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Theoretical Framework of Park Vitality Area and Implementation Pathways for Realizing the Recreational Vitality Area of Urban Parks

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ABSTRACT

The concept of "Park Vitality Area" signifies a new phase of urban park development in China and represents a new practical paradigm promoting parks as "landscape catalyst." With a review of the relevant theoretical context and international background, this article proposes dual-dimensional connotations for Park Vitality Area from both a broad sense (sustainable perspective) and a narrow sense (recreational perspective). In response to current practical demands in China, this article focuses on the narrow sense using Beijing as an example to demonstrate its spatial characteristics and three-tiered implementation pathways: enhancing internal vitality, linking internal and external vitality, and cultivating virtual vitality communities of parks. Functionally, the Park Vitality Area promotes innovative transformation of parks from single-type land use into spatial catalyst-driven sustainable development in surrounding areas. Spatially, the fragmented, point-based configuration of parks is reconceptualized as a composite "point–line–plane" system. The conceptualization of Park Vitality Area can propel research and practice of urban parks into a new stage of systematic development. The future research can encompass a series of issues in the umbrella of Park Vitality Area, including its internal structural characteristics, the spatial extent of radiative influence, mechanisms of spatial interconnectivity, multidimensional driving factors, and spatiotemporal evolution patterns. As an innovative pathway for parks to engage in urban renewal and governance, Park Vitality Area underscores the disciplinary value and professional contribution of planning and design within the broader agenda of building a beautiful China. Moreover, it offers a practical paradigm and a Chinese solution for the sustainable development of global cities.

KEYWORDS

Green Infrastructure; Landscape Urbanism; Green Space; Park Vitality Area; Spatial Vitality; Urban Renewal; Landscape Catalyst

HIGHLIGHTS

- Park Vitality Area represents a new stage and a new paradigm of urban parks in China
- Park Vitality Area encompasses both a broad sustainable perspective and a narrow recreational perspective
- Pathways include enhancing internal vitality, linking internal and external vitality, and cultivating virtual vitality communities

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1 Introduction

As vital public infrastructure for urban sustainable development, parks play an irreplaceable role in improving air quality, purifying water quality, regulating microclimates, preventing and mitigating disasters, and enhancing residents' quality of life[1–3]. The global evolution of park–city relations follows a three-phase pattern characterized by "individual construction–system building–catalyst-driven development." During the mid-1800s, influenced by New York's Central Park and the park movement, park projects gradually emerged across major cities in Europe and North America[4]. These early initiatives primarily focused on developing individual

parks according to urban needs, treating parks as isolated green spaces. By the late 19th century, Ebenezer Howard's "Garden City" concept and Patrick Geddes' regional planning theories promoted the development of urban green network systems[5], establishing theoretical and practical foundations for subsequent green space systems, greenways, and green infrastructure. From the mid-20th century onward, accompanied by Jane Jacobs' perspective of parks as catalysts for social vitality[6] and Charles Waldheim's advocacy of Landscape Urbanism[7], parks gradually evolved into paradigms for catalyst-driven urban renewal, opening new pathways for sustainable development of urban parks.

In contrast, the development of parks in China demonstrates distinct local characteristics, following an evolutionary trajectory that can be summarized into four stages: park prototypes, fee-based parks, free parks, and boundaryless parks. The genuine prototypes of parks in China, such as Shanghai's Bund Park (Public Garden) and Hongkou Park, emerged during the late Qing Dynasty (around 1900). Although these modern parks were public open spaces, their accessibility was limited by high entry barriers and expensive tickets, resulting in restricted public welfare[8]. After the 1940s, some private gardens were converted into public parks, but they remained enclosed and fee-based for an extended period. The internal landscapes of these parks contrasted sharply with the surrounding urban environment, imparting a strong attribute of being "scenic spots". Activities within the parks also offered distinctive experiences that differ from daily life[9]. This enclosed fee-based model persisted until the 1990s, leading to relatively weak connections between parks and their external urban contexts. As urbanization progressed, the free opening of Chinese urban parks in the modern sense was initiated in 2001[10]. Apart from historical and cultural heritage parks that continued to impose entrance fees to limit visitor numbers and preserve cultural relics, most urban parks were gradually free. This transformation significantly enhanced public accessibility and usage vitality. Nevertheless, park planning and management during this phase remained predominantly focused on internal spaces, exhibiting distinctly inward-oriented characteristics.

As China's urbanization transitioned from incremental expansion to quality enhancement of existing urban stock, parks were no longer perceived merely as isolated spaces. Instead, their spillover effects and dynamic interactions with urban structures have received increasing attention. Within this context, "Park City" has emerged as a central theme in urban planning. Since 2023, the open and shared use of parks has emerged as a key strategy for urban renewal. Beijing responds proactively by introducing concepts such as "Boundaryless Parks" and "Garden City," advocating for the removal of park walls and fostering integration between parks and urban neighborhoods. Concurrently, other regions across China have launched a range of innovative park initiatives, including planning integrated green space system, dismantling physical barriers, opening lawns, diversifying amenities, and encouraging institutional participation in governance. These efforts collectively promote the "park plus" model (i.e., multifunctional park development), significantly elevating the functional roles and value of urban parks. Throughout this process, research on park vitality and associated evaluation techniques has gradually developed[11–13]. These measures facilitate the transformation of parks toward "landscape catalysts" for urban renewal, upon which this article proposes the "Park Vitality Area" theory.

2 Connotations and Characteristics of the Park Vitality Area

2.1 Park Vitality Area

This study defines "Park Vitality Area" by drawing on the theory of landscape catalyst, while integrating and expanding frameworks and analytical methods from Trade Area research and urban vitality studies. The urban catalyst theory originated from the decline and subsequent renewal practices of urban centers in the USA after World War II. Its core premise holds that isolated high-quality design cannot effectively stimulate urban renewal; rather, a catalyst should be a planning and design strategy that expands progressively from individual sites to broader urban areas[14]. With the emergence of Landscape Urbanism, the concept of "landscape catalyst" gradually formed, yet it has largely remained at the level of conceptual explanation or description of design outcomes, without developing a systematic research framework[15]. Additionally, research on urban vitality has formed a rich academic tradition. Vitality, as one dimension of urban design expression, reflects how well the physical form of a place supports urban vitality, human activities, and physiological needs[16–19]. Various factors, including street types, safety, accessibility, visual quality, and diversity of social interactions, collectively shape urban vitality[20–23]. Moreover, parks are recognized as a significant factor influencing urban vitality[24–25]. Building on this research trajectory, the Park Vitality Area theory proposed in this article positions parks as the core catalyst, explicitly identifies urban vitality as the central carrier of the catalytic effect, and constructs a systematic analytical framework by incorporating the methodological logic of Trade Area research.

The Park Vitality Area theory posits that parks not merely influence urban vitality but also function as engines driving it. Broadly, it denotes the spatial extent served by spillover effects of diverse park functions, i.e., the geographical area where park vitality can exert influence, encompassing both broad and narrow connotations. The broad sense of the Park Vitality Area emphasizes sustainable development, holistically considering the capacity of parks to foster sustainability in surrounding areas across ecological, social, and economic dimensions. Its radiation range should be defined according to different types of vitality and patterns of spatial flow. For instance, from a species perspective, the vitality area of insects is smaller than that of birds, whereas the stormwater regulation function of a park requires integrated assessment of surrounding drainage networks, topography, and watershed characteristics. The narrow sense of the Park Vitality Area specifically denotes vitality centered on human recreational use, which is most analogous to the Trade Area concept. It primarily focuses on the parks' attractiveness to people and the radiation range of activities the parks can stimulate.

The introduction of Park Vitality Area reflects dual transformations in physical space and conceptual thinking. From a physical spatial standpoint, parks are no longer isolated "points" but physical spaces with a "point–line–plane" multi-level structure capable of linking adjacent areas. Conceptually, the Park Vitality Area represents a perceptual shift—parks are no longer viewed simply as a land use type but are redefined as engines that drive surrounding vitality and promote local sustainable development. Its theoretical core resonates academically with Landscape Urbanism, as both stress that landscape can replace architecture as the city's primary framework, thereby promoting urban development and vitality enhancement[26]. The distinction lies in that the Park Vitality Area is rooted in China's urbanization process and embodies a Landscape Urbanization path with localized characteristics[27].

Concepts related to the Park Vitality Area include the park system, the park service radius, and the 15-minute community life circle (Table 1). The park system primarily highlights the connectivity and systematic development of physical landscapes, while the park service radius specifically denotes the spatial coverage of a park's services in its vicinity. In contrast, the Park Vitality Area emphasizes how parks can serve and stimulate vitality and development across surrounding areas. Conceptually, it aligns more closely with the community life circle. In 2014, Shanghai pioneered the "15-minute community life circle" concept, which centers on community residents with their residences as the focal point. Within a 15-minute walking radius, it aims to fulfill diverse basic needs including dining, leisure, culture, sports, healthcare, and commerce, while establishing a safe, comfortable, and barrier-free slow-traffic system. Unlike the community life circle, which addresses a broad range of services, the Park

Table 1: Core connotations of concepts related to park vitality area

Concept	Definition	Standard requirement	Source
Park system	A recreational system comprising reasonably configured parks of various levels and types in the city, meeting citizens' multi-level and multi-type leisure and recreational needs	The proportion of residential land covered by a 500 m service radius of urban parks should exceed 90%; 100% for planned new areas and 80% for old urban areas as required	Standard for Planning of Urban Green Space (GB/T 51346-2019)
Park service radius	The service distance parks provide to citizens, specifically from park entrances to visitors' residences	· The service radius coverage rate for park activity spaces refers to the proportion of residential land area within the service radius to the total residential land area · A 500 m service radius for parks with park activity spaces of 5,000 m^2 or larger, and a 300 m service radius for those between 400 and 5,000 m^2	National Garden City Evaluation Standard
15-minute community life circle	A fundamental unit that fulfills diverse daily (work and living) needs of urban and rural residents, within a suitable daily walking range	It is recommended to define the community life circle scope based on street and town administrative boundaries, considering residents' daily travel characteristics and actual needs, while avoiding segmentation by urban trunk roads, rivers, mountains, railways, etc. and following principles of travel safety and convenience	Spatial Planning Guidance to Community Life Unit (TD/T 1062-2021)

Vitality Area positions the park as the focal point of service, with greater emphasis on functions related to park vitality. Overall, the development of the Park Vitality Area can both connect with the community life circle, serving as one of its organic components, and operate independently, as the influence of park vitality is not confined to adjacent neighborhoods.

2.2 Composition and Characteristics of Park Recreational Vitality Area

As a broad concept, the Park Vitality Area encompasses extensive connotations that cannot be fully addressed in a single article. This study therefore concentrates on the narrow sense, i.e., the Park Recreational Vitality Area, which focuses on human activity and comprises three key spatial components: internal, boundary, and service spaces. Internal space denotes the physical area enclosed by park boundaries, serving as the core supplier of park vitality and the primary field for its generation. Boundary space refers to the transitional zone where the park boundaries interact with external users, holding potential for stimulating and enhancing park vitality. Service space represents the actual spatial extent served by park vitality, directly reflecting the scope of vitality demand. Notably, with the rapid development of social media, the spatial dimensions of Park Recreational Vitality Area have transcended physical boundaries, extending into virtual domains such as social media platforms and online communities. Consequently, the service space embodies dual dimensions: physical and virtual (Fig. 1).

The physical dimension demonstrates distinct layers and variation patterns, broadly categorized as daily, holiday, and check-in recreational circles. Use frequency in these circles decreases progressively with increasing distance from the park boundary. The daily recreational circle acts as the primary source of park vitality, featuring frequent use. The holiday recreational circle may attract users from beyond the surrounding area, with activities concentrated on holidays and a correspondingly lower frequency of use. The check-in recreational circle attracts users drawn by the park's unique appeal or specific events, typically for one-time

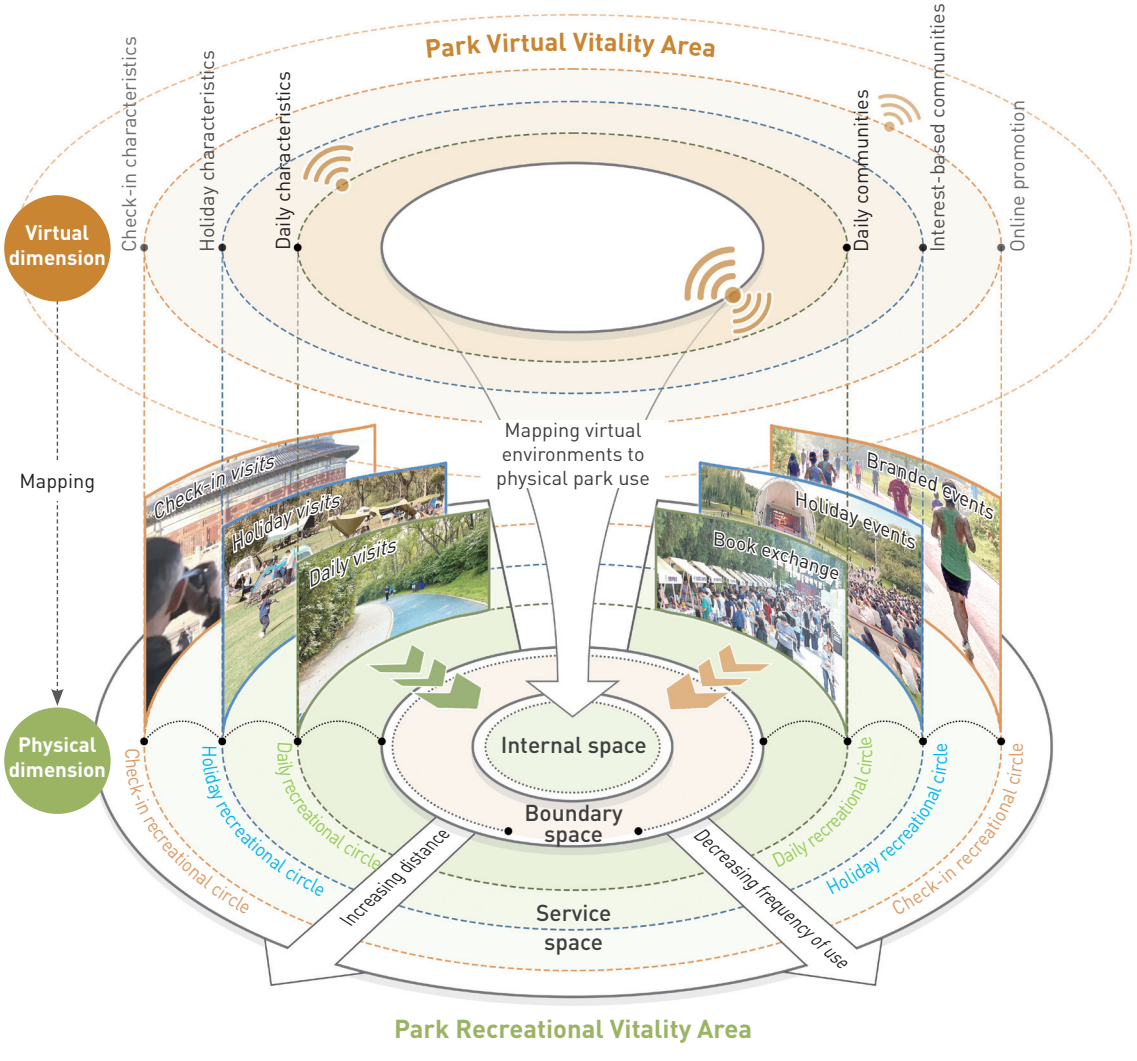

Fig. 1 Spatial radiation and potential layers of the Park Recreational Vitality Area.

or non-recurrent visits. Overall, as the spatial radiation range of the park extends outward, the frequency of use declines, but the duration of visits shows a contrasting pattern—visitors traveling longer distances generally spend more time in the park[28].

The virtual dimension of Park Recreational Vitality Area primarily manifests as the Park Virtual Vitality Area, representing a park's comprehensive influence in digital domains. This influence can be observed across multiple dimensions, including online community engagement, topic dissemination, and virtual interaction intensity. As a non-physical sphere, it can directly or indirectly affect physical park usage through mechanisms such as user cognitive construction and behavior guidance. Instead of a homogeneous virtual space, the Park Virtual Vitality Area exhibits differentiated features corresponding to physical layers due to variations in user behavior. This differentiation not only continues the behavioral patterns of daily, holiday, and check-in activities but also generates new manifestations due to the boundaryless nature of virtual space. For example, a park-based book exchange community, whose members are predominantly nearby residents, demonstrates online interaction frequencies highly synchronized with offline activity cycles. This forms a Park Virtual Vitality Area with daily characteristics, whose spatial radiation range largely overlaps with the physical daily recreational circle. In contrast, a marathon community organized around the park's branded events transcends geographical constraints, with participants potentially spanning nationwide enthusiasts. Their online discussion intensity fluctuates in a holiday-peak pattern with the event cycle and participation often exhibits marked check-in characteristics, constituting a cross-regional virtual vitality area. Overall, this differentiation reflects both the mirroring of physical behavior in virtual space and the spatial restructuring capability empowered by digital technology.

Similar to Trade Areas[29], the Park Recreational Vitality Area demonstrates the following four typical characteristics:

1) Hierarchy: The radiation range of park vitality displays a distinct layered structure, gradually decreasing from the inner to outer areas, with clear layers and progressive hierarchy. Large parks generally exhibit relatively larger radiation circles with more layers, while small parks have smaller service ranges with fewer layers.

2) Irregularity: Spatially, Park Recreational Vitality Area may take irregular forms that vary significantly according to surrounding topography, ecological conditions, transportation, and socio-demographic distribution.

3) Overlap: Vitality areas of different parks can overlap and intersect geographically. In these overlapping zones, multiple parks simultaneously serve relevant populations, implying competition among parks to attract users.

4) Fluidity: This denotes the dynamic spatial changes of park users, influenced by external factors such as park system patterns, population demand structure, and transportation conditions, as well as internal factors including management strategies, operational policies, basic facilities, and service capabilities.

3 Beijing's Pathways for Developing Park Recreational Vitality Area

This study uses three parks in Beijing—Ritan Park, Longtan Zhonghu Park, and Wenyuhe Park—as examples to illustrate innovative approaches in developing Park Recreational Vitality Area. Geographically, these parks are located in different districts within Beijing's Sixth Ring Road, covering both the urban core and suburban areas. At Ritan Park, a series of innovative measures emerged from exploring vitality of a cultural relic protection site. As a renowned cultural relic site, it operates under government-led management, with full administration by the Ritan Park Management Office. The approach at Longtan Zhonghu Park involves renovating a former amusement park. Its predecessor, Beijing Amusement Park, underwent redevelopment starting in 2020 and reopened as Longtan Zhonghu Park on September 24, 2021, offering free admission. Its management combines government subsidies and enterprise-led operation as a pilot initiative. Wenyuhe Park is a newly constructed waterfront linear park, positioned as a nature-based, high-quality, international urban ecological leisure park that integrates cultural exchange and exhibition with outdoor sports experiences. A notable feature is its fully enterprise-led operation, where daily maintenance and management serve for commercial purposes. In summary, Ritan Park is characterized by "cultural relic activation and boundary sharing," Longtan Zhonghu Park emphasizes "site renewal and community operation," and Wenyuhe Park exemplifies "linear waterfront and enterprise operation." These three parks represent development models of "historical revitalization, site renewal, and new area leadership," respectively, demonstrating typicality and comparability in historical context and management approaches.

In developing Park Recreational Vitality Area, these parks have implemented diverse innovative practices, which can be categorized into three pathways: enhancing internal vitality, linking internal and external vitality, and cultivating virtual vitality communities (Fig. 2). The results of interviews with members from relevant park management offices and Beijing Park Association, together

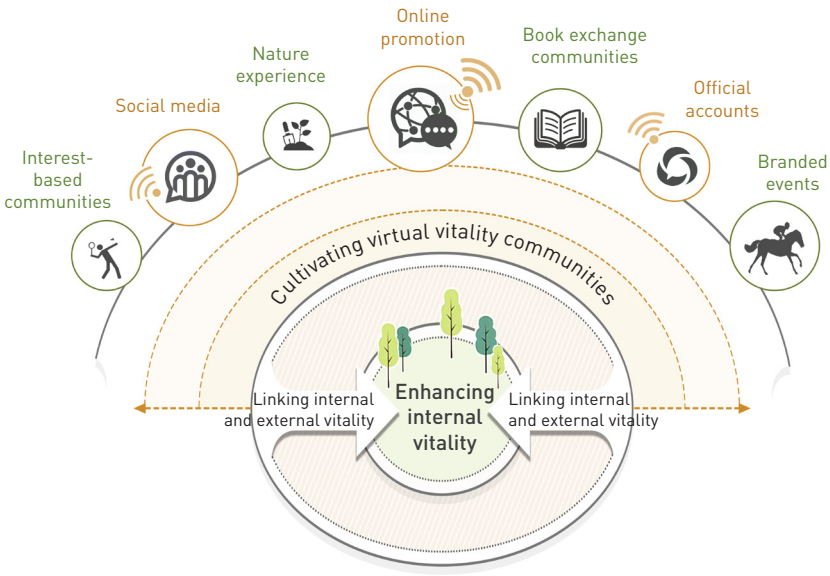

Fig. 2 Three pathways for developing the Park Recreational Vitality Area.

with field surveys, indicate that the degree and characteristics of innovation in constructing the vitality area differ among parks along these pathways (Table 2).

3.1 Enhancing Internal Vitality

The foundational pathway for developing Park Recreational Vitality Area focuses on introducing diverse facilities and activities to enhance park vitality. The three case study parks demonstrate distinct approaches in this regard.

As a historical garden, Ritan Park enhances its vitality by revitalizing park assets and meeting diverse public needs. Ten percent of the park's space is allocated for dining services, repurposing underutilized areas such as the stone boat and horticulture stations into catering spaces, generating economic benefits through market-oriented operations. The remaining ninety percent of the space is dedicated to providing free public services, fulfilling citizens' needs for walking, exercise, social interaction, and recreation. Spatially, the park is organized into three vitality units: the northern area recreates ritual spaces of the altar temple, the western area constructs social interaction spaces inspired by Jiangnan gardens, and the eastern area creates an innovation zone for sports technology experiences. This demonstrates a contemporary approach to revitalizing historical gardens.

Longtan Zhonghu Park's internal vitality enhancement centers on the renovation of the former amusement park. All water areas within the park are designated for commercial use, while the ratio of land-based public service areas to commercial spaces is approximately 9:1. By collaborating with nearby sports management organizations, the park has been thematically

Table 2: Basic information of the parks and their innovation in Park Recreational Vitality Area construction

Basic information				Innovation degree and characteristics of Park Recreational Vitality Area construction		
Park name	**Characteristic**	**Area**	**Management type**	**Enhancing internal spatial vitality**	**Integrating internal and external spatial vitality**	**Cultivating online vitality communities**
Ritan Park	Vitality exploration of a cultural relic protection site	20.62 hm^2	Government-led	◆◆◆◆ Daily and festive vitality within historical settings	◆◆◆◆◆ Sharing boundaries and collaborating with surrounding businesses	◆◆ Online communication and marketing
Longtan Zhonghu Park	Renovation of old amusement park	39.67 hm^2	Government-subsidized and enterprise-operated	◆◆◆◆ Distinct vitality focused on sports and recreation	◆◆◆ Utilizing nearby parking facilities and collaborating with surrounding research institutions	◆◆◆◆ Self-established online communities
Wenyuhe Park	Newly built linear park	3,040 hm^2 (planned)	Enterprise-operated	◆◆◆◆ Waterfront public vitality with IP event series	◆◆ Greenways connecting nearby green spaces and communities	◆◆ Online communication and marketing

NOTE

◆ represents the level of innovation in constructing the corresponding type of vitality area; a greater number of the symbols indicate a higher level of innovation.

positioned as a “sports and recreation plus” destination, forming a four-tier vitality scene encompassing urban lifestyle, outdoor recreation, events, and sports. Concurrently, catering services have been introduced. By leveraging its intrinsic characteristics and focusing on sports and recreational facilities, the park integrates diverse business formats to create new scenarios, thereby boosting its vitality and attractiveness.

At Wenyuhe Park, efforts to enhance internal vitality are reflected in diverse experiments with linear waterfront commercial and recreational offerings. In autumn 2020, the Chaoyang Section Demonstration Area opened first. The park features a variety of dining facilities and operational projects, including ecological experiences, nature education, sports adventures, pet services, and comprehensive leisure areas. As a park fully operated by an enterprise, Wenyuhe Park continuously innovates in developing vitality and actively explores diverse forms of outdoor recreation.

3.2 Linking Internal and External Vitality

Establishing connections with surrounding vitality areas to expand the scope and influence of park services constitutes the second strategic focus in developing Park Recreational Vitality Area. Various parks have undertaken diverse explorations in this regard. For instance, Longtan Zhonghu Park utilizes nearby parking facilities, collaborates with sports management organizations to host series of sports activities, and partners with Beijing Academy of Forestry and Landscape Architecture to conduct nature education and cultural programs. Wenyuhe Park, meanwhile, connects with adjacent parks and communities through greenway development. The most representative case is Ritan Park, which has achieved vitality integration between internal and external spaces through approaches of “boundary opening and sharing” and “linking with surrounding businesses” (Fig. 3).

In the renovation for boundary opening and sharing, Ritan Park proactively relocated perimeter fences, freeing approximately 1 hm^2 of space for neighborhood improvement. This created a high-quality garden neighborhood spanning 1.94 hm^2 by integrating adjacent streets. The park incorporated municipal sidewalks into its green spaces, achieving seamless visual integration between park landscapes and the urban environment. Simultaneously, the park developed a convenience and public service block, transforming previously enclosed green space into an area for rest and healthcare-supportive activities. By removing physical barriers and sharing boundary space in response to surrounding land use needs, the park further stimulated the utilization potential and vitality of adjacent areas.

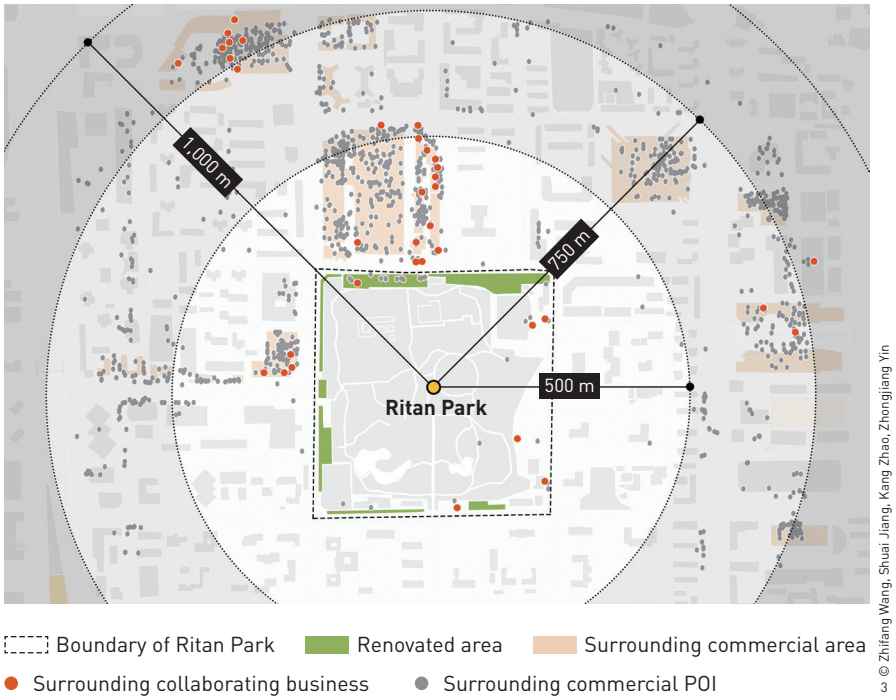

Fig. 3 Pathways of “boundary opening and sharing” and “linking with surrounding businesses” at Ritan Park.

The “2024 Ritan Park Golden Autumn Garden Fair” exemplifies collaboration with surrounding businesses. Breaking from conventional models, the event not only featured internal garden activities but also partnered with 42 business entities in the surrounding commercial area. Visitors received exclusive discounts and a “food map,” allowing them to enjoy dining and shopping benefits while participating in park activities. Evolving from a single park festival into a multifaceted district-wide collaboration, the event established a synergy between visitor flows and commercial activities, effectively stimulating economic vitality in the commercial area. Through innovations in operational concepts, methods, and event planning, Ritan Park has established a mutually beneficial relationship with commercial entities, demonstrating a viable pathway for park development and revenue transformation.

3.3 Cultivating Virtual Vitality Communities

Advances in information and communication technologies and the rise of social media have expanded the concept of space, making cyberspace a site and medium for generating new social relationships[30]. Cyberspace transcends geographical boundaries, encompassing not only residents of a specific area but all individuals who identify with a place across diverse spatiotemporal contexts. Through perception and cultural exchange in virtual

environments, cyberspace influences physical spaces and human activities, thereby creating new spatiotemporal and social dynamics[31]. Therefore, the Park Recreational Vitality Area should not only consider the spatial reach of physical environments but also foster relationships between people and parks in cyberspace.

Establishing and utilizing online platforms for promotion to attract more visitors has become a routine practice for major parks. These parks have progressively established new media platforms, navigation tools, and community forums to leverage the influence of cyberspace for outreach. For instance, the 2024 Ritan Park Golden Autumn Garden Fair achieved over 2 billion exposures across 37 new media platforms.

Beyond basic platform development and activity promotion, Longtan Zhonghu Park stands out particularly in community building. Its management team has created and operated two major types of communities: "Zhonghu Little Managers" (park volunteer service groups) and "Zhonghu Little Players" (park user communities). Currently, there are four volunteer groups with more than 800 members and over 30 user communities comprising tens of thousands of members, covering diverse themes such as music, running clubs, photography, and flea market stalls. While primarily targeting surrounding neighborhoods, these communities extend their influence beyond geographical boundaries. Through online community management, Longtan Zhonghu Park has achieved segmented management based on user types, strengthened park vitality and user engagement, and established important channels for activity promotion and feedback collection.

4 Discussion

4.1 Academic and Practical Significance of Park Vitality Area

As a theoretical framework for enhancing park vitality, Park Vitality Area refers to a dynamic spatial system centered on park spaces that facilitates the aggregation and diffusion of biological flows, material flows, human flows, and cultural information flows through functional radiation. The development of Park Vitality Area holds multiple values at both academic and practical levels.

For scholarly research, this theoretical framework enables future studies to focus on key scientific questions, including the internal structural characteristics of the vitality area, spatial radiation effects, systemic linkage mechanisms, multidimensional driving factors, and spatiotemporal evolution patterns. For example, research may examine the radiation effects of parks in areas such as cooling spillovers, housing price enhancement, and urban vitality improvement. Specific investigations could include analyzing differences in spatial radiation capacity among parks of varying scales and types, comparing radiation characteristics of point-based, patch-based, and linear parks, and investigating whether the Park Vitality Area exhibits non-concentric distribution patterns under the influence of accessibility and other factors. In addition, the characteristics of Park Vitality Areas may vary across different national, cultural, and urbanization contexts. It is worth noting that park vitality intensity does not follow a simple linear growth pattern. Similar to central business districts, there exists an optimal scale effect for internal vitality. From an ecological conservation perspective, park systems are also constrained by multidimensional carrying capacities. Therefore, in-depth research on the comprehensive carrying capacity of park systems and their internal functional spaces, as well as establishing scientific mechanisms for vitality element integration and exploring strategies for regulating human activities under carrying capacity constraints will become critical research directions.

For practical implications, the Park Vitality Area framework provides clear objectives and strategic guidance for park construction and renewal. Park development should focus on creating differentiated vitality content systems and expanding the scope of vitality radiation through spatial coordination mechanisms. Based on varying development levels, the construction of Park Vitality Area progresses through four evolutionary stages: 1) focusing on cultivating internal vitality, manifested as a spontaneously emerging initial form; 2) emphasizing synergy in physical spaces through integrated spatial design and co-construction mechanisms to amplify vitality impact; 3) promoting the integration of physical and virtual spaces through digital technologies to establish cultural information networks and to reshape urban cultural ecology; and 4) achieving systematic coupling of natural ecology and cultural vitality, enabling parks to become core pillars of urban sustainable development.

4.2 Governance-Oriented Approach to Park Recreational Vitality Area

While this study focuses on the narrow sense of Park Recreational Vitality Area and its implementation pathways, this does not imply that park construction and management should be entirely oriented toward enhancing human attraction or increasing facility investment. On the contrary, we advocate for advancing the development of Park Recreational Vitality Area through governance thinking, based on two aspects: the "negative list" and "non-material" approaches.

Strengthening the "negative list" approach aims to clarify the

boundaries of "what cannot be done." Parks possess significant public welfare attributes, and Park Vitality Area aims to extend the concept of parks from "public welfare" to "shared benefits." However, overemphasizing human attraction may lead to neglect of natural ecological vitality in parks or even cause ecological damage. Parks should first consolidate their ecological functions in biodiversity conservation and climate change response. Subsequently, they should provide multifunctional public spaces to meet citizens' diverse needs within natural environments[32]. The broad sustainable perspective forms the foundation of Park Vitality Area. Future development should prioritize ecological protection, avoiding excessive commercialization. Furthermore, parks' appeal to crowd, to some extent, is spontaneous. Urban parks, particularly those in central areas, carry substantial potential usage demands from surrounding users. Current management models emphasize the public welfare, which may restrict park use and suppress related demands. With policy adjustments, these latent demands may spontaneously transform into park usage vitality at any time. Therefore, the core challenge is to reasonably regulate the level of control to achieve shared benefits while maintaining public welfare. The key to establishing a negative list lies in defining unrecommended content and behaviors, emphasizing the construction of regulatory systems. Through categorized management, tiered administration, and internal zoning controls, park scenarios can be guided toward healthy development, thereby promoting the spontaneous emergence of more recreational activities.

The essence of the "non-material" approach lies in strengthening operational capabilities rather than relying on rapid investment in physical infrastructure. Intangible event catalysts, particularly large-scale activities, can enrich and enhance urban sustainable development across multiple dimensions[33]. Park scenarios develop spontaneously based on natural and social needs. Future development of China's Park Recreational Vitality Area should move beyond the incremental mindset focused on large-scale demolition and construction of physical landscapes and facilities. Instead, emphasis should be placed on the principle of "operation first," prioritizing support for teams with mature operational capabilities to participate in development. Moreover, park scenario operations must be fully integrated with surrounding land use conditions to comprehensively drive the development of peripheral areas, adopting systematic operational thinking that transcends park boundaries. Through categorized, tiered, and zoned management, parks can establish positive and negative lists for diverse entities and consumption models. While maintaining institutional constraints, resource sharing platforms should be developed to enable more social groups, businesses, and citizens to share resources and benefits. Suitable models for different parks should seek common ground while respecting differences. Overall priority should be given to supporting teams with operational capabilities, while moderately encouraging innovative exploration.

Adopting governance rather than construction as the primary focus, Park Recreational Vitality Area can implement a dual-mechanism logic: using the "negative list" to define boundaries and "non-material" operations to activate potential. This approach establishes the institutional guarantee of "public welfare as foundation, shared benefit as principle" while achieving multi-stakeholder collaboration. It shifts from "restricting what cannot be done" to "stimulating spontaneous growth" and explores a Chinese pathway of differentiated governance by using institutions to stabilize boundaries and operations to promote vitality.

5 Conclusions

Against the backdrop of park city development, urban qualitative regeneration, and the opening and sharing of park space, this study clarifies the theoretical connotations of Park Vitality Area and practical pathways for the narrow sense of Park Recreational Vitality Area. As a distinctive Chinese model of landscape catalytic development, Park Vitality Area demonstrates breakthroughs at theoretical, governance, and practical levels. It reshapes the academic framework of park research: transitioning from isolated "points" to layered systems, from aggregate vitality metrics to carrying capacity thresholds, and from physical spaces to virtual–physical integration—forming an interpretable, comparable, and iterative research framework. Emphasizing parks as catalytic cores interconnected through vitality layers, the Park Vitality Area continuously radiates ecological benefits, social vitality, and economic momentum to urban renewal areas. It promotes sustainable development of existing spaces through functional iteration, cultural regeneration, and social integration. The progressive pathway of Park Vitality Area reflects China's proactive exploration in revitalizing and utilizing parks, demonstrating the professional value and practical wisdom of planning and design disciplines in building a beautiful China and contributing to global sustainable development.

Competing interests | The authors declare that they have no competing interests.

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公园活力圈理论框架及公园游憩活力圈实现路径

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摘要

“公园活力圈”标志着中国公园绿地发展的新阶段，也是公园绿地与“景观触媒”理念结合的实践新范式。本文在梳理公园活力圈理论脉络与国际背景的基础上，提出其广义（可持续发展视角）与狭义（游憩使用视角）双维度内涵。基于当前实践需求，本文重点聚焦狭义的公园游憩活力圈，并结合北京市的典型案例，深入解析其空间特征及三级构建路径，包括内部空间活力提升、内外空间活力联动及网络空间活力社群培育。公园活力圈在功能上推动公园从单一用地类型转型为带动周边区域可持续发展的空间触媒，在空间上将传统离散分布的公园“点状”空间重构为“点－线－面”复合系统。公园活力圈的提出，能够促使公园绿地研究与实践迈入系统化发展阶段，其研究涵盖内部结构特征、辐射影响范围、空间关联机制、影响因素及时空演变规律等系统性议题。公园活力圈是公园绿地参与城市更新治理的新语法，既展现了规划设计专业在美丽中国建设中的价值与贡献，更为全球城市的可持续发展提供了实践范式和中国方案。

关键词

绿色基础设施；景观都市主义；绿色空间；公园活力圈；空间活力；城市更新；景观触媒

文章亮点

- 公园活力圈是中国新时代公园绿地发展的新阶段与新范式
- 公园活力圈具有广义（可持续发展视角）与狭义（游憩使用视角）双重内涵
- 公园游憩活力圈构建路径包括内部空间活力提升、内外空间活力联动和网络空间活力社群培育

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1 引言

公园绿地作为城市可持续发展的关键公共基础设施，在改善空气质量、净化水质、调节微气候、防灾减灾、提升居民生活质量等方面具有不可替代的作用[1–3]。国际上，公园与城市关系的演进大体呈现出“单体建设—系统构建—触媒驱动”3阶段的特征。19世纪中期，受纽约中央公园及城市公园运动的影响，欧美各大城市公园项目逐渐兴起[4]，主要依据城市发展需要进行单体公园建设，视公园为独立绿色空间。19世纪末，埃比尼泽·霍华德的“花园城市”理念及帕特里克·盖迪斯的“区域规划”思想推动了城市绿地的网络体系发展[5]，为后续的绿地系统、绿道体系及绿色基础设施奠定了理论与实践基础。20世纪中期以后，伴随着简·雅各布斯提出“公园作为社会活力触媒”的观点[6]，以及查尔斯·瓦尔德海姆倡导的景观都市主义[7]，公园逐步成为触媒驱动城市更新的范式，为公园绿地的可持续发展开辟了新路径。

相较之下，中国公园绿地的发展进程具有鲜明的本土特色，其演进脉络可概括为“公园雏形—收费公园—免费公园—无界公园”4个阶段。

中国真正意义上的公园雏形出现于晚清时期，例如上海的外滩公园、虹口公园等。这些近代公园虽为公共开放空间，却受制于高门槛与高票价，呈现出有限公益性[8]。新中国成立后，部分私家园林被改造成公园，但长期保持围合与收费特征，其内部景观与周围城市环境形成鲜明对比，赋予了公园强烈的“景点”属性，园内的活动也呈现出区别于日常生活的特殊体验[9]。这种封闭式收费模式一直延续至20世纪90年代，导致公园与外界联系相对不足。随着城市化进程的持续推进，中国现代意义上的城市公园免费开放始于2001年[10]。除历史文化遗产类公园依然收取门票以限制入园人数和保护文物外，大多数城市公园逐步免费开放，公众可达性和使用活力显著提升。然而该阶段的公园规划与管理仍主要聚焦于园内空间，呈现明显的内向型特征。

随着中国城市化建设由“增量扩张”转向“存量提质”，公园不再仅被视为独立空间，其外溢效应及与城市结构的互动关系日益受到重视。在此背景下，“公园城市”成为城市规划的核心议题之一。自2023年起，公园绿地开放共享开始实施，成为城市更新的一项重要战略。北京积极响应，提出“无界公园”“花园城市”等理念，推动拆除公园围墙，促进公园与城市街区融合。与此同时，全国其他地区也开展了一系列公园创新实践，包括规划层面整体衔接绿地系统、打破物理边界、开放草坪、引入多元业态、鼓励社会机构参与运营等，助推“公园＋”模式发展，显著提升了公园绿地在城市中的功能与价值。在这一过程中，公园活力的相关研究及相应的评价技术方法也逐步兴起[11–13]。这些举措共同促进了公园绿地向城市更新“景观触媒”的转变，本文据此总结提出“公园活力圈”理论。

2 公园活力圈的内涵与特征

2.1 公园活力圈

本研究以“景观触媒”理论为基础界定公园活力圈，同时整合并拓展了商圈研究及城市活力研究的相关框架和分析方法。“城市触媒”理论起源于第二次世界大战后美国城市中心的衰退与更新实践，其核心观点认为，孤立的优质设计并不足以激发城市更新，触媒应是一种由点及面、渐进式的规划设计策略[14]。随着景观都市主义的兴起，“景观触媒”概念逐渐形成，但主要停留在理念阐释或设计成果描述层面，尚未建立系统的研究体系[15]。此外，城市活力研究也已形成丰富的学术脉络。活力是城市设计的表现维度之一，反映了场所形式对城市生命力、人类活动及生理需求的支持程度[16–19]。诸如街道类型、安全性、可达性、视觉质量、社交互动多元性等因素均对城市活力产生影响[20–23]，而公园绿地也被认为是城市活力的重要影响因素之一[24–25]。基于以上研究脉络，本文提出的公园活力圈理论确立了公园绿地的触媒核心地位，明确将城市活力作为触媒作用的核心载体，并借鉴商圈研究的方法逻辑构建系统分析框架。

公园活力圈理论认为，公园绿地不仅是城市活力的影响因素之一，更是带动城市活力的引擎。其泛指公园绿地各类功能外溢效应所能够服务的空间范围，即公园活力所能带动并影响的地理区域，包含广义和狭义两个层面的内涵。广义的公园活力圈关注可持续发展，综合考虑公园绿地在生态、社会、经济等多维层面带动周边可持续发展的能力，其辐射范围需依据不同类型的活力内容及空间流动特征来界定。例如，从物种层面看，昆虫的活力圈小于鸟类，而公园的雨洪调节作用则需结合周边管网、地形及所处流域特征综合考量。狭义的公园活力圈特指以人群游憩使用为核心的活力，与商圈概念最为接近，主要关注公园对人群的吸引力及其所能带动人群活动的辐射范围。

公园活力圈的提出体现了物质空间和理念思想上的双重变革。从物质空间角度看，公园不再是孤立的“点”，而是具有“点—线—面”多重结构的物质空间，能够联动周边区域的场所。从理念层面看，公园活力圈代表了一种观念的转变——公园不再仅是一种土地利用方式，而被重新定义为带动周边活力与促进周边可持续发展的引擎。其理论内核与景观都市主义形成学理呼应，均强调景观能够替代建筑成为城市的核心骨架，促进城市发展及活力提升[26]。不同的是，公园活力圈根植于中国的城市化进程，体现了一种具有本土特征的景观城市化路径[27]。

与公园活力圈相近的概念包括公园体系、公园服务半径和15分钟社区生活圈（表1）。公园体系主要强调景观在物质空间上的联通与体系建设。公园服务半径特指公园对周边区域的服务覆盖范围，而公园活力圈则更强调公园作为活力引擎能够在多大程度上服务及带动周边区域的活力与发展。公园活力圈与社区生活圈概念更具相似性。2014年，上海率先提出“15分钟社区生活圈”概念，强调以社区居民为服务对象，以住所为中心点，在步行15分钟的服务半径范围内满足不同人群的餐饮、休闲、文化、体育、医疗、商业等多方面基本需求，构建安全、舒适、无障碍的慢行系统。相较于社区生活圈对多种服务的全面考量，公园活力圈以公园为服务辐射中心，更注重与公园活力相关的各项服务。整体而言，公园活力圈的建设既可以联动社区生活圈，成为“15分钟社区生活圈”的有机组成部分；但二者又不完全相关，因为公园的活力辐射影响不仅局限于周边社区。

2.2 公园游憩活力圈的构成和特征

公园活力圈作为一个广义的概念，其内涵覆盖范畴较广，一篇文章难以穷尽所有。因此本文主要聚焦狭义层面的公园游憩活力圈。这一狭义概念以人群活力为核心关注点，在空间构成上可分为三大部分：内部空间、边界空间和服务空间。内部空间特指公园边界所围合的物理范畴，作为公园活力的核心供给载体，构成活力生成的主导场域；边界空间指公园边界和外部使用者交互联动的过渡区域，具有激发并提升公

表 1：公园活力圈相关概念的核心内涵

概念	定义	标准要求	参考资料
公园体系	由城市各级各类公园合理配置的，满足市民多层级、多类型休闲游览需求的游憩系统	城区公园绿地 500 m 服务半径覆盖居住用地的比例应大于 90%，其中规划新区应达到 100%，旧城区应达到 80%	《城市绿地规划标准（GB/T 51346-2019）》
公园服务半径	公园为市民提供的服务距离，即从公园入口到游人住地的距离	· 公园绿化活动场地的服务半径覆盖率指服务半径覆盖的居住用地面积占居住用地总面积的百分比 · 5 000 m^2 及以上公园绿化活动场地按 500 m 服务半径测算，400—5 000 m^2 的公园绿化活动场地按 300 m 服务半径测算	《国家园林城市评选标准》
15 分钟社区生活圈	在适宜的日常步行范围内，满足城乡居民全生命周期工作与生活等各类需求的基本单元	宜基于街道、镇社区行政管理边界，结合居民生活出行特点和实际需要，确定社区生活圈范围，并按照出行安全和便利的原则，尽量避免城市主干路、河流、山体、铁路等对其造成分割	《社区生活圈规划技术指南（TD/T 1062-2021）》

园活力的潜在价值；服务空间则指代公园活力供给所辐射的实际服务范畴，直观体现活力需求的空间影响范围。需要强调的是，随着社交媒体的快速发展，公园游憩活力圈所涉及的空间维度已突破物理局限，延伸至虚拟领域，例如社交媒体、网络社群等均属其范畴。公园游憩活力圈的服务空间同时具备物质实体和网络虚拟双重维度（图1）。

物理维度的公园游憩活力圈具有明显的圈层及变化规律，可大致分为日常游憩圈、节假游憩圈和打卡游憩圈，且这些圈层呈现离公园边界越来越远、使用频率逐步降低的规律状态。日常游憩圈是公园活力供给主力场域，呈现高频次使用的典型特征；节假游憩圈的使用者可能并非周边居民，活动多集中于节假日，使用频次相应降低；打卡游憩圈指公园因特殊吸引力或特定时期而吸引来的打卡型使用者，其使用特征多表现为一次性或非重复的属性。概括而言，随着辐射空间范围向外扩展，圈层的使用频率虽会出现递减趋势，但使用时长却呈现反向特征——当游客远程到访公园时，其在公园的停留时间通常会更长[28]。

虚拟维度的公园游憩活力圈主要表现为公园网络活力圈，泛指一个公园在数字场域中的综合影响力，具体可表现为网络社群关注度、话题传播力及虚拟互动活跃度等多重维度，其作为一种非物理性的影响范畴，能够通过用户认知建构与行为引导等路径，对公园的实体使用行为产生直接或间接的渗透效应。网络活力圈也并非单一均质的虚拟空间，会因使用者行为特征的差异，呈现出与实体圈层相对应的分化特征，这种分化既延续了日常、节假、打卡等行为逻辑，又因虚拟空间的无界性而产生新的表现形态。例如，以公园为据点的书籍交换社群，其参与者多为周边居民，线上互动频率与线下活动周期高度同步，形成具有日常性特征的网络活力圈，其空间辐射范围与实体日常游憩圈基本重合；而围绕公园品牌赛事形成的马拉松社群，则突破地理邻近性限制，参与者可能覆盖全国范围的爱好者，其线上讨论热度随赛事周期呈现节假式波动，活动参与行为带有显著的打卡属性，构成跨地域的网络活力圈。这种分化既体现了虚拟空间对实体行为的镜像映射，又展现出数字技术赋能下的空间重构能力。

与商圈类似[29]，公园游憩活力圈具有以下4个典型特征：

1）层次性：公园活力的辐射范围具有明显的圈层结构，由内向外呈逐步衰减趋势，层次及递进结构清晰。一般情况下，大型公园的辐射圈相对较大，层次较多。小型公园则服务辐射范围较小，层次较少。

2）不规则性：在空间范畴上，公园游憩活力圈可能呈现不规则形态，会随周边地形、自然生态、交通及社会人口分布等差异而表现不同。

3）重叠性：不同公园的活力圈在地理空间上可互相重叠、彼此交叉。在重叠区域，不同的公园同时为相关人群服务，这也意味着不同公园需要竞相吸引使用者。

4）流动性：特指公园使用者具有空间分布上的动态变化特征，这种变化既受公园绿地系统格局、人口需求结构、交通条件等外在因素影响，也受公园管理方法、运营方针、基本设施及服务能力等内部因素影响。

3 公园游憩活力圈构建的北京路径

本研究以日坛公园、龙潭中湖公园和温榆河公园为例，概括北京市在公园游憩活力圈建设上的创新尝试。这些公园在地理区位上分布于北

京六环内的不同城区，涵盖城市核心区与近郊区。日坛公园的一系列创新举措源于文物保护单位的活力探索。作为著名文物古迹，其管理权属于政府主导形式，由事业单位日坛公园管理处全权管理。龙潭中湖公园的探索则属于旧游乐场的翻新尝试。该公园前身是北京游乐园，于2020年启动改造建设，2021年9月24日开始免费对外开放。该公园是政府补贴、企业主导运营的试点。温榆河公园则是新建公园，属于典型的滨水线性公园，定位为集文化交流展示、户外运动体验于一体的亲自然、高品质、国际化城市生态休闲公园。该公园的一大特点是企业运营，依据商业逻辑开展日常维护和管理。概括而言，日坛公园以“文保激活＋边界共享”为特色，龙潭中湖公园以“旧场更新＋社群运营”为亮点，温榆河公园则以“滨水线性＋企业运营”为代表。三者分别呈现“历史活化—旧区更新—新区引领”的发展模式，在历史脉络、管理方式等方面具有一定的典型性和可对比性。

在公园游憩活力圈的构建中，这些公园所进行的差异化创新实践可概括为以下三大路径：内部空间的活力提升、内外空间的活力联动，以及网络空间的活力社群培育（图2）。针对相关公园管理处及北京市公园绿地协会成员的访谈与实地调研结果显示，不同公园基于上述3条路径的活力圈构建创新程度及特色也各有不同（表2）。

3.1 内部空间的活力提升

公园游憩活力圈构建的初步路径聚焦引入多种设施、活动来提升公园活力，3个公园展现出差异化实践特色。

日坛公园作为历史名园，通过盘活公园资产、满足市民多元需求来提升公园活力。公园10%的空间用于提供餐饮，石舫、园艺驿站等闲置空间被转化为餐饮服务空间，通过市场化运作产生经济效益；90%的空间用于提供免费的公共服务，满足市民散步、锻炼、社交、娱乐等需求。其空间组织形成三大活力单元：北区复现坛庙礼仪空间，西区构建江南园林式交往场所，东区打造体育科技创新体验带，展现历史名园的现代活化路径。

龙潭中湖公园的内部活力提升主要聚焦旧游乐园的改造。该公园内部水域均为经营空间，陆面公共服务和经营性空间的面积比例约为9:1。通过联动周边体育管理机构，确立“运动游乐＋”主题定位，形成了城市生活类、户外游乐类、节事类、运动类4级活力场景，并同步引入餐饮服务。龙潭中湖公园紧密围绕本底特色，聚焦运动和游乐设施，联动多元业态建构新场景，提升了公园活力与吸引力。

温榆河公园的内部活力提升体现为线性滨水业态的多种尝试。2020年秋，该公园的朝阳段示范区率先开园，园内餐饮设施类型多元，经营性项目丰富多样，涵盖生态体验、自然教育、运动探险、宠物服务、综合休憩等多种类型。温榆河公园作为一家完全由企业运营的公园，在活力内容建设上持续创新，积极探索了多样化的室外游憩方式。

3.2 内外空间的活力联动

如何衔接并联动周边活力，进一步扩大活力服务及辐射范围，是公园游憩活力圈构建的第二个重要策略关注点。不同公园在此方面进行了

表 2：公园基本情况及其公园游憩活力圈构建的创新情况

基本情况				公园游憩活力圈构建的创新程度和特色		
公园名称	特点	面积	管理模式	内部空间的活力提升	内外空间的活力联动	网络空间的活力社群培育
日坛公园	文物保护单位的活力探索	20.62 hm^2	政府主导	◆◆◆◆ 历史场景中的日常和节庆活力	◆◆◆◆◆ 边界共享、联动周边商户	◆◆ 网络传播与营销
龙潭中湖公园	旧游乐场的翻新	39.67 hm^2	政府补贴、企业运营	◆◆◆◆ 体育游乐为主的独特活力	◆◆◆ 借用周边停车场、联动周边科研单位	◆◆◆◆ 自建网络社群
温榆河公园	新建的线性公园	规划范围 3 040 hm^2	企业运营	◆◆◆◆ 滨水普适性公园活力 IP 系列活动	◆◆ 绿道连接周边绿地及社区	◆◆ 网络传播与营销

注

◆ 代表相关类型活力圈构建的创新程度，数量越多表示创新程度越高。

多样探索。例如，龙潭中湖公园借用周边停车场，与体育管理机构联动开展系列运动类活动，并与北京市园林绿化科学研究院合作开展自然教育与文化活动；温榆河公园则通过绿道建设联动周边其他公园及社区；而最具代表性的是日坛公园，其通过“边界开放共享”和“联动周边商户”两条路径，实现了公园内外空间的活力联动（图3）。

在边界开放共享的改造中，日坛公园主动后撤围栏，腾出约1 hm^2的空间用于街区美化，并联动周边街道，形成面积达1.94 hm^2的高品质花园街区。通过将市政人行道引入公园绿地，实现公园景观与城市景观的有机融合。同时打造便民惠民服务街区，将原本封闭的绿地改造为供休憩和就医等候的空间。通过打破边界壁垒，并结合周边土地利用需求共享边界空间，从空间上进一步激发周边区域的使用潜力与活力。

“2024日坛公园金秋游园会”是与周边商户联动的典型体现。该活动突破了以往的常规模式，不仅设置内部游园活动，更同时联动周边商圈的42家商户，推出游园会“专享优惠”和“美食地图”。游客在游园赏玩的同时，可享受活动门票附带的商圈餐饮和购物折扣优惠。活动由单一的公园节事拓展为多元的商圈联动，实现客流与消费互联互促，有效拉动了商圈经济活力。该活动在运营理念、方式及项目策划等方面均进行了创新，推动公园与商圈的商业主体形成良性互动，为公园发展和营收转化探索出一条可行路径。

3.3 网络空间的活力社群培育

信息通讯技术的日趋发达和社交媒体的兴起使得空间的内涵进一步延展，网络空间成为新型社会关系生成的场所与载体[30]。网络空间能够突破地缘亲近性，不以特定区域的居住人群为主体，而囊括多时空下对某处场所具有认同感的所有人。人们藉由虚拟空间中的感知与文化交流，对物质实体空间及人的活动产生影响，进而形成新的时空关系和社会关系[31]。因此，公园游憩活力圈不仅要考虑物质空间的辐射范围，还应建构网络空间中人与公园的关系。

构建并利用网络平台进行宣传推广、凝聚吸引力，已成为各大公园的常态化关注焦点。各公园逐步建立了新媒体平台、导览软件及社群平台等，通过网络空间影响力进行宣传推广。例如，2024日坛公园金秋游园会活动即在37个新媒体平台形成了超20亿次曝光量。

除却基本的网络平台建设和活动推广，龙潭中湖公园在社群建设方面尤具特色。其管理团队建构并运营了“中湖小当家”（公园志愿服务群）和“中湖小玩家”（公园使用者社群）两大类社群，目前已形成4个共800余名成员的志愿者群，以及30余个涵盖上万名成员的使用者社群，主题涵盖音乐、跑团、摄影、闲置摊位等多种类型。这些社群以周边社区为主要辐射对象，但整体影响范围不限于此。通过网络社群的运营，龙潭中湖公园实现了基于使用者类型的细分管理，强化了公园活力及用户黏性，成为公园活动推广与意见反馈的重要载体。

4 讨论

4.1 公园活力圈的学术与实践意义

公园活力圈作为公园活力营建的理论框架，是指以公园空间为核心载体，通过功能效应的辐射扩散，形成能够有效集聚生物流、物质流、人群流及文化信息流的动态空间系统。公园活力圈的构建具有学术和实践层面的多重价值。

在研究层面，基于该理论框架，未来公园绿地研究可聚焦活力圈的内部结构特征、空间辐射效应、系统关联机制、影响因素体系及时空演变规律等关键科学问题。例如，可探究公园绿地在降温外溢、房价带动及城市活力提升等方面的辐射效应；研究不同尺度和类型公园的空间辐射能力差异；比较点状、片状和带状公园的辐射特征；以及分析在可达性等因素的影响下，公园活力圈是否呈现非同心圆分布状态。此外，不同国家、文化及城市化背景下，公园活力圈的相关情况也可能存在差异。值得注意的是，公园活力强度并非呈简单的线性增长趋势，与商业中心区类似，其内部活力存在最优规模效应；而从生态保护视角看，公园系统亦受到多维承载力的约束。因此，深入研究公园绿地系统的综合承载力及其内部功能空间的承载力阈值，建立科学的活力要素准入机制，探索承载力约束下的人群活动调控策略，将成为未来的重要研究方向。

在实践层面，公园活力圈理论为公园建设与更新改造提供了明确的目标导向和策略框架。公园建设应着力构建差异化的活力内容体系，并通过空间联动机制拓展活力辐射范围。基于发展程度差异，公园活力圈建设将呈现4个递进式发展阶段：1）聚焦内部活力培育，表现为自发生长的初级形态；2）强调实体空间的协同联动，通过空间一体化设计和共建共治机制扩大活力影响范围；3）推进虚实空间融合，借助数字技术构建文化信息传播网络，重塑城市文化生态；4）实现自然生态与人文活力的系统耦合，使公园绿地成为城市可持续发展的核心支撑。

4.2 公园游憩活力圈的治理思维

本文重点讨论了狭义公园游憩活力圈的内涵及实现路径，但这不意味着公园建设与管理应完全以提升人群吸引力为导向，进而加大设施建设投入。相反，本研究主张从“负面清单”和“非物质”两方面出发，以治理思维推动公园游憩活力圈的实现。

强化“负面清单”的意图在于明确“不可为”的边界。公园具有显著的公益属性，公园活力圈尝试将公园的内涵由“公益”拓展为“共益”，但若过度强调人群吸引力，则可能忽视公园绿地的自然生态活力，甚至造成生态破坏。公园应首先夯实其在生物多样性保护与气候变化应对中的生态功效，再提供多功能的公共空间，以满足人们在自然环境中的多元需求[32]。广义的可持续视角是公园活力圈的根本所在，未来公园活力圈的建设要立足生态保护，避免过度商业化的倾向。此外，公

园对人群的吸引力在一定程度上具有自发性。城市中，特别是中心区的公园绿地，承载了周边大量用户的潜在使用需求。当前的公园管理模式强调其公益属性，在一定程度上限制了公园的使用，抑制了相关使用需求。而随着政策的调整，这些潜在需求随时可能自发转化为公园的使用活力。因此，核心问题在于如何把握管控力度，在确保公益的基础上实现共益。设置负面清单的重点在于明确不可行的内容与行为边界，强调控制性规章制度的建设，通过分类分级管理及公园内部分区管控制度，引导公园场景的健康发展，以此促进更多游憩活动的自发发生。

“非物质”的要点在于强化运营，而非依赖某些场景的快速投资建设。无形的事件触媒，特别是大型节事活动，能够从不同的方面丰富和提升城市的可持续发展[33]。公园场景是依据自然与社会需求而自发生长的。未来中国的公园游憩活力圈建设应摒弃大拆大建的物质景观与设施增量思维，转而强调“运营先行”的原则，优先支持具备成熟运营条件的团队参与建设。此外，公园场景运营需充分结合周边土地利用情况，统筹带动周边区域发展，跳出公园边界建立系统运营的思维。公园可在分类、分级、分区管控的基础上，建立多元主体和消费模式的正面和负面清单，在制度约束前提下搭建资源共享平台，让更多的社会群体、商家及市民实现资源共享共益。不同公园的适宜模式应求同存异，总体上优先支持具有运营能力的团队进入，并适度鼓励创新探索。

以治理而非建设为主要抓手，公园游憩活力圈可通过“负面清单”划定底线、以“非物质”运营激活潜能的双机制逻辑，实现“公益为底、共益为纲”的制度保障与多元协同。其强调从“限制不可为”转向“激发自发生长”，以制度稳边界，以运营促活力，探索出一条差异化治理的中国路径。

5 结语

在公园城市建设、城市存量更新及公园绿地开放共享的背景下，本文阐释了公园活力圈的理论内涵及狭义公园游憩活力圈的实践路径。作为具有中国特色的景观触媒发展模式，公园活力圈体现了理论、治理与实践层面的多重突破。它重塑了公园研究的学理体系：从孤立的“点”到圈层系统，从活力总量到承载阈值，从物质空间到虚实融合，形成了可解释、可比较、可迭代的研究框架。公园活力圈强调以公园绿地为触媒核心，以活力圈层为纽带，将生态效益、社交活力与经济动能持续辐射至存量更新区域，推动既有空间在功能迭代、文化再生与社会融合中实现可持续发展。公园活力圈的渐进式潜在发展路径体现了中国在公园活化利用方面的积极探索，彰显了规划设计相关学科与行业在美丽中国建设和全球可持续发展中的专业价值与实践智慧。

图 1. 公园游憩活力圈的空间辐射及潜在圈层
图 2. 公园游憩活力圈构建的三大路径
图 3. 日坛公园的“边界开放共享”和“联动周边商户”路径