

儿童友好型城市街区公共空间景观设计策略研究

Research on Landscape Design Strategy of Public Space in Child-friendly Urban Blocks

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DOI: 10.12145/202106026

摘要：城市街区公共空间是儿童活动频率最高的场所，然而，当下街区公共空间缺乏以儿童为角度出发设计的、符合其生理与心理需求的活动场地，极大影响儿童的健康发展。因此，本文基于儿童友好型城市建设背景，对街区公共空间的现状进行分析，结合相关设计实践研究，从儿童自身行为特征出发提出针对街区点状、线状与面状三种空间类型的景观设计策略，为儿童友好型城市街区公共空间的建設提供新的思路。

关键词：儿童友好；街区；城市街区公共空间；景观设计；儿童行为模式

Abstract: The public space in urban blocks is the place with the highest frequency of children's activities. However, the current public space in blocks is lack of venues for activity designed from the perspective of children to meet their physical and psychological needs, which greatly affects the healthy development of children. Therefore, based on the background of the construction of child-friendly city, this article analyzes the current situation of the public space in the block. Starting from the characteristics of the children's own behavior combined with relevant design practice research, this paper proposes a correspondence to the three spatial types of point, linear and planar spaces in the block. The specific landscape design strategy provides new ideas for the construction of public space in child-friendly urban blocks.

Key words: child-friendly; block; public space in urban blocks; landscape design; Behavior patterns of children

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引言

作为世界上人口最多的国家，中国有着世界上最大的儿童群体。街区作为城市构成和社会治理的基本单元，也是与儿童日常生活密切相关的地方。然而，当下街区公共空间设计的观念存在盲区，即大多设计师将成年人作为设计的主体，忽视了儿童的权益与需求，设计中缺乏符合儿童行为特性的活动场地。以上因素极大地影响了儿童的成长，本文从儿童友好的视角出发，对城市街区公共空间景观设计策略进行初步探索。

1. 相关概念解析

1.1 儿童友好型城市

“儿童友好型城市”的概念由联合国儿童基金会在 1996 年首次提出^[1]，倡导改善城市生活环境，从而满足儿童在城市中的各类行为活动的需求。将儿童的需求与决策纳入城市的规划体系当中，充分体现了儿童权益。目前，全世界共有 400 多个城市被认证为“儿童友好型城市”，并且数量仍在持续增加^[2]。

1.2 儿童友好型景观

儿童友好型景观是指以儿童为核心，营造保证儿童权益、满足儿童需求的景观环境。在设计策略中充分将儿童需求与景观要素相结合，创造出适合儿童身心发展的空间环境。

1.3 城市街区公共空间

城市街区公共空间通常是指街区建筑空间以外的开放性环境和场所，服务对象主要为

街区内居民，其目的是满足居民公共交往以及户外活动的需求。本文所指的城市街区公共空间是指与儿童生活紧密相关的居住街区公共空间，主要为街区内街道空间、绿地、广场空间等。

1.4 国外儿童友好街区建设经验

1.4.1 国外儿童友好型政策

国外儿童友好的相关理论发展较早。1933年《雅典宪章》明确表示了对于社区内应设置儿童游戏场的要求；1959年《儿童权利宣言》再次强调了儿童游戏的权益与需求；1989年《儿童权利公约》明确了儿童的四项基本权利，并提出儿童友好型城市需保证儿童的各项权益；1996年的联合国第二次人居环境会议中将儿童友好型的理念从心理学、教育学等领域扩展到建筑与空间设计领域；2005年“儿童友好型”街区环境国际研讨会提出“儿童友好型街区”空间设计理念与任务。

1.4.2 国外儿童友好型实践经验

国外在儿童友好型街区公共空间实践方面有着较为丰富的经验。公园广场空间设计实践中，荷兰代尔夫特市的霍夫多普街区结合步行街道布置了各类游戏设施及交往空间；丹麦哥本哈根的点状游戏场创造了儿童与自然接触的机会。街道空间设计实践中，英国提出的“社区地带”，使街区中的街道与其他公共空间串联整合，为儿童提供活动机会；英国伦敦的“步行巴士”计划为儿童提供了环保健康的出行方式。学校空间设计实践中，美国丹佛的“见学地景”项目通过改造学校的废弃场地，使其成为儿童户外的多用途活动空间。

2. 街区公共空间分类与现状

2.1 街区公共空间的分类

街区公共空间根据空间形态可分为点状空间、线状空间和面状空间。参考《城市居住区规划设计规范》（GB 50180—93）中对于公共空间范围的界定，对三种空间做出定义^[3]（表1）。良好的街区环境可以通过点、线、面的结合，形成适合儿童出行与户外活动的空间体系。

表1 街区公共空间分类
Table 1 Classification of Public Space in Blocks

空间形态	范围	空间类型
点状空间	面积小于 4000 m ²	街角广场、口袋公园、停车空间等
线状空间	面积不小于 400 m ² 宽度不小于 8 m	街道及其附属空间、滨水空间等
面状空间	面积大于 4000 m ²	街区广场、公园绿地、运动场、小游园等

2.2 街区公共空间的现状

目前，儿童友好型街区公共空间的规划设计颇为局限，缺乏系统的规划思考与细节的空间设计，具体表现为：空间组织不合理，街区内活动场地的布局没有考虑儿童的出行路径；儿童活动空间不足，街区公共空间的设计不注重对儿童群体的考虑，导致针对儿童设计的活动场地缺乏；空间缺乏连续性，各类型空间没有形成系统，整体体验感较差；儿童游乐设施不合理，单一化的游乐器械缺少独特性与吸引力。

3. 街区内儿童行为模式分析

儿童友好型城市街区公共空间设计需要考虑街区尺度下儿童的日常活动习性，从儿童的心理及行为特点出发，依据其活动特性提出设计策略。

3.1 行为模式特征

3.1.1 随机性

儿童在空间中的活动轨迹具有随机性。由于儿童注意力易分散、好奇心强，其活动轨迹不固定，容易被新鲜事物吸引。因此，活动场地的设置需要具备灵活性、整体性，注重与周边其他场地的结合。

3.1.2 聚集性

年龄相近的儿童更容易聚集在一起游戏，年龄较小儿童偏向于挖沙子等简单活动，而年龄较大儿童喜欢难度较大的游戏。因此，设计中要充分考虑不同年龄段儿童的需求。

3.1.3 自发性

由于街区公共空间的特征，难以设置专供儿童游戏的集中场地和大型设备，儿童自发组织的活动较多。因此，设计中要保证街区活动空间的可塑性，不完全设定空间活动内容，使儿童可以自发组织使用场地。

3.2 心理特征

3.2.1 探索性

儿童容易被新奇的环境吸引，例如，洞口、缝隙等隐蔽的空间都会引起儿童强烈的探索欲望。因此，可以设置小山坡等不规则的空间激发儿童探索行为，创造丰富的空间游戏体验。

3.2.2 依赖性

年龄较小儿童的活动需要他人陪同完成。因此，设计中应考虑儿童的依赖性，设置看护区与亲子娱乐区等代际性空间。

3.2.3 模仿性

儿童模仿能力强，善于在模仿事物的形态或发出的声音等行为中找到活动的新方式。设计中要运用街区中各种元素对儿童的影响，例如，设置具有教育意义的设施，让儿童在模仿中学习与成长。

4. 儿童友好型城市街区公共空间景观设计策略的探索

基于儿童友好型城市建设背景，结合儿童行为特性，对街区内点状空间、线状空间、面状空间提出景观设计具体策略（图 1）。

4.1 合理布局点状空间，保障儿童活动便利性

点状空间由于其面积小、分布广的特质，是街区内儿童使用最为频繁的公共空间类型。同时点状空间这种非正式的游戏场地对儿童成长有着重要作用。当下大多数正式的游戏场地往往因为预设的游戏内容导致儿童缺乏主动学习探索的欲望。相反，非正式、无组织的游戏更能让儿童发展合作的能力。



1

儿童友好型城市街区公共空间景观设计策略图
Landscape Design Strategy Diagram of Public Space in Child-friendly Urban Blocks

(1) 合理布局点状空间：根据儿童出行路线，将路线上的节点作为点状空间的设置地，适当加大其分布密度保障儿童活动的便利性，形成“游戏点”网络（图 2）。

(2) 利用碎片临时性空间：合理利用街边临时停车位、街区内碎片化绿地等点状空间，置入趣味性景观设施，形成“快闪公园”等临时性游戏空间。同时设置可移动或可拆卸的便捷艺术装置^[4]，与街区整体环境兼容（图 3）。

(3) 重构废弃“边角料”空间：结合儿童出行路径，重构原有建成环境中废弃的点状空间，纳入街区儿童游戏活动场地体系。例如，北京市朝阳区水碓北里幼儿园周边点状空间的改造中，“卷心菜”方案通过对场地的重构，取消老旧废弃的设施，以儿童的视角重新审视场地，设置不同功能层次的围合空间，给原本活动缺失的场地带来了活力（图 4）。

(4) 公众参与空间微更新：街区中相当多的点状空间由于忽视导致边缘化。区别于大拆大建，点状空间更适合以公众参与为基础，对空间及其设施采用局部渐进的方式进行更新^[5]。例如，北京市 BOBO 自由城小区创意地绘街区共建活动以儿童参与为纽带，空间微更新为途径，促进街区共建共治（图 5）。

4.2 合理规划线状空间，保障儿童出行安全性

线状空间的合理规划可以保证儿童户外活动的安全性。当下机动车交通的普遍性，使儿童及其家长对街道这个“最方便到达的城市公共空间”顾虑颇多，因此，线状空间的安全性尤为重要。通过研究分析发现，街道安全主要包括心理安全、社会安全和出行安全三个方面^[6]。其中，出行安全与建成环境设计的相关性最高。本文从出行安全角度出发对街区内线状空间环境提出改善策略。

(1) 确立儿童出行路线：根据儿童的出行习惯确定日常出行路线，有针对性地进行路径规划。例如，荷兰代尔夫特市推出的“儿童出行路径”通过合理地规划儿童出行路线，将儿童日常的生活场所串联形成安全有趣的“廊道”^[7]（图 6）。

(2) 完善街道交通设计：通过对出行路径中街道入口、交叉口及沿街设施的改善和街道交通静稳化措施、共享路面等设计方法的运用创建安全的街道环境（图 7）。

(3) 优化街道空间设施：合理布置街道绿化设施和城市家具，设置符合儿童审美及活动兴趣的设施，增强儿童与街道空间互动性、提升心理安全感（图 8）。

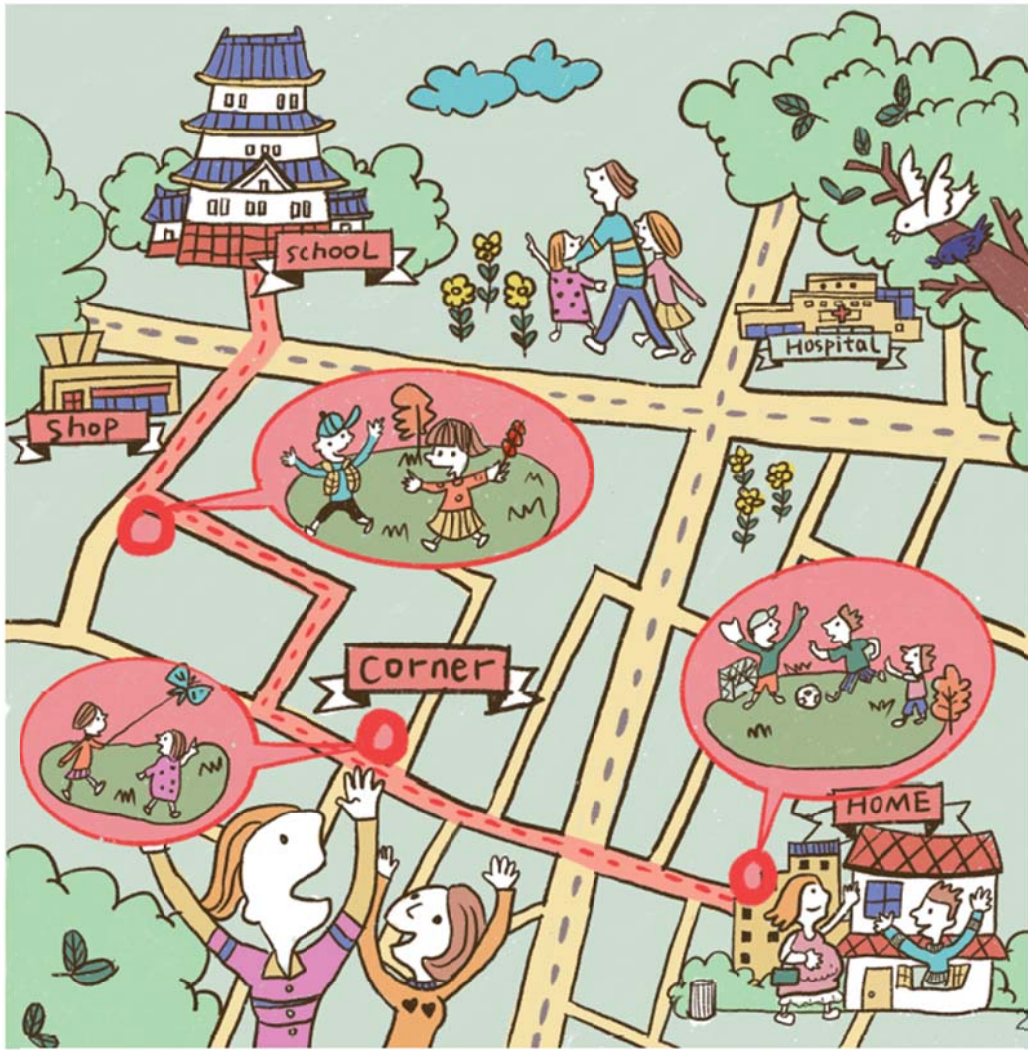
(4) 设置儿童友好标识：通过醒目明晰的卡通图标，提醒儿童以及其他街道使用者注意儿童的出行路线，保障儿童出行安全（图 9）。

4.3 复合设计面状空间，保障儿童活动多样性

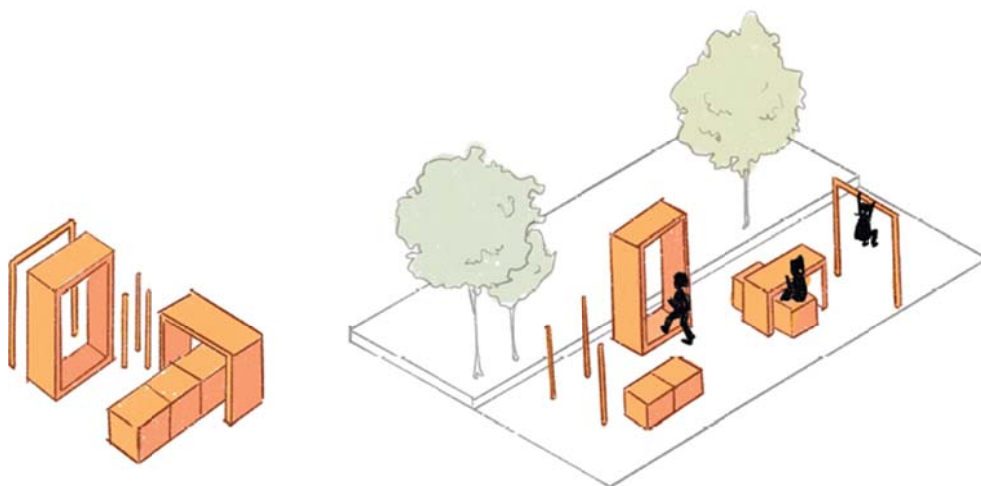
面状空间是街区公共空间儿童友好型的集中体现。面状空间更注重场地设计本身，通过合理地规划设计，满足不同人群尤其是儿童的需求，创造丰富的空间类型，保障儿童活动的多样性。

(1) 设计需求多样化空间：根据不同年龄段儿童需求差异，为其设计多样化的空间。方便儿童的监护与活动自主性。例如，北京市通州区第二中学周边面状空间改造中，“网”方案根据儿童年龄差异设置网状互动装置、攀爬网道、爬坡与滑梯设施等，符合不同年龄段儿童心理和生理需求（图 10）。

(2) 设置共享代际性空间：当下我国普遍存在老人照顾孩子的现象，设置共享代际性空间，避免了因活动区的分割而导致的空间单一化问题，在儿童获得看护的同时，也使老人从中获得了陪伴与满足。例如，北京市通州区第二中学周边面状空间改造中，“绿洲”方案将幼儿学步区与活动器械区集中设置，并在周边设置座椅，家长在锻炼的同时也可以兼顾儿童的安全（图 11）。



“游戏点”点状空间分布图
Distribution Map of “Game Point” Dotted Space



3

临时性可拆卸趣味性装置
Temporary and Detachable Fun Device



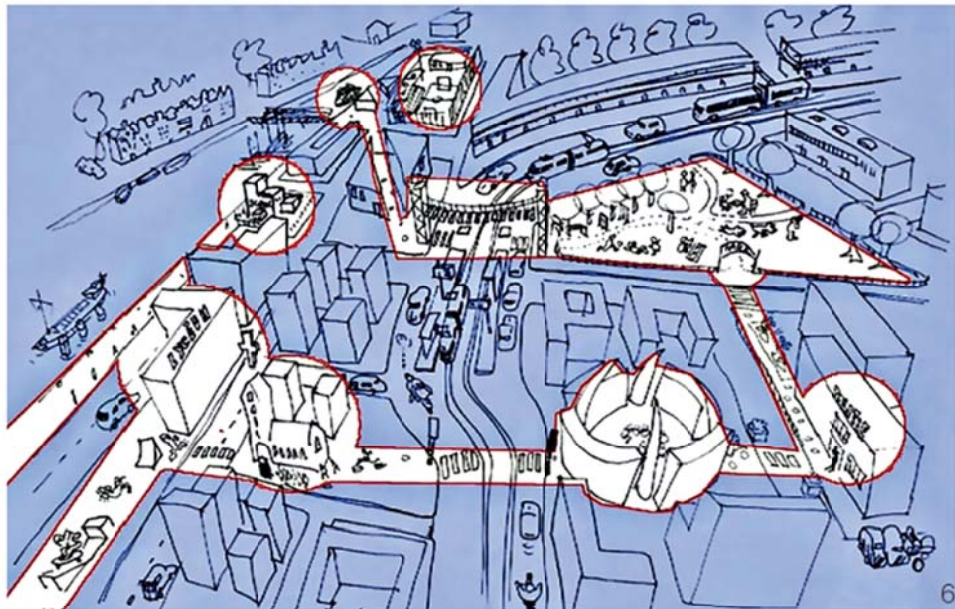
4

朝阳区水碓北里幼儿园周边点状空间设计方案“卷心菜” (©王澜润)
Dotted Space Design “Cabbage” around Shuiduibeiili
Kindergarten in Chaoyang District (© WANG Lanrun)



5

BOBO 自由城小区创意地绘街区共建活动 (© 中央美术学院建筑学院)
 Creative Painted Block Co-construction Activity in BOBO Free City
 Community (© School of Architecture, Central Academy of Fine Arts)



6

儿童出行路径示意图^[7]
 Schematic Diagram of Children's Travel Path^[7]

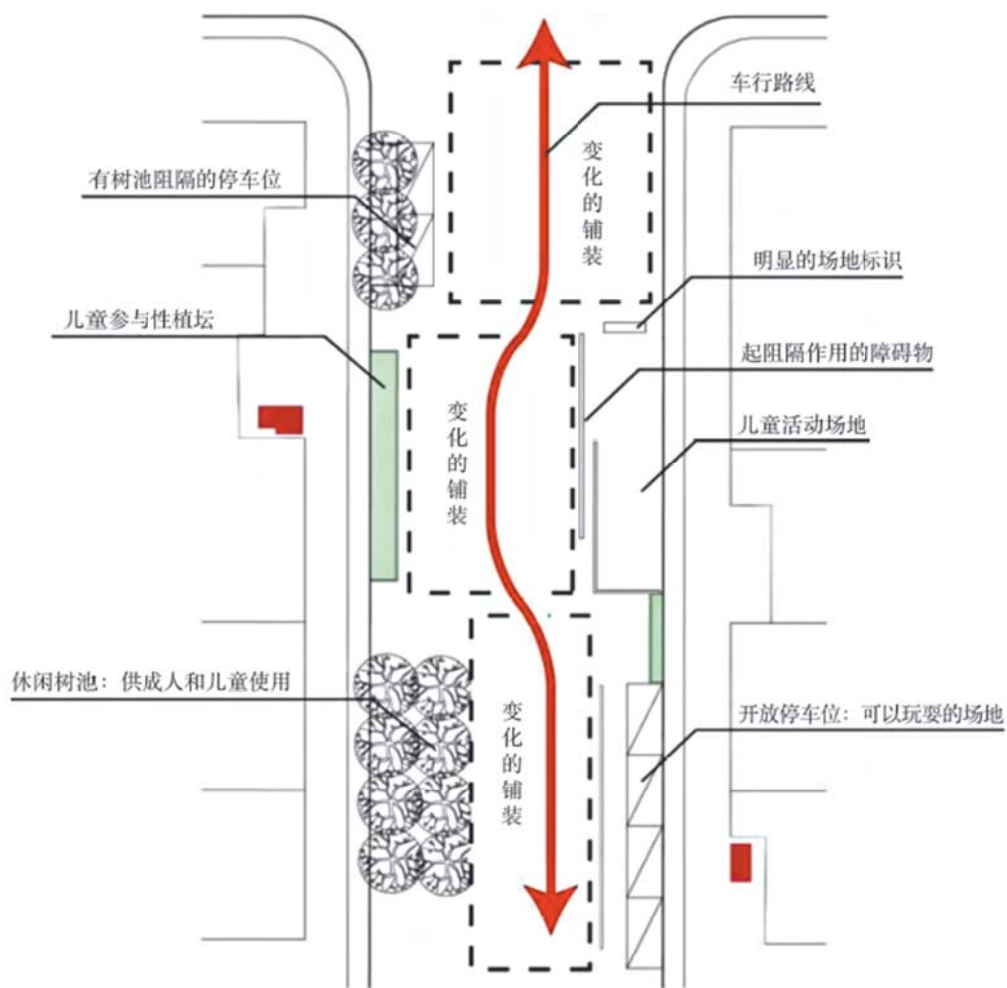
(3) 设置边界过渡性空间：边界的设置保障了儿童活动的安全性与空间的完整性。其中边

界的过渡性尤为重要，空间的进入需要儿童有一定的情感沉淀和循序渐进的空间感受。例如，北京市西城区育翔小学周边面状空间改造中，“像素公园”方案创造了不同氛围的空间和更多的自由性，运用像素元素在每个功能片区连接的部分进行过渡与延伸，摒弃生硬的边界，使整体空间体验完整并富有新意（图 12）。

（4）设置趣味吸引性空间：儿童对于新奇的事物通常产生探究的心理并做出行动[8]，所以设计需要具备一定的趣味性。北京市通州区第二中学周边面状空间改造中，“夹缝”方案根据儿童心理特性，创造了具有探索性的空间，利用不同类型的夹缝空间，吸引儿童与场地互动。例如，光影夹缝、草坡夹缝、树阵夹缝等（图 13）。

5. 结语

我国对于儿童友好型城市街区公共空间景观设计还需要进一步深入总结其他国家的建设经验，在科学的理论与研究指导下，遵循儿童的行为特征，结合我国城市发展现状，推进儿童友好型城市街区建设。本文希望能够为儿童友好型城市街区公共空间的设计提供一些思路，构建更加完善的儿童友好型街区空间。

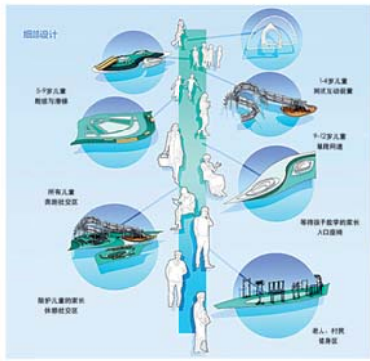




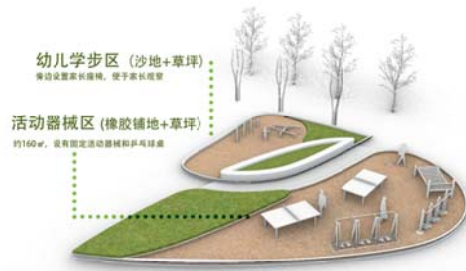
儿童友好型街道空间设施示意图
Schematic Diagram of Facilities in
Space of Child-friendly Street



9
儿童友好路径标识
Child-friendly Path Identification



10
通州区第二中学周边面状空间设计方案“网” (©许可)
Planar Space Design Scheme "Net" around No. 2 Middle School in Tongzhou District (© XU Ke)



11
通州区第二中学周边面状空间设计方案“绿洲” (©罗思齐)
Planar Space Design Scheme "Oasis" around No. 2 Middle School in Tongzhou District (© LUO Siqi)



12
西城区育翔小学周边面状空间设计方案“像素公园” (©王梓严)
Planar Space Design Scheme "Pixel Park" around Yuxiang Primary School in Xicheng District (© WANG Ziyen)



13
 通州区第二中学周边面状空间设计方案“夹缝” (©李睿婷)
 Planar Space Design Scheme "Crevice" around No. 2 Middle
 School in Tongzhou District (© Li Shuangting)

Introduction

As the most populous country in the world, China has the world's largest group of children. As the basic unit of urban composition and social governance, block is also a place closely related to children's daily life. However, there are blind spots in the current concept of public space in block design, that is, most designers take adults as the main body of the design, and ignore the rights, interests and needs of children, and their design lacks venues for activity in line with the behavioral characteristics of children. The factors above have greatly affected the growth of children. This paper preliminarily explores the landscape design strategy of the public space in urban blocks from the perspective of childfriendliness.

1. Analysis of Related Concepts

1.1 Child-friendly Cities

The concept of "child-friendly city" which was first proposed by UNICEF in 1996^[1], advocates the improvement of the urban living environment, so as to meet the needs of children's various

behavioral activities in cities, and integrates children's needs and decisions into the urban planning system, fully reflecting children's rights and interests. More than 400 cities in the world are currently certified as "child-friendly cities", and the number continues to increase[2].

1.2 Child-friendly Landscape

Child-friendly landscape refers to the landscape environment with children as the core to ensure children's rights and interests and meet children's needs. In the design strategy, children's needs are fully integrated with landscape elements to create a spatial environment suitable for children's physical and mental development.

1.3 Public Space in Urban Blocks

Public space in urban blocks usually refers to the open environment and place outside the building space in the block, whose service object mainly focuses on the residents in the block. The purpose is to meet the needs of the residents' public communication and outdoor activities. The public space of urban blocks in this paper refers to the public space in residential blocks closely related to children's life, mainly for the street space, green space and square space in the block.

1.4 Experience in Building Child-friendly Blocks in Foreign Countries

1.4.1 Child-friendly Policies in Foreign Countries

Relevant theories of child-friendly in foreign countries developed earlier. The Athens Charter (1933) specified the requirement for children's playground to be set up within community. The Declaration of the Rights of the Children (1959) emphasized the rights, interests and needs of children's games again. The Convention on the Rights of the Children (1989) defined the four fundamental rights of children and proposed that their rights needed to be guaranteed in child-friendly cities. The Second United Nations Conference on Habitat in 1996 expanded the concept of child-friendly approach from the field of psychology and pedagogy to the field of architecture and space design. The International Symposium on "Child-friendly" Block Environment (2005) proposed the concept and task of child-friendly block.

1.4.2 Child-friendly Practical Experience in Foreign Countries

Foreign countries have more experience in the practice of public space in childfriendly blocks. In the space design practice of park square, the Hoofddorp block in Delft, the Netherlands sets up different recreation facilities and communication space combined with walkway. The dotted space in Copenhagen, Denmark creates opportunities for children to contact with nature. In street space

design practice, the “Community Zone” proposed in England integrates the streets in line with other public space to make opportunities for children. In the “Walking Bus” program in London, England provides an environment-friendly and healthy way for children to travel. In school space design practice, the “Learning Landscape” Project in Denver, USA, makes it a multi-purpose outdoor activity space for children by transforming the abandoned school space.

2. Classification and Current Status of Public Space in Blocks

2.1 Classification of Public Space in Blocks

The public space in blocks can be divided into dotted space, linear space and planar space according to the spatial form. With reference to the definition of the scope of public space in the Code for Planning and Design of Urban Residential Areas (GB 50180-93), the three spaces are defined^[3] (table 1). Good environment in blocks can form a space system suitable for children’s travel and outdoor activities through the combination of point, line and surface.

2.2 Current Status of Public Space in Blocks

At present, the planning and design of public space is quite limited, lack of systematic planning and spatial design in detail. All these are concretely showed in unreasonable space organization, travel paths in the venues for activity in blocks without considering children, and insufficient activity space for children as the design of public space in blocks doesn’t pay attention to children which leads to the lack of venues for activity. The space is unsystematic and lack of continuity with poor overall experience. The recreation facilities are unreasonable and the single recreation installation is lack of uniqueness and attraction.

3. Analysis of Children’s Behavior Patterns in Blocks

The design of public space in child-friendly urban blocks needs to consider the daily activity habits of children at the block scale, and proposes design strategy according to the psychological and the behavioral characteristics of children.

3.1 Characteristics of Behavioral Patterns

3.1.1 Randomness

Activity trajectories of children in space are random. Due to children’s distraction and strong curiosity, their activity trajectory is not fixed and they are easy to be attracted to new things.

Therefore, the setting of the activity site needs flexibility and integrity, and needs to pay attention to the combination with other surrounding sites.

3.1.2 Aggregation

Children of similar ages are more likely to gather together to play. For example, younger children tend to have simple activities, such as digging sand, while older children prefer more difficult games. Therefore, the needs of children of different ages should be fully considered in the design.

3.1.3 Spontaneity

Due to the characteristics of the public space in blocks, it is difficult to set up centralized venues and large equipment exclusively for children's games, so children spontaneously organize more activities. Therefore, the design should ensure the plasticity of the block activity space, and the spatial activity content is not completely set, so that children can spontaneously organize the use of the site.

3.2 Characteristics of Mentality

3.2.1 Exploratory

Children are easy to be attracted to novel environment, such as holes and other hidden space which will cause children's strong desire to explore. Therefore, irregular space, such as hillsides and hole drilling, can be set up to stimulate children's exploration behavior and create a rich spatial game experience.

3.2.2 Dependence

The activities of younger children need to be done accompanied by others. Therefore, children's dependence should be considered in the design, setting up inter-generational space, such as care area and parent-child entertainment area.

3.2.3 Imitation

Children have a strong ability to imitate and are good at finding new ways of activities in imitating the form of things or making sounds. The design should use the influence of various elements in the block on children, for example, setting up educational facilities so that children can learn and grow in imitation.

4. Exploration of Public Space Landscape Design Strategy in Childfriendly Urban Blocks

Based on the construction background of child-friendly cities and combined with children's

behavior characteristics, specific landscape design strategies are proposed for the dotted space, linear space and planar space in blocks (figure 1).

4.1 Reasonable Layout of Dotted Space to Ensure the Convenience of Children's Activities

Due to its small and widely distributed characteristics, dotted space is the most frequent common space type for children in blocks. At the same time, the informal dotted space has an important role in children's growth. Most formal game venues nowadays lack the desire to actively learn and explore due to the preset game content. Instead, informal, unorganized games can better enable children to develop the ability to cooperate.

(1) Reasonable layout of dotted space: Take the nodes on the route as the setting place of dotted space according to children's travel routes, appropriately increase the distribution density to ensure the convenience of children's activities, and form a "game point" network (figure 2).

(2) Utilization of the fragmented temporary space: Rationally utilize dotted space such as temporary parking space along the road and fragmented greenbelt in blocks, and put into interesting landscape facilities to form temporary game space such as "pop-up park". Also, set up a removable or removable convenient art installation^[4], compatible with the overall environment of the block (figure 3).

(3) Reconstruct the abandoned "corner material" space: Combined with the children's travel path, reconstruct the original abandoned dotted space in the original built environment and incorporate it into children's game activity site system in the block. For example, in the transformation of the dotted space around Shuiduibeili Kindergarten, Chaoyang District, Beijing, the "cabbage" scheme canceled the old abandoned facilities through the reconstruction of the site, re-examined the site from the perspective of children, and set up enclosed space of different functional levels, bringing vitality to the site which used to be lack of activity (figure 4).

(4) Micro-renewal of space with public participation: A considerable amount of dotted space in the block is marginalized due to neglect. Different from large demolition and construction, the dotted space is more suitable for updating the space and its facilities in a local and gradual way based on public participation^[5]. For example, the creative painting activity of Beijing BOBO Free City Community takes children's participation as the bond and space micro-renewal as the way to promote block joint construction and co-governance (figure 5).

4.2 Reasonable Planning of Linear Space to Ensure Children's Travel Safety Reasonable planning

of linear space can ensure the safety of children's outdoor activities. At present, the universality of motor vehicle traffic makes children and their parents worry about the "most accessible urban public space" of the street, so the safety of linear space is particularly important. Through research and analysis, we find that street safety mainly includes three aspects: psychological, social and travel^[6]. Among them, travel safety has the highest correlation with built environment design. This paper proposes a strategy to improve the linear space environment from the perspective of travel safety.

(1) Establish children's travel routes: Determine the daily travel routes according to children's travel habits, and carry out targeted path planning. For example, the "children's travel path" launched by Delft, the Netherlands, connects children's daily living places into a safe and interesting "corridor" by making reasonable planning of children's travel routes^[7] (figure 6).

(2) Improve the street traffic design: Create a safe street environment by the improvement of the street entrance, intersection and street facilities in the travel path, the application of street traffic stabilization measures and shared road surface and other design methods (figure 7).

(3) Optimize the street space facilities: Reasonably arrange the street greening facilities and urban furniture, set up the facilities in line with children's aesthetic interests and activities, enhance the spatial interaction between children and the street, and enhance the psychological sense of security (figure 8).

(4) Set up child-friendly signs: Remind children and other street users to pay attention to children's travel routes and ensure children's travel safety through eye-catching and clear cartoon icons to ensure children's safety (figure 9).

4.3 Composite Design of Planar Space to Ensure the Diversity of Children's Activities

Planar space is the concentrated embodiment of child-friendliness in the public space in blocks. The planar space pays more attention to the design of the site itself. Through reasonable planning and design, it can meet the needs of different groups, especially children, create rich space types, and ensure the diversity of children's activities.

(1) Diversification space for design needs: Design diversified space for children according to the different needs of different ages, which will be convenient for the monitoring and activity autonomy of children. For example, in the transformation of the planar space surrounding No.2 Middle School in Tongzhou District, Beijing, the "network" scheme sets up reticular interactive

installation, climbing net and slide facilities according to the difference in the ages of children, which will meet the psychological and physical needs of children at different ages (figure 10).

(2) Set up shared inter-generational space: At present, the phenomenon that the elderly take care of children is common in China. Setting up shared intergenerational space avoids the problem of single space caused by the division of activity areas. When children get care, the elderly get companionship and satisfaction. For example, in the transformation of the planar space surrounding No. 2 Middle School in Tongzhou District, Beijing, the “Oasis” program sets children’s walking area and activity equipment area intensively, and seats are set around. Parents can also take into account children’s safety while exercising (figure 11).

(3) Set up boundary transitional space: The boundary setting ensures the safety and spatial integrity of children’s activities. Among them, the transition of the boundary is particularly important, and the entry of space requires children to have a certain emotional precipitation and gradual spatial feeling. For example, in the planar space transformation surrounding Yuxiang Primary School in Xicheng District, Beijing, “pixel park” scheme creates different atmosphere space and more freedom, uses pixel elements in the connecting part between different functional area to make transition and extension, abandons the boundary of hardening, and makes the overall space experience full and innovative (figure 12).

(4) Set up interesting and attractive space: Children usually have the psychology of inquiry into novel things and take actions^[8]. So the design needs to have certain interests. In the transformation of the planar space surrounding No. 2 Middle School in Tongzhou District, Beijing, the “crevice” scheme creates anexploratory space according to children’s psychological characteristics, and uses different types of crevice space to attract children to interact with space, such as light and shadow cracks, grass slope cracks, tree array cracks, etc. (figure 13).

5. Conclusion

The landscape design of public space in child-friendly urban blocks in China still needs to further summarize the construction experience of other countries. Under the guidance of scientific theory and research, it should follow the behavioral characteristics of children and combine with the current situation of urban development to promote the construction of child-friendly urban blocks. This paper hopes to provide some ideas for the design of public space in child-friendly urban

blocks, and build a more perfect child-friendly block space.

参考文献 (References):

[1] 刘智成. 儿童游戏权研究[D].南京:南京师范大学,2014.

LIU Zhicheng. Research on Children's Right to Play[D]. Nanjing:Nanjing Normal University, 2014.

[2] 韩光淼,周源,康雨薇,刘懿. 国外儿童友好城市建设的启示[A]. 中国城市规划学会、重庆市人民政府.活力城乡·美好人居——2019中国城市规划年会论文集(07城市设计)[C].中国城市规划学会、重庆市人民政府:中国城市规划学会,2019:10.

HAN Guangmiao, ZHOU Yuan, KANG Yuwei, LIU Yi. Enlightenment from the Construction of Child-friendly Cities Abroad[A]. China Urban Planning Society, Chongqing Municipal People's Government. Vigorous Urban and Rural, Beautiful Human Settlements — Proceedings of 2019 China Urban Planning Annual Conference (07 Urban Design) [C]. China Urban Planning Society, Chongqing Municipal People's Government: China Urban Planning Society, 2019:10.

[3] 林琰,董璟璟.基于儿童友好的城市街区公共空间规划策略研究[J].西安建筑科技大学学报(社会科学版),2018,37(05):24-31.

LIN Ying, DONG Jingjing. Research on Planning Strategy of Public Space in Childfriendly Urban Blocks[J].Journal of Xi'an University of Architecture & Technology (Social Science Edition),2018,37(05):24-31.

[4] 李迅.公共空间中的装置艺术[J].景观设计,2019(06):22-27.

LI Xun. Installation Art in Public Space [J]. Landscape Design, 2019 (06): 22-27.

[5] 侯晓蕾.基于社区营造的城市公共空间微更新探讨[J].风景园林,2019,26(06):8-12.

HOU Xiaolei. Discussion on Micro-renewal of Urban Public Space Based on Community Construction[J].Landscape Architecture,2019,26(06):8-12.

[6] 徐梦一,沈瑶,廖培琿,海伦·伍利.基于国外文献综述的社区环境儿童出行安全评价指标[J].景观设计学,2020,8(02):10-25.

XU Mengyi, SHEN Yao, LIAO Yuhui, Helen Wooley. Evaluation Index of Children's Travel Safety in Community Environment Based on Foreign Literature Review[J]. Landscape Architecture Frontiers,2020,8(02):10-25.

[7] 何丰,朱隆斌.从街道到游乐场——荷兰儿童友好型街道实践经验借鉴[J].住宅科

技,2020,40(04):43-47.

HE Feng, ZHU Longbin. From Street to Playground—Practical Experience of Child-friendly Street in the Netherlands[J]. Housing Science, 2020,40 (04): 43-47.

[8] 姚瑶,申世广.基于儿童行为特性的城市街道景观设计研究[J].设计,2020,33(14):138-141.

YAO Yao, SHEN Shiguang. Research on Urban Street Landscape Design Based on Children's Behavior Characteristics[J].Design,2020,33(14):138-141.

(整理:邱丰、苗慧珠 翻译:李小白)