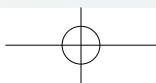
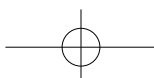
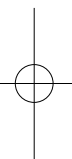
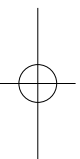
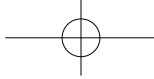


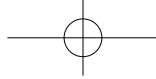
2023

Report on the Investment Environment of Minhang District, Shanghai

An International Open Highland, A Resilient Economic Hub





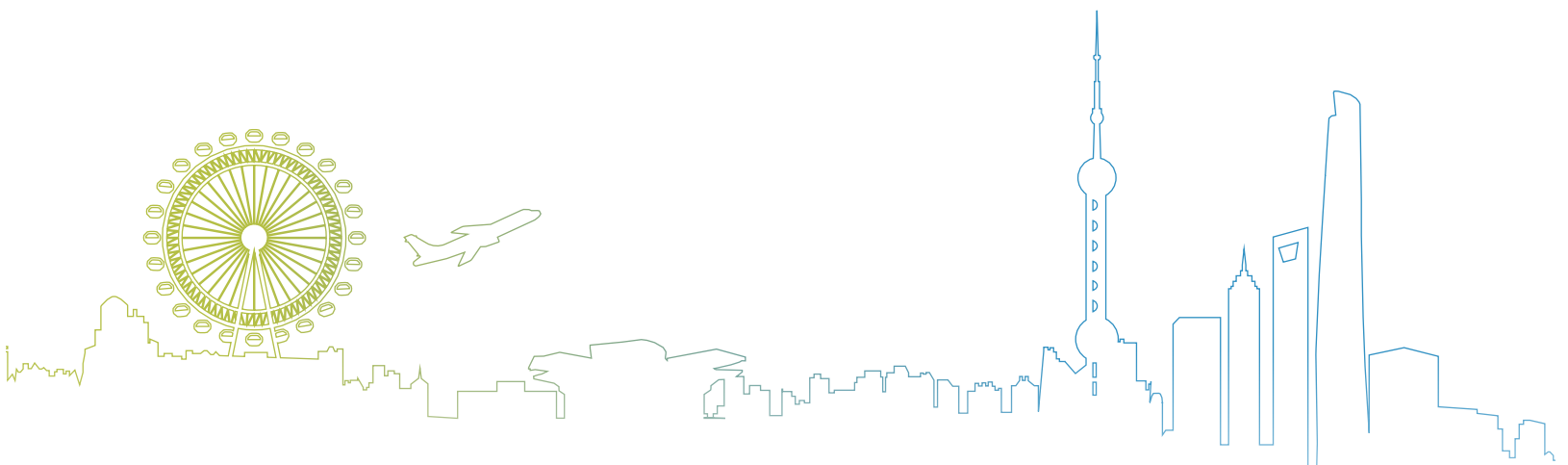


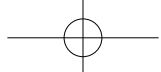
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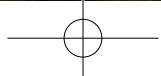


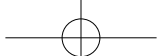


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Report Summary





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- 1.1 A city of resilience and vitality manifested with steady economic growth
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Report Summary

To objectively and comprehensively reflect the overall investment environment of Minhang District amid epidemic normalisation and provide authoritative information to domestic and foreign investors and people from all sectors, the Investment Promotion Centre of Minhang District has engaged PricewaterhouseCoopers Consultants (Shenzhen) Limited - Shanghai Branch (“PwC”) as a third party to provide intellectual and technical support in preparing the Report on the Investment Environment of Minhang District, Shanghai (2023). This is the fifth consecutive year that PwC issues the investment environment assessment report for Minhang District.

In the post-epidemic era, Minhang, with its innovative digital government services, high quality whole-chain technology environment, high-end industries led by hard technologies and new industrial system, has driven the regional economic development to be stable and positive, and the economy has shown the characteristics of “strong resilience”, mainly reflected in “scale resilience”, “structural resilience”, “openness resilience”, “innovation resilience”, “industrial resilience” and “policy resilience” in six areas. The resilient Minhang continues to attract a concentration of global quality enterprises and highly qualified talents, and is becoming a city of opportunity and future for the development of investors, supply chains, talents and citizens. In the future, Minhang will embark on a new journey to transform the national strategic opportunities into the winning momentum of Minhang’s reform and development, and make every effort to make Minhang the main force in the construction of Hongqiao International Open Hub and the main engine in the construction of Shanghai Science and Technology Innovation Center, writing a new chapter of the era of Minhang’s practice of Chinese modernization.

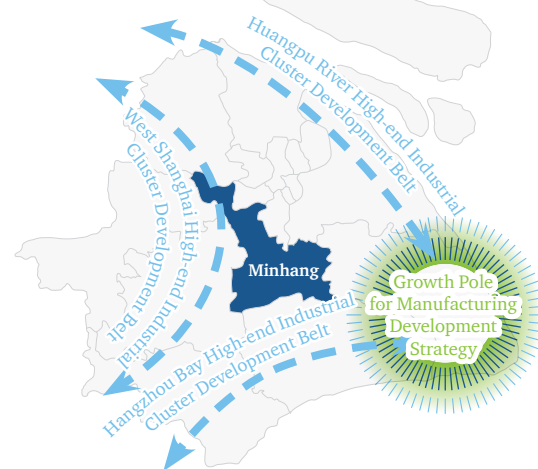
Five keywords for Minhang’s comprehensive strength:

- Resilience:** In 2021, Minhang’s GDP was approximately RMB 284.319 billion, up by 10.8% year-on-year and 2.7 percentage points higher than that of Shanghai. Minhang’s total fiscal revenue was RMB 89.28 billion, ranked second in Shanghai. Strategic emerging industries accounted for 51.3%, which was 11.6 percentage points higher than that of Shanghai. In 2021, the total industrial output value of enterprises above the designated size reached RMB 391 billion, hitting a new high in the past 10 years.
- Opening up:** Minhang makes continuously efforts to build the “Greater Hongqiao” International Business District based on Hongqiao International Open Hub. At the end of 2021, Minhang District had 996 new foreign-owned enterprises, absorbing contract foreign capital of USD 5.04 billion. And at the end of Oct. 2022, there are 62 regional headquarters of multinational companies and 58 foreign-owned R&D centers in total.
- Innovation:** As the national demonstration zone for the transfer and transformation of technological achievements, the R&D expenditure of the whole society is equivalent to 9.16% of Minhang’s GDP, ranking high in Shanghai and also within Tier 1 in China. In 2021, the number of projects approved by the Natural Science Foundation of China was the highest in the country. On July 2022, there were 2,328 high-tech enterprises, 577 Shanghai “specialized, refined, peculiar and new” SMEs, 36 national “Little Giant” enterprises, and over 300 R&D institutions.
- Hub:** In 2021, Hongqiao Integrated Transport Hub recorded 317 million trips, with an increase of 18.9% over the previous year. As of September 2022, the density of the road network in Minhang District increased from 0.93 km/km² to 3.77 km/km². 11 rail transit lines run through Minhang District (currently 20 lines in Shanghai). Total road mileage reached 1,406.86 km, and total public transport mileage reached 1,088.4 km.
- Green:** Minhang District systematically constructs urban greenways and three-dimensional green networks, to transfer from “parks in the city” to “the city in the park”. In 2022,

Minhang will complete the construction of 120 hectares of various green areas, add 1,200 mu of forest area, and build 30 neighbourhood micro-parks, with green area per capita reaching 10.65 m²/person (ranked second in Shanghai). And Minhang’s forest coverage rate and urban green coverage rate will also reach 18.3% and 40%, respectively. The Air Quality Index (AQI) reach 88%.

High-end and emerging industry clusters led by strong manufacturing and key & core technologies

- Strong manufacturing district:** Located in the West Shanghai high-end industrial cluster development belt, Minhang District adheres to the “strong manufacturing district” strategy. In 2021, the manufacturing industry contributed to 35% of Minhang’s GDP, and Minhang has formed an advanced manufacturing industry system led by high-end equipment, artificial intelligence, new-generation information technology, and biomedicine, based on the great “neoBay” Science and Technology Innovation Zone of Shanghai.
- Grabbing new development sectors:** The new economy represented by the “four new development sectors” of digital economy, green and low-carbon, metaverse and intelligent terminal is to be developed along Huangpu River Development Belt.





Minhang

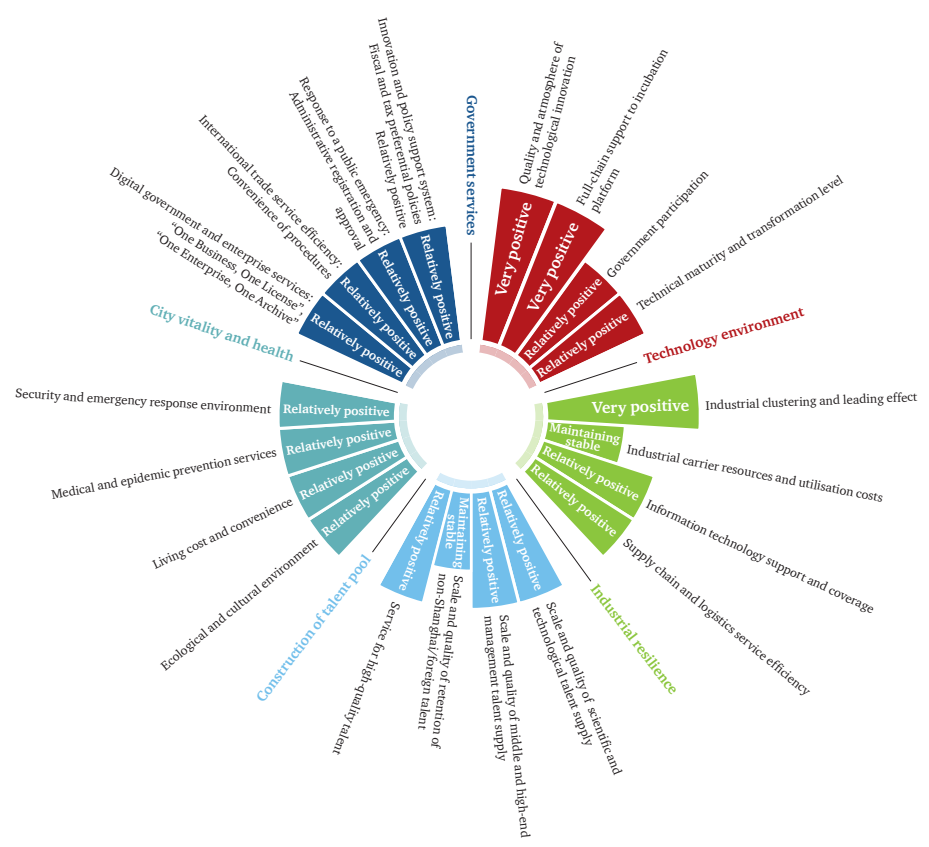
An international, open, resilient and inclusive city of future

Integrated transport hub connects the world through air-rail transportation
 “Habitat” for global headquarters and R&D centers
 International trade center with open and shared international elements

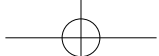
High-quality development space with north-south joint development and double-centers radiation
 A resilient economy is driven by strong manufacturing and key & core technologies
 City of the future led by digitalization and green

Based on the indicators of PwC’s *Chinese Cities of Opportunity*, this report, from an investor’s perspective, assessed the investment environment in Minhang District, Shanghai in terms of government service, science environment, industry resilience, construction of talent pool and city vitality by referring to the evaluation system of World Bank on urban competitiveness and indexes of National Development and Reform Commission and relevant departments on the business environment. The above five indicators involve four aspects, i.e., enterprise investment attraction, production and operation guarantee, enterprise R&D innovation, and introduction, cultivation and retention of talents, which systematically reflect the investment environment of Minhang District.

We selected over 100 most representative enterprises well-recognised in economic contribution, growth potential, innovation and social responsibility in Minhang to participate in the questionnaire.



Against the background of epidemic normalisation, Minhang District is highly competitive in the industrial resilience, technology environment, government services, judging from the perspectives of enterprise investment attraction, production and operation guarantee, enterprise R&D innovation, and introduction, cultivation and retention of talent.



01

Chapter 1

Embrace openness and innovation,
composing resilient and inclusive



1.1 A city of resilience and vitality manifested with steady economic growth

Steadily increasing economic and industrial outputs

Resilient economic development

In 2021, Minhang District saw a steadily recovering economy, ongoing transformation and upgrading, and significant growth in various economic development indicators, marking a good start to the “14th Five-Year Plan”.

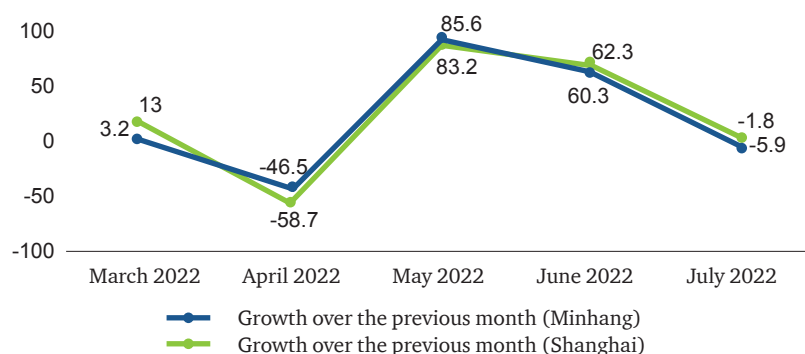
In 2021, Minhang’s GDP reached RMB **284.319** billion, accounting for **6.57%** of that for the whole city, representing year-on-year growth of **10.8%**, higher than that of Shanghai (**8.1%**).

In 2021, Minhang District realised fiscal revenue of RMB **89.3** billion in total, accounting for **11.4%** of that for the whole city, representing year-on-year growth of **18.6%**, higher than that of Shanghai (**10.3%**).

District-level fiscal revenue reached RMB **3.31** billion, which exceeded RMB **30** billion for the first time in years and **ranked second** only to Pudong New Area.

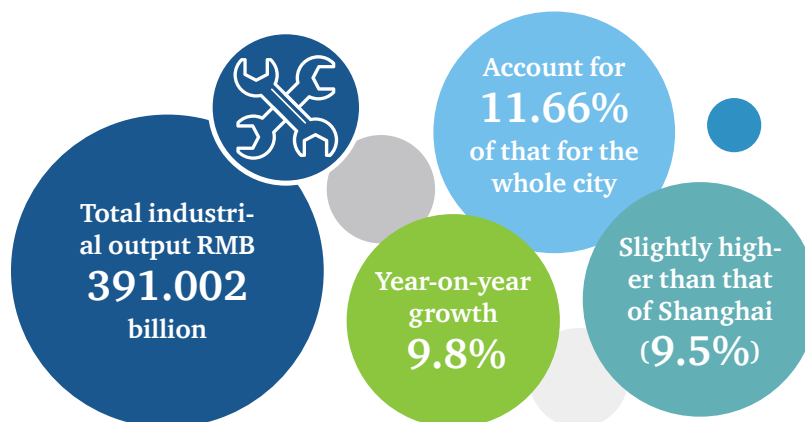
In 2022, affected by a complex and severe external environment as well as a local epidemic outbreak, the total industrial output declined sharply in March and April, but rebounded vigorously since May and paced up in June. Advanced manufacturing constitutes the cornerstone of Minhang’s economic development. Under the “Five Ones” pandemic prevention and control mechanism, enterprises have resumed work and production, with industrial growth each month outpacing the average in Shanghai, which shows that Minhang’s economy is developing with resilience and vitality.

Minhang vs. Shanghai in total industrial outputs in 2022 (by growth rate)



City-leading industrial strength

Located in the West Shanghai high-end industrial cluster development belt, Minhang District adheres to the “strong manufacturing district” strategy, with an industrial economy growing at pace and scale in the course of transformation and upgrading. In 2021, the total industrial output value of enterprises above the designated size reached RMB **391** billion, hitting a new high in the past 10 years.

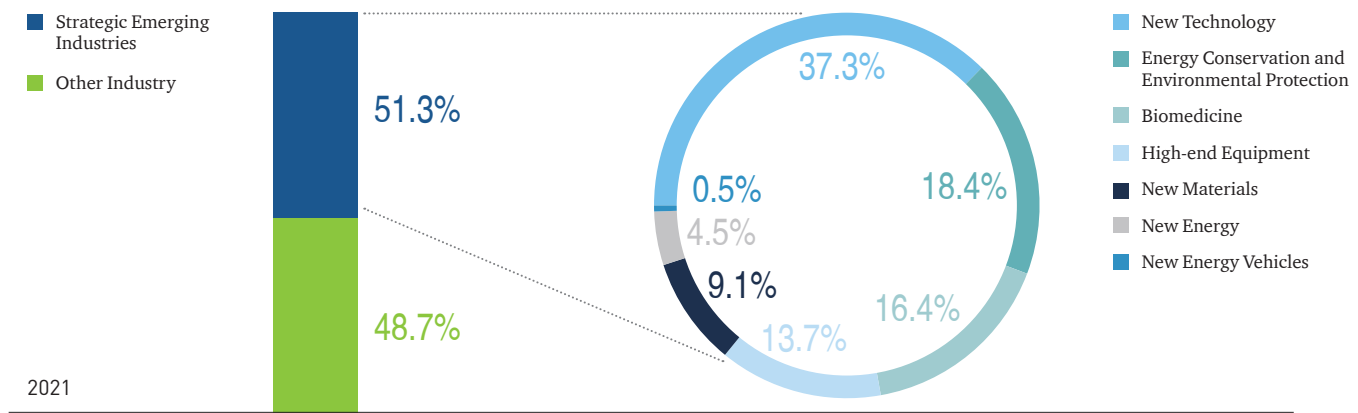


Economic transformation underpinned by domestic and foreign investment

Quality and efficiency improvement by booming strategic emerging industries

In 2021, Minhang District saw a total industrial output of RMB 188.702 billion from strategic emerging industries, a year-on-year increase of 10.1% to 51.3%, 11.6 percentage points higher than that of Shanghai. Among them, double-digit growth was achieved in new technology, energy conservation and environmental protection, biomedicine and high-end equipment.

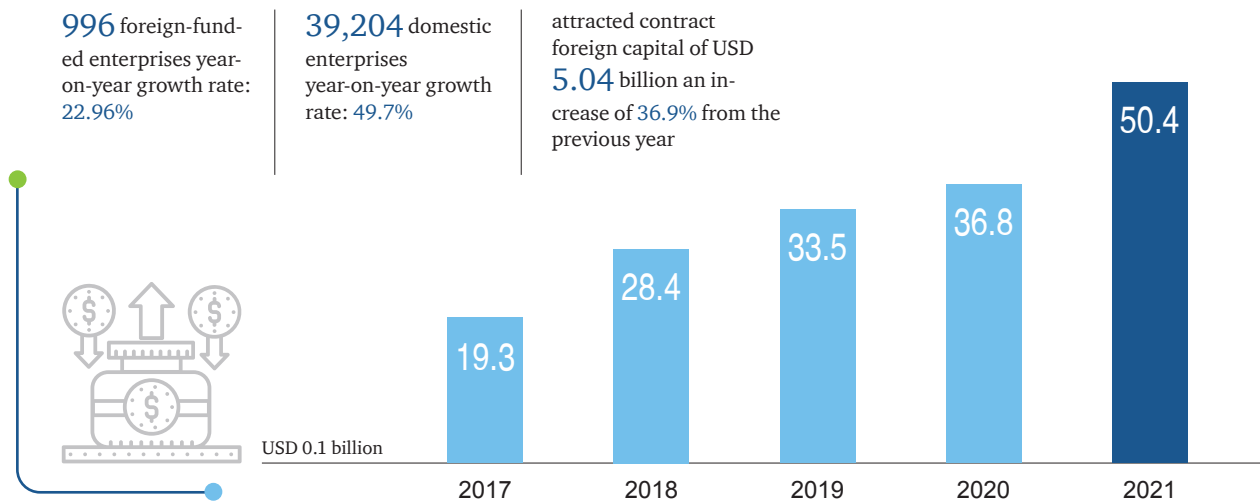
Composition of strategic emerging industries



Ever-growing attraction with a breakthrough in domestic and foreign investment

In 2021, Minhang District introduced 166 key industrial projects such as ZF FriedrichshafenAG and the Asia Pacific Headquarters of Messer, with a total investment of over RMB 63 billion and tax revenue of nearly RMB 1.6 billion for the year.

In 2021, Minhang District had an ever-growing attraction to domestic and foreign investment.



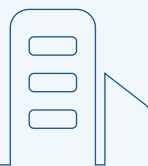
1.2 A new international and open highland supported by overlapping national strategic opportunities

An enterprise “friend moments” gathered by headquarters

New highland for headquarters economy

In recent years, Minhang has actively integrated resources across the district relying on the Hongqiao International Open Hub. Minhang has made ongoing efforts to build the “Greater Hongqiao” modern service function zone and made it the “Habitat” of global headquarters, which further highlighted the industry multiplier effect and enabled the “enterprise friend moments” to expand in Minhang, facilitating global resources allocation.

At the end of Oct. 2022, foreign-funded functional organisations in Minhang District totalled **120**, including **62** regional headquarters of multinational companies and **58** foreign-funded R&D centres. A number of industry leaders including Medtronic and Siemens Energy have set up innovation centres in Minhang District to pace up global cooperation and technological innovation.



In 2021, another **8** regional headquarters of multinational companies were settled in Minhang District, making Minhang top Shanghai in terms of growth in quantity. Minhang District is becoming more attractive to foreign investors, which quickens the pace for headquarters economy agglomeration.

A “Hub” for factor mobility, and “new harbour” for international trade

International trade hub

As a high-quality demonstration zone for national import promotion and innovation, Hongqiao International Central Business District is to be built into an open and shared international trade hub.

01 Global High-quality Commodity Allocation Service

“**Hongqiao Pinhui**” operates as the main platform for “6+365 days” exhibition and trading that undertakes the spillover effect of China International Import Expo (“CIIE”), bringing over 60,000 items under more than 5,700 brands from 90+ countries and regions.

Hongqiao International Coffee Harbour: This is the first specialised import and distribution platform of “Hongqiao Pinhui”, and has become the new pace-setter for Shanghai’s coffee trading industry by building the coffee import and export service platform of “From Crop To Cup”.

02 Global Full-chain Human Resources Service

Hongqiao International Business Talent Hub is a platform that integrates talent consulting, talent training, entrepreneurship guidance, industry communication, policy advocacy and life services, covering the “full chain” of talent services.

03 International Advanced Technology Transfer Service

Minhang has established 28 international technology transfer channels (in cooperation with international organisations), introduced 41 domestic and overseas technology transfer service agencies, and brought in and hosted large-scale international technology transfer exhibitions and forums, with 485 international scientific and technological projects precisely transferred.

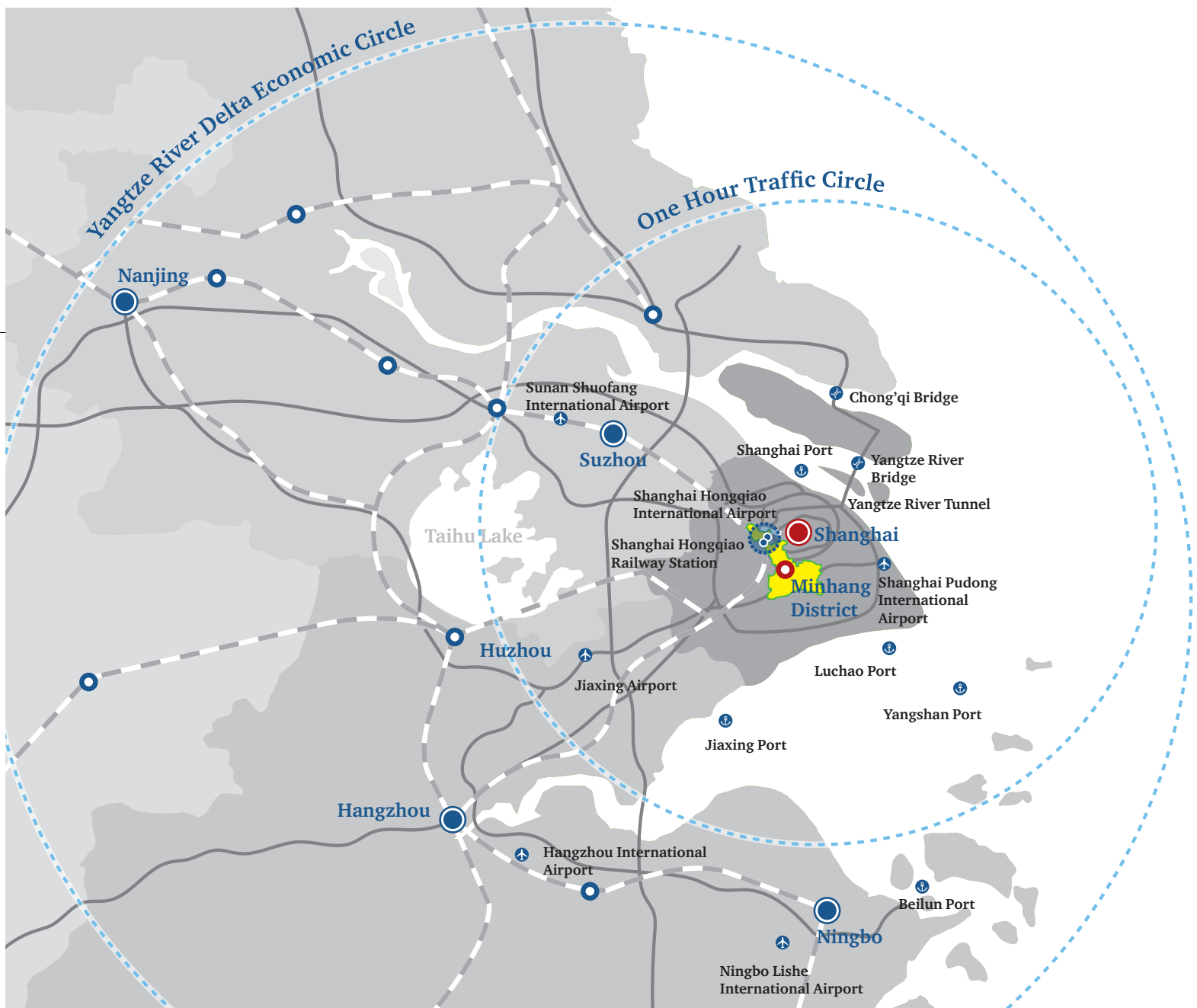
04 Operational Service for International Trade Organisations

Hongqiao Overseas Trade Centre has brought in 30 trade and service organisations and entered into relationships with more than 150 trade and investment promotion institutions globally.

Comprehensive transportation network, enabling efficient linkage at home and abroad

Air-rail composite, sea-land access

Minhang District has one of the world's largest comprehensive transportation hubs, Hongqiao Integrated Transport Hub, known as the "west gate" of Shanghai, which realises connection in all directions with air-rail and sea-land transportation capabilities. In 2021, the establishment of the Hongqiao International Open Hub was upgraded to a national strategy. It forms two expansion zones, southbound and northbound that cover 14 districts and counties in Shanghai, Jiangsu and Zhejiang, becoming an international open hub radiating the Yangtze River Delta and connecting the world.





01

Hongqiao Integrated Transport Hub

In 2021, Hongqiao Integrated Transport Hub recorded **317** million trips, an increase of **18.9%** over the previous year.

02

“Air-rail transportation” products

“Air-rail transportation” products have provided a two-way transportation channel from most of the cities in Jiangsu, Zhejiang and Anhui to domestic air-accessible cities through Shanghai, covering **16** cities, **18** airports, **22** bus stations and nearly **400** railway stations.

03

China-Europe freight train “Shanghai Express”

The designated CIIE train gets loaded in Hamburg and Duisburg in Germany and departs from Malaszewicze of Poland. It is scheduled to pass through Belarus and Kazakhstan, and head directly to Minhang of Shanghai through Alashankou port. In May 2022, “Shanghai Express” realised full coverage of the China-Europe line, China-Russia line and Central Asia line.

Sustained improvement in infrastructure

As of September 2022, the density of the road network in Minhang District increased from 0.93 km/km² to 3.77 km/km².



The density of the road network
3.77 km/km²



Rail transit lines run through Minhang District
11 lines



Total road mileage
1,406.86 km



Total public transport mileage
1,088.4 km

1.3 A pacesetter for technological innovation

Producing outstanding scientific and technological innovation achievements, and staying ahead in intellectual property rights

Scientific and technological innovation performance



Minhang District is the national demonstration district for the transfer and transformation of technological achievements

as of July 2022

2,328 high-tech enterprises

36 national “Little Giant” enterprises

577 Shanghai “specialised, refined, peculiar and new” SMEs

The R&D expenditure of the whole society was equivalent to 9.16% of Minhang’s GDP

Building integrated innovation carriers, and unleashing vitalities of innovation entities

01

Opening innovation carriers by scientific research entities

In recent years, the opening of innovation resources by large enterprises, scientific research institutions and SMEs in Minhang District has facilitated mutual cooperation among large, medium and small-sized enterprises in R&D innovation, creative design, manufacturing, procurement, marketing and financing, realising deep integration of innovation and entrepreneurship.

In 2021, Minhang District had **103** academician and expert workstations in total.

02

Comprehensive industrial group Co-building and sharing the benefits thereof

In cooperation with Shanghai Jiao Tong University and Shanghai Land (Group) Co., Ltd. Minhang District established “neoBay”, which was selected for the first batch of the “National Mass Entrepreneurship and Innovation” demonstration base.

Up to now, **550** companies have been located in the core area of the Great “neoBay” and more than **50** companies have obtained market financing of over RMB **8** billion, with **9** of them having a market valuation of over RMB **1** billion.

Optimising technology trading ecology, and stimulating achievement transformation capability

Service mechanism for achievement transformation



Intellectual Property Trading Centre:

Minhang District brought in SIPE Southern Sub-centre, with the transactions amounting to RMB **5** billion.



International Technology Trading Market:

Shanghai International Technology Trading Market has built an integrated and collaborative platform for the technology market in the Yangtze River Delta, and has successively completed core functions such as cross-regional demand release and matching, with the cumulative number of demand contracts reaching **2,946** and the intended amount exceeding RMB **7** billion; the InnoMatch Global Supply and Demand Matching Platform has been launched, using digital technology to create an innovation ecosystem that integrates and matches technology, talent, services and capital, and build a transformation fast track for scientific and technological achievements.

Industry-Academy-Research cooperation bridge

Minhang District has undertaken the Yangtze River Delta Innovation Challenge Contest for five consecutive years, accurately tapping **1,119** enterprise needs, conducting more than **100** supply-demand matching sessions, collecting **450** solutions within the Yangtze River Delta, and deeply serving the open innovation of enterprises in the district. The 2022 Contest focuses on open innovation of large enterprises, driving ENGEL, WEGO Group and others to release technological innovation needs, and promoting collaborative innovation of large, medium and small enterprises.

Diversified technology finance system

Minhang District has established a special fund for the transformation of national scientific and technological achievements.

Total contribution
RMB **428** million

Accumulative guide fund
RMB **6.2** billion

725 enter-
prises obtained
investment funds

50 new investment enter-
prises got registered

1.4 Digitalisation-driven urban governance, and creation of resilient urban ecology

Innovative digital governance to enable stable and efficient urban operation

“Two websites” to improve urban efficiency



The “**Unified administration management website**” to handle each case efficiently: Under the impact of the global epidemic, Minhang District upgrades the “unified administration management website” platform by leveraging big data, cloud computing and other advanced technologies to establish and improve the urban operation management system for district, town, street, and village communities, which features a three-tier structure of “city operation center - processing grid - self-governed grid”, and is based on “multi-grid in one” pattern, to ensure efficient and stable operation of urban management, public security, epidemic prevention and control, etc.



The “**Government online-offline shanghai**” follows the principle of “simplifying application information filing, providing the least application materials and optimising process”, achieving an online processing ratio of 81.68%.

Pluralistic governance structure to improve resilience in urban management

Resilient city governance system for epidemic prevention and control

“Five Ones” pandemic prevention and control mechanism to ensure work and business resumption

- 1 A “**special working group**”: Establishing a special working group for internal epidemic prevention and management, which plays a leading role in “internal personnel protection”, “access control management”, “supply support”, “regular disinfection and sterilization”, “epidemic-related emergency response”, etc.
- 2 A “**check system**”: Implementing regular or temporary “closed-loop management” in plant areas, checking “Venue Code” and “Digital Sentinel” for people entering the place.
- 3 A “**COVID testing site**”: Setting up COVID testing sites in large enterprises, and organising internal personnel for COVID testing.
- 4 A “**temporary isolation area**”: Setting internal separate areas for “physical segmentation” of risk people and those with abnormal physical signs.
- 5 An “**emergency plan**”: Formulating epidemic emergency response plans, which can be implemented in a rapid and orderly manner in case of emergency.

1.5 A model of city-industry integration, and a future model for a better life

New landmark for international consumption agglomeration

International consumption centre

According to the *Special Plan for Shanghai Commercial Space Layout (2021-2035)*, Minhang aims to build itself into an international consumption centre, with diversified consumption patterns as well as an appealing consumption environment.

3 municipal commercial centres
There are 29 Municipal Commercial Centre in Shanghai

- 1 Hongqiao International Central Business District Municipal Commercial Centre
- 2 Wuzhong Road Municipal Commercial Centre
- 3 Xinzhuang municipal Municipal Commercial Centre (in the long term)

6 district-level Commercial centres
There are 45 district-level Commercial centres in Shanghai.

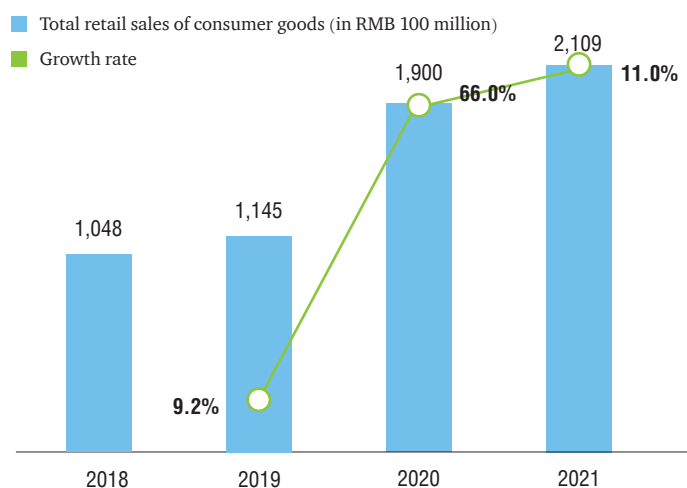
- 1 South Hongqiao
- 2 Qibao
- 3 NanFang Mall
- 4 Meilong
- 5 Zhuanqiao
- 6 Pujiang



Growing total retail sales

In 2021, total retail sales of consumer goods in Minhang District reached RMB **210.9** billion, accounting for **11.66%** of the city's share, with Year-on-year growth of **11.0%**.

Total retail sales of consumer goods in Minhang District (2018-2020)



New life in Digital Minhang

Against the backdrop of the normalisation of epidemic prevention and control, ways of living and consumption are shifting towards digitalization, everyone can enjoy digital-based innovative life. Minhang District is actively creating a new digital-based model for a better life in medical care, education, old-age care, and public welfare.



Smart Health Care



Smart Breakfast

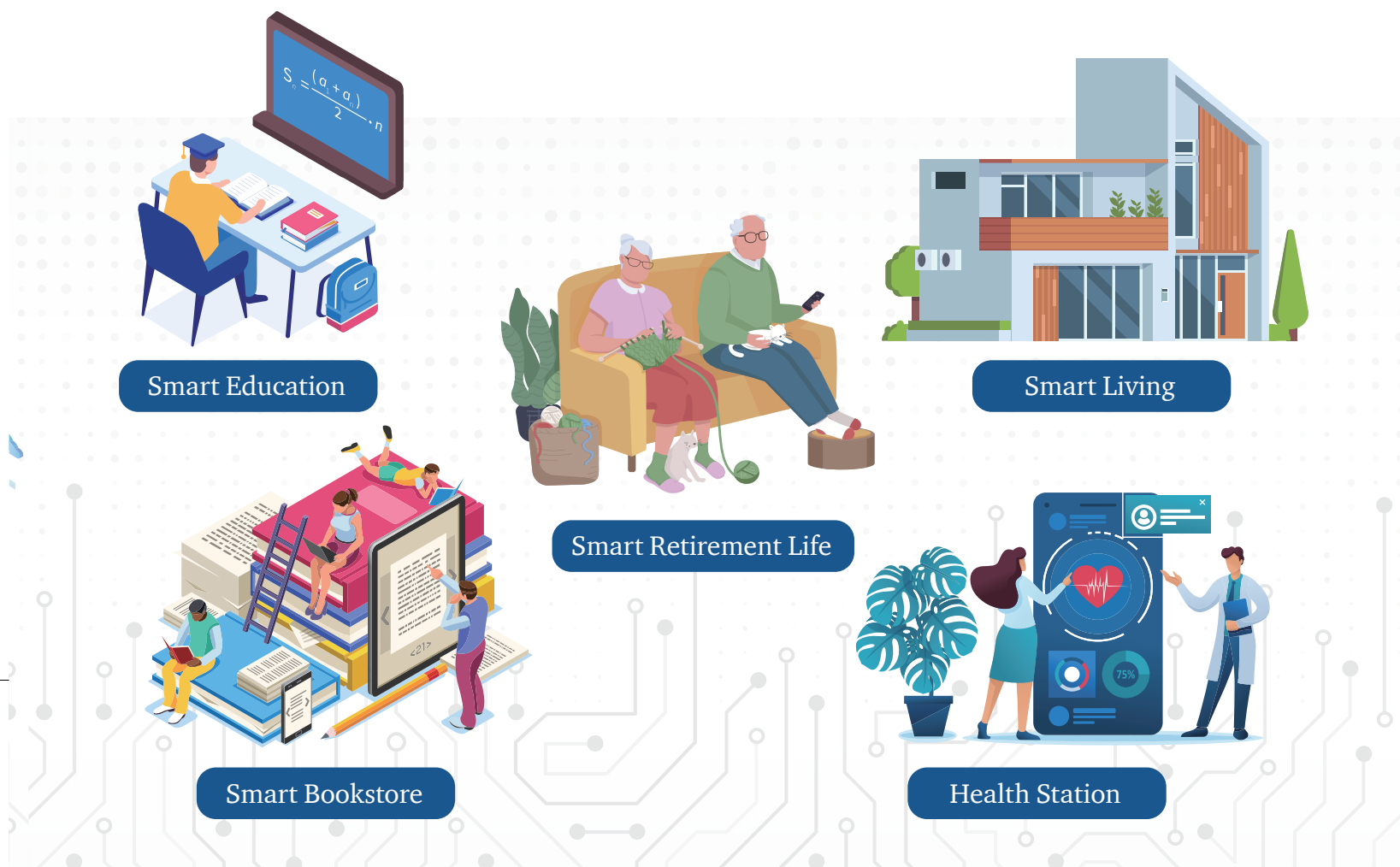


Smart Parking

Playing a demonstration and leading role in digital education

Minhang, as one of the first demonstration districts in China for smart education, has been making active efforts to promote the construction of **8** digitalisation-enabled demonstration schools and intelligent education cloud platforms in the district. Minhang aims to establish a regional digital education base, which covers, on average, **72%** of the **153** primary and secondary schools in Minhang.





Improving quality and efficiency through Digital healthcare resources

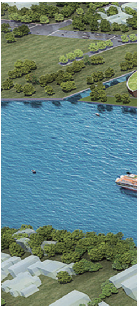
Minhang is committed to digital transformation by building major scenarios of “convenient medical treatment” and highlighting scenarios of “smart medicine” to optimise medical services, reduce patient waiting time and create a new pattern of smart hospitals.

- Pre-treatment
Save up to **60 minutes** by reducing waiting time with precise appointments
- Pre-treatment
Intelligent pre-diagnosis can improve treatment efficiency, covering **21 public medical institutions** in Minhang
- In-treatment
One-stop medical payment on mobile
- Post-treatment
Establishing electronic medical records, sending electronic discharge summaries, and ensuring expenses charged by online hospitals are consistent with offline ones

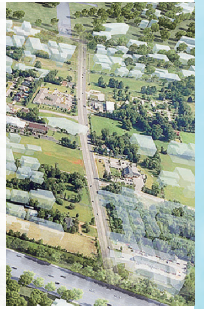
New ecology of green and low-carbon city

To build a solid urban ecological green barrier, and build the district into a model for green ecology, Minhang systemically constructs urban greenways and three-dimensional green networks, including promoting “park +”, “life circle +” and other projects, advancing from “parks in the city” to “city in the park”, and from “seeing green outside the door” to “pushing the door to enter the park”.

Building a high-quality and low-carbon park city



In 2022, Minhang will complete the construction of **120** hectares of various green areas, add **1,200** mu of forest area, **500** mu of non-commercial forest, **45** km of greenway, **32,000** square meters of three-dimensional greenbelts, and **30** neighbourhood micro parks, with green area per capita leading in the city and reaching **10.65** m²/person, and forest coverage rate reaching **18.3%**, and the Air Quality Index (AQI) reach **88%**.



Renovating the “round-the-city” park - Meilong Ecological Park

By 2022, Shanghai will be the first to complete 7 round-the-city parks. The Meilong Ecological Park, a “round-the-city” project along the round-the-city ecological park zone in Minhang District, aims to create a park with a distinctive cultural theme.

Total land area approx.

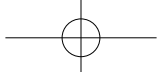
59.7 hectares



Being a pioneer to build low-carbon demonstration zone

Achieving “emission peak” and “carbon neutrality” is an important goal for future city construction.

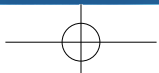
- Minhang Development Zone was awarded as the Shanghai Four-star Green Zone in 2020. At the beginning of 2021, Minhang created the “Zero-carbon Demonstration Zone”, and formulated the *Compilation of Cases for the “Zero-carbon Zone” of the Minhang Economic and Technological Development Zone*. At present, the output energy consumption of parks in Minhang is about 1/5 of the average energy consumption of industrial enterprises above the designated size of Shanghai.
- At the beginning of 2022, “Shuisheng Park” thereinto was opened. Upholding the goal of “zero carbon”, lawn lights and yard lights in the park were all powered by solar energy, making the park a green ecological leisure place.



02

Chapter 2

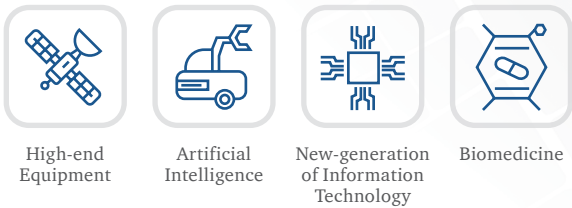
Cultivation of high-end industries to map
out frontiers for future development



2.1 “Two-wheel drive” industrial development

“4+4” high-end industrial clusters:

The advanced manufacturing industry led by “four industries” of high-end equipment, artificial intelligence, new-generation information technology and biomedicine, the layout is centered on the Great “neoBay” Science and Technology Innovation Zone in the south of Shanghai.



The four advanced manufacturing industries account for **19.7%** of the total operating income of the “4+4” industries

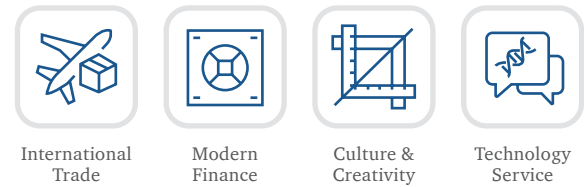
There are **3** characteristic industrial parks of Shanghai

The total output value of foreign investment and investment from Hong Kong, Macao and Taiwan account for **58%** of the total output value of industries above the designated size in Minhang District





The modern service industry, represented by the “four industries” of international trade, modern finance, cultural creativity and technology services, is laid out with the Hongqiao International Central Business District.



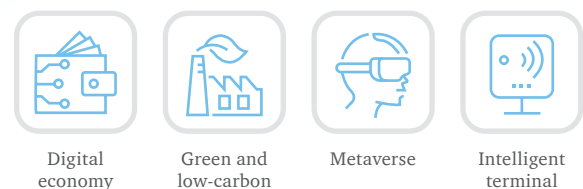
In the first half of 2022, the four modern service industries accounted for **80.3%** of the total operating income of the “4+4” industries.

In 2022, the headquarters economy of Minhang District accounted for **71.6%** of the total output value of service industries above the designated size in Minhang District.

In the first half of 2022, the number of foreign-funded functional organisations reached **110**, up by **60%** over the same period. Oct. 2022, **62** are regional headquarters of multinational corporations and **58** are foreign-funded R&D centres.

Four new development sectors:

The new economy represented by the “four new development sectors” of the digital economy, green and low-carbon, metaverse and intelligent terminal is to be developed along Huangpu River Development Belt.



2.2 Integration of characteristic and competitive industries in Minhang District



In the first half of 2022



High-end equipment industry in Minhang District operating income RMB **10.099** billion.



70 High-end Equipment enterprise.

Investment appeal

01

Synergistic development achieved by agglomeration of leading enterprises: Leading enterprises of the high-end equipment industry gather in Minhang to form an industrial promotion pattern featuring “up-stream and downstream intergrowth driven by leading enterprises”. For example, AVIC, CSIC and other leading enterprises of high-end equipment have established the Minhang District High-end Equipment Industry Quality Improvement Alliance, which is committed to promoting cross-industry quality improvement through technical exchange, resource sharing and talent training.

02

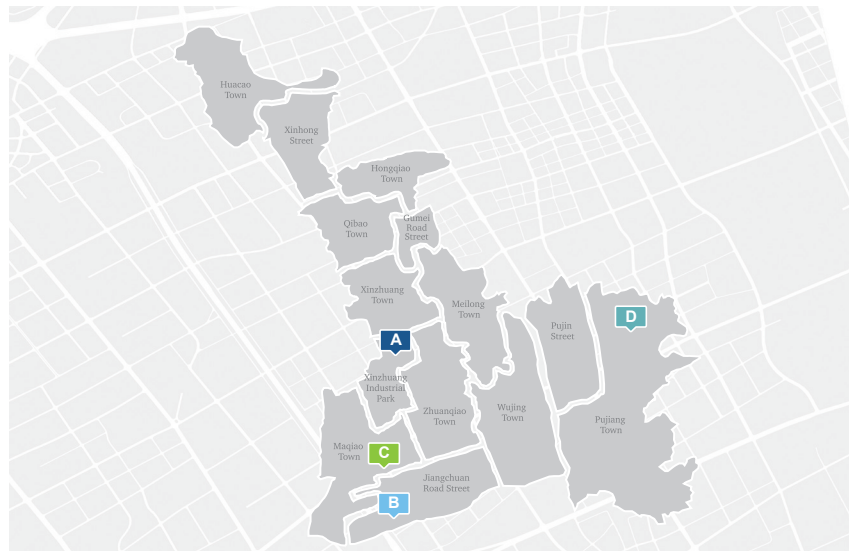
Improvement on transformation to digital production: The government of Minhang District sources intelligent manufacturing diagnosis service providers to issue professional diagnosis reports, clarifying the intelligent transformation direction for manufacturing enterprises, providing qualification certificates for awards and subsidy declaration, and giving data support for the government’s special incentive policies, to ensure the government to improve the accuracy of intelligent manufacturing services for enterprises.

03

A new pattern of quality service: Minhang District takes the lead in launching the quality infrastructure NQI service cloud platform – “Min Zhi Hui” in “Government Online-Offline Shanghai”, forming a “concentric circle” mode of one-stop service of quality infrastructure centred on high-end equipment manufacturing, which has been selected into the national top 20 typical examples of quality infrastructure service in 2021.

Industry Base

- A** Xinzhuang Industrial Park
- B** Minhang Economic and Technological Development Zone
- C** Shanghai Maqiao Artificial Intelligence Innovation Pilot Zone
- D** Shanghai Aerospace Industry Base



Characteristic industrial clusters



Competitive industries

Intelligent Equipment, Aerospace Equipment, Energy Equipment

Industries with potential

Marine Shipbuilding Equipment, Rail Transit Equipment

01 Intelligent Manufacturing Equipment

Robot, including Shanghai Jinta Technology, Hyundai Robotics, Shanghai Weihong Electronic Technology*, Flexiv*, WhalesBot and Positec; **numerically-controlled machine tool**, including Lynuc, Topic*, Nozoli, MOONS* and Toshiba Machine.

02 Astronautics and Aeronautics Equipment

Astronautics equipment, including Shanghai Astronautics Power Supply Technology, Shanghai Lizheng Satellite Application Technology, Shanghai ASES Spaceflight Technology; **aeronautical equipment**, including AECC Commercial Aircraft Engine, AVIC Aeronautical Radio Electronics Research Institute, AVIC Electromechanical System.

03 High-end Energy Equipment

New energy equipment, including China General Nuclear Power Group, State Nuclear Power Automation System Engineering Company, Shanghai Electric, Shanghai Xinmin Duty Forging, Ningbo KBE Group; **key parts components for new energy vehicles**, including Shanghai Dajun Technologies, Shanghai Auto Edrive, Songz Automobile Airconditioning, Shanghai Junsheng Bairui Automatic Driving R&D; **smart grid core technology**, including Sieyuan Electric*, Siemens Switch, ABB Engineering Shanghai.

04 Marine Shipbuilding Equipment

Marine Design and Research Institute of China, Qiyao Heavy Industry

05 Rail transit equipment

Traffic Control Technology, Shanghai Alstom Transport Co., Ltd.

Prominent innovation resources

Intelligent manufacturing equipment: State Key Laboratory of Mechanical System and Vibration

Astronautics and aeronautics equipment: Shanghai Jiao Tong University School of Aeronautics and Astronautics/School of Nuclear Science and Engineering, Chinese Aeronautical Establishment Shanghai Branch, AVIC Aeronautical Radio Electronics Research Institute, Shanghai Society of Aeronautics, Civil Aircraft Industrial Design Centre

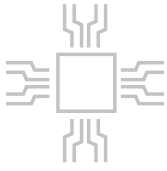
High-end energy equipment: School of Nuclear Science and Engineering, Shanghai Power Equipment Research Institute, Shanghai FRP Research Institute, clean and efficient power generation equipment innovation service platform, a professional technical service platform for nuclear safety equipment testing, National Centre for Quality Supervision and Testing of Distributed Power Equipment in Smart Grid (Shanghai)



* Municipal Special New Giant Science and Technology Enterprise

* High-tech "Little Giant" Enterprise

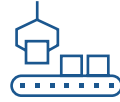
New-generation Information Technology



In the first half of 2022



227 new-generation information technology enterprises in Minhang District generated an operating income of RMB 41.68 billion.



More than 95% enterprises resumed work, ranking No.1 in suburban districts of Shanghai.

Investment appeal

01

Innovation breeding based on universities: Minhang District utilises university-based sci-tech innovation resources to build a one-stop “University Sci-Tech Innovation Belt” represented by the omnichannel carrier for entrepreneurship and innovation, academician and expert workstation, sci-tech achievements commercialisation platform, and scientific innovation service centre. It focuses on promoting the construction of an innovation ecology centre featuring an intelligent network and synergy of industrial Internet and blockchain to accelerate industrial development empowered by technical innovation achievements of universities.

02

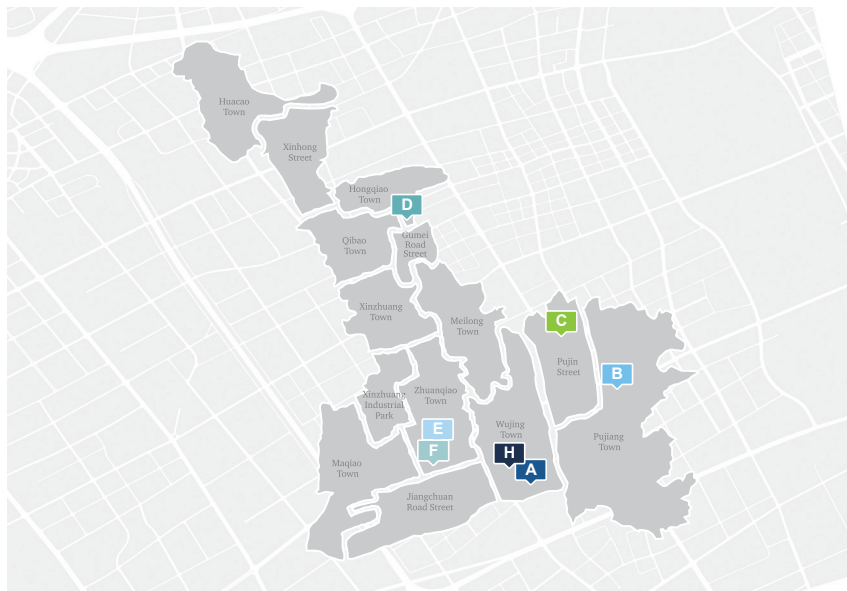
High-quality technical talents reserve: Shanghai Jiao Tong University, East China Normal University, Shanghai Dianji University and other colleges and universities in Minhang District provide a large number of technical talents specialising in electronic information, electrical engineering and computer science, assisting enterprises to consistently cultivate R&D talents.

03

Comprehensive and targeted policy support: Minhang District provides comprehensive policy support for sci-tech innovation, product R&D, talent training, applications and investment and financing of the new-generation information technology development, in a bid to promote the full-cycle development of R&D-oriented new-generation information technology enterprises.

Industry Base

- A** Zizhu National High-Tech Industrial Development Park
- B** 863 Software Incubator (Shanghai) Base
- C** Lingang Pujiang International Science and Technology City
- D** Caohejing High-Tech Park Hongqiao Science and Technology Oasis
- E** Xiangyang Industrial Internet Base
- F** Longfor Blue Engine Danshui Innovation Park
- H** The Great “neoBay” Science and Technology Innovation Zone



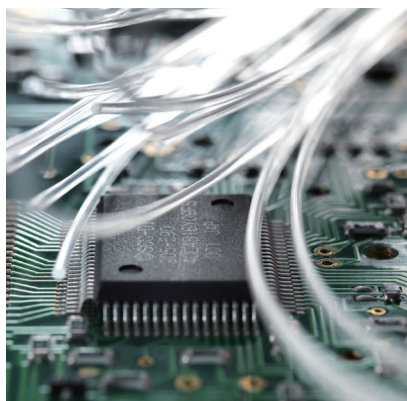
Characteristic industrial clusters

Competitive industries

Integrated Circuit Supporting Service, Software and Network Information, and Sensor Control

Industries with potential

5G and Industrial Internet



01 Integrated Circuit Supporting Service

Biren Technology*, Iluvatar CoreX*, Awinic Technology*, Sendis Semiconductor, Sensylink*, Unicloud

02 Software and Network Information

Tsinghua Unigroup, Shanghai Lantu Information Technology*, Guolong Information Technology (Shanghai), Shanghai Jun Zheng Network Technology*, Shanghai Zendai Himalaya Network Technology*, Wicresoft*, XD Inc., Lansha Information Technology (Shanghai), Ocean Engine, Shanghai Cootek Information Technology, Neusoft

03 Sensor Control

Shanghai Friendless Electronics Technology*, Shanghai Weihong Electronic Technology*, Laimu Electronic*, Omron, Coseमितech*

04 5G and Industrial Internet

Shanghai Shenergy Power Tech*, Brightdairy, HC System*, AECC Commercial Aircraft Engine, Shanghai Huadian Minhong Energy

Prominent innovation resources

Integrated circuit supporting service: Shanghai Jiao Tong University School of Microelectronics, East China Normal University School of Information Science and Technology

Software and network information: Shanghai Jiao Tong University School of Software, Shanghai Computer Software Technology Development Centre, National Engineering Laboratory for Information Security Technologies

Sensor control: Shanghai Aerospace Control Technology Research Institute



* Special New Giant Science and Technology Enterprise

* Unicorn Enterprise

* Municipal Specialized and Sophisticated Enterprises



Biomedicine

From Jan. 2022 to Aug. 2022



The total output value of 68 biomedical enterprises which are above the designated size in Minhang District was RMB **20.33** billion.



Number of biomedicine enterprises reached **530**.

Investment appeal

01

Coordinated development throughout the industrial chain: Targeted at the synergistic development of the entire biomedical industrial chain, Minhang District introduces relevant policies and government services to continuously promote close cooperation among government, industries, universities, research institutes, manufacturing enterprises, medical institutions and financing organisations to form a spatial layout of “service in the north, R&D in the south, and transformation in the east”, facilitating the development of a layered industrial cultivation system and the whole ecological industry.

02

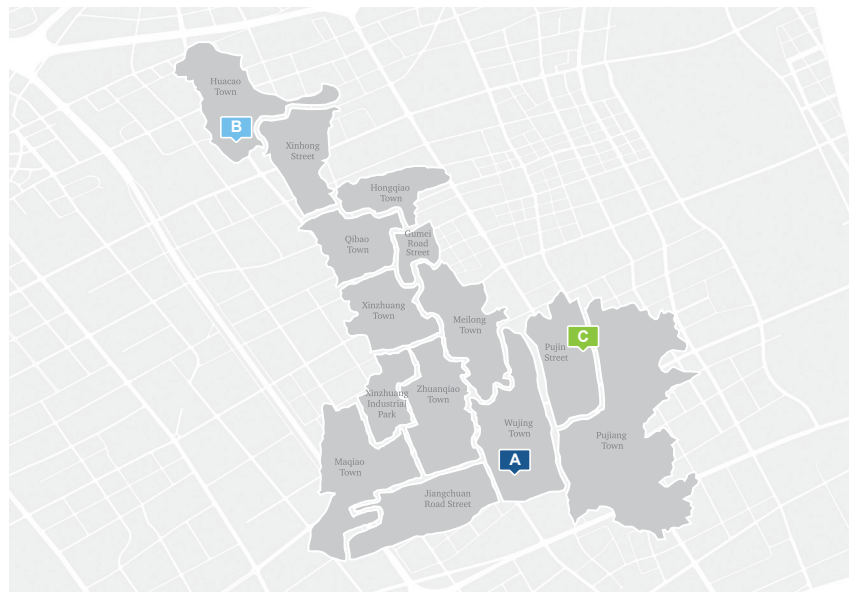
Gathering of leading innovative enterprises: The biomedical industry in Minhang District pursues development driven by manufacturing and service. It has gathered several domestic and overseas leading enterprises including Sino-American Shanghai Squibb Pharmaceuticals, SPH No.1 Biochemical & Pharmaceutical, Shanghai Hengrui Pharmaceutical, Shanghai Johnson & Johnson Pharmaceutical, Medtronic, and Tofflon. Besides, in recent years, it has also attracted batches of biomedical innovators, including Innovent, WeGo, Yunnan Baiyao, Chiatai Tianqing, Neosoftmedical, Shanghai Anmaibo Biomedical, Illumina, to set up an office in Minhang District.

03

Smart medicine application scenario: Relying on Hongqiao international open hub and the new-generation information technology, Minhang District accelerates the pace for industrial radiation and intelligent integration. Based on the New Hongqiao International Medical Centre and South Hongqiao Smart Medicine Innovation Pilot Zone, Minhang District speeds up the construction of application scenarios for the biomedical industry and innovative diagnosis and treatment service scenarios, in a bid to create a new smart medicine model.

Industry Base

- A** The Great “neoBay” Smart Healthcare Innovation Development Function Area
- B** Hongqiao Biomedical R&D Headquarters Functional Area
- C** Pujiang Biomedical High-end Manufacturing Functional Area



Characteristic industrial clusters

Competitive industries

R&D of Innovative Drugs and Preparations, Biomedical Technology Transformation and High-end Medical Devices and Equipment

Industries with potential

Biological Genes, Smart Medicine



01 R&D of Innovative Drugs

Innovent, Lepu Biopharma*, Shanghai Hengrui Pharmaceutical, Alphamab Oncology, Sino-American Shanghai Squibb Pharmaceuticals, YolTech Therapeutics, Shanghai Zhixun Biotechnology, Aurisco

02 Biomedical Technology Transformation

China Stem Cell Group, Lumy Bio, Applied Protein Technology, Shell Biotech

03 High-end Medical Equipment and Materials

Johnson & Johnson Medical Devices*, Medtronic*, Liferiver*, WeGo, Tofflon*, Micro&Nano, LifeScan, GeNext, Straumann

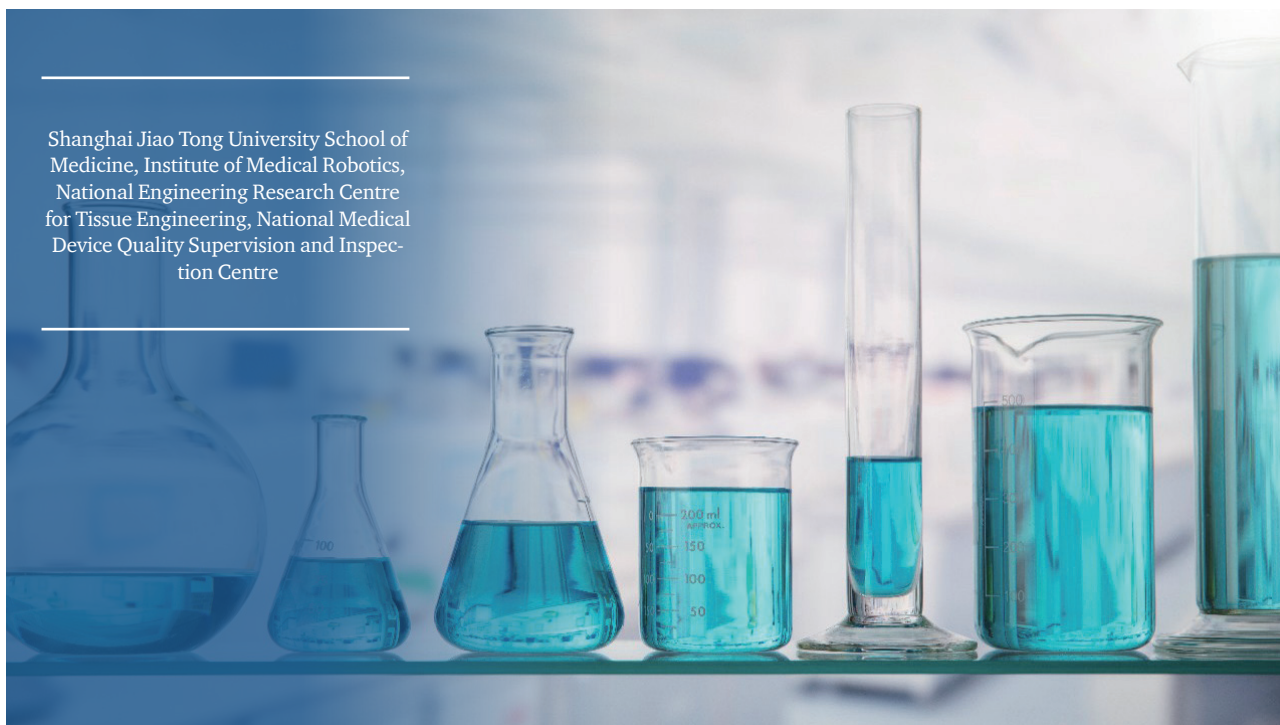
04 Biological Genes

BGI*, Sansure Gene Technology*, Shanghai Belief-Delivery BioMed Co., Ltd., Illumina

05 Smart Medical Service

VoxelCloud, WuXi Diagnostics*, Shanghai Shengmin Intelligent Medical Technology Development, Bioclub

Prominent innovation resources



Shanghai Jiao Tong University School of Medicine, Institute of Medical Robotics, National Engineering Research Centre for Tissue Engineering, National Medical Device Quality Supervision and Inspection Centre

* Unicorn Enterprise * Municipal Specialized and Sophisticated Enterprises * Special New Giant Science and Technology Enterprise



Artificial intelligence

In the first half of 2022



Artificial Intelligence enterprises in Minhang District generated an operating income of RMB 12.654 billion.



55 Artificial Intelligence enterprises.

Investment appeal

01

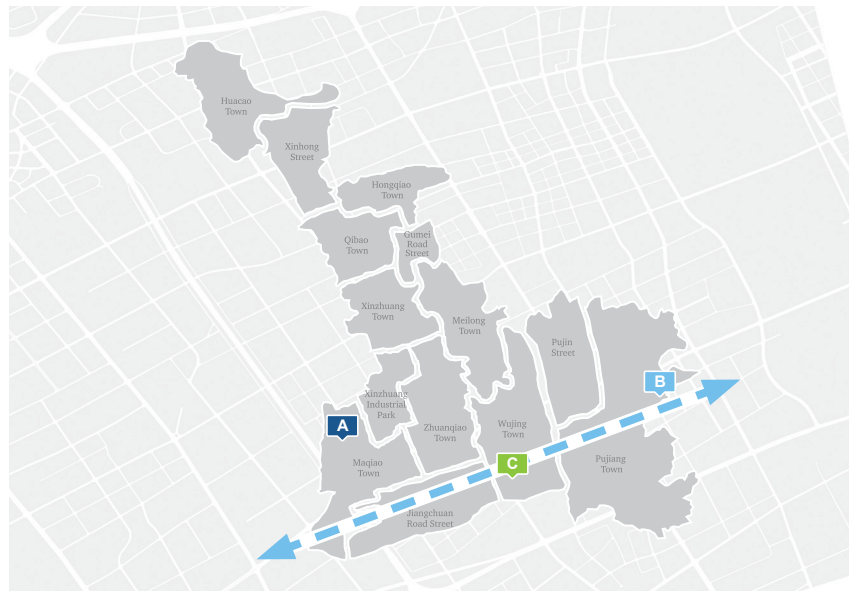
Joining innovation platform efforts for ecology establishment: Minhang District innovates R&D mechanisms for artificial intelligence, coordinates the strength from government, platform companies, universities and leading enterprises to co-build research institutes of characteristic industries, innovation centres, ecological empowerment centres and other diversified and innovative functional platforms, to provide industrial entities with innovation breeding and inclusive computing power, and promote artificial intelligence research innovation and ecological prosperity.

02

The integrated scenario of digital transformation: The integration of advanced manufacturing and modern services in Minhang District equipped with all key industrial elements provides a solid basis for artificial intelligence innovation and research, achievement transformation and technological application, which forms an application-oriented and technology-based industrial ecology and builds several replicable and applicable comprehensive scenario schemes on digital transformation.

Industry Base

- A** Shanghai Maqiao Artificial Intelligence Innovation Pilot Zone
- B** Zizhu Innovation and Entrepreneurship Corridor
- C** The Great “neoBay” Science and Technology Innovation Zone



Characteristic industrial clusters

Competitive industries

Intelligent Robots, Intelligent Transport, Intelligent Perception and New Hardware

Industries with potential

Smart Healthcare and Intelligent Identification



01

Basic Layer

Intel, Iluvatar CoreX*, TuringQ (chip); ChinaScope*, APEX Technologies*, Infosys (data processing); Shanghai Friendess Electronics Technology*, Shanghai Shengshi Weisheng Technology, Shanghai Freshera Information Technology, Robustel* (intelligent perception), Shanghai Weihong Electronic Technology*, Fluid (Shanghai) Transmission Technology Limited (IntelliSense)

02

Technical Layer

DeepSight* (industrial vision), ReadSense, Flexiv* (computer vision)

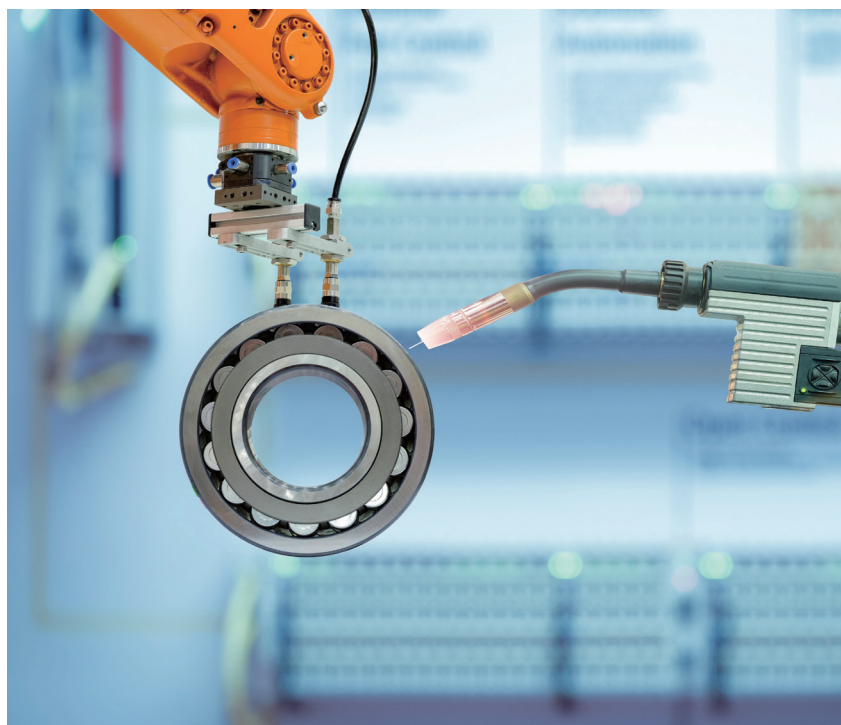
03

Application Layer

CloudMinds Robotics*, JAKA*, WhalesBot*, ENCOO*, Ti5robot, Gaussian Robotics, Hyundai Heavy Industries (intelligent robot); Windrose*, Human Horizons, Pegasus, Hisea Group, Objecteye (intelligent transport and traffic); Starhealth (smart medicine)

Prominent innovation resources

Shanghai Jiao Tong University School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University Centre for Cognitive Machines and Computational Health, Baiyulan Open AI, Shanghai Artificial Intelligence Research Institute, HRG Innovation Research Institute, Northwestern Polytechnical University Industrial Innovation Centre



* High-tech "Little Giant" Enterprise

* Shanghai Specialized and Sophisticated Enterprises

* Special New Giant Science and Technology Enterprise

2.3 Evolvement of future frontier industries in Minhang



Digital economy

Investment appeal

01 **Interconnected development of digitalisation and intelligence:** The government of Minhang District actively builds up platforms to connect the digital economy and the real economy, which strengthens the development driven by digital industrialisation and industrial digitisation, so to continuously amplify the radiation and driving effect of the digital economy, and boost the rapid development of the digital economy.

02 **Accelerated empowerment by five economy types:** Minhang District is motivated by the five new economy types, led by flux economy, service economy and open economy, to provide more convenient accesses, platforms, facilities and channels, to facilitate the aggregation of various high-end elements home and abroad, also enhance the attraction, operation, creation and allocation of the development factors of the digital economy.



Innovation carriers

- A** Hongqiao International Business District Global Data Trade Hub
- B** Zizhu National High-Tech Industrial Development Park
- C** Caohejing Hongqiao Science and Technology Oasis
- D** The Great “neoBay” Science and Technology Innovation Zone
- E** Shanghai Maqiao Artificial Intelligence Innovation Pilot Zone
- F** Xinzhuang Industrial Park Digital Industrial Zone

Featured development sectors

01 Digital Trade
 Focusing on digital trade headquarters and cross-border e-commerce, and has established a high-level digital trading platform. **Star enterprises:** Microsoft Azure, CDP Group, Glodon*, 360zebra

02 Digital Content
 Minhang District focuses on games, animation, online audio and visual, and digital reading, and has established the world’s leading digital content development ecosystem (from digital content industry channels to content sectors) featuring originality, mobility and diversification. **Star enterprises:** Ocean Engine (ByteDance), Shanghai Zendai Himalaya Network Technology Co., Ltd.*, TapTap, Shanghai Cootek Information Technology.

03 Digital Health
 Minhang District is committed to realising regional health information connectivity and mutual recognition and building up a platform for integrated storage and governance of regional health data. **Star enterprises:** Shanghai Lianfeng Shuzhi Medical Technology Development, 3D Medicines*, Image Medraw Technology (Shanghai), Epharmacloud

04 Digital R&D
 Minhang District focuses on cloud design, intelligent assembly, industrial data and digital technology R&D. Neusoft Group, Costar Group, ChinaScope*, ZStack*, Shanghai Ziguang Digital Technology.

* Unicorn Enterprise
 * Municipal Specialized and Sophisticated Enterprises
 * Special New Giant Science and Technology Enterprise



Green and low-carbon

Investment appeal

01

Excellent low carbon environment: The Global 500 make an active investment in Minhang District. Siemens, ABB, Johnson & Johnson and other leading industry players continue to explore implementation methods from design, intelligent management, energy saving and carbon reduction projects, new energy, carbon accounting, carbon finance, peak carbon dioxide emissions and carbon neutral planning, to enhance the green and low-carbon demonstration benefits and promote high-quality development of enterprises.

02

A new pattern of co-governance on the environment: Introducing the philosophy of “led by government and facilitated by development zone through platform building with the enterprise as the entity”, Minhang District Ecological Environment Bureau, Minhang Development Zone, Jiangchuan Road Community and enterprises in the development zone have jointly established the “Green Co-construction Alliance”, which has proactively started the “cloud services” on environmental protection to improve the business environment and promote the green transformation of enterprises.

Featured development sectors

01

Industrial Energy Saving

Minhang optimises the energy structure and deepens the construction of a green manufacturing system. Promote the application projects of regional solar photovoltaic power generation, distributed energy supply, industrial energy storage and so on. **Star enterprises:** Shanghai Electric, Huadian Energy, Lvliang New Energy

02

Smart Grid

With a continuous focus on the integration of the smart grid industrial chain, Minhang aims to become an important base for national new energy R&D and innovation, equipment manufacturing, headquarters gathering and demonstrative application. **Star enterprises:** Trina Solar, Sieyuan, EDT Power, Heraeus

03

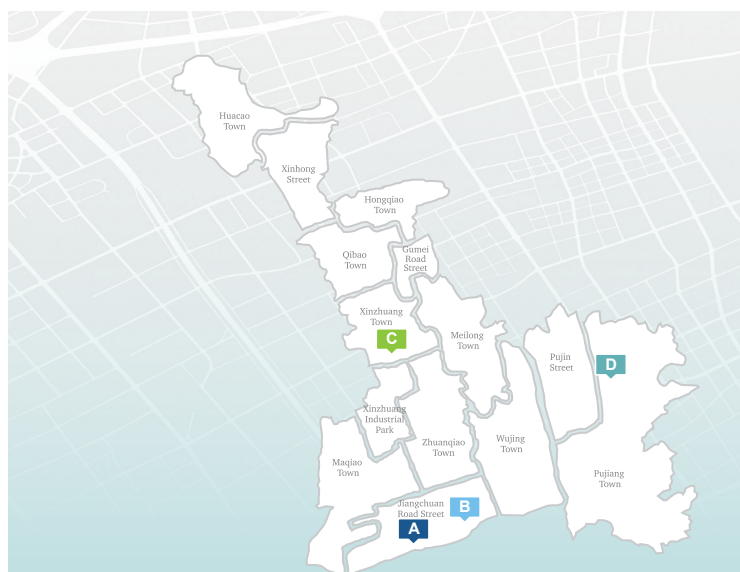
Environmental Protection Engineering and Equipment

Minhang promotes the environmental governance of industrial pollutants, prevention and control of hazardous wastes, soil restoration, as well as other environmental protection projects and the development of environmental protection technology and equipment. **Star enterprises:** Shanghai Conglin Environmental Protection Technology, China Construction Fourth Engineering Division, Shanghai Environmental Protection*, Shanghai Yugong Environmental Protection & Technology

04

Hydrogen Vehicle

Minhang aims to realise a reasonable layout of hydrogen fuel cell engine, hydrogen fuel cell stack and on-board hydrogen supply system, expediting the development of fuel cell vehicles. **Star enterprises:** Shanghai Sunlong Bus*, Breton*, CAR Inc., Aerospace Hydrogen Energy (Shanghai) Technology.



Innovation carriers

- A** Minhang Economic and Technological Development Zone
- B** Zizhu National High-Tech Industrial Development Park
- C** Xinzhuang Industrial Park
- D** Pujiang Low-Carbon Technology Industrial Park

Innovation breeding

Shanghai Jiao Tong University School of Environmental Science and Engineering, Shanghai Jiao Tong University School of Mechanical Engineering, Energy Research and Technology Center, Technical Product Promotion Center for Comprehensive Utilization of Construction Waste

- * High-tech “Little Giant” Enterprise
- * Municipal Specialized and Sophisticated Enterprises
- * Special New Giant Science and Technology Enterprise



Metaverse

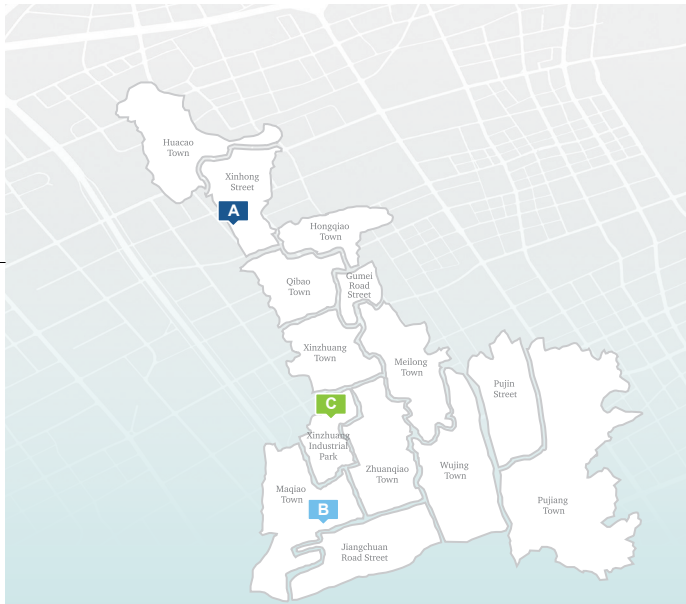
Investment appeal

01

A digital twin city with advanced layout: As the only national demonstration zone of city-industry integration in Shanghai, Minhang District vigorously promotes digital transformation, building sound application scenarios for the implementation of Metaverse-related technologies and platforms.

02

A pan-entertainment ecosystem with innovative integration: Minhang continuously extends its ecosystem radius by integrating its e-sports industry with technology, culture & creativities industries. The pan-entertainment industry centred on e-sports and content production is becoming an important carrier for Metaverse. In the past two years, there were over 80 e-sports-related enterprises registered and set up in Minhang District.



Innovation carriers

- A** Hongqiao International Business District Minhang Area
- B** Shanghai Maqiao Artificial Intelligence Innovation Pilot Zone
- C** Xinzhuang Industrial Park Digital Industrial Zone

Featured development sectors

01

Digital Twin

Minhang explores the application of digital twin technology in urban planning, transportation construction, intelligent manufacturing and modern trade.

Representative enterprises: Cosmo Plat*, Bright Map, 360humi, Jingteng Tech

02

Digital Interactive Entertainment

Super Gen, China Electronics Corporation, EcoPlants, Dianzhen Internet Technology (Shanghai) Co., Ltd.



* Special New Giant Science and Technology Enterprise



Intelligent terminal

Investment appeal

01

Intelligent industrial chain led by key & core technology: The aggregation of upstream and downstream of intelligent industrial chain led by key&core technology in Minhang District is taking shape. Maqiao Artificial Intelligence Innovation Pilot Zone alone has gathered over 20 intelligent robot enterprises and over 10 new intelligent hardware enterprises.

02

Application scenarios of diversified intelligent terminals: Minhang District establishes the service mechanism of regional overall planning and block-town coordination to provide flexible carrier and space for rapidly growing intelligent terminal enterprises and develop application pilots covering various scenarios such as transportation, digital home and intelligent elderly care.

Featured development sectors

01

New Intelligent Hardware

Minhang attaches importance to developing new intelligent industrial sensors, intelligent consumption sensors and intelligent chips, aiming to build a national-level new intelligent hardware industry base.

Representative enterprises: Unisplendour Chip (Shanghai) Technology, Biren Technology*, Inventec, Orientech, M SQUARE, Enflame

02

Intelligent Factory

Minhang advocates intelligent manufacturing diagnostic services of “one enterprise, one policy” to create an exemplary intelligent factory.

Representative enterprises: Brightdairy, Shanghai Aerospace Equipments Manufacturer, AECC Shanghai Commercial Aircraft Engine Manufacturing, CIG*, Shanghai Electric, SBT Ultrasonic Technology*



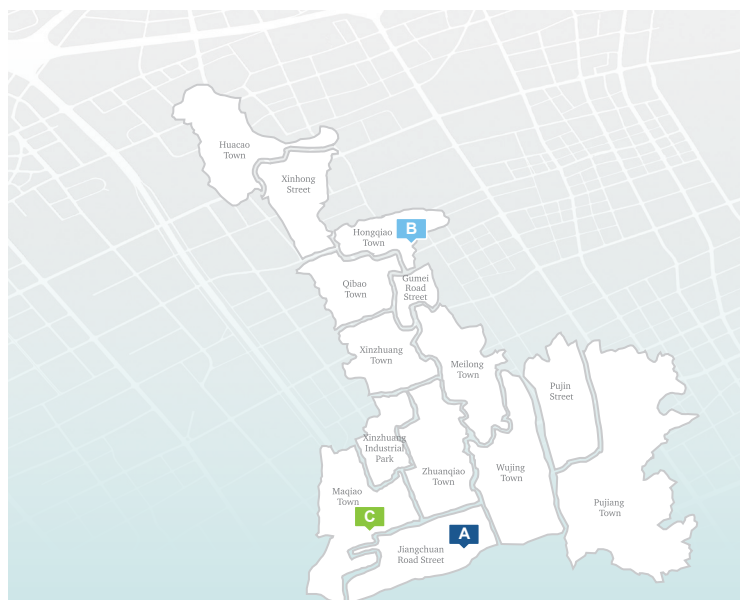
Innovation breeding

Shanghai Jiao Tong University Institute of Automotive Engineering, Shanghai Southwest Engineering School

* Unicorn Enterprise

* Municipal Specialized and Sophisticated Enterprises

* Special New Giant Science and Technology Enterprise

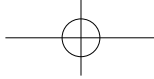


Innovation carriers

A The Great “neoBay” Science and Technology Innovation Zone

B Caohejing Hi-Tech Park Minhang District

C Shanghai Maqiao Artificial Intelligence Innovation Pilot Zone



People's Government of Minhang District, Shanghai

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🌐 Website: <http://www.shmh.gov.cn/>

☎ Tel: 021-24030000

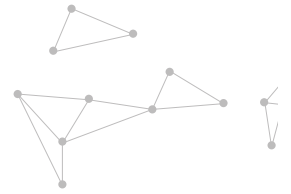
Business Promotion Center of Minhang, Shanghai

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Today's Minhang



Invest Minhang



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