

vanke



2022

vanke

SUSTAINABILITY
REPORT

About This Report

This report is the 15th sustainability report issued by Vanke Group, mainly focusing on the disclosure of Vanke Group's philosophy, important measures and effectiveness in environmental, social and governance aspects in the year 2022.

References of names

To facilitate presentation and reading, "China Vanke Co., Ltd." in this report is referred to as "Vanke Group", "Vanke", "the Group", "the Company" or "We". Unless otherwise indicated, terms used in this report shall have the same meanings as those defined in the Vanke Group Annual Report 2022.

Preparation basis

- The Ten Principles of the UN Global Compact
- Guidance on Social Responsibility (ISO 26000:2010) issued by International Organisation for Standardisation (ISO)
- GRI Sustainability Reporting Standards (GRI Standards) issued by Global Sustainability Standard Board (GSSB)
- The Chinese Social Responsibility Standard GB/T36001-2015 Guidance on Social Responsibility Reporting
- Real Estate Industry Standards issued by SASB (Sustainability Accounting Standards Board)
- Environmental, Social and Governance Reporting Guide (HK-ESG) in Appendix 27 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited
- Task Force on Climate-related Financial Disclosures (TCFD)
- The Self-Regulatory Guidelines for the Companies Listed on the Shenzhen Stock Exchange No. 1 – Standardised Operation of the Companies Listed on the Main Board
- Guidelines on the Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR5.0) issued by the Chinese Academy of Social Sciences
- Corporate Social Responsibility Guidelines of Real Estate Enterprise in Guangdong Province issued by the Guangdong Real Estate Association

Reporting principles

This report is prepared in accordance with the four reporting principles listed in the Environmental, Social and Governance Reporting Guide (HK-ESG) on The Stock Exchange of Hong Kong Limited, namely "materiality", "quantitative", "balance", and "consistency".

Reporting scope

While determining the reporting scope, we ensure that this report can reflect the ESG impact and performance of the Group. Unless otherwise indicated, this report covers sustainability performance of the operations and management services from 1st January, 2022 to 31st December, 2022 ("within the reporting period" "the end of the reporting period").

Revision and approval

This report has been reviewed by the Board of Directors (the "Board") before its release. Vanke guarantees that this report is free of any false information, misleading statements or major omissions.

Disclaimer

This report contains forward-looking statements, including but not limited to words or phrases such as "will", "expects", "forecasts", "future", "aims", "estimates", "plans", "believes", "potential", "continues", "continuous", "objective", "purpose", "possible". This part is based on current expectations, assumptions, estimates and forecasts, which may be affected by uncertain factors and therefore, lead to material differences from actual results. Vanke Group does not undertake any obligation to update any forward-looking statements in this report, except obligations required by laws. Vanke Group is not responsible for the results of any person's judgement based on the information contained in this report.

Report access

In case of any discrepancy between the Chinese and English versions, the Chinese version shall prevail. The electronic version of the report has been uploaded to the HKEXnews, the website of Shenzhen Stock Exchange and the Company's official website at www.vanke.com.

Opinions feedback

For any questions or suggestions concerning this report, please send an email to p-vkesg@vanke.com, or call us at +86 (755) 25606666.

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Environmental Practices

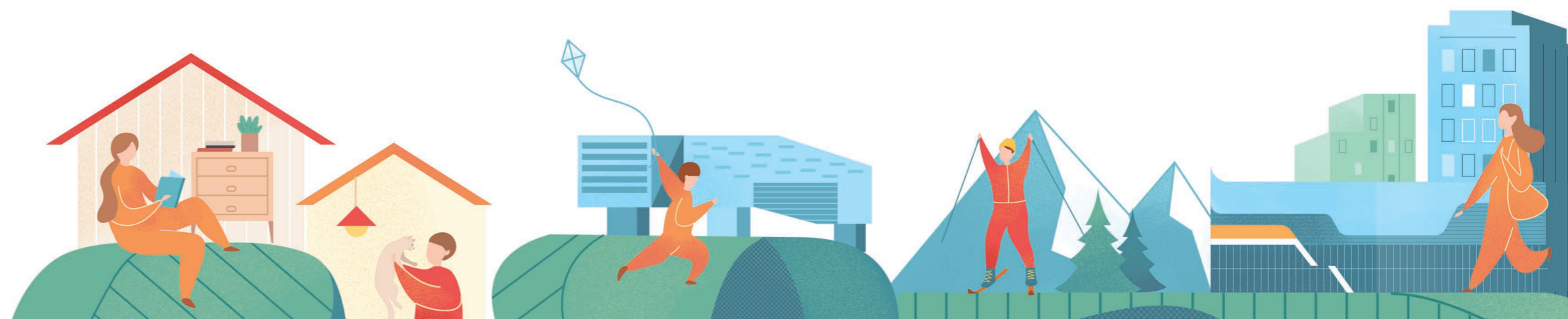
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Report Summary

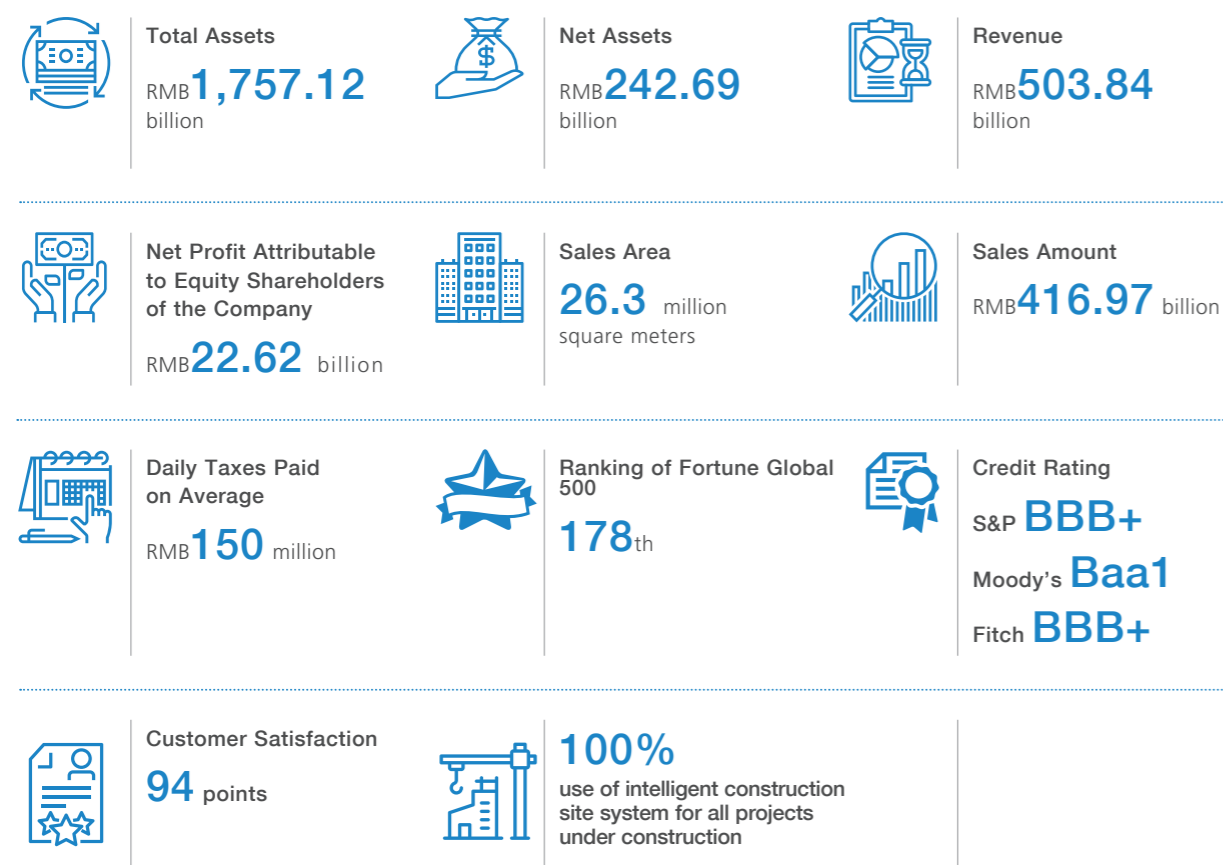
As a leading enterprise in China's real estate industry, Vanke has long been committed to green and sustainable development, integrating green and low-carbon concepts into the entire design, construction, and operation process. Vanke also continues to promote the creation of a green supply chain, advocate green leasing and actively explore the construction of carbon-neutral communities.

Through the journey of exploring green and low-carbon development, we have created a lot of "firsts" as a pioneer. Vanke is the first in the domestic real estate industry to put forward the green development concept of "industrialization, green building and full renovation". Vanke City (Phase IV) in Shenzhen is the first domestic residential project to obtain the national Three Stars Green Building certification. Shenzhen Vanke Dameisha Center is China's first LEED Platinum-certified green office project. The Net-Zero Carbon Community in Dameisha has become a sample for exploring sustainable community development at the 27th United Nations Climate Change Conference (COP27). Vanke also is the first member company in the global real estate industry to join the "Climate Saver" program initiated by World Wide Fund for Nature (WWF).

We uphold the concept of long-term, and continue to promote sustainable development, consolidate sound operational practice, lead the green and low-carbon environmental practices, and navigate the sharing and inclusive social practices.

Highlights of 2022

Operational Practices



Environmental Practices



Social Practices



Sustainability Performance

Vanke continuously improves sustainable development management to create value for customers and society. In 2022, we were highly recognised in a number of representative sustainability ratings and indices.

<p>CNI Index ESG rating</p> <p>Obtained AA rating, ranked first in the real estate sector</p> <p>The only real estate company included in Shenzhen 100 ESG Top Index</p>		<p>MSCI ESG rating</p> <p>Maintained BBB</p>
<p>Hang Seng ESG 50 Index</p> <p>Maintained to be included as a constituent and obtained A+ rating as one of the Top 50 ESG leaders with relatively high market-capitalisation listed in Hong Kong, and maintained to be included in Hang Seng Corporate Sustainability Benchmark Index, Hang Seng Stock Connect A Low Carbon Index, Hang Seng (China A) Corporate Sustainability Index</p>		
<p>Corporate Sustainability Assessment (CSA) by S&P Global</p> <p>The score of CSA</p> <p>steadily increased</p>	<p>ESG Risk Rating by Morningstar Sustainalytics</p> <p>maintained low risk, and the score of the ESG Risk Rating continued to decreased</p> <p>The ESG performance improved</p>	<p>GRESB</p> <p>Obtained 3-Star rating</p> <p>The performance improved</p>



Vanke's ESG case was selected as one of the Best ESG Practices for A-share listed companies in 2022

In September 2022, the China Association for Public Companies released the "Best ESG Practices for A-share listed companies in 2022". Vanke's ESG Case – "Being an Outstanding Green Enterprise" became one of the best ESG practice cases of 30 A-share listed companies, and the only real estate industry case selected. Therefore, Vanke was included in the positive list of the Securities and Futures Market Integrity of the China Securities Regulatory Commission's archival database.

In 2022, we were also awarded prizes and recognition from governments, industry organizations, media platforms, and the public, including but not limited to:



HKCGI



Shenzhen Charitable Donation List



Institutional Investor



Fortune



New Fortune



New Fortune, Guanghua-Rotman Centre for Information and Capital Market Research



Shenzhen Research Association of Corporate Governance



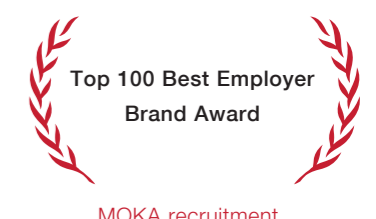
Forbes China



Nanfeng Weekend



Zhaopin.com



MOKA recruitment

Message

2022 is the year of deep adjustment in the industry, and also the year full of challenges. Vanke has always maintained a sound operation, closely following the development of the times, and firmly following the road of balanced emphasis on development, operation and service. We grow together with city development and our clients, drawing a “new chapter” of high-quality development.

Operational practices – deepen value creation

To practice the concept of long-term development, in 2022, we took the initiative to integrate the concept of sustainable development into the whole process of corporate operation, product development and service provision, thus further consolidating sound operation, deepening value creation, and continuously bringing Vanke’s influence on all stakeholders. Based on the residential attributes of residential products, we always put quality, health and performance at the core of residential products and deliver quality products and services to customers. We updated the “5+3+2” actions to the good service action, refined service standards from contract to house inspection and delivery, and improved service quality. We continued to carry out compliance audits and inspections to strengthen our awareness of the bottom line of business operations and enhance risk management. In addition, we continued to expand the influence of “Operation Skynet” in the industry and strengthen the responsible supply chain establishment, regarding material quality, construction quality, air quality and other dimensions.

Environmental practices – lead high-quality development

Based on the industry transformation and development opportunity, we continued to explore and lead the new path of high-quality green and low-carbon development in 2022. We actively applied solutions related to net zero carbon emissions, zero waste management and biodiversity to build a carbon neutral experimental zone in Shenzhen Dameisha Vanke Center and use Vanke Center as the base to explore the construction of a “near-zero carbon community” with residents and organizations in the Dameisha community. We are a pioneer in carbon neutrality in urban communities by transforming our green vision into green action. We actively responded to climate change, continued to deepen climate risk management, and carried out climate change scenario analysis with reference to the recommendations of the TCFD framework. We systematically and comprehensively identified climate-related risks and opportunities, therefore improving climate-related risk management capabilities and grasping climate-related opportunities. While ardently reducing our operational energy consumption, we also optimized our management in various areas such as green building, resource recycling, and promoting sustainable lifestyles, joining hands with various stakeholders to share the responsibility of green development.

Social practices – create a better future together

By upholding the “fight together” culture, we value our employees as the company’s most valuable asset. We offer a workplace environment based on equality, respect, tolerance and diversity, providing growth and development opportunities for every employee. In 2022, we continued to carry out service and professional trainings, actively headhunting front-line staff and providing them with training, growth and development opportunities. We advocate “win-win cooperation” and promote the progress and development of the industry with the concept of sustainable development. We have created a comprehensive supplier index SCI through AUPUP, introduced quality suppliers covering more than 400,000 SKUs, promoted the transformation of the industrial supply chain and realized the ecological upgrade of the industry. We promote joint development, give full play to our resource advantages, share the fruits of Vanke’s development with society, and take corporate social responsibility with our actions.

In 2022, our ESG performance was widely recognized by domestic and international rating and index agencies. Vanke received an AA rating in the Shenzhen Stock Exchange CNI Index ESG rating, making it the only real estate company included in Shenzhen 100 ESG Top Index. Vanke has been included in Hang Seng Corporate Sustainability Benchmark Index, Hang Seng (China A) Corporate Sustainability Index and Hang Seng ESG 50 Index for consecutive years, and has received an A+ rating. Also, Vanke maintained its BBB rating by MSCI and low-risk rating by Morningstar Sustainalytics. Vanke was also selected as a member of Forbes 2022 China ESG 50. Vanke’s ESG Case – “Being an Outstanding Green Enterprise” was the only real estate industry case selected and became one of the best ESG practice cases of 30 A-share listed companies. Also, Vanke was included in the positive list of the Securities and Futures Market Integrity of the China Securities Regulatory Commission’s archival database.

As the old Chinese saying goes, “Forge ahead when knowing your insufficiency”. In 2023, Vanke will continue to provide a better life for the people and take high-quality development as our vision and mission. We grasp development opportunities, seek steady progress, adhere to the concept of sustainable development, and create more sustainable economic, environmental and social values for all stakeholders.

Board Statement

Based on the requirements of the Listed Company Governance Standards issued by the China Securities Regulatory Commission and the Environmental, Social and Governance Reporting Guide issued by the Stock Exchange of Hong Kong, the Company and the Board will have heavy involvement in the environmental, social and governance (ESG) affairs and actively integrate ESG into the Company’s business practices. In 2019, the Board reviewed and clarified the ESG management system and the ESG work responsibilities to ensure that sustainable development issues facing Vanke will be gradually incorporated into the Company’s agenda.

As the highest decision-making body, the Board is fully responsible for determining the Group’s ESG management structure and management strategy, ensuring that appropriate and effective ESG risk management and internal monitoring systems are in place, listening to the results of discussions on material ESG issues and monitoring the progress of ESG objectives, and reviewing and approving the annual ESG report of the Company.

In addition, the Company set up an ESG Working Committee which is chaired by the chairman of the Board. The ESG Working Committee is responsible for confirming the results of materiality assessments, determining the ESG management objectives, policies and implementation approaches of ESG, and evaluating and identifying material ESG management issues such as ESG related risks and opportunities. Our routes and achievements in products and services, climate change response, carbon emissions and other aspects created through the ESG management work will be reviewed and approved by the Board and released in the ESG report of the Company.

Complying with the Environmental, Social and Governance Reporting Guide issued by the Stock Exchange of Hong Kong, the Company set key ESG targets covering greenhouse gas emissions, waste management, resource use, etc. The Board has reviewed and discussed the relevant target setting and progress.

The 2022 Sustainability Report of the Company was reviewed and approved by the Board on 30th March, 2023.

About Vanke

Company Overview

Company profile

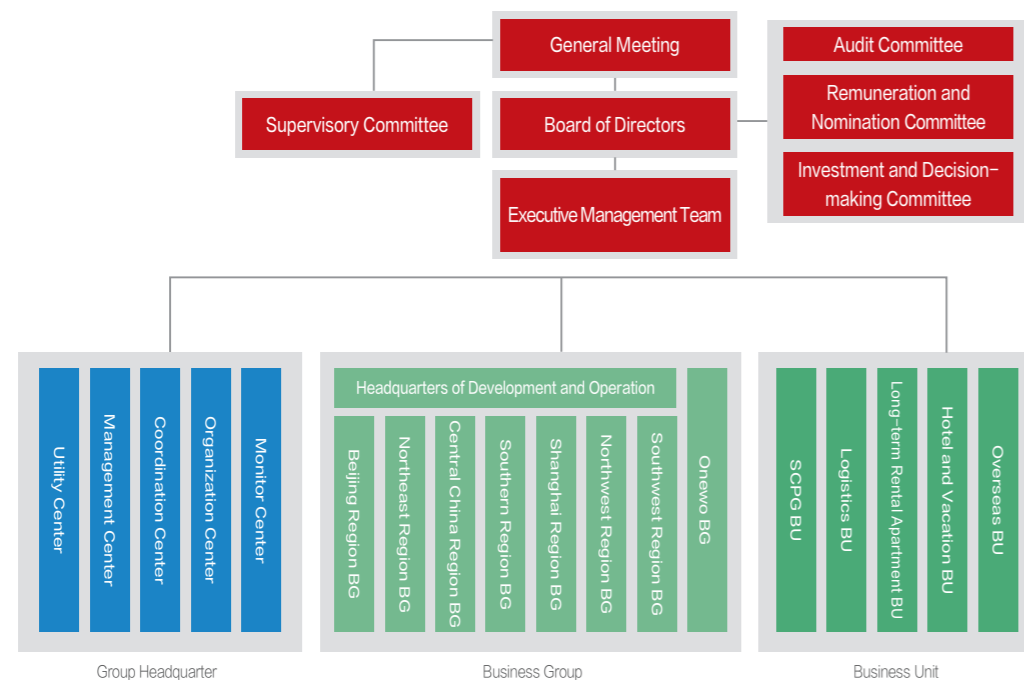
China Vanke Co., Ltd. was established in 1984. After 30 years of development, it has become China's leading urban construction service provider. The Group focuses on the three most vibrant economic circles nationwide and key cities in Midwest China. In 2022, Vanke ranked 178th on the Fortune Global 500 companies.

We persistently grow together with city development and our clients, satisfying people's various demands for a good life with its best efforts. Until now, the ecosystem it has been constructing is getting into shape. In the property area, Vanke has always upheld the vision of "building quality housing for ordinary people to live in". While consolidating its existing advantages of residential property development and property service, the Group's businesses have expanded to areas such as logistics and warehousing services, rental housing, and retail property development and operations. With the above superiority, a solid foundation has laid better to satisfy people's needs for a good life and to achieve sustainable development.

Corporate governance

- Governance Structure

In compliance with the Company Law of the People's Republic of China and other relevant laws and regulations, Vanke has formed a corporate governance structure with checks and balances among various functions and formulated policies and rules in line with its development pursuits. The General Meeting, the Board, the Supervisory Committee and senior management exercise rights and fulfil obligations strictly in line with the Articles of Association and play the role of specialised committees of the Board and independent directors, to effectively perform corporate governance and protect the interests of shareholders and the Company, to sustain the Company's long-term healthy development.



The General Meeting exercises the right of decision-making as specified in relevant laws and regulations, and the Articles of Association. It decides critical issues such as guiding principles for corporate operations, financing, investment, and profit distribution.

The Board reports to the General Meeting and exercises the rights of operation and management over the Company. It sets up three specialised committees on audit, remuneration & nomination, and investment & decision-making. To ensure the professionalism of the committees, members are selected with a moderate balance of skills, experience and diversity of viewpoints. Of its 11 directors, 4 are independent directors, including one woman. These independent directors are responsible for the convening of the specialised committees and hold a majority in the audit committee and the remuneration & nomination committee in order to play a better role as independent directors.

The Supervisory Committee reports to the General Meeting. It conducts financial checks and oversees directors and executives in performing jobs according to law. It also organises patrol inspections of subsidiaries to tighten oversight and safeguard the interests of the Company, shareholders, and employees. Vanke had three supervisors, including one woman.

The senior management is accountable for the production and operations, implementing the resolutions of the Board, annual plans and investment proposals, formulating corporate policies and rules, and exercising other powers as granted by the Articles of Association or the Board. Of the 4 senior executives in the Company, 2 are women.

- Corporate governance practice

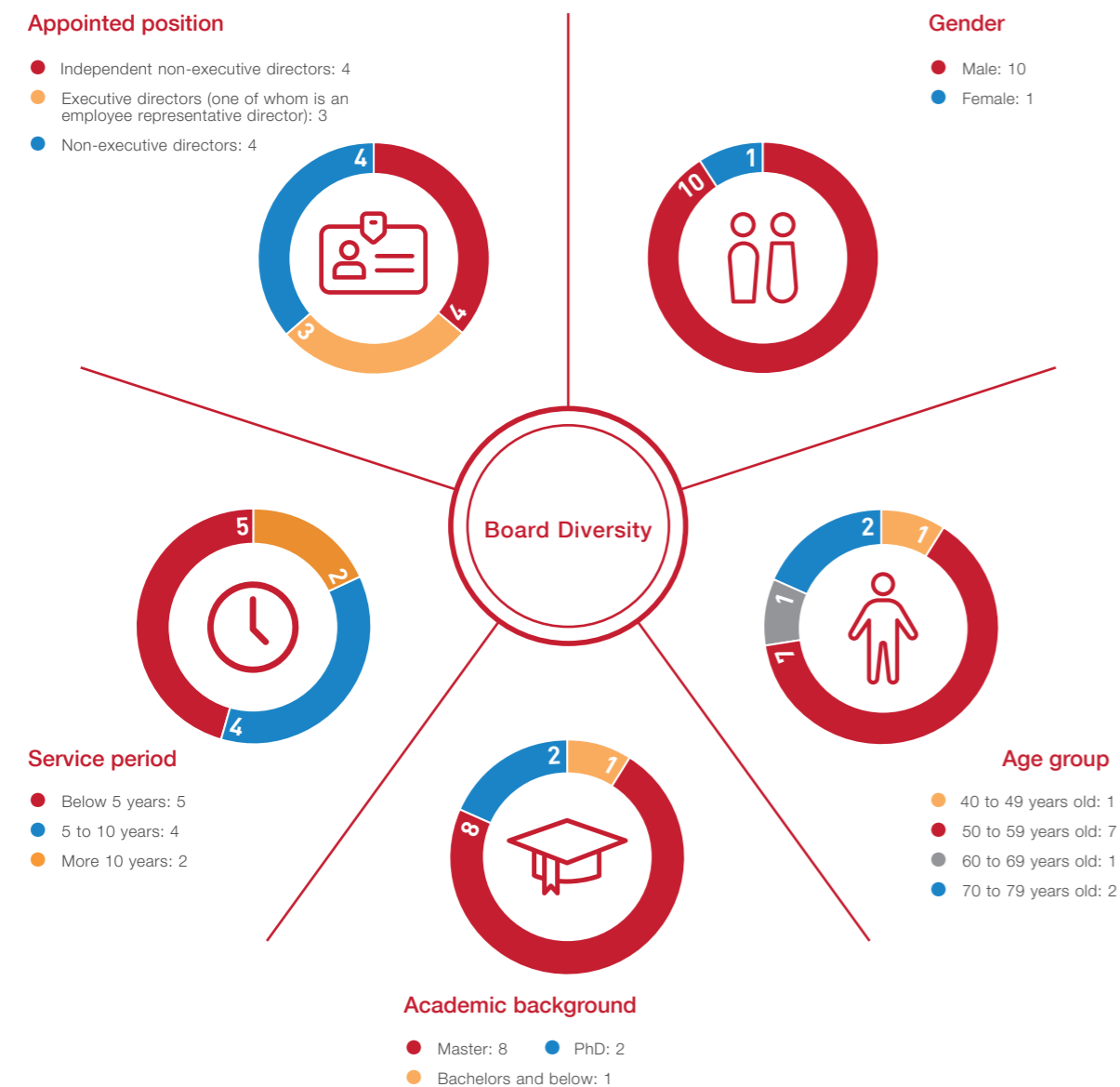
During 2022, the Company strictly complied with the Company Law of the People's Republic of China, the Securities Law of the People's Republic of China, the Code on Governance of Listed Companies, the Corporate Governance Code and the Listing Rules of the Hong Kong Stock Exchange and other laws and regulations, continuously improved the corporate governance structure and standardized the operations in light of the actual situation of the Company. During the reporting period, a total of two general meetings were held, and several rules and regulations, including the Articles of Association, were amended and issued to improve corporate governance further.



• Board diversity

The Company actively practices the policy of diversifying the membership of the Board of the Company by formulating and applying the Rules for the Implementation of the Board Remuneration and Nomination Committee. The remuneration and nomination committee shall fully consider the diversity requirement of the Board, including but not limited to gender, race, language, cultural background, educational background, industry experience and professional experience, when it reviews the structure and composition of the Board, studies the selection criteria and procedures of directors, and senior executives. In the meantime, the remuneration and nomination committee shall consider the contribution of candidates to the qualifications, skills, experience, independence and gender diversity of the Board in combination with the business model and development plan of the Company. The current Board members have extensive industry experience and expertise in various areas, including financial management, corporate governance, and finance.

In March 2023, Vanke revised the Rules for the Implementation of the Board Remuneration and Nomination Committee and added a chapter "Board Diversity Policy" to further clarify approaches and requirements related to board diversity.



Business landscape

With the strategic positioning of "urban construction service provider", the company actively provides customers with diversified products and services for a better life in the fields of residential property development, property services, logistics and warehousing, rental residence, retail property development and operations, etc., and develops in tandem with the city.

Property development

The property development business of Vanke focuses on "good products" and "good services", adhering to the full-cycle and full-category development and operation strategy. With business activities involving multiple fields such as comprehensive residential areas, EPC (Engineering Procurement Construction) and agency construction, urban renewal, and TOD (Transit Oriented Development), we are committed to continuously improving urban living quality and developing together with cities and customers.



Hangzhou Gucui Yinxiu

In 2022, property development business achieved

Sales area of **26.3 million** square meters

Sales amount of RMB **416.97 billion**

Property service

Onewo Space-Tech Service Co., Ltd. ("Onewo", stock code as: 02602.HK) pioneers and innovates the property services industry in China. 32 years ago, Onewo kick-started the journey with the simple purpose of pursuing delightful property services for more people – a purpose which still guides the way we operate today. Drawing on exceptional brand strength and service quality, Onewo has become a leading omni-space service provider with an unmatched growth model built upon the synergy of businesses across community, commercial and urban spaces. Through AIoT and BPaaS solutions, Onewo realises "Remote & Hybrid" operation, thereby improving efficiency of the spaces we serve for customers. In terms of geographic focus, Onewo strives to provide best-in-class space services to customers in high-tier cities with strong economic fundamentals.

For the annual ESG performance of Onewo, please refer to 2022 ESG report of Onewo.



Onewo

As of 31st December, 2022, Onewo covers **584** Onewo Towns

4,358¹ residential property service projects

Over **2,133¹** commercial property service projects

84 urban space projects across **36** cities

¹ The numbers of residential property services and commercial and corporate property services projects are taken from the calibration of contracted projects as of December 31, 2022.

Logistics and warehousing

VX Logistic Properties (VX Logistics) provides logistics and warehousing services and integrated supply chain solution platforms to Vanke, aiming at providing enterprises with high-standard, diversified multi-temperature zone integrated logistics services. Since 2015, VX Logistic Properties, has started its national warehousing network layout. Currently, its comprehensive strength ranks first in the industry, and its cold chain warehousing scale ranks first in China.

In 2022, VX Logistics adhered to the concept of "Technology Empowerment" and "Smart Carbon Neutral" to achieve systematic and intelligent management in multiple dimensions such as safety, quality, efficiency and energy consumption. VX Logistics has obtained LEED Platinum and Green Warehouse 3-star certifications for several parks, with a green building certification area of 4,106,900 square meters.

VX Logistics published the "White Paper on Near-zero Carbon Intelligent Logistics Park", committed to improving energy saving and consumption reduction in park operations and promoting 100% green warehouse certification for all new cold storage.

As of 31st December, 2022, for logistics and warehousing business, the accumulative leasable construction area of projects started is **9.64 million** square meters.



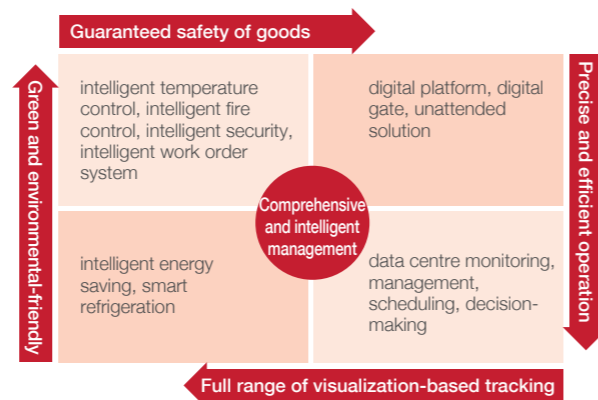
VX Logistic Properties
"White Paper on Near-zero Carbon Intelligent Logistics Park in 2022"



Case VX Tianjin Dongjiang Port Cold Chain Park – Build a benchmark park for bulk commodities in the port

In 2022, as the highest investment and largest volume cold chain park of VX Logistics, VX Tianjin Dongjiang Port Cold Chain Park was officially opened. It is the largest cold chain park in Tianjin with the highest construction and service standards, containing a modern intelligent three-dimensional cold chain center and processing center, headquarters base and related supporting facilities, and has been approved as the first-class cold storage qualification in Tianjin.

The park actively responds to the national goal of "dual carbon", and the construction standard meets the design requirements of the national green building "three stars" certification or LEED Platinum level. Relying on VX intelligent park platform, the park has realized comprehensive and intelligent management.



VX Tianjin Dongjiang Port Cold Chain Park

Rental housing

Port Apartment is a long-term rental apartment brand owned by Vanke that offers youthful urban clients one-stop living options. Port Apartment provides a "convenient, comforting, healthy and energetic" high-quality living space and creative fashion life in accordance with the different living expectations of youthful clients.



Port Apartment

As of 31st December, 2022, Port Apartment

Are located in **34** cities across China
Operated and managed a total of more than **215,000** long-term rental apartments

Opened nearly **166,000** high-quality rooms

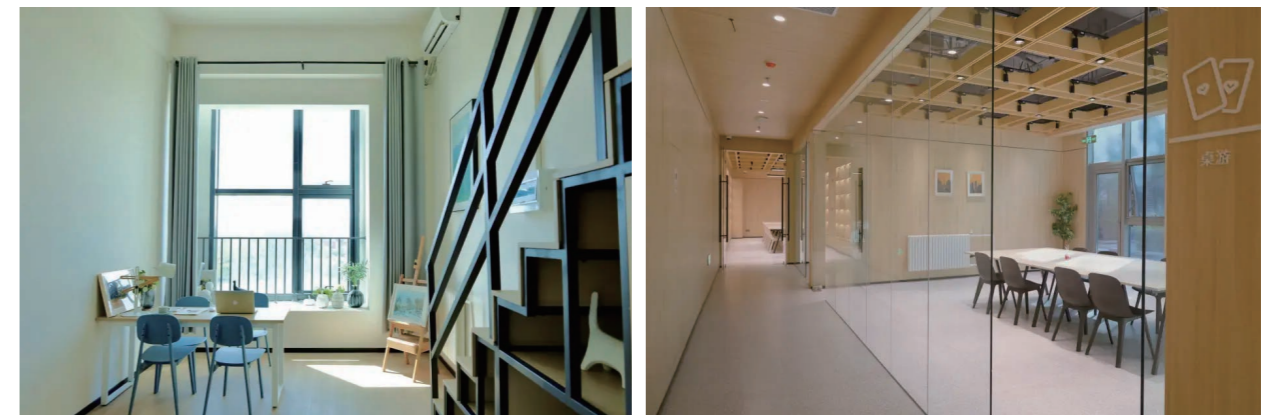
The accumulative number of registered users on the online platform reached

2.7 million

A total of **66** projects with a total of **58,900** housing units were officially included in the affordable housing system

Case Guaranteed rental housing of Vanke Port Apartment in Shunyi, Beijing

Vanke responded to the national policy call for multi-channel and multi-modal participation in the construction and operation of guaranteed rental housing policy. As a result, in November 2022, Beijing Shunyi Park Apartment 28 Block Project was landed and implemented. The project equipped four functional areas, including a shared leisure area, book bar and public reading area, shared meeting area and leisure and entertainment area, fully meeting the needs of youth groups for housing functionality and comfortable living.



Port Apartment | Beijing Shunyi, 28 Block Project

Retail property development and operations

Vanke's retail property development and operations business includes shopping centres, community commercial and other business forms. SCPG is the Group's professional retail property development and operation capability platform. From a worldwide perspective, SCPG concentrates on shopping centres' investment, construction, and management and extends its business operations along the whole commercial real estate value chain. Upholding the "green ecology" and "customer-centric" ethos, SCPG continues to add genuine value for customers and merchants, offer a quality experience for the great life of the public, take up the green low-carbon innovation mission practitioner and contribute to the promotion of urban construction and consumer upgrading.

As of 31st December, 2022, retail property development and operations

- 242** retail projects opened in total
- Opened GFA of **12.28 million** square meters
- 3.65 million** square meters of retail GFA under planning and construction
- Of which, **102** retail projects have been opened by SCPG
- Opened GFA of **8.68 million** square meters
- 1.24 million** square meters of retail GFA under planning and construction

Case Shanghai Nanxiang Incity MEGA, creating a new highland for green consumption

Shanghai Nanxiang Incity MEGA actively promotes green mall operations, applying building automation system and energy regeneration system to optimize energy use and reduce energy consumption. In addition, the mall also actively implements waste classification, formulates environmental procurement policies, advocates paperless offices and enhances waste management capabilities.

In May 2022, Shanghai Nanxiang Incity Mega actively responded to the first Shanghai Green Consumption Season event and created a commercial space in harmony with nature by upholding the concept of "sustainable development" and "green environmental protection".



Ecological Botanical Garden in Shanghai Nanxiang Incity MEGA

Hotel and vacation

Vanke's hotel and vacation business operates projects in core cities such as Shenzhen, Guangzhou, Suzhou, Hangzhou and other tourist destinations such as Huangshan and Lijiang, and holds the Banyan Tree China Group hotel brand, as well as two self-owned brands, "Yun", which focuses on high-end business, and "Youxiong", which focuses on urban humanities.

The ski resort and vacation project is integral to Vanke's hotel and resort business, and Vanke is operating the most extensive mountain and ski resort management group in China. The Group manages six resorts and will add the Yanqing Olympic Park in 2022. It has built and put into operation 340 hectares of ski area and 102 ski trails with a total length of 79.2 kilometres.

As of 31st December, 2022, hotel and vacation business

- Holding **33** hotels in operation
- 102** ski trails have been built

Case Yun x Salomon Hotel, the first outdoor sports-themed hotel in China

In 2022, the Yun Hotel at Vanke Songhua Lake Resort is being renovated with the goal of maximizing resource efficiency and minimizing environmental impact. To meet the new needs of outdoor sports and skiing enthusiasts in the post-Winter Olympics era, the hotel is co-branded with global outdoor sports brand SALOMON to create the first outdoor sports-themed hotel in China, Yun x Salomon Hotel, which has been widely acclaimed since its opening.



Yun x Salomon Hotel

Overseas

Since 2012, Vanke has been gradually developing our overseas business. Vanke has set up Vanke Overseas Investment Holding Company Limited (stock code: 01036. HK) in Hong Kong, China, and has entered the US, Singapore, the UK, and other countries successively, operating in real estate investment and development, asset management, and other businesses in many major international cities. In response to the market characteristics of different regions, Vanke selects partners with independent development capability and sound reputation to cooperate in overseas markets, and always practised the Group's positioning of "urban construction service provider" and is committed to providing more good products and good services to the society and customers.

Topic of the Year

Creating a Near-Zero Carbon Community Sample

Dameisha Vanke Center – Carbon Neutral Experimental Zone

Vanke is adopting net-zero carbon emission, zero waste and biodiversity solutions to pilot a carbon-neutral community at Shenzhen Dameisha Vanke Center to convey Vanke's attitude towards nature and society.



Dameisha Vanke Center is located in the pleasant Dameisha community in the eastern part of Shenzhen, where Vanke Group headquarters was located. Shenzhen Dameisha Vanke Center is planned to be transformed into an international carbon neutral experimental zone through a four-year renewal process, of which the first phase was officially unveiled in October 2022. In January 2022, Dameisha Community was selected as the first pilot project of Shenzhen's near-zero carbon emission zone. The case of the carbon-neutral community in Dameisha Vanke Center and Vanke's implementation of green principles were selected as the only low-carbon transition case in the real estate industry in the Green Finance Working Group's white paper Recommendations to Promote Accelerated Global Transition to a Low-Carbon Economy. In addition, the carbon-neutral community in the Dameisha Vanke Center has been included in the "14th Five-Year Plan" for Shenzhen's response to climate change as a major project, and is a demonstration project for carbon neutrality.



Dameisha Vanke Center – Carbon Neutral Experimental Zone

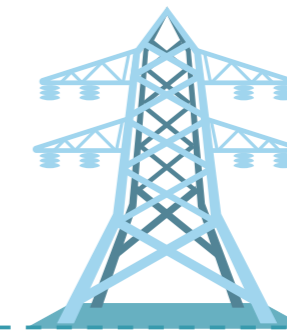
• Future-oriented microgrid exploration and implementation

Dameisha Vanke Center increased the comprehensive energy saving rate of the building to 85% and the proportion of renewable energy to 85% through combining three technologies: renewable energy, green building and digital energy, and achieved 100% green power supply during the operation period.



Energy-saving

Intelligent lighting systems upgrade, creating efficient air-conditioned server room, and building energy-efficiency management systems to improve energy use efficiency.



Open source



Solar power generation layout, distribution of energy storage and intelligent charging piles to improve the PV consumption rate and increase the proportion of green energy.

Data after transformation

Energy consumption indicators per unit area

Design value: **66** kWh/m²
 Shenzhen: **91.8** kWh/m²
 (Average value of commercial buildings in 2019)

Near-zero energy building indicators

Energy saving rate of the building: **25.08%** (≥20%)
 Comprehensive energy saving rate: **85.38%** (≥60%)

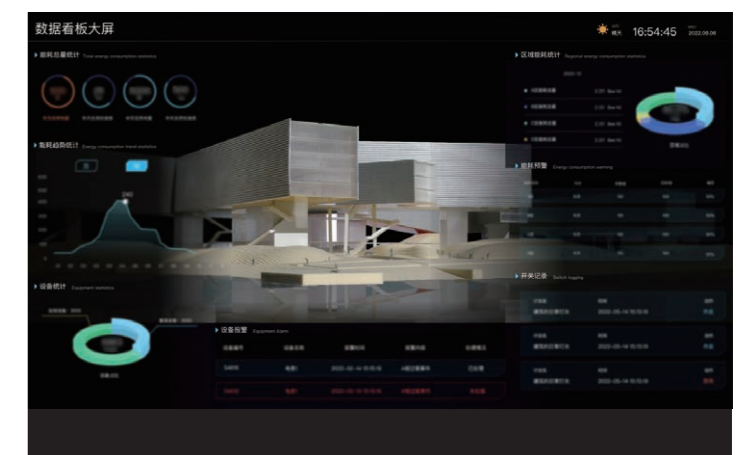
Near-zero carbon emission building indicators (Shenzhen)

Carbon emission reduction: **752.2tCO₂e**
 (Compared to the base year)
 Carbon reduction rate: **93.3%** (≥40%)

Case Microgrid and virtual power plant practices

Dameisha Vanke Center predicts the future 24-hour building load power consumption and renewable energy generation through modelling and applies algorithms to multi-objective strategy scheduling of load, realizes peak and valley reduction of daily power consumption curve, improves renewable energy consumption rate, and reduces operational carbon emissions.

- ▶ Construct an energy monitoring system, a data centre and a community energy prediction model, combined with a building automation system, to build a digital base for a carbon-neutral zone.
- ▶ Utilize buildings for energy storage, electrochemical energy storage, and schedule air conditioning loads to improve renewable energy consumption rates.
- ▶ Actively participate in grid demand-side response and virtual power plant trading.



Microgrid Data Dashboard

• Not only an ecological garden

The rooftop ecological garden of Dameisha Vanke Center is the largest rooftop ecological garden in South China that combines distributed solar power plant and flower garden. Vanke has been following the concept of “low maintenance and self-growth” and is committed to the renovation and maintenance of the rooftop garden.



In 2022, we carried out invasive plant cleaning and soil improvement work, added about 28 species of nectar-derived plants and protein plants mainly from native plants, set up four additional water supply points for birds, and created small but beautiful facilities such as insect gabions and insect islands by transforming abandoned rooftop stones, aiming to create an ecological rooftop landscape with flowers in all seasons, and then improve the comprehensive indicators of green building sustainability such as microclimate regulation, biological self-cycling, species diversity and rainwater storage. We advocate the concept of “co-construction, co-management, sharing, friendly to nature”, linking members of various organizations and community residents in Dameisha Vanke Center to participate and build the ecological garden through adoption of planting and other forms.

We believe that the rooftop ecological garden of Dameisha Vanke Center is not only a garden, but also a practice of the concept of sustainable development and will become an essential ecological and science node affecting the biodiversity network of the surrounding area.

• Community with zero-waste and resource recycling

Vanke has been exploring the concept of “zero-waste” management since 2005 and has integrated the idea into daily operations and management. Dameisha Vanke Center is committed to creating a zero-waste and resource-recycling community:

- ▶ The waste management system and collection containers have been redesigned to promote reduction at source and reuse of office and food waste to minimize harmless, solid waste and improve resource efficiency.
- ▶ 80% of the materials used to rebuild the eco-rooftop garden came from recycled waste generated in the park.
- ▶ Exploring an organic recycling system based on biological treatment methods, we have achieved **100%** recycling of food waste in the park with the help of a black soldier fly.



Overview Map of the Material Flow Cycle in the Zone

Dameisha near-zero carbon community – building a zero-carbon community sample for a better life together

“Near-zero carbon community” is a systematic project and an innovative exploration to promote the transformation of community construction towards green and low-carbon and to build a beautiful green lifestyle. Taking Dameisha Vanke Center as a sample, Vanke Foundation combines different living scenes in the community to create a “near-zero carbon community” with residents and organizations.

Case Youths Light up the “Dameisha Near-zero Carbon Community” Innovation Initiative

Vanke Foundation and Guangzhou Academy of Fine Arts launched the “Dameisha Near-zero Carbon Community” innovation initiative, which focused on three themes: “sustainable tourism, food waste reduction and local resource utilization of organic waste” and produced nine innovative solutions for sustainable tourism in the Dameisha community, empowering youth with a fun, gamified learning model and diverse perspectives and co-creation, driving youth to achieve social values and promote low-carbon environmental behavior in the community. Among them, the “Dameisha Near-zero Carbon Community Exploration Toolkit” was nominated for the China Service Design Excellence Award.



Dameisha Near-zero Carbon Community Exploration Toolkit

Case Discover Meisha Midsummer

To get more public attention and participation in the construction of the Meisha Carbon Neutral Community, Vanke Foundation launched the “Discover Meisha Midsummer” campaign on May 21. Through a series of online and offline contents and interactions, such as hiking on the waterfront trail, nature observation, near-shore biological research and observation, the campaign linked multiple resources to help the public understand the local biodiversity of Meisha. The campaign promotes ecological restoration and helps organic materials to be recycled in the field. It also encourages people to practice low-carbon lifestyle with actions, activate local and related publicity networks and illustrate the charm of Meisha carbon neutral community which helps the public to understand the construction process and development direction of Meisha carbon neutral community.



Poster of Discover Meisha Midsummer

Helping Rural Vitalization

Regional revitalization

- Multi-town rural revitalization demonstration belt in Ruyuan, Shaoguan

In 2022, Vanke continued to support rural revitalization in minority areas in Guangdong Province, following up on the multi-town ongoing rural revitalization demonstration belt project in Shaoguan City's Ruyuan Yao Autonomous County, building "the most beautiful Yao-Hakka passage" based on the construction of the Rugui Highway. In addition, Vanke has transformed Yao villages and formed the "eight scenes of Bibei" along the Suxi river based on its geographical advantages, which has driven the development of tourism along the route.

- Convenience and tourism infrastructure construction – the most beautiful Yao-Hakka passage

The most beautiful Yao-Hakka passage contains the greenway construction, station construction and the image of the gateway at the head and tail of the Rugui Highway. Greenway construction turns expressways into slow-moving paths, offering a safe pedestrian path for villagers and a walkway for tourists to take a slow tour. Station construction allows visitors to stop by and have a simple guide to learn about the surrounding attractions. In addition, it serves as a public activity centre and a stage to display agricultural products. An entrance sign was set up for Rugui Highway and art installations with different characteristics are placed according to different thematic areas, which can form popular spots.



Greenway Planning Diagram



Real View of Greenway Demonstration Belt



Real View of Yao-Hakka Plaza

- Model village construction – Bibei Yao Village's theme area and eight scenes of Bibei



Renovation Effect of Bibei Yao Village on the Mountain

Bibei Village is a Yao original ecological village. Vanke carried out minor renovations on the Bibei Yao Village while preserving its original architectural style: extracting Yao architectural elements, building a new cultural exhibition hall and villagers' center, and improving tourism supporting facilities such as boutique homestay and unique food experience hall; simultaneous improvement of rural infrastructure, electricity expansion, network signal improvement and drinking water pipe expansion for the native villages, and modified the village entrance square to create a rural public space.

In addition, along the Suxi River that runs through the Yao Village theme area, Vanke has set up several rest stops with scenic views, forming the "eight scenes of Bibei", which attract tourists to stop and further enhance their travel experience.



Yao Village Before and After Renovation Comparison

Education revitalization

• Vanke Green and Shine (G&S) rural education support

“Vanke Green and Shine (G&S) Rural Education Support” was launched in 2016, which aims to focus on and support the professional capacity development, physical and mental health and career awareness of rural teacher groups and to promote rural education by combining teaching facility donation and related teaching activities. Over the past six years, Vanke has invested RMB15.38 million in Zhengfeng County, Guizhou Province, benefiting more than 128,000 rural teachers and students.



G&S Rural Education Support Program Site

In 2022, based on the rural teacher support, Vanke launched the county rural education support program. Vanke plans a four-year (2022-2025) cycle in Yongshun County, Hunan Province, to help improve the county's rural education environment and fully stimulate the county's rural education vitality through the G&S Mini Library, G&S Science Class, and G&S Rural Teachers Support series of projects.

• Zundao School education support

Vanke participated in the post-disaster reconstruction in Zundao in Sichuan in 2008, and Zundao School was the first permanent building delivered in the disaster area, achieving the nine-stage earthquake resistance standard. Over the past 14 years, Vanke has continuously supported the development of Zundao School by establishing an education development committee, engaging entrepreneurs, implementing teacher rewards and scholarships, and other means.

In 2022, Vanke gradually changed its focus from focusing on achievement to supporting “five education initiatives” by continuing to cooperate with the Green and Shine Foundation to launch the second phase of the “Shine Art Class” at Zundao School, providing online painting courses to help teachers and students learn diverse painting concepts, knowledge and skills and enrich their artistic experience. Vanke also invited local music teachers and schools to organize music summer camp activities in Mianzhu, leading students to learn small wind instruments such as ocarina, recorder, and Bau, and enabling them experiencing various forms of art such as singing and dancing.

In the context of the school system restructuring, Vanke introduced OKR management methods to the school in 2022 and iterated on the original incentive program to energize the management and teachers' team. This effort is gradually transforming the school into a model rural institution.

Rural Education Support

By the end of 2022, Vanke together with Green and Shine have built **40** bookstores in Yongshun County, donated **124,340** books, donated more than **1,000** science experiment kits to **28** schools, trained **178** teachers offline, and provided health care grants or scholarships to **73** teachers or their children, benefiting **73,447** rural teachers and students



Zundao School Education Support Activities

• Shantou education infrastructure development

In response to the national rural revitalization strategy, Vanke supported Shenzhen's efforts to help Shantou by combining the pledges from the provincial and municipal “630” poverty relief days in 2021 and 2022 to support the construction of education infrastructure in Shantou, specifically by donating nine public town centre kindergartens in Chenghai, Chaoyang, Chaonan and Haojiang districts in Shantou.

Supporting Shantou Education Infrastructure Development

Vanke donated a total of **120** million in pledges to build **9** public town centre kindergartens, which are scheduled to be completed in the fall of 2023

• Employee volunteers – communication ambassadors for rural children

In 2021, Vanke launched the “Blue Envelope Communication Ambassador” group-level volunteer program, which mainly uses letters to accompany and encourage children's growth over a long period of time, and focuses on addressing children's confusion and psychological needs in the process of growth. In 2022, Vanke carried out the third phrase of the “Blue Envelope Communication Ambassador Volunteer Activity”. A total of 368 employee volunteers were paired one-on-one with rural children from Zundao School in Sichuan, the 7th Primary School in Zhenfeng County, Guizhou, and the 10th Primary School in Zhenfeng County, Guizhou, guiding them towards healthy and happy growth.

Blue Envelope Communication Ambassador

By the end of 2022, **368** employee volunteers were paired one-on-one with rural children, exchanging **4,065** letters throughout the year and writing a total of about **2** million words



“Blue Envelop Communication Ambassador” Activities

Beautiful countryside

Vanke also promotes the sustainable development of the rural environment, culture and community by focusing on industrial empowerment, tapping into local culture and cultivating agrarian civilization. In addition, Vanke has initiated projects on waste classification and sustainable management in villages, explored the cooperation model of enterprise and community, and actively contributed to the construction of a beautiful new countryside that is ecological and livable.

• Vibrant village program

Vanke continues to take the community waste management, rural culture construction and community self-organization capacity building as the entry point in two pilot villages in Guangdong Province: Xiankeng Village in Heyuan and Xiapu Village in Lufeng. The purposes are to explore and empower local forces to use community space and human resources effectively, respond to the diversified development needs of local communities in an environmentally friendly way, and effectively support the smooth transition from poverty alleviation to rural revitalization in the villages concerned. We have also gradually explored a "enterprise hardware first + social services to follow" cooperation model. The story of Xiapu Women Service Team was shown at the United Nations Climate Change Conference (COP27) in Sharm El Sheikh, Egypt, as a case study of Asian women's power to combat climate change and the story of Xiankeng Village's rural revitalization action was published in full on the "South+" platform.



Xiankeng Village – Plan for Sustainable Vitality in Xiankeng Village



• Sustainable household waste management project in Jiulong Town

In Jiulong Town, Deyang City, Sichuan Province, Vanke started from the community and school to promote sustainable management of domestic waste through the construction of environmental education space, exploring and cultivation of local forces, and conducting environmental education activities. By linking schools and communities through these three aspects, the project has established a multi-functional environmental education base and a team of garbage classification lecturers. As of the end of 2022, it has provided environmental education for local youth and community residents and effectively linked community, schools, and government departments to support the daily operation of the center.

The pilot community has resourcefully processed **113.15** tons of kitchen waste in total



Sustainable Household Waste Management Project in Jiulong Town

Operational Practices

- Our Strategy
- Sustainability Management
- Compliance Management
- Good Products
- Good Services



Our Strategy

Philosophy

With the business mission of “creating real long-term value for the widest range of stakeholders”, Vanke practices sustainable long-term development and integrates sustainable development into the entire operation management process, product development and service provision. We practice compliance governance, attach importance to business ethics management and construction, and achieve Vanke quality with “good products” and “good services”.

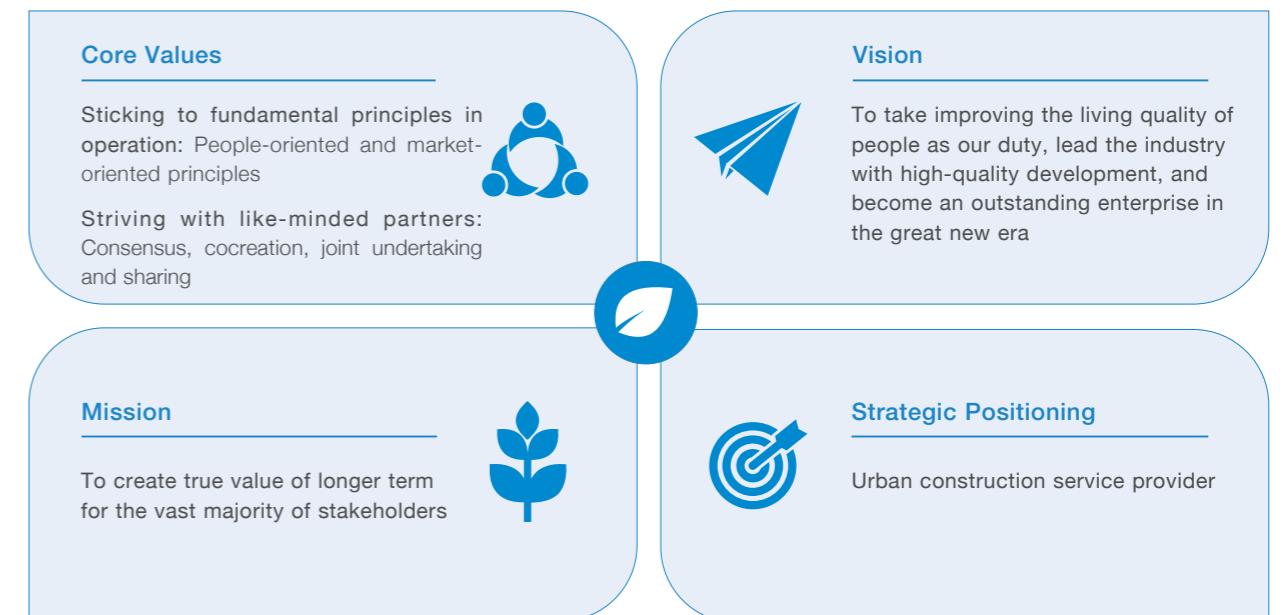
Goal and progress

Goal	Progress
Customer Satisfaction	
We are committed to providing good products and services to our customers. In 2023, the Company will continue to deepen the AI-powered automatic alert system, get access to the Company’s businesses, realise the automatic identification and advance handling of risk problems, promote problem solving and improve customer experience.	
Port Apartment is committed to maintaining an overall customer satisfaction rating of 90 or above.	In 2022, the overall customer satisfaction score was 91.24. 
With 2021 as the base year, the customer satisfaction rate of logistics services will remain above 95%.	The overall satisfaction rate for Cold Chain Operations + High-Standard Properties is 95.86%. 
Customer Services	
SCPG will continue to optimize the accessibility facilities and customer experience.	Continuously improve the external barrier-free access and internal barrier-free facilities, and provide diversified quality services. 

Sustainability Management

Vanke has been actively pursuing the concept of sustainability and continuously improving the management of environmental, social and governance (ESG) performance. We review the performance of Vanke ESG regularly, formulate ESG strategies and policies and implements studies on specific ESG topics on a regular basis to gradually enhance the ESG management level and responsible practices.

Philosophy and strategic positioning



Based on the strategic positioning of “urban construction service provider”, the Company actively renders customers with diversified products and services for a better life in the fields of real estate development, property services, logistics and warehousing services, rental housing, retail property development and operations, etc., and develops in step with the city.

Sustainable development management

Vanke has established an ESG management system, set up an ESG governance structure from the Board to the ESG Execution Team, and clarified the responsibilities and division of labour at each management level to promote the ESG governance work of Vanke Group effectively.

Governance structures and responsibilities

Organization	Role	Composition	Responsibilities
The Board of Directors	Decision-making body	Members of the Board	<ol style="list-style-type: none"> 1) Decide the ESG management framework and management strategy of the Company; 2) Ensure that Vanke establishes appropriate and effective ESG risk management and internal monitoring system; 3) Engage in discussions on important ESG issues and monitoring the progress of ESG goals. 4) Review and approve the ESG annual report of the Company.
The ESG Working Committee	Management body	<p>The Chairman of the Board is the director and the secretary of the Board acts as the deputy director.</p> <p>Other members include the responsible persons of relevant functions, BGs and BUs</p>	<ol style="list-style-type: none"> 1) Confirm the results of internal and external materiality assessment; 2) Decide the management objectives, policies and implementation approaches of ESG; 3) Acknowledge the assessed and identified ESG related risks and opportunities; 4) Determine the relevant ESG management system and workflow; 5) Decide on the ESG work plan and evaluate the completion of the work; 6) Conduct preliminary examination of the annual ESG report and submit it to the Board for review; 7) Oversee other ESG related matters of the Company.
The ESG Execution Team	Executive body	Composed of ESG contact personnel of related functions, BGs and BUs. The specific members are assigned by responsible persons of the relevant functions, BGs and BUs	<ol style="list-style-type: none"> 1) Conduct internal and external materiality assessment; 2) Responsible for preparing the annual ESG report of the Company; 3) Assess and identify ESG-related risks and opportunities; 4) Assess the gap between ESG work and standard requirements of the two stock exchanges, and the advanced peer companies' excellent practices, make improvement plans and promote their implementation; 5) Implement annual work content according to ESG management objectives; 6) Implement resolutions of and other tasks assigned by the ESG Working Committee.

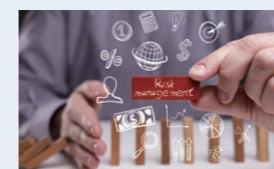
Management philosophy

Vanke has integrated the concept of sustainable development into its operation and management, constantly reviewed its sustainable development performance, and continuously strengthened the management of all aspects of ESG. The Company deeply integrated sustainable development with its existing business and control models by regularly communicating with stakeholders, deepening research on sustainable development policies, conducting issue management, planning development goals and implementing improvement proposals.



Operation Management

In the management process of investment and M&A, sustainable development factors such as soil quality testing, environmental protection compliance, social security compliance, and safety production are taken into consideration in the evaluation.



Risk Management

Integrate sustainability-related risks, such as climate risk, into enterprise risk management.



Employee Engagement

Promote sustainable development to employees and work with them to build a low-carbon, environmentally friendly, diverse and inclusive workplace. In 2022, we conducted two training sessions on sustainability for the management and employees of our headquarters and BUs, covering topics related to sustainable development trends, management of essential issues and data management to enhance employees' participation and awareness of sustainable development.



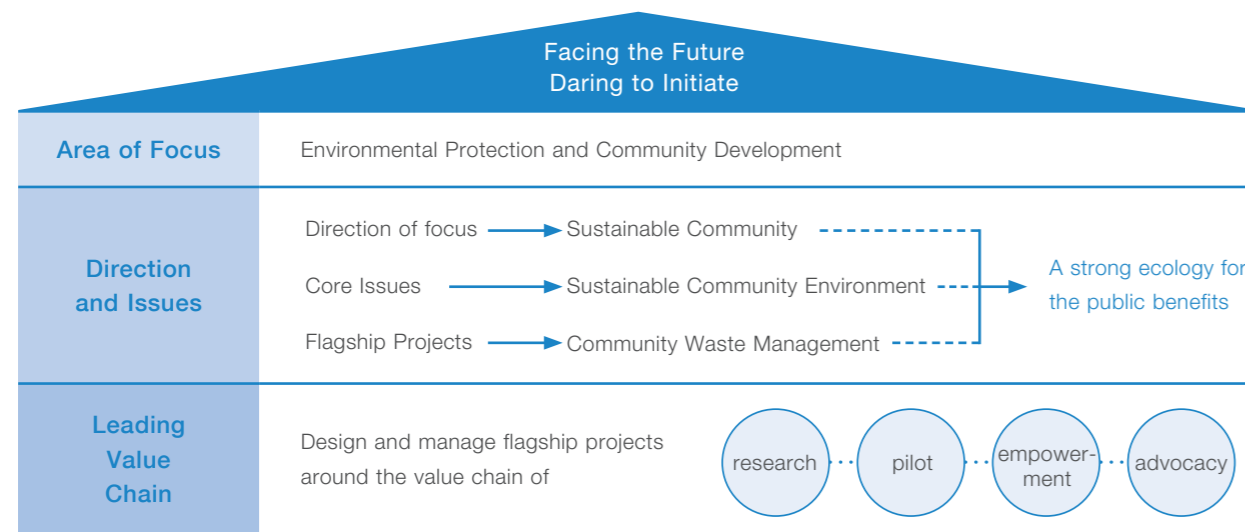
Stakeholder Communication

Communicate with the government, shareholders, customers, and public charity organizations, to respond to their expectations and requirements. Publish annual sustainability report to respond to the concerns of stakeholders and show Vanke's sustainable development performance.

Public charity strategy

Founded in 2008, the Vanke Foundation is a national non-public foundation initiated by China Vanke Co., Ltd., approved by the State Council and the Ministry of Civil Affairs of the People's Republic of China which also acts as its supervising authority. In 2017, it was recognized as a charity organisation. At the end of 2021, it was rated as a 4A national social organization by the Ministry of Civil Affairs.

In 2018, Vanke Foundation released the Vanke Foundation Strategic Plan 2018-2022. The public charity actions have been planned from four aspects: supporting research, network building, capacity building, and policy advocacy.



In 2022, Vanke Foundation continued to make efforts in environmental protection and community development. On the basis of constantly improving the community waste management and strengthening biodiversity conservation, Vanke Foundation actively responded to the national policy of “carbon dioxide peaking and carbon neutrality”, innovatively led and took actions and initiatives to address the climate change, and leveraged the power of social organizations to help the country achieve the dual-carbon goal actively.

In 2022, Vanke Foundation spent a total of RMB **72,825,980.99** on public charity operations, with funds invested in the following areas: community waste management, green environment protection, disaster and epidemic relief, education development, precise poverty alleviation, and children's health. In addition, during the reporting period, **19** public charity volunteer activities were launched, calling for **10,557** participants and a total of **108,750** hours of volunteer service.

In February 2023, Vanke Foundation released its new five-year strategic plan. Vanke will continue to focus on the exploration and promotion of carbon-neutral communities, address the bottleneck period of community waste management, and continue to explore sustainable communities and contribute to a better urban life.

Progress of public charity strategy

In 2022, Vanke Foundation focused on two scenarios and two platforms to carry out zero-waste public charity activities and community sustainable development empowerment actions, to strengthen the awareness of the zero-waste concept in the city and specific scenarios, and to cultivate relevant institutions and talents to support sustainable community development.

Urban scenarios

Zero-waste Campus

- Conducting a special promotion program for the Zero Waste School Guide**
In 2022, the Zero Waste School Guide received 166 applications from 23 provinces/municipalities; 11 schools from 9 provinces/autonomous regions and municipalities conducted an average of over 130 hours of practical activities. In addition, the Zero Waste School Guide was applied to more than ten schools, including Shenzhen Dandelion Campus.

- Launching the zero-waste campus initiative**
In 2022, more than 450 schools participated in the Chongqing Zero-waste Campus Initiative, and 33 “Zero-waste Campus Pilot Schools” were selected based on teacher training, curriculum practice and student activities. In addition, the results were showcased through the online “Zero-waste Campus Carnival”, viewed by more than 1.08 million people in real-time.

Zero-waste Offices

- Deepening Zero-Waste Office**
In 2022, Vanke Group continued to deepen the concept of environmental protection and zero-waste office action, upgrading the equipment of waste separation bins and centralized waste collection points in Vanke Park and continuously carrying out Vanke zero-waste environmental protection activities. As a result, our zero-waste achievement was fully recognized by the Shenzhen Municipal Bureau and was awarded “Shenzhen 2022 Green Unit of Domestic Waste Separation” title.

- Promoting the Zero Waste Office Program**
Provide technical support and operational guidance for the implementation of zero waste in office scenarios for companies nationwide. In 2022, we recruited 21 joint promotion partners, attracted more than 300 enterprises to participate, and successfully conducted nine seminars with more than 2,500 participants.

- Carrying out nature exploration-themed activities**
Vanke Group conducted two nature exploration theme activities in 2022, and the satisfaction rate of participating employees was 100%.

Zero-waste Community

- Expanding participation coverage**
With Beijing and Shenzhen as the core focuses, the program covers 90 urban communities in 7 cities and over 180,000 urban households nationwide.

- Green housekeeping course**
The Green Housekeeping course is available on the online school of China's largest Internet housekeeping company, “Ayilaile.com”, and will be open to 380,000 registered housekeeping workers.

- Live courses**
The “Waste Reduction – Green Housekeeping Achievement Conference and Roundtable Forum” was broadcast via Phoenix Television's live streaming platform and was watched by 100,000+ viewers online.

Specific scenario

Zero-waste Forbidden City

- Strengthening the foundation of waste classification**

The project worked with the Forbidden City to continue the green waste composting. A total of 28 tons of green waste was processed in 2022.

- New landscape of ecological flower beds**

The project, in collaboration with professional partners, built 156 square meters of ecological flowerbeds in the Forbidden City, using traditional Chinese gardening techniques to create a flowering for three seasons evergreen throughout the year natural landscape, and over 20 species of native plants, landscape stones, lotus tanks, and ecological facilities such as compost bins, worm towers, and insect houses to create miniature ecosystems.



Zero-waste Activity in the Forbidden City

- Continue to promote public awareness of zero waste**

Combining the culture of Chinese calligraphy, tour in the Forbidden City and culinary culture, we jointly released several activities, for example, Check-in activities for identifying ancient word on the garbage can, biweekly activities Zero Waste Discovery | Play around in the Forbidden City | Public activities for Zero Waste Forbidden City and the second themed activities in the Forbidden City, namely zero-waste restaurant culture week. The public will be able to deepen their knowledge of zero-waste concepts through unique online and offline activities. At the same time, the Palace zero-waste thematic webpage has been launched on the official website of the Palace Museum in mid-2022.

- Expanding industry influence in the international market**

In 2022, the project actively participated in external exchanges by showing a promotional video, a project brochure and the Forbidden City zero-waste eco-creative products at COP27 China Pavilion. The Forbidden City zero-waste products were also exhibited at the Shenzhen Charitable Creative Space.

- Pilot action**

Based on four specific scenarios of villages, households, public attractions, and B&Bs on the pilot islands, five demonstration sites for in-site resource treatment of organic waste were established, with nearly 20 tons treated in-site.



Zero-waste Activity on Island

- Training for personnel**

The project has nurtured a "Green Weizhou" team of

7 local community leaders, which has led 20 leaders on the island to participate in the construction and operation of green communities on an ongoing basis.

- Public advocacy**

Based on the action experience, Weizhou Island Organic Cycle Handbook was produced to standardize the technical route and to provide a reference for the work of the relevant government departments.

Zero-waste in Islands Action

Empowerment platform

Plan	Planet Partnership Plan	Star Partnership Plan	Supporting Chinese social organizations to participate in global environmental governance capacity development
Detailed Information	Nurturing start-up social organizations with potential for sustainable community issue development	Nurturing regional leaders with the potential to lead on sustainable community issues	Focusing on biodiversity conservation and climate change issues and enhancing the international participation capacity of relevant Chinese social organizations
2022 Progress	<ul style="list-style-type: none"> A total of 22 organizations have been supported to form the "Planet Partnership Network", located in 13 provinces, cities and autonomous regions across China. Planet Partners currently serves more than 18 communities, serves more than 20,000 people, and accompanies and supports 34 social organizations. The program has provided 156 hours of coaching to planet participants and partners, supporting business model sorting, organizational governance, and program implementation. In terms of institutional expansion, 30% of the organizations organically combined their original programs with the Planet program. In service methodology innovation, 60% of the organizations were inspired by the new learning methods and improved their problem-solving capabilities. 	<ul style="list-style-type: none"> A total of 27 organizations jointly established the "Star Partnership Network", located in 19 provinces, cities and autonomous regions across China. Star Partnership Network now directly serves more than 100 communities with more than 570,000 people and accompanies and supports 356 social organizations. It has expanded coverage to 5 regions: Yangtze River Delta, Pearl River Delta, Bohai Sea, Northwest and Southwest. Different Star Partners support community creation empowerment training and technology, waste management, etc. The enabling system of the project has been used for reference by JingCaoTongXing, Luyuan Project, Ginkgo Foundation Partnership, LingLong Project and other enabling projects in various industries. 	<ul style="list-style-type: none"> The project held three training sessions on three topics: sustainable development, biodiversity conservation and climate change, and invited 45 high-level representatives from international/domestic government departments, academic institutions and global/local groups to share their views. The training sessions were broadcast live on multiple platforms offline and online, with over 202,000 participants. The project has produced and released 3 sets primers and 10 in-depth interpretation documents to help Chinese social organizations quickly understand the relevant content and strengthen the related business and development links.



Star Partnership Plan – Sustainable Community Building Sharing Session



Planet Partnership Plan – Sustainable Community Building Board

Think tank platform

2022 Project Progress Project Information

Xirang Scholar Support Program

- All 10 "Xirang Scholars" have completed their research and reports. The study covered diverse topics such as waste management in urban, rural and ethnic minority areas, food waste, beach waste, recycling of used textiles, and participation of social organizations in waste sorting and composting.

Waste classification boosted by big data

- Continued to maintain and optimize the construction of the "garbage map", expanded the coverage area of "taking a picture of garbage classification readily", dynamically evaluated hundreds of cities and promoted community garbage sorting, responsible recycling and food waste resource recovery in enterprises and communities.
- The number of garbage photos exceeded 83,622 nationwide, lighting up 47,197 neighborhoods and covering a total of 337 cities.
- The garbage map became a tool for Qingdao, Suzhou and other cities to conduct community garbage sorting surveys.

Promote the research on social organization policies

- Public Policy Advocacy Capacity Building Project, which helped 20 social organizations to improve their policy understanding and advocacy capacity through offline workshops and online accompaniment support.
- Helped social organizations in the field of solid waste to learn and use carbon accounting tools by carrying out the project of Carbon Emission Reduction Calculation Capacity Guidance.
- The Handbook for Capacity Building of Public Policy Advocacy by Social Organisations was formulated.

Public advocacy

- Household garbage classification action with Dandelion volunteer lecturers: Conducted three empowerment training sessions in 2022 and over 150 waste reduction and sorting activities by funded project partners.
- Community Low Carbon Environmental Protection Gathering Action Project – Leitu Action Phase 3: In 2022, two learning communities were established, and 651 participants were trained. Various thematic and exchange activities, including resource recycling, zero-waste practices, environmental education, were conducted. A total of 1,428 people directly participated in the study and influenced 42,052 people.

Stakeholder engagement

We have always insisted on building diversified communication mechanisms and close relationships with the stakeholders for exchanges and communication through more channels and methods.

Expectations and Requirements	Stakeholders	Vanke Responses
<ul style="list-style-type: none"> Legal Compliance Tax payments according to law Support of economic development 	<p>← The Government →</p>	<ul style="list-style-type: none"> Compliance management Proactive tax payment Responding to the call of national policy
<ul style="list-style-type: none"> Corporate governance Returns and growth Risk control 	<p>← Shareholders →</p>	<ul style="list-style-type: none"> Establishing a scientific and reasonable governance structure Regular disclosure of business information General meetings Continued growth to ensure shareholder returns
<ul style="list-style-type: none"> Wage and benefit security Health and safety Smooth communication Fair promotion and development opportunities 	<p>← Employees →</p>	<ul style="list-style-type: none"> Timely and full wage payment and social insurance payment Establishment of occupation health and safety management system Carrying out physical examination and fitness testing for employees Establishment of 12 communication channels Smooth career development channels
<ul style="list-style-type: none"> Product quality assurance Quality management service 	<p>← Customer →</p>	<ul style="list-style-type: none"> 5+2 industrialised construction Providing quality service Protecting customer privacy
<ul style="list-style-type: none"> Honouring commitments Fair, just and open procurement Experience sharing 	<p>← Partners →</p>	<ul style="list-style-type: none"> Contract execution according to law Open bid invitation, issuance of List of Qualified Suppliers WUPUP E-commerce Platform Project cooperation Promotion of sound industry development
<ul style="list-style-type: none"> Effective use of resources Emission reduction Addressing climate change Biodiversity conservation 	<p>← Environment →</p>	<ul style="list-style-type: none"> Responding to carbon neutrality goals Built the Dameisha Vanke Center as a sustainable model park Housing industrialisation, green building, energy management, water resources management, waste management (including community waste management) Zero-waste projects Participation in United Nations Climate Change Conference and United Nations Biodiversity Conference Engaging in environmental governance, vegetation conservation, snow leopard conservation, porpoise conservation, mangrove wetland conservation and coral conservation
<ul style="list-style-type: none"> Support of social development Care for disadvantaged groups Health culture 	<p>← Communities and the Public →</p>	<ul style="list-style-type: none"> Supporting rural vitalisation strategy Charity undertakings Volunteer services

Management of material topics

We regularly conduct research activities for a wide range of stakeholders to comprehensively understand and collect the views of government, shareholders, employees, customers and other parties on Vanke's sustainable development and help us identify important sustainability issues. In 2022, we reviewed materiality issues, conducted interviews with business units within the Group related to ESG work, and reviewed the materiality issues and their ranking through expert evaluation and peer benchmarking.

Evaluation process

1 Identify and build a database of issues

Based on national policies, company development, disclosure standards, capital market, peer benchmarking and the original materiality issues, we identify and sort out the materiality issues for this year in multiple dimensions and build a materiality issue database.

- Policy trend analysis: Follow the national macro policy requirements, conduct in-depth research on national and provincial and municipal policies and regulations, combined with the real estate industry policies and regulations, and analyze the sustainable development trend of the industry.
- Disclosure Standards Analysis: Comprehensive reference to GRI standards, The Task Force on Climate-Related Financial Disclosures (TCFD), HKEx Environmental, Social and Governance Reporting Guide, SASB standards, to grasp the latest sustainability issues management standards and information disclosure requirements.
- Aggregate the assessment requirements for capital market ESG ratings and indices, and update the capital market rating issues database.
- Peer benchmarking analysis: benchmark the sustainability-related disclosures of our domestic and international peers and identify key industry concerns.

2 Conduct stakeholder engagement

- Based on the assessment results and our daily contact and communication with each stakeholder, we understand the core concerns of the stakeholders through online and offline interviews or teleconferences to advance the assessment and review of this year's materiality issues.

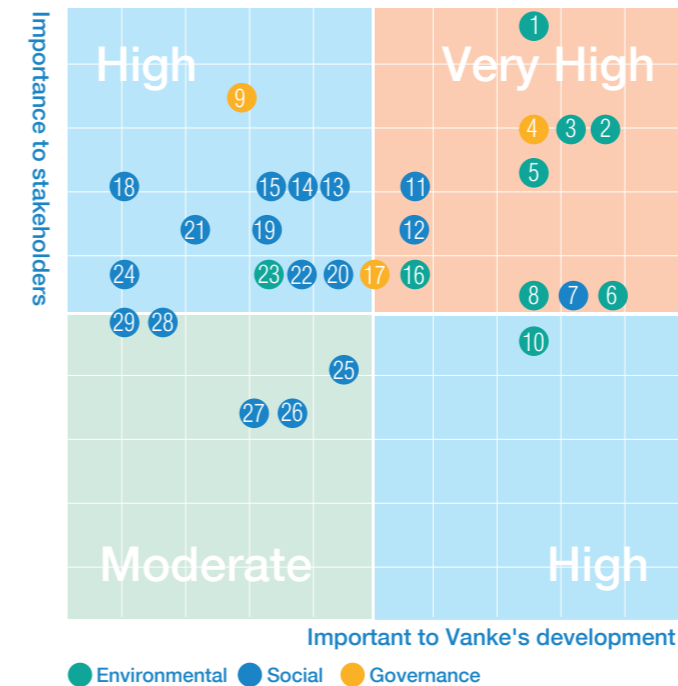
3 Analysis and review of materiality issues

- The ESG issues identified are ranked and analyzed in terms of their materiality, by considering the opinions of corporate management and stakeholder requirements. The screening and analysis results are reviewed through two channels: internal management and external experts.

4 Material issue responses and disclosure

- Develop and implement action plans for materiality issues, present and confirm to the Board, and highlight the responses and disclosures in the report.

Materiality matrix



- 1 Adopting green and sustainable building design
- 2 Increasing energy efficiency and using renewable energy
- 3 Reducing and properly managing waste and sewage discharge
- 4 Preventing and combating corruption and unfair competition
- 5 Coping with climate change risks and opportunities
- 6 Reducing greenhouse gas (GHG) emissions
- 7 Guaranteeing the safety and health of customers
- 8 Reducing water waste
- 9 Ensuring compliance and sound operation
- 10 Promoting green and sustainable supply chains
- 11 Protecting customer privacy and information security
- 12 Ensuring the well-being of employees and creating a decent employment environment
- 13 Protecting the occupational health and safety of employees and labours
- 14 Improving customer opinion and satisfaction management
- 15 Providing training and career development opportunities
- 16 Biodiversity conservation
- 17 Strengthening stakeholder communication
- 18 Establishing enterprise and supply chain behaviour standards
- 19 Protecting the rights and interests of employees and employee diversity
- 20 Improving community infrastructure and supporting services
- 21 Safeguarding product safety and quality
- 22 Promoting community integration and coordinated development, and building a people-centred new town
- 23 Improving environmental awareness and participation of stakeholders
- 24 Protecting intellectual property rights
- 25 Improving customer service quality
- 26 Enhancing employee participation and satisfaction
- 27 Serving rural revitalization and boosting common prosperity
- 28 Fair hospitality and marketing
- 29 Promoting industry exchange, cooperation and innovation

Compliance Management

Business ethics

Vanke insists on honest and compliant operation, strictly prohibits commercial bribery and conflict of interest, and takes whistleblowing management seriously, advocating the establishment of a mutually trusting compliance partnership. We ask every Vanke employee to adhere to the bottom line and work together to create a transparent and healthy business ecology.

- **Solid integrity management**

Vanke has established a well-proven integrity management structure. The Audit Committee of Vanke is responsible for reviewing the Company's internal controls, coordinating the communication, supervision, and verification of internal and external audits, inspecting and evaluating the Company's risk management system, and so on. The audit and supervision function are directly responsible for the integrity management of the Group. We have established a supervision mechanism involving the headquarters, business groups/units (BGs/BUs) and frontline companies to play a major role in the management of audit supervision and corruption risk screening.

Vanke has achieved a **100%** signing rate for its Sunshine Cooperation Agreement in 2022

Vanke has formulated many codes of conduct, such as the Sunshine System – Vanke Red Line Requirements for Employees, Letter of Reminder for Integrity Risks, Code of Conduct for Employees, Sunshine Cooperation Agreement, Principles for Whistleblowing, to strengthen the foundation of corporate business ethics management. In 2022, we updated the Sunshine Cooperation Agreement by adding a standard model clause on “anti-bribery” to expand the management dimension of the Sunshine Cooperation Agreement. In addition, we also updated Vanke Group's 16 Bottom Line Principles and disseminated them to all employees through emails, training and annual meetings.

Vanke Group's 16 Bottom Line Principles

<ul style="list-style-type: none"> • No compromise on life safety • No ambiguity in quality standards • No bribery • No accepting bribes • Not to seek personal gain • No leakage of confidential information 	<ul style="list-style-type: none"> • No underreporting, no omission, no late reporting • “I am not a company spokesperson” • No falsification of data • No false promises to customers • No private engraving and private use of official seals • No private treasury 	<ul style="list-style-type: none"> • No personal collection of customer money • No external guarantee that exceeds the authorities • No external borrowing that exceeds the authorities • No external investment that exceeds the authorities
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- **Prevention and control of corruption risk**

The headquarters and business divisions of Vanke carried out audits and inspections to promptly close integrity loopholes. The organization culture, team atmosphere and supplier relationship are inspected in a focused manner, and the company's sunshine culture is well promoted. In addition, we invited all employees and partners to evaluate our integrity environment, compiled a Letter of Reminder for Integrity Risks according to the evaluation results, and issued it to front-line management teams to foresee the integrity risk prevention management.

Vanke carried out special implementation verification of violations of discipline in key areas and key personnel, focusing on integrity construction, internal anti-fraud investigation and organizational construction, and strictly adhered to the red line and bottom line. In 2022, we conducted a total of 12 comprehensive audits and 126 special audits for all business lines across the Group, and 146 integrity monitoring projects, including 13 risk inspections for key risk areas such as marketing, finance, cost and procurement. We strictly deal with violations of red lines, promote management by investigation, and continuously strengthen risk awareness management in marketing departments.

Case Special Reform Program for Decoration Management Mechanism

This year, Onewo Integrity Monitoring Center launched the renovation management mechanism, and created a SaaS solution for renovation management based on the induction and review of historical integrity cases, realizing the control and supervision of the entire renovation process from filing, deposit, gate post, inspection, acceptance to evaluation, solidifying the safety management and safety production of the building maintenance in the managed community through positive and transparent basic renovation data, and making the incidence rate per 1,000 person of decoration fraud decrease by 69% year-on-year.

- **Whistleblower management**

In order to actively improve integrity management and effectively identify integrity risks, we find relevant clues by collecting internal and external reports, internal screening, etc., and independent investigations are conducted by the Monitoring Center.

Open reporting channels

We have set up open reporting channels such as the Vanke Fraud Reporting Website (5198.vanke.com), the 5198 reporting email box and the “Integral Vanke” WeChat official account. Suppliers, contractors, and other partners may report any potential breaches to Vanke through open reporting channels.

Specialized personnel special processing

Specialized personnel are arranged to receive and process the collected reporting information, insisting on the principles of confidentiality of reporting, give priority to real names, and rewarding the investigation. We accept complaints and reports against Vanke employees or units for private fraud, falsification and other unethical behaviour.

Strict process management

Upon receiving the confirmed reported cases, Vanke's supervision and audit function department seriously handles the reported cases of fraudulence and corruption according to the seven procedures: judgment and analysis, the establishment of a verification team, carrying out verification, issuance of the preliminary verification report, feedback to the informant and soliciting the opinions of the investigated object, issuance of the formal verification report, and notification.

Information confidentiality management

We will establish regulations on the protection of whistleblowers' information, promise to strictly control the scope of internal access to whistleblowing information within the scope allowed by law, strictly keep the materials involved in the investigation process confidential, and required the investigated units and persons reported against not to retaliate against the informants. Once acts of retaliation are found, we will deal with such actions seriously.

- **Cultivating integrity culture**

Vanke attaches importance to cultivating integrity culture and conducts annual integrity education for members of the Board and all employees, devoting to deeply planting a culture of integrity in the hearts of every employee.



We conduct annual red-line training for all employees, including members of our Board, and regulate the conduct of all employees in their positions. We conduct regular integrity promotion activities to promote integrity laws and regulations and internal company norms through a dedicated integrity website, a series of integrity posters, the launch of integrity presentations and the release of integrity files and all-employee warning cases. In 2022, we conducted quarterly briefings and training activities on disciplinary violations that occur within the company.



We designate the Sunshine System – Vanke Red Line Requirements for Employees as the compulsory course for all new employees and signed the Vanke Group Statement with all new employees to enhance new employees' awareness of professional red lines such as bribery, acceptance of bribes, duty encroachment, economic fraudulence, conflict of interest, deception and concealment, and disclosure of confidential information. In 2022, Vanke (excluding Onewo BG) organized 74 training sessions for 1,982 new employees; Onewo BG conducted training for 25,500 new employees.



We focus on strengthening senior management's awareness of performing their duties with integrity. In 2022, the directors, supervisors and senior executives of the Group attended the special training sessions for directors, supervisors and senior executives of listed companies organized by the regulatory authorities to continuously learn regulatory laws and regulations and strengthen the awareness of diligence, loyalty and honesty in performing their duties.

• **Enhancing partner integrity**

Vanke joined forces with several well-known enterprises to establish the enterprise anti-fraud alliance, calling on all members to "be honest and not to bribe", and sharing the blocklist to improve the social cost of dishonest personnel and dishonest units. The enterprise anti-fraud alliance has 716 members, including more than 20 Fortune Global 500 companies and more than 110 of China's top 500 enterprises. It has become the most influential enterprise anti-fraud and mutual-assistance organization in China, contributing to a clean society.

In 2022, there were **0** cases of anti-competition behaviours in which Vanke was considered a participant, and **0** instances of violating the antitrust law.

Risk Management

• **Building a solid foundation**

Vanke has developed Internal Control Management System of China Vanke Co., Ltd. and Risk Management Manual of China Vanke Co., Ltd. to clarify the Company's objectives and principles for internal control management and risk management, organizational system and responsibilities division, risk identification, risk assessment, risk response, risk management monitoring and supervision and other content.

• **Refining the structure**

Vanke has improved and strengthened the functions to identify, monitor and guard against risks at the Board level and internal management level on an ongoing basis, and examined and assessed the effective operation of the risk management system established by the Company. The Headquarters is responsible for the identification, prevention and control of risks at the company level, gradually establishing the risk-management functional department in business groups/units and front-line companies for risk identification and assessment.

• **Optimization of management**

Vanke has set up "three lines of defence" consisting of business, functional, and internal supervision departments to implement comprehensive risk management. At the same time, our professional departments identify the six significant risks, continuously follow up on special rectification and establish a long-term effective risk management mechanism. For details on internal control and risk management, please refer to China Vanke Co., Ltd. 2022 Annual Report.

• **Empowerment training**

Vanke continues to strengthen risk management training to consolidate risk management awareness further. We conduct various specific trainings in regular and irregular ways, including red line bottom lines, negative cases, risk tips and other topics. At the same time, we have incorporated risk management content into our daily training and appropriately integrate risk management-related content and promotions in various trainings at headquarters, regional and front-line companies to further strengthen employees' risk management awareness.

Information security and privacy protection

Vanke strictly complies with the Cybersecurity Law of the People's Republic of China, Data Security Law of the People's Republic of China, Personal Information Protection Law of the People's Republic of China, and other laws and regulations, and has formulated Vanke Group Information Security Inspection and Audit Management Standards, Personal Information Compliance Management Outline, Personal Information Security Incident Emergency Plan to provide management standard for Vanke to implement information security and privacy protection.

In 2022, Vanke became a director unit of Guangdong Internet Society, a subordinate unit of Guangdong Communications Administration, and participated in the formulation of the Information Security Technology and Internet Application System Data Security Capability Maturity Model.

• **Information security and compliance management**

The Group established a data security and personal information security compliance teams through the "Dragon Wakening Program", which are divided into two levels: the compliance team at the Group level and the compliance team at the BG/BU level, taking charge of the compliance management of the Group's data security and personal information security. In 2022, we have taken several measures to strengthen information security and privacy protection for public cloud management, management mechanism and management process. In addition, we require all personnel, including employees, partners, suppliers and other subjects, to sign confidentiality agreements and confirm the implementation of confidentiality agreements through regular and special audit checks. In 2022, the signing rate of confidentiality agreements for employees and partners achieved 100%.

Cloud security management	<ul style="list-style-type: none"> • Build cloud security system from IaaS, PaaS and SaaS layers respectively, and open up security processes and tools • Build cloud network attack exposure surface security detection and response mechanism through cloud security asset mapping platform • Protect application systems and data security on the cloud through cloud access security broker (CASB) • Combine standards and technical means to achieve closed-loop management of risk by building a cloud configuration risk handling mechanism
Optimize management mechanism	<ul style="list-style-type: none"> • Improve data security and personal information compliance system • Conducting personnel compliance awareness and professional skills training • Carry out special work on data security and personal information compliance • Strengthen the security technology protection system
Strengthen management process	<ul style="list-style-type: none"> • Establishment of bulk export application, approval and encryption mechanism for users' personal information • Compliance assessment and application approval process for newly launched personal information-related systems • Regular implementation of APP compliance testing and rectification mechanism • Carry out self-assessment of personal information impact (PIA) of each system

Vanke has established a default privacy protection mechanism (PbD) throughout the entire life cycle, and the management mechanism has been expanded to be implemented in five areas, including the Port Apartment App, Yixuanfang Applet, Hotel and Vacation Applet, Onewo Zhuzher App and SCPG Yinxiangxing Applet in 2022.

• **Cybersecurity inspections**

We have adopted the red-and-blue confrontation to conduct in-depth attack-defence drill, continuously improving the Group's network security defense level and testing the Group's existing security defense monitoring capability. At the same time, we urge each BG and BU to implement information security self-inspection quarterly through "Operation Woodpecker".

We strictly abide by the requirements of data security and personal information laws and regulations, conduct self-inspection and self-correction of compliance risks promptly for sales scenes, shopping malls, project sites and other places, sort out and promote rectification of existing risks and potential risks of the Group's data and personal information compliance, enhance the compliance awareness of partners in each business department, and protect the personal privacy of customers. In 2022, Vanke carried out multi-dimensional audits such as external audits, internal audits and on-site audit inspections for information security and customer privacy protection.

In 2022, we continued to optimize the system functions through the self-developed audit inspection system, realised the automation, digitisation and process of BG and BU audit inspection, and established **58** key audit items, covering more than **126** frontline business units.

• **Information security emergency response**

Vanke Group formulated the *Emergency Response Plan for Personal Information Security Incidents*, established an effective security protection and emergency response mechanism, clarified the requirements of data security management including data classification and grading, data life cycle management, data security incident response, etc., and specified the personal information security incident monitoring and early warning mechanism and emergency response process, so as to improve incident emergency response capabilities and protect the interests of personal information subjects. When a personal information security incident occurs, we will take measures such as closing ports, temporarily shutting down relevant systems, suspending the authorization of personnel permissions, and suspending third-party data cooperation. For large-scale personal information leakage incidents, we will promptly inform the affected users of ways to mitigate the harm and prevent the occurrence of secondary and derivative incidents in accordance with the requirements of laws, regulations or regulatory authorities and the provisions of Vanke Group's *Privacy Policy* and take necessary remedial measures. In 2022, no major information security incident occurred.

• **Information security certification**



ISO 27001 Certification

Both Onewo and Hotel and Vacation BU obtained ISO 27001 Information Security Management System Certification. Wanyi Technology has completed the annual review of the ISO 27001 Information Security Management System certification for the year 2022, ensuring the continuous operation of the information security management system.



National Level Protection Evaluation and Certification

Wanyi Technology currently has eight important business systems that have passed the national level protection evaluation and certification, including four systems that have passed Level 2 protection certification and four systems that have passed Level 3 protection certification.

• **Information security training**

We strengthen training on information security and privacy protection for all employees through theme courses, training exams, and security culture promotion. In 2022, we conducted information security and compliance certification exams covering all employees, with a 100% passing rate; issued a fishing email test for all employees to strengthen employees' security prevention skills; held information security experience day on-site activities to enhance employees' awareness of security risks and protection and organized the Group's Information Security Competition to expand the cultivation of security awareness participation.

Intellectual property rights protection

Vanke strictly complies with the *Trademark Law of the People's Republic of China*, *Copyright Law of the People's Republic of China*, *Patent Law of the People's Republic of China* and *Anti-Unfair Competition Law of the People's Republic of China* and other governing laws and regulations in China and take legal actions to manage and protect the patents, copyrights, trademarks, and other intellectual property rights of Vanke.

• **Protecting our intellectual property rights**

We attach great importance to protecting our intellectual property rights, implementing the relevant requirements of intellectual property laws and regulations, and protecting our legitimate rights and interests through such channels as patent application, trademark registration, and litigation to defend our rights.

• **Respect others' intellectual property rights**

We respect intellectual property rights of others, encourage and protect fair competition, prevent and strictly prohibit any form of infringement, and do our best to protect the legal rights of others from infringement.

Number of new patent in 2022

Category	Patent for Design	Patents for Invention	Patents for Utility Models	Total
Green Building	0	0	1	1
Environmental Restoration	0	5	0	5
Science and Technology	19	58	0	77
Property Management	3	11	3	17
Total	22	74	4	100

Cumulative number of patents acquired

Category	Patent for Design	Patents for Invention	Patents for Utility Models	Total
Green Building	0	4	18	22
Assembled, industrialized	7	11	34	52
Environmental Restoration	0	12	8	20
Science and Technology	39	112	30	181
Property Management	11	18	15	44
Total	57	157	105	319

As of December 2022, there are **564** patents pending for approval, covering green building, assembled and industrialization, and property management.

Good Products

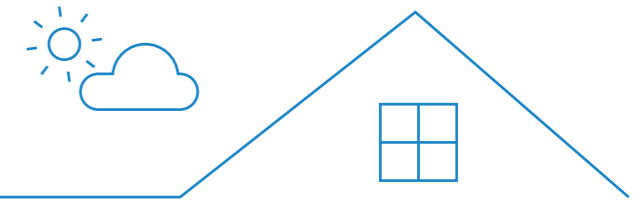
Based on the residential property of residential products, Vanke puts quality, health and performance at the core of residential products and conducts full life-cycle management and control of engineering quality to deliver quality products to customers.

Guided by the goal of improving engineering quality and promoting the improvement of the professional capability of the engineering system, Vanke Group has formulated the Management Measures for Safety and Quality Inspection of Projects under the Construction of Vanke Group. The inspection system consists of the safety, quality, and delivery inspection systems to ensure the quality and safety of Vanke's residential products. We developed the Comprehensive Inspection and Review Work Manual to conduct online and offline comprehensive reviews of all projects on a quarterly basis, covering all phases of the project cycle from project acquisition, project delivery, and project operation and maintenance. Meanwhile, we actively invite external and internal experts from various professional ports to organise regular training on product quality and safety within the Group in combination with an actual cases to improve our employees' professional ability.

Design – return to a healthy living environment

Vanke complies with national and WELL standards, focusing on hardware guarantee, customer commitment and actual implementation. We have formulated Vanke Group Evaluation Criteria for Healthy Residential Areas, Vanke Group Star Evaluation and Control Measures for Healthy Residential Area Projects, and Vanke Group Operating Guidelines for Evaluation Criteria for Healthy Residential Areas. Vanke Group Evaluation Criteria for Healthy Residential Areas takes into account Vanke's product system and makes a comprehensive evaluation of air, thermal comfort, water, lighting, sound, movement, spirit, materials, community access, intelligence, property operation and service of integrated residential area projects.

Section	Value propositions and technical points	Actions taken
Air	Focus on the development and manufacture of air replacement products, such as fresh air ventilation systems	Fully promote the fresh air ventilation system that can filter outdoor air PM2.5 and indoor discharge formaldehyde and other harmful gases, with the ability to purify the air actively.
Thermal Comfort	Provide a more comfortable indoor and outdoor temperature and humidity environment, and ensure warmth in winter, coolness in summer, and appropriate humidity.	Specify the design requirements on condenser location for central air conditioning, air conditioning outlet, kitchen air conditioning, temperature and humidity dual control air conditioning, dehumidifier, and underfloor heating. Develop mobile dehumidification and anti-condensation intelligent system for underground garage.
Water	Provide cleaner water and more hygienic and safe drainage	Put forward requirements on ensuring water quality, improving water purification equipment, drainage system safety, and functional kitchen and bathroom design. Choose the sanitary ware with self-cleaning anti-bacteria black technology to enhance water purification equipment and ensure water quality.
Lighting	Make full use of natural light and upgrade the standard of lamps and lanterns to provide customers with more comfortable indoor lighting	Research pleasant light environments and healthy lighting. Design more integrated, personalized luminaires.
Sound	Provide quieter interior spaces, and a tranquil life without being disturbed by noise	Iteratively upgrade the sound insulation of building components, optimise equipment and pipes, carry out noise acceptance monitoring, promote the application of water-based acoustic coatings to open the quiet mode in downtown areas.
Movement	Committed to solving customers' pain points of insufficient sports venues and imperfect sports facilities, and providing customers with more abundant, all-age, and all-weather fitness spaces.	Provide design guidelines for healthy runways and children's playground, and apply them to the projects.



Section	Value propositions and technical points	Actions taken
Spirit	Create a green, picturesque park-like landscape.	With "human being" as the main character, transition from spatial design to scene design, and strive to create more comfortable and talkative communication venues and neighborly and friendly interactive spaces.
Materials	Provide more heat insulation, safer, more durable, lighter and stronger materials and parts	Promote new material products to the ground and develop FRP materials with greater durability and insulation.
Community Access	Create barrier-free, contactless, more hygienic, safer, more convenient, and more comfortable community access and logistics system for customers by providing multi-dimensional design guidelines, methods and measures	Carry out studies on emergency protection, contactless access, community comfort and other aspects.
Intelligence	Realize integrated intelligent control of home devices, providing more convenient operation and visualized environmental data	Build an integrated smart home platform and achieve higher health standards with the help of "black technology" innovation.
Property Operation and Service	Create a safer and healthier living environment and provide more comfortable and convenient services for residents	Maintain the greenery, provide event planning, illumination assurance, noise control, garden maintenance, and value-added services.

Case Ideal community for luxury human living – Yicheng ZhenwanYue Home

As a model of ideal community living for the Vanke Group, Yicheng ZhenwanYue Home returns to the essence of human living in the design process, creates several super scenes to connect people with nature, the city and intelligence, and integrates the concept of healthy human living into community life.

- **Natural scenario:** Through the integration of the park and living scenarios, residents can get close to nature and realize a comfortable and healthy living life with pro-ecology.
- **Urban scenario:** Through a sky corridor, we connect commercial, ecological, leisure, entertainment and other life nodes, linking various urban life elements to form an urbanized community circle with multiple business scenarios.
- **Intelligent scenario:** Through the design of the community entrance complex, the intelligent form realizes rational zoning, body temperature monitoring, sterilization, sending and receiving distribution and other functions to achieve a new standard of healthy human living.



Yicheng ZhenwanYue Home Schematic Diagram



Materials – rigorously standardising the access conditions

We have persistently tightened management and control from the source, implemented comprehensive and three-dimensional control of the quality of products through unannounced inspections of materials and components and project site inspections, and carried out all-round supervision of Vanke products through “Operation Skynet” on an ongoing basis to ensure good products and services.

• Material supply management

- **Source control:** Fully utilise the advantages of centralised procurement, focus on the quality testing control on production source raw materials, semi-finished products and finished products and reduce the probability of unqualified products shipped out of the factories;
- **Product testing:** Perform random testing of different categories of products on monthly, quarterly, semi-yearly, and yearly bases;
- **Supervision and rectification:** Establish a closed-loop inspection mechanism for non-conformities, and realise 100% closure of non-conformity problems.

• Operation Skynet

Since 2015, we have implemented “Operation Skynet” across the Group, have formulated and continuously updated the Administrative Measures for Vanke Skynet Inspection Implementation, Vanke Implementation Plan for Skynet Inspection on Projects, and Vanke Skynet Inspection Standard for Products under Centralised Procurement, and implemented quality compliance of construction materials to prevent counterfeit and inferior materials and components from entering Vanke’s project construction sites.

In 2022, we have conducted monthly tests on material quality, construction quality, air quality, acoustic and noise insulation and other dimensions, expanded the tests for non-conformities, and formulated unique rectification plans such as rework/return according to the actual situation; interviewed the responsible suppliers and imposed corresponding financial penalties according to the contract terms to ensure a 100% rectification rate, and put the unqualified suppliers into the no-shopping list.

At the same time, we also continue to expand the influence of “Operation Skynet” in the industry, solve the pain points of the upstream and downstream industries through the AUPUP, promote the new ecology of the supply chain to further upgrade, reduce the number of unqualified suppliers in the industry, and improve the quality of products and services of suppliers in the industry through various gate-keeping.

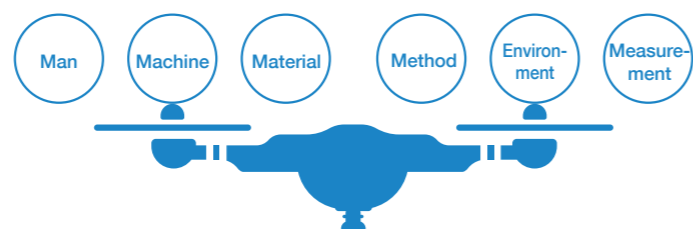
In 2022, “Operation Skynet” has **100%** covered seven regional companies, **54** cities, and **610** production industries, with a wide range of industries including real estate, hotels, and commerce

Construction – intelligent technology integration and assurance

Vanke’s intelligent construction platform boasts a holistic architecture of “1+1+N” and establishes a solution with one platform, one command centre, and N extended business systems. It fully uses IoT, cloud computing technology, and BIM technology to achieve real-time uploading, summary, analysis and display of massive data on construction sites and realises the transformation from traditionally managed construction sites to intelligent construction sites.

Vanke applies drones to facilitate high-quality construction, using them to conduct earthwork measurements on construction sites and collect on-site information. The design team can comprehensively optimise the underground engineering scheme based on the on-site earthwork information, and the engineering team can reasonably arrange the underground construction period and track the process according to the earthwork progress information to ensure efficient and high-quality construction.

Vanke has established an online remote assessment and evaluation system to implement online integrated management of projects in six dimensions: personnel management, machinery equipment management, materials management, normal management, environment management and evaluation, to improve project management.



In 2022, we strengthened the inspection of attendance and performance behavior for employees and partners, used cameras and other equipment and facilities for daily project risk evaluation, and expanded the coverage and usage rate of the visualization of tower crane hoisting operations, face recognition of elevators, AI hidden danger recognition, and intelligent broadcast system.

Delivery – full construction cycle assessment assurance

Vanke attaches importance to the quality assurance work, has formulated and implemented the Administrative Measures for Safety and Quality Inspection of Projects Under Construction of Vanke Group, which clarifies the guarantee system consisting of the safety inspection system, quality inspection system and delivery assessment system.

By 2022, Vanke has realized **100%** use of intelligent construction site system for all projects under construction

Safety and quality inspection system: It includes three parts: internal mutual inspection, external professional inspection and special inspection.

Delivery assessment system: It is divided into three parts: regional self-inspection, headquarters sampling inspection and customer perspective evaluation, and includes three segments: pre-delivery assessment, delivery assessment and post-delivery assessment.

We entrust a third-party professional evaluation agency to carry out the full construction cycle assessment of 100% of the projects under construction, and cover all construction dimensions from the foundation to the final delivery, to eliminate the delivery of faulty projects. At the same time, we conduct random inspections of delivered projects, focusing on projects with bottom-line risks. After delivery, we review indicators such as the average repair rate and quality complaint rate per customer after the centralised delivery of products from the customer’s perspective to ensure the delivery of high-quality products.

Vanke has formulated the Management Regulations of Safety Production and Quality Accidents in Vanke Group’s Projects under Construction, set assessment standards for relevant persons responsible for accidents and suppliers, specified the bottom line of accountability for safety production and quality accidents, imposed corresponding penalties for annual assessment according to the level of safety production accidents, and adopted the mechanism of aggravated penalties for persons responsible for or suppliers of consecutive safety accidents.

Good Services

We adhere to the “customer-centric” philosophy, maintain self-request awareness with the highest standard in the industry, take customers’ needs as the starting point for innovations on products and services, and are committed to delivering good products and services that satisfy customers.

Baseline – guaranteeing the basic rights and interests

Vanke has established a comprehensive customer service system integrating the whole process of the pre-sale, sale and aftersale services to attach great importance to customer demands and guarantee the rights and interests of customers with practical actions.

• Safeguarding customer safety

Vanke has always put the customers’ health and safety first. We strengthen health and safety management in property services, commercial services, logistics, hotel and vacation to provide customers with safe and stable services. In 2022, we established a safety production committee in the Group level and held regular monthly safety production meetings to unify the management of safety management system guidelines and bottom-line standards.



Property Safety

In 2022, Onewo launched the special action of “no elevator entrapment” for residential property projects and established an “elevator entrapment care fund” to improve the safe operation of elevators through measures such as aging accessories renewal, elevator fine tuning, safe and civilized elevator publicity, renovation and optimization of the operating environment. The annualized number of elevator trapped persons was 0.06 per unit per year (better than the national standard of 1.4 per unit per year), a decrease of 57.14% compared with that before the action.



Hotel Safety

In extreme weather, we intensified the patrols around the hotel, examined whether the glass windows on the exterior wall of the hotel were closed, and turned off the peripheral electrical equipment and power to prevent short circuit and fire as well as to ensure the safety of hotel guests.



Food Safety

We have taken several food safety assurance measures to help provide a safe and reliable food supply to society. In the area of food cold chain, we have developed the VX Cold Chain Food Safety Management System based on ISO 9001 and HACCP and according to the relevant requirements of the industry head customers and improved the food safety management system construction. To ensure food storage safety, we have applied intelligent technology and management measures such as a temperature and humidity monitoring system and QEHSS management platform to ensure food safety in all aspects.



Leisure Safety

Around the core of the personal safety of customers, Vanke has built a snow and ice sports VSKI safety management system covering equipment safety, safety surveillance, safety inspection, personnel safety, medical care security and safety protection to protect customers' life and property.



Shopping Safety

Vanke has formulated the Guidelines for Emergency Handling of Meteorological Disasters and the Natural Disaster Prevention Regulations, developed remote operation plans for extreme weather such as typhoons, heavy rain, extreme cold, and high temperature, and established linkage management between remote and on-site through digital means. Through the Safety Production Month, Vanke strengthened safety hazard inspection and rectification, ensured that equipment and facilities were intact and effective, and regularly conducted safety and fire drills to improve the safety management of commercial projects.

Upholding the basic principle of marketing

In compliance with laws and regulations such as Regulatory Measures on the Sale of Real Estate and the Advertising Law of the People's Republic of China, Vanke formulated and promulgated several internal policies, including Notice on Standardising Operations Relating to Earnest Money/Subscription Money, Requirements of Strictly Prohibiting Illegal Collection of Money in the Sales Process, and Special Administrative Requirements for the Sale of Products Involving Office Buildings, Commercial Properties and Residential-Commercial Hybrids. There are strict requirements for sales materials, sand table models, various business scenarios, construction methods and techniques, model rooms and so on when a product is launched for sale, and the dissemination of misleading and ambiguous product information and excessive commitment is strictly prohibited to protect customers' right to know.

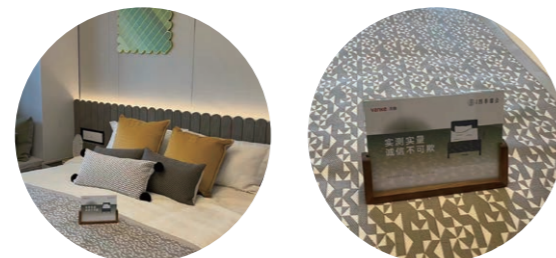
In 2022, Vanke conducted **31** audits and **11** monitoring investigations involving marketing categories to continuously implement strict supervision of marketing activities.

Honesty marketing with no trickery

Vanke is the first in the industry to display the reality to customers through sunshine declaration, adverse conditions and other ways. In addition, we consistently adhered to the "Honest Marketing with No Trickery" service standard. The Integrity Marketing Initiative strengthens public disclosure of commitments to customers, insists on integrity marketing without trickery, and provides integrity products and services to enhance customer experience. In 2022, we launched the sample room size tips and product service labeling work for our development. Through the clearly identifiable development and service logos, we hope to help customers understand project highlights.

No shrinkage in the sales model room

The apartment sales model room size is displayed according to the actual standard size, and the dimensions of sofa, bed, bedside table, and closet depth to avoid shrinkage.



Sales Model Room Dimensions Display

Delivery of standard model rooms

We ensure that "What you see is what you get", 1:1 restoration of the delivery standards promised in the Contract of Sale and Purchase of Commercial Properties, truly reflecting the house type, structure, space dimensions, decoration parts and components, and delivery standards.



Delivery of Standard Model Rooms

Product and service labels

We follow the principle of "honest marketing with no trickery" to emphasize value for money, highlight service products to enhance customer trust and help customers understand the real hardware and software product situation.



Vanke Forest Park Product Service List

Responsible marketing training

Strengthening the awareness of responsibility for marketing personnel helps to implement responsible marketing behavior on the ground. Vanke pays attention to the training and dissemination of marketing personnel and strengthens marketing management in a targeted manner through different special training.

In 2022, Vanke's marketing team achieved **100%** coverage of responsible marketing training.

Grain Operation Grain Rain: Regular online and offline special marketing training for regional and city company marketing leaders, regional and city company marketing expense posts, planning and operation posts, regional and city integrated marketing posts, project PMs and planners, Vanguard city general managers, sales directors, and relevant partners of development and operation headquarters.

"Wei Jia" authorization system: "Wei Jia" is launched for the integrity marketing of property consultants, and special training and assessment are conducted regularly.

Job certification program: Theoretical assessment around the Professional Fundamentals of Real Estate Economics and practical assessment on case sales and service process are conducted. Only those who pass the assessment can obtain the induction qualification and will be given the enterprise WeChat profile picture present to the public.

Standards – standardising service requirements

Comprehensive and detailed service standards are the basis for regulating service behaviours and improving service capabilities. Vanke continuously refines their service capabilities by formulating and implementing unified service standards.

In 2022, SCPG and Cushman & Wakefield Vanke Service all obtained **ISO 9001** quality management system certification.

• Customer service standard

In 2022, Vanke updated the “5+3+2” service iteration to “Good Service Action”, further refining the service standards and improving the service quality management.

Good Service Action	Service standards	Good service in 2022
Upgrade in Contract Services	Convenient and reliable online signing tools can meet the needs of customers for remote signing, reducing duplicate signatures, and quickly checking the contract content in real time.	In 2022, the online signing platform application covered 100% of the application, 56,000 sets were signed online, and customer satisfaction with the signing service reached 99 points.
Coordinator Service in Advance	After the contract is completed, the Vanke property coordinator service will be provided in advance to fill the service gap between post-sale and delivery; after delivery, the front coordinator will be transformed into a life coordinators.	In 2022, 870 front coordinators landed in all Vanke’s projects on sale, of which 441 front coordinators continued to serve customers after the projects were delivered to achieve the service continuity and 97% customer satisfaction after the sale.
Build the Community with Property Owners	Upgrade the online site opening to building a home with the property owner, inviting, invite the property owners to visit the construction sites of ongoing projects every month and ask construction questions and suggestions, providing property owners with a full cycle of knowable and visible services.	In 2022, the initiative has covered 408 Vanke projects under construction, with a total of 89,800 customers participating.
Creating a Diverse Community with Property Owners	Build a platform for property owners’ interests, so that more like-minded property owners can join the community and find each other due to their interests, and enhance the interaction and relationship between friends and neighbours.	In 2022, a total of 1,005 communities have been established and 6,016 community activities have been carried out.
Delivery Service Upgrade	Practice the “three ones” delivery service: “one-stop” handling of customer experience delivery procedures, “one-face” reception by the customer service ambassador throughout the whole process, and “one-person” accompanying experience by a professional house inspector throughout the house inspection process.	Optimize the customer experience through delivery touchpoint segmentation to enhance customer esteem and delivery memory, with an immediate delivery satisfaction score of 98 in 2022.
Maintenance Service Upgrade	Carry out maintenance service upgrades, and property personnel undertake maintenance business and adopt joint management with real estate personnel to continuously improve maintenance efficiency.	In 2022, the overall customer satisfaction rate for maintenance was 99.45%; Maintenance Service and Maintenance Operation Standard 2.0 – Special for Decoration Parts was formulated; multi-channel warranty and self-built maintenance team have been provided.
Build a Beautiful Community with Property Owners	With public revenue, communities public maintenance funds, property owners’ crowdfunding and other funds, join hands with various parties to conduct the Neighborhood Program and the Beautiful Community Plan, optimizing the infrastructure and the actual living function of the community.	In 2022, the Neighborhood Program had raised more than RMB 29.1 million, covering more than 3,400 residential communities, and the total amount of Beautiful Community Plan was RMB 136 million.

Case “White Glove” initiative

Since October 2022, Vanke Real Estate and Onewo have jointly launched the “White Glove” initiative, which aims to improve the quality of project infrastructure services and ensure the stable operation of equipment and facilities and the cleanliness of hidden spaces.



Customers can put on white gloves to touch the space inside the house at will when inspecting the house



White glove inspection of power distribution room shows all-round unified high standard of precision work quality

• “SOP1+12” delivery standards for Port Apartment

In 2022, the service standard “SOP1+12” was updated by the Port Apartment, further refined the service standard, promoted benchmarking projects, carried out the monthly coordinator service day, promoted benchmarking stores, adopted online live broadcast to explain the inspection standard, and actively organized the training and certification for 12 touch points of service SOP.

• Response to customer complaints

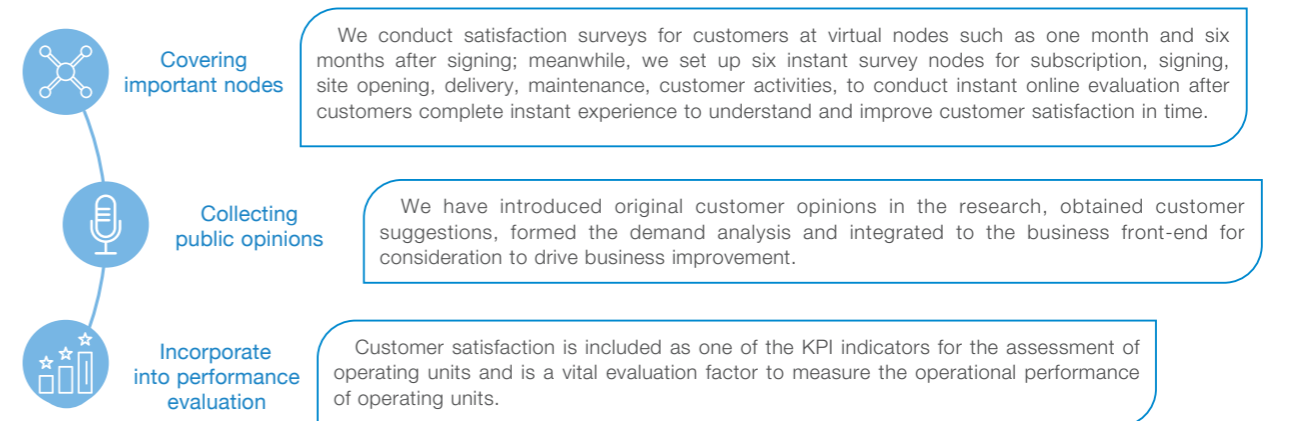
For customer complaints, we will immediately record them in the CRM system, adhere to the 30-minute response mechanism, and complete the first response within 24 hours. Key common complaint problems are strictly handled in accordance with the “1-4-24 hours” information feedback mechanism, that is, one hour to achieve the Company’s information transmission to crucial personnel and resources that can solve the customer problem, four hours to complete the problem research and timely response to customers, and 24 hours to formulate a detailed solution to the customer problem. To further improve the follow-up treatment of customer issues, we have developed an escalation mechanism from front-line business units to company management and from group units at all levels to group headquarters for repeated complaints and problems that have not been closed for a long time.

We continuously upgrade and optimize the online customer service product “Serving Home” and set up a regional centralized customer service centre to ensure efficient resolution of customer requests. Since 2021, we have been developing our own technology platform, establishing data algorithms for maintenance task work orders and complaint problem work orders, applying AI technology to achieve 24-hour screening of customer problems, and identifying and warning key problems. We will continue to improve the ability of problem prevention and resolution through technology by identifying and warning key problems.

At the same time, Vanke continues to strengthen the training of customer problem handling ability, and further improves the professional level of business through the training of face-to-face customer personnel, emergency drills and case defense of customer managers.

• Customer satisfaction survey

Vanke has established a relatively complete and mature satisfaction research system, which provides satisfaction research work in terms of coverage nodes, research methods, performance assessment and other dimensions to understand customers’ opinions better and respond promptly. In 2022, Vanke Group participated in preparing Customer Satisfaction Instant Measurement Criteria on Real estate Development and Property Services Enterprise to further promote the standardization of satisfaction tools in the industry and help the industry develop in a healthy way.



As of December 2022, the overall company-wide satisfaction coverage rate was **38%**, with an overall score of **94** points, an increase of **3** points compared to 2021; the total customer satisfaction score for Port Apartment was **91.24** points.

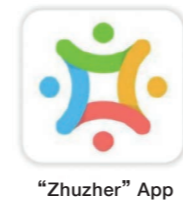
Upgrading – delivering intelligent services

• Intelligent community

Onewo has developed a number of online application platforms and products, integrating the resources of people, places, things, feelings and events in the community, promoting the interconnection of data between different systems, bringing “people-space-service” together, providing customers with integrated intelligent services, comprehensively improving the service capacity of intelligent space and promoting the intelligence and modernization of service space management.

“Zhuzher” App

“Zhuzher” App provides more convenient property life service, more useful content information and more affordable consumption experience for local communities. It has three sections: basic service of “Living Here is Really Convenient”, community life of “Living Here is Really Useful” and value-added service of “Living Here is Really Affordable” and is committed to improving the quality of life and happiness of community and subdistrict residents.



Mobile Phone Door-opening Function in “Zhuzher” App

“Cloud Traffic” pedestrian management platform

We have independently developed the “Cloud Traffic” pedestrian management platform, providing intelligent access integrated products for all types of communities to render comprehensive digital access services for users (including residents and non-residents) in the community, realizing full-scene-covering pedestrian management in the community, and ensuring community safety. At the same time, we have developed a new mobile phone door-opening function, replacing the traditional door-opening mode and integrating three new hardware interaction technologies (QR code identification, Bluetooth identification and remote network control), so that residents can quickly and safely enter and leave the community through the “Zhuzher” App.

“Pineapple No.1” self-service terminal

“Pineapple No.1” is a self-service terminal integrated machine independently developed by Onewo, focusing on the more complicated service demand and complex service relationship in the property industry, covering asset services (decoration filing, house transfer), pedestrian access services (access card application, renewal and cancellation), vehicle access services (parking fee payment/storage, rental parking space refund, property license plate binding) and so on.

In order to ensure information security, the system will forcibly log out if the customer has no operations with 30 seconds at the self-service terminal. At the same time, the personal information will be desensitized, and the watermark will be added to the uploaded certificates.

Digital twin PaaS platform

This platform realizes data fusion and scene linkage through Internet of Things services, visualization services, audio and video services, and location services, and provides PaaS level service empowerment for applications in corresponding systems in scenes such as construction sites, urban streets, residential communities, and office buildings.

• Intelligent retail property

Currently, SCPG has built four major platforms, including a shared service platform for internal operation efficiency, an asset management service platform and a data service platform centred on asset operation, and a digital marketing platform centred on consumers. SCPG is actively exploring the green and sustainable development model of “low-carbon intelligent transportation + shopping centre renewable energy” and is committed to establishing the capability of “shopping centre + future digital community” operation and the future digital community operation technology and scenario application.

• Intelligent logistics

VX Logistic Properties empowers logistics businesses with more technological possibilities by leveraging the intelligent park platform, supply chain management platform and intelligent algorithm platform. The intelligent park platform builds intelligent modules around four themes: ensuring safety, keeping quality, reducing energy consumption, and improving efficiency to ensure the safety of VX Logistic parks, improve the logistics quality and efficiency of the park, and reduce energy consumption at the same time; the supply chain management platform integrates various management systems such as orders, warehousing, transportation, to achieve integrated management from orders to settlement, reducing costs and increasing efficiency for customers; the intelligent algorithm platform performs modelling, forecasting, and optimization of the customer supply chain through algorithms, providing a decision-making basis for enterprise operation and management.

Case Near Zero Carbon Smart Demonstration Park of VX Shanghai Fengxian Lingang Park

VX Shanghai Fengxian Lingang Park has the most extensive layout of intelligent equipment, the most holistic application of the innovative system, and the highest degree of intelligence. The cold chain IoT platform provides a total solution for energy consumption data collection, analysis and optimization in the park. For carbon emission management, the park has built a real-time carbon management monitoring screen, which can not only monitor carbon emissions in the park in real-time but also track the energy efficiency of distributed photovoltaics on a time-by-time basis, which can be used to formulate emission reduction strategies.



Carbon Management Real-time Monitoring Screen



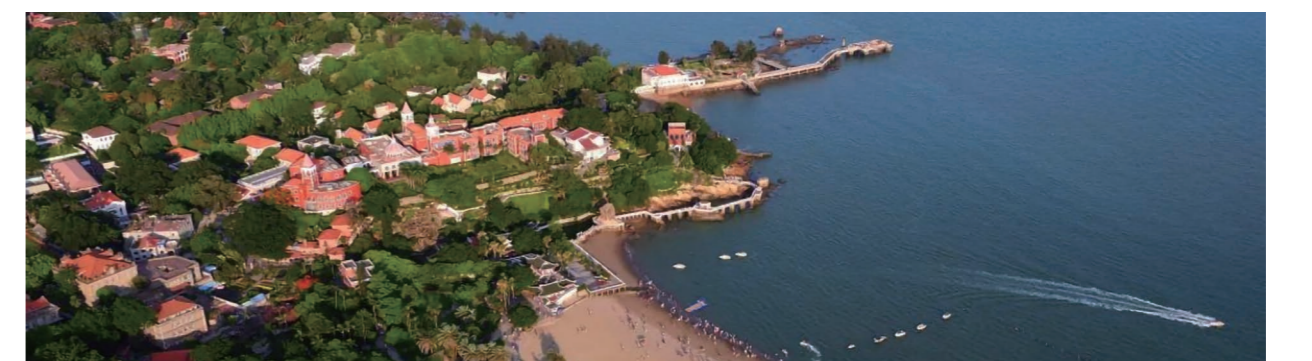
Calculation of Energy Saving and Consumption Reduction During the Equipment Life Cycle

• Intelligent urban services

As the first practitioner and promoter of the “Property City” model, Onewo has upgraded it to a “Total Intelligent Operation” service in 2022, which integrates the systemic thinking and process management capabilities of property management into urban governance to improve urban operational efficiency and effectiveness. Onewo has launched the “Cloud City Captain” spatial service product, which is a combination of posts, equipment and scheduling system, carrying 73 kinds of specific businesses in urban space, including municipal sanitation, greening and cleaning, road and bridge management and maintenance, auxiliary patrols, ecological environment testing, etc., thereby achieving online closed-loop management of offline business.

Case Space intelligent operation of world cultural heritage

At Gulangyu Island, a world cultural heritage site in Xiamen, Onewo used unmanned aerial vehicle (UAV) to patrol and shoot in the sky, analyzed the on-site environment using AI algorithms, and synchronously transmitted the images back to the intelligent operation scheduling platform. In addition, Onewo have installed garbage cans equipped with overflow alarm sensors, green vegetation equipped with intelligent sprinkler systems, grid-controlled cameras, streetlamps, and landscape lighting on the island, making this “Sea Garden”, which received tens of thousands of tourists every day, in an orderly manner.



Gulangyu Island of Xiamen City Under the Territory-wide Intelligent Operations Service

Environmental Practices

- Our Strategy
- Climate Change Response
- Green Design Commitment
- Advancing Green Construction
- Practicing Green Operation
- Green Finance



Our Strategy

Philosophy

We are ushering in an era when everything is about “carbon”. The Chinese government has pledged to reach the peak of carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060. In the context of the “3060” strategy, the construction of green buildings plays an essential role in achieving the national “dual carbon” goal, as well as promoting high-quality urban development. Additionally, green building construction contributes significantly to the development of climate-resilient societies. Driven by the national “dual carbon” goals, Vanke reinforces its position in the industry through continuously exploring new ways of achieving high-quality, green and sustainable development, aiming to be a pioneer in transitioning towards carbon neutrality in the communities and cities.

Goals and progress

Green Building Certification



Goals	Progress
Property development	
<ul style="list-style-type: none"> Increase the green building label certification rate: For new buildings designed in accordance with the China Green Building Label/GB/T 50378-2019 -Design & Construction, the Group aims to achieve 100% certification of two-star and three-star projects in 2025 and 100% certification of one-star projects in 2030. 	<p>The real estate business sector added 14,372,700 square meters of area meeting green building evaluation standards, 12,752,100 square meters of projects meet green one- and two-star standards and 1,620,600 square meters of real estate projects meet green three-star standards, progressively strengthening the identification of high-star projects.</p> 
<ul style="list-style-type: none"> Develop high-star and high-quality green buildings, and gradually increase the star-level standard of new buildings by stages and types: The Group aims to achieve a total of 6 new LEED-certified projects and 4 new WELL-certified projects by 2025, and the construction and operation of new large-scale commercial and office projects will not be lower than the two-star standard for green buildings by 2030. 	<p>In 2022, we acquired 7 LEED Gold certifications, 1 LEED Platinum certification and 3 WELL certifications.</p> 
<ul style="list-style-type: none"> The coverage of newly acquired land “with third-party environmental impact assessment reports, including analysis of biodiversity” will be increased year by year. 	<p>In 2022, the third-party environmental impact assessment reports were obtained for all newly acquired land.</p> 

Logistics


<ul style="list-style-type: none"> Ensure that all new cold storages are covered by LEED/green warehouses, and input the LEED/green certification standard into the design front-end in advance as the pre-design standard; and encourage and eventually achieve full coverage of cold storage parks by LEED/green warehouses. 	<p>In 2022, we developed working documents based on the bottom line criteria of the China Green Building Label Three-star and LEED Gold standard, and incorporated them into the cold storage product design decision process.</p> 
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SCPG


<ul style="list-style-type: none"> We will ensure that 100% of the new self-owned Incity MEGA will obtain LEED certification in the future, and that all new buildings achieve the green building two-star certification in the next five years. 	<p>In 2022, we do not have any newly built self-owned Incity MEGA. We will continue to monitor the green building certification of our projects and continue to disclose the progress of our targets.</p> 
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GHG emissions and carbon neutrality





Goals	Progress
Property development	
<ul style="list-style-type: none"> Total of five ultra-low-energy, near-zero-energy or low-carbon demonstration projects to be certified by 2025. 	<p>In 2022, a total of two newly acquired projects of ultra-low-energy buildings are in the design phase.</p> 

SCPG

<ul style="list-style-type: none"> By 2030, the carbon emissions of at least 20 SCPG shopping centres to be reduced by 9% against a 2021 baseline. 	<p>20 SCPG shopping malls achieved greenhouse gas emission reduction through photovoltaic power generation by 2022.</p> 
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Energy efficiency improvement



Goal	Progress
Property development	
<ul style="list-style-type: none"> Continue to improve the operational energy efficiency indicators of commercial office projects: For new standard commercial office projects using centralised cooling systems, the average comprehensive energy efficiency ratio (EER) of cooling systems increases by 30%. New commercial office projects in the core areas of first-tier cities achieve the EER excellence goal of 5.0. 	<p>In 2022, we have completed the high-efficiency computer room design work for public construction projects, including the projects in Shabu, Guangzhou and Banyee Tree Chongqing International Land-sea Center. The annual average design energy efficiency ratio (EERad) of the refrigeration room system has achieved a grade of 5.0 or above.</p> 
<ul style="list-style-type: none"> For commercial office projects in operation using centralised cooling systems, compared with the energy consumption standards in 2020, the energy consumption of cold sources is reduced by 10% by 2025 and 15% by 2030. 	<p>We gradually launched the energy-consumption management platform to accurately evaluate the energy consumption levels of commercial office projects.</p> 

Hotel and vacation

<ul style="list-style-type: none"> For projects under construction, if conditions permit, the central air-conditioning system adopts a high-efficiency machine room, and the COP value of cooling capacity performance coefficient of chiller in the central cooling station is not less than 5.0; the central hot water system of new projects adopts the air-conditioning heat recovery system and air energy heat pump as auxiliary heat sources. 	<p>The Yun Resort located in Guangzhou and Foshan have adopted high-efficiency machine rooms, and the total COP value of the cooling station is not lower than 5.0. In addition, the central hot water system in new projects has adopted the air-conditioning heat recovery system with an air energy heat pump as the auxiliary heat source.</p>	
<ul style="list-style-type: none"> Energy saving renovation will be carried out for projects in operation, if conditions permit, to reduce operating energy consumption. 	<p>The corridor lighting of the Yun Resort Qingyuan has been retrofitted with LEDs, saving energy consumption cost of RMB 7,128 per month.</p>	

Port Apartment

<ul style="list-style-type: none"> From 2021 onwards, 100% of Port Apartment's new self-held projects adopt variable frequency air conditioners and water heaters with first-class energy consumption. In the future, we will also ensure that 100% of our self-held projects adopt variable frequency air conditioners and water heaters with first-class energy consumption. 	<p>In 2022, we have continued to achieve our goal of using 100% variable frequency air conditioners and water heaters with first-class energy consumption in our self-owned projects.</p>	
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Logistics

<ul style="list-style-type: none"> Take refrigeration energy consumption as an important indicator of power consumption in the park: by 2023, the refrigeration energy consumption will be reduced by 5% against a 2022 baseline. 	<p>In 2022, the parks have adopted screw chillers and evaporative condensers, which improved energy efficiency by more than 30% compared with piston chillers.</p>	
<ul style="list-style-type: none"> Examine the existing types of refrigerants used, transition to low-GWP refrigerants, accelerate the phase-out of hydrochlorofluorocarbons (HCFCs), and limit the use of hydrofluorocarbons (HFCs). 	<p>In 2022, we completed a thorough examination. Currently, we are using environmentally friendly refrigerants.</p>	

SCPG

<ul style="list-style-type: none"> The energy efficiency ratio of air-conditioners of new projects will be increased by 30% or more over the current average against a 2021 baseline. 	<p>In 2022, the energy efficiency ratio of air-conditioners of new projects is better than the 2021 average.</p>	
<ul style="list-style-type: none"> By 2025, the electricity intensity of the public areas in 20 shopping malls will be reduced by 6% against a 2021 baseline. 	<p>In 2022, the total power consumption of the public areas in 20 shopping malls was reduced by 1.1 million KWH.</p>	
<ul style="list-style-type: none"> We will continue to monitor the relevant goals of operational energy efficiency indicators such as electricity/water consumption per GFA, electricity/water consumption per RMB10,000 turnover, etc., striving to achieve the industry-leading level. 	<p>We have introduced an energy management platform to continuously monitor the relevant indicators of various operational energy efficiency indicators.</p>	

Onewo

<ul style="list-style-type: none"> Actively use intelligent means to help commercial enterprise customers save energy and reduce emissions, and eight benchmark projects in energy consumption and water conservation will be set up nationwide. 	<p>In 2022, 11 pilot energy-saving or water-saving experimental projects were set up in commercial projects under management nationwide;</p>	
<ul style="list-style-type: none"> For commercial projects with a service scope covering energy management, collect operational energy efficiency indicators such as electricity/water consumption per unit of floor area and electricity/water consumption per RMB10,000 of turnover, and establish information on energy consumption benchmark values by project type. 	<p>In 2022, a total of 68 energy-saving and water-saving innovative service proposals were awarded the "Dolphin" award by Onewo.</p>	

Use of renewable energy



Goal	Progress
<h4>Logistics</h4> <ul style="list-style-type: none"> In 2021, we conducted multi-faceted demonstrations and R&D discussions on distributed solar power plants and building integrated photovoltaics (BIPV) in the logistics park, and will gradually coordinate the research and implementation plans in the future. 	<p>In 2022, we have built a distributed photovoltaic pilot park, and have six pilot parks under construction.</p>

SCPG


<ul style="list-style-type: none"> By 2025, at least 18 shopping malls will realise solar power generation, and the power generated will account for 2% of the electricity consumption in the public areas of the shopping malls. We plan to continue to promote the application of solar power generation in the future. 	<p>In 2022, we have implemented seven photovoltaic power generation projects, generating a total of 3,494,967 kWh of green electricity.</p>
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Water resource management



Goal	Progress
<h4>Onewo</h4> <ul style="list-style-type: none"> Actively promote water conservation. Continuously improve water conservation measures in our daily business and operations through fine management and application of technical means. Strengthen the recycling of water resources and reduce water pollution. 	<p>Optimize operational measures in terms of water conservation at source, water conservation in process and water recycling, for example, actively adopting water-using equipment with high efficiency, regularly inspecting water-using equipment and pipelines to avoid water leakage and seepage, and using rainwater, air-conditioning condensate and mountain water for greenery irrigation.</p> <p>In urban service, the digital city operation service platform and the full-scope intelligent operation and management model were introduced to realize the intellectualization of river management and maintenance, improve the urban river water quality and reduce water pollution.</p>

Hotel and vacation

<ul style="list-style-type: none"> We will consider water-saving solutions for projects under construction. For example, choosing water-saving bathrooms for guest rooms and public toilets, configuring direct drinking systems for some hotel rooms, and using reclaimed water systems for some projects. 	<p>In 2022, all of our in-process projects are prioritized to use water-saving equipment selections in the bidding selection process. In addition, to raise awareness of water conservation among our employees, we have conducted training and posted water conservation signs in the cafeteria and restrooms.</p> 
<ul style="list-style-type: none"> We will carry out water-saving renovation for projects in operation, enhance employees' awareness of water conservation, increase publicity to in-house customers, and introduce water-saving incentive policies. 	

Green leasing





Goal	Progress
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Port Apartment

<ul style="list-style-type: none"> In 2022, Port Apartment incorporate the "Port Apartment encourages tenants to conserve energy and reduce unnecessary energy waste" into the tenant agreement. It is expected that more than 15,000 new contracts will be substituted by the end of 2022. 	<p>In 2022, according to the goal, we replaced the existing contracts with new contracts and incorporated the energy conservation-related initiatives into the rental contract to promote green concepts to our tenants.</p> 
<ul style="list-style-type: none"> In 2023, Port Apartment will continue to promote energy conservation initiatives into tenant agreements and the implementation of paperless leases. 	

Green construction



Goal	Progress
<ul style="list-style-type: none"> Referring to the Ministry of Housing and Urban-Rural Development's Guidebook for the Reduction of Construction Waste at Construction Sites (Trial), we will establish a management system for the reduction of construction waste at construction sites, formulate a special plan for the reduction of construction waste at construction sites, and advocate and encourage construction parties to improve the utilisation rate of construction waste. 	<p>Vanke has implemented the principle of reduction of construction waste, and incorporated relevant measures into the project planning and bidding requirements. Through the development of prefabricated buildings, such as steel structures, we have reduced the discharge of construction waste throughout the life cycle of construction.</p> 
<ul style="list-style-type: none"> We advocate and encourage projects under construction to install intelligent water and electricity data collection equipment, and gradually increase the coverage rate. 	<p>In 2022, all projects under construction are equipped with hydropower data collection equipment.</p> 

Green procurement




Goal	Progress
<ul style="list-style-type: none"> We integrate biodiversity considerations into our procurement procedures and avoid biodiversity damage and natural environment degradation. 	<p>In 2022, we are progressing towards the goals. Landscape types have been selected according to local conditions, and materials and plants with strong local characteristics were chosen.</p> 
<ul style="list-style-type: none"> We ensure that 100% of the purchased aluminium alloy profiles use a chrome-free passivation process, 100% of the purchased wood is sourced and 100% of our materials come from Green Supply Chain Action whitelisted suppliers. 	<p>In 2022, we ensured that 100% of the purchased aluminium alloy profiles use a chrome-free passivation process, 100% of the purchased wood is from known sources and 100% of our materials come from Green Supply Chain Action whitelisted suppliers.</p> 

Garbage classification




Goal	Progress
<h4>Onewo</h4>	
<ul style="list-style-type: none"> Actively promote waste classification in residential projects and strengthen the resourceful utilization of waste. More than 100 new pilot residential project launched for waste classification in 2022. Establish a nationwide data ledger to record the disposal of kitchen waste and harmful waste from commercial projects. The classification of waste from commercial projects nationwide is completely compliant, and no administrative punishment incidents have occurred. 	<p>Vanke Service conducted waste classification in 625 new residential communities in 2022; and cumulatively carried out waste classification in 1,520 residential communities from 58 cities;</p> <p>In 2022, the service spaces served by Onewo had no new administrative penalties for waste classification;</p> <p>Explore greenery composting, kitchen waste treatment by black soldier fly and other practices of organic waste on-site elimination in residential, commercial and urban service spaces.</p> 

Hotel and vacation

<ul style="list-style-type: none"> In 2022, all self-operated hotels will implement the "zero-waste" project and become "zero-waste hotels". We will vigorously carry out more pilot projects of "zero-waste" recycling and organic cultivation in the hotel and vacation business. 	<p>In 2022, we have implemented "zero-waste" projects in all of our owned hotels. The Yun Resort Shenzhen Longcheer has completed the renovation of "Yun Farm" and put it into pilot use for organic planting.</p> 
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Housing industrialization



Goal	Progress
<ul style="list-style-type: none"> The proportion of Vanke's housing industrialisation in the total construction volume will be steadily increased year by year. In 2021, Vanke's housing industrialisation accounted for 83% of the total construction volume. 	<p>In 2022, the housing industrialisation accounted for more than 85% of the total construction volume.</p> 

Climate change response



Goal	Progress
<ul style="list-style-type: none"> Vanke will take energy efficiency, carbon emissions, water resources, ecology and other environmental goals as tracking targets and metrics related to climate change. We will continue to identify climate-related risks and their impact on the Group's business, and formulate Vanke's climate change management route with reference to TCFD recommendations. 	<p>We continue to track the performance of various indicators, discuss the impact of climate risks on business.</p> 

Climate Change Response

As a pioneer enterprise in tackling climate change and promoting green development, Vanke has been actively exploring the possible opportunities and challenges brought by climate change. In response to China's commitment to achieve carbon neutrality by 2060, Vanke has integrated climate change countermeasures into the whole life cycle covering product design, materials procurement, project construction and operation, seeking economic models to deal with the risks of climate change. In cooperation with its partners, Vanke also actively shares its best practices in combating climate change, and calls on the whole society to make contributions.

Since 2021, we have started to disclose information in accordance with the TCFD recommendations on the four core areas: governance, strategy, risk management, and metrics and targets. This year, we conducted a more in-depth scenario analysis of climate change and climate risks. We focused on identifying the climate risks and potential opportunities faced by the company's different businesses under the brown scenario in order to improve the effectiveness of climate risk management and grasp climate-related opportunities. More information on Vanke's response to potential climate change risks and opportunities can be found in the "Our TCFD Report" section.

Green Design Commitment

Developing green buildings is an urgent need for transforming the growth mode of the construction industry, and an inevitable choice for building an eco-friendly and energy-saving society. We are an active advocate of green building. While complying with national and industrial standards such as Assessment Standard for Green Building, we have formulated and promoted the Vanke Guideline for Green Building Standards within the Group. We have rigorously conducted environmental management in the entire lifecycle of building from design to operation. While ensuring quality and safety, we do our utmost to save resources and reduce negative impact on the environment to truly realise harmonious coexistence between buildings and nature.

Green building standards

On the basis of Assessment Standard for Green Building (GB/T 50378-2019), Vanke has formulated the Vanke Guideline for Green Building Standards, and established a "people-centric" green technology system to provide customers with a safe, healthy and comfortable building environment. In combination with the climate, environmental and resources characteristics of the area where the building is located, Vanke has specified requirements and landing strategies for the architectural design from safety, durability, health and comfort, convenience of life, resource-saving and liveable environment.

In 2022, Vanke released the Management Measures of Product Strategy, Planning and Design, which outlines the requirements for developing each project from pre-investment to construction drawings, as well as the requirements for grading and classification management. We have established product academic committees at our headquarters and regional offices to coordinate product management, covering product solutions, product completion and product completeness. In addition, we have developed management guidelines for the operation of various products and produced a white paper, which outlines a professional approach to management with three modules: bottom line design, technical standards for each professional product, and operational guidelines. Additionally, the white paper outlines the current and applicable systems and procedures of the Group that need to be learned and mastered by the design system and clarifies our requirements for product management.



Development and Operation Business Technology Management White Paper (Comprehensive Residential Volume)

Building technology research

Vanke attaches great importance to the R&D and innovation of green and eco-friendly technologies. We established the Vanke Architecture Research Center in 1999 and set up Vanke Architecture Research Center in Dongguan and Vanke Green Research and Development Center, Xiong'an in 2007 and 2017 respectively, in order to promote green construction techniques and continuously cultivates innovators. We delve into the industrialised construction system, green building, smart operation and maintenance, ecological environment, renewable resources and waste treatment to enhance sustainability of human habitat, lifestyle and environment with the concept and fruits of innovation. In the future, Vanke will strive to build a more open platform for R&D, commercialisation and implementation, and jointly promote technological innovation and landing application with high-quality R&D resources, relying on its business.

Vanke's contribution to international, national and industrial standard formulation in 2022

- Industry group standards that Vanke has participated in design and publication:
- Standard for size coordination of industrialized residential buildings (JGJ/T 445-2018)
 - Technical Standard for Backfilling Project by Using Premixed Fluid Solidifying Soil (T/CECS 1037-2022)
 - Technical Standard for the Application of Fireproof and Thermal Insulation Composite Panels of Concrete Exterior Walls (CABEE 009-2021)
 - Reaction resin grout for indoor decorating (T/CBMF 206-2022)
 - General requirements for centralized procurement of household air conditioning system (T/CECS 10216-2022)
 - General requirements for centralized procurement of refrigerating (heat pump) unit (T/CECS 10217-2022)
 - Requirements and evaluation for green warehousing and distribution (GB/T 41243-2022)
 - Technical Specification for Developing and Evaluating Zero-Carbon Logistics Park (T/SEESA 014-2022)

Take reference with the national design drawings:

Pultruded Fiber Reinforced Polymer (FRP) Composite Profiles Building Parts (1) – Integrated air-conditioning enclosures, integrated bay windows, wall guardrails, wall handrails, and pull-ties for prefabricated sandwich insulation wall panels piece (20CJ99-1 20CG49-1)

• Innovation in building materials:

China's building materials industry is one of the significant contributors to carbon emissions, offering excellent potential for carbon emission reduction and market growth. To continuously promote technological innovation and material development, Vanke has conducted research on utilising industrial wastes, including fly ash, slag and desulfurized gypsum, while developing materials such as low-carbon tile adhesives, self-leveling gypsum and lightweight plastering gypsum. New materials can reduce carbon emissions by 23.6% to 75.3% compared to traditional products.



- Using industrial waste desulfurized gypsum as the primary cementitious material, we can reduce the carbon emission from the preparation process from 350 kg CO₂/m³ to 90 kg CO₂/m³, compared with using cement-based materials.



- Using industrial waste desulfurized gypsum as the main cementitious material, it is more environmentally friendly and economically beneficial because it has same service life as building material. Lightweight plastering gypsum is reusable and cement mortar can be replaced by it. This product has been applied to over 200 projects, such as Vanke City of Stars in Shenzhen, Vanke Marine Metropolis project in Sanya and Vanke Marine Metropolis project in Hainan.



- With fly ash, slag, metakaolin and other industrial by-products as the main body of cementitious materials, carbon emission can be reduced from 349 kg CO₂/m³ of traditional tile adhesive to 99 kg CO₂/m³.

Additionally, we have developed and launched dust-blocking screens that can effectively prevent dust invasions while simultaneously meeting the indoor air permeability requirements by providing sound light transmission and aging resistance. Using moisture-resistant perforated wallpaper can reduce the humidity of the wall. It can significantly increase the rate of water vapour transmission, reduce the risk of mould growth, and no pollutant release. Formaldehyde-free wallpaper can remove long-lasting formaldehyde through chemical reaction when the cost increments of main material fees and auxiliary materials are small.

Dust-blocking screens



Formaldehyde-free wallpaper



• Development of industrialised construction products

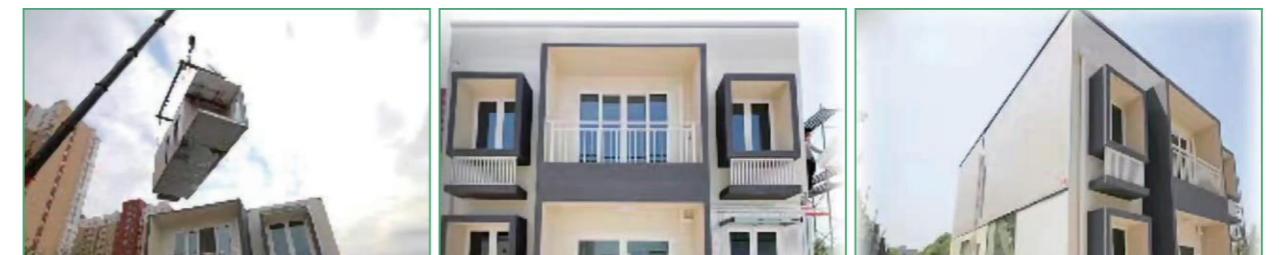
Vanke has developed a concrete exterior fireproof insulation composite panel system that utilises moulded polystyrene panels and rock wool composite, commonly known as LV composite panels. Walls, thermal insulation, and fireproofing can be integrated with this system, and all components of the system are prefabricated in the factory and assembled and installed on-site. It can make the construction process convenient, eliminate problems associated with thermal insulation materials of poor quality and reduce the energy consumption and greenhouse gas emissions generated during construction and use.

• Research on power distribution technology

To enhance the use of photovoltaic renewable energy and reduce its impacts on the power grid and help achieve the goal of carbon neutrality in China, Vanke Architecture Research Center in Dongguan has worked jointly with Shenzhen Institute of Building Research Co., Ltd. in conducting research on the application of “Solar photovoltaic, Energy storage, Direct current and Flexibility (PEDF)” power distribution technology. The study adopts a hybrid AC/DC power supply architecture with bidirectional interaction with the grid, matching the peak power of DC load with the peak power of PV power generation and a landing technology strategy with a load priority of lighting over the display and air conditioning to achieve the goal of maximizing economic benefits.

Green building design

Vanke adopts the standards that are higher than the current industry standards. It sets high requirements for the heat transfer coefficient of the main parts of enclosing structures such as external walls, roofs, external windows and curtain walls, and heat gain coefficient of solar energy, and specifies guidelines for the water use efficiency of sanitary appliances and the application proportion of green building materials. Vanke continues to develop and promote passive ultra-low energy building design, applies passive ultra-low energy building technology, and innovatively applies steel structure systems to achieve constant temperature, constant humidity, constant oxygen, constant quiet, and haze-free indoor environments while increasing energy-saving rates to 92% or above. To accomplish the goal of fast building construction in Xiong'an New Area and reduce energy consumption, we have adopted a prefabricated steel structure design approach and employed cold-formed thin-walled steel beams and modular steel structure technology systems to construct experimental buildings for talent apartments and long-term rental apartments.



Prefabricated steel structure building

• Adaptive design for climate change

Vanke has included greening rate, green area per capita and the total amount of rainwater drainage into the Vanke Guideline for Green Building Standards as required technologies and promoted the use of rooftop greenery, recessed green spaces and rain gardens in the design to enhance the liveability of green building environments and the resilience of buildings to the risks of climate change.

Green building certification

Green building certification data

New construction projects met green building evaluation standards for **9** consecutive years, and by the end of 2022, Vanke met green building evaluation standards for a total area of **308.3** million square meters.

During the reporting period, among Vanke's new projects, a total of **61** projects (residential/public/logistics and warehousing) have been awarded 3-star certification under the Green Building Evaluation Standard, **7** LEED Gold certifications, **3** LEED Platinum certifications, **3** WELL certifications and **1** BRE&TUV net zero carbon building certification. Of all the new real estate development and logistics projects that met the green building evaluation criteria this year, **36%** incorporated renewable energy design.

During the reporting period, Vanke added an area of 18.48 million square meters that meets the green building standards. Among them, the real estate development business segment added 14,372,700 square meters of area meeting green building evaluation standards, of which 12.75 million square meters meets one-star or two-star standards and 1,620,600 square meters meeting the three-star certification of green building evaluation standard. In addition, several logistics parks received LEED Platinum and Green Warehouse 3-star certifications, and 4,106,900 square meters have been added as new green building certification.

• Vanke's certified three-starred green projects

Project name	Building Type (Residential/Public)	GFA (10,000 square meters)	Label type
Hangzhou Xingtu Guangnian	Residential	30.5	Pre-evaluation
Hangzhou Xingyu Guangnian Mansion	Residential	15.17	Pre-evaluation
Ningbo Star Travel Guangnian Mansion	Residential	7.5	Pre-evaluation
Kunwu Xuzhou	Residential	26.54	Pre-evaluation
Xuzhou Cuiwan Zhongcheng	Residential	22.03	Pre-evaluation
Xuzhou Huaihai Yinxiu	Residential	3.52	Pre-evaluation
Xuzhou Yungu	Residential + Public	13.28	Pre-evaluation
Fuzhou City Light	Residential	26.2	Pre-evaluation
ZTE Headquarter Building	Public	8.0	Pre-evaluation
Xuhui Vanke Center, Shanghai	Public	9.32	Design

• Vanke's certified three-starred green warehouse projects

Project name	Building type (residential/public/ logistics warehousing)	GFA (10,000 square meters)	Label type
VX Jinan High-tech Zone Park	Logistics and warehousing	7.56	Operation
VX Chengdu Longquan Park	Logistics and warehousing	9.16	Operation
VX Hangzhou Qiantang New District Cold Chain Park	Logistics and warehousing	4.76	Operation
VX Suzhou Xiangcheng Park	Logistics and warehousing	3.96	Operation
VX Jiaxing Pinghu Cold Chain Park	Logistics and warehousing	2.97	Operation
VX Xi'an High-tech Park	Logistics and warehousing	8.75	Operation
VX Haitou Xiamen Haicang Cold Chain Logistics Park	Logistics and warehousing	3.57	Operation
VX Shanghai Songjiang Xinbang Cold Chain Park	Logistics and warehousing	2.06	Operation
VX Shanghai Songjiang Xinqiao Cold Chain Park	Logistics and warehousing	2.87	Operation
VX Nanjing Qixia Bonded Park	Logistics and warehousing	4.33	Operation
VX Changsha Kaifu Park	Logistics and warehousing	21.58	Operation
VX Nanchang Changbei Cold Chain Park	Logistics and warehousing	6.03	Operation
VX Yoursender Shenzhen Yantian Cold Chain Park	Logistics and warehousing	10.87	Operation
VX Wuhan Dongxihu Cold Chain Park	Logistics and warehousing	9.05	Operation
VX Chongqing Airport Park	Logistics and warehousing	9.90	Operation
VX Chongqing Donggang Park	Logistics and warehousing	5.20	Operation

• Vanke's certified three-starred green warehouse projects (Continued)

Project name	Building type (residential/public/ logistics warehousing)	GFA (10,000 square meters)	Label type
VX Quanzhou Shishi Park	Logistics and warehousing	7.69	Operation
VX Quanzhou Jinjiang Park	Logistics and warehousing	4.21	Operation
VX Fuzhou Lianjiang Park	Logistics and warehousing	8.68	Operation
VX Hangzhou Dajiang East Yipeng Park	Logistics and warehousing	13.14	Operation
VX Hangzhou Dajiang East Linjiang Park	Logistics and warehousing	3.81	Operation
VX Ningbo Jiangbei Zhuangqiao Logistics Park	Logistics and warehousing	3.82	Operation
VX Cixi Logistics Park	Logistics and warehousing	4.87	Operation
VX Ningbo Yuyao Zhangting Logistics Park	Logistics and warehousing	6.27	Operation
VX Hangzhou North Logistics Park	Logistics and warehousing	4.93	Operation
VX Shaoxing Zhuji Logistics Park	Logistics and warehousing	10.93	Operation
VX Hangzhou Airport Park Phase II	Logistics and warehousing	9.24	Operation
VX Shenyang Hunnan Park	Logistics and warehousing	6.88	Operation
VX Changchun Economic and Technological Development Zone	Logistics and warehousing	5.63	Operation
VX Langfang Anci Park	Logistics and warehousing	9.44	Operation
VX Nanjing Liuhe Park	Logistics and warehousing	10.51	Operation
VX Hefei Feixi Park	Logistics and warehousing	4.76	Operation
VX Guangzhou Conghua Aotou Park	Logistics and warehousing	4.96	Operation
VX Foshan Sanshui Baini Park	Logistics and warehousing	9.62	Operation
VX Foshan Sanshui Leping Park	Logistics and warehousing	14.88	Operation
VX Foshan Nanhai Park	Logistics and warehousing	9.84	Operation
VX Nanning Xinzhong Wisdom Park	Logistics and warehousing	9.76	Operation
VX Wuhan Huangpi Hankou North Park	Logistics and warehousing	7.28	Operation
VX Changsha Yuhuayuan District	Logistics and warehousing	12.86	Operation
VX Wuhan Airport Park	Logistics and warehousing	7.26	Operation
VX Xian Airport Park Phase I	Logistics and warehousing	9.57	Operation
VX Xian Airport Park Phase II	Logistics and warehousing	7.48	Operation
VX Xian Fengdong Park	Logistics and warehousing	13.38	Operation
VX Shanghai Jinshan Caojing Park	Logistics and warehousing	4.27	Operation
VX Wenzhou Pingyang Park	Logistics and warehousing	5.73	Operation
VX Ningbo Jiangbei Hongtang Park	Logistics and warehousing	11.94	Operation
VX Xiamen Tongan Park	Logistics and warehousing	3.80	Operation
VX Jiaxing Jiashan Park	Logistics and warehousing	9.59	Operation
VX Taizhou Cluster Park	Logistics and warehousing	12.00	Operation
VX Jiaxing Nanhu Park	Logistics and warehousing	7.65	Operation
VX Tianjin Wuqing Park (Phase I)	Logistics and warehousing	10.24	Operation

• Vanke's other green certified projects

Project name	Building type (residential/public/ industrial)	GFA (10,000 square meters)	Building certification
Metropolis Xinghai, Dalian	Public	6.8	LEED BD+C: Core and Shell Gold certification; WELLCore Gold Certification
Wanchung Yunhui, Shenzhen	Public	10.0	LEED Communities: Plan and Design Platinum Certification
Sunshine City, Hangzhou	Residential	2.9	LEED BD+C: Core and Shell Gold Certification
Shanghai Uni-City	Residential + Public	80	LEED Cities and Communities: Plan and Design Gold Pre-certification
Shanghai Longhua Vanke Centre	Public	6.3	LEED BD+C: Core and Shell Gold Certification
Shanghai Xinyao Zhongcheng	Residential + Public	2.8	LEED BD+C: Core and Shell, Gold certification
ZTE Headquarter	Public	27.3	LEED BD+C: Gold Pre-certification for new construction and major renovations; WELL Gold Certification
Super International Center (SIC)	Public	18.9	LEED BD+C: Core and Shell Gold Pre-certification; WELL Gold Certification
Shanghai Fengxian Lingang Cold Chain	Industrial	11.15	LEED BD+C: New Construction and Major Renovations Gold Pre-certification; WELL Gold; LEED V4 BD+C: Warehouse and Distribution Centers (WDC) Platinum Pre-certification; BRE&TUV Net-zero Carbon Buildings Certification
VX Hangzhou Qiantang New District Cold Chain Park	Industrial	4.76	LEED V4 BD+C: Warehouse and Distribution Centers Platinum Certification

Case VX Logistics Shanghai Fengxian Lingang Park became the first net-zero carbon building certification project for logistics parks in China

VX Logistics Shanghai Fengxian Lingang Park is located in Lingang Free Trade Zone, Shanghai, with an area of about 37,000 square meters. It is the first zero-carbon smart logistics demonstration park of VX Logistics. For carbon emission management, an electronic carbon management platform has been developed by the park for the management of carbon emissions, which not only provides real-time monitoring of the carbon emissions in the park but can also monitor the energy efficiency of distributed photovoltaics hourly to formulate emission reduction strategies.

Through energy conservation and consumption reduction, as well as the distribution of photovoltaics, the park reduced emissions of nearly 26,000 tons of standard coal in its green operation phase. As a result, about 68,000 tons of carbon dioxide were reduced, and more than 200 tons of sulphur dioxide were reduced. As calculated based on the ASHRAE 90.1-2010 Energy Standard For Buildings Except Low-rise Residential Buildings, the project has achieved an energy saving of more than 50%.

The park has been recognised by many international green building certification agencies. It was the first domestic logistics park to receive Net-zero Carbon Buildings Certification jointly issued by TÜV Rheinland Greater China and the Building Research Establishment (BRE). It has obtained LEED V4 BD+C Warehouse and Distribution Centers (WDC) Platinum Pre-Certification. Moreover, this case was selected as one of the "2022 Corporate Climate Action Case Collection", a publication jointly published by the Department of Communications and Education of the Ministry of Ecology and Environment and C Team, and presented at the United Nations Climate Change Conference. Among the 27 cases presented at the conference, this was the only logistics industry case, and it provides a replicable example for reducing greenhouse gas emissions in the industry.



Shanghai Fengxian Lingang Park's Net-zero Carbon Buildings Certification and LEED V4 BD+C Platinum Pre-Certification

Case VX Hangzhou Qiantang New District Cold Chain Park received the world's highest score of 90 for its green warehouse certification

VX Hangzhou Qiantang New District Cold Chain Park is designed to meet the LEED V4 Warehouse and Distribution Center Platinum design standard from the aspects of site selection and transportation, sustainable site development, water conservation, energy efficiency, materials, and indoor air quality, in order to ensure the compliance with green and sustainability requirements.

Through structural optimisation, the use of recyclable and green building materials, and LCA simulations based on a whole life cycle assessment, the Park minimises the environmental impact brought by building materials. Compared to industrial-standard building construction, this project significantly reduced carbon emissions by 13.0%, reduced acidification potential by 11.2%, and lowered the eutrophication potential by 15.0%.



Certification of VX Hangzhou Qiantang New District Cold Chain Park

Case Metropolis Xinghai, Dalian achieved LEED Gold and WELL Gold Certification

Metropolis Xinghai, Dalian is located northwest of Xinghai Square in Dalian City. This project takes measures to improve "green" performance in terms of water saving, energy saving, and materials.

- **Water saving:** Preference is given to water-saving native plants for landscape design. Also, outdoor water use is maximised through water-saving irrigation systems and high-performance water-saving sanitary ware is used indoors. Compared with the US LEED water benchmark, we achieved a 40% reduction in indoor water consumption.
- **Energy and atmosphere:** We adopt low-voltage lighting designs, high-efficiency HVAC equipment and optimise the operating schedule of building facilities. Compared to the American ASHRAE standard 90.1-2010 benchmarked buildings, we have achieved energy saving rate of up to 19%.
- **Materials and resources:** We use local building materials that are recyclable to reduce the number of carbon emissions generated during the manufacturing and transportation of materials. The construction waste treatment process was also refined during the construction process, resulting in a final waste recycling rate of 90%.



Approved design sketch of Metropolis Xinghai, Dalian

In addition, we pay close attention to the health and well-being of the residents through health design and print the WELL health manual to encourage residents to understand health and well-being measures. We also conduct annual household surveys to understand residents' needs and respond accordingly. Upon completing the on-site performance test, the building achieved LEED Gold and WELL Gold certification, making it a green and low-carbon landmark in Xinghai Square.

Advancing Green Construction

We incorporate the concept and practice of environmental protection throughout materials procurement, design and construction in an effort to save energy and resources, reduce pollution, and promote green lifestyle with green human habitat.

Green environmental governance

We attach importance to the environmental issues in the land development stage, and promote land development and consolidation, river pollution control, lake and reservoir ecological restoration process environmental protection, and ecological landscape building. All these efforts are to maximise the land resources and ecological value.

Data from the year 2022

In 2022, we carried out restorations of water body of a total of **80,000** square meters. Sponge transformation of the Dameisha Inner Lake in Shenzhen is one of the examples.

Soil remediation

In response to the national's call to strengthen soil pollution prevention and control efforts, Vanke has actively undertaken its social responsibility as a real estate development enterprise strictly following the laws and regulations such as the Soil Pollution Prevention and Control Law of the People's Republic of China and Soil Pollution Prevention and Control Action Plan. We conduct rigorous and scientific soil environment quality assessment before and during project development and undertake detailed soil environment investigation and risk assessments for project sites with soil contaminated. It can precisely locate contaminated soil areas and eliminate soil quality risks.

In 2022, we conducted a detailed survey and risk assessment on soil environment for the Sanxing Urban Renewal Unit project in Futian District, Shenzhen. We completed a soil environment survey and environmental protection filing for the project areas that do not have soil contamination risks. By December 2022, we had completed the environmental investigation and environmental filing for five sites of the projects with no soil contamination risk. Of which, a school site was successfully handed over to the government, and facility development of a community sports park was completed, which is now open to Shenzhen residents.

Inland lake and river management

Due to the poor fluidity and exchangeability of the water body, urban inner lakes face three problems: the discharge of foreign matter into the rainwater pipe network, the turbidity after rain, and the outbreak of blue-green algae. We have designed and developed a three-piece lake operation and maintenance set based on our experience. Incorporating our unique international invention patent, a 3D fast filtration technology with a digital support system for operation and maintenance, we provide lake management services based on water quality monitoring, AI analysis and control, and cyclic filtration. As a result, the operation and maintenance of lake is more refined, convenient and intelligent.



Current status of the environmental governance project



Design sketch of the environmental governance project

Case Dameisha Inner Lake's sponge transformation

Lotus Lake is located in Dameisha Outlet Shopping Park in Yantian District, Shenzhen, and is the rainwater collection end of the sponge transformation area of the outlet. The purification system in Lotus Lake consists of gravel and the ecosystem surrounding the lake. Through the water pipes, collected rainwater is evenly distributed in the gravel belt and then flows into the lake. It helps eliminate surface pollution at source, purify the water and maintain the water's quality for an extended period of time. This project was completed in May 2022, and the lake water quality reached Class III according to the Environmental Quality Standards for Surface Water. The purified lake water can be used for irrigation, greening public areas, road washing.

In this project, Lotus Lake serves not only the functions of "saving", "purifying", and "using", but also has an ornamental element due to its stable ecology, clear water body, and green landscaping, which adds vibrancy and attractiveness to the park.



Design sketch of Shenzhen Dameisha Inner Lake's sponge transformation

Intelligent environmental protection management

We continue to empower the protection of the ecological environment with scientific and technological strength and help the protection of the ecological environment through digital construction and services of the ecological environment. In 2022, we continued cooperating with Guangming District, Shenzhen City, Guangdong Province to promote intelligent environmental protection projects. We established an ecological environment data centre, and a unified command and dispatch centre. Also, we developed ecological digital windows and an ecological environment intellectual alert centre, as well as upgraded the intelligent tools for environmental management. Through the analysis and early warning of environmental conditions and trends supervision of pollution sources and closed-loop disposal, we will provide a scientific basis for environmental management and decision-making and improve the overall supervision effectiveness and service quality.

Green material selection

On top of fair, just and open procurement, we have added the environmental protection principle for supplier management. Meanwhile, we pair up with likeminded companies to promote "China's Real Estate Industry Green Supply Chain Campaign Action (GSC)". We reduce adverse environmental impacts generated by raw materials procurement, production, processing and end user consumption, improve resource efficiency, and realise green upgrade of the supply chain, so as to provide green and healthy products for end consumers.

We benchmarked with the guidelines such as the Catalogue of Construction Materials Banned in Beijing (2018 Edition) and Announcement on the Ban of the Production, Sale, Import and Export of Household Electrical Appliances with Chlorofluorocarbons (CFCs) as Refrigerants and Foaming Agents (No.200, 2007 of the Ministry of Environmental Protection) and established a list of prohibited and restricted materials for the Group according to their environmental health and safety properties. At the same time, we follow the Green Procurement Guidelines for China's Real Estate Industry, improve procurement standards and systems, comprehensively consider energy conservation and environmental protection factors in product design, procurement, production, packaging, logistics, sales, service, recycling and reuse, and work with upstream and downstream enterprises to implement social responsibilities such as environmental protection and energy conservation and emission reduction to create a green supply chain.

Example of Vanke Group's List of Prohibited and Restricted Materials		
Material category	Material name	Reason for disabling
Coatings/Paints	Solvent-based floor paint	The use of materials causes air pollution
	Coatings and adhesives not meeting DB11/3005	The material contains organic pollutants and emits harmful gases during construction

Promoting the procurement of "green list" suppliers

In 2020, in cooperation with the Institute of Public and Environmental Affairs in Chaoyang District, Beijing, we established a "green list" online application platform, which has been officially launched, to include supply chain enterprises with outstanding performance in energy conservation and emission reduction in the "green list" and make priority purchases from them. In 2021, there were already 22 "green list" enterprises. At present, the green list standards for rock wool, heat pump, and stone have been formulated, and it is planned to continue to empower real estate enterprises and suppliers in the future to promote actual procurement.

Case Aluminum alloy enterprises are empowered to disclose carbon emissions through Green Supply Chain Action

In 2022, the Institute of Public and Environmental Affairs (IPE) in Beijing Chaoyang District was commissioned by the Green Supply Chain Action for the Real Estate Industry in China to conduct a greenlist empowerment activity for an aluminium company on the "whitelist". After the empowerment, the company disclosed its GHG emission data in accordance with Guidelines for the Accounting and Reporting of Greenhouse Gas Emissions from for Electrolytic Aluminium Production Enterprises (Trial) and Guidelines for Greenhouse Gas Emissions Accounting and Reporting of Enterprises (Trial) through Blue Map's Carbon Disclosure Platform.

Advancing green construction

Vanke strictly abides by the Environmental Protection Law of the People's Republic of China, and has formulated the Green Construction Standards for Architectural Engineering. During the entire construction process, we will take into account the environment and surrounding neighbourhoods' needs, and focus on the conservation and utilisation of materials, water, energy, and land to reduce the impact on the air, water and land, to create a clean, tidy, comfortable and safe construction environment.

Pollution control

Soil	Bare soil and concentrated earthwork at the construction site are covered.
Air	Covering measures are strictly required for earth-moving vehicles, and the vehicles must be cleaned before driving out. Fog cannons combined with spraying are used in the construction site and regularly started and shut down to automatically start the dust suppression equipment to reduce the dust concentration.
Waste	Wastes on the construction site are required to be collected in hazardous, non-hazardous, recyclable and non-recyclable categories. Construction waste is centrally collected and stacked and timely transported. Special warehouses are set up on site to store finegrained construction materials in a closed manner. High-altitude waste is transported vertically. The construction unit is urged to dismantle the construction enclosure and other temporary facilities within the agreed time and conduct a comprehensive cleaning of the surrounding environment to ensure that the site is cleared after the work is completed.
Light	Large-scale lighting fixtures such as onsite tower chandeliers adopt directional searchlights to prevent strong light from leaking.
Noise	Noise sources in the production area of the construction site are identified. Targeted noise reduction measures are formulated according to the characteristics of the project and the surrounding environment, and the noise reduction goals and requirements are clarified.

Resource conservation

In accordance with the ISO 14000 environmental management system, Environmental and Hygiene Standards for Construction Sites (JGJ146-2004), and Green Construction Guidelines (Notice Jian Zhi [2007] No. 223), we have formulated the Site Safety, Health and Environmental Protection Management Standards applicable to all projects under construction developed within the Group, prepared water and electricity conservation plans, and appointed persons in charge to implement them, so as to standardise the site management of environmental protection during construction.

Housing industrialization

Housing industrialisation refers to housing construction in an industrialised way. It can effectively reduce energy and material consumption during construction and has become an important practice for the construction industry to practice green development. We are always committed to environmental protection, and have worked on the industrialised construction system for nearly two decades and gradually figured out a mature path for its promotion and application.

We continue to iteratively upgrade the “5+2” construction system, implement Vanke’s practices related to industrial and standardised construction in accordance with the 2018-2021 Vanke industrialisation System Promotion Measures, and compile the Industrial Quality System Standard to contribute to the green and healthy development of the construction industry. In 2022, in terms of standardised design, factory production, assembly construction and information management, we upgraded the construction system and continued developing new prefabricated components and assembly-type parts. The coverage rate of all-concrete exterior walls, assembly-type interior partition walls and system formwork was increased, and the “5+2+X” construction system was fully applied to new projects.

Case Develop and promote the new composite reinforced material profiles

Vanke’s subsidiaries including Vanke Shenyang and Vanke Dalian have adopted the new composite reinforced material, Fiber Reinforced Polymer (FRP) profiles, which offers the attributes of lightweight, high strength, corrosion resistance, and durability. Moreover, it has a high safety performance and is easy to manufacture. By standardising production, labour costs and industrial mould costs can be reduced. Furthermore, the material has a low thermal conductivity and an excellent overall heat insulation performance, which enables it to perform energy-saving and environmental protection functions.



External FRP bay window

Practicing Green Operation

Vanke actively practices the green development concept and makes good use of resources and energy. Vanke has formulated and implemented Administrative Measures for Energy Conservation and Consumption Reduction, and introduced green technologies such as the intelligent energy system and the reclaimed water and rainwater utilisation, to enhance energy and water resource management from various aspects. We have further taken the lead to promote “zero waste” management in the industry and facilitate the construction of a resource-efficient and eco-friendly society.

Energy efficiency management

• Shopping mall

We are highly concerned about energy conservation and emission reduction and have actively participated in the campaign of striving to be a “zero” runner initiated by the Paulson Institute and China International Economic Exchange Centre, and formulated energy saving renovation plans and energy saving goals for our shopping malls. Vanke has formulated the Energy Conservation and Emission Reduction Management System and the Energy Conservation and Consumption Reduction Methods and Measures, makes clear energy conservation and consumption reduction management requirements for projects that have opened, are under construction or planned, and stipulates that all projects that are owned or operated by the Group should achieve energy efficiency improvement through intelligent analysis of energy use and promotion of the use of new energy on the basis of continuously improving the construction of the energy management platform.

- **Energy management platform improvement:** Continue to expand the use of a unified energy management platform. In 2022, we successfully upgraded the local version of the energy management system to the cloud version for five shopping malls, including the one on Hangzhou, resulting in the unification of the energy management system within SCPG. We manage energy data in a granular manner and implement automatic meter reading by automated data collection; the circuit of distribution rooms was divided into branches, and the energy consumption of the sub-circuit was analysed. We continue to improve equipment online rate in all four malls except Wuhan Incity, the equipment online rate exceeded 95%.
- **Energy use analysis and improvement:** We collect energy consumption data of shopping malls every month and carry out analysis of the statistics. Shopping malls with electricity consumption in the public area exceed certain limit are required to trace the source and conduct variance analysis. The relevant responsible units shall conduct comprehensive investigations and timely rectification of existing problems.
- **New energy utilisation:** We actively promote and utilise micro-grid technology (photovoltaic power generation). We installed solar energy generation equipment on the roofs and parking lots of shopping malls, built optical storage and charging inspection equipment, V2G smart microgrids, as well as the system for operating them. We have also strengthened collaboration with external parties with new energy sources in the form of charging stations and Demand Responsive Transport (DRT).

Case To build the first complex project of “photovoltaic carport and intelligent lighting” in Yangzhou

Yangzhou Inreach has developed and built the first “photovoltaic carport + intelligent lighting” project in Yangzhou City by using the rooftop parking lot of a commercial complex.

The project is based on the installation of 8,000 square meters of solar panels on the rooftop parking lot of the Walmart shopping plaza in Yangzhou City, using the integrated photovoltaic building model for self-consumption and grid access. The total installed capacity of the “PV Carport + Smart Lighting” project is about 1 MW and is estimated to generate about 1,000,000kWh of new energy power annually, accounting for about 16% of Yangzhou Inreach’s total annual power consumption.

In addition to the full use of new energy technologies, Yangzhou Inreach also introduces energy-saving and carbon-reducing technologies to intelligently manage water, electricity, gas, heating and cooling energy to further reduce total energy consumption.



Yangzhou Inreach

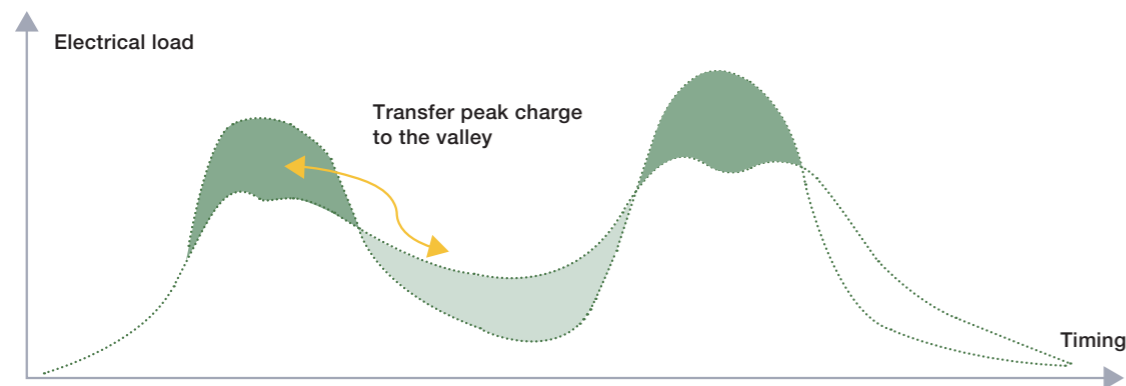
• Property services

Committing to providing green and low-carbon services for customers, Onewo improves the operational energy efficiency of all types of properties through scientific management, digital technology empowerment and behavioral guidance, while ensuring the quality of property services and other basic requirements, and deeply integrates the concepts of green, low carbon and sustainability into property services. In 2022, Onewo conducted energy-saving renovations to the infrastructure of some residential projects under management, with focuses on brightening and consumption reducing of lighting systems, energy-saving renovation of air conditioning and elevators, and making full use of renewable energy, etc., to strengthen energy management; actively promotes energy conservation and emission reduction through various means and identifies the space for this purpose in commercial service spaces, strengthens energy management, builds its own energy conservation service strength and helps customers save energy and reduce consumption through strengthening energy management from the aspects of digital empowerment, equipment renovation, optimization of management, etc.

In addition, in 2022, Onewo implements the "Dolphin Action of Innovation" among our employees, encourages and promotes active participation of employees from all business units and specific departments in developing and putting forward innovative proposals, and promotes and implements quality proposals in more application scenarios through award selection of "Blue Dolphin" and "Golden Dolphin". During the reporting period, a total of 68 innovative proposals related to energy and water conservation were awarded the "Dolphin" award, and will be applied and extended in a wider range of businesses.

Case The "Golden Dolphin" innovative proposal in 2022 : Pre-cooling in the valley and fluctuating water temperature control method

In typical industrial or commercial buildings, air conditioning systems account for a large proportion of the electricity consumed. Cushman & Wakefield Vanke Service has proposed a proposal of "Pre-cooling in the valley and fluctuating water temperature control method": pre-cool the chilled circulating water, indoor environment (indoor air, walls, floors, and roofs, facilities, etc.) during the valley to save cooling capacity; release such cooling capacity during the peak to increase the valley electricity and reduce the peak electricity, so as to complete the thermal load transfer in the area with a lower electricity price, saving the electricity load during the peak or flat periods. The proposal is quick to implement, with low investment costs but stable and long-term benefits, and is an industry-leading approach to energy conservation management by forming fully automatic control through applying manual adjustment in the early stage and upgrading BA control system in the later stage. The proposal has been piloted in one high-end manufacturing project with an estimated electricity cost saving of approximately RMB1.12 million per year. Currently, the proposal is being implemented in more customer service projects.



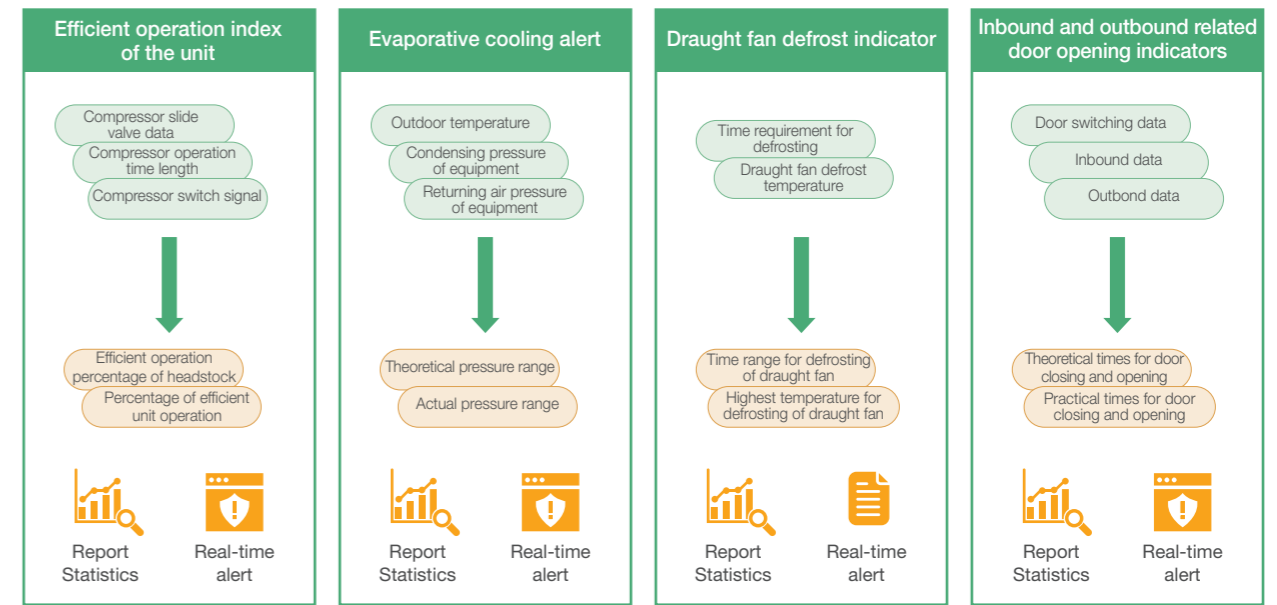
Optimization of Air Conditioning Operation Strategies to Decrease Peak Electricity and Increase Valley Electricity, Saving Energy and Reducing Costs

• Hotel

For hotel energy consumption management, we actively expand the utilisation and development of new energy fields on the basis of strictly implementing lighting management, air conditioning, heating and cooling management and power distribution standards, saving energy and reducing consumption in multiple ways.

• Logistics

In terms of logistics business, we use the Internet of Things (IoT) platform to realise functions such as automatic recording of energy consumption data, real-time management reports, timely energy-saving alerts, and aggregation of energy consumption data from each park for monitoring and horizontally compare energy savings in real-time. By the end of the reporting period, 29 of the 30 cold chain parks were equipped with an IoT platform, and the remaining park will launch the platform shortly.



IoT management platform

Moreover, we have actively implemented the following energy-saving measures in the management of the logistics park:

- ▶ Install a door curtain at the unloading entrance to prevent air-conditioning leakage caused by operations other than loading and unloading.
- ▶ To reduce the hallway's energy consumption of cooling, a buffer room is set up at the entrance of the hallway, and a visual and audible alarm is installed on the door at entrance of the buffer room.
- ▶ High-efficiency LED lamps are used in both indoor and outdoor lighting;
- ▶ In the logistics park, a multifunctional building has been configured as an office area. Its air conditioning is equipped with a high-efficiency variable refrigerant flow (VRF) multi-connector system that can burn 10% less energy than a conventional air conditioning system.
- ▶ 100% of the PV installation load will be reserved for the newly constructed cold storage facility.

Case Photovoltaic distributed power plants in VX Shanghai Fengxian Lingang Park

The PV distributed power station of VX Shanghai Fengxian Lingang Park was constructed on the rooftops of three factory buildings using 6,369 pieces of monocrystalline solar modules with an energy efficiency of 555W, with a total installation capacity of 3,534.795 kW. It is connected to the high voltage grid to produce electricity for on-site use and the surplus power is sold. In September 2022, the project was officially connected to the grid, and once completed, it can produce renewable energy power of approximately 3.5 million kWh per year.



PV Distributed Power Station in VX Shanghai Fengxian Lingang Park

• Data centre

Vanke pays attention to carbon emission management of data center, and practices green and low-carbon data center construction by optimizing and improving usage efficiency, business upgrading and improving management measures. Since 2021, Vanke has steadily promoted the migration of data centres to public clouds, releasing a total of two data centers' storage space as of December 2022, reducing the total carbon emissions by 697.82 tons compared with the that of 2021. In December 2022, Vanke data centers achieved the international certificate ISO 14064-1 for greenhouse gas emissions accounting.

As of December 2022, **2** data centres have been released, with **697.82** tons of carbon emissions reductions compared to 2021 Vanke data center year-on-year total carbon emission reduction



ISO-14064 Certificate of Vanke Co., Ltd's data centre

Water management

We strive to manage our water resources efficiently, pay attention to source management, strengthen water and rainwater utilisation management, improve water efficiency, implement water conservation measures at the business level, and encourage employees and tenants to conserve water.

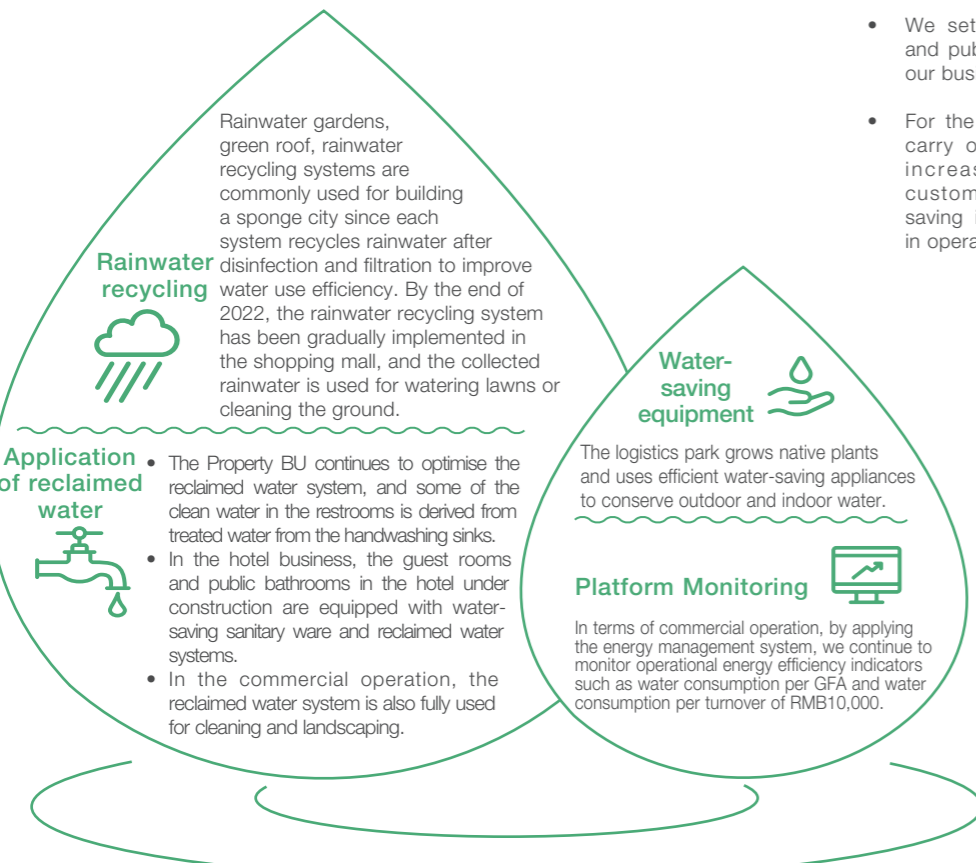
• Source management:

Identifying and managing water use risks and collecting water use data help setting water reduction targets and, subsequently, on-going water management. Water use risks are fully considered in project investment, design, development, and operation to promote resource conservation and reduce wastewater generation.

• Process management:

• Water-saving publicity:

- We set up water-saving reminders and publicity signs at water points in our business and office areas.
- For the hotel business, we gradually carry out water-saving renovation, increase publicity for in-house customers, and introduce water-saving incentive policies for projects in operation



Waste management

Vanke has begun to explore “zero-waste” management since 2005. Based on the project management experience and public charity resources of the Vanke Foundation, Vanke collaborates with the governments, NGOs, enterprises and other stakeholders to explore and promote new technologies and new methods for domestic waste management of urban and rural communities, and make “zero-waste” communities a reality in China.

• Zero-waste Office

New Office “Zero” Sense – Zero-waste Office Action Guide has provided practical guidance for Vanke’s zero-waste office since its release in 2021. In 2022, Vanke initiated a series of zero-waste culture cultivation activities within the Group in order to promote zero-waste offices and raise employee awareness. Simultaneously, we announced zero-waste office principles externally and partnered with multiple actors to empower 387 enterprises and institutions in 20 cities nationwide to advocate zero-waste office policies within their organizations.

Case “Zero-waste Office Program”

In 2022, Vanke Foundation and the Duckgaga Creative Philanthropy Center launched the “Zero-waste Office Program” to provide technical support and operational guidance for enterprises nationwide to implement zero-waste initiatives in office scenarios. The Zero-waste Office Program will provide technical support and operational guidance for enterprises nationwide to implement zero-waste initiatives. By conducting lectures, workshops, expert coaching, and other empowerment activities, we assisted the selected companies in practicing the 3Rs, standing for reducing, reusing, and recycling, in their offices. This helps improve resource utilisation and motivate employees to adopt sustainable work and lifestyle practices, contributing to achieving a waste-free city and achieving carbon neutrality.

- We invited seven zero-waste industry experts to form a zero-waste office expert team, recruited 21 joint promotion partners, and encouraged 387 enterprises (organisations) to participate.
- Campaign publicity was launched by developing highlight actions of Zero-waste Office Action, producing zero-waste office promotional videos, and releasing the zero-waste office action list for enterprises. We have more than 50,000 participants online and around 3,000 participants on-site.
- We selected six seed companies for one-to-one coaching to establish the “first tier” of zero-waste offices in China.



Zero Waste Office Program

• Zero-waste community

We take the participation of multiple subjects in the community to respond to organic waste treatment as the core, and with communities in Beijing and Shenzhen as the core area. The urban zero-waste community projects covered nearly 180,000 urban households in 80 urban communities in seven cities.

Case Vanke Xishan Courtyard “Organic Waste Recycling” Pathway

Vanke Xishan Courtyard has built a sustainable trinity of “source reduction – waste separation, organic waste treatment using black water fly, and aerobic composting” to raise residents’ awareness of waste separation and environmental protection and promote the application of the model in communities by establishing a link between the front-end living situation and the back-end treatment technology system.

By the end of 2022, more than 70 events had been held with more than 2,800 participants. The total capacity of food waste recycling in situ reached 500 kg/day. 76.7 tons of food waste was processed in 2022 and 91.6 tons of recyclables can be recycled annually. In 2022, Xishan Courtyard was awarded “Household Waste Separation Demonstration Neighbourhood in Beijing (municipality-level)”.



Illustration of “Organic Waste Recycling” in Xishan Courtyard

• Zero-waste hotel

Vanke Hotel and Vacation BU have formulated the Zero Waste Hotel Management System. In 2022, the Zero-waste Team consisting of a Chief Environmental Officer, Executive Officer, Secretary General and team members was established in nine hotels to enforce zero waste hotel management practices. Vanke Hotel and Vacation BU has formed a “1+2+1” model, standing for a set of systems, two core tasks, and one consensus and action (publicity). In 2022, nine hotels have implemented self-examination and specialised management through applying design and operation guidelines and self-assessment checklists. To date, they have achieved full coverage of zero-waste management.

Case The Yun Resort Shenzhen Longcheer implements a compost utilization and transformation program

In 2022, the Yun Resort Shenzhen Longcheer completed a renovation of its farm on the roof of 6th floor and placed it into operation. A separate area has been established on the roof for composting green waste. This allows green waste to be recycled and reused as organic fertiliser for Yun Farm; organic vegetables from the farm are available for guests to pick and use as raw materials for cooking dishes.



Yun Farm renovation at the Yun Resort Shenzhen Longcheer

• Zero-waste campus

To encourage the participation of schools in the construction of “zero-waste schools”, in 2022, Vanke Foundation and Roots & Shoots Beijing collaborated to promote the Zero-waste School Construction Guide and launched a specialised promotion program. A total of 20 finalists were selected for the program. They were from 11 schools across the country with an average of over 130 hours of practical activities conducted, and with four online and offline training sessions conducted. In addition, the Zero-waste School Construction Guide has been widely used in more than ten schools.

Case Waste-free Campus Action

In Chongqing, the Waste-free Campus Action has selected 10 to 20 primary and secondary schools to build waste-free campuses to contribute to constructing a zero-waste city. In 2022, the Waste-free Campus Action launched its Waste-free Campus Construction Toolkit and selected 33 schools for the pilot project. A carnival of Waste-free Campus Action was broadcasted live which was viewed more than 1.08 million times.



Waste-free Campus Action Guidelines

• Encouraging the public to engage in Zero-waste Management

We encourage the public to participate in waste separation and zero-waste management. Through Vanke’s influence, we hope to cultivate sustainable community leaders and organisations and strengthen the public’s understanding of zero-waste living. In 2022, Vanke Foundation encouraged the public to participate in zero-waste practices through supporting community waste separation initiatives, cultivating sustainability leaders, and carrying out public advocacy actions. A total of 207 community waste management projects were implemented.

Case Dandelion Plan

Dandelion volunteer lecturer project – special action for deep cultivation of community waste sorting

In 2022, Vanke Foundation continued to support special actions for deep cultivation of community waste sorting in Shenzhen. With the aim to build a network of Dandelion volunteer lecturers in Shenzhen, a project was organised to cultivate key volunteer lecturers for community waste sorting. It helps activate the endogenous motivation of the volunteer lecturer team to regularly carry out community waste sorting and improve the effectiveness of community waste sorting. In 2022, three empowerment training were conducted with a total of 77 hours of tutoring arranged for the project partners. The funded project partners carried out over 150 waste reduction and sorting activities.



Deep cultivation - Dandelion Teacher

Case Phase II of the Soil-piling Action

In 2022, Vanke Foundation continued to fund Phase II Soil-piling, which aims to identify potential and key community actors through the “empowerment + action” model, to raise awareness of waste separation and encourage action among urban community residents, and to gather and promote endogenous community power.



An event of Phase II of the Soil-piling Action

This year, the project provided training for 418 trainees and conducted ten online courses on waste reduction and recycling; attracted nearly 10,000 participants, carried out practical actions based on the courses for 1,753 times and organised three joint activities; encouraged 7,463 community residents to participate the activities, and captured the attention of 58,424 people.

• Releasing the social influence of “Zero Waste”

In 2022, Vanke Foundation continued to carry out the “Palace Museum Zero Waste project”. We explored specific scenarios of zero waste and carried out tasks such as “Zero Waste on Islands” and “Meisha Carbon Neutral Community”.

Case Weizhou Island kitchen waste recycling project

With Weizhou Island as a pilot project, we constructed and operated five compost demonstration sites, achieving nearly 20 tons of organic waste being treated in situ. Based on the experience, the project team produced the “Weizhou Island Organic Recycling Treasure Book”, which standardises the technical route and provides a working reference for relevant governmental functions. The project has also built a “Green Weizhou” team of seven local community key actors, who in turn have brought together 20 key actors on the island to continuously participate in the construction and operation of green communities. The process and effectiveness of the project have contributed to Weizhou’s willingness and determination to build a zero-waste community. By the end of 2022, the Weizhou Island Management Committee expressed its desire to create China’s first zero-waste island and actively promoted its construction program and plan. In addition, the project has been reported by national and local media, such as People’s Daily, Hunan TV, Guangxi Daily, Beihai Daily, etc., to make the zero-waste island initiative on Weizhou Island known to a broader public.



Composting demonstration site



Weizhou Island Zero Waste Slogan

Co-create green operation

Vanke is committed to integrating green concepts into its daily operations and working with stakeholders to build a green society.

• Committing to green leasing

We are actively working with tenants and consumers to promote green shopping malls, green offices, energy-efficient operations and environmentally friendly renovation materials to deepen green leasing steadily and promote “green sustainability” throughout the operating cycle of commercial projects.

During the reporting period, we have incorporated ESG initiative clauses into the standard lease contract template covering retail property development and operations and the rental housing business. In 2022, we officially launched and promoted the implementation of ESG initiatives in our commercial projects nationwide. We have replaced more than 15,000 new leases with energy-saving initiatives in line with our green leasing target, intending to promote green concepts to our tenants.

We will continue to promote and deepen our green leasing practices in the future. Port Apartment will continue promoting energy-saving initiatives into tenant treaties and paperless leasing contracts in 2023. The Retail property development and operations business plans to further enhance the ESG initiative in the standard lease contract with tenants to a more comprehensive initiative covering environmental protection, energy conservation and emission reduction, safety and green supply chain, public charity and social responsibility, human rights, integrity management, corporate governance, risk management, etc. starting from 2023.

Case Shanghai Uni-City’s “Green and Sustainable” Action

Officially opening on September 30, 2022, Shanghai Uni-City put the concept of “green and sustainability” into practice before and after the opening and launch green activities in three phrases by phases, including issuing Sustainable Shop Fitout Guideline and organising online and offline green activities, to continuously build the characteristic of green TOD business.

- Phase 1 – Advocating Sustainable Shop Fitout for Commercial Tenants: On 28 July 2022, we held a press conference for the publication of the *Sustainable Shop Fitout Guideline* to advocate green furnishing for merchants and provide professional guidelines and suggestions throughout the entire decoration process, ranging from preliminary design to material selection to construction to final acceptance. We also implemented carbon emission tracking assessments and “green incentives” for commercial tenants who participate in green secondary decoration.
- Phase 2 – Guiding consumers to participate in green and sustainable activities: From 13 August 2022, we have organised 26 sessions of “DAY DAY UP” green and sustainable activities for members in collaboration with many external brands. The activities include mystery boxes drawing, unused clothing recycling, exchange of green creative products and H5 games to promote green and sustainability concepts.
- Phase 3 – Continuously promoting environmental art and fashion concepts since its opening.



“Upcycling Urban Metabolism Project” Poster



“Sustainable Shop Fitout Guideline”

• Advocate low-carbon development of the industry

We are committed to promoting the action and international influence of Chinese entrepreneurs in addressing climate change, building a knowledge exchange platform for international entrepreneurial, and exploring the green transformation of China's economic development through exchange, mutual learning and engagement. In 2020, we jointly launched the China Business Climate Action (CBCA) Leaders Initiative², calling for low-carbon development in the real estate industry to actively address climate change. In 2022, C Team³ co-wrote and published "A Practical Guide for Sustainable Actions in Fashion Industry", sharing practical tools and recommendations to guide practitioners to drive action and changes and further promote sustainable change in the fashion industry.



The China Corporate Climate Action (CCCA), jointly launched by Vanke Foundation and its partners, aims to drive green transformation and innovation in business and industry. The CCCA initiatives include the following action strategies:

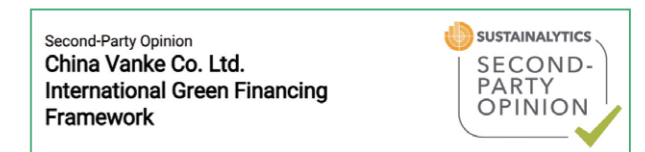
- Set ambitious and achievable net zero targets and implementation plans.
- Strengthen greenhouse gas accounting and management, and support the development of sectoral carbon management standards and tools.
- Optimize energy efficiency, and adopt energy-saving, green and low-carbon production technologies and management practices.
- Scale up the use of renewable energy; explore and develop energy storage and negative emission technologies.
- Commit to offering healthy, ecological and climate-friendly products and services.
- Take environmental responsibility in the full product life cycle, and reduce resource waste and pollutant emissions in all processes.
- Promote joint emission reduction actions with partners in the entire business stream to foster green supply chain.
- Use trading mechanisms and carbon sink products to offset unavoidable emissions.
- Participate and support the development of green finance and climate finance.
- Promote ESG practices and sectoral ESG standards development.

Green Finance

In the context of the national "dual carbon" goals, green, low-carbon and healthy buildings are expected to be developed at a fast pace, and green finance will help accelerate the development of the green real estate market. The companies with good ESG performance have greater advantages in the field of green financing.

We are committed to incorporating sustainability factors into our financing mechanism. Vanke has established the Green Financing Framework (GFF) in 2021. Under the GFF, Vanke can issue green financing instruments, including green bonds and green loans. The proceeds are used to finance and refinance existing and future assets that improve Vanke's environmental performance. We specify that the net proceeds will be used for green buildings, renewable energy, pollution prevention and control, and sustainable water and wastewater management.

The GFF received a Second-Party Opinion from Sustainalytics in 2021 based on the Green Bond Principles 2018 and the Green Loan Principles 2020.



In 2022, Vanke issued three tranches of green medium-term notes with a total size of RMB7 billion.

	2022 Phase I Green medium-term notes	2022 Phase II Green Medium-Term Notes	2022 Phase III Green Medium-Term Notes
Size (RMB100 million)	30	20	20
Issue date	2022-07-19	2022-08-10	2022-09-19
Maturity date	2025-07-21	2025-08-12	2025-09-21
Maturity (years)	3	3	3
Coupon rate (%)	3.0	2.9	3.2

² The initiative was co-initiated by Vanke and other organisations including China Real Estate Association, China Real Estate Chamber of Commerce and Architecture 2030

³ In 2014, business leaders such as Wang Shi and environmentalists initiated the China Champions for Climate Action, also known as C Team, with a view to building a new international platform based on exchange, mutual learning and engagement for entrepreneurs to explore green economic transformation in China.

Social Practices

- Our Strategy
- Striving with Employee Partners
- Win-win Partnership
- Shared Development




Our strategy

Philosophy


We uphold the culture of “striving with like-minded partners”, provide every employee with an equal, respectful, inclusive and diverse workplace environment, and provide them with opportunities and space for growth. We advocate a “win-win partnership”, guided by the concept of sustainable development, to promote the progress and development of the industry; we promote “shared development”, share Vanke’s achievements with communities, and interpret corporate social responsibility with actions.

Goals and progress

Employee and contractor health and safety

Goal	Progress
Group	
<ul style="list-style-type: none"> After an all-round review of the previous year’s workforce, we determine the physical test program and set targets for the year. The physical test requirement for all divisions and frontline entities in 2022: participation rate ≥ 95% and excellence rate ≥ 90%. 	In 2022, the Group (except Onewo) has achieved the participation rate and excellence rate of physical test. 


Property development

<ul style="list-style-type: none"> Enhance production safety capacity and ensure a reduction in the casualty of safety incidents. 	The accident rate in 2022 has decreased compared to 2021. 
<ul style="list-style-type: none"> Ensure safety training covers all employees and all contractors. 	100% coverage of safety training for employees and contractors in 2022. 

SCPG

<ul style="list-style-type: none"> Ensure that the excellence rate of annual physical test reaches 90%. 	The employee physical excellence rate in 2022 reached over 90%. 
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Supply chain management

Goal	Progress
<ul style="list-style-type: none"> Vanke currently has 100% due diligence coverage over suppliers and will keep it that way in the future. 	In 2022, the due diligence coverage rate was 100%. On the basis of the current situation, we implement stricter standards and evaluate the performance of our suppliers over the past three years. 

Striving with Employee Partners

Human resources are the core competitiveness of a company. Following the concept of “striving with employee partners” based on the principles of “consensus, cocreation, joint undertaking and sharing”, the Company has nurtured employees with a transparent and healthy culture, provided a stage and a platform for them to show their talent and realise their dreams, and encouraged employees to progress with the Company, so as to create and share a better life and value together. Vanke’s organizational structure and talent strategy enable us to attract, retain and cultivate outstanding talents. In 2022, Vanke was honored as “Top 100 Best Employer Award 2022” by Zhaopin.com and “Top 100 Best Employer Brand Award” by MOKA recruitment.

Protection of employees’ rights and interests

We strictly abide by relevant laws and regulations and employment policies, formulated and implemented the Code of Conduct for Employees and the Vanke Human Resources Manual. We fully protect employees’ legitimate rights and interests in the principle of fair, just and open employment. To support the mutual development of the Company and employees, Vanke actively updated documents such as the Labour Contract, Performance Appraisal Management Measures, and Employee Handbook in 2022, striving to create a friendly and warm working environment where employees can give full play to their talent.

Fair recruitment

We strictly abide by the Company Law of the People’s Republic of China, the Labour Law of the People’s Republic of China and other Chinese laws and regulations as well as world-recognised conventions, such as labour standards of the International Labour Organisation. In recruitment and employment, we treat all employees as equals and oppose discriminated treatment based on gender, age, ethnicity or religion, providing every employee with fair employment and development opportunities.

Vanke has taken various measures to ensure that the recruitment process conforms to the norms and respects candidates’ feelings. The Group has formulated training manuals such as the Recruitment Manual to regulate the recruitment process from all aspects. In terms of interviewer training, we have carried out training activities such as campus recruitment interviewer empowerment. Through detailed training for interviewers to explain the recruitment process, structured interview requirements and other relevant content, we ensured the fairness and professionalism of interviews.

In 2022, the Vanke Labour Union and the Vanke Workers’ Congress participated in the democratisation process by formulating, revising, negotiating, and deciding on rules and regulations included in the Employee Handbook of some front-line companies to better protect the rights and interests of employees.



• Prohibition of child labour and forced labour

Vanke prohibits child labour and forced labour, and extends the employee rights throughout the value chain to our suppliers and contractors. Our suppliers and contractors are required to prohibit the employment of child labourers under 16 years old. In 2022, Vanke had no operations or suppliers that employed child labour, arranged workers to engage in hazardous work, or were at significant risk of forced employment or forced labour. There were no violations of laws or regulations relating to child labour and forced labour throughout the year.

• Fair performance-based remuneration and benefits

We have formulated the Vanke Employee Handbook in accordance with national laws and regulations and developed the Group's compensation and charity system based on our standardised compensation principles and rules market - and post-based salary, pay raise for excellence and pay secrecy). We adhered to "create more, share more, pay more for more work" and continuously revised and improved the Group's remuneration and benefits system.

In terms of salary and performance management, we have formulated a Salary Scale applicable to all employees within the Group, graded employees and fixed their salaries taking into account all factors such as employee's abilities; we also regularly review the salary scale and remuneration of employees every year. To better align and support the development of diverse businesses, Vanke's business units, including long-term rental apartments, logistics, and hotels and vacation, have iteratively upgraded their remuneration systems that are more suitable for their business development and stimulate the motivation and growth of the front-line employees.

In terms of performance management, we standardize the performance evaluation level and the standards of employee appointment, remuneration, development, etc. We also advocate a performance culture, continuously improve performance management, and support and help employees grow and develop.

Regarding performance-based remuneration, we reward employees based on individual performance and corporate performance. To ensure that the performance evaluation of the employees is fair and just, and consistent with their actual performance, we conduct performance interviews and year-end reward interviews with the employees after the performance evaluation to give feedback on their performance. The department/project partners will provide one-on-one feedback on their work performance and offer work guidance. Meanwhile, we have put in place the performance appeal process to ensure that the ideas of employees can be effectively fed back and promptly replied.

Additionally, Vanke provides employees with a variety of non-salary benefits, including purchasing commercial insurance against critical illness and accidental injuries for all employees and offering discounted group commercial medical insurance for their family members. Employees could voluntarily purchase insurances, enjoy paid leaves and receive support for weddings and funerals.

In 2022, the social insurance coverage rate of Vanke employees was **100%**.

Case "One Person" Digital Construction of Human Resources

In 2022, under the overall guidance of digital construction, Vanke carried out a "one person" human resources digital construction project to promote digital transformation of the Group's human resources management and improve capacities and efficiency of human resources services. The "one person" project is based on "serving employees; realizing everyone is online; adhering to product thinking; unifying the foundation and flexible front-end" as the basic considerations, empowering employees from recruitment, onboarding, transfer, and resignation, and remuneration and benefits management.

- Recruitment, onboarding, transfer and resignation: Iterate the basic human resources process, provide a variety of basic human resources services according to different functions, and implement online, automated, and self-directed scientific and technological transformation method to improve the efficiency of human resource services.
- Remuneration and benefits: Realize key achievements, including centralized query of remuneration and benefits, query of hourly piecework workload, online management of personal commission, daily salary calculation and salary payment, multi-bank channels, flexible salary payment, fully protecting the basic rights and interests of employees by providing transparent inquiry and operation procedures.

• Diversity and tolerance

Vanke actively advocates a workplace culture of diversity, equality and tolerance, and gradually incorporates this concept into corporate management. We advocate gender equality, promote differentiated skills, cultivate a diversified talent structure, and provide equal employment opportunities and a better communication platform for people with disabilities. We provide fair and non-discriminatory remuneration for all employees, ensure equal opportunities for all, strive to eliminate discrimination or arbitrary dismissal of employee, and continue to improve the inclusiveness of the workplace and the sustainability of the company's development.

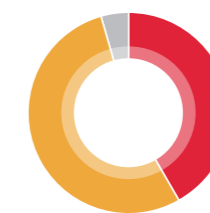
Diversified talent structure of Vanke

Number of employees by gender



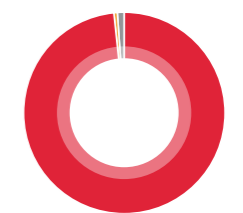
Male 72,086
Female 59,731

Number of employees by age



Aged 29 and below 55,252
Aged 30-49 70,756
Aged 50 or above 5,809

Number of employees by region



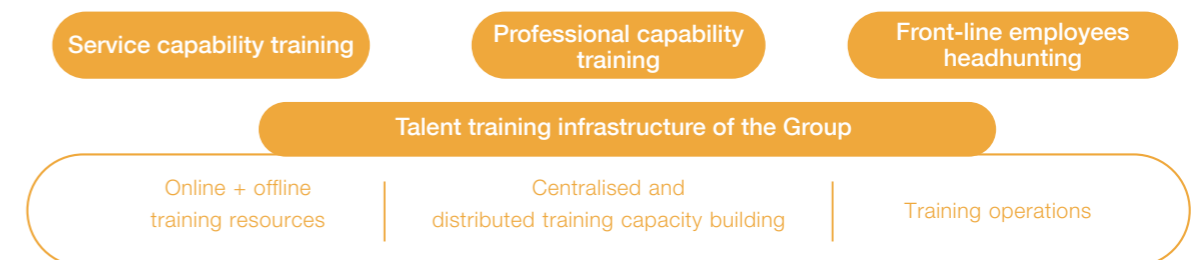
Mainland China 131,573
Overseas 53
Hong Kong, Macao, and Taiwan 191

Employee training and development

Upholding the philosophy of "highly unified cultural heritage and diversified talent training", we have built a general training system for the headquarters and BG/BU-based distributed training systems, linked by the "Joyful Learning" platform. Additionally, we encourage all staff to explore the necessary learning opportunities by themselves, support them to externally participate in learning and improve their academic qualifications, and create opportunities for strivers to challenge themselves, learn and develop continuously. In 2022, we developed or updated 2,159 training courses, and the average training hours of each employee is 25.3 hours.

In 2022, Vanke formulated the "Talent Training Plan of the Group", focusing on business development and different business scenarios, focusing on front-line employees, providing various forms of training, and improving talent cultivation management. The "Talent Training Plan of the Group" focuses on the improvement of service and professionalism, adopts flexible training methods, and focuses on the majors of front-line employees through methods such as "learning maps", "daily practice", "situational teaching" and "online interaction" to increase professional level of grassroots strivers.

- Service capacity training: for new employees, new businesses (front-line employees), and new managers (front-line managers), focusing on improving the front-line leadership of "good squad leaders" and consolidating the organizational foundation; empowering grassroots service instructors to improve training quality and efficiency. In 2022, the service capacity training coverage rate was 100%.
- Professional capability training: Focus on improving key professional capabilities and consolidating basic ability.



• Joyful Learning: A mobile knowledge sharing platform

The Vanke “Joyful Learning” Online Mobile Learning Platform has continuously provided high-quality learning resources for employees and more empowerment opportunities. The “V Joyful Learning” online mobile learning platform has undergone continuous optimisation in 2022, we continuously add new learning courses and optimise course formats to provide employees with a better learning experience:

2022 Employee training coverage rate **100%**
More than **4,900** video courses were uploaded to the V Joyful Learning Platform.



• Headquarters’ training system

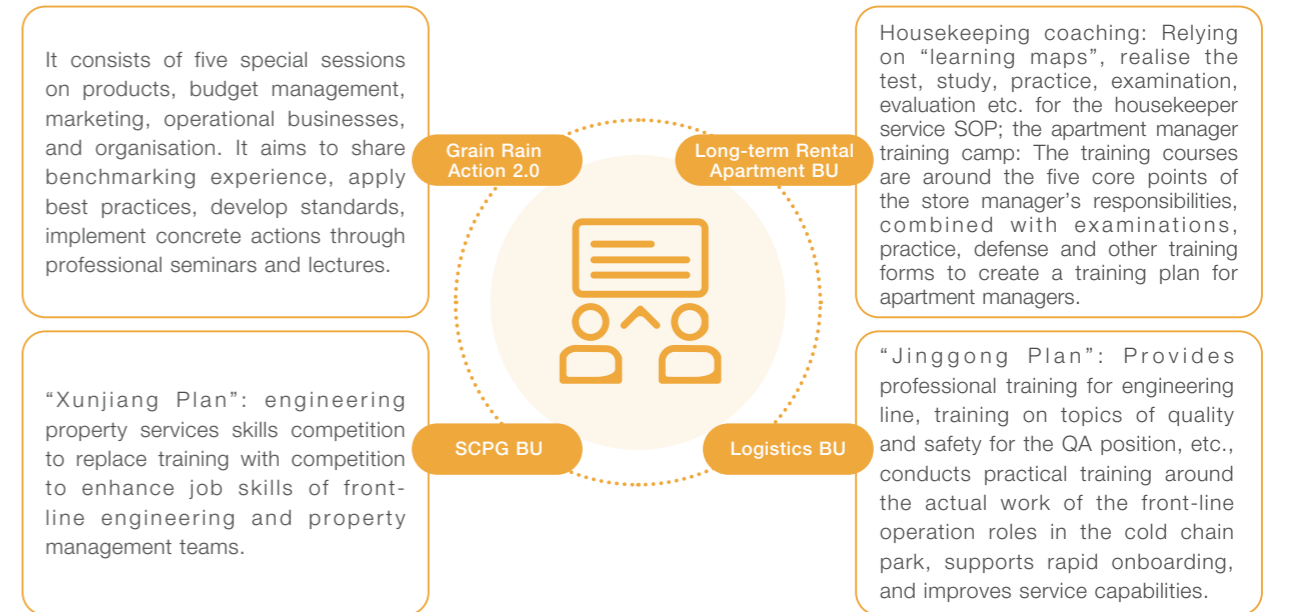
In 2022, Vanke carried out a series of programs such as Headquarters Learning Day, Special Training for Business Unit Partners, Front-line Leadership Training to continuously improve employees’ professional skills and broaden their vision and thinking.



• Distributed training system

Vanke Group’s distributed training system includes the Jiayi Academy in the Northern Region BG, Sixing Academy in the Southern Region BG, Pujiang Academy in Shanghai BG, Southwest Academy in the Southwest Region BG, School of Knowledge for Onewo BG, and IN-Academy for SCPG BU.

In 2022, each business unit carried out targeted training programs in line with the Group’s requirements for “cultural values, professionalism, specialisation and work culture”.



Employee involvement and communication

Vanke fully guarantees employees’ rights to know, participate, express and oversee. We offer “12 communication channels” and launch the “Forefront Voice” Program and Battlefield Report Program as a bridge of communication between employees and the management. They also allow the management to listen to the voice of front-line employees and learn about the front-line situation.

Accordingly, Vanke’s business units also take the perspective of serving employees. To help employees grow and solve problems, we focused on two aspects in developing flexible and diverse employee communication channels, and defining construction subjects, operation rules and bottom-line principles of different communication channels, covering all employees.



We strive to ensure that our employees are highly satisfied with their career development and have a sense of achievement. We listen to the voices of our employees and join hands with them to move forward together.

Occupational health and safety

Employee health and safety is the top priority in our operation management. We strictly abide by the laws and regulations such as Work Safety Law of the People's Republic of China and the requirement of *OHSAS 18001 Occupational Health and Safety Management Certification*. We continue to improve corporate policies regarding occupational health and safety management and carry out daily supervision and inspection. In addition, we raise employees' safety and health awareness through training and assessment and are committed to creating a safe, healthy and comfortable cultural environment for our employees, and help employees to live healthy and work happily.

• Safety management system

Vanke prioritises its employees' safety and has developed a relatively comprehensive system and structure for safety management. We have further released the Measures for the Control of Production Accidents to define the liability for production safety accidents and adopted the one-vote veto mechanism for responsible management personnel and responsible cooperative units. A safety management system has been established at the group and regional levels to ensure that occupational health and safety are appropriately managed by assigning responsibility for safety management to the relevant management bodies at each level. Onewo and all 33 property service companies in China of Vanke have obtained ISO 45001 occupational health and safety management system certification.



Safety management system at the group level

The Group has established a Production Safety Management Team, comprising senior safety experts from both the Group and regional BGs. The Team has a lead partner served by the safety experts of all regional BGs on a rotating basis. We have also set up a Group-level production safety committee, which holds monthly safety production meetings. We standardise our safety management system guidelines and bottom-line standards and conduct enhancement training for safety pain points. We also participate in accident investigation and handling, conduct investigation based on the accident situation, and carry out iterative enhancement on safety management measures.

To ensure effective top-down management of safety matters, we have set up an information reporting system that requires safety incidents to be reported to the company's top management as soon as they occur. An incident report should include seven main elements which include the cause of the incident, and it should be emailed to the relevant management of the Group within 24 hours of the incident occurring.

• Safety assurance measures

All business segments of Vanke have implemented targeted safety assurance measures. Our safety management work is continuously strengthened from four aspects: iterative assessment system, capacity building, standardised behaviour, and closed-loop system.

Continuously update the engineering safety and quality assessment system: Improves the assessment areas based on the development of new technologies and techniques, increases the assessment dimensions and updates the assessment rules to form a more realistic and comprehensive evaluation of the project.

Maintain long-term capacity building on track: ensure 100% coverage of safety and quality capability training, implement assessment and certification for induction, and conduct in-depth discussion of special topics combining pain points and difficulties to enhance capability.



Safety management system at the regional level

Each region and the frontline company has established a production safety management committee and employed safety experts and full-time safety engineers to take full charge of work safety management. We have put each stage of the project under full-cycle safety management and performance management, and clarified the responsibilities, obligations and rewards and punishments of project personnel, project supervisors and general contractors.

Gradually standardise safety and quality management behaviour: develop standardised management actions for physical and human defence, create standardised management processes for quality management, and establish rest areas management methods and a safety grid management system.

Guarantee a closed-loop management process: formulate pre-risk avoidance actions including lean engineering planning, decoration planning, delivery planning, program approval, assess problematic closed-loop activities such as look-back, gate pulling, and punishment to achieve improvement and optimisation through reporting and management team review.

Each BU also implements safety and security measures following its business characteristics. VX Cold Chain, for example, has developed an EHS management system and released VX Cold Chain EHS Management System V1.2. We determine the critical control points in the cold chain storage process based on based on "man", "machine", "material", "method" and "environment". Detailed regulations are formulated in terms of production safety responsibility system, safety training and assessment, safety culture, equipment and facility management, pallet cargo management, management system and plan, workplace management to improve the performance of occupational health and safety management.

Onewo attaches great importance to the occupational health and safety of employees and other service providers. Safety management supervisors, EHS experts, business supervision experts and quality accident supervisors jointly complete the formulation and implementation of safety management policies. According to Onewo's Quality Accident Management Measures, personnel safety accidents caused by poor management will be graded as quality accidents, and will be included in the performance appraisal of relevant business leaders and corresponding management according with grade. In addition, Onewo adopts the same health and safety management standards to its contractors as it does to its employees. In order to promote the health and safety of contractors' employees, Onewo's Outsourcing Agreement explicitly stipulates that health and safety factors are included in service evaluation, and requires contractors to prepare safety emergency plans, and implement and rehearse such plans. In addition, we conduct occupational safety training for contractors employees from time to time, organize safety specification examinations, etc., to raise their safety awareness. Onewo requires contractors to purchase insurance for employees providing mechanical and electrical security services, and implement a series of health and safety management measures. For suppliers of cleaning services, we have also formulated occupational safety regulations as follows: when signing a Contract of Cleaning of Semifinished Product Rooms with a contractor, we require the contractor to sign a Safety Management for Cleaning Operations, specifying occupational safety management regulations.

Safety risk investigation and responsibility assessment

To continuously strengthen project safety operation and construction safety management, Vanke continues implementing various safety hazard identification and management work measures. We actively conduct safety risk evaluation and supervision, formulate the Comprehensive Inspection and Inspection Workbook, and conduct comprehensive online and offline inspections, including quarterly safety compliance inspection for all projects. We conduct safety evaluations of all projects every quarter and full-coverage inspection on major risk points and on the implementation of safety management in the construction process. Also, the safety management tools such as the Safety Rating Scale and the Traffic Light Mechanism Checklist is continuously updated and applied. We hire professional third-party organisations to conduct science-based assessments of different risk points at stages of construction and delivery and urge rectifications of any risk identified.

We care about employees' health. We not only provide free physical examination for all contract employees but also hire professional third-party institutions to perform physical tests for employees, covering all employees of the Group. Test objectives are set based on five central functions of the Group headquarters, and the participation rate of each function was required to be ≥95% and the excellence rate of each function was required to be ≥90%. The employee participation rate and excellence rate in the physical tests are connected to the year-end bonus of the management of the centres they serve.

Safety training

Highlight data

In 2022, the Company organised more than **3,817** third-party safety evaluations, covering **100%** of the projects under construction, of which **4** online safety inspections and **2** offline safety inspection have been conducted. A total of **2,833** sections was assessed.

Highlight data

Vanke's production safety has been improved, with a decrease in safety accidents as well as casualty, and achieved the target of **0** major safety accidents.

Vanke pays keen attention to cultivating employee safety awareness and conducts various forms of training for all Vanke employees, including employees of the Group and contractors, in order to enhance employees' safety awareness. In 2022, the Production Safety Committee held 85 safety training sessions with a total of 46,490 participants.

Highlight data

The coverage rate of safety training for employees of the Group and contractors is **100%**.

Employee care and well-being

Vanke guides employees to pursue a better life in a healthy and sustainable way. We advocate the idea of “alternating work with rest”, pays attention to the physical and mental well-being of each employee from such aspects as material, mind and culture, and carries out a variety of team building activities to enhance the cohesion and sense of belonging of employees.

In 2022, we formulated the Vanke Association and Club Operation Measures based on the characteristics of Vanke associations and clubs, and carried out pilot promotion to further standardise the management of various sports associations and clubs under Vanke.

Vanke provides employees with a variety of cultural and sports activities and continuously enrich the content of the internal health culture. In order to strengthen employees’ health, enrich their lives and help them develop a healthy lifestyle, we encourage them to participate in various types of sports in various ways, including establishing sports associations/clubs, releasing club activities on a monthly basis, providing free gymnasiums, building fitness stations in office buildings, conducting health lectures and physical tests, holiday care. By the end of 2022, the 14 clubs at Vanke’s headquarters alone had carried out 508 activities with 6,777 participants.

Vanke actively supports employees in need. Vanke has established Vanke Fraternal Society which provides consolation and material support for employees hit by misfortune under the principle of “keeping an eye out for each other, all for one, one for all, and enhancing Vanke employees’ capacities in resisting catastrophic incidents through teamwork”. Since its inception, the Vanke Fraternal Society has donated RMB37.733 million to 498 members in the face of major catastrophic events. In 2022, the Vanke Fraternal Society donated RMB7.685 million to 102 members.

Win-win Partnership

Vanke strives to establish a standardised, fair and unified supplier management system. We have developed our internal policies for supply chain management, such as Supplier Management Measures, Sky-Net Action Management Measures, and Sunshine Cooperation Agreement. By clarifying the full lifecycle management process of supplier selection, evaluation and exit, we strive to effectively identify risks, and reduce potential environmental, social and safety hazards, improve Vanke and our suppliers’ product quality and service capabilities.

Meanwhile, Vanke works with excellent companies across sectors to build the VVUPUP E-commerce sharing platform based on consultation and joint contribution. The platform holds the practice results of Vanke in new product R&D, quality control and supply chain management over the past 30 years, and realises scale effect and complementarity among partners, and enhances the competitiveness of the supply chain.

Highlight data

In 2022, Vanke had **20,659** qualified suppliers. There were **7,651** suppliers and **316** product categories on the VVUPUP E-commerce sharing platform.



Create a sustainable supply chain

Philosophy

Vanke upholds the concept of sustainable development and incorporates it into supply chain management. We encourage all suppliers to abide by the following management concepts:

Compliance with laws and regulations:

Comply with all relevant laws and regulations where they operate

Prohibition of forced labour:

No forced labour in any form

Prohibition of child labour:

No official or temporary employment of worker under the legal working age shall be allowed

Salary and working hours:

Comply with the local applicable minimum wage level and working hours requirements

Labour relations:

Sign employment contracts that comply with local laws and regulations
Pay attention to employee health and safety management

Anti-discrimination:

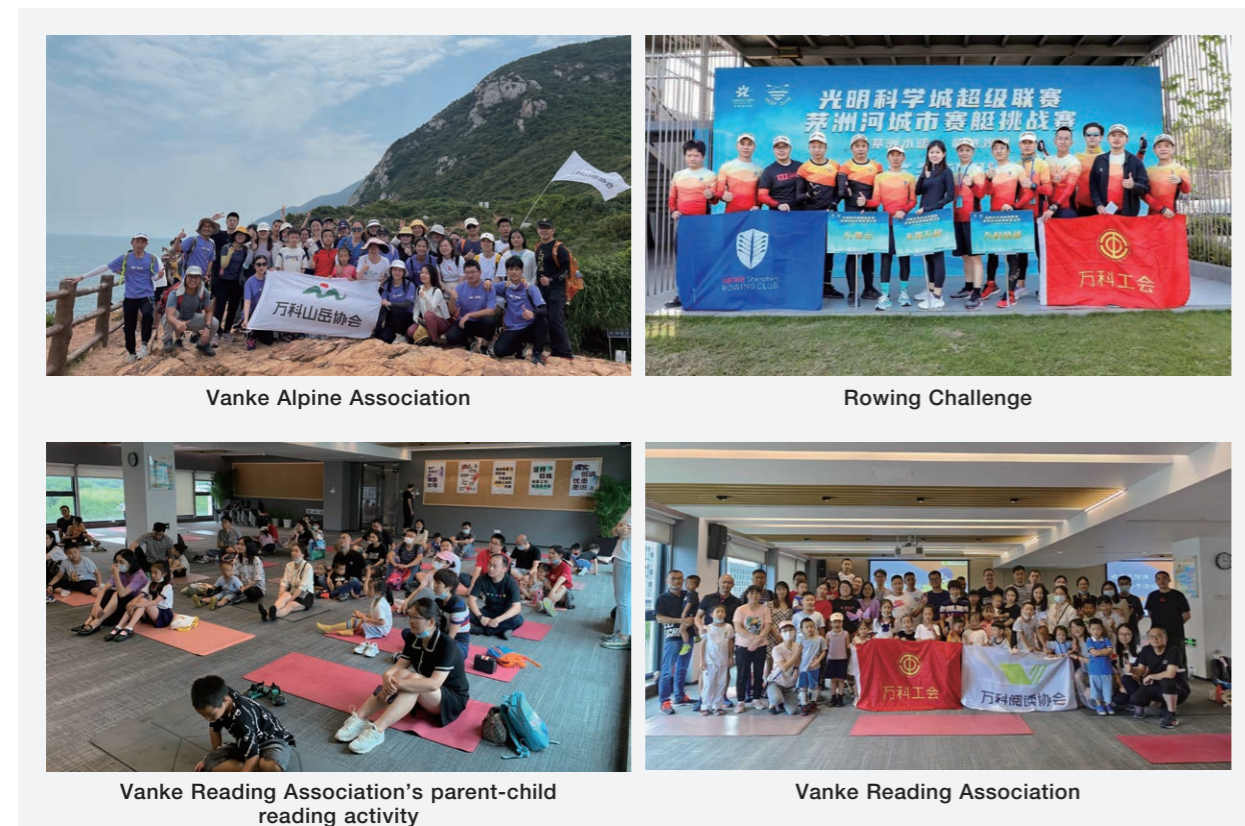
No employee should be discriminated based on their gender, age, marital status, sexual orientation, nationality, race, religion or physical disability

Anti-corruption and bribery:

Create a fair and healthy business environment, and do not tolerate any form of bribery, corruption and unfair competition

Environmentally friendly:

Advocate the concepts of environmental protection and low carbon, and strive to reduce the impact on the environment



Vanke Alpine Association

Rowing Challenge

Vanke Reading Association’s parent-child reading activity

Vanke Reading Association

• **Management mechanism**

We formulate the Supplier Management Measures to provide basic regulations for the sustainable supply chain management. Under the premise of fully protecting suppliers' interests, we establish requirements for suppliers regarding compliance, environmental protection, and necessary quality management throughout the entire supplier screening, admittance, and assessment process.

In addition, Vanke has also put forward precise requirements for contractors' safety management and protection of employees' rights and interests to enhance the responsibility awareness and capacity of the supply chain.

Safeguarding worker safety

- We require contractors to use more than ten new technologies to ensure the health and safety of workers, such as facial recognition system, intelligent voice broadcasting system and other intelligent management systems, to reduce accidents on construction sites and improve the health of construction workers.

Protecting labour rights

- We strictly abide by national laws and regulations, require EPC contractors to implement a wage security system for contract workers, and provide social insurance for employees in accordance with the law
- We forbid child labour in any construction unit or partner and protect the rights and interests of minors and female workers
- We require EPC contractors to provide regular safety and health training for employees, and workers must receive physical examinations before reporting to work at the construction site
- The employer must document the safety status of workers

• **Risk management**

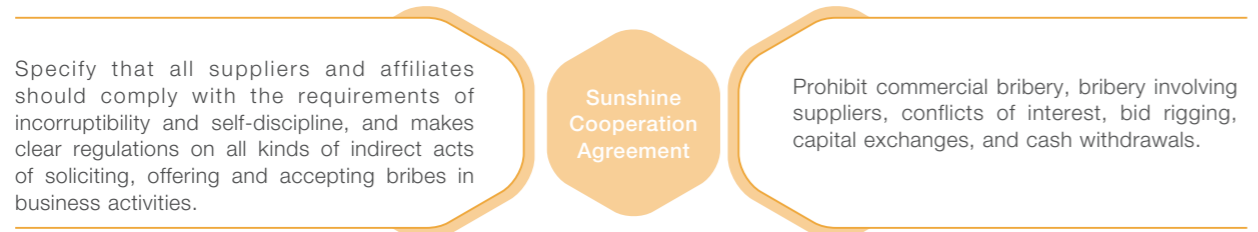
We adhere to the objective and quantitative evaluation system for our suppliers. Suppliers are evaluated based on multi-dimensional indicators such as online intelligent site evaluation performance, third-party unannounced inspection evaluation performance, Skynet material inspection qualification rate and after-sale repair rate. The evaluation indicators cover the business performance of suppliers throughout the whole cycle, making the evaluation quantifiable, comparable and traceable.

We regularly assess and manage the operation, safety and quality, environmental and social risks in suppliers, and publish a list of high-risk suppliers. We lower supplier performance risks by interviewing suppliers of high-risk key resources and reviewing the quarterly assessment and improvement plan submitted by suppliers. In 2022, no suppliers were included in the category of high-risk suppliers due to violations of environmental, social, and other regulations. In addition, we have developed a supplier exit mechanism. Suppliers' safety incidents, shoddy work and inferior material, frauds, concrete risks and other poor quality or contract breaching behaviours are reviewed regularly, resulting in varying degrees of punishment such as the yellow card, red card or blacklist. According to the degree of non-compliance, the supplier may be suspended or terminated, and we may pursue relevant responsibilities against the units and individuals involved according to relevant laws and regulations.

• **Clean procurement**

"Prohibiting all acts of soliciting, offering and accepting bribes" is the bottom line of business we have long implemented. In 2022, we upgraded our anti-fraud tool, Eagle Eye, and the upgrade focused the management of procurement management and supplier profiling. Moreover, we have established a public reporting hotline and email address in order to improve the integrity management of our employees, suppliers, and contractors.

We take the Sunshine Cooperation Agreement as part of the contract. In 2022, 100% of our suppliers (including contractors) have signed the agreement.



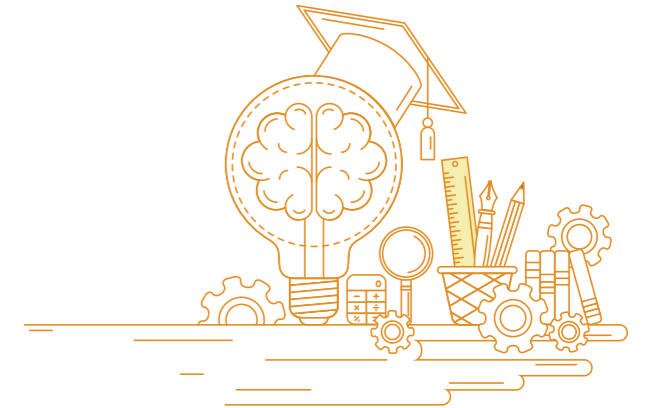
Additionally, we have conducted anti-corruption due diligence on our key suppliers. In 2022, Vanke Southern Region conducted anti-corruption due diligence on 18 suppliers. The due diligence covers whether a sound integrity and anti-corruption system has been established, how integrity and anti-corruption work is carried out, and whether corruption cases have been reported and how they have been handled.

• **Communication and training**

We communicate effectively with suppliers through various methods, perform regular training, provide special training courses regarding product quality and safety, and empower the creation of a responsible supply chain.

Highlight data

In 2022, we held **64** quality-related training sessions, covering more than **3,000** suppliers (including wire and cable, ceramic tiles, coatings). The cumulative number of participants exceeded **100,000**.



Promotion of industry development

Through AUPUP, Vanke creates a new ecosystem of the upstream industry chain to promote the transformation of the industrial supply chain, advance product standardisation, realise the industry's ecological upgrade, and expand the industry's influence.

Relying on Vanke's over 35 years of experience in quality control and supply chain management, AUPUP integrates data and industry to promote transparency, flatness, efficiency and greenness in bulk commodity trading, realising upstream and downstream information sharing and complementary resources. Through the visualisation platform, we integrate the bidding robot, "Sky Net system, Sky Eye system and Sky Road system," and other core technology services to achieve online visualisation of bidding progress, product testing and logistics supervision that bring convenience to suppliers and procurers and facilitate obligations.

In 2022, AUPUP, in partnership with nearly 100 organisations including testing agencies, developers, manufacturers and construction contractors, such as Research Institute of Wood Industry, Chinese Academy of Forestry; Floor Professional Committee and Stone Wood Plastic Eco-friendly Materials and Products Committee of China National Forest Products Industry Association, and China Quality Certification Center, drafted 2022 Engineering Flooring Quality White Paper and 2022 Waterproof Material Quality White Paper to empower the healthy development of the industry with professional strength.

Case AUPUP Supplier Growth Camp

In June 2022, a Supply Chain Management Session of the AUPUP Supplier Growth Camp was held with the theme "New Relationships between Procurement and Supply and Cost Control in the Era of Competitive Quality". Guests from well-known enterprises in the industry were invited to share their perspectives, jointly interpret the new relationship between procurement and supply, and empower suppliers to develop. Organised by AUPUP, the Growth Camp relies on Vanke's experience and resource accumulated to deliver training courses for suppliers. It aims to help suppliers improve their knowledge in all aspects from customers to the industry and themselves, and clarify the direction of growth, so as to gain more cooperation opportunities.

Shared Development

Vanke aims to meet people's ever-growing needs for a better life, is committed to continuous innovation-driven development through diversified strategies, and strives to become a "lifestyle creator".

Positioned as an "urban construction service provider", Vanke pays attention to cities' historical and cultural heritages and respect their historical and cultural relics while leading urban renewal projects. We aim to create a convenient, cosy and safe living environment, and promote prosperous urban development.

Empowering urban revitalization

In the vicinity of newly-built residential area, there are often old neighbourhoods and urban villages that lack professional property management. We have made attempts in multiple regions to address the concerns of residents in old neighbourhoods through a government-guided, multi-stakeholder approach, focusing on infrastructure renovation, digital infrastructure and community co-creation, to create a better home.

Case Management of old communities in Xima New Village, Jiangnan District, Wuhan

Jiangnan Urban Resources Management Co., Ltd. of City Up provides property services for 99 old communities in Jiangnan District, Wuhan, including the approximately 30-year-old Xima New Village with over 1,000 households. The Xima New Village has no contracted property company, and no property owners committee has been formed. It is a typical old community with dilapidated façade, ageing pipes and insufficient parking spaces. Unlike traditional property management, we have created Wuhan's first "property city" long-term governance model for old communities by restructuring community and block services and bringing urban space municipal services into the communities. Through the installation of intelligent access control, parking and common area monitoring facilities, and the uploading of community building information data, demographic data and security monitoring onto the company's intelligent operation and dispatch platform, remote operation and intelligent management are achieved.

We use the approach of "the government pays a little, the people pay a little, and the business makes up a little", and the government, enterprises and residents work together to establish a self-blooding mechanism to reduce the property fees paid by residents, and to solve the problem of insufficient funds for the management of old communities by supplementing the government's financial resources and public resources for the operation and paid services of the communities.



A small square after the renovation of Xima New Village

Happy and harmonious community

Vanke is committed to continuously meeting people's needs for a better life and actively participating in constructing beautiful cities. We carry out community transformation projects such as "The Beautiful Community Plan" to stimulate a sense of participation and belonging in community governance and to create a caring community life. We actively engage in a wide range of community activities to nurture sustainable communities and bring more people together for sustainable community development.

• Building beautiful communities

To promote joint construction, governance and sharing among the government, residents and society, and to explore a sustainable model for the renewal and governance of old districts, Vanke has joined hands with Onewo, owners' groups and local governments to actively carry out initiatives such as "The Beautiful Community Plan" and the "Neighbourhood Program".

The "Neighborhood Program" is a "Consumption supports community renewal and culture construction" public welfare action initiated by Vanke Service in 2016. Based on Youlin Market, it provides owners with grain and oil and fresh agriculture products, household supplies, education and tour products, maternal and infant products, pet supplies and other high-quality products, then part of the income obtained will be provided freely to the community in the name of Neighborhood Program, to help the renewal and upgrade of the community. The Neighborhood Program income balance of relevant communities we serve can be checked on "Zhuzher" App at any time. In 2022, the Neighborhood Program identified fitness equipment, recreational facilities and AEDs as core support items.

Highlight data

By the end of the reporting period, the "Neighborhood Program" has raised a total of over RMB**29.10** million, covering more than **3,400** residential communities, with over **1** million residents involved in the fundraising, and has helped over **100** communities complete hundreds of renovations, benefiting over one million owners.

The "Beautiful Community Plan" is a continuation and upgrade of the "Neighborhood Program" concept of co-funding and co-construction. Joining hands with Onewo, we invest in the "Beautiful Community Plan" funds for facilities renewal and renovation in residential communities, thereby leveraging owners' concern for the public benefits and rights of their communities.

Highlight data

During the reporting period, the Beautiful Community Plan had a total construction cost of RMB**136** million, involving **88** projects in **20** cities and **302** renovation items.



Fitness-for-all program

A warm and healthy culture has always been the gene of Vanke as well as our continuous pursuit of excellence. In 2013, Vanke launched and hosted the Run for Fun series of activities aiming to create non-competitive mass sports with the target of “run for health, run for happiness, and run for friendship”. Vanke has gradually developed the Run for Fun into a series including Urban Run for Fun, the Community Run for Fun, the University Run for Fun, and the runner-cantered full marathon. In nearly a decade of precipitation, the Run for Fun series has become the national fitness IP with the most significant participation, influence, and comprehensive coverage. Among them, the Urban Run for Fun is the only company-sponsored event that is approved and guided by the Department of Mass Sports of the General Administration of Sport of China.

Vanke has been integrating the warm and healthy culture into corporate practice, advocating a healthy lifestyle and spreading this concept to employees, owners, customers, partners and the wider community. Vanke is spreading the warm and healthy culture through its actions, driving more people to “get moving”.

- “Sports Federation Cup” 2022 Nationwide Run for Fun

In 2022, the “Sports Federation Cup” 2022 Urban Run for Fun co-organised by the All China Sports Federation and Vanke was upgraded to a nationwide event. The event attracted a total of 1.63 million runners, covering 368 cities across China, with a total of 110 million kilometres run, 8.2 million runs and nearly 600 offline events organised.

The event invited many celebrities and national athletes such as Zhong Nanshan, Bai Yansong, Eileen Gu, Su Bingtian and Su Yiming to participate. By showcasing the spirit of Chinese sports and inspiring stories of those who achieved remarkable feats through perseverance and hard work, the event aims to lead and encourage more people to embrace sports, participate in sports, and take initiative to do sports. The event has made history in terms of the number of participants and the coverage, making it an important symbol of “fitness for all” and injecting vitality into the pursuit of a healthy China.



2022 Nationwide Run for Fun

- Vanke New Year Marathon

The 2023 Vanke New Year Marathon (online) featured a three-day online event for runners with the theme of “running ahead with Joy”. This event had a wide coverage, with participants spanning from the northernmost and easternmost points of Heilongjiang, to the westernmost point of Xinjiang, and the southernmost point of Hainan. We welcomed the first rays of sunshine of the new year in a healthy and joyful way across the country, running towards a beautiful 2023.



Vanke New Year Marathon

Investor education

Vanke Investor Education Base (the “Base”) was established in 2015, with a focus on “serving the needs of investors”, it helps small and medium-sized investors to develop a rational investment philosophy and enhance risk prevention awareness. During the reporting period, the Base kept up with the hot topics in the capital market and produced a range of excellent and visually-appealing investor education products, such as the “Briefing ESG While Walking with the Times” brochure and the “Introduction to Public Infrastructure REITs” series of brochures, to provide investors with the latest relevant knowledge. In addition, the Base organised investor education activities in various locations, such as Dameisha Base and Nantou City, to answer investors’ questions. Within the company, innovative activities such as the “Shareholders are Coming” health promotion run were also conducted promote shareholders’ rights. In 2022, Vanke Investor Education Base won the award of “Excellent Investor Education Base in Shenzhen in 2022” as jointly evaluated by Shenzhen Public Companies Association and Shenzhen Investor Services Center.



2022 “Shareholders Are Coming” – Walking into Shenzhen Nantou City



2022 Investor Rights Knowledge Competition

Investor education products



“Briefing ESG While Walking with the Times” brochure



3.15 Poster for Investors

Our TCFD Report



Governance

We have established an ESG management structure with the Board as the highest decision-making level. The Board is responsible for determining the Company's ESG management structure and management strategy to ensure the establishment of appropriate and effective ESG risk management and internal monitoring systems. The Board has integrated climate change-related risks and opportunities into ESG management. For more information about the responsibilities and division of work at each management level, please refer to the "Sustainable development management" section of this report.

Strategy

In 2022, the Intergovernmental Panel on Climate Change ("IPCC") of the United Nations released its sixth assessment report covering the assessment the impacts of climate change. The report highlights that global warming of 1.5 °C could occur as soon as 2030 if there are no strong mitigation measures. We acknowledge that climate change may pose multiple risks to our business and lead to climate transition risks with potential financial impacts. On the other hand, climate change will also create opportunities and inspire us to innovate and make new attempts in business. It helps the company transform into a low-carbon economic development model and maintain a leading position in the market. Under the background of the national "dual carbon" goals, we have studied and evaluated policies, formulated measures based on policies, and improved the climate risk management process to achieve effective management of climate risks.

Based on our own business experience, we provide collective technologies for constructing carbon-neutral cities and are committed to creating climate-resilient communities to better deal with the physical impacts of climate change. Guided by the science-based carbon-neutrality targets, we carry out various initiatives in clean energy, green buildings, carbon asset management, low-carbon transportation, resource recycling, and sustainable lifestyles. We provide buildings, parks, and communities with comprehensive low-carbon solutions from planning to operation, aiming to be a pioneer in transitioning towards carbon neutrality in the communities and cities.



Case Promoting Efficient And Sustainable Urban Development Based on the Model of “Transit-Oriented Development (TOD)”

Shanghai Uni Vanke Mall, located in Qingpu, Shanghai, is Vanke’s first commercial entity developed based on TOD model in Shanghai. The Shanghai Uni Vanke Mall project exemplifies Shanghai Vanke’s exploration of TOD in commercial samples as it integrates shopping mall, office, residential property, youth apartments, public green spaces and other diversified complex business forms, with an total area of about 800,000 square meters. Uni Vanke Mall creates a mini-TOD city that demonstrates green and sustainable development principles which meet the expectation the future city.

In May, Shanghai Uni-City received LEEDv4.1 Gold Pre-certification from the US Green Building Council (USGBC). In terms of green buildings, environmentally friendly and noise-reducing building materials were used, and a large number of intelligent systems were installed to reduce energy consumption. It has developed the LEED community based on the three major brand principles of “green and low carbon, smart technology, and humanistic interaction”.



Shanghai Uni Vanke Mall



Shanghai Uni-City has been awarded the LEEDv4.1 Gold Pre-certification

Case VX Logistic Properties Released a White Paper on Near-zero Carbon Smart Logistics Park to Empower Smart Carbon Neutrality with Technology

VX Logistic Properties, a subsidiary of Vanke, officially released the “White Paper on Near-Zero Carbon Smart Logistics Park in 2022”, proposing the concept of “Technology empowerment, leading the smart carbon neutrality of the park”. Also, VX Logistic Properties formulated its future carbon neutrality path, which focuses on improving energy conservation and consumption reduction.

Based on macro-market analysis, industry-positioning analysis, professional technical research, and internal and external investigations of the enterprise, as well as an analysis of the advantages and disadvantages associated with sustainable development, VX Logistic Properties has summarised the carbon neutral path as “3+4+N”, referring to three focus points, four handles, and N carbon reduction activities. The N carbon reduction actions include VX Logistic Properties’ “Zero Carbon Zone”, digitalisation of carbon management, distributed photovoltaic coverage and low-energy buildings. VX Logistic Properties will evaluate the best course of action for zero-carbon transformation which tailored to its unique characteristics and scientifically implement initiatives to achieve the near-zero carbon target.



The concept plan of Near-zero carbon smart logistics park

We understand that the industrial chain of building materials accounts for 53% of building carbon emissions, and green building material procurement and green manufacturing are important ways to address resource and environmental concerns. We have established the AUPUP Certification Alliance (ACA), aiming to unify industry consensus on green carbon reduction, promote the green transformation of the industrial chain, and support certification and evaluation businesses such as factory certification, factory three system certification, building evaluation, and calculation of the carbon emission of buildings. To date, we have issued green carbon certificates for more than 300 products produced by 77 companies. Currently, WUPUP E-commerce sharing platform has a particular section for carbon-friendly products with more than 300 different items. The certification of chromium-free passivation of aluminium alloy profiles, led by Vanke in the industry, has become an industry standard for real estate buyers. Going forward, we will continue keeping aligned with the national technical standards and accelerating the creation of green building materials product libraries. Also, we will improve the green carbon procurement section on the WUPUP E-commerce sharing platform, provide buyers with comprehensive supply chain of green carbon products and resources, and encourage the adoption and upgrading of a green carbon supply chain in line with the “dual carbon” strategy.

Risk management

Climate risk scenario analysis

We select the Representative Concentration Pathways of IPCC 8.5 (RCP 8.5) Scenarios, and the Current Policy Scenarios of the Central Bank and Regulators Network for Greening the Financial System (NGFS) for analysis and comparison.

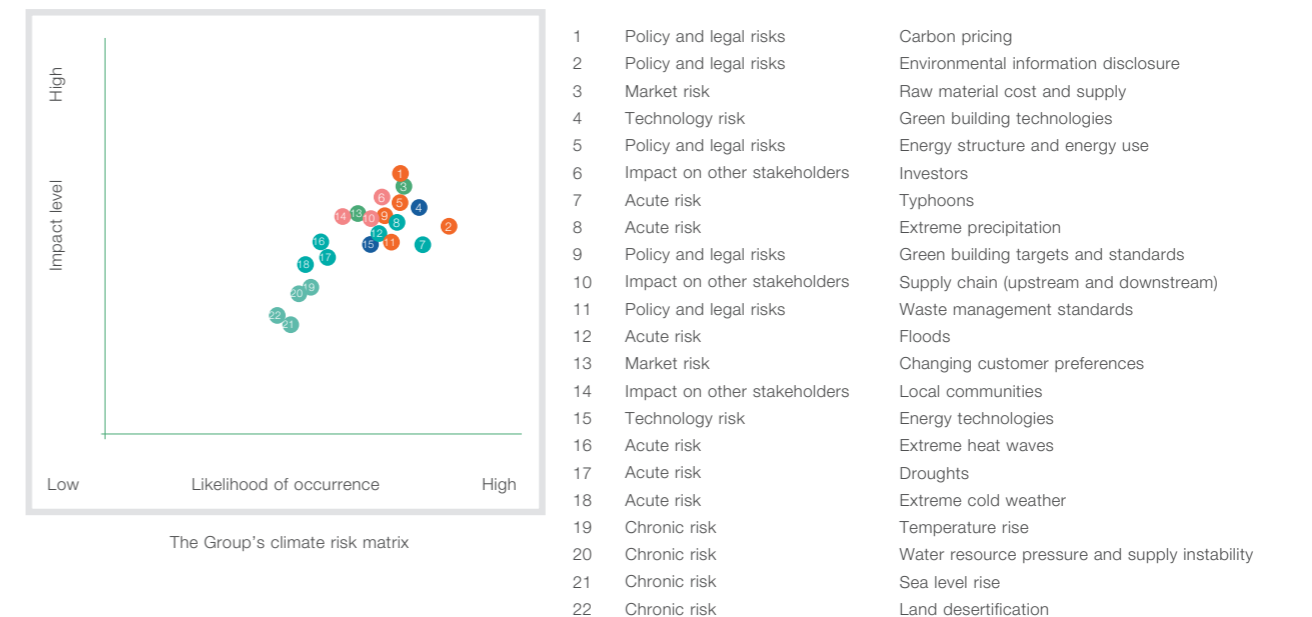
In the brown scenario, we selected in RCP 8.5, no significant policies have been introduced, economic growth and technological progress still heavily rely on fossil fuels, and businesses continue to emit significant quantities of greenhouse gases. According to this scenario, China is one of the countries in the world with the most significant losses caused by tropical cyclones and storm surges, and the average annual losses from river flood continue to rise. This situation is likely to worsen due to the intensification of climate change. China’s densely populated, low-lying coastal cities are threatened by rising sea levels, storm surges, and coastal erosion, while inland provinces in northern and western China will experience more frequent and extreme heat waves and droughts, which will lead to an increased risk of water shortages.

In the current policy scenario of the NGFS, the scenario assumption is that only the current climate policies are maintained without further strengthening. In this scenario, global greenhouse gas emissions will continue to rise until 2080, resulting in irreversible changes such as about 3°C of global warming and sea level rise. This scenario is considered a “hot house” scenario, characterized by high physical risks and low transitional risks.

Identification and prioritization of climate risk

We identify risk items applicable to Vanke based on the type of risk and Vanke’s business segments with reference to TCFD’s classification of risks. We carry out research and policy review to identify physical and transitional risks at the industry and corporate operation levels, and clarify the list of climate change risks. Based on Vanke’s business, we have identified eleven key departments that are highly related to climate risks and opportunities. Following a scenario analysis as well as interviews with key departments and experts, we conducted an assessment on 22 climate risks, which were ranked based on likelihood of occurrence and degree of impact. As a result, we identified seven high-risk items.

During the survey, different business departments assess risks based on their business characteristics and business understanding. Extreme precipitation, floods and other acute risks have a greater impact on engineering-related departments, while departments engaged in environmental restoration-related businesses believe that various types of climate risks are more likely to occur.



Climate Risk Response

Based on the scenario analysis and public research reports, we identified several climate-related risks and opportunities that may affect the company's business under the above scenarios, and resilience analysis was conducted for the seven high-risk items, as illustrated in the following table.

Climate risk		Impacts on business	Responses
Transition risk	Environmental information disclosure	High risk Regulatory authorities will further tighten the environmental information disclosure requirements of companies. Vanke may need to publicly disclose historical data such as energy consumption and carbon emissions every year and implement policies such as carbon trading, carbon tax, and environmental protection tax in line with the policies. The increasingly strict regulatory requirements on the accuracy of environmental data will result in higher monitoring costs and compliance risk of information disclosure.	We consider the expectations of various stakeholders and continue strengthening the disclosure of sustainability information to address their concerns. In 2021, we built Vanke's ESG data system and gradually expanded the scope of data collection that lays a solid foundation for carbon emission data collection and facilitates the formulation of carbon reduction action plans.
	Investor concern	High risk Investors increasingly recognise the correlation between the ESG performance of real estate and its ability to generate positive returns in the long run. Regulatory authorities have also begun to impose requirements on investment institutions regarding their ESG policies and disclosures, so investors will require companies to provide more reliable ESG information that can be incorporated into investment analysis and decision-making.	Vanke continues to conduct benchmarking of the ESG rating results to improve our management of ESG risks. We continue to pay attention to the capital market and investors' inquiries about Vanke's ESG affairs and respond to the concerns of all stakeholders with timely public disclosure. In 2022, we received the following awards for our disclosure management services and investor relations management services: The "2022 Best Practice Award for Directors of Listed Companies" for disclosure management and investor relations management; "Best ESG Practices for A-share listed companies in 2022"; The "Best IR Team" and "Best ESG" in Institutional Investor's 2022 All-Asia Executive Team; The "Best ESG Disclosure Award" by New Fortune; The "Best Investor Relations Award for Chinese Listed Companies" by the Securities Times' Tianma Awards.
	Carbon pricing	High risk Currently, the Chinese government has not imposed a carbon tax on the real estate industry, but some cities, such as Beijing and Shanghai, have included carbon emissions of real estate projects in their quota management systems on a trial basis. In the future, the coverage of the carbon market may be extended to other critical energy-consuming industries, including the building materials industry, which is closely related to the upstream supply chain of real estate. The upstream real estate supply chain will have to optimise carbon emission management to comply with government regulations, and the related costs may be passed on to construction materials and energy costs. As a result, the real estate industry will have higher construction and operating costs.	Vanke is committed to developing high-quality green buildings and reducing carbon emissions in its entire business chain. We promote technological and material innovation, conduct research on the comprehensive utilisation of industrial waste, and develop low-carbon tile adhesives, gypsum-based self-levelling and lightweight plastering gypsum. The carbon emissions of new materials can be reduced by 23.6%-75.3% compared with traditional products. Vanke Research Centre cooperates closely with passive ultra-low energy building professional institutions such as the German Passive House Institute and China Academy of Buildings Research to formulate the enterprise standard Vanke Passive Design Solutions for Ultra-Low Energy Buildings from the perspective of improving efficiency and reducing costs. We have jointly developed a 5-piece set of ultra-low energy consumption material parts, including doors, windows, curtain wall systems, walls, heat recovery fresh air systems, roof waterproofing, and external shading. Taking a family living in a 120-square-meter house in Beijing as an example, through measures such as thermal insulation of doors, windows and walls, and the use of heat recovery technology, the annual equivalent energy consumption per square meter will be reduced by 13 degrees, which is 11% lower than that of ordinary houses, saving 1,560 degrees of electricity throughout the year. This set of solutions has been applied to projects in Beijing, Shijiazhuang and other places.
	Raw material cost and supply	High risk In addition to energy, steel, cement and wood are essential building materials in the real estate industry. Since all kinds of building materials are energy-intensive and carbon-intensive, the supply chain of real estate companies is also affected by the physical risks of climate change. During the low carbon transformation period, the supply and price of traditional building materials may fluctuate due to various factors, including national carbon reduction and green building policies, raw material stocks, energy prices, technological developments and substitutes.	In 2022, we actively studied the information on bulk materials, such as steel, aluminium, copper, cement, glass, asphalt and other primary construction materials, and conducted price monitoring, factor analysis, policy interpretation, supply and demand analysis and market expectations analysis. By monitoring important information, we can timely adjust the adjustment mechanism and the pricing basis to secure a stable supply and a reasonable price for materials. To enhance our resilience to raw material cost fluctuations, we have conducted research on utilising industrial wastes, including fly ash, slag and desulfurized gypsum, while developing materials such as low-carbon tile adhesives, gypsum-based self-levelling and lightweight plastering gypsum.

Climate risk		Impacts on business	Responses
Transition risk	Green building technology	High risk In the initial stage of transformation, Vanke may require additional investment to develop green design technology and patents, leading to increasing cost of R&D, design, and development of buildings. In the medium to long term, as buildings' general emission performance improves, it will become more challenging to improve energy efficiency through technology further. Vanke may need to find other ways to reduce carbon emissions.	Vanke has established the Vanke Architecture Research Center in Dongguan and Xiong'an Vanke Green Research and Development Centre to conduct in-depth research on industrialised construction systems, green buildings, smart operation and maintenance, ecological environment, renewable energy, and waste treatment, and continue to promote technological innovation and practical applications. Also, Vanke signed the "Framework Agreement on Cooperatively Promoting the Implementation of the Technology Evaluation and Transformation Platform of the Ministry of Environmental Protection in Xiong'an New Area" with the Environmental Development Center of the Ministry of Environmental Protection. We will work closely in various fields to promote the application of environmental technology. For more information about green building technology, please refer to the section of Green Design Commitment.
	Energy structure and energy use	High risk Currently, China's development is also focused on transitioning away from fossil fuels and vigorously promoting alternative energy sources to replace coal and oil with renewable energy sources such as solar energy and wind power. Consequently, additional costs for complying with energy policies will be incurred. Existing energy-intensive equipment may be retired before the end of their lifetime due to policy reasons. Moreover, renovation of existing building equipment and fluctuations in energy prices may result in an increase in operating costs.	We have continued to explore the application of renewable energy. In the Vanke Center project in Dameisha, Shenzhen, Vanke provided power to buildings through rooftop photovoltaics, achieving 85% of power consumption came from green power. The project consumes green energy from local and power grids by using micro-grid technology, resulting in power costs optimisation and the offset of cost fluctuations brought by power policies during the operation phase. In addition, we have formulated a distributed photovoltaic landing plan for the logistics cold chain park and will gradually coordinate and speed up the implementation progress. During the reporting period, SCPG promoted seven solar power generation projects, producing a total of 3,494,967KWh of green electricity, and planned to adopt solar power generation in at least 18 shopping malls by 2025 and continue to promote the application of solar power generation.
	Physical risks	Extreme weather High risk Under the brown scenario, the rate of damage expected from a 100-year tropical cyclone will increase significantly, reaching 18.4% in 2039 and 21.9% in 2050, compared to 1.4% in 2015. Extreme weather conditions can result in increased delays or cancellations of construction projects, thereby increasing construction costs. Additionally, it can significantly affect shopping centre traffic and turnover, and pose risks to customers, employees and the general public. It is estimated that a potential loss of approximately RMB 410,000 to the Yun Resort Shenzhen Longcheer was incurred as a result of tropical storms "Siamba" (Signal No. 3) and "Ma-on" (Signal No. 9).	Based on Vanke's business divisions, each business segment have formulated policies to handle extreme weather events. In terms of hotel business, as the Yun Resort Shenzhen Longcheer is located near the sea, where typhoons and storms occur frequently, we have developed a typhoon emergency plan to help minimise the impact. Onowo has formulated the Guidelines for Emergency Response to Meteorological Disasters and the Natural Disaster Prevention Regulations, formulated remote operation plans for extreme weather such as typhoons, heavy rain, extreme cold, and high temperature, and established a remote and on-site linkage mechanism. We have established emergency plans for floods in Wuhan, Changsha, Nanchang and other cities that are threatened by floods in the Yangtze River Basin in order to deploy in advance to deal with extreme weather. We have established a nationwide remote operation centre in Wuhan, which forms a remote closed loop of the property management service process through AIoT artificial intelligence hardware technology. In case of typhoon and heavy rain during field operations, the system is now able to automatically infer the areas of heavy rainfall and red warning. For the area with a red warning, the background will automatically send relevant reminder information to the owner. In addition, the accumulated water in all projects can be detected by the camera and no on-site notification is required, realising the intelligent service of remote broadcast through the camera.

• Metrics and targets

In response to transition risks, Vanke’s corresponding business departments actively conducted research on policies to ensure our prompt action. Our business segments are equipped with dedicated personnel responsible for monitoring typhoon warnings during extreme weather conditions when typhoons and flood season disasters occur frequently. When typhoon speeds exceed 74 miles per hour (33m/s), all employees will be informed of typhoon-related events. Additionally, Vanke considers environmental goals such as energy efficiency, carbon emissions, water resources, and ecology as climate-related indicators for continuously monitoring, more information about the content and progress of the metrics and targets, please refer to the section headed “Environmental Practices” of this report. Below is a list of the core indicators that we are keep tracking of.

Indicators	Unit
Total energy consumption	ton (standard coal)
Energy consumption density	Property development, property service, logistics, SCPG: ton (standard coal)/construction area; Hotel and Vacation: ton (standard coal)/Guest check-in per night
Carbon emissions (Scope 1 and 2)	ton
Area in new construction projects meeting green building evaluation standards	million square meters
Number of projects with ultra-low energy consumption, near zero energy consumption or low-carbon demonstration areas	project
Percentage of materials purchased from Green Supply Chain Action whitelisted suppliers	%

Enhance climate resilience in multiple dimensions

• Biodiversity conservation

Biodiversity is the basis for the survival and development of human society, and the loss of biodiversity is a common challenge facing the world. Vanke is cooperating with government departments, professional institutions and other parties to practice biodiversity protection and maintain the ecological balance.

Participating in the COP15 “Towards Kunming: My Commitment for Nature” action initiative and make a commitment to biodiversity action

The Kunming Declaration, adopted at the first phase of the 15th Conference of the Parties (COP15) to the UN Convention on Biological Diversity (CBD) in 2021, called on parties to commit to strengthening cooperation and coordination with existing multilateral environmental agreements such as the UN Framework Convention on Climate Change and biodiversity-related conventions, as well as with the 2030 Agenda for Sustainable Development and related international and multilateral processes actions to advance the protection, conservation, sustainable management and restoration of terrestrial, freshwater and marine biodiversity.

We have actively supported the Convention on Biological Diversity and participated “Towards Kunming: I Promise for Nature” at COP15. Further, we have designed and completed the “Vanke Foundation Biodiversity Action Commitment”, which has been reviewed by the Convention Secretariat and published on the official website. We are committed to contributing to global environmental governance with Chinese solutions jointly with the Chinese social organisations, enterprises, and youth in order to increase our international influence in ecological protection over the next ten years.



Vanke Foundation Biodiversity Action Commitment

Launching the next five-year strategic plan of “Mount Everest Snow Leopard Protection Plan”

In 2022, with the assistance of external experts, Vanke Foundation launched a five-year strategic plan for the “Mount Everest Snow Leopard Protection Plan”. Based on the experience accumulated during the previous two phases, we have formulated the “Mount Everest Snow Leopard Protection Plan 2023-2027” to promote systematic and practical investment in the protection of snow leopards on Mount Everest, demonstrating the participation of social organisations in developing ecological civilization in Tibet.



Mount Everest Snow Leopard Protection Plan

• Climate change action

The 27th United Nations Climate Change Conference (COP27) was held in Sharm El Sheikh, Egypt, from November 6th to November 18th, 2022. During the United Nations Climate Change Conference, Vanke Foundation continues to support the Department of Climate Change of the Ministry of Ecology and Environment for the ninth year in designing and building the “China Pavilion” at the Blue Zone of the conference. For the first time, a community day was set up at the China Pavilion, with “Community Waste Management” and “Near Zero Carbon Community Building” as the themes of the side events, and more than ten experts from domestic and international were invited to share and discuss their thoughts. During the conference, Vanke Foundation and C Team held ten side events, inviting more than 50 Chinese enterprises, 30 Chinese social organizations, and more than 30 domestic and foreign universities and government agencies to participate, showing the efforts and achievements of Chinese civil forces, including enterprises and social organizations, in addressing climate change.

In the Green Zone of the conference, Vanke Foundation also supported C Team to set up an exhibition hall for Chinese enterprises, which showcased the climate actions of more than 10 well-known enterprises, including Vanke Group, through photos, videos, posters and physical objects.

The series of side events of COP27 “China Pavilion” produced a total of 68 original articles for traditional media, with an influential readership of more than 60 million, covering more than 200 million people; during COP27, the new media section had more than 55,000 self-published blog posts and tweets, and more than 117,000 readerships of related blog posts and topics. Six original short videos were broadcasted with a maximum of 5,000 times, over 200 likes and 180 retweets.

Indicator No.	Unit	Property development in 2022	Onowo in 2022	Hotel and vacation in 2022	Logistics in 2022			SCPG in 2022	
					Headquarters offices	Shared area of high standard park	Cold chain logistics park and office (including transportation)	Shared area (including project management)	Tenant
A1 Emissions									
A1.3 Total hazardous waste produced and intensity									
Office - hazardous waste	kg	36,033	1,759.5	1,665.7	80	49,405	1,015	87,006.7	1,618.5
Hazardous waste intensity	Property development, property service, logistics, SCPG: kg/ construction area; hotel and vacation: kg/guest checking into a hotel room per night	0.1975	0.0107	0.0022	0.0146	0.0472	0.0001	0.0218	0.0005
A1.4 Total non-hazardous waste produced and intensity									
Total non-hazardous waste	Ton	49,724.3848	1,126.137	2,589.4392	4.18	2,027.456	22,329.38	53,862.3425	83,100.9966
Non-hazardous waste intensity	Property development, property service, logistics, SCPG: ton/ construction area; hotel and vacation: ton/guest checking into a hotel room per night	0.2726	0.0068	0.0034	0.0008	0.0019	0.0028	0.0135	0.0253
Office - recyclable waste	Ton	14,017.404	34.035	86.8561	1.36	565.475	2,193.17	508.988	3,299.7076
Office - other waste	Ton	35,188.0938	989.157	1,064.8941	0	1,413.941	19,702.87	40,025.9105	46,774.505
Kitchen - kitchen waste	Ton	518.887	102.945	1,437.689	2.82	48.04	433.34	13,327.444	33,026.784
A2 Use of resources									
A2.1 Direct and/or indirect energy consumption by type in total and intensity									
Total energy consumption ^④	Ton (standard coal)	4,039.1727	1,981.2966	9,658.1783	34.4061	21,583.9121	3,689.9697	51,638.4869	77,709.6779
Energy consumption intensity	Property development, property service, logistics, SCPG: ton (standard coal)/ construction area; hotel and vacation: ton (standard coal)/guest checking into a hotel room per night	0.0221	0.012	0.0127	0.0063	0.0206	0.0005	0.0129	0.0237
Gasoline consumption	Litre	1,477,481.804	233,945.53	26,576.15	2,500	4,517.03	7,275.96	59,116.195	0
Diesel consumption	Litre	12	80	105,935.18	0	434,644.41	29,159.9	9,542.36	0
Total natural gas consumption	m ³	323,769.68	61,224.62	1,940,399	0	23,907	268,427	6,491,125.53	269,634.00
Natural gas consumption for heating	m ³	138,315.13	32,267	190,881	0	23,907	268,427	6,125,819.53	269,634
Natural gas consumption for domestic use	m ³	185,454.55	28,957.62	1,749,518	0	0	0	365,306	13,200
Pipeline gas consumption	m ³	23,701.7	0.12	0	0	0	0	17,269	0
Electric power consumption	10,000 kWh	1,436.504025	1,267.500488	5,126.118105	25.7594	16,955.3155	2,676.728014	31,007.25735	60,415.61726
Purchased heating power	GJ	1,436.504025	2,769.0863	18,174.6893	0	5,375.5069	0	159,100.2297	96,133.9242
A2.2 Water consumption in total and intensity									
Water consumption	Ton	152,329.76	129,598.95	695,027.86	198	475,089.99	291,233.05	3,654,203.57	5,240,781.94
Water consumption intensity	Property development, property service, logistics, SCPG: ton/ construction area; hotel and vacation: ton/guest checking into a hotel room per night	0.835	0.7849	0.9166	0.0362	0.4537	0.0363	0.916	1.5975

Data Statistics Scope

Property development	Property Services	Hotel and Vacation	Logistics	SCPG
Headquarters office, Regional/frontline office	Headquarters offices, Regional/frontline office	Hotel	Headquarters offices, High standard logistics park (including project management team office), Cold chain logistics park (including transportation)	Shared area (including project management office) Tenant

Notes

- Scope 1 carbon dioxide emissions include direct emissions from petrol, diesel, natural gas, pipeline gas, etc.
- Scope 2 carbon dioxide emissions include indirect emissions from purchased electricity and purchased heat.
- Scope 3 carbon dioxide emissions include emissions from petrol, diesel, natural gas, pipeline gas, purchased electricity, etc. used by tenants.
- Total energy consumption is the total usage of gasoline, diesel, natural gas, pipeline gas, purchased electricity and purchased heat.
- Due to further refinement of data collection and management scope in 2022, we optimized the data collection and estimation methods and hence, the gasoline consumption data increased significantly.

Reference standards for data calculation

- Direct carbon dioxide emissions from gasoline, diesel, natural gas and pipeline gas were calculated by referring to the Guidelines for Accounting and Reporting of Greenhouse Gas Emissions from Operating Units (Enterprises) of Public Buildings (Trial) issued by the General Office of the National Development and Reform Commission.
- Indirect carbon dioxide emissions from purchased electricity and purchased heat were calculated according to the Guidelines for Accounting and Reporting of Greenhouse Gas Emissions from Operating Units (Enterprises) of Public Buildings (Trial) issued by the General Office of the National Development and Reform Commission. The power emission factors in Mainland China referred to the standard of the "Guidelines for Accounting and Reporting of Greenhouse Gas Emissions of Enterprises Power Generation Facilities (2022 Revision)", and the power emission factors in overseas regions referred to IGES List of Grid Emission Factors (<https://www.iges.or.jp/en/pub/list-gridemission-factor/en>).
- The purchased heat was calculated according to the Energy Saving Design Standard for Residential Buildings in Freezing Cold and Cold Areas (JGJ26-2010) issued by the Ministry of Housing and Urban-Rural Development.
- The total energy consumption was converted into standard coal according to the Chinese standard GB/T 2589-2020 General Rules for Comprehensive Energy Consumption Calculation.

Social performance

ESG Indicator	Unit	2022
B1. Employment		
B1.1 Total workforce by gender, employment type, age group and geographical region		
Total number of employees	Person	131,817
Gender		
Male	Person	72,086
Female	Person	59,731
Employment category		
Full-time employees	Person	131,817
Part-time employees	Person	0
Age		
29 years old and below	Person	55,252
30 to 49 years old	Person	70,756
50 years old or above	Person	5,809
Region		
Mainland China	Person	131,573
Hong Kong, Macau and Taiwan	Person	191
Overseas	Person	53
B1.2 Employee turnover rate by gender, age group and geographical region		
Rate of employee turnover	%	30.1%
Gender		
Male	%	29.9%
Female	%	30.4%
Age		
29 years old or below	%	36.2%
30 to 49 years old	%	24.3%
50 years old or above	%	32.9%
Region		
Mainland China	%	30.2%
Hong Kong, Macau and Taiwan	%	21.4%
Overseas	%	19.7%
B2. Health and safety		
B2.1 Number and rate of work-related fatalities occurred in each of the past three years including the reporting year		
Number of work-related fatalities in 2020	Person	0
Number of work-related fatalities in 2021	Person	0
Number of work-related fatalities in 2022	Person	2 ⁴
Percentage of work-related injuries in 2020	%	0
Percentage of work-related injuries in 2021	%	0
Percentage of work-related injuries in 2022	%	0.0015%
B2.2 Total number of days lost due to work-related injury		
Total number of days lost due to work-related injury	Day	234 ⁵

⁴ Employees who lost their lives in the course of their employment do not include non-work related injuries or deaths, such as traffic accidents or sudden illnesses while commuting to and from work.

⁵ The total number of days lost due to work-related injury statistics covers real estate development, logistics and warehousing, rental housing, retail property development and operations (scope of consolidation), hotel and vacation and overseas business, etc.

ESG Indicator	Unit	2022
B3 Development and Training		
B3.1 Percentage of employees trained by gender and employee category		
Percentage of employees trained	%	100%
Gender		
Male	%	54.7%
Female	%	45.3%
Employee category		
Management staff	%	0.9%
Non-management staff	%	99.1%
Training type		
New employee training	%	42.9%
Other special training	%	57.1%
B3.2 Average training hours completed per employee by gender and employee category		
The total training hours of workforce	Hour	25.26
Gender		
Male	Hour	24.05
Female	Hour	26.72
Employee category		
Management Staff	Hour	31.30
Non-management staff	Hour	25.20
Training type		
New employee training	Hour	6.36
Other Special training	Hour	39.43
B5 Supply Chain Management		
B5.1 Number of suppliers by geographical region		
Region		
Beijing region	Supplier	3,511
Southern region	Supplier	6,117
Central China region	Supplier	2,139
Northwest region	Supplier	1,296
Shanghai region	Supplier	6,332
Southwest region	Supplier	2,226
Northeast region	Supplier	1,619

ESG Indicator	Unit	2022
B6 Product Responsibility		
B6.1 Percentage of products sold or shipped subject to recalls for safety and health reasons totally		
Number of products sold or shipped subject to recalls for safety and health reasons	Time	0
B6.2 Number of products – and service-related complaints received		
Number of customer (product or service) complaints	Complaint	2,082
Product and service satisfaction		
Customer satisfaction about after-sales services	%	97
Real-time satisfaction upon delivery	Score	98
Overall customer satisfaction of Port Apartment business	Score	91.24
B6.3 Description of practices relating to maintaining and protecting intellectual property rights		
Number of newly obtained patents in the reporting period	Patent	100
Number of accumulated intellectual property rights held	Case	319
Number of accumulated software copyrights held	Copyright	172 ⁶
Number of accumulated trademarks held	Trademark	776 ⁷
B6.5 Description of how to implement and monitor information guarantee for consumers		
Average hours of information security training	Hour	3
B7 Anti-corruption		
B7.1 Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period		
Number of cases where the Company is regarded as a participant in anti-competitive practices	Case	0
Number of cases in violation of the anti-monopoly law	Case	0
Lawsuits regarding corruption, bribery, extortion, fraud or money laundry	Case	0
B7.3 Anti-corruption training		
Number of board members and senior managers participating in anti-corruption training	Person	17
B8 Community Investments		
B8.2 Resources contributed to the focused area		
Amount invested in rural vitalisation	RMB'0,000	10,000
Public charity donations	RMB'0,000	2,000
Total amount invested by the Vanke Foundation for public charity	RMB'0,000	7,283 ⁸
Number of participants in voluntary activities	Participant	10,557
Hours spent on voluntary activities	Hour	108,750

⁶ Statistic of cumulative quantity held by Onewo

⁷ Statistic of cumulative quantity held by Onewo

⁸ This data is the total expenditure of public charity business for Vanke Foundation

ESG Index

Environmental, Social and Governance Scopes and General Disclosure and Key Performance Indicators (KPIs)		Corresponding Section
Environment		
A1: Emissions	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	Advancing Green Construction; Practicing Green Operation
	A1.1 The types of emissions and respective emissions data	The emission of gaseous pollutants is not an important category for the operation of the Group.
	A1.2 Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Appendix: ESG Key Performance
	A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Appendix: ESG Key Performance
	A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Appendix: ESG Key Performance
	A1.5 Description of emission target(s) set and steps taken to achieve them.	Environmental Practices - Our Strategy
A1.6 Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them.	Environmental Practices - Our Strategy	
A2 : Use of Resources	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials	Green Design Commitment; Practicing Green Operation
	A2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	Appendix: ESG Key Performance
	A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	Appendix: ESG Key Performance
	A2.3 Description of energy use efficiency target(s) set and steps taken to achieve them.	Environmental Practices - Our Strategy
	A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.	Environmental Practices - Our Strategy; Practicing Green Operation (The Group's daily business does not have the problem of obtaining suitable water sources.)
	A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	Packaging materials are not required for the finished products of the group business.

Environmental, Social and Governance Scopes and General Disclosure and Key Performance Indicators (KPIs)		Corresponding Section
A3: The Environment and Natural Resources	General Disclosure Policies on minimising the issuer's significant impacts on the environment and natural resources.	Green Design Commitment; Advancing Green Construction; Practicing Green Operation
	A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	Green Design Commitment; Advancing Green Construction; Practicing Green Operation
A4: Climate Change	General Disclosure Policies on identification and mitigation to significant climate-related issues which have impacted, and those which may impact, the issuer	Climate Change Response ; Our TCFD Report
	A4.1 Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.	Climate Change Response ; Our TCFD Report
Social		
B1: Employment	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and charity.	Striving with Employee Partners
	B1.1 Total workforce by gender, employment type (for example, full- or part-time), age group and geographical region.	Appendix: ESG Key Performance
	B1.2 Employee turnover rate by gender, age group and geographical region.	Appendix: ESG Key Performance
B2: Health and safety	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	Striving with Employee Partners
	B2.1 Number and rate of work-related fatalities occurred in each of the past three years including the reporting year	Appendix: ESG Key Performance
	B2.2 Lost days due to work injury	Appendix: ESG Key Performance
	B2.3 Description of occupational health and safety measures adopted, and how they are implemented and monitored	Striving with Employee Partners
B3: Development and Training	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities	Striving with Employee Partners
	B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management)	Appendix: ESG Key Performance
	B3.2 The average training hours completed per employee by gender and employee category	Appendix: ESG Key Performance
B4: Labor Standards	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour	Striving with Employee Partners
	B4.1 Description of measures to review employment practices to avoid child and forced labour	Striving with Employee Partners
	B4.2 Description of steps taken to eliminate such practices when discovered.	Striving with Employee Partners

Environmental, Social and Governance Scopes and General Disclosure and Key Performance Indicators (KPIs)		Corresponding Section
B5: Supply chain management	General Disclosure Policies on managing environmental and social risks of the supply chain.	Win-win Partnership
	B5.1 Number of suppliers by geographical region.	Appendix: ESG Key Performance
	B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	Win-win Partnership
	B5.3 Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	Win-win Partnership
	B5.4 Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	Advancing Green Construction
B6: Product responsibility	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	Compliance Management; Good Products; Good Services
	B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	No product or service recall events that had a significant impact on the Group's operations occurred during the reporting period, so it is not applicable.
	B6.2 Number of products and service related complaints received and how they are dealt with.	Good Services; Appendix: ESG Key Performance
	B6.3 Description of practices relating to observing and protecting intellectual property rights..	Compliance Management
	B6.4 Description of quality assurance process and recall procedures.	Good Products
	B6.5 Description of consumer data protection and privacy policies, and how they are implemented and monitored.	Compliance Management
	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	Compliance Management
B7: Anti-corruption	B7.1 Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	Appendix: ESG Key Performance
	B7.2 Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	Compliance Management
	B7.3 Description of anti-corruption training provided to directors and staff	Compliance Management; Appendix: ESG Key Performance
B8: Community investments	General Disclosure Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	Helping Rural Vitalization; Sustainability Management; Shared Development
	B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	Helping Rural Vitalization; Sustainability Management; Shared Development
	B8.2 Resources contributed (e.g. money or time) to the focus area.	Appendix: ESG Key Performance

Index to SASB Indicators

Theme	Indicator	Code	Corresponding section
Energy management	Energy consumption data coverage as a percentage of total floor area, by property subsector	IF-RE-130a.1	Appendix: ESG Key Performance
	(1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector	IF-RE-130a.2	Appendix: ESG Key Performance
	Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector	IF-RE-130a.3	Appendix: ESG Key Performance
	Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector	IF-RE-130a.4	Green Design Commitment
	Description of how building energy management considerations are integrated into property investment analysis and operational strategy	IF-RE-130a.5	Practicing Green Operation
Water management	Water withdrawal data coverage as a percentage of (1) total floor area and (2) floor area in regions with High or Extremely High Baseline Water Stress, by property subsector	IF-RE-140a.1	N/A
	(1) Total water withdrawn by portfolio area with data coverage and (2) percentage in regions with High or Extremely High Baseline Water Stress, by property subsector	IF-RE-140a.2	Appendix: ESG Key Performance
	Like-for-like percentage change in water withdrawn for portfolio area with data coverage, by property subsector	IF-RE-140a.3	Appendix: ESG Key Performance
	Description of water management risks and discussion of strategies and practices to mitigate those risks	IF-RE-140a.4	Our TCFD Report; Practicing Green Operation
Management of tenant sustainability impacts	(1) Percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and (2) associated leased floor area, by property subsector	IF-RE-410a.1	N/A
	Percentage of tenants that are separately metered or submetered for (1) grid electricity consumption and (2) water withdrawals, by property subsector	IF-RE-410a.2	Appendix: ESG Key Performance
	Discussion of approach to measuring, incentivizing, and improving sustainability impacts of tenants	IF-RE-410a.3	Environmental Practices – Our Strategy; Practicing Green Operation
Climate change adaptation	Area of properties located in 100-year flood zones, by property subsector	IF-RE-450a.1	N/A
	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	IF-RE-450a.2	Our TCFD Report

