

Micro-Intervention as a New Approach for Urban Regeneration in Metropolises: A Case Study in Beijing

Dongdong Chen

Affiliation: Beijing Municipal Institute of City Planning and Design
Email: camchen-bicp@foxmail.com

Abstract

This study examines urban regeneration in Beijing through the lens of micro-intervention strategies, in alignment with the city's 2016-2035 Master Plan. As Beijing confronts challenges of its vast population and rapid urban growth, it has adopted a sustainable development model characterised by a growth cap and a strategic emphasis on minimalistic interventions. This paper examines three exemplary cases—No. 17 Guangminglou Residence, Wangjing Walk Business District, and Langyuan Vintage Factory—to illustrate how Beijing manages growth constraints while enhancing the quality of urban life. The micro-intervention projects are analysed to demonstrate their role in promoting cultural vitality and maintaining architectural integrity without the extensive construction typically associated with urban redevelopment. This research draws upon a longitudinal collaboration with the Beijing municipal government, incorporating insights from over 200 case studies since 2021. It reflects on the adaptability and effectiveness of Beijing's urban strategies. The findings suggest that Beijing's approach could serve as a model for sustainable urban transformation that other global cities facing similar developmental pressures might consider. This investigation offers a comprehensive insight into the potential of targeted, small-scale interventions to drive significant enhancements in urban sustainability and liveability.

Keywords

Urban regeneration, micro-intervention, sustainable development, Beijing urban planning

Introduction

Since the 1950s, the phenomenon of rapid urban expansion has prompted discussions on the effective management of urban development boundaries and the utilisation of city resources in a more efficient manner. The concepts of "smart growth" and "post-growth" have emerged as a means of achieving a balance between economic development and sustainable outcomes (Hess, 2010; Jackson, 2011). One method for reutilising urban resources is redevelopment, which has evolved from mere physical space reconstruction and beautification to focusing on sustained improvements to social environments and regeneration (Wu, Xu and Gar-On Yeh, 2007; Roberts, 2000). In the present era, this approach has become the dominant strategy employed by numerous cities in their pursuit of improvement and adaptive reuse.

Furthermore, China has increasingly prioritised sustainable development over purely economic gains since 2020. For instance, President Xi Jinping asserted that the ecological environment itself is the economy, thereby underscoring a shift towards environmental consideration in economic planning (Xinhua, 2020). The Ministry of Natural Resources has integrated urban development boundaries into national spatial planning, thereby providing guidance for this new direction (Government of China, 2019). The 2017 master plan for Beijing establishes a framework for the city's future growth, incorporating measures such as industrial permits, prohibited lists, and differentiated urban density controls (Beijing Municipal Bureau of Natural Resources and Planning, 2017). A notable aspect of this plan is the adoption of "micro-intervention" regeneration strategies, which replace large-scale demolitions with small-scale, gradual improvements. The approach to micro-intervention regeneration has already generated

a number of practices, which have in turn shaped a distinct model for the city's urban regeneration.

This paper examines three specific case studies that have been implemented under Beijing's micro-intervention strategy. The case studies include No. 17 Guangminglou Residence, Wangjing Walk Business District, and Langyuan Vintage Factory. This paper examines the operational principles of these initiatives, summarising their distinctive models and interpreting how such urban regeneration contributes to the sustainable development of metropolises. The following sections of this article are structured as follows: the next section reviews global literature on urban regeneration, followed by a methodology section. The fourth through sixth sections provide detailed accounts of each case study, while the final section discusses the significance of micro-intervention strategies for sustainable development.

Urban Regeneration: Global Perspectives and China's Strategic Approaches

In the mid-20th century, cities across the globe were confronted with the challenges posed by uncontrolled urban expansion. In response, various nations adopted sophisticated urban management policies with the objective of addressing inefficient land use, excessive dependence on automobiles, and environmental degradation. In the United States, the adoption of the "smart growth" philosophy facilitated the implementation of strategies such as "Urban Growth Boundaries" and "Transit-Oriented Developments" to effectively manage urban sprawl (Daniels, 2001). Similarly, the United Kingdom's "Green Belt" policy was instrumental in curtailing the unplanned expansion of urban areas (Hall, 2002). Japan concentrated on enhancing its public transportation systems to reduce reliance on personal vehicles (Hayashi et al., 2004). Singapore maintained urban order and efficient land utilisation through intensive spatial planning and stringent land development policies (Kempton et al., 2022). These initiatives were of great significance in controlling urban expansion, enhancing environmental protection, and promoting sustainable development.

As the 21st century commenced, particularly in the aftermath of the 2008 global financial crisis, there was a paradigm shift from a sole focus on GDP growth to an acknowledgement of the importance of ecological sustainability, social equity, and quality of life (Harris, 2010; Schneider et al., 2010). This shift gave rise to the "post-growth" theory, which advocates for economic activities to be harmonised with ecological capacities and societal well-being (Fritz and Koch, 2014; Kadekodi, 1992). Cities such as Amsterdam have implemented this theory by supporting circular economies and enhancing public transportation systems, thereby reducing reliance on conventional growth models (Flint and Danner, 2001).

In China, the rapid urbanisation that occurred between the late 20th and early 21st centuries initially prioritised economic growth and speed. However, as environmental concerns and resource pressures mounted, the Chinese government, during the second decade of the 21st century, redirected its urban planning strategies towards prioritising ecological protection and sustainable development. This strategic pivot involved the integration of the "Three Land Management Red Lines" into national spatial planning, which effectively balanced urban and rural growth (Liu et al., 2019). These red lines included ecological protection redlines, permanent basic farmland, and urban development boundaries. In response to the challenges posed by urbanisation, major cities such as Beijing and Shanghai developed urban master plans that regulated development space and population growth. These plans ensured the implementation of high-quality, sustainable urban development (Merics, 2021).

Following the enactment of the "14th Five-Year Plan" in 2020, China has actively promoted urban regeneration with the objective of transitioning towards high-quality development. The plan emphasises the implementation of intensive, green, and low-carbon development models, advocating a balanced "reserve-renovate-rebuild" strategy that prioritises the preservation and enhancement of existing structures (United Nations Development Programme, 2021). Furthermore, the State Council issued directives to avoid large-scale demolitions and constructions, promoting small-scale, incremental regeneration to ensure sustainability. (Asian Development Bank, 2021). The Beijing government developed the "Beijing Urban Regeneration Action Plan" (Beijing Municipal Government, 2021), which sets out specific objectives, tasks, and measures for urban regeneration during the "14th Five-Year" period. This plan provides a robust framework of policy and institutional support for these initiatives.

The urban regeneration strategy of Beijing has transitioned from a property-led approach of demolition and redevelopment to a more comprehensive strategy that prioritises functional transformation, quality enhancement, and cultural preservation. Notable projects include the renovation of Shougang Industrial Park (Wang, Duan and Zheng, 2023), the conservation project for Nanluoguxiang (Zhang, Kang and Koo, 2019; Min and Aili, 2015), and the revitalisation of Wangfujing pedestrian street (Zhou, 2012), which illustrate Beijing's strategic shift in urban regeneration. These initiatives not only preserve the city's historical heritage, but also improve the quality of life for residents, and stimulate economic growth through business upgrading. The projects illustrate the efficacy of applying urban regeneration principles to diverse local contexts.

Methodology

The methodology adopted in this study utilises a qualitative case approach, designed to provide an in-depth analysis of urban regeneration projects implemented in Beijing from 2020 to 2022. The research involved continuous investigation of over 200 urban regeneration initiatives during this three-year period.

The sources of these projects varied. Some of the projects were initiated by enterprises or local authorities seeking upgrades of their own properties. While others were initiated by district governments to enhance safety and environmental conditions within their jurisdictions. In collaboration with municipal and district governments, the research specifically targeted projects that were representative of broader trends or that demonstrated innovative practices within the sphere of urban regeneration. This selection process, conducted jointly by municipal and district governments along with researchers, ensured that each chosen project significantly aligned with the overarching goals of urban policy and practice.

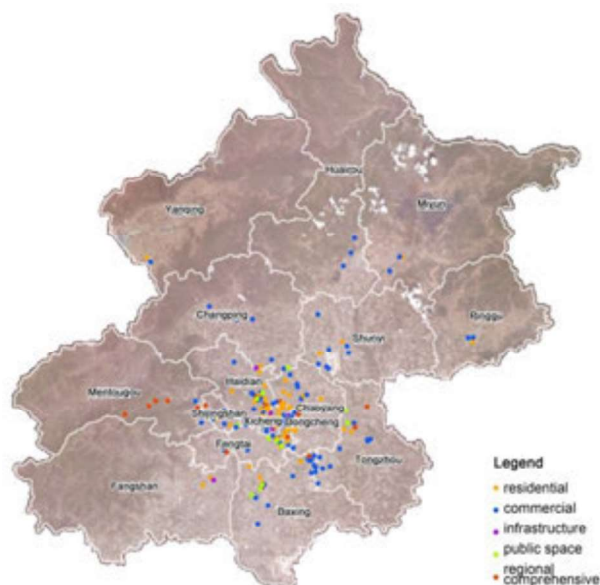


Figure 1. The distribution of Beijing's urban regeneration projects from 2020-2022
(Source: author)

Primary data collection was conducted through organised interviews with a diverse array of stakeholders, including project developers, urban planners, architects, researchers, and government officials who were involved in the planning and reviewing phases of the projects. These interviews aimed to gather comprehensive insights into the project implementation process, the challenges faced, the strategies deployed, and the outcomes achieved. This methodology allowed for a multi-dimensional analysis of the projects, covering both the technical aspects of planning and design as well as the administrative and execution phases.

For projects identified as particularly significant, the research methodology included field visits. During these visits, interviews were conducted with a wide range of individuals, including local residents, visitors, sub-district and neighbourhood-level workers, and other local workers such as delivery riders. This method facilitated the collection of a broad spectrum of perspectives and experiences, providing a deep understanding of the community's interactions with and responses to the urban regeneration projects.

This study focuses on three key cases: No. 17 Guangminglou Residence, Wangjing Walk Business District, and Langyuan Vintage Factory. Each represents a distinctive approach to the micro-intervention regeneration of old residential buildings, commercial areas, and industrial facilities, respectively. The research involved comprehensive tracking of these projects from initiation and design through approval and operation. Extensive longitudinal monitoring and multiple site visits were conducted to ensure the accuracy and completeness of the data. This comprehensive examination provides critical insights into the challenges and innovations associated with micro-intervention strategies in urban regeneration.

No. 17 Guangminglou Residence

No. 17 Guangminglou Residence is a residential building located in Longtan Subdistrict, Dongcheng District, Beijing. Constructed in the 1960s, the three-storey building covers an area of 335.7 square metres with a floor area of 1007.1 square metres. Over time, the building has undergone significant deterioration, exhibiting a number of structural deficiencies, including partial cracking, which presents a significant risk to the safety of its occupants. The building's design and facilities are outdated and lack basic living conveniences, particularly the arrangement where every five households share a kitchen and bathroom, which severely compromises the quality of life and privacy of the residents and is in urgent need of improvement.



Figure 2. Before and after regeneration of No. 17 Guangminglou Residence
(Source: <https://baijiahao.baidu.com/s?id=1751087758495236894&wfr=spider&for=pc>)

Feature 1: Minimal increase for enhanced urban aesthetics and living conditions

In contrast to traditional large-scale demolition and rebuilding projects, the regeneration of No. 17 Guangminglou Residence employs a micro-intervention strategy. The objective of this approach is to preserve as much of the original architectural character and urban fabric as possible, while implementing necessary functional enhancements. The project entailed the addition of a single storey to the existing three-storey structure, resulting in a total height of 12.7 metres and an increase in floor area of 420.9 square metres. This approach, which could be described as prudent and incremental, was designed to ensure harmony with historical architecture and the adjacent older residential districts, thereby maintaining continuity of the urban facade and overall aesthetic coherence.

The renovation has provided each household with independent kitchen and bathroom facilities, thus transitioning from the previous non-self-contained units to fully equipped dwellings. This significant upgrade has enhanced the convenience and comfort of residents. Furthermore, the expanded living area has alleviated the previously cramped conditions, increasing the residential area from 35 to 46 square metres per household. This not only enhances the quality of life of residents but also significantly increases the private living space available to them.

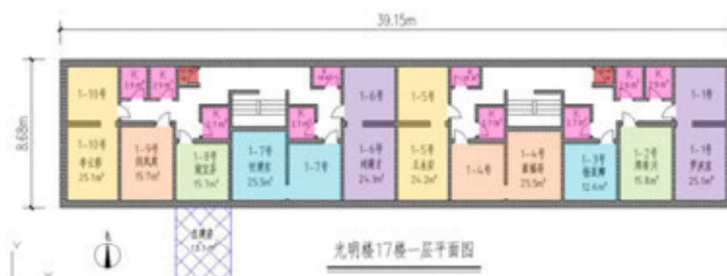


Figure 3. Floor plan before regeneration of No. 17 Guangminglou Residence (Source: Beijing Tsinghua Tongheng Urban Planning & Design Institute)



Figure 4. Floor plan after regeneration of No. 17 Guangminglou Residence (Source: Beijing Tsinghua Tongheng Urban Planning & Design Institute)

Feature 2: New Financial Framework for Collaborative Urban Regeneration

The No. 17 Guangminglou Residence, which was previously owned by the Dongcheng District government and designated as public housing, was occupied by tenants rather than homeowners. The regeneration project introduces an innovative funding model that involves residents, the property owner (Dongcheng District government), and both municipal and district governments in a collaborative financing arrangement. This model represents a departure from traditional funding models that are typically financed solely by the government or developers. It introduces a more diversified and sustainable funding source. The direct participation of residents not only alleviate the financial pressure on the government but also allows residents to engage actively in the regeneration process.

The total project cost is approximately 20 million RMB. The total government subsidies amount to approximately 5.8 million RMB, comprising municipal subsidies of 2630 RMB per square metre and district subsidies of 3156 RMB per square metre. The residents contributed approximately 4.2 million RMB, which represents a substantial level of involvement, accounting for 21% of the total cost. Meanwhile, the property owner, Dongcheng District government, invested approximately 10 million RMB, covering half of the total expenses. This financial structure ensures a balanced economic burden among all stakeholders, thereby reducing the dependence on a single financial source.

The residents primarily benefit from the considerable appreciation in housing value that occurs as a result of the regeneration process. The cost to residents was calculated using the original

housing area of 35 square metres at a renovation cost price of 1560 RMB per square metre, while the additional 11 square metres were calculated at a reconstruction cost price of 6564 RMB per square metre. Consequently, the average contribution cost for residents was calculated as $(35 * 1560 + 11 * 6564) / 46$, which equates to approximately 2800 RMB per square metre. This figure is considerably lower than the prevailing secondary market price of 100,000 RMB per square metre. By participating in the regeneration process, residents were able to transition from tenants to homeowners. This resulted in a notable increase in the value of their asset, with each household gaining an expansion in living space from 35 square metres to 46 square metres. This improvement in both living quality and financial feasibility represents a significant enhancement in the standard of living for the residents. This co-financing model offers a financially viable and socially responsible approach to urban regeneration, representing a sustainable method that benefits the entire community.

In conclusion, the regeneration of No. 17 Guangminlou Residence exemplifies a successful model for the regeneration of Beijing's aged residential buildings. The project demonstrated an effective balance between architectural preservation and the implementation of enhancements to living conditions. This was achieved through the adoption of a minimalistic design approach that aligns with the existing urban fabric. Moreover, the innovative financial model, which involved a collaborative investment strategy among residents, the property owner, and government agencies, demonstrated a sustainable and propagable approach to urban regeneration. This project not only enhanced the safety and functionality of the housing but also facilitated a significant shift in the residents' status from tenants to homeowners, thereby enhancing both their quality of life and financial stability. Therefore, No. 17 Guangminglou Residence represents a pivotal development in urban regeneration strategies, offering valuable insights for future projects in similar urban settings.

Wangjing Walk Business District

The Wangjing Walk Business District is situated in the Wangjing area of Beijing's Chaoyang District. It was previously a derelict zone characterised by a 380-metre road lined with commercial buildings, the majority of which were owned by Vanke and Fangheng. The district's regeneration was initiated with the objective of addressing a range of issues, including outdated environments, suboptimal business operations, and significant traffic congestion. The project aimed to enhance the commercial appeal and public spaces quality of the district, thereby improving inclusivity and accessibility to better serve the community's predominantly international demographics. The revitalisation has not only improved services but also significantly boosted urban vitality, transforming Wangjing Walk into a vibrant and dynamic business district.

The regeneration project of Wangjing Walk Business District represents a significant departure from traditional commercial complex renovations, which are typically developer-led and focus primarily on enhancing the commercial property itself through expansions, façade beautification, and interior refurbishment in order to attract more consumers. In these conventional models, the transformation of external public spaces is often relegated to a secondary role, usually addressed last in the renovation process with minimal investment.

In stark contrast, the Wangjing Walk Business District project commenced its transformation with a focus on the enhancement of public spaces, with a particular emphasis on the improvement of the central roadway environment within the commercial district. This initial step, spearheaded by the government and financially supported by them, demonstrated a strong

commitment to the revitalisation of regional development. The government's initial investment not only upgraded the infrastructure but also successfully encouraged private capital to participate in the renovation of adjacent commercial entities. This approach effectively mobilised resources and strengths from both the public and private sectors, collectively advancing the comprehensive regeneration of the area.

Furthermore, the Wangjing Walk Business District regeneration did not result in an increase in the scale of the buildings, thereby minimizing disruptions to the surrounding urban environment. Instead, the project substantially enhanced the area's aesthetic quality and functionality by upgrading environmental conditions and augmenting public services. This strategy, which places a core emphasis on the renovation of public spaces, not only improves the commercial viability of the area but also strengthens community cohesion and resident satisfaction. The Wangjing Walk Business District project offers a novel perspective and a practical example for sustainable development in urban commercial districts. It demonstrates how public space-focused regeneration can profoundly impact both economic vitality and social integration in urban settings.



Figure 5. Before and after regeneration of Wangjing Walk Business District
(Source: https://m.thepaper.cn/baijiahao_19131954;
<https://export.shobserver.com/baijiahao/html/645866.html>)

Feature 1: Government-Led, Corporate-Participated Regeneration Model

In the Wangjing Walk Business District regeneration project, the government, Vanke, and Fangheng played distinct financial roles and collaborated to drive the project's success. Both Vanke and Fangheng are prominent real estate developers in China, with substantial fixed assets on either side of Wangjing Walk.

At the outset, the government made an initial investment of 13 million RMB, which was focused on essential infrastructural renovations such as road repairs and lighting system upgrades. This funding constituted the initial stage of the broader district transformation.

Subsequently, Vanke, as a principal corporate entity, made a further investment of 35 million RMB. This expenditure was not only allocated to the development of recreational, artistic, and support facilities along the district, such as new commercial spaces, public art installations, and green projects, but also included substantial internal renovations and business model enhancements for Vanke-owned commercial buildings and offices along Wangjing Walk. The initiatives were designed to enhance the district's commercial appeal and public aesthetics, thereby improving the experience for residents and visitors and optimising Vanke's own asset value and operational efficiency.

Fangheng also provided financial support, albeit on a smaller scale, with a contribution of 5 million RMB. The investment was directed towards further enriching the district's recreational and artistic facilities, including the addition of art exhibitions and temporary event spaces, as well as other beautification projects. These enhancements served to enhance the overall cultural atmosphere and functionality of the district.

The layered financial contributions and their sequence ensured that the project's diverse needs were met, while also reflecting the spirit of collaboration and shared responsibility between the government and enterprises in urban regeneration efforts. This cooperative model effectively leveraged the strengths of each party, optimised resource allocation, and facilitated the transformation of Wangjing Walk from a traditional commercial street into a modern, international business and cultural district.

Feature 2: Strategic Business Alignment through Community Insights

In the preliminary phase of the Wangjing Walk Business District regeneration project, the project team conducted extensive and detailed market research and resident opinion collection to ensure that the regeneration plan comprehensively and accurately reflected the specific needs of the area. The research activities, which spanned several months, included roundtable discussions, questionnaire surveys, and door-to-door interviews. These covered 11,400 effective tax-paying enterprises out of 26,700 legal entities in the district, including 1,113 foreign-related enterprises. The substantial tax contributions from these foreign-related enterprises, accounting for 59.6% of the district's revenue, served to highlight Wangjing Walk's international business stature and its broad international consumer demand.

The resident surveys and interviews employed a multi-level and multi-dimensional approach, addressing satisfaction with the current living environment, expectations for the regeneration, and specific demands for new facilities. The residents expressed a strong need for improvements in infrastructure, including transportation and public spaces, as well as a desire for more recreational and cultural activities within the district. These insights enabled the project team to define the project's commercial positioning. This was to create a multifunctional commercial and cultural district that meets international standards, incorporating more outdoor recreational facilities and a diverse range of commercial and cultural amenities.

The preliminary research and opinion gathering conducted for this project were comprehensive and designed to align the modifications with the actual needs and expectations of the residents. This foundational work facilitated the development of a district that not only meets international standards but also addresses the specific requirements of the local community. The methodical approach to data collection and analysis was of great importance in guiding the regeneration and enhancement of the district's commercial and cultural environment. This approach reflecting a careful consideration of both broader objectives and detailed resident feedback.

The regeneration of Wangjing Walk Business District has significantly enhanced the area's commercial vitality and community environment, as evidenced by substantial increases in foot traffic and fiscal revenue following the regeneration. In particular, the average daily foot traffic increased from 4,784 on weekdays and 4,428 on weekends to 15,436 and 20,844, respectively. This increase not only demonstrated a significant boost in the district's appeal but also reflected an uptick in commercial activities.

In terms of economic impact, annual sales increased from approximately 800 million RMB prior to the regeneration to 1.2 billion RMB, representing a 50% increase. Moreover, fiscal tax revenue saw a significant rise, amounting to approximately 56 million RMB annually. This revenue growth not only provided the local government with increased fiscal income but also demonstrated the positive impact of enhanced public services and infrastructure investments on the prosperity of commercial activities.

In conclusion, the Wangjing Walk Business District regeneration project was implemented in a manner that avoided merely expanding the building area, thereby minimising disruptions to the surrounding community during construction. The investments made by each participating party were kept within reasonable bounds, ensuring a balanced contribution to the project. The project's outcomes were notably significant, yielding substantial economic benefits and enhancing social impact. This regeneration has established a new paradigm for the revitalisation of ageing urban commercial districts, demonstrating the efficacy of government-led improvements in public spaces. This approach effectively encourages local businesses and property owners to voluntarily participate in the upgrading of their properties on a voluntary basis. The project's collaborative funding model has been instrumental in fostering regional revitalisation, with subsequent economic growth and increased land values enriching the community. Ultimately, this has resulted in a mutually beneficial scenario for all stakeholders involved, thus establishing a replicable model for urban development.

Langyuan Vintage Factory

Langyuan Vintage represents a seminal example of industrial heritage micro-intervention. Strategically situated in the core of Beijing's Central Business District (CBD), the factory originally served as the Wan Dong medical equipment factory. As the CBD continues to evolve and urbanisation progresses, traditional industrial facilities are becoming increasingly incompatible with the modern urban landscape. In 2009, the Beijing Capital Group acquired the development rights to this site, launching a city regeneration project centred around cultural and creative industries. The project retained the industrial character of the area while introducing new cultural and public service functions to meet the diverse development needs of the city.



Figure 6. After regeneration of Langyuan Vintage Factory
(Source: <https://www.xiaohongshu.com/explore/63073aaf00000001b02418c>;
<https://175586960.b2b.11467.com/news/2885968.asp>)

Feature 1: Preservation of Industrial Ambience and Provision of Diverse Spaces

The regeneration of Langyuan Vintage is characterised by a profound respect for the site's historical value. In contrast to the conventional demolition and reconstruction practices typically employed in such cases, the Beijing Capital Group opted to maintain the low-density characteristics of the industrial park and its industrial architectural appearance. This resulted in the transformation of the area into a "back garden" within the CBD. Although this strategy resulted in higher renovation and maintenance costs, the continued spatial quality and historical value it brought has endowed the area with a unique cultural atmosphere.

The project adhered to the principle of "repairing the old as old," thereby ensuring that the original structures and features of the factory were retained to the greatest extent possible. For instance, the site's original red brick walls and large industrial windows were meticulously restored and preserved. The spaces were redesigned with a variety of functions in mind, including bookstores, zen spaces, cafes, and co-working spaces catering to the culture and entertainment industries. This has made it the preferred relaxation destination for CBD employees after work.

In particular, some spacious industrial areas were transformed into venues suitable for theatre, art exhibitions, and other cultural events, such as the Lanjing Art Centre and Yu She Performance Space. This has enhanced Langyuan's cultural atmosphere and provided unique interactive platforms for artists and audiences.

Feature 2: Cultivation of Culture and Community

Langyuan Vintage plays an instrumental role in enhancing the quality and scope of community public services by integrating a multitude of cultural activities and facilities. For example, the Liang Yue City Bookroom, which is accessible 24 hours a day, provides a shared space where reading and learning can be enjoyed, thereby enriching the cultural lives of the residents. Furthermore, the annual Langyuan Book Fair has become a significant event, attracting book enthusiasts and creative industry professionals alike, and fostering community cultural exchanges and the development of the creative industries.

The cultural facilities and activities not only enrich the residents' cultural lives but also gradually shape an attractive cultural community, enhancing the cohesiveness of the community.

In the process of regenerating Langyuan Vintage, the developer eschewed the profit-driven model typical of real estate developments, instead prioritising the enhancement of the spatial quality of the area and the continuous implantation and cultivation of a cultural atmosphere with the objective of creating a lasting impact. This strategy has demonstrably enhanced the value of the entire park. The protective transformation of the old industrial architecture and the careful planning of cultural content have enabled Langyuan Vintage to not only preserve valuable urban historical memories but also to foster new social value and business opportunities. The project exemplifies the profound potential of culture and creativity in regenerating urban spaces, offering new avenues for sustainable urban development and providing valuable insights and lessons for the regeneration of other industrial heritage sites in Beijing.

Conclusion

This paper examines the transformation of urban regeneration strategies in Beijing, providing a detailed analysis of three exemplary cases. This analysis reveals the core features of micro-intervention urban regeneration strategies. These strategies adhere to a minimalist approach to urban intervention, eschewing the mere expansion of building scales in favour of a focus on enhancing architectural quality, improving public spaces, addressing the needs of local residents and workers, and fostering high-quality cultural content. This regeneration approach offers a more sustainable path of development for metropolises in the global south, particularly those that have reached developmental limits and require refined management of urban construction.

The study is significantly supported by the Beijing municipal government, whose conception of a project repository in the Beijing Urban Regeneration Action Plan has provided a wealth of empirical data. Since 2020, the Beijing government has consistently updated its urban regeneration project repository, with over 80% of the 200-plus projects tracked from 2020 to 2022 employing micro-intervention strategies. This substantial corpus of data provides a robust foundation for the prominence of micro-intervention strategies in Beijing's urban regeneration efforts since 2020. In the future, Beijing will continue to pursue this strategy, with a focus on managing overall urban construction volumes and enhancing spatial quality, cultural significance, community care, and collaborative construction. This approach will be employed in order to gradually address the issues that have accumulated during periods of rapid urban expansion. As a representative megacity in the global south, Beijing's experiences and practices in urban regeneration could provide insights for other cities at similar stages of development.

It is important to note that this study is subject to certain methodological limitations. In the case of Wangjing Walk, the data on residents and businesses was obtained from the project constructors, rather than directly from the residents themselves. This approach may limit the comprehensive understanding of residents' negative feedback. In order to enhance the accuracy and depth of future research, this paper will, in subsequent studies, collect first-hand data through direct interviews with residents. This will further refine the research methodology in order to perfect the study's conclusions.

References

- Asian Development Bank. (2021). The 14th Five-Year Plan of the People's Republic of China—Fostering High-Quality Development. Available at: <https://www.adb.org/publications/14th-five-year-plan-high-quality-development-prc>
- Beijing Municipal Bureau of Natural Resources and Planning (2017) Release of the Beijing Urban Master Plan (2016-2035), available at: https://ghzrzyw.beijing.gov.cn/zhengwuxinxi/gzdt/sj/201912/t20191223_1421777.html.
- Beijing Municipal Government. (2021) 'Notice from the General Office of the CPC Beijing Municipal Committee and the General Office of the Beijing Municipal People's Government on the Issuance of the "Beijing Urban Regeneration Action Plan (2021-2025)"'. Available at: https://www.beijing.gov.cn/zhengce/zhengcefa/gui/202108/t20210831_2480185.html
- Daniels, T. (2001) 'Smart Growth: A New American Approach to Regional Planning', *Planning Practice & Research*, 16(3), pp. 271-279.
- Flint, R. and Danner, M.J.E. (2001) The Nexus of Sustainability & Social Equity: Virginia's Eastern Shore (USA) as a Local Example of Global Issues.
- Fritz, M. and Koch, M. (2014) 'Potentials for prosperity without growth: Ecological sustainability, social inclusion and the quality of life in 38 countries', *Ecological Economics*, 108, pp. 191-199.

- Government of China (2019) Several Opinions of the CPC Central Committee and the State Council on Establishing a National Land and Space Planning System and Supervising its Implementation, available at: https://www.gov.cn/zhengce/2019-05/23/content_5394187.htm.
- Hall, P. (2002) *Urban and regional planning*. Routledge, London and New York.
- Harris, J. (2010) 'The macroeconomics of development without growth'. Semantic Scholar.
- Hayashi, Y., Doi, K., and Tamura, K. (2004) 'Urban Transport Sustainability: Asian Trends, Problems and Policy Practices', *European Journal of Transport and Infrastructure Research*, 4(1).
- Hess, E. D. (2010) *Smart Growth: Building an Enduring Business by Managing the Risks of Growth*. Columbia University Press.
- Jackson, T. (2011) *Prosperity without Growth: Economics for a Finite Planet*. Earthscan.
- Kadekodi, G. (1992) *Paradigms of sustainable development*.
- Kallis, G., Schneider, F., Martínez-Alier, J. (2010) 'Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue', *Journal of Cleaner Production*, 18, pp. 511-518.
- Kempton, J., Lee, K., and Green, N. (2022) 'Long-term planning and development for urban and regional inclusion, safety, resilience, and sustainability: Insights from Singapore', *Regional Integration*, 14(14), pp. 59-79.
- Liu, Y. et al. (2019) 'Spatial Patterns and Driving Forces of Conflicts among the Three Land Management Red Lines in China: A Case Study of the Wuhan Urban Development Area', *Sustainability*, 11(7), 2025.
- Merics. (2021) "'Greening" China: An analysis of Beijing's sustainable development strategies'. Available at: <https://merics.org/en/report/greening-china-analysis-beijings-sustainable-development-strategies>
- Min, L. and Aili, L. (2015) 'Urban architectural heritage reuse from the perspective of industrial types: a case study of Nanluoguxiang street in Beijing City', *Tourism Tribune*, 30(115-126).
- Roberts, P. (2000) The evolution, definition and purpose of urban regeneration. *Urban regeneration: A handbook*, 1, pp.9-36.
- Schneider, F., Kallis, G. and Martínez-Alier, J. (2010) 'Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue', *Journal of Cleaner Production*, 18, pp. 511-518. (Note: This is a duplicate entry, same as entry 14)
- United Nations Development Programme. (2021). *Issue Brief - China's 14th Five-Year Plan*. Available
- Wang, S., Duan, W. and Zheng, X. (2023) 'Post-Occupancy Evaluation of Brownfield Reuse Based on Sustainable Development: The Case of Beijing Shougang Park', *Buildings*.
- Wu, F., Xu, J. and Gar-On Yeh, A. (2007) *Urban Development in Post-Reform China: State, Market, and Space*. 1st ed. London: Routledge.
- Xinhua (2020) 'Xi Stresses Ecological Protection in Zhejiang Tour', available at: http://www.xinhuanet.com/english/2020-03/31/c_138934165.htm.
- Zhang, Y., Kang, S. and Koo, J. (2019) 'What Is the Critical Factor and Relationship of Urban Regeneration in a Historic District?: A Case of the Nanluoguxiang Area in Beijing, China', *Sustainability*, 11(6772).
- Zhou, Y. (2012) 'Landscape Design According to the Beijing Wangfujing Commercial Walk Street', *Journal of Jilin Institute of Architecture & Civil Engineering*.