for subsequent product quality supervision and crackdown on counterfeit and shoddy cement. At the same time, the Company promoted the registration and protection of trademarks including "Runfeng", "Wangpaigongjiang" and "Runpin". In addition, we collected information on the use of its trademarks in the industry and sales regions to provide support for subsequent trademark protection work. In 2021, there was no counterfeiting cases or incidents of the Company that were investigated and dealt with by administrative or judicial authorities.

### Follow-Up on Customers' Complaints

CR Cement adheres to customer-oriented concept, pays keen attention to customers' requirements and actively responds to customers' complaints. We designated staff to handle customers' complaints within 24 hours and ensure the handling rate to reach 100%. At the same time, we followed up on customer visits and details of customer complaint handling every month, as well as customers' feedback comments on the Company's products. We focused on following up with the issues on fluctuations of product indicators and quality of packaging bags, as well as secured supply to customers. We continued to implement rectifications to persistently improve the quality of products and services.

Ensured the handling rate to reach  
**100** %

### Advocate Sustainable Consumption

CR Cement is not only keen on protecting the rights and interests of consumers, but also advocates sustainable consumption of customers. The Company encourages consumers to make rational and responsible decisions when consuming, reuse recyclable materials and products, and actively propagate the concept of sustainable consumption. At the same time, the Company continuously reduces the consumption of natural resources during the process of materials consumption and product manufacturing, improves product technology, produces and sells through green and environmentally friendly methods.

**Case** The Southeast China Region actively promoted "abandoning the seam and changing to paste" to protect the rights and interests of customers

In April 2021, the Southeast China Region of CR Cement replaced its paper bag supplier. After the new packaging was put into the market, an operating region received customers' feedback that some bagged products occurred leakage of ashes and cracks on bags, representing latent hazards of waste of resources and environmental pollution. After receiving the feedback, the operating region immediately organized relevant departments of marketing and procurement and paper bag manufacturer to conduct market research. It was found out that this batch of paper bags had unstable longitude and latitude quality with low tensile strength, and was prone to cracks on bags and leakage of ashes after packaging and loading and unloading. Therefore, we stopped using this batch of packaging bags and the supplier was urged to improve the quality of the packaging bags as soon as possible.

#### Extended Reading

In September 2020, the Standardization Administration of China issued the new standard of GB/T 9774-2020 "Sacks for Packing Cement", which officially came into force on 1 April 2022. Following the release of the new standard, the cement packaging bag type has fully "abandoned the seam and changed to paste", i.e., the seam bottom bag type was completely eliminated, and the cement packaging bag is limited to the square bottom valve mouth bag type.

## Satisfactory Service

In 2021, CR Cement continued to organize each operating region to launch customer satisfaction survey and designed questionnaires with 18 questions from the six dimensions of sales team, sales support, complaint handling, delivery and secured supply, product quality and product brand. 4,796 valid questionnaires were collected. Through the analysis on survey questionnaires, we deeply understood the differentiated aspirations of customers and continuously improved the quality of products and services during the operation process to provide products and services of better quality to customers. In 2021, CR Cement's customer satisfaction rate reached 97.8%.

Customer satisfaction  
rate reached

97.8 %



Cement production plant in Fengchenggang, Guangxi held a symposium for bagged cement customers

## Brand Building

CR Cement has always been working hard on the brand building of "Runfeng". We organized the anniversary celebration of "Runfeng Cement" brand for five consecutive years to persistently deepen the promotion and propagation of the "Runfeng" brand and its spokesperson "Run Xiaofeng".



The fifth anniversary celebration of "Runfeng Cement" brand cum the opening of Haixi Direct Sales Centre were held in Dali, Yunnan

### Extended Reading:



The best moments  
of brand anniversary  
celebration that you  
must know!

### Extended Reading:



"So Shocking" for the first  
lesson, didn't expect you to  
be such cement for nuclear  
power station



Synthesizing sales, logistics, venue and other conditions, we established two brand image flagship stores in Shangri-La of Yunnan and Dongguan of Guangdong to continuously deepen brand building for end users.



Through the Internet media, combined with themes such as "my blessings to the fifth anniversary of 'Runfeng'" and "promotional video of Runfeng brand image", we intensively promoted our brand image on platforms such as social media, industry media and internal media of the Company to enhance the brand awareness.



Combined with the themes of "cement for nuclear power engineering" and "Portland cement for roads", special Internet propagation and promotion was launched in the forms of short videos, advertorial for science popularization, cartoons for science popularization and brand placement cooperation with vloggers to highlight the excellent product quality, professional services and product strength of "Runfeng" and expand the brand influence.



With the themes of "Approaching the End Users, a Heart-Warming Runfeng" and "Runfeng by Your Side", combined with market characteristics, over 80 brand promotion activities in various forms were organized around the end users. We used video accounts, public official accounts and other media for widespread propagation so as to provide customers with more diversified value-added services.

In terms of new brands and new products, in 2021, the Company launched "Runpin" as the unified product brand for functional building materials, completed brand image development, established visual image system, and formulated product application standards. Among which, during the year, "Runpin" tile adhesive was officially launched to the market, had been sold to dealers and distribution stores in Guangdong and Guangxi markets, and supplied to large-scale engineering projects such as composite hospitals and shopping malls.



The launch ceremony of "Runpin" tile adhesive new products cum customer exchange meeting



# Building in Green

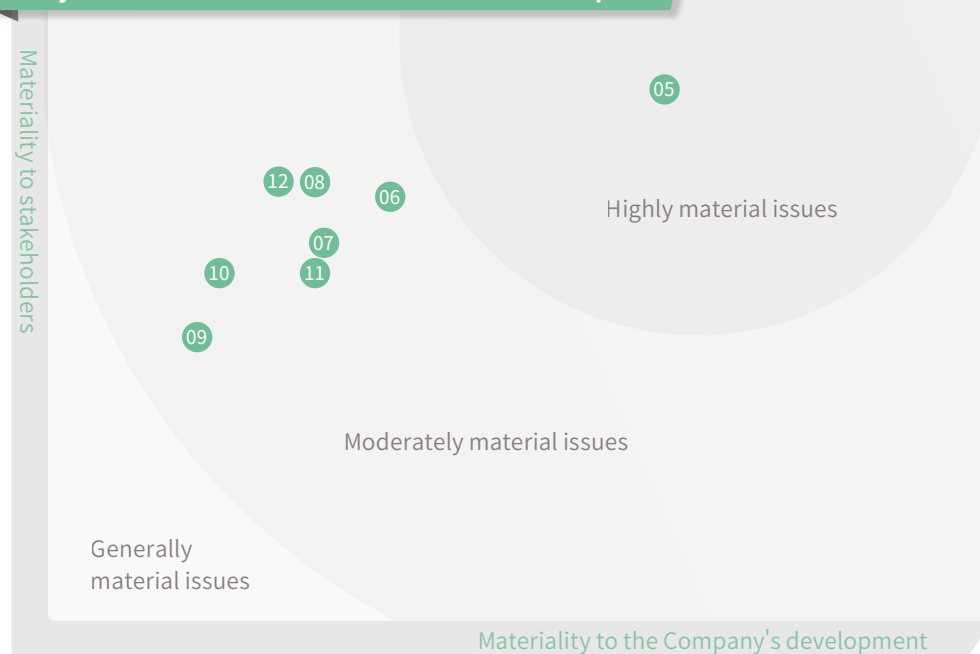
## Embark on the Journey to Carbon Neutrality



- 48 Enhance Management with Respect for Environment
- 50 Reduce Energy Consumption with Perseverance
- 60 Protect Ecology with Determination



**Major substantive issues addressed in this chapter:**



- |                                     |  |
|-------------------------------------|--|
| 05 Sustainable development          | 10 Environmental restoration and green mine construction |
| 06 Energy and resources management  | 11 Low-carbon development and response to climate change |
| 07 Environmental management systems | 12 Clean technology and opportunities in green building  |
| 08 Pollutant and waste management   |  |
| 09 Solid waste co-processing        |  |

**HKEX ESG Indicators in This Chapter:**

A1/A1.1/A1.3/A1.4/A1.5/A1.6/A2/A2.1/A2.2/A2.3/A2.4/A3/A3.1/A4/A4.1

**CASS-CSR4.0 Indicators in This Chapter:**

E1.1/E1.2/E1.3/E1.5/E1.6/E1.7/E1.8/E1.9/E1.10/E1.12/E2.1/E2.2/E2.3/E2.4/  
E2.5/E2.6/E2.7/E2.8/E2.9/E2.10/E2.11/E2.12/E2.13/E2.14/E2.15/E2.16/E2.17/  
E2.18/E2.19/E2.20/E2.21/E2.22/E2.23/E2.24/E2.25/E3.1/E3.3/E3.4/E3.5/E3.6

**GRI Standards Indicators in This Chapter:**

201-2/301-2/302-3/302-4/303-3/304-2/305-1/305-2/306-2

**National "Fourteenth Five-Year" Plan:**

The main goals for construction of ecological civilization during the "Fourteenth Five-Year" period are to optimize the development and protection of national land and space, achieve remarkable results in the green transformation of production and lifestyle, attain more reasonable allocation, substantial increase in utilization efficiency of energy and resources, continue to reduce total emissions of major pollutants, continue to improve the ecological environment, strengthen the barrier for ecological security, and significantly improve the living environment of urban and rural people.

**Vision goals for 2035** are to widely form green production and lifestyle, stably reduce carbon emissions following peaking, fundamentally improve the ecological environment, and basically achieve the goal of building a beautiful China by 2035.

**CR Cement's Actions:**

Green reflects our heritage and the landscape reflects our original intention. The green transformation and upgrade of the cement industry is of great significance to the in-depth battle of pollution prevention and control and the realization of the "dual carbon" strategic goal. As an industry leader, CR Cement has always adhered to the concept of ecological priority and green development. We actively engaged in energy saving, emission reduction, pollution reduction and carbon reduction, pursued the coordinated development of enterprise and ecological environment, and helped to create a beautiful China with everlasting green hills and abundant vitality.

**CR Cement and SDGs**





## Story on Responsibility

# "Ecological Green" Background Color of Sustainable Development of Mines

Limestone is an important raw material in cement production, and the excavation of mines will inevitably damage and affect the ecological environment. Under the present need of building a community with a shared future between human and nature, and in the critical period of construction of ecological civilization, how to achieve economic benefits and ecological benefits that complement each other is a question that Pingnan Cement cannot avoid.

As an advanced model for limestone mines in Guigang City, Pingnan Cement fully unleashes the mission and responsibility of a central state-owned enterprise, by actively building green and intelligent mines and protecting our blue planet through Ecological Green.

## Industry-Academia Collaboration, Breakthroughs in Water Management

During the mining process, Pingnan Cement encountered the first problem: how to resolve secondary geological disasters such as drop of groundwater level around the mining area, karst collapse pits, reduction of water volume in the wells of villagers, water leakage from farmland and drying up of fish ponds that may be caused by limestone mining process. Pingnan Cement and Shandong University jointly launched scientific research to control the amount of groundwater inflow and reduce pumping and drainage in mining areas through non-continuous enclosures, and pioneered the comprehensive water control model with high-velocity and large-flow karst pipelines, namely "slurry pad to control flow and reduce speed + accurate exploration of key channels + discontinuous curtain closure + CIS new controllable material sealing" and the dynamic construction method of "concurrent survey, design, and construction", which have effectively restored the ecological environment around the mining area and suppressed the frequency of secondary geological disasters. As of October 2021, 4 main water inflow points and private mining water inlets had been successfully plugged, with a total water reduction of 202,000 m<sup>3</sup> per day. In addition, the water inflow treatment project has further spawned many scientific research achievements. The project team has published 6 technical papers in total and obtained 10 technical patents. The technical research results have won the second prize of scientific and technological progress of the Chinese Society for Rock Mechanics & Engineering.

## Mine Greening to Promote Ecological Restoration

At the same time of water inflow treatment, the ecological restoration of surface vegetation damaged by mining operations is also in full swing. In order to restore the vitality of the mine, Pingnan Cement used a combination of hanging nets and vines in the vicinity of mining areas for restoring the explored mines. To overcome the complex local natural conditions at the same time, Pingnan Cement built green lands such as ecological park, central garden, peach garden and artificial lake, planted over 2,100 bougainvillea trees, over 3,200 mango trees and yellow fruit trees. Pingnan Cement cooperated in planting approximately 50 mu of citrus groves, hung 35,000 m<sup>2</sup> of climbing nets on the slopes, and planted at the bottom of the slopes to restore greening. The green coverage rate of industrial sites reached 96%.



Pingnan Cement Mine Central Garden

## Digital Empowerment to Strengthen Resource Utilization

When digitalization and intelligentization became the mainstream production tools, Pingnan Cement also began to explore how to embed digitalization and intelligentization into the process of mine production, safety management and ecological protection, and made a series of achievements in scientific research, including the construction of intelligent systems such as digital mining software platform, production execution system platform, 3D visualization management and control platform, mining truck intelligent dispatching system and video monitoring system, which had further optimized the matching of people and positions and the ratio of vehicles to shovels, and had improved production efficiency. At the same time, diesel consumption was reduced by approximately 7%, tire consumption was reduced by approximately 30%, and 100% comprehensive utilization of resources had been achieved.



Intelligent Mine System of Pingnan Cement

Not only that, the construction of Pingnan Cement's green intelligent mine has also set a number of firsts in the construction of intelligent mine by CR Cement. It first initiated the customized development of the mobile APP in the mobile application development platform (H5) of CR Cement and laid the foundation for project promotion. It first initiated the display of the positional relationship between ore deposit and rock on the 3D visualization platform. It first initiated the connection between mine fueling trucks and engineering equipment to achieve automatic data upload, statistics and analysis. The steps of green and intelligent mine construction had been accumulating and advancing little by little.

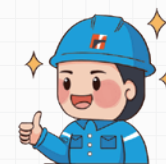
## Ecological Villages to Improve Prosperity Indicators

Mineral resources have attributed to the success of Pingnan Cement. Pingnan Cement is also strongly committed to "corporate citizenship", and always takes part in and support local economic development as a responsibility and obligation. Focusing on the construction requirements of "Beautiful Guangxi, Ecological Village", it donated money to improve the production and living environment in the countryside. It repaired and built open drainage channels in the farmland area to divert the treated stope drainage. After treatment through a sand sedimentation tank, the water quality met testing standards and was discharged to the open channel through water pumps to serve the cultivation and irrigation of surrounding villages. The benefited area reached 12,825 mu, including 8,825 mu of paddy fields and 4,000 mu of dry land.



A drainage canal repaired and built by Pingnan Cement for the benefit of people

Green is the clear background color for promoting high-quality development and is an eternal symbol of mine construction. Pingnan Cement will continue to closely follow new development requirements, implement new development philosophy, and accelerate the deep and broad development of green mines.



## Concept behind the story

President Xi Jinping said at the 2021 Leaders Summit on Climate that Chinese civilization had always advocated the unity of nature and human, the law of nature, and the pursuit of harmonious coexistence of human and nature. The concept of ecological civilization and the construction of ecological civilization had been written into the "Constitution of the People's Republic of China" and had been incorporated into the overall layout of socialism with Chinese characteristics. CR Cement has always been guided by Xi Jinping's Thoughts on Socialism with Chinese Characteristics in the New Era, and adheres to the development philosophy of "Innovation, Coordination, Green, Openness, Mutual Sharing", insists on life and health first, is devoted to green and high-quality development and is committed to becoming a resource-saving and environment-friendly enterprise, in order to contribute to the construction of a beautiful China.



## Enhance Management with Respect for Environment

With green as the foundation, continuous progress can make a difference. CR Cement keeps in mind the original intention of environmental protection, maintains the strategic concentration on ecological construction, continuously improves environmental management, and builds a pattern of "further environmental protection". We strengthen environmental risk management and control, and build a strong line of defense for environmental safety. We cultivate green factories, accelerate the construction of green manufacturing systems, and create a new momentum for green development.

### Improve Environmental Management

CR Cement fully implements Xi Jinping's Thoughts on Ecological Civilization, continuously strengthens the overall design and system construction of environmental protection work, and strictly abides by 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 Water Pollution, the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, other relevant laws and regulations and industry standards, in order to continuously improve the environmental management system of "horizontal to the brink, vertical to the end". All cement production plants of the Company had passed the ISO 14001:2015 Environmental Management System Certification.

#### Construction of Policies and Systems

The Company formulated "EHS Management Series" of the "Management Manual" of CR Cement, and implemented the "Policy for EHS Accountability by Positions of China Resources Cement Holdings Limited", "Management Guideline for Prevention and Control of Atmospheric Pollution (2021 Edition)", the "Management Guideline for Prevention and Control of Water Pollution (2021 Edition)", the "Management Guideline for Prevention and Control of Noise Pollution (2021 Edition)", the "Management Guideline for Prevention and Control of Pollution by Solid Waste (2021 Edition)", the "Management Guideline for Environmental Protection Compliance (2021 Edition)" and other environmental management policies to specify environmental management responsibilities and strengthen environmental protection compliance.

#### Construction of Organizational Systems

The EHS organizational institutions in each business unit of the Company includes the EHS Committee, the EHS Supervision and Management Department and the EHS Supporting Department to ensure all-level implementation and full coverage of environmental supervision responsibilities.

#### Construction of Appraisal Systems

The Company established an excellent operation management evaluation system and sets target values based on industry or internal benchmarking results, and comprehensively evaluated the performance of each cement production plant in terms of environment, health and safety to enhance the management standards and drive for the sustainable development of the Company.

CR Cement continued to improve the level of environmental risk prevention and emergency response, organized production plants to identify environmental impact factors, identify and update lists of laws and regulations, and conducted special inspections on environmental compliance and pollutant discharge compliance. The "Environmental Protection Management On-site Latent Hazard Investigation Manual of China Resources Cement Holdings Limited" was issued to guide each



Environmental Management  
System Certification

### Strengthen Environmental Risk Control

production plant to investigate latent hazards and eliminate environmental risks in a timely manner. In addition, CR Cement strictly implemented the Environmental Impact Assessment Law of the People's Republic of China, proactively completed environmental impact assessments, and actively communicated with industry experts, regulatory authorities and other organizations on issues such as environmental protection to provide opinions for improving environmental protection plans and related actions.

## Certification of Green Factories

CR Cement fully promotes green manufacturing and highlights green environmental protection in the whole process of raw material selection, the production and manufacturing process and product application. We actively promote the construction of green factories, and has received widespread recognition. As of the end of 2021, 17 production plants of CR Cement had been included in the registers of national-level, provincial-level or AR-level "Green Factories".

#### National-level (10) Green Factories

Tianyang Cement, Nanning Cement, Pingnan Cement, Wuxuan Cement, Heqing Cement, Guigang Cement, Fuchuan Cement, Hongshuihe Cement, Changzhi Cement, Jinsha Cement

#### Provincial-level or AR-level (7) Green Factories

Shangsi Cement, Luchuan Cement, Hepu Cement, Longyan Cement, Yanshi Cement, Caoxi Cement, Yongding Cement

As of the end of 2021, **17** production plants of CR Cement had been included in the registers of national-level, provincial-level or AR-level "Green Factories"

Wuxuan Cement



Guigang Cement

#### Further reading:



The National Green Factories of CR Cement are...



In addition, CR Cement started the creation and construction of "Garden Factories" in 2021. By visiting industry benchmarks, communicating with peer companies, organizing the establishment of working groups, and conducting trial evaluations of "Garden Factories", CR Cement has preliminarily determined an evaluation system of "Garden Factories" suitable for itself and plans to complete the creation of "Garden Factories" in batches and phases during the "Fourteenth Five-Year" period. As of the end of 2021, the first batch of production plants had commenced creation and construction.



Heqing Cement launched the beautification and lighting work of the "Garden Factories", and painted local Bai culture characteristic patterns on the exterior of the building in the production area

## Reduce Energy Consumption with Perseverance

Multiple measures had been taken to save energy and reduce emissions. CR Cement continuously strengthens management in the scopes of energy saving and pollution management, improves the comprehensive utilization efficiency of energy and resources, and promotes the development of circular economy. We intensively promote pollution reduction and emission reduction to minimize pollutant emissions. We strictly implement the "dual carbon" policy, adhere to taking the path of green, circular and low-carbon development, and help in the green upgrade of the industry.



The standard coal consumption per ton of clinker was **103.8** kg standard coal/ton, representing a decrease of **0.6%** from 2020;

The consolidated energy consumption per RMB10,000 output (comparable price) was **2.09** tons of standard coal/RMB10,000, representing a decrease of **19.6%** from 2020;

The consolidated energy consumption per RMB10,000 value addition (comparable price) was **5.27** tons of standard coal/RMB10,000, representing a decrease of **5.6%** from 2020.

## Saving of Energy and Resources

### Improvement of Energy Utilization Rate

CR Cement has formulated and strictly implemented the "Policy for Supervision and Management of Energy Saving and Emission Reduction", established a sound energy management system, continued to promote and apply new technologies, new equipment, new materials and innovation achievements in energy saving and environmental protection, and used digitalization and intelligentization technologies to quantify, evaluate, analyze and optimize resource consumption in the production process of production plants to further improve the utilization rates of resources and energy. In 2021, CR Cement continued to improve its performance on energy consumption.

The Company strengthened the application of new technology and new equipment. In 2021, the promotion and application of technology for 17 large-scale highly-effective fans was completed in total and the promotion and application of 31 highly-effective energy-saving air compressors and 28 highly-effective energy-saving air blowers was advanced, which had significantly reduced power consumption and saved electricity costs.

In addition, the Company actively promotes digital transformation by cooperating with Siemens to build a pilot digital smart factory in Tianyang Cement and a "lighthouse factory" in Fengkai Cement to improve production efficiency and reduce energy consumption.

During the year, the Company formulated action plans for energy saving and carbon emissions reduction, mainly by increasing grinding aids of raw materials and coal-saving agents, implementing alternative fuels, promoting the iteration and upgrade of firing system and the application of new technologies and new equipment, in order to achieve reduction in energy consumption levels. It is targeted that by 2025, the production capacity with comprehensive energy consumption per unit product that meets the benchmark level shall exceed 30%; standard coal consumption per ton of clinker, consolidated electricity consumption per ton of clinker and electricity consumption per ton of PO42.5 cement processed shall be reduced by 5%, 10% and 16% respectively as compared with 2015 (107.6 kg, 55.1 kwh and 31.2 kwh).

In terms of clean energy, the Company plans to roll out pilot projects for distributed photovoltaic power at the cement production plants in Fengkai and Luoding of Guangdong, Wuxuan, Tianyang, Luchuan and Pingnan of Guangxi, as well as some aggregates and prefabricated construction factories where conditions are suitable. The project will gradually be promoted at other production plants. It is targeted that, by 2025, the total installed capacity of photovoltaic power generators will exceed 150 megawatt and the annual power generation will exceed 150 million kwh.



In September 2021, the photovoltaic power station project of Ding'an Concrete passed the inspection acceptance of China Southern Power Grid and was officially connected to the grid for power generation

## Resource Saving and Comprehensive Utilization

CR Cement adheres to the principle of "saving, intensifying and reducing", continuously promotes total resource management, scientific allocation, comprehensive saving and recycling, vigorously promotes the reuse of waste residues in the process of mine development and cement R&D, which creates a complete solution for solid waste disposal and builds a whole-process resource recycling system.

### Composite Utilization of Industrial Waste

During the mining process, CR Cement adopts waste-free or reduced-waste technology to comprehensively utilize all non-hazardous wastes such as stripped soil, stones and waste residues to achieve zero discharge of waste residue. For other wastes with reusable value, such as scrap iron and scrap leather belts, manufacturing enterprises contact qualified third-party institutions for recycling and reuse.

In the cement R&D process, CR Cement is dedicated to exploring the application of industrial waste in cement production. Through optimization of the prescription of raw materials, the project on composite utilization of limestone residue resources was launched to achieve utilization of mining waste resources. By the end of 2021, composite utilization of industrial waste of the Company (including coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag) reached 20,490,000 tons.

Project	2019	2020	2021
Industrial waste utilized ('000 tons)	21,080	21,010	20,490

By the end of 2021, composite utilization of industrial waste of the Company (including coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag) reached

20,490,000 tons

#### Case Slag Recycling and Reuse Proven Effective

In 2021, Midu Cement actively assisted the government of Yi Town, Xiangyun County, Yunnan to recycle and reuse wastes generated from previous traditional method of zinc production in an effort to share the government's environmental protection burden and improve the local soil condition "without any grass growth".



**Before improvement:** Wastes generated from previous traditional method of zinc production were piled up on the soil surface of the mountain, which caused vegetation unable to grow with negative impact on the local environment. The national environmental protection supervision departments had repeatedly required the local government to make rectifications.



**After improvement:** Wastes on the surface of the mountain were removed and used as cement mixture. Approximately 500,000 tons of residue have been used in total, which has made outstanding contributions to improving the local environment and soil quality.

#### Further reading:



Midu, a landscape town "jumping" between musical notes

## Co-Processing

CR Cement comprehensively promote co-processing projects in the three scopes of municipal solid waste, urban sludge and hazardous industrial waste to create complete solutions to solid waste processing. Compared to traditional landfilling, co-processing of solid waste by use of cement kilns enables us to substantially save land resources, avoid pollution to the soil and water sources, and eliminate toxic pollutants such as dioxin by use of heat inside cement kilns, thereby achieving "hazard-free, mass-reducing and recyclable" processing and creating a healthier living environment for local residents in the vicinity. As of the end of 2021, the Company had 10 co-processing projects in total, with total annual processing capacity of 1.71 million tons.

#### Further reading:



Sludge siege? Learn about this solution

Project	Type	Annual Processing Capacity (tons)	Status
Binyang, Guangxi	Municipal solid waste	110,000	In operation
Tianyang, Guangxi	Municipal solid waste	180,000	In operation
Fengqing, Yunnan (note 1)	Municipal solid waste	110,000	In operation
Midu, Yunnan	Municipal solid waste	110,000	In trial operation
Nanning, Guangxi	Urban sludge (note 2)	110,000	In operation
Zhushui, Guangzhou (note 1)	Urban sludge (note 2)	300,000	In operation
Yuebao, Guangzhou (note 1)	Urban sludge (note 2)	560,000	In trial operation
Changjiang, Hainan	Hazardous industrial waste	30,000	In operation
Shangsi, Guangxi (note 3)	Hazardous industrial waste	100,000	In trial operation
Yanshi, Fujian (note 3)	Hazardous industrial waste	80,000	In trial operation
	Urban sludge	20,000	Under construction

Notes:

1. Located in the cement production plants of our associates and joint ventures.
2. The Nanning project co-processed wet sludge of 80% moisture content. The Zhushui and Yuebao projects co-processed dry sludge of below 40% moisture content. The annual processing capacity of each urban sludge co-processing project is calculated as the annual processing capacity of wet sludge.
3. Co-processing projects jointly developed by CR Cement and environmental protection companies.

2021

The Company co-processed a total of  
**207,700 tons**  
of municipal solid waste

**44,800 tons**  
of urban sludge (80% moisture content)

**19,600 tons**  
of industrial hazardous waste



Case Commencement ceremony of the construction waste disposal plant project in Changjiang, Hainan was successfully held

In April 2020, CR Cement obtained a franchise license for the resourceful utilization of construction waste in Changjiang, Hainan to build a construction waste disposal plant project with design annual processing capacity of approximately 250,000 tons of construction waste, and complemented with annual production capacities of approximately 300,000 m<sup>3</sup> of concrete and approximately 1,150,000 tons of manufactured sand and gravel. In December 2021, the project successfully completed construction and commenced operation, which will fully improve the level of resourceful utilization of construction waste recycling in Hainan Province, form a good pattern of reduction, resourcefulness and recycling of construction waste, and contribute CR Cement's strength to the construction of the Hainan Free Trade Port and the National Ecological Civilization Pilot Zone.



Construction Waste Disposal Plant Project in Changjiang, Hainan

Residual Heat Utilization

CR Cement attaches great importance to the use of energy recycling technologies, techniques and equipment. All cement and clinker production plants are equipped with pure low-temperature residual heat recovery generation systems, which recover and convert residual heat from the production process into electrical energy, greatly improving the comprehensive utilization efficiency of energy and having good economic and environmental benefits. In 2021, the Company generated approximately 1,884 million kWh of electricity through residual heat recovery, contributing 31.4% of the electricity used in cement production.

In 2021, the Company generated approximately **1,884** million kWh of electricity through residual heat recovery

Contributed to **31.4** % of the electricity used in cement production

Pollutant Management

Emissions Management

CR Cement attaches great importance to emission management, establishes and improves the emission supervision system, implements the disclosure of emission information, and ensures that 100% of all cement production bases have obtained permits for pollutant emissions and strictly followed the requirements of pollutant discharge licenses. All cement and clinker production plants are 100% equipped with denitration systems and bag filters to achieve emission levels which are far lower than local and national standards.

Information disclosure

Since 2019, all our cement production plants had implemented a system for disclosure of pollutant emissions from production lines, which actively disclosed real-time data on pollutant emissions from all production lines to their communities and consciously accepted social supervision.

Monitoring system

At CR Cement's headquarters, there is a monitor platform for environmental pollutant emissions, which achieves the headquarters' real-time monitor on pollutant emissions of all production lines. The risk management capability on pollutant emissions had been further enhanced by timely reminders from the platform to urge production plants to verify abnormal data. In 2021, the Company started to promote intelligent management of environmental protection data and achieved automatic collection and intelligent reporting of environmental protection data on a minute basis.

Application of Emission Reduction Technology

CR Cement actively introduced advanced emission reduction technologies and equipment to continuously improve our emission reduction performance. In 2021, the Company continued to promote the optimization of our high-efficiency low-resistance pre-heating and pre-decomposition system as well as the upgrade and transformation of the fourth-generation grate cooler, and actively promoted the application of low thermal conductivity and energy-saving refractory materials, energy-saving combustor technology, new energy-saving thermal insulation materials, raw materials grinding aids and coal-saving aids in order to reduce energy consumption, coal consumption and pollutant emissions.

In 2021, the total emissions of nitrogen oxides, sulphur dioxide and particulate matters from the main discharge outlets of the Company's cement production plants decreased by 16.2%, 8.8% and 22.3% respectively as compared with 2020.



It is targeted that, by 2025, the emission concentrations of nitrogen oxides, sulphur dioxide and particulate matters will strive to fall below 100 mg/m<sup>3</sup>, 50 mg/m<sup>3</sup> and 10 mg/m<sup>3</sup> respectively from exhaust gases of kiln heads and kiln rears of all cement production plants.

**Nitrogen oxides emission reduction:** CR Cement proactively launched the research and application on intelligent ultra-low emissions technology of highly effective selective non-catalytic reduction denitration (heSNCR), multi-level combustion and selective catalytic reduction denitration (SCR). In 2021, we completed technological upgrade projects for emission reduction of nitrogen oxides at our cement production plants in Fengkai and Huizhou of Guangdong, Luchuan and Pingnan of Guangxi, Jinsha of Guizhou and Changzhi of Shanxi, which laid the foundation for the promotion and application during the "Fourteenth Five-Year" period.

**Emission reduction of sulphur dioxide:** As of the end of 2021, CR Cement had completed the construction of 4 sets of wet-process desulphurization systems and 11 sets of composite desulphurization systems, with remarkable effect on emission reduction of sulphur dioxide. At the same time, the Company plans to implement upgrade projects in Changjiang of Hainan and other cement production plants to increase the capacity of wet-process desulphurization to continuously deepen the level of application of desulphurization technology.

**Emission reduction of particulate matters:** CR Cement continuously promoted different types of technologies of bag filters in high temperature for ultra-low emissions at each production plant. As of the end of 2021, the annual average emission concentration of particulate matters of 42 out of 46 clinker production lines of the Company had fallen below 10 mg/m<sup>3</sup>, achieving ultra-low emissions of particulate matters.

Total Amount of Emissions			
Projects	2019	2020	2021
Nitrogen oxides (tons)	37,584	36,194	30,324
Sulphur dioxide (tons)	1,824	1,646	1,501
Particulate matters (tons)	2,083	1,777	1,381

Emission Concentrations					
	Emission Standard of Air Pollutants for Cement Industry (GB 4915-2013)		Average emission concentrations of pollutants emitted from the major discharge outlets of the Company's cement production plants		
	Ordinary emission limits	Special emission limits	2019 (Restated*)	2020 (Restated*)	2021
Nitrogen oxides (mg/m³)	400	320	232	221	208
Sulphur dioxide (mg/m³)	200	100	11	10	10
Particulate matters (mg/m³)	30	20	9	9	6

\*In 2021, the calculation method for the overall pollutant emission concentration was improved, and the data for 2020 and 2019 were restated accordingly.

Solid Waste Management

CR Cement strictly complies with the relevant laws, regulations and industry standards including the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes" and formulates comprehensive and holistic treatment plans for solid waste generated during the production process to ensure the safe and effective disposal of hazardous wastes and promote the recycling of non-hazardous waste, effectively prevent the spread of secondary pollution and reduce the environmental burden on the region.

Regarding hazardous wastes: In accordance with the "hazard-free, mass-reducing and recyclable" principle, the Company adequately recycles the waste oil generated in the production process for lubrication of mechanical and other conveying equipment in order to minimize the production of hazardous wastes. Other hazardous wastes such as oil barrels and non-recyclable waste oil are recycled by the original manufacturers, or recycled or handled by entrusted qualified third-party institutions in strict compliance with the requirements of national laws and regulations. In 2021, hazardous wastes produced amounted to 550 tons, 600 tons of hazardous wastes were processed, and the processing rate was approximately 111% due to the handling of some inventories of previous years during the year.

Regarding non-hazardous waste: Fully enclosed delivery is adopted during materials treatment and delivery process at all the clinker production lines of the Company. Each transit point had been equipped with filters to collect particulate matters and minimize dust scattering. At the same time, the dust collected by bag filters is applied as raw materials, semi-finished products and finished products to recycle the waste generated during the production process. Waste-free or less-waste technology is adopted at mining areas and non-hazardous wastes such as stripped soil and stones are all compositely utilized to achieve zero discharge of waste residue. Scrap iron and scrap leather belts are recycled and used by qualified third-party institutions on a regular basis. In 2021, non-hazardous wastes produced amounted to 135,580 tons, 108,220 tons of non-hazardous wastes were processed, and the processing rate was approximately 80%. The remaining non-hazardous wastes are kept in storage pending recycling and handling.

Water Resources Utilization

CR Cement actively advocates water conservation and recycling of water. We adhere to the disposal principles of classified collection by type, classified treatment by quality and multi-phase recycling, and continuously initiates the comprehensive composite treatment and management on the recovery and recycled use of industrial wastewater, domestic wastewater and initial rainwater. With reference to national first-class emission limits, CR Cement also formulated strict procedures and standards for treatment of domestic wastewater. Domestic wastewater was treated with techniques such as pre-treatment and biochemical methods. Industrial wastewater was treated with techniques such as pre-treatment (coagulation-sedimentation) and intensive treatment (sand filtration, membrane processes, etc.), which finally achieved separation of rainwater and wastewater in the factory zones. Treated domestic wastewater and industrial wastewater which meet the standards are fully recycled for use in factory zones, so that zero discharge of wastewater is achieved.

In 2021, comprehensive treatment of wastewater was promoted and implemented at 9 cement production plants including Pingnan Cement of Guangxi. The goals of zero discharge of wastewater and composite utilization of water resources had been achieved with stable operation. Relevant projects had been launched at 6 cement production plants in Guangdong, Guangxi, Fujian and Yunnan during the year. It will be gradually promoted at other cement production plants of the Company in the future.

Indicator	2019	2020	2021
Water consumption (tons)	32,546,000	31,392,000	30,254,000
Water consumption intensity for the production of cement and clinker (kg per ton of cement produced)	360.4	346.7	355.8



Rainwater collection tank built by Hongshuihe Cement



## Persist in Low-carbon Development

CR Cement attaches great importance to the control of carbon emissions. We actively respond to the proposal for carbon peaking and carbon neutrality in the building materials industry. We continue to reinforce the implementation of the national "dual carbon" targets and the "dual control" energy consumption policy, proactively expedite energy saving and carbon reduction, strengthen appraisal on energy saving and carbon reduction, and implement technological upgrade and low-carbon transformation for production lines in order to execute the targets and missions for the "Fourteenth Five-Year" Plan.

In 2021, the Company formulated the "Strategic Plan for Control of Carbon Emissions" in light of our own actual circumstances and development strategies, which would gradually enhance the management capabilities and standards for controlling carbon emissions, and promote green, low-carbon and sustainable corporate development. We target for peaking the total carbon dioxide emissions by 2025 and reducing carbon dioxide emissions per ton of clinker by 2% compared to 2020, and strive to achieve carbon neutrality in our industry chain by 2060.



CR Cement held the seminar on "Fourteenth Five-Year" carbon emissions control



CR Cement and China Building Materials Federation entered into a cooperation agreement for technical services on carbon emissions management

### Organizational Construction

CR Cement will optimize the management model and policies of carbon emissions and strengthen the management capabilities on controlling carbon emissions. A leading group for carbon emissions management was established, with the Chief Executive Officer serving as the leader to coordinate the launch of control on carbon emissions. As the department responsible for the daily management of carbon emissions, the EHS department organizes and coordinates various departments on the management of carbon emissions from the aspects of strategy, project implementation, carbon asset management, and R&D on technology.

### Talent Capability Building

Through a combination of internal professional research with internal and external professional training, we will continue to improve the level of technical capability of professional talents.

### Carbon Asset Management

Excelling carbon emission data inventory, exploring models for carbon asset management, and enhancing capabilities of carbon asset management.

## Energy Saving and Consumption Reduction

We promote technological upgrade projects for energy saving and consumption reduction, comprehensively utilize the advantages of local resources such as fly ash, coal gangue or calcium carbide slag, and achieve comprehensive utilization of resources and reduce coal consumption through contribution to thermal value or improving flammability of clinker. Electricity consumption had been reduced through technologies such as high-efficiency energy-saving fans, energy-saving air compressors and blowers.

### Research on Carbon Reduction Technology

Applied research of new technologies and new techniques for alternative fuels, alternative raw materials and alternative clinker was rolled out. During the "Fourteenth Five-Year" period, the Company will launch technological research and pilot application of carbon dioxide capture and utilization to prepare for further promotion in the future.

### R&D on Low-carbon Products

Cement for nuclear power plants, cement for roads and high-belite cement were proactively promoted in Fujian and Hainan to reduce carbon dioxide emissions. As compared with ordinary cement and clinker, carbon dioxide emissions per ton of clinker from cement for nuclear power plants, cement for roads and high-belite cement decreased by approximately 1.5%, 1.6% and 2.2% respectively. At the same time, low-calcium hydraulic cement and low-calcium air-entrained cementitious materials were researched and developed. The former has relatively low content of calcium oxide, and mainly includes high-belite cement and sulfoaluminate cement. With the potential for carbon sequestration, the latter can absorb carbon dioxide during hydration process.

#### Low-Carbon Product Certification

Various cement and clinker products of production plants located in Luoding of Guangdong, Wuxuan, Nanning, Guigang, Tianyang, Pingnan, Hepu, Luchuan, Fuchuan, Binyang and Shangsi of Guangxi, Heqing of Yunnan and Changzhi of Shanxi had passed the low-carbon product certification.

### Preparation for Carbon Trading

The Company actively participates in pilot activities for the construction of national carbon market in preparation for the future unification of national carbon market. In 2021, the Company had settled the carbon credit quota for 8 production plants in Guangdong and 5 production plants in Fujian for 2020.

#### Further reading:



Recover the Planet: The secret language regarding "3060" low-carbon



The "Dual Carbon Targets" are the present main line of operation and development of the industry. At this current stage, the research of CR Cement is meticulous, objective and advanced, with substantial progress in keeping up with the level of a state-owned enterprise. Focusing on the "Dual Carbon Targets" main line, it is hoped that CR Cement will continue to strengthen its communication with the China Building Materials Federation, and put forward practical and implementable opinions and suggestions in the formulation of relevant standards and policies.

In July, Yan Xiaofeng, President of China Building Materials Federation, said during the visit to the Shenzhen headquarters of CR Cement



# Protect Ecology with Determination

We prioritize ecology in order to go steadily and farther. CR Cement adheres to the harmonious progress of economic development and ecological protection, and promotes the construction of green mines. We strengthen ecological restoration, protect biodiversity, actively guide green lifestyles, create green culture, and continuously enhance the people's sense of gain of the ecological environment.

## Emphasize Treatment and Management of Mines

CR Cement sets targets for effective improvement of the ecological environment and rational utilization of mineral resources, and adheres to the philosophy of "concurrent excavation, treatment and restoration". We strictly implement the planning opinions including the "National Mineral Resources Plan", the "Green Mine Construction Specification of Cement Limestone" and the "Implementation Opinions on Accelerating the Construction of Green Mines", innovate on the ways and methods of mine restoration and accelerate the creation of "Green Mines". In view of vegetation destruction, soil erosion and soil pollution that may occur during the mining process, CR Cement actively formulated whole-process and multi-dimensional protective measures to effectively reduce the adverse impact on biodiversity and ensure ecological security.



### Before mine exploitation

The concept of "Green Mines" is incorporated into mine selection and mining planning. There would be no mine exploitation in the vicinity of ecological protection areas and neighbouring communities. Green and environmentally friendly exploitation proposals would be planned for to avoid the impact of business operations on biological reproduction in the reserves areas and all mining projects are ensured to have passed 100% of project environmental impact assessment.



### During the mining exploitation cycle

The impact of production and operating activities on the habitat of living organisms is reduced by adopting measures such as zero discharge of wastewater from the mines, timing recycling and reuse of waste oil in a timely manner, and application of technologies of shock absorption and weak-shock blasting. We actively implement green projects such as noise control, mining dust reduction and wastewater treatment to continuously increase the proportion of mines with green mine certifications.



### Before closure of a mine

We strictly follow the "Project of Mining Geo-Environmental Protection and Integrated Renovation" and "Land Rehabilitation Plans" to manage and restore the mine environment, plant various vegetations with reasonable mix and match according to the natural environmental conditions of the mines. The coverage rate of the regreened mining area has reached 100%. As of 2021, the Company had completed ecological restoration of approximately 2.82 million m<sup>2</sup>.

### Further reading:



2020 National Green Mine Express Directory! CR Cement has these

As of 2021, the Company had completed ecological restoration of approximately

**2.82** million m<sup>2</sup>

## Persist in Green Management

### Green Procurement

CR Cement actively responds to the national call for environmental protection and vigorously advocates for green procurement. By actively developing and utilizing industrial waste slag such as gypsum, fly ash, copper slag, water slag, steel slag and pyrite slag, our operating regions had replaced raw ore types of raw materials resources, which contributed to the protection of ecological environment. In addition, in terms of construction machinery parts, the Company actively promotes the procurement and use of remanufactured parts, which saves on procurement costs whilst reducing waste of resources.

### Green Packaging

CR Cement actively responds to the requirements of GB/T9774-2020 "Cement Packaging Bags", promotes green packaging, greatly reduces ash leakage and broken bags in cement packaging bags, and reduces dust pollution. In April 2022, the Company had eliminated seam bottom bags and replaced them with square bottom laminated plastic woven bags to achieve full coverage in green packaging.

## Cultivate Green Culture

### Promote Green Offices

CR Cement adheres to the concept of green development, actively practises green operations, vigorously promotes OA and ERP office systems and advocates paperless office. We strengthen the management on office equipment to reduce energy waste, use water-saving appliances to reduce water consumption, and recycle plastic and paper to reduce waste generation. In addition, commuter buses are offered to employees at some operating regions and production plants. We advocate for green commutes such as public transportation, bicycles and walking, and call on every employee to be a practitioner of environmental protection through practical actions.



Jinsha Cement was selected as the "Provincial-Level Water-Saving Enterprise in Guizhou"

### Further reading:



Striving to be a "Low-Carbon Pioneer" to start the "New Trend" for green offices



In June 2021, the mine of China Resources Cement (Changjiang) Limited was included in the register of provincial-level green mines by the Department of Natural Resources and Planning of Hainan



## Publicize Green Concepts

CR Cement continues to promote environmental protection awareness education, and actively launches environmental protection professional training to improve the environmental protection standard of the team. Environmental protection themed activities such as "World Environment Day", "National Energy-Saving Week" and "National Low Carbon Day" were actively launched to further strengthen the awareness of energy conservation in daily office work and cultivate a green culture at CR Cement. In 2021, total investment of the Company in environmental protection was RMB508 million, which was mainly involved in aspects such as environmental protection awareness activities, environmental protection training, upgrade and operating maintenance for online monitoring system.

### Case Launch special training on environmental protection and publicize the concept of energy saving and environmental protection

In June 2021, in order to effectively improve the capability of environmental protection professional management personnel of concrete plants to discover and solve environmental protection management problems on site, effectively respond to present severe environmental protection management situations, and reduce environmental protection risks, EHS Department of the headquarters held an annual special training session on environmental protection management for concrete plants. Personnel from the environmental management functional line of 36 concrete plants and prefabricated construction companies participated in the training.

In November, the EHS Department of the headquarters organized and launched environmental protection management training in the second half of the year in video format. A total of 127 participants from key positions in our operating regions and production plants, the persons in charge of the safety and environmental protection departments, and environmental protection management personnel attended the training. Four courses were covered in this training, including "Environmental Protection Management Systems, Problems and Ideas", "Environmental Protection Site Management Practices", "'Dual Carbon' Policy and Carbon Emissions Work Situation of CR Cement Headquarters", and "Creation Ideas for CR Cement Garden Factories". "Opinions and Suggestions on Environmental Management of Headquarters" served as the action learning theme after the classroom training, which will help to improve the level of environmental protection management.

## Practice Green Charity

CR Cement actively launched environmental protection charitable community activities such as volunteer tree planting and cleaning the environment. These activities had effectively enhanced the green environment in the vicinity of the community and implemented the important concept of "clear waters and green mountains are as good as mountains of gold and silver" with practical actions.



Guigang Concrete launched voluntary tree planting activities

### Further reading:



Commitment to nature  
is always kept

Fengkai Cement participated in the old clothes recycling activity of "Energy Saving and Carbon Reduction Start with Clothes"



Jiangmen Concrete launched volunteer service activity of "Renovate the Tanjiang Environment, and Share Clear Waters and Blue Skies"



Fangchenggang Cement launched environmental protection volunteering activities



# Marching with Dreams

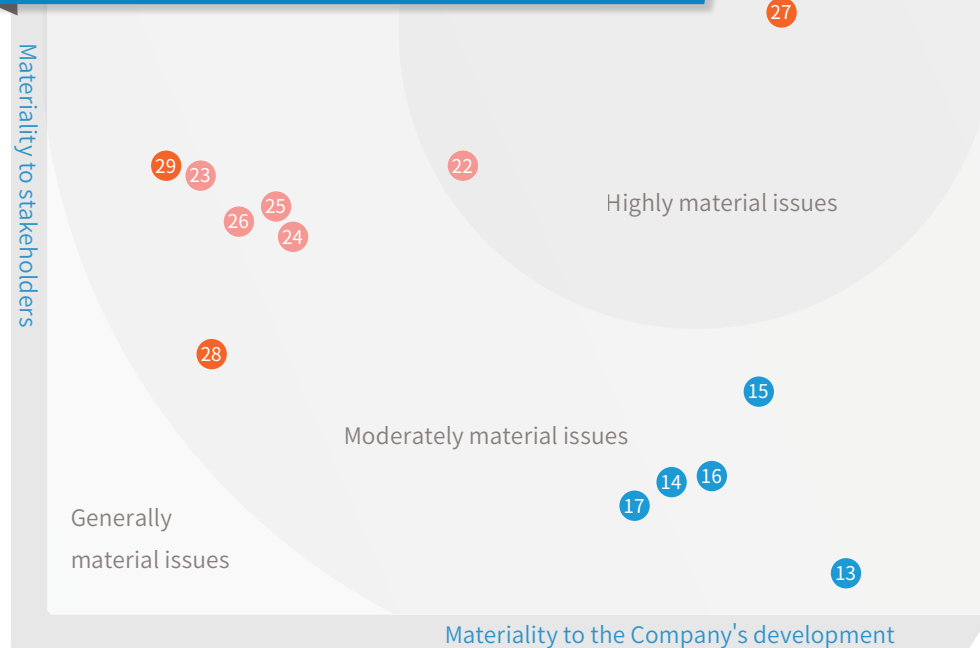
Perform Harmonious Symphony for the New Era



- 70 Employee Development with Incentives
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### Major substantive issues addressed in this chapter:



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| 14 Development and training of employees                                    | 23 Supply chain responsibility management                              |
| 15 Occupational health of employees   | 24 Facilitation of fair competition                                    |
| 16 Rights and interests of employees  | 25 Strategic cooperation and resources sharing                         |
| 17 Care for employees   | 26 Communications with industry players to foster industry development |
| 27 Production safety  |  |
| 28 Community charity, volunteering activities and emergency relief          |  |
| 29 Investment in and drive for employment, assistance to rural vitalization |  |

### HKEX ESG Indicators in This Chapter:

B1/B1.1/B1.2/B2/B2.3/B3/B3.2/B4/B4.1/B5/B5.2/B5.3/B5.4/B8/B8.1/B8.2

### CASS-CSR4.0 Indicators in This Chapter:

M3.1/M3.2/M3.3/M3.4/M3.6/M3.7/M3.8/M3.10/M3.11/M3.14/M3.15/S2.1/S2.2/S2.3/S2.4/S2.5/S2.6/S2.7/S2.8/S2.9/S2.10/S2.11/S2.12/S2.13/S2.14/S2.15/S2.16/S2.17/S2.18/S2.20/S3.1/S3.2/S3.3/S3.4/S3.5/S3.6/S3.7/S4.1/S4.4/S4.5/S4.6/S4.7/S4.8/S4.9/S4.10/G6.3

### GRI Standards Indicators in This Chapter:

102-12/102-13/102-16/103-2/203-1/203-2/204-1/206-1/308-1/308-2/  
401-1/401-2/401-3/403-1/403-2/403-3/403-4/404-1/404-2/404-3/  
405-1/406-1/408-1/413-1/413-2/414-1/414-2

### National "Fourteenth Five-Year" Plan:

We will firmly promote common prosperity, continuously enhance people's sense of gain, happiness, and security, and promote comprehensive development of people and comprehensive progress of society. We will improve the volunteer service system and extensively launch volunteer service and caring actions, adhere to the principle of joint discussion, mutual contribution and shared benefits, and uphold the ideals of green, openness and integrity, deepen pragmatic cooperation, strengthen security guarantees, and promote joint development.

### CR Cement's Actions:

Our original aspiration drives us deeply passionate. With high-quality development, CR Cement adheres to the awareness of safeguarding the red line and builds a line of defense for ensuring production safety. We always show concern and care for employees, and create a healthy and happy workplace. We sincerely launch multiparty cooperation and lead the industry forwards. We devote ourselves to charity and public welfare enthusiastically, insist on benefiting the people, and strive hard to build an enterprise that "makes employees happy, lets partners develop, and gives society warmth", demonstrating the responsibility of a central state-owned enterprise.

### CR Cement and SDGs





## Story on Responsibility

# Heart-warming Project = Unite the Forces of Patriotism and Love for Hong Kong

"I sincerely wish Hong Kong well and our Hong Kong compatriots well. Hong Kong's prosperity and stability is the wish of Hong Kong compatriots and the expectation of our motherland." President Xi Jinping's sincere words represent the deep concern and sincere expectations of people and the government to Hong Kong compatriots. In order to fulfill CR Cement's social responsibilities in Hong Kong, the Company organized employees to launch the "Heart Warming Project" in Hong Kong and interacted with grassroots of Hong Kong society to warm people's hearts with love.

## Green and Gratitude Bring Joy to Elders

Youth fades and time flies but each phase of our lives has its own wonder. With a positive attitude towards aging, our life will continue to shine on the stage. The Friendship Association of CR Cement organized Hong Kong employees to hold the "Green and Gratitude Workshop" volunteer activity at the Kwun Tong Family Service Center, bringing a variety of cultural and recreational activities to the elderly. Volunteers patiently instructed the elders to arrange flowers while having cordial conversations with them. The event also aimed to encourage the elderly to exercise more and get vaccinated against COVID-19 virus. The elderly who participated in the event were delighted when they saw the scattered flowers in their hands had been made into pots of dazzling floral displays.



"Green and Gratitude Workshop" activity

## Food Wise for the Poor Brings Aid to the Impoverished



"Food Wise Experience Day" activity

"Food Angel" is a food recycling and assistance program launched by the non-profit organization "Bo Charity Foundation". It aims to provide the poor people and low-income families in Hong Kong warm meals with the aim of spreading the "Food Wise" culture and care for the vulnerable groups. On winter solstice, the Friendship Association of CR Cement organized Hong Kong employees to participate in the "Food Wise Experience Day" volunteer activity held by "Food Angel". In the central kitchen of "Food Angel" in Sham Shui Po, everyone worked together to process ingredients to prepare love meal boxes. The volunteers had made 400 nutritionally balanced meals, all of which were distributed to those in need of food assistance in the society, adding some warmth to the harsh winter.

## Clean the Beach to Make the Sea More Blue

Beaches are precious resources shared by Hong Kong citizens. Apart from having the right to enjoy them, we also have the responsibility to protect them. The Friendship Association of CR Cement organized Hong Kong employees to launch beach cleaning activities at Lido Beach of Sham Tseng under the theme of "Cleaning Hong Kong Needs You, Rise Together to Clean the Beach". With gloves, garbage tongs and garbage bags, the volunteers cleaned up wrapping paper, straws, cigarette butts, plastic bottles and fruit peels on the beach, in order to bring the society's attention to Hong Kong's marine environment and call for more people to protect this beautiful city.



"Cleaning Hong Kong Needs You, Rise Together to Clean the Beach" campaign

## A Loving Atmosphere Eases the Heart

CR Cement attaches great importance to the construction of corporate culture for employees. We organized visits to themed exhibitions and movie watching to understand China's national situation and history to enhance employees' feelings for the country.

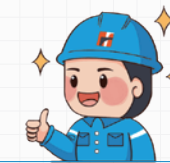
At the same time, in order to create a friendly working atmosphere and enhance the sense of belonging, identity and happiness of employees in Hong Kong, the Company organized the Mid-Autumn Festival lantern making contest, Disneyland leisure day activities, "Hand in Hand to Protect the Marine Environment, Heart to Heart to Inherit Cement Culture" team building activities and vaccination incentive activities to let employees in Hong Kong learn more about traditional Chinese culture and corporate culture concepts through colorful activities and stimulate the enthusiasm of employees in Hong Kong to love the country, Hong Kong, and the enterprise.



Disneyland leisure day activities



Action learning activities in Hong Kong Region



## Concept behind the story

President Xi Jinping pointed out in his important speech on 1 July, the 100th anniversary of the founding of the Communist Party, peace, concord, and harmony are ideas the Chinese nation has pursued and carried forward for more than 5,000 years. On the journey ahead, all the sons and daughters of the Chinese nation must come together and move forward in unison and work together to create a bright future for national rejuvenation. CR Cement adheres this into the corporate DNA and is determined to create a better life for the people. CR Cement will actively maintain the prosperity and stability of the Hong Kong Special Administrative Region and promote the "Heart-warming Project" to gather the strength of the Hong Kong youth for promoting the integration between China and Hong Kong. Through actions, CR Cement aims to deepen the idea behind patriotic stories and love for the Hong Kong spirit to build a more harmonious and beautiful society.



# Employee Development with Incentives

Achievements are made by talents and businesses are expanded by talents. CR Cement has always adhered to the talent concept of "respecting people's value, developing people's potential, and sublimating people's minds", and strictly abides by the Labour Law and other relevant laws and regulations to protect the employees' legitimate rights and interests, as well as their occupational health. We smoothen the development channel of employees, and help employees achieve their own development through a diversified and systematic training system. We care for employees and organize a variety of cultural and sports activities and make every effort to create a happy workplace.

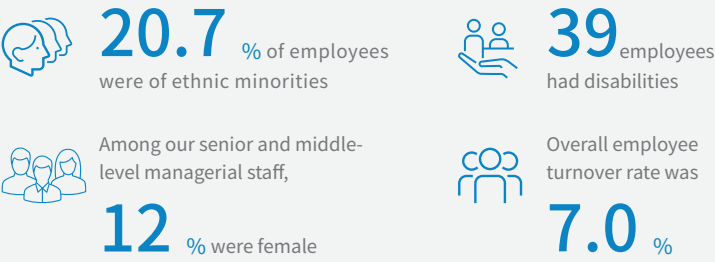
## Protection on Legal Rights and Interests

### Protecting Human Rights

CR Cement respects and cherishes the value of every employee and is in strict compliance with 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 and the Provisions on Prohibition of Using Child Labour. By adhering to the principle of equal employment, we prohibit all discrimination due to differences in gender, age, territory, education, religious belief, nationality, race, sexual orientation and disability. We pay attention to the protection of employees' privacy. Personnel involved in employee

data and information need to sign a confidentiality agreement, and set up corresponding nodes and authority controls in the process management of the human resources system to prevent information leakage. We established a fair, impartial and open system for personnel selection and appointment. Employment of child, forced labour, overtime work, harassment and abuse situations have not occurred. We comprehensively protect the legal rights and interests of employees in terms of diversity and equal opportunities.

#### Statistics for Cement in 2021



Ten years of youth, remember our original aspirations, grateful to have you, concrete to create our future - Zhuhai Concrete's 10th anniversary celebration

#### Further reading:



CR Cement Post-doctorate Innovation Implementation Plant is recruiting in 2022. Come and join us!

### Employees by Geographical Region

Statistical Indicator	Unit	2019	2020	2021
Chinese Mainland	-	19,665	19,324	19,337
Hong Kong	-	151	143	154
Total	-	19,816	19,467	19,491

### Employees by Function

Statistical Indicator	Unit	2019	2020	2021
Management	-	402	391	410
Finance, administration and others	-	2,485	2,498	2,813
Production staff	-	11,627	11,198	11,048
Technical staff	-	4,420	4,517	4,318
Sales and marketing staff	-	882	863	902

### Employees by Gender

Statistical Indicator	Unit	2019	2020	2021
Number of male employees	-	16,474	16,187	16,153
Number of female employees	-	3,342	3,280	3,338
Proportion of male employees	%	83	83	83
Proportion of female employees	%	17	17	17

### Employees by Age

Statistical Indicator	Unit	2019	2020	2021
29 and below	-	3,023	2,439	2,041
30 to 39	-	8,450	8,395	8,226
40 to 49	-	6,697	6,731	6,841
50 and above	-	1,646	1,902	2,383

## Remuneration and Benefits

CR Cement adheres to the principle of simultaneous growth of corporate benefits and employee income and simultaneous improvement of labour productivity and labour remuneration. We gradually built a remuneration allocation mechanism based on values of the roles and in combination with the contributions to results, personal capabilities and personal development. In accordance with laws and regulations including the Social Insurance Law of the People's Republic of China and the Regulations on Paid Annual Leave of the Employees, we integrate the needs of employees to continuously refine and enrich the employee benefits system and ensure employees' fair treatment in terms of remuneration, benefits, compensations and leaves.

Timely and full contributions to the "Five Social Insurances and Two Funds" and the Mandatory Provident Fund are made for Mainland employees and Hong Kong employees respectively.

The Company provides insurances for employees and their two immediate family members and improve the list of annual health check items for employees.



Additional company annual leave and leave for examination companionship are provided.

The Company protects employees' physical health through measures such as "flexitime" and "mobile clock-in" during the COVID-19 epidemic.



Fangchenggang Cement held the 2021 Long-term Service Award Presentation Conference

## Democratic Management

CR Cement respects employees' freedom of speech and actively listens to their "voices". CR Cement continuously improves mechanism and channel for negotiations and communications, and effectively protects employees' rights to know, participate, express and supervise. We fully leverage the bridging role of various channels such as employees' congress, whistle-blowing hotlines, whistle-blowing emails and OA forum to collect reasonable suggestions

and communicate and solve trending and difficult issues that concern employees in a timely manner. We established a feedback collection mechanism for entry-level employees by taking use of the basic contact point work system, conducting foundational research, thoroughly communicating with front-line employees and collecting entry level employee's feedbacks.



Luchuan Cement held a "Listen to Your Voice" event for management communication

### Further reading:



Sound from Youths in CR Cement on May 4<sup>th</sup>

## Occupational Health

CR Cement attaches great importance to the employee's occupational health. CR Cement formulated the "CR Cement Employees' Health Manual" and the "Rules of Occupational Health Management" and continuously improved the regular body checks of employees and the special body checks system for special types of work and hazardous types of work. We continued to promote the technical transformation of dust removal in automated packaging and loading systems to improve the working environment of employees and launched various health promotion and education activities to improve employees' health awareness. In 2021, a total of 41 employees of the Company passed the assessment and obtained the certificates for registered occupational hygienists. By the end of 2021, the coverage rates of the ISO 45001:2018 Occupational Health & Safety Management System and staff body checks are both 100%.



Pingnan Cement launched training and presentation for occupational disease prevention and general health



Fengkai Cement launched body checks for occupational health

### Case Longyan Cement helped employees with healthy living

Longyan Cement and the Second Hospital of Longyan City held a health knowledge lecture on "Caring for Health and Gratitude for Life". The lecture aims at prevention, treatment, precautions and eating habits of diseases and problems that concern employees. The event provided guidance to employees with clinical cases and lifestyle knowledge, which helped employees to develop a healthy lifestyle.



"Caring for Health, Gratitude for Life" health knowledge lecture

### Further reading:



For students who receive this "health index" test questionnaire, please pass it on



## Smooth Career Path

### Development of Employee Capabilities

CR Cement adheres to the principle that talent strengthens the enterprise. In order to strengthen business connection with human resources system, we meticulously designed and provided training for senior management and cultivation projects for elite and young management pursuant to the targets of "three full coverage". We launched various types of professional skills training and co-organized 2021 Future Star boot camp. Over 30 face-to-face professional courses, covering audit, strategy, EHS and finance were newly developed.

Over 100 articles of organizational and personal case studies were newly formulated. Operational guidelines for training project development and project delivery were prepared. Pilot online "Run Class" was launched to build the functions for training score management, which will lay the foundation for achieving digital filing management of all-staff training. In addition, we vigorously encouraged online staff training and advanced the construction of online learning resources database.

#### Statistics for Cement in 2021

##### Offline Training

Cumulative offline training for a total duration of approximately **110,600** hours

Approximately **1,900** participants attended offline training

##### Online Training

Over **300** mini-courses were self-developed internally

Over **50** online courses were newly uploaded

Total duration of online training was approximately **92,000** hours

**4,701** online examinations

Approximately **18,900** employee participants were in attendance of the online training

**51** online professional training sessions were initiated

##### Training Duration

Total duration of training was approximately **202,600** hours

Average training duration per employee was approximately **10.7** hours

#### Further reading:



In 2021, China Resources Group's Future Star new employee orientation at South China Seven Camps was successfully concluded



The first training course for the cultivation projects "Blue Sapphire Scheme" for elite and young management



The fourth training and graduation presentation of the phase 1 training course for the cultivation projects "Blue Sapphire Scheme" for the elite and young management



Mr. Wang Xiangming, Chairman of China Resources Group, spoke at the closing ceremony of the "Future Star" New Employee Orientation Camp (The 7th Camp of South China)



CR Cement 6th EHS Knowledge Competition



Group photograph of the participants of the 7th Camp of South China at the 2021 China Resources Group "Future Star" New Employee Orientation Camp

### Channels for Career Promotion

CR Cement attaches great importance to the growth and development of employees. We established three types of M/P/S (short for management sequence, professional sequence, and skill sequence) development channels for employees, and matched them with corresponding evaluation and assessment mechanisms to provide talent guarantee for promoting the Company's high-quality development under the premise of ensuring fair promotion opportunities.

- We optimized the hierarchy structure for managers and compressed management levels. In June 2021, 80 senior managers were reorganized to further optimize the path for cadres to become talents and promote the accelerated growth of outstanding young talents.
- We organized cross-unit, cross-business and inter-regional exchanges for excellent managerial staff to broaden professional horizon, sharpen business acumen and polish managerial skills.
- We paid keen attention to select and cultivate young managerial staff, formed a talent pool of young managerial staff, and accelerated the growth of managerial staff and promoted the construction of talent ladders through the cultivation projects "Blue Sapphire Scheme" for elite and young management.
- We modified the appointment standard system for professional technical talents to develop the standards for appointment of technical talents and conducted job appraisal on a regular basis.



#### Listen to "New Voices"

Walk well with every step of the way, work well in every task, and believe that everything is for the best arrangements!

Wei Xuan, Structural Building Materials Division

Embrace challenges proactively, take one step at a time, never forget our aspirations and move forward bravely!

Wu Yuwen, Changjiang Cement of South China Region

Scan the QR code to learn more about "New Voices"





## Create a Happy Workplace

### Work-Life Balance

CR Cement adheres to the people-oriented concept and humanized management. By organizing birthday parties, sports competitions, painting and calligraphy competitions, festival celebrations and other cultural and sports activities which are beneficial to the physical and mental health of employees, CR Cement aims to enrich the lives of employees and enhance the vitality of the organization.

Further reading:



Cooking showdown of the people of CR Cement, come and watch!



Shenzhen "Runpin Cup" Badminton Tournament



Shenzhen "Runpin Cup" Badminton Tournament



Shenzhen headquarters organized a birthday party with the theme of "National Fitness – Together You and Me"



Shenzhen headquarters organized a birthday party with the theme of "National Fitness – Together You and Me"



Guangdong Region departments and Dongguan Cement held the Women's Day Flower Art Salon



Fuchuan Cement launched outdoor team building activities

## Care and Mutual Assistance for Employees

CR Cement has been steadily launching care work for employees continuously. We organized various expert lectures and cultural and recreational activities to care for the physical and mental health of female employees and enhance their sense of happiness and gain. We established a standardized employee assistance mechanism and regularly visited employees in need and their families with solicitude to understand their actual difficulties and needs, care for and follow up on the improvement of their living conditions. In 2021, the Group and its employees donated a total amount of approximately RMB1,400,000 to the "China Resources Cement Gratitude Fund", which aims at caring for and helping the employees in need and illness. 50 employees in need were subsidized. Subsidies in the amount of approximately RMB2,600,000 were distributed.

Further reading:



Come and see who the cement workers selected as "2021 Outstanding Employee of China Resources Group" are!



Hongshuihe Cement Women's Day activities



Guigang Cement cooperated with the Tantang Public Security Bureau to launch the Women's Day joint friendship building activity



Guigang Cement held the unveiling ceremony of the staff room and women's room



Tianyang Cement "Gratitude Fund" fundraising activities

In 2021, the "China Resources Cement Gratitude Fund" has raised a total of approximately RMB

**1.4** million in donations

**50** employees in need were subsidized

Subsidies in the amount of approximately RMB

**2.6** million were distributed



## Promote Cooperation Through Joint Efforts

What is difficult for one person is made easy with the help of many. CR Cement adheres to the concept of fairness and justice, win-win cooperation and common development. We strengthened strategic synergy, and actively launched strategic cooperation with outstanding enterprises, local governments and universities. We adhered to Sunshine Procurement, established and improved the supply chain management system and extensively participated in industry exchanges for the green, healthy and sustainable development of the cement industry.

### Deepen Strategic Cooperation

#### Enterprise-Enterprise Cooperation

CR Cement attaches great importance to establishing strategic partnership with outstanding enterprises and achieves win-win growth through cooperation. In 2021, the Company entered into strategic cooperation agreements with China Railway Group, Baowu Group, China Power Construction,

China Telecom and other leading enterprises in the industry to conduct in-depth exchanges on concrete, new materials, comprehensive utilization of solid waste resources and intelligent development so as to optimize resource allocation and jointly achieve high-quality development.



Runfeng New Materials and Hainan Haikong International Trade Co., Ltd. signed a strategic cooperation agreement



China Resources Cement and Deqing Yingqi Building Materials Co., Ltd. in Guangdong signed a capital increase agreement

#### Case CR Cement and Baowu Group Environmental Resources Technology Co., Ltd. comprehensively deepened cooperation

In July 2021, CR Cement and Baowu Group Environmental Resources Technology Co., Ltd. entered into a strategic cooperation framework agreement in Shanghai. Both parties will fully leverage on their respective advantages in terms of resources, technology, logistics and market along the upstream and downstream of the industrial chain and promote in-depth integration and cooperation around businesses such as mineral powder, steel slag, desulfurization slag and solid hazardous waste treatment.



CR Cement and Baowu Group Environmental Resources Technology Co., Ltd. entered into a strategic cooperation framework agreement

#### Case Explore China's 5G Industrial Internet Hand in Hand with China Telecom

In October 2021, CR Cement and China Telecom Co., Ltd. entered into a cooperation framework agreement in Beijing. Both parties will jointly leverage on their respective advantages, with the goal of leading the high-quality development of China's 5G+ industrial Internet industry and assisting the intelligent transformation and upgrade of manufacturing enterprises, and jointly explore digital solutions for the manufacturing industry.



CR Cement and China Telecom entered into a cooperation framework agreement

“

CR Cement, as a major user and a trustworthy user of Datong Coal Mining Group, has a solid foundation for cooperation with Datong Coal Mining Group, and both parties have established profound mutual trust and friendship.

Wang Cunquan, General Manager of Datong Coal Mining Group

”



## Government-Enterprise Cooperation

CR Cement fully leveraged our corporate brand and industrial advantages, explored new modes of government-enterprise cooperation and integrated local resources to boost high-quality development of the local economy through "Government-Enterprise Pairing" and the construction of local industrial zones.



CR Cement and People's Government of Baise Municipality entered into a cooperation framework agreement for an industrial zone project on new building materials

### Case CR Cement entered the Shaanxi market

In November 2021, CR Cement, China Resources Asset Management Co., Ltd., Tongchuan Municipal People's Government of Shaanxi Province, and Tongchuan Huinengxin Energy Co., Ltd. entered into an investment framework agreement in Shenzhen. CR Cement jointly formed Tongchuan Runxin New Materials Co., Ltd., with Tongchuan Huinengxin Energy Co., Ltd. and increased our shareholding to 99% in December 2021. The company owned the mining rights of a limestone quarry for construction stones in Shang-dian, Yintai District, Tongchuan City, Shaanxi, with resource reserve of approximately 147.0 million tons and planned annual production capacity of approximately 5.0 million tons. This project is CR Cement's first project upon entering the Shaanxi market. It is of milestone significance and value for the Company to implement the "Fourteenth Five-Year Plan" development strategy and improve and expand our strategic layout in Shaanxi.



“

The location of Nanning has significant geographical advantages and broad prospects for development. CR Cement is welcomed to further increase its investment in Nanning, participate in the construction of Nanning from a high starting point and help Nanning achieve functional improvement.

Liao Liyong, the then acting mayor of Nanning said in a meeting

China Resources Group has many good projects in Guangxi, which have made great contributions to the economic development of Guangxi. The China Resources Wuxuan New Building Materials Industrial Zone has an advantageous geographical location and is a very good project. The transportation advantage of the "Golden Waterway" of the Qianjiang River is integrated into the development strategy of the Greater Bay Area and promotes local economic and social development.

Qin Rupei, the then executive vice chairman of Guangxi Zhuang Autonomous Region said during a survey of Wuxuan Cement

”

## Academia-Enterprise Cooperation

CR Cement actively leveraged on our role as an enterprise to issue questions, complemented the advantages and collaboratively developed with universities to conduct in-depth cooperation in scientific and technological innovation, achievement transformation, exchange and mutual recruitment of high-level talents, and technical training for high-level talents to promote the efficient linkage of production, education and research, and served national economic and social development.

### Case CR Cement and Shandong University Entered into a Strategic Cooperation Agreement

In September 2021, CR Cement entered into a strategic cooperation agreement with Shandong University to jointly explore and solve the problem of water hazard control in mines with her geotechnical engineering team.

#### Further reading:



Academia-enterprise cooperation jointly builds the future! This is probably the most ideal employment status for graduates~



Guangdong Region and Shaoguan University established an academia-enterprise partnership



CR Cement entered into a strategic cooperation framework agreement with Lanling Yixin Mining Technology Co., Ltd and Jinan University



Guigang Cement New Apprenticeship Training Course



The apprenticeship ceremony of "academia-enterprise mentorship, forging skilled craftsmen" in Fujian Region



Promoting Sunshine Procurement

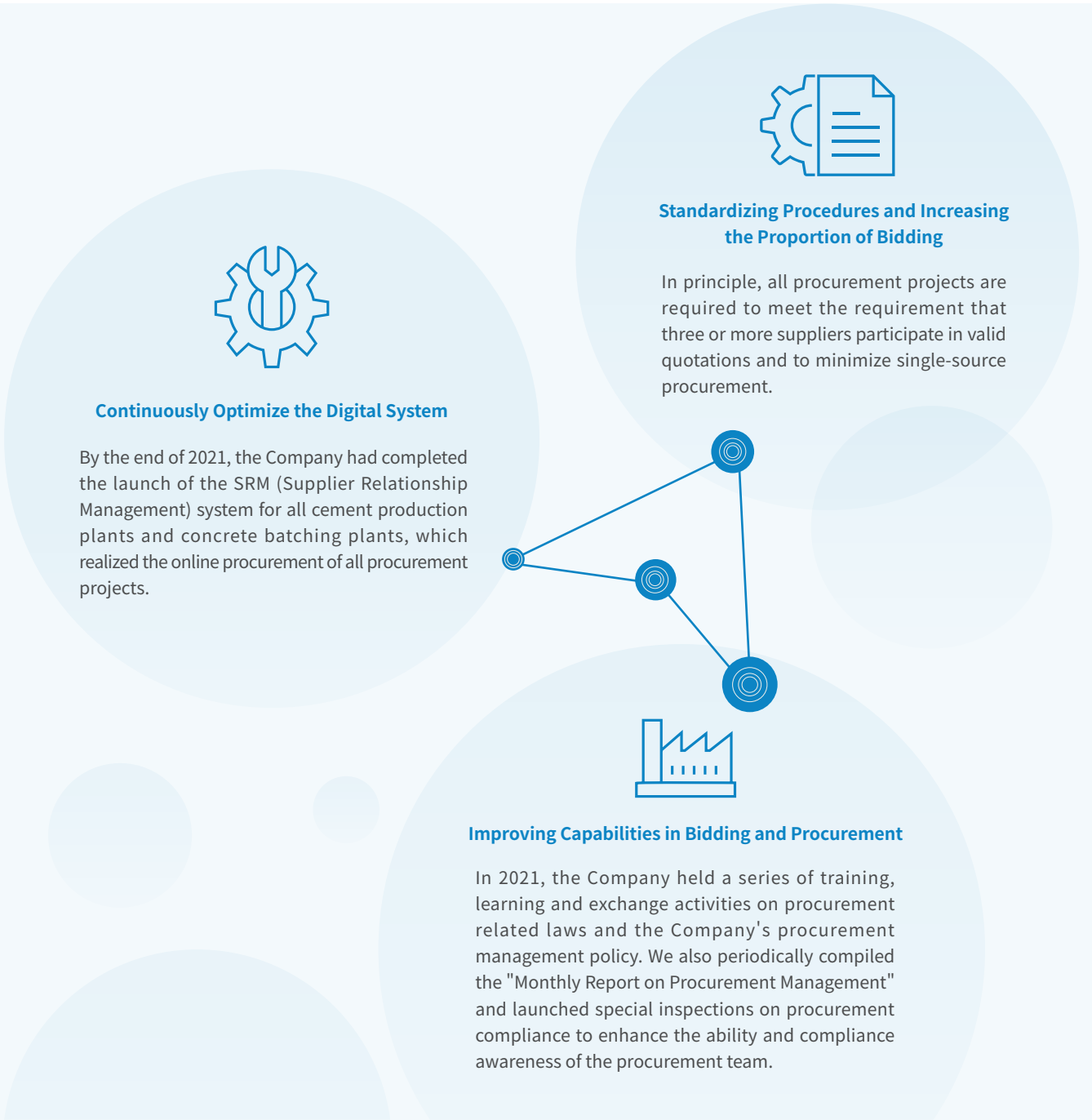
Supplier Management

The Company strictly implements the principles of supplier development and management. Tender procurement process had been standardized through formation and implementation of the "Policy on Procurement Management", the "Measures on Supplier Management" of the Company. The proportion of public tender increased. Sustainable index system for admission and evaluation of suppliers was established to regulate the whole process of development, selection, cooperation and evaluation of suppliers. Suppliers which have operations in the factories of the Group's plants were further required to strictly complete the "Safety Pre-Assessment on Counterparties" to ensure the safety of the employees of both parties.



Guarantee Fair Competition

In order to create an open and transparent business environment and achieve fair competition among suppliers, CR Cement continued to optimize the digital procurement system, continuously increased the proportion of bidding and procurement and enhanced the working ability of the procurement team to ensure the compliance and fairness of the all processes, all elements and all directions of project procurement.



## Advocate Operational Integrity

CR Cement attaches great importance to honest cooperation with suppliers. We required all suppliers to sign the "Sunshine Declaration" as an annex to the procurement contract. We strengthened the supervision of key links in key areas, actively launched integrity alert education for our partners, and built a strong system of defense to fight against corruption and forestall moral degeneration. In 2021, a total of 1,294 people from suppliers, distributors, joint ventures and other partners participated in 4 instances of integrity alert education. We publicized and implemented the Sunshine Declaration, the Ten Tenets of China Resources, and the Code of Business Conduct of China Resources Group, so as to effectively establish the anti-corruption supervision and linkage mechanism with partners. CR Cement continue to purify the political ecology in supply chains to build a clean and honest development atmosphere.



Employees of Runfeng Trade Development Co., Ltd. signed the "Sunshine Declaration"



The Southwest China Region held a conference on integrity alert education for sales staff in the marketing department and distributors

## Local Procurement

CR Cement adheres to the principle of sustainable development and shoulders social responsibilities. Under the same conditions, we prioritize localized procurement, promote the use of local raw materials, and encourage nearby procurement. While decreasing procurement costs and reducing industrial pollution, we also drive the employment of residents in the vicinity in order to continuously create economic benefits for the local area.

### Case The Yunnan Region insisted on local procurement of coal and supported the development of local industries

In 2021, the Yunnan Region purchased a total of 580,000 tons of local coal and 6 out of the 7 coal suppliers were local enterprises in Yunnan.

## Growth of Suppliers

CR Cement is committed to building a transparent, dynamic and traceable supply chain system. We require suppliers to sign and strictly implement the "Safety and Environmental Protection Agreement". Through methods such as qualification review, management evaluation, special training and alert education of suppliers, we directly or indirectly enhance the social responsibility awareness of suppliers and continue to drive for the growth of suppliers.

### Case Changjiang Cement of Hainan organized safety training for suppliers

Changjiang Cement regularly organizes safety management training for suppliers twice a year, and conducts safety training and driving test for bulk raw material suppliers and transport drivers. Drivers who pass the test were issued a factory driving permit and are required to sign a safety agreement with suppliers. In 2021, there were no safety liability accidents related to suppliers in Hainan region.

## Lead Industry Development

### Promoting Exchange within the Industry

CR Cement actively participates in major industry events, builds and expands communication platforms by fully leveraging our influence and appeal in the value chain and industry, promotes the formulation and implementation of industry policies, innovates and promotes industry technologies, and leads the healthy and sustainable development of the industry.

### Case CR Cement was elected as Honorary Secretary of the Hong Kong Construction Materials Association

In November 2021, CR Cement was elected as the Honorary Secretary of the Hong Kong Construction Materials Association. In the future, we will strengthen exchanges and learning between peer companies in China and Hong Kong, enhance mutual understanding and mutual trust and industry consensus, and help with the high-quality development of the cement industry in both areas.



Member of the Board of Directors of the Hong Kong Construction Materials Association

### Further reading:



Ji Youhong, CEO of China Resources Cement, participated in the C12+3 Summit: Practicing green and low-carbon development, demonstrating the responsibility of central state-owned enterprises



## Protect Livelihoods with Sincere Hearts

We must be self-reliant and benefit the world. CR Cement aims to continuously enhance people's sense of gain, happiness and security, integrates social responsibility work into all aspects of production and operation, strictly implements production safety, and effectively protects people's health and safety. We thoroughly participate in social welfare and charity to improve people's livelihood and well-being and actively promote the comprehensive development of community construction to write a new chapter of common prosperity.

### Strictly Control Production Safety

#### Production Safety Management

CR Cement adheres to the principle "no production when unsafe", and strictly abides by the "Production Safety Law of the People's Republic of China", and implements the requirements of the "EHS Management Series" of the "Management Manual" of the Company through construction of a strict EHS organization system with "Three-tiered Management and Control" to consolidate the foundation of safety management. In 2021, the Company issued and implemented a total of 14 EHS policies and regulations, which clarified that the main person in charge of each unit is the first responsible person for EHS, and all employees signed the "Letter of EHS Undertaking". We issued the "Detailed Policies for the Annual EHS Assessment of Production Plants" and implemented EHS coefficient assessment and annual EHS special award selection. We continued to promote the construction of the EHS element-based management system, organize professionals to inspect and assess the implementation of these elements, and integrate the EHS management elements into the evaluation of excellent operation management. By the end of 2021, CR Cement had 198 occupational safety personnel in total (including 78 registered safety engineers). In 2021, RMB210 million was invested in production safety, which mainly involved in 8 aspects, including the transformation and maintenance of protection safety equipment and facilities, occupational hazard prevention and control, occupational hazard factor detection and monitoring, occupational health examination and other items or activities directly related to production safety.

EHS organizational institutions at each business unit of CR Cement set up the EHS Committee, the EHS Supervision and Management Department and the EHS Supporting Department, which are under the direct management of persons in charge of the corresponding business units, undertake EHS management requirements from the headquarters and organize the launch of various EHS work. Through formulating and improving EHS management policies and standards, the EHS Department at headquarters supervises and evaluates the progress and effectiveness of EHS work of all levels of units, provides professional support and technical services of EHS to relevant units, and continuously innovates on EHS measures to prevent EHS risks.

CR Cement is not only strictly self-disciplined, but also has strict requirements on counterparties for production safety management. Counterparties' responsibilities for safety management had been specified through the formulation of the "Contractor Safety Management Policy (2021 Edition)" of the Company. As of the end of 2021, contractors of construction projects, service providers for maintenance and repairs of equipment, transportation providers, headhunters, suppliers, waste handlers, tenants and technical service providers were all included in the scope of counterparties.

## Innovative Safety Technology

While continuously improving the safety management system, CR Cement strengthens the supporting role of science and technology in production safety, continuously overcomes major technical problems in production safety, deeply integrates technologies such as the Internet and intelligentization with production safety, and promotes the improvement of production safety work with the help of technological progress to increase the construction level of a safety-oriented enterprise.

### Full Lockout Tagout Coverage

All cement production plants have installed and commenced operation of the VCS visual isolation switch box. Through the implementation of lock-out and tag-out projects in each cement production plant, the effective isolation of hazardous energy has been ensured. Among which, the lock-out and tag-out energy isolation construction project of Huizhou Cement won the China Resources Group's Outstanding EHS Project Achievement Award.

### Safety and Risk Control System for Mixer Truck Driver's Compartment

The intelligent traffic safety risk control pilot project for mixer truck driver's compartment at Jiangmen Concrete operated well and had greatly reduced the illegal behavior of drivers and improved the fleet management efficiency. It was listed as a project of "China Resources Smart 2028" Industry + Smart Innovation Acceleration Camp (referred to as "Run Acceleration").

### Promote the Use of Preheater Anti-fall Devices

In February 2021, the EHS Department of the headquarters issued the "Notice on Promoting the Use of the Preheater Inner Cylinder Object Anti-Fall Device", which required the full promotion of the preheater inner tube object drop prevention device. By the end of 2021, all cement production plants had used the preheater inner cylinder object anti-fall device, which effectively prevented objects from falling into the preheater and avoided production safety accidents.

### Construction of Health and Safety Experience Hall

The health and safety experience halls at Tianyang Cement, Guigang Cement, Caoxi Cement, and Fengkai Cement have been completed and commenced operation. Among them, safety training experience hall at Fengkai Cement officially commenced operation in November 2021, covering an area of approximately 390 m<sup>2</sup>. There are 19 groups of experience areas including the VR safety experience area, experiences of limited space and height falling, first aid safety and virtual experience of fire extinguishing and body checks.



Health and safety experience hall at Fengkai Cement



## Emergency Safety Management

CR Cement attaches great importance to emergency management work, continuously strengthens the emergency response capacity building of key personnel in all aspects of production and operation, and pays attention to the promotion of on-site emergency response plan drills for personnel at production sites and comprehensively promotes the modernization of emergency management systems and capabilities. In 2021, our operating regions and production plants conducted 1,333 emergency drills, with a total of 19,455 participants.



Emergency drill activities at Fengkai Cement



Jiangmen Concrete conducted a simulation exercise for accident planning for road vehicle traffic safety



Emergency drills for slope failure incidents at Guigang Cement

### Further reading:



Annual fire safety exam!  
Come quick and answer  
the question!

## Production Safety Supervision

CR Cement adheres to bottom-line thinking and red-line awareness of safety. We implemented the three-year special rectification action for production safety, established and improved the hierarchical management and control of safety risks. We also implemented latent hazard investigation, governance system and continued to promote the inspection, supervision and management of safety hazards at the headquarters, operating regions and production plants at multiple levels. At the same time, based on our "Three-year Action Plan for Special Rectification of Production Safety", we dynamically updated the "two lists" for latent hazard rectification tracking and system improvement and increased our special rectification efforts. In 2021, a total of approximately over 700 sessions of epidemic prevention and control were executed. EHS comprehensive inspections and EHS special inspections were conducted in various operating regions and production plants and the rectification rate of latent hazards was 100%. We organized 15 special safety supervision and inspection, assistance and guidance, conducted 31 inspection on production plants and launched excellent operational management evaluation for 37 cement (grinding stations) production plants and 55 concrete batching plants.

## Production Safety Training

The aggregate duration of safety training amounted to approximately

**460,400** hours

coverage rate

**100** %

CR Cement actively cultivated a culture of production safety and added various safety training courses into online learning platform, the Learning and Innovation Center to encourage employees to learn independently. Meanwhile, we continued to launch offline safety training, and effectively created a safety learning atmosphere to integrate the concept of production safety to each employee. In 2021, the aggregate duration of safety training for the Group's staff and counterparties amounted to approximately 460,400 hours, achieving full coverage of 100%.



Tianyang Cement safety training

### Case CR Cement launched training course on health and safety management

In October and November 2021, CR Cement held the 2021 training courses on health and safety management of cement production plants, concrete batching plants and new business plants at the Learning and Development Center (Guangzhou). A total of 98 employees from various business units including full-time and part-time safety managers, department managers and production line managers participated in the training. Through systematic training and learning, exchange of discussions and professional answers, the trainees have enriched their professional knowledge and improved their safety management skills.



### Further reading:



Open days, symposiums,  
"tourney" competitions...  
What are the people of  
CR Cement doing in prod-  
uction safety month?



Practice Community Charity

Total amount of donations was approximately HK\$  
**6,416,000**

CR Cement continued to adhere to community charity, actively built brand community charity projects, established the "Gratitude Fund" of the Company and formulated the "Gratitude Fund Charter of China Resources Cement Holdings Limited" to help employees and immediate family members who suffered from major diseases and major accidents. At the same time, we formulated the "Detailed Policies for the Implementation of Community Charity Activities of China Resources Cement Holdings Limited" to vigorously promote the volunteer spirit of mutual assistance and friendship, and earnestly implement various charitable activities with the purpose to "help the elderly, assist the disabled, aid in disaster relief, relieve the poor, and facilitate the people" and strive to build a caring enterprise with responsibility, feelings and warmth. In 2021, CR Cement made donations in cash and in various forms in the total amount of approximately HK\$6,416,000.

Case CR Cement assisted Yangbi of Yunnan in post-disaster reconstruction

In May 2021, an earthquake occurred in Yangbi County, Dali Prefecture, Yunnan Province. An earthquake-resistant emergency organization was established in Yunnan as soon as possible, and emergency supplies such as flashlights, emergency lights, tents, coats, quilts and folding beds were promptly purchased and delivered to the disaster area to guarantee the safety of people's lives and property. We also fully leveraged our own advantages and used the Yangbi Direct Sales Center as a support point to fully deploy existing resources and fulfill the original aspiration to continue to help people in disaster areas rebuild their homes.

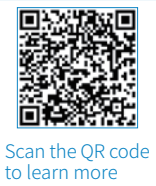


Scan the QR code to learn more



Case CR Cement's "Children's Walk with Resources Heart, Competitive Blooming" Charitable Cloud Run event

In July 2021, CR Cement's second "Children's Walk with Resources Heart, Competitive Blooming" Charitable Cloud Run event was successfully held. During the event, more than 2,900 employees participated in the "cloud run" and "step donation". The Company used RMB100,000 of charitable funds to purchase smart blackboards and school uniforms for poor primary schools by the method of "step donation". We advocated the concept of healthy life to employees while actively fulfilling social responsibility.



Scan the QR code to learn more



"New Era, Benefit Together" community charity activity of the Southeast China Region to assist the disabled



Fangchenggang Cement launched voluntary blood donation activities



Guigang Cement Women's Federation organized female workers to knit sweaters, hats, scarves and other clothes to send love to poor children



Guo Rihui from Manufacturing Department of Zhangping Cement participated in emergency rescue in Weihui City, Henan Province with the volunteers of Zhangping City Dawning Rescue Association



Volunteer fire brigade of Fuchuan Cement participated in mountain fire rescue



# Enthusiastic Community Building with the Society

## Support Rural Vitalization

CR Cement keeps its own mission and responsibilities in mind and actively responds to the national rural vitalization strategy. CR Cement continues to improve rural infrastructure construction, and thoroughly explores new models of rural vitalization. We actively implemented the talent assistance project of the "China Resources Group's Five-Year Plan for the Development of Haiyuan County on Targeted Assistance". In 2021, we organized the Company's middle and senior management personnel to provide "one-to-one" assistance for 35 underprivileged college students in Haiyuan County and subsidized assistance funds of RMB35,000 to promote the harmonious development of the areas needing assistance.

Case Fuchuan Cement in Guangxi boosted local industry development

In October 2021, Fuchuan Cement donated 900 tons of construction cornerstones to the Jingshan Village Committee of Baisha Town, Fuchuan County. The Jingshan Village Committee arranged the construction of the Heishan Village Industrial Road, which helped industrial development.



澄迈爱心企业捐赠50吨水泥助力乡村振兴  
2021年11月13日 10:28 来源：中新网海南



帮扶热心企业华润水泥（昌江）有限公司金江粉磨站捐赠50吨水泥助力乡村振兴。张建华供图

中新网海南新闻11月12日电(张建华) 11月12日，华润水泥(昌江)有限公司金江粉磨站向澄迈县中兴镇大云村捐赠50吨水泥，用于村庄建设公共文化活动场地，改善老区村容村貌，助力乡村振兴。

澄迈爱心企业捐赠50吨水泥 用于建设村庄公共文化活动场地  
南海网 2021年11月12日18:57 海南南海网传媒股份有限公司 关注

新海南客户端、南海网、南国都市报11月12日消息（记者 王小畅）11月12日，华润水泥（昌江）有限公司金江粉磨站向澄迈县中兴镇大云村捐赠50吨水泥，用于村庄建设公共文化活动场地，改善老区村容村貌，助力乡村振兴。



捐赠现场。

In November 2021, Hainan News App, Nanhai.com, Chinanews.com (Hainan), and Nanguo Metropolis Daily released the news that "Chengmai Caring Enterprise Donated 50 Tons of Cement to Support Rural Vitalization"

Case Yongding Cement in Fujian built rural water conservation facilities

Yuxi Village of Longtan Town, Yongding District, Longyan City, Fujian Province is located deep in the mountains. The local irrigation and water conservancy facilities are interlaced and have been in disrepair for a long time, resulting in a large area of arable land becoming barren.



Yongding Cement helped to repair water conservation facilities in Yuxi Village

Yongding Cement took the initiative to plan with the village committee to harden the cement of 6 old canals with a total length of 1,500 meters, built two 280-meter flood control embankments and a bridge across the river in Yuxi Village, and cleaned the Yuxi river at the same time. After the discharged water filtered through the three-level sedimentation tank at each point, it would go through the third-party inspection and meet discharge standards, before entering the swimming pool of Yuxi Village. By improving a series of water conservancy facilities, the people do not have to worry about the safety risks brought about by flash floods, farming became safe and convenient, and there are now places for villagers and children to play and swim.

## Joint Construction of a Friendly Community

CR Cement is committed to sharing its development achievements with more people, actively participating in community construction, using its own material resources and technological advantages to support community infrastructure construction, helping cultural and educational activities in the community and creating a healthy, stable

and harmonious living environment.

In 2021, Yongding Cement, a subsidiary of the Company, actively participated in government-enterprise co-construction and took the initiative to solve the problems of community residents.

Case Yongding Cement in Fujian assisted in the repair of Hakka tulou

Yuxi Village of Longtan Town, Yongding District, Longyan City, Fujian Province is the birthplace of the local Chen family. It is located deep in the remote mountains of Yongding. There are more than 10 large-scale clustered Tulou buildings with a history of more than 100 years, most of them have been in disrepair for a long time with dirty and messy environments, which affects the lives of villagers and even poses potential safety hazards. After learning about the situation, Yongding Cement took the initiative to communicate with the local government and undertake repair work to protect the world's cultural treasures. The company organized the systematic analysis of the degree of damage for more than 10 Tulou buildings and organized and implemented the step by step repair work of more than 10 Hakka Tulou buildings according to the local history and local culture of Tulous buildings. The urgent production had greatly improved the living environment for local villagers.



Yongding Cement assisted Yuxi Village in the repair of Hakka Tulou buildings



### Case "Hand in hand" passage of the government and enterprises for people's convenience

The China Resources Home (staff dormitory) of Yongding Cement is located at the junction of Longtan Village and Yuxi Village, which is close to the town in a straight line, but this direct access has not been opened. There are also potential safety hazards due to the substantial traffic of heavy trucks on the South Ring Road. In response to this problem, Yongding Cement took the initiative to communicate with the town government and built town-enterprise "hand in hand" passage for people's convenience with a length of 200 meters and a width of 2 meters, connecting China Resources Home and the Yangjiayi Bridge of Longtan Village. This had solved the problem of safe and convenient travel for villagers and employees.



Yongding Cement and the local government jointly built a passage for people's convenience

### Case Create a New Example for Pollution Control

Longtan Town, where Yongding Cement is located, is an important economic town in Yongding District. Regulating sewage discharge and guiding enterprises to control sewage has always been the focus of the town's river protection work. In recent years, in order to better implement the concept of green development, promote the construction of ecological civilization and promote the transformation of the ecological river governance model from "government one-way promotion" to "government + enterprise + social multi-coordinated promotion", Longtan Town took the lead in officially establishing the "Enterprise River Captain System" in the district, which calls on enterprises along the river with high credibility, strong sense of responsibility, and enthusiasm for public welfare activities to take the lead in serving as "Enterprise River Captain".

Yongding Cement is the first enterprise in Longtan Town to formally establish the "Enterprise River Chief Captain". The general manager serves as the chief river captain, and the manager of the administrative and personnel department serves as the river captain. They also specially set up a river captain system office and established a lead working group to formulate the work responsibilities of "enterprise river captain". Yongding Cement established a river patrol and river protection team and a team of river channel supervisors, organized and supervised the inspection and management of responsible river channels (sections). Yongding Cement assisted the town and river captain office by participating in tasks such as water resource protection, river and lake shoreline management and protection, water pollution prevention and control, water environment governance, water ecological restoration and law enforcement supervision. In 2021, Yongding Cement had launched more than 10 fry placements and river cleaning, governance and renovation actions, launched the "Love the River, Protect the River" publicity campaign, and actively collected feedback from all walks of life on water control. In February 2022, Fujian established the country's first Joyful River and Lake Advancement Association to upgrade and build a "New Fujian example" of river and lake management. Yongding Cement became its first member unit.

#### Further reading:



Fujian Joyful River and Lake Advancement Association was established



Yongding Longtan: Town and enterprise jointly promoted construction and water management

## Holding the Line of Defense Against COVID-19 Epidemic

In the new stage of regular epidemic prevention and control, CR Cement has fully implemented the decision-making and deployment of central, provincial and municipal epidemic prevention and control. CR Cement implemented joint prevention and joint control, comprehensively improved the actual combat capabilities such as comprehensive epidemic coordination and emergency joint interaction, and improved timely detection, rapid handling, precise management and control of regular prevention and control mechanism, which has effectively provided a strong security for protecting the people's health.

- We attached great importance to epidemic prevention and control, implemented local epidemic prevention requirements, stocked up epidemic prevention materials, conducted daily temperature checks, distributed epidemic prevention supplies and paid attention to quarantined employees.
- We launched awareness work for regular epidemic prevention and control and guided employees to take the initiative in vaccinating against the novel coronavirus epidemic. By the end of 2021, the vaccination rate reached over 99% and we implemented necessary and thorough nucleic acid testing.
- The risks of virus spreading had been effectively prevented through continuously providing anti-Epidemic materials such as masks and alcohol for medical use to employees and strict disinfection of the working environment.
- We highlighted the epidemic control of units stationed abroad and at border-related enterprises, monitored the entire process of logistics and people at production plant near border ports, and strengthened disinfection of all links. We prevented the spread of the epidemic that may be caused by the infection of foreign-related materials and personnel.
- Company employees were encouraged to participate as volunteers in volunteer services for the novel coronavirus epidemic vaccination and nucleic acid testing.



Dongguan Cement volunteer service team participated in the volunteer services for novel coronavirus epidemic vaccination in Shatian Town



Caoci Cement launched novel coronavirus vaccination knowledge awareness and vaccination work

# Responsibility Management

## Strategy for Responsibility

By upholding the corporate mission "to provide quality products, services and systematic solutions to the public, promote green development and lead digital transformation, thereby building an everlasting business", CR Cement had always assimilated social responsibility into corporate operations and rooted the same in its businesses. We review corporate social responsibility from a strategic perspective, and persistently advance the launch of social responsibility from the point of view of stakeholders such as shareholders, employees, customers, partners and the community, which includes reinforcing safety management of production plants, responding to the "dual carbon" strategy, strengthening environmental protection management, innovating on upgrade measures for energy-saving and emissions reduction, implementing health management and promoting co-processing projects to foster the high-quality development of the Company. With an innovative spirit and a pragmatic attitude, we constantly promote transformation and upgrade of the cement industry in China, and strive to achieve the glorious vision "to become a respected world-class building materials company".

## Governance of Responsibility

### Organization

CR Cement had established the "Corporate Culture and Social Responsibility Steering Committee" since 2013, responsible for the leadership, promotion and decision-making of the strategic directions with respect to social responsibility. The Chief Executive Officer currently serves as the President of the Committee. The Committee members comprise of the major heads of all departments at headquarters, operating regions, business divisions and professional service institutions. In addition, the Committee established the "Social Responsibility Report Preparation Committee" in 2016, responsible for preparing the social responsibility report. This had laid a solid foundation for the Company to launch its social responsibility work and to effectively promote the management, integration and propagation of responsibility.

In order to actively fulfil corporate social responsibility and launch the firm implementation of relevant works on responsibility practice, on 18 March 2022, the Board revised the Terms of Reference for the Risk and Compliance Committee (formerly known as Corporate Governance Committee) to add its powers and duties for ESG risk management. The Committee shall be responsible for studying, developing, amending and reviewing the primary management systems, policies and practices on risk management of the Company, as well as making recommendations to the Board and monitoring their implementation.

### Policies and Systems

To promote a systematic and standardized approach towards social responsibility work, the Company formulated the management system and reporting indicators system for social responsibility work based on the "GRI Sustainability Reporting Standards" of Global Reporting Initiative, the "Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited, the "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0)" of Chinese Academy of Social Sciences, the "Guidance on Social Responsibility of Cement Enterprise", the "Guidance on Social Responsibility Reporting of Cement Enterprise", the "Social Responsibility Evaluation Index System of Cement Enterprise" of China Cement Association, and the "China Resources Group Management Measures for Social Responsibility".

## Culture of Responsibility

CR Cement constantly consolidates its capability to fulfil its own responsibilities. We have built a good brand image and corporate image in the industry through the construction of "City Symbiont", as well as the continuous promotion of our socially valuable and sustainable brands of charitable businesses such as "Gratitude Fund" and "co-processing projects by use of cement kilns".

- ◉ We actively organized and participated in internal and external social responsibility training, seminars and other activities to understand the latest domestic and international developments in social responsibility work and enhance the report authors' understanding and grasp on the relevant theories of social responsibility as well as the standards and methods for report preparation.
- ◉ In active response to the initiatives of China Resources Group, CR Cement proactively participated in social responsibility appraisal activities to further benchmark against outstanding enterprises in fulfilling social responsibility, find disparities and improve deficiencies, and promote the implementation of responsibility fulfilment whilst meeting high standards and strict requirements.

## Engagement with Responsibility

CR Cement is proactively concerned with the aspirations and expectations of our stakeholders. We continue to explore effective means of communications with stakeholders through various channels and means including information publication, information reporting, special presentations, shareholders' meetings, site visits, community activities, open days, staff activities, the Company's website and official WeChat public account for the disclosure of the Company's results and relevant activities in a timely, accurate and rigorous manner as well as timely propagation of the Company's philosophy and practice of responsibility fulfilment. While enhancing stakeholders' understanding on and support to the Company, the Company also actively listens to the reasonable opinions and suggestions from internal and external stakeholders for the continuous improvement of corporate operational management methods and improvement on the Company's competitiveness.



Types of Stakeholders	Aspirations and Expectations	Communications and Responses
<b>Government and regulatory bodies</b> 	<ul style="list-style-type: none"> <li>Regulated operations according to laws</li> <li>Safety and environmental protection</li> <li>Occupational health</li> <li>Regional economic development</li> <li>Employment and tax income</li> </ul>	<ul style="list-style-type: none"> <li>Strict Implementation of national policies</li> <li>Insistence on energy saving and emission reduction, and promotion of low-carbon development</li> <li>Insistence on production safety, and reinforcement on protection of occupational health</li> <li>Proactive participation in local construction and providing employment opportunities</li> <li>Compliance with laws and regulations, timely payment of taxes</li> <li>Active response to the urge from government, and timely submission of corporate information</li> </ul>
<b>Shareholders and investors</b> 	<ul style="list-style-type: none"> <li>Corporate value</li> <li>Enhanced quality and increased efficiency</li> <li>Corporate governance</li> <li>Sustainable development</li> <li>Risk management</li> <li>Compliance management</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing standards of corporate operation, results and asset value</li> <li>Enhanced quality and increased efficiency for improving corporate competitiveness</li> <li>Standardizing construction of the Board, and perfecting scientific and effective governance system</li> <li>Paying attention to environmental and social impacts, adopting corresponding measures, and improving relevant information disclosure and communications</li> <li>Enhancing the strength of preventing and solving substantial risks</li> <li>Construction of compliance management system, improving compliance review mechanism, and rolling out propagation of code of business conduct</li> <li>Strengthening investors relation management and protecting the legal rights and interests of all shareholders</li> </ul>
<b>Customers</b> 	<ul style="list-style-type: none"> <li>Product quality</li> <li>Customer service</li> <li>Rights and interests of customers</li> <li>Innovation</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive guarantee of product quality</li> <li>Establishing sound customer service system, improving mechanism for customer feedback and complaint handling, and launching surveys on customer satisfaction</li> <li>Upholding and protecting security of customer data, and strengthening the construction of customer management system</li> <li>Encouraging innovation of products and technology</li> </ul>

Types of Stakeholders	Aspirations and Expectations	Communications and Responses
<b>Employees</b> 	<ul style="list-style-type: none"> <li>Rights and interests of employees</li> <li>Remuneration and benefits</li> <li>Career development</li> <li>Care for employees</li> <li>Health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Adhering to the principle of equal employment, and protecting the legal rights and interests of employees</li> <li>Holding employees' congress and construction of communications platform for employees</li> <li>Formulating competitive remuneration and benefits systems, and improving various benefits and treatment</li> <li>Launching staff training and assessment activities for excellence and advancement, and perfecting incentives and promotion mechanism</li> <li>Organizing staff activities, and employees' work-life balance</li> <li>Care for occupational health and mental health, and care for employees in need</li> </ul>
<b>Suppliers and partners</b> 	<ul style="list-style-type: none"> <li>Punctual fulfillment of agreements</li> <li>Integrity and probity</li> <li>Equality for mutual benefit</li> <li>Cooperation for mutual gain</li> <li>Advancement, transformation and upgrade of the industry</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening the management of suppliers and procurement orders, with strong emphasis on fulfillment of agreements</li> <li>Launching regular probity education and adopting Sunshine Procurement</li> <li>Strengthening communications and cooperation, building equal cooperation mechanisms and platforms for mutual benefits</li> <li>Launching regular meetings, mutual visits and exchanges</li> <li>Participating in the formulation of industry standards and technological research</li> </ul>
<b>Community</b> 	<ul style="list-style-type: none"> <li>Ecological protection</li> <li>Community development</li> <li>Community charity</li> <li>Local employment and economic development</li> </ul>	<ul style="list-style-type: none"> <li>Reinforcement of production safety management, green production and green office to increase the composite utilization efficiency of energy and resources, and circular economy development</li> <li>Construction of green mines and green factories, and promotion of co-processing projects</li> <li>Active participation in mutual community construction</li> <li>Active participation in rural revitalization, community charitable activities and social volunteer activities</li> <li>Support for local education business and provision of employment</li> </ul>
<b>Media</b> 	<ul style="list-style-type: none"> <li>Abiding by laws and compliance</li> <li>Information disclosure</li> <li>Operational results</li> <li>Health and safety</li> <li>Sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Timely and accurate disclosure of corporate information</li> <li>Welcoming supervision by media, smooth channels of external publication for proactive communications with and timely response to the media</li> </ul>

# Materiality Analysis

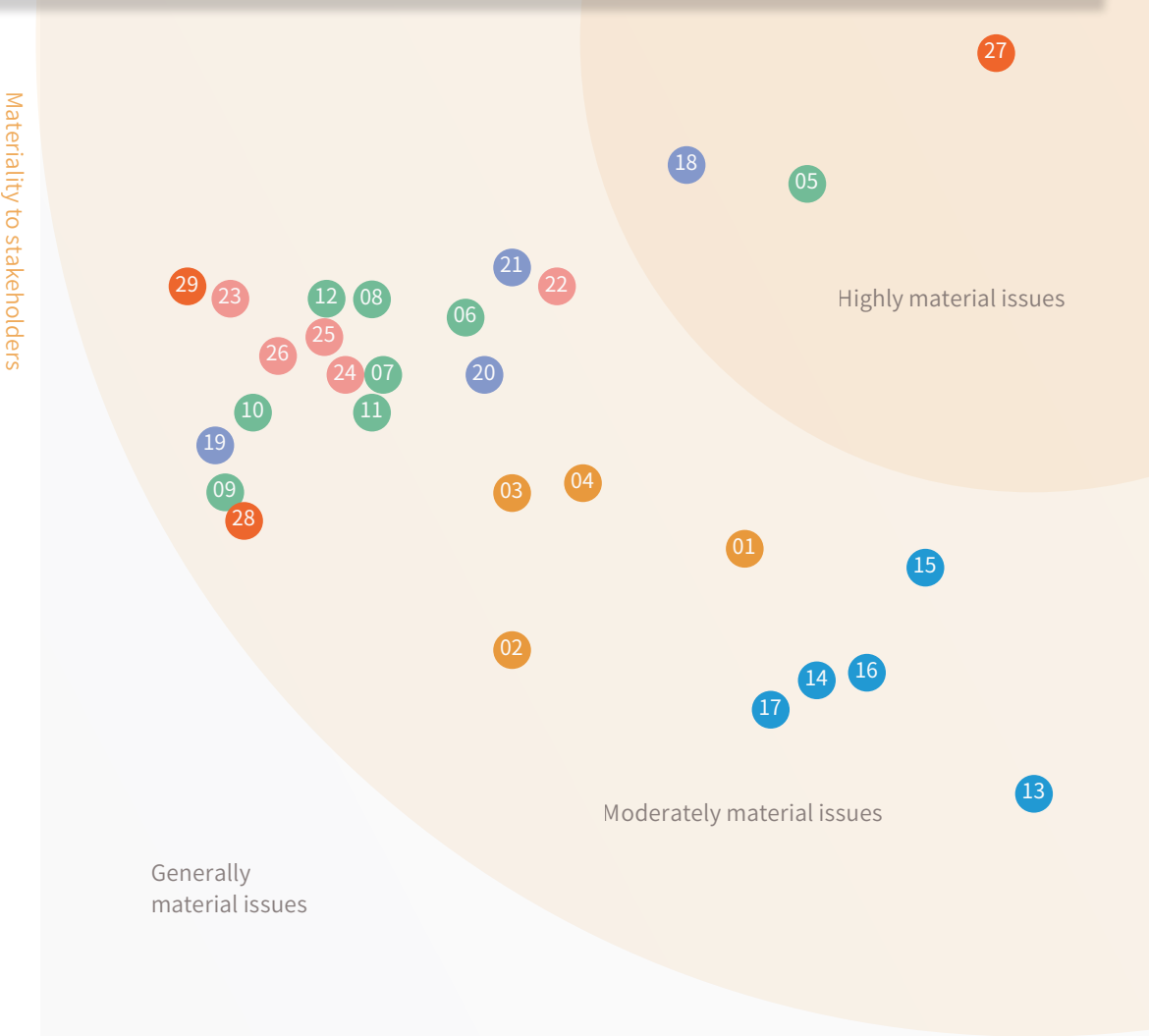
## Identification of Material Issues

The Company continued to improve the management model of material issues, and identified 29 material issues from 6 scopes of responsibilities in 2021 through analysis on macro policies and industry policies and regulations, research on the domestic and international authoritative social responsibility standards, benchmarking comparison with excellent social responsibility reports in the cement industry, and with reference to "Environmental, Social and Governance Reporting Guide" of the Stock Exchange, "GRI Sustainability Reporting Standards" of Global Reporting Initiative, "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0)" of Chinese Academy of Social Sciences, "Guidance on Social Responsibility of Cement Enterprise", "Guidance on Social Responsibility Reporting of Cement Enterprise" and "Social Responsibility Evaluation Index System of Cement Enterprise" of China Cement Association.

## Prioritization of Material Issues

In order to further enhance the specificity of material issues, in 2021, the Company prepared survey questionnaire of material issues, which were sent through emails, peer-to-peer invitations and official WeChat public account to extensively understand the degree of concerns of internal and external stakeholders on each material issue. The Company collected a total of 2,665 valid questionnaires. Based on the survey results, we assessed the priority of material issues from the two dimensions of "materiality to the Company's development" and "materiality to stakeholders", and prepared the materiality assessment matrix. Upon the review and recommendation by the Board, the senior management and external consultants on the material issues and their prioritization results, the core material issues closely related to sustainable development of the Company which highly concerned stakeholders were confirmed as the key disclosure contents.

Analysis results of material issues of the 2021 CR Cement Social Responsibility Report



## Scope of Responsibilities

- Economic**
  - 01 Managerial efficiency, operating results and corporate value
  - 02 Corporate governance and risk management
  - 03 Integrity management and promotion of anti-corruption
  - 04 High-quality development, transformation and upgrade
- Environment**
  - 05 Sustainable development
  - 06 Energy and resources management
  - 07 Environmental management systems
  - 08 Pollutant and waste management
  - 09 Solid waste co-processing
  - 10 Environmental restoration and green mine construction
  - 11 Low-carbon development and response to climate change
  - 12 Clean technology and opportunities in green building
- Employees**
  - 13 Compensation and benefits of employees
  - 14 Development and training of employees
  - 15 Occupational health of employees
- Customers**
  - 16 Rights and interests of employees
  - 17 Care for employees
  - 18 Product and service quality management
  - 19 Management of intellectual property rights and transformation of achievements in scientific research into practical applications
  - 20 Product and service innovation
  - 21 Rights, interests and satisfaction of customers
- Partners**
  - 22 Integrous and compliant procurement
  - 23 Supply chain responsibility management
  - 24 Facilitation of fair competition
  - 25 Strategic cooperation and resources sharing
  - 26 Communication with industry players to foster industry development
- Public**
  - 27 Production safety
  - 28 Community charity, volunteering activities and emergency relief
  - 29 Investment in and drive for employment, assistance to rural vitalization



## Honours and Recognition



- The national-level green factory and national-level green mine of China Resources Cement (Heqing) Limited were honoured with the Certificate of Appreciation of the **"United Nations Sustainable Development Goals Achievement Awards Hong Kong"** by the Green Council of Hong Kong.

- CR Cement was ranked the second in the 2021 Chinese Corporate Social Responsibility Development Index (Building Materials Industry) by the research group of the **"Blue Book of Corporate Social Responsibility (2021)"** of the Chinese Academy of Social Sciences.

- CR Cement's Social Responsibility Report 2020 was awarded a **5-star** rating by the Chinese Expert Committee on CSR Report Rating.

- CR Cement was honoured with the **"Certificate of Excellence in Environmental, Social and Governance Reporting"** in the **"2021 Best Annual Reports Awards"** by the Hong Kong Management Association.

- China Resources Cement (Longyan Yanshi) Limited was honoured with the **"Hong Kong Green Awards 2021"** – Green Management Award – Corporate (Large Corporation) – Bronze by the Green Council of Hong Kong.

- CR Cement was awarded as one of **"The Most Respected Enterprises"** in Asia in the category of Basic Materials, **the Best Chief Executive Officer** (ranked the third by the sell side), **the Best Investor Relations Team** (ranked the first in comprehensive ranking) and **the Best Investor Relations Officer** (ranked the second in comprehensive ranking) in the "2021 All-Asia Executive Team" organized by the financial magazine "Institutional Investor".

- CR Cement was honoured with the **"Leading Enterprise Award"** (market capitalization over HK\$20 billion) and the **"Leading Environmental Initiative Awards"** of the **"ESG Leading Enterprise Award 2021"** by Bloomberg Businessweek.



## Future Prospects

2022 is an important year which changes of the world has been developed in an all-round way, while risks and opportunities coexist. 2022 is also a critical year which the Chinese people are marching enthusiastically and vigorously towards the Second Centenary Goal. Given the requirements in carbon peaking, carbon neutrality and national policies for the industry, the building materials industry will fully enter a high-quality new development stage marked by green and low-carbon. During the "Fourteenth Five-Year" period, in order to achieve the goal of "Building Another China Resources Cement", the Group will grasp the new development stage, thoroughly implement the new development philosophy and build a new development paradigm. We will continue to reinforce the three core strengths of "leading market position in the region, innovation-driven development, lowest total costs". We will strengthen, optimize and expand the basic building materials and functional building materials businesses, steadily develop the structural building materials business,

incubate and cultivate the new materials business, as well as construct the development model of "Resources + R&D + Industry" to build modern industry clusters. We will also continue to optimize the industrial chain layout, accelerate digital and intelligent transformation, and increase investment in innovation, research and development to inject lasting momentum into the high-quality corporate development, while continuously improving the operational efficiency and quality, enhancing management standards of environmental protection, safety and health, and actively promoting carbon emissions peaking and carbon neutrality. In order to consolidate market competitiveness, we will deepen brand marketing and the construction of sales channels. Through vigorous and determined endeavor, CR Cement will better undertake the glorious missions endowed by the new era, advance the cement industry to develop in a more responsible and sustainable manner, and become a respected world-class building materials company.



Appendix

Key Performance Indicators

Statistical Indicator	Unit	2019	2020	2021
Economic Responsibilities				
Turnover	HK\$ million	38,956	40,087	43,963
Cost of sales	HK\$ million	23,298	24,451	29,840
Selling and distribution expenses	HK\$ million	1,987	1,796	2,064
General and administrative expenses	HK\$ million	2,329	3,193	2,989
Finance costs	HK\$ million	454	274	232
Profit before taxation	HK\$ million	12,008	11,893	10,291
Earnings before interest and taxation <sup>1</sup>	HK\$ million	12,462	12,167	10,523
Profit for the year	HK\$ million	8,694	9,030	7,725
Profit attributable to owners of the Company	HK\$ million	8,618	8,960	7,767
Total assets	HK\$ million	61,171	68,532	79,149
Equity attributable to owners of the Company	HK\$ million	41,980	49,627	54,856
Net assets <sup>2</sup>	HK\$ million	42,266	50,024	55,641
Ratio of profit to costs <sup>3</sup>	%	42.8	40.0	29.3
Return on net assets <sup>4</sup>	%	21.7	19.6	14.6
Return on total assets <sup>5</sup>	%	20.5	18.8	14.3
Ratio of value conservation and value appreciation of state-owned capital <sup>6</sup>	%	123.5	120.3	114.8
Industry ranking <sup>7</sup>	-	3	3	3
Number of commenced or concluded corruption lawsuits	-	0	0	0

• <sup>1</sup> Earnings before interest and taxation equal to the sum of profit before taxation and finance costs.

• <sup>2</sup> Net assets equal to total assets less total liabilities.

• <sup>3</sup> Ratio of profit to costs is calculated by dividing profit before taxation by the sum of cost of sales, selling and distribution expenses, general and administrative expenses and finance costs.

• <sup>4</sup> Return on net assets is calculated by dividing profit for the year by average net assets.

• <sup>5</sup> Return on total assets is calculated by dividing earnings before interest and taxation by average total assets.

• <sup>6</sup> Ratio of value conservation and value appreciation of state-owned capital is calculated by dividing the sum of equity attributable to owners of the Company and dividend paid for the year by equity attributable to owners of the Company for the previous year, after taking the effect of exchange rate into consideration.

• <sup>7</sup> Source of data on industry ranking is from China Cement Association. Assessment indicators include sales volume of cement, total profit, net profit, assets and market capitalization in 2021.

Statistical Indicator	Unit	2019	2020	2021
Responsibilities to Customers and Partners				
Total number of suppliers	-	9,074	11,524	10,975
Contract compliance rate	%	93	91	90
Handling rate of customers' complaints	%	100	100	100
Passing rate of product quality	%	100	100	100
Total R&D investment <sup>8</sup>	RMB million	23	41	336
Number of R&D employees	-	45	40	53
Number of international, national or industrial standards contributed	-	1	2	0
Number of new patent licenses	-	19	42	37
Number of patents and patent applications	-	232	269	360
Number of strategic cooperation agreements executed	-	5	9	21
Expenditure on industry-academia-research cooperation	10,000 RMB	0	139	693
Significant innovation awards	-	1	0	0

• <sup>8</sup> The statistical method of R&D investment was reorganized and standardized in 2021, and the intensity of R&D was strengthened in the same year.

Statistical Indicator	Unit	2019	2020	2021
Responsibilities to Employees				
Total number of employees	-	19,816	19,467	19,491
Number of employees in Mainland China	-	19,665	19,324	19,337
Number of employees in Hong Kong	-	151	143	154
Number of male employees	-	16,474	16,187	16,153
Number of female employees	-	3,342	3,280	3,338
Number of minority employees	-	4,152	4,110	4,035
Number of employees with disabilities	-	59	42	39
Proportion of female managerial staff	%	11	11	12
Execution rate of employment contracts	%	100	100	100
Social insurance coverage rate	%	100	100	100
Body check coverage rate	%	100	100	100
Number of employees attending health body check	-	19,816	19,467	19,491
Number of occupational disease occurrences	-	0	1	0
Average number of days of paid annual leave per employee <sup>9</sup>	Days	13.8	13.9	13.8
Staff training coverage rate	%	100	100	100
Average training duration per employee	Hours	12.9	14.5	10.7
Average investment in training per employee	RMB	436	336	423
Total investment in staff training	10,000 RMB	864	654	825
Employee turnover rate	%	9.5	5.8	7.0

• <sup>9</sup> Average number of days of paid annual leave per employee is calculated based on the number of days of paid annual leave for employees in Mainland China.

Statistical Indicator	Unit	2019	2020	2021
Responsibilities to Public				
Number of new recruitments	-	1,386	789	763
Charitable donations	HK\$ million	2.7	9.4	6.4
Taxation	HK\$ million	3,314	2,864	2,566
Proportion of local procurement <sup>10</sup>	%	62	62	61
Number of staff injured at work	-	13	13	11
Number of incidents of general and above levels	-	2	1	0
Fatalities	-	2	1	0
Fatality rate	‰	0.099	0.051	0
Number of participants in safety training	-	245,398	257,902	277,607
Duration of safety training <sup>11</sup>	10,000 hours	40.1	41.6	46.0
Investment in production safety	RMB million	156	152	210
Safety training coverage rate	%	100	100	100
Number of safety emergency drills	-	1,135	1,228	1,333
Number of participants in safety emergency drills	-	18,025	18,665	19,455
Number of specialized safety management personnel	-	192	200	198
Number of licensed safety management personnel	-	1,277	1,943	1,254
Number of registered safety engineers	-	59	66	78

• <sup>10</sup> Scope of statistics of local procurement includes purchased materials other than seaborne coal, seaborne gypsum, some auxiliary materials and spare parts of centralized procurement.

• <sup>11</sup> Scope of statistics includes safety training duration of employees of the Company and counterparties.



Statistical Indicator	Unit	2019	2020	2021
Responsibilities to Environment				
Total investment in environmental protection	RMB million	443	441	508
Investment in technological upgrade in energy-saving and emission reduction	RMB million	120	123	147
Consolidated energy consumption	'000 tons of standard coal	7,915	7,917	7,190
Consolidated energy consumption per RMB10,000 output	tons of standard coal per RMB10,000	2.65	2.60	2.09
Consolidated energy consumption per RMB10,000 value addition	tons of standard coal per RMB10,000	5.85	5.58	5.27
Emission of nitrogen oxides <sup>12</sup>	tons	37,584	36,194	30,324
Emission intensity of nitrogen oxides <sup>12</sup>	kg per ton of clinker produced	0.5439	0.5146	0.4810
Average emission concentration of nitrogen oxides <sup>12</sup>	mg/m <sup>3</sup>	232	221	208
Emission of sulphur dioxide <sup>12</sup>	tons	1,824	1,646	1,501
Emission intensity of sulphur dioxide <sup>12</sup>	kg per ton of clinker produced	0.0264	0.0234	0.0238
Average emission concentration of sulphur dioxide <sup>12</sup>	mg/m <sup>3</sup>	11	10	10
Emission of particulate matters <sup>12</sup>	tons	2,083	1,777	1,381
Emission intensity of particulate matters <sup>12</sup>	kg per ton of clinker produced	0.0301	0.0253	0.0219
Average emission concentration of particulate matters <sup>12</sup>	mg/m <sup>3</sup>	9	9	6
Emission of greenhouse gases	'000 tons of carbon dioxide equivalent	58,710	59,605	53,404
Emission intensity of greenhouse gases	tons of carbon dioxide equivalent per ton of clinker produced	0.8497	0.8472	0.8470

• <sup>12</sup> Scopes of statistics of nitrogen oxides, sulphur dioxide and particulate matters include the major discharge outlets of the Company's cement production plants. In 2021, the Company had improved the calculation method of overall pollutant emission concentrations, and restated the data in 2020 and 2019 accordingly.

Statistical Indicator	Unit	2019	2020	2021
Responsibilities to Environment				
Electricity consumption <sup>13</sup>	million kwh	6,426	6,518	6,017
Electricity consumption of cement and clinker	million kwh	6,398	6,489	5,980
Electricity consumption of concrete	million kwh	28	29	37
Electricity consumption per ton of cement	kwh	72.9	72.2	72.5
Electricity consumption per ton m <sup>3</sup> of concrete	kwh	2.1	2.2	2.6
Coal consumption	'000 tons	10,033	9,943	8,918
Unit coal consumption per ton of clinker	kg	145.2	141.3	141.4
Standard coal consumption per ton of clinker	kg	105.5	104.4	103.8
Proportion of cement sold in bag	%	35.6	33.2	28.9
Consumption of packaging materials <sup>14</sup>	tons	63,765	60,276	50,170
Consumption intensity of packaging materials <sup>14</sup>	kg per ton of cement packed in bags	2.17	2.08	2.19
Industrial waste utilized <sup>15</sup>	'000 tons	21,080	21,010	20,490
Municipal solid waste co-processed	tons	162,700	183,100	207,700
Urban sludge co-processed <sup>16</sup>	tons	56,500	52,800	44,800
Hazardous industrial waste co-processed	tons	7,200	6,100	19,600
Water consumption <sup>17</sup>	tons	32,546,000	31,392,000	30,254,000

• <sup>13</sup> Scope of statistics includes the power purchased externally for production by the Company.

• <sup>14</sup> Packaging materials refer to the packaging for cement sold in bags.

• <sup>15</sup> Scope of statistics of industrial waste includes coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag.

• <sup>16</sup> 80% moisture content for wet sludge.

• <sup>17</sup> Scope of statistics covers water purchased, which is the same as "annual fresh water consumption"

Note: Details of collection and reporting methods of emissions and energy consumption data is listed in Appendix 2 of 2021 Annual Report "Environmental and Social Responsibility Report".

Reference Table of Indicators

Topic	Subtopic	Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASSCSR4.0) of Chinese Academy of Social Sciences	"GRI Sustainability Reporting Standards" of Global Reporting Initiative (GRI Standards)	"Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited (HKEX ESG Guide)
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Building in Green, Embark on the Journey to Carbon Neutrality	Enhance Management with Respect for Environment	E1.1/E1.2/E1.8	201-2	
	Reduce Energy Consumption with Perseverance	E1.3/E1.7/E1.9/E1.10/E2.1/E2.3/E2.4/E2.5/E2.6/E2.7/E2.8/E2.9/E2.10/E2.11/E2.12/E2.13/E2.14/E2.15/E2.16/E2.17/E2.18/E2.23/E2.24/E2.25	301-2/302-3/302-4/303-3/305-1/305-2/306-2	A1/A1.1/A1.3/A1.4/A1.5/A1.6/A2/A2.1/A2.2/A2.3/A2.4/A4/A4.1
	Protect Ecology with Determination	E1.5/E1.6/E1.12/E2.2/E2.19/E2.20/E2.21/E2.22/E3.1/E3.3/E3.4/E3.5/E3.6	304-2	A3/A3.1

Topic	Subtopic	Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASSCSR4.0) of Chinese Academy of Social Sciences	"GRI Sustainability Reporting Standards" of Global Reporting Initiative (GRI Standards)	"Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited (HKEX ESG Guide)
Marching with Dreams, Perform Harmonious Symphony for the New Era	Employee Development with Incentives	S2.1/S2.2/S2.3/S2.4/S2.5/S2.6/S2.7/S2.8/S2.9/S2.10/S2.11/S2.12/S2.13/S2.14/S2.15/S2.16/S2.17/S2.18/S2.20	401-1/401-2/401-3/403-1/403-2/403-3/403-4/404-1/404-2/404-3/405-1/406-1/408-1	B1/B1.1/B1.2/B2/B2.3/B3/B3.2/B4/B4.1
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Rating Report

Rating Report of Social Responsibility Report 2021 of China Resources Cement Holdings Limited

Commissioned by China Resources Cement Holdings Limited, the Chinese Expert Committee on CSR Report Rating selected experts to form a rating team to rate the 2021 Social Responsibility Report of China Resources Cement Holdings Limited (hereinafter referred to as the "Report").

I. Rating Criteria

The "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0)" issued by Chinese Academy of Social Sciences and "Rating Standards for Corporate Social Responsibility Report of Chinese Enterprises (2020)" of Chinese Expert Committee on CSR Report Rating.

II. Rating Process

- 1. The Rating Team reviewed and confirmed the "Confirmation Letter of Process Materials of Corporate Social Responsibility Report" and relevant supporting materials submitted by the preparation team of the Report;
- 2. The Rating Team conducted review on the preparation process and the contents disclosed in the Report, then drafted the rating report;
- 3. The vice president of the rating expert committee, the leader of the Rating Team and experts of the Rating Team jointly reviewed and signed off the rating report.

III. Rating Results

Process (★★★★★)

The Company's General Office took the lead in setting up the Working Group for Report Preparation to coordinate the preparation of the Report. The Chairman of the Board of Directors cum the Chief Executive Officer assumes the role of President of the Corporate Culture and Social Responsibility Steering Committee, supervising the overall direction and responsible for the final review of the Report. With a clear positioning in its functional value, the Report is positioned as an important tool for disclosing information regarding responsibility fulfilment, improving social responsibility management, strengthening communications with stakeholders and highlighting corporate brand image. Substantive issues were identified based on national macro policies, international and domestic social responsibility standards, industry benchmarking analysis, the Company's major strategies and surveys on stakeholders. The Report will be released by organizing a special conference, and will be available in electronic and printed formats, in Chinese and English versions, in video form, in simplified version, in long diagram version and other forms of presentations with excellent performance on the process.

Substantiveness (★★★★★)

The Report systematically discloses key issues facing the industry such as product quality management, product innovation,

occupational health management, production safety, R&D and application of environmental protection technologies and equipment, saving of energy resources, management of hazardous waste, reduction of "three wastes" emissions, and green mines, which are in full and detailed description with excellent performance on substantiveness.

Completeness (★★★★★)

The main contents of the Report systematically discloses 91.32% of the core indicators of the industry in which the Company operates from the perspectives of "Cultivating from Solid Foundation, Begin a New Era of High-Quality Development", "Building in Green, Embark on the Journey to Carbon Neutrality" and "Marching with Dreams, Perform Harmonious Symphony for the New Era", with excellent performance on completeness.

Balance (★★★★★)

The Report reveals negative data such as "number of commenced or concluded corruption lawsuits", "number of occupational disease occurrences", "employee turnover rate", "number of staff injured at work", "number of incidents of general and above levels" and "fatalities" and briefly describes the investigation and handling on customers' feedback on the damage of new product packaging, which has excellent performance on balance.

Comparability (★★★★★)

The Report discloses the comparative data of 113 key indicators for 3 consecutive years, such as "turnover", "total assets", "charitable donations", "investment in production safety", "total investment in environmental protection" and "water consumption". The horizontal comparison of "third place in 2021 in the 'Comprehensive Strength Rankings of Chinese Cement Listed Companies' by the China Cement Association" was carried out, with excellent performance on comparability.

Readability (★★★★★)

The Report is centred around three dimensions of "Cultivating from Solid Foundation", "Building in Green" and "Marching with Dreams", which systematically expounds the Company's concept, practice and effectiveness of responsibility fulfilment on key issues, responds to the expectations and aspirations of stakeholders, and interprets the deep understanding of fulfilling social responsibilities. The cover design adopts cartoon illustration style, integrating business elements such as "green mines", highlighting the characteristics of the industry and enhancing the recognition of the report. The Report sets up "extended reading", "noun explanation" and "further reading" to extend the interpretation of the content and stakeholders' testimonies are embedded in multiple places to support the effectiveness of responsibility fulfilment, with excellent performance in readability.

Innovation (★★★★☆)

The Report actively benchmarks against international and domestic social responsibility standards, highlighting the global vision of the Company and the progress of the report. Each chapter of the Report begins with the "National 'Fourteenth Five-Year Plan'" and "Actions of China Resources Cement", closely following the national policies, sets up "Story of Responsibility" to introduce key projects or actions, and expounds the "concept behind the story", which enhances the vividness and enthusiasm of the Report and the performance on innovation is leading.

Overall Rating (★★★★★)

According to assessment of the Rating Team, the "Social Responsibility Report 2021 of China Resources Cement Holdings Limited" is awarded a five-star rating as an excellent corporate social responsibility report.

IV. Suggestions for Improvement

The framework and content of the Report could further respond to current trending topics and enhance the sense of the times to improve innovation of the Report.



中国企业社会责任报告
评级专家委员会
Chinese Expert Committee on CSR Report Rating

CR Cement Social Responsibility Report has been awarded five-star rating for four consecutive years

Signature of Vice President

Vice President of Chinese Expert Committee on CSR Report Rating

Signature of Leader of the Rating Team

Leader of the Rating Team

Signature of Expert of the Rating Team

Expert of the Rating Team

Issuance date: 17 June 2022



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Organizational Institutions

Corporate Culture and Social Responsibility Steering Committee

President: Ji Youhong

Vice President: Wang Xiaohu

Members: Huang Ting, Zheng Qinghong, Tan Ying, Jing Shiqing, Li Baojun, Li Chuanji, Cai Xiang, Li Wei, Wang Yue, Lam Hung Elaine, Yin Yue, Kang Zhen, Ouyang Baoqing, Zhang Shu, Peng Fangqing, Hu Song, Tao Lei, Zhang Ling, Cheng Shi, Zhong Kehui, Li Hezuo, Wang Wen, Zhong Xinguang, Shi Mingze

Social Responsibility Report Preparation Committee

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Associate Editors: Fu Li, Zhang Jiao, Fung Ka Yee, Liang Qian Lin, Xue Zhaohui

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Feedback



Dear Readers,

Thank you for sparing your precious time to read the 2021 Social Responsibility Report of China Resources Cement Holdings Limited. This is the ninth Social Responsibility Report which CR Cement published to the public. In order to continuously strengthen the level of preparation of the social responsibility report and constantly raise the capability of fulfilling social responsibilities, we hope to listen to your opinions and suggestions. Please help complete the relevant questions in the feedback form and return the feedback to us by selecting any of the methods as follows:

Your Information

Name: .....

Company: .....

Position: .....

Telephone: .....

Fax: .....

Email: .....

Multiple Choices: (please tick✓ in the corresponding position)

	Excellent	Good	Average	Poor	Very Poor
Pleas rate the extent to which this report has reflected CR Cement's major impacts on economy, society an environment					
Please rate the responses to and disclosure of issues which concern stakeholders in this report					
Please rate the clarity, accuracy and completeness of the disclosed information, indicators and data in this report					
Please rate the readability of this report					
Please provide your overall rating of the 2021 Social Responsibility Report of China Resources Cement Holdings Limited					

What are your suggestions on the social responsibility work of CR Cement?

.....

In your opinion, what are the deficiencies in this report?

.....

What are your suggestions for our future publications of the corporate social responsibility reports?

.....

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