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British Embassy Beijing

Insights

Special Feature - Spring 2022

Sustainable Cities special feature

Targeted Support for the Adoption of International Standards in China

Making inclusive, safer, resilient & sustainable cities

The British Standards Institution (BSI) managed the implementation of the standards component of the 'UK-China Business Environment Programme', followed by 'Targeted Support for the Adoption of International Standards in China'. As part of these projects, four sites were selected as pilots for the ISO 37101 Sustainable development in communities standard:

1. China-Singapore Tianjin Eco City (CSTEC)
2. Qujiang District
3. Guangzhou Huangpu Development Zone
4. Guangzhou Higher Education Mega Center (HEMC).

Pilot update as of Apr 2022

In all pilots, capacity development events were held with the implementation teams from each city, along with UK experts from different communities running similar implementations. At the pilot launch event in December 2020, all four pilot sites introduced their cities at a workshop in Beijing. In March 2021, a series of four workshops were held online with each of the cities. During these events, each participating city provided a status update and more information related to the scope of their pilot project. In May 2021, all project teams were invited to Guangzhou Higher Education Mega City (HEMC) for an on-site visit and workshop where all cities reported on their progress. In October 2021, a similar event was held in Tianjin Eco City,

but this time due to travel restrictions no site visit took place; instead a worldwide webinar on sharing experiences in using the draft ISO 37111 Sustainable cities and communities as a phased implementation approach applicable to small cities was held. To date, 7 events have been held and due to the wider interest of both the Guangzhou HEMC and the Tianjin Eco City events, large online audiences were reached. In March 2022, a series of four workshops were held online with each of the cities. During these events, each participating city provided a status update and more information related to the scope of their pilot project.

Sustainable Development Goal (SDG) 11

In 2015, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development, a plan to promote peace and sustainable growth worldwide. One of the 17 SDGs within the plan is SDG 11.

SDG 11 is about making "cities and human settlements inclusive, safe, resilient, and sustainable." SDG 11 states cities should ensure access to safe and affordable housing, public transportation and public green spaces. It also states that cities should be resilient to natural disasters and protect those in vulnerable situations while also minimising economic loss.

The challenges cities face can be overcome in ways that allow them to continue to thrive and grow, while improving resource use and reducing pollution and poverty. The vision of the future includes cities of opportunities for all, with access to basic services, energy, housing, transportation and more.

The UN has defined 10 targets and 15 indicators for SDG 11. The sustainable cities project in China tracks that these targets and indicators are achieved.

Project stakeholders

- China National Institute of Standardization (CNIS)
- Central Committee for Discipline and Inspection (CCDI)

Targets

The programme aims to put in place a management system standard providing a framework to manage the sustainable development of a community based on an agreed set of sustainability indicators. This would include:

- Provide a systematic approach to the management of sustainability of the city
- Improve the quality of the management of the community
- Increase economic development
- Reduce our environmental impact
- Advance social governance
- Deliver the required public infrastructure
- Improve access to public services

Progress in the adoption and use of International Standards

Identify
Identified the need for adopting ISO 37101:2016 for sustainable development in communities

Steering Group
Jan 2020 project steering group set up between BSI & CNIS experts to identify potential pilot organizations

Objectives
Feb - Dec 2020 each city set themselves objectives in the form of sustainability criteria

Collaboration
Dec 2020 - May 2021, four pilots launched in Tianjin, Qujiang and Guangzhou, plus cultural awareness training

Implementation
May 2021 - March 2022 technical roundtables and international conference on sustainability issues

Accomplishment
Dissemination of results of pilot cities in China

Pilot city progress

China-Singapore Tianjin Eco City (CSTEC)

> “The implementation team built on the Plan-Do-Check-Act (PDCA) system to achieve sustainable development through a Target – Realise – Evaluate – Enhance (eco-TREE) approach which is now shared widely with other potential sustainable cities in China.”
>
> **Ms. Bai Zhiyang**, Director – Tianjin Eco City Bureau of Legal Affairs, General Division

Standards piloted

All standards developed by ISO/TC 268

Key numbers

- 30km^2 pilot & 150km^2 extended area
- 70k local residents
- 8,300 enterprises

Background

CSTEC was jointly developed by the governments of China and Singapore. Located 150 km from Beijing and 45 km from downtown Tianjin, it is a relatively independent, typical small/medium sized Chinese city and is the only National Green Development Demonstrative Area of China's State Council. Up to now, CSTEC has piloted eight International Standards developed by ISO/TC268, and already has a well established mode for annual reporting. A KPI system continually guides all of the city's integrated planning and all indicator systems are in line with both the concept of green, circular and low-carbon development, and a compact, smart, green and low-carbon path of urbanisation. These indicators respond to the requirement of the six purposes and 12 issues of ISO 37101 sustainable development in communities and comply with ISO 37120 family. CSTEC has also established a system for the pilot city, including 63 sustainability-related indicators.

Accomplishments

The pilot project in Tianjin Eco City has rapidly improved the quality of the local economy by establishing an industrial system dominated by intelligent technology, cultural tourism and healthcare, backed up by green finance, education and training. The project aligns closely with SDG 11 of the UN Sustainable Development Goals (SDGs), making cities inclusive, safe, resilient, and sustainable. In addition, the project aligns with ten of the other SDGs, including SDG4 (Quality Education), SDG 6 (Clean Water & Sanitation) and SDG 13 (Climate Action).

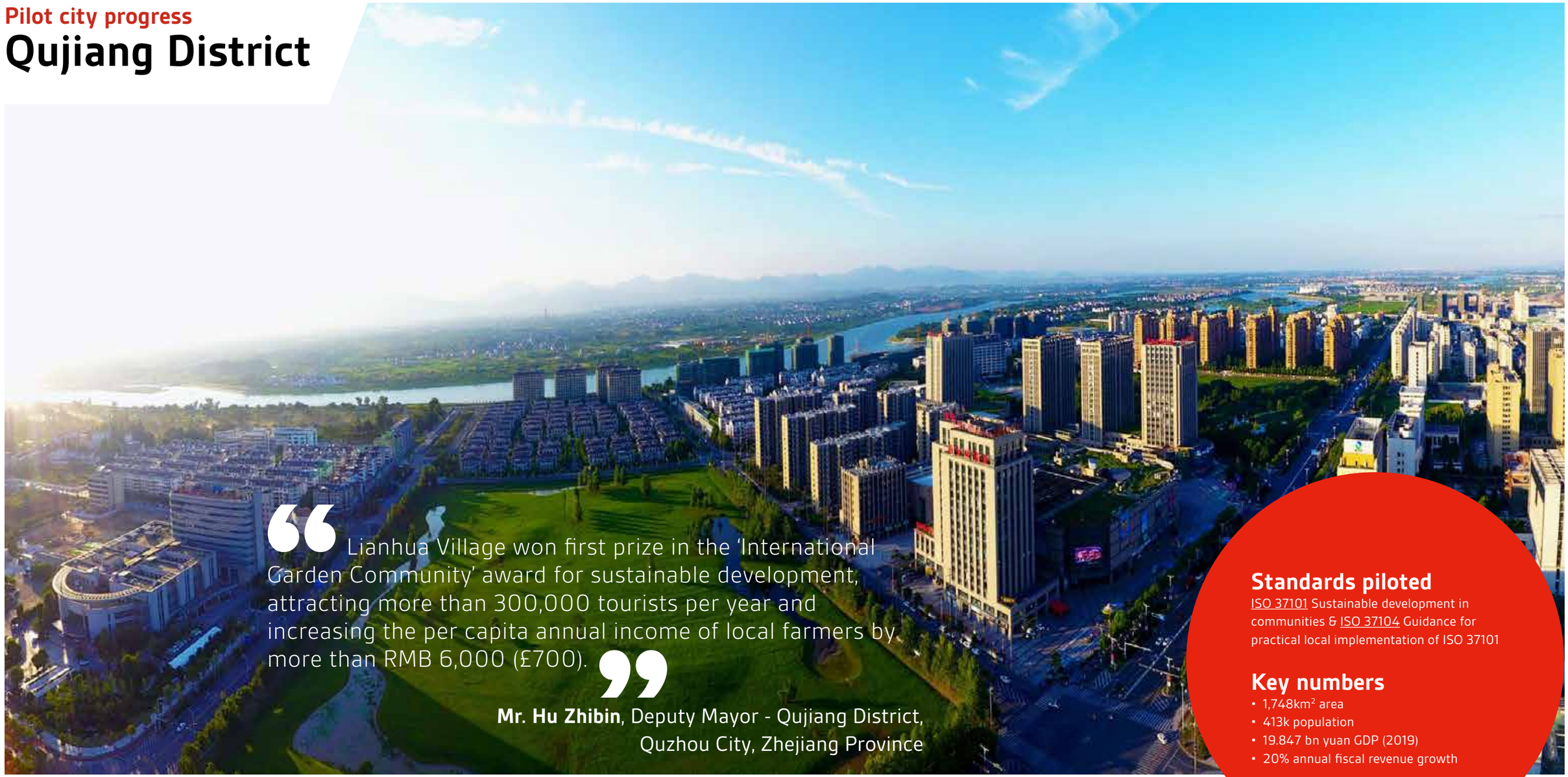
During the course of the project the city recorded multiple achievements, including smart green urban construction, environmental protection and green culture. The coastal tourism industry has regained its vitality thanks to the national tourism demonstration zone while the first dedicated tourism destinations festival attracted over six million visitors.

The smart monitoring platform “waste free city” was officially put into use and demonstrated to attendees at the ‘World Artificial Intelligence’ conference. More than 20 million square meters of green buildings have been built to promote resource conservation and efficient recycling, and the first practical zero-energy consumption smart building was built in Tianjin. Tianjin Eco city continues to promote wastewater treatment and soil restoration.

The pilot project has not only allowed Tianjin Eco City to effectively test a series of sustainable development standards for cities and communities in China namely ISO 37101, ISO 37104 (guidelines for implementation of ISO 37101) and ISO 37111 (Guidelines for flexible implementation of ISO 37101), but also provided opportunities to actively participate in the development of both international and national standards.

Pilot city progress

Qujiang District



> “Lianhua Village won first prize in the ‘International Garden Community’ award for sustainable development, attracting more than 300,000 tourists per year and increasing the per capita annual income of local farmers by more than RMB 6,000 (£700).”
>
> **Mr. Hu Zhibin**, Deputy Mayor - Qujiang District, Quzhou City, Zhejiang Province

Standards piloted

ISO 37101 Sustainable development in communities & ISO 37104 Guidance for practical local implementation of ISO 37101

Key numbers

- 1,748km^2 area
- 413k population
- 19.847 bn yuan GDP (2019)
- 20% annual fiscal revenue growth

Background

Qujiang is a citizen-centric, environmentally friendly and resource-saving city located at the junction of four provinces, Zhejiang, Fujian, Jiangxi, and Anhui. It is also an important node connecting the Yangtze River Delta, the Pan-Pearl River Delta and the Haixi Economic Zone, and by high-speed rail is just one hour from Hangzhou and two hours from Shanghai. The superior location of Qujiang ensures convenient transport and economic conditions.

Accomplishments

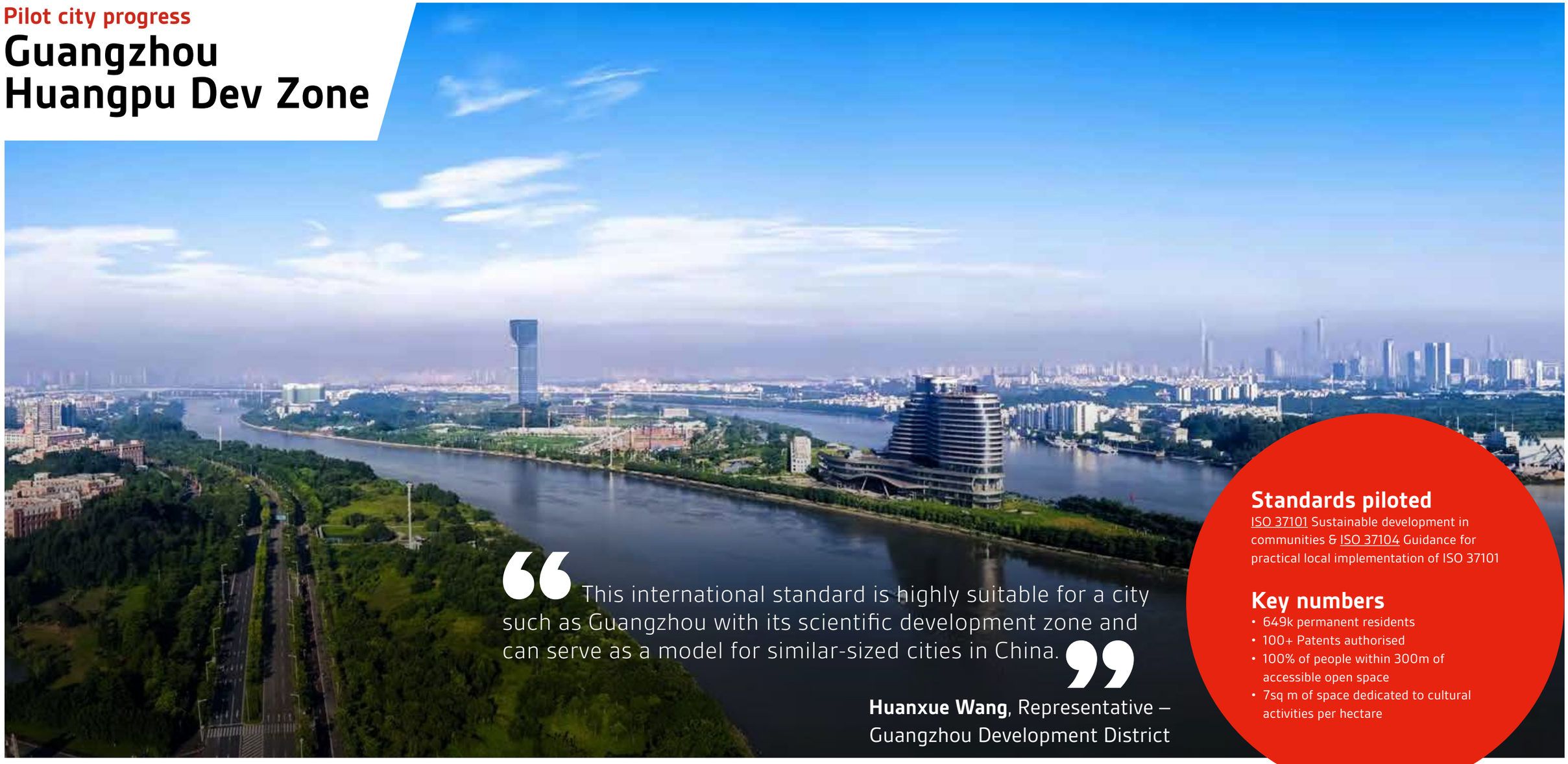
The pilot project in Qujiang District used the framework provided by ISO 37101 along with indicators relevant to a small, rural community tailored by the implementation team and their stakeholders to set their own goals. The management system in ISO 37101 provides a systematic way to not only set these goals but to contiguously track and manage progress towards attaining them and has led to policies such as the Future Village Communities concept, sustainable agricultural development, business environment and government digitization. The Future Village Communities project centred around Lianhua village including the Lianhua platform on the cloud, shared dining halls, incluvillage meeting rooms, fitness stations and farming gardens.

The pilot project in Qujiang district has also promoted the digital transformation of the economy and society as well as promoting green and low carbon.

During the course of the project the district explored standardization in healthcare models through big data, disease treatment, rehabilitation medicine and aged care services.

Pilot city progress

Guangzhou Huangpu Dev Zone



> This international standard is highly suitable for a city such as Guangzhou with its scientific development zone and can serve as a model for similar-sized cities in China.
>
> **Huanxue Wang**, Representative – Guangzhou Development District

Standards piloted

ISO 37101 Sustainable development in communities & ISO 37104 Guidance for practical local implementation of ISO 37101

Key numbers

- 649k permanent residents
- 100+ Patents authorised
- 100% of people within 300m of accessible open space
- 7sq m of space dedicated to cultural activities per hectare

Background

Guangzhou Development District (GDD) was established in 1984 with the approval of the State Council. It is one of the first 14 state level development districts in China and was rated 2nd among the top ten industrial parks for investment attractiveness in 2020. It is deeply integrated with Huangpu District in terms of functional areas and administrative regions. In July 2020, it was designated a pilot city for International Standards in sustainable development of small and medium sized cities. The bio-island science and technology innovation business district includes over 500 biomedical enterprises in an area of 18,300 km^2.

Accomplishments

The pilot project in GDD used the framework provided by ISO 37101 and the implementation guidance provided by ISO 37104 as well as the draft international standards ISO 37108 (which includes guidance for indicators for business districts), to identify indicators and set targets for a sustainable business district that balances the needs of the community while at the same time being attractive to investment and business activity.

The management system provided in the standard provided a framework to manage progress towards attaining these goals and has led to an improvement of the business environment in two ways:

The first is through business environment reform comprising 168 reform measures including infrastructure, innovation, public management, service to enterprises to apply for electricity, water, gas heating and internet installations, a cross-border business registration platform to expand the scope of services to Singapore and a pilot patent agency project.

The second major benefit has been the construction of a bio-island as a science and technology innovation area. The biological island within the Guangzhou Development Zone is established as a development area for biological and scientific development.

Pilot city progress

Guangzhou Higher Education Mega Center (HEMC)

> The regional centralised cooling system alone can save 24,000 tons of coal, 60,000 tons of carbon dioxide and 480 tons of sulphur dioxide every year.

Shenglin Xiang, Representative - HEMC

Standards piloted

ISO 37101 Sustainable development in communities & ISO 37104 Guidance for practical local implementation of ISO 37101

Key numbers

- 18 km^2 area
- 10 universities in 5 clusters
- 150k students

Background

HEMC, located on Xiaoguwei Island in southeast Guangzhou, boasts ten universities in five clusters. According to the overall plan, HEMC will become a centre for nurturing senior talent, as well as scientific research exchange in South China. It also aims to develop into a modern, ecological, first-class Chinese university zone of the 21st century, rich in cultural atmosphere and unique characteristics. A model for construction of new areas in Guangzhou, HEMC incorporates a distributed energy system, a comprehensive piping system and a comprehensive information integration system. A "smart all-in-one card system", the University City Museum and an energy conservation system have also been incorporated into the construction. Through an optimised project structure, the cost of construction has been effectively reduced.

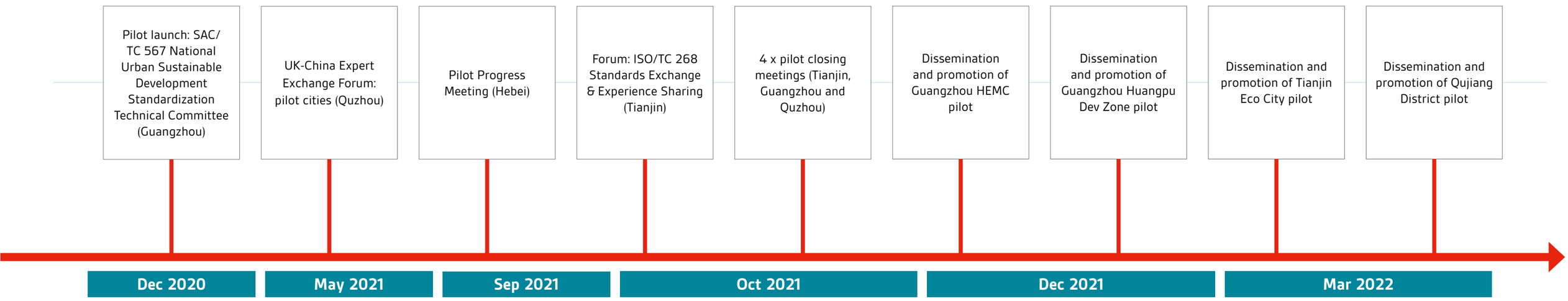
Accomplishments

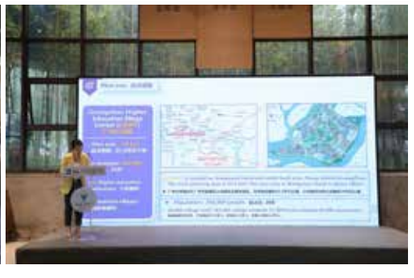
Through this pilot project, Guangzhou HEMC has established a set of indicators for sustainability unique to the needs of the community and its stakeholders which balance the needs of the institutions, the residents and the students. It has used the management system in ISO 37101 to systematically manage to achieve these goals and continuously improve the sustainability of the community. During the pilot project implementation, the team also worked on refining recommendations on a staged approach to implementation of ISO 37101 and their experiences are being shared with the drafting group responsible for developing an international guideline document which is currently at the working draft stage (ISO 37111 - Sustainable Cities and Communities - Small and Medium-Sized Cities - Guidance for Practical Implementation of ISO 37101).

As a university town in China, Guangzhou HEMC has established a city-level energy system at the beginning of the planning and construction period, including regional central cooling and urban central heating water systems, underground utility tunnels and water supply systems. Other environmental benefits in Guangzhou HEMC include the construction of a water ecology demonstration area and upgrading of the local landscape including construction of over 25 km of a greenbelt ecological corridor.

In terms of innovation, Guangzhou HEMC aims to become a demonstration area for the integrated development of science, industry and education in the Guangdong-Hong Kong-Macao Greater Bay Area. And has used the experience gained during this implementation to provide examples of indicators of sustainability applicable to university towns and science parks to the indicator database included in the ISO Standards. To date, Guangzhou HEMC has attracted a total investment of around 5.65 billion yuan or £680 million.

Progress in the Sustainable Cities sector from 2020 to 2022





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