

KNOWLEDGE EXCHANGE
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Bridging Bicycle Kingdoms: Dutch-Sino Collaboration in China's Cycling Resurgence



A cycle lane runs alongside a busy road in Beijing, where cycling is being reintegrated into the wider transport network.
Image: Chris Bruntlett

China's recent cycling resurgence represents one of the most significant urban mobility transformations of the 21st century. While domestic policy reforms, technological innovation and renewed political commitment have driven this revival, international collaboration has also played an important role. Among the most influential partnerships has been the long-standing exchange between Chinese and Dutch practitioners. Both countries were once bicycle kingdoms before the automobile reshaped their cities. Dutch experience has since helped inform China's cycling resurgence, with Chinese cities adapting those ideas to local conditions.

Beijing's Bicycle Comeback

Few cities illustrate the cyclical nature of urban transport better than Beijing. During the 1980s and 1990s, the city was internationally recognised as the "Bicycle Kingdom", with over 60% of daily trips undertaken by bike. Rapid motorisation, economic growth and road expansion subsequently reversed this trajectory. By 2012, cycling's mode share had fallen to just 12%, a direct outcome of its car-first policy. Traffic congestion, pollution and declining public space became defining features of the capital.

A turning point arrived in 2015 with the Asian Development Bank-commissioned policy document entitled "Beijing Bicycle Strategy and Policy: The Way Back to World Bicycle Capital". Developed jointly by two Dutch consultancies and Chinese partners, it reframed cycling as an essential component of a modern transport system rather than a legacy of the past. What it established was that cycling cities are not achieved through infrastructure alone—instead, cities that consistently increase their cycling rates combine high-quality hardware (physical infrastructure), software (policies and standards), and orgware (governance, institutions and implementation). Progress depends on these three elements reinforcing one another.

Within that framework, the strategy proposed applying the five CROW design principles—for ensuring the door-to-door experience is coherent, direct, safe, comfortable and attractive—to create cohesive networks, instead of isolated facilities.[1] Furthermore, it recommended safer intersections, stronger bicycle–public transport integration, cycling-priority streets, traffic-calming and -circulation measures, and embracing the extended range of the e-bike.

Local Adaptation Rather Than Replication

These recommendations quickly aligned with wider policy reforms. Beijing's Urban Master Plan (2016-2035) explicitly prioritised walking, cycling and public transport above private cars. In 2020, the city introduced an extensive package of policies, design standards and monitoring schemes that embedded cycling into the planning process. Since then, Beijing's network has exploded to 3,200 km, with protected bike lanes accompanying major roads, quieter streets becoming cycling-priority corridors, and intersections redesigned to improve safety. Bike infrastructure is connected with metro and bus stations, making it an integral part of Beijing's wider transport system.

However, Chinese cities did not simply copy-and-paste Dutch solutions. Instead, they selectively adapted ideas to local conditions. Tongzhou's flagship cycling corridor illustrates this process. When the master plan for this brand-new district on the eastern edge of Beijing was being developed, the directive from the mayor—who had just returned from an official visit to The Hague—was crystal clear: it must put cycling front and centre. At its spine would be a 3 km corridor connecting its commercial and residential hubs.

To fulfil his vision of a world-class sustainable infrastructure project, they went to the Dutch Cycling Embassy, where engineers at Haskoning were selected for their extensive experience with regional *doorfiets* (non-stop cycling) routes, to partner with a locally based consultant. Opened in May 2025, the route was designed using best practice and principles straight out of the CROW Manual. Key features included a five-metre width for safety, railway underpasses for directness, shade trees for comfort, and a bespoke light fixture for attractiveness.

Similarly, the new Shahe Metro Station (SMS) bicycle parking draws inspiration from the Netherlands while incorporating Chinese operational requirements. Located



Designed with Dutch cycling principles in mind, Tongzhou's cycle highway provides a direct, tree-lined route through the new district.
Image: Chris Bruntlett



Bike sharing has made cycling easier to access in Beijing, particularly for trips to and from public transport.
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in Beijing's Changping District, the multi-storey facility—the first of its kind in China—provides a seamless connection to public transport for 8,000 bikes and e-bikes. During design, project leaders undertook an extensive review of international best practices for bike parking and transit-oriented development. At its heart was Utrecht Central Station (UCS), home to the world's largest bike parking and widely regarded as the global benchmark for bike-train integration.

Dutch examples were referenced, particularly in areas such as management, operation and user behaviour. The UCS was studied as a leading example of how large-scale cycling infrastructure supports public transport while maintaining a high-quality user experience. Officials noted striking similarities between UCS and SMS—the former serving a regional population of about 370,000 people, while the latter is home to 300,000 residents, across a combination of university campuses, technology parks, and dense residential neighbourhoods around a major transit hub.

The SMS facility adopts many principles that made UCS famous: direct connections, intuitive wayfinding, high-capacity parking, integrated services and digital management systems. Planners specifically highlighted the ability to manage flow with precision through smart monitoring and operation. By adapting Dutch lessons to Chinese conditions, SMS has combined bikes and trains into a seamless door-to-door mobility option. If it succeeds as a replicable national model as intended, UCS' influence will ultimately be measured not just in Europe, but across hundreds of rapidly growing Chinese cities.



A bicycle-priority sign marks a street where cyclists take precedence over cars.
Image: Chris Bruntlett

Dutch Influence Beyond Infrastructure

One of the most transformative ideas of Beijing's cycling renaissance, however, wasn't imported through a formal workshop or study visit. It came through a blog. After discovering Mark Wagenbuur's BicycleDutch, a popular blog about cycling in the Netherlands, a Tsinghua University professor became a passionate advocate for the *fietsstraat*: a street where cyclists are the main users and cars are guests.

Today, that idea has spread across the city at an astonishing rate. Hundreds of kilometres of cycling-priority streets now form the backbone of the city's bike network—creating safe, comfortable routes through neighbourhoods, commercial districts, and around metro stations. This is a remarkable example of informal policy transfer: a Dutch idea, shared online, embraced by a local champion, and transformed into citywide change for millions.

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Transformative Role of Bike Sharing

The most notable difference between the Dutch and Chinese cycling stories lies in bicycle ownership. Dutch cycling remains overwhelmingly based on privately-owned bicycles, while Beijing instead pioneered the global expansion of dockless bicycle sharing.

By removing barriers associated with ownership, maintenance and storage, shared bicycles have dramatically lowered the threshold for cycling. Today approximately one million shared bikes support around one billion annual trips in Beijing, with the majority functioning as first- and last-mile links to public transport. This innovation fundamentally changed assumptions about how a cycling city can function.

By rethinking the bike itself, not as a product to own but as a service to access, Chinese cities point towards urban cycling's next evolution: where riding a bike is not just safe and convenient, but where having one of your own is no longer a pre-requisite for enjoying the many benefits it has to offer.

Scaling the National Bicycle Revival

Long regarded as China's policy laboratory, Beijing's leadership and experience now serve as a reference for other Chinese cities.

Guangzhou has rapidly expanded protected infrastructure and re-allocated road space from private vehicles. More than 500 intersections have been planned for safety upgrades, while dedicated non-motorised lanes now span nearly 2,966 km across the city. The city has also invested heavily in expanding its greenway network, with plans to grow the network to 6,000 km as part of broader efforts to support active mobility.

Similarly, Shenzhen has taken an ambitious approach, linking its cycling infrastructure with wider urban and recreational networks, building on a greenway system that now spans more than 3,400 km. Chengdu's Tianfu Greenway demonstrates how ecological planning and everyday mobility can reinforce one another: its 109 km loop forms a three-tiered, spoke-and-hub network that will ultimately span around 17,000 km, while its metropolitan Park City—featuring green and active mobility infrastructure—acts as the primary support framework.

Although each city is defined by distinct geographic, institutional and political circumstances, they share an emerging philosophy that views cycling as an essential component of liveable, inclusive and sustainable development, rather than a residual transport mode.

The Benefits of Reciprocal Learning Between Countries

The relationship between the Netherlands and China has evolved considerably over the past decade. While Dutch expertise has contributed valuable planning frameworks, institutional approaches and design principles during a critical period of policy change, China has also become a laboratory for innovations, operating at scales rarely seen elsewhere.

Dockless bike sharing, app-based mobility platforms, integrated digital management and multimodal bicycle ecosystems have demonstrated possibilities many Dutch cities are only beginning to explore. Even as the Netherlands continues to lead in infrastructure and culture, China has shown that shared mobility can dramatically reduce the need for private bicycle ownership while enhancing access to and utilisation of scarce urban space.

Furthermore, China's rapid adoption of the e-bike—with a national fleet exceeding 350 million—offers valuable lessons in regulating and designing for light electric mobility. As Dutch cities grapple with the growing prevalence of e-bikes and fatbikes, this shared policy challenge presents a promising avenue for comparative research and bilateral knowledge exchange. Instead of a one-way transfer of expertise, future collaboration could offer opportunities for both countries to co-develop evidence-based approaches to infrastructure design, vehicle regulation and the safe integration of emerging micromobility technologies.



Bicycle parking at Shahe Metro Station connects cycling with public transport, adapting lessons from Dutch bike–train facilities to Beijing's needs.
Image: Chris Bruntlett

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The Limits of Direct Knowledge Transfer

The limits of direct knowledge transfer became particularly apparent when Dutch principles encountered China's very different urban scale, density, and mobility patterns. The Netherlands' emphasis on relatively fine-grained cycling networks, cycling-priority streets and integration with public transportation provided a useful starting point, but these ideas often required substantial adaptation to accommodate much larger travel volumes, higher-density development, and the widespread use of shared bikes and e-bikes.

At SMS, Dutch-style bike–train integration was not simply reproduced: principles of directness, wayfinding and high-capacity parking were combined with smart monitoring and digital management suited to Chinese operational conditions. Likewise, Tongzhou proved Dutch design principles could guide the project, but needed to be translated into a new-build district with different spatial dimensions and expectations.

The lesson, therefore, was not to reproduce Dutch infrastructure literally, but to understand the principles behind it and reinterpret them in ways that respond to local needs, institutions, and patterns of travel.

No Longer a Simple Export

The revival of cycling in China should not be understood as the simple export of a Dutch model. Rather, it reflects an evolving partnership in which international experience has been successfully translated through many factors—including strong political leadership and governance, local champions who can drive change, sufficient institutional capacity to translate knowledge into action, a willingness to adapt proven approaches to local contexts, and integrating cycling within the wider transport system and mobility strategy.

Critically, the knowledge flow is no longer one way. As Chinese cities continue refining shared-bike systems, digital mobility services and seamless public transport integration, they offer lessons that are increasingly relevant for Europe. Dutch cities—despite their world-leading cycling rates—face growing challenges around parking, ownership saturation, growing e-bike usage and station capacity. Adapting elements of China's model could help address these pressures while complementing, rather than replacing, existing culture.

The future of sustainable mobility therefore lies not in one country copying from another, but in continued collaboration between two bicycle kingdoms that now have much to teach each other.

[1] Published by non-profit agency CROW in the Netherlands, the CROW Design Manual for Bicycle Traffic is the most influential bicycle transportation planning guide—outlining strategies and best practices for assessing, implementing and managing bicycle infrastructure.