Research on Community Habitat Improvement Design Based on Green-Healthy City Concept

LI Yinan, WU Rourou*, ZANG Chuanyu, WANG Zhou
(Anhui Xinhua University, Hefei, Anhui 230031, China)

Abstract With the rapid development of urbanization, urban environmental degradation has significantly impacted the ecological environment quality of urban residents. This study, taking 10 communities in Hefei as samples, integrates bibliometric analysis (Citespace), vegetation quadrat surveys, and resident satisfaction questionnaires to quantify the implementation pathways of biodiversity, low-carbon society, and therapeutic landscapes in community habitat design. Key findings reveal that the high-carbon-sequestration plant combination of *Liriope spicata* and *Pittosporum* tobira can mitigate urban heat island effects, while the aromatic plant assemblage of *Cinnamomum camphorum* and *Osmanthus fragrans* demonstrates notable stress-reduction benefits. Monoculture planting, however, leads to reduced pollinator populations. Based on these outcomes, a "4−3−2" design framework is proposed, which stands for 4 ecological indicators (greening rate ⩾ 40%, native plants ⩾ 60%, non-motorized transport coverage rate 100%, and therapeutic facilities ⩾ 2), 3 types of spatial strategies (ecological network infiltration, low-carbon travel strategy, and therapeutic landscape creation), and 2 major participation mechanisms (resident environmental council and plant-adoption incentive program). This study provides a quantifiable and operational framework for urban community habitat improvement.

Keywords Green-healthy city, Resident participation, Community habitat, Ecological design, Hefei
DOI 10.16785/j.issn 1943-989x.2025.4.004

Community is the fundamental living unit for human survival and serves as a medium and opportunity for people to understand society. The location of a building determines the community's geographical environment, while its residents shape its cultural environment. Vegetation, climate, and greenery form the ecological environment of the community, and together, they create the living environment.

The *Opinions on Strengthening and Improving Urban and Rural Community Governance* issued by the Central Committee of the Communist Party of China and the State Council in April 2017 emphasized that advancing urban community governance in a coordinated manner was a fundamental project to achieve modernization of the national governance system and governance capacity of China[1], highlighting the close relationship between community habitat and public health environment, transportation, green space coverage, and other factors. The community center, through a integrated configuration of multiple functions, can gather residents, establish emotional connections among community residents, and enhance residents' sense of identity and belonging[2]. In 2019, Gao Siyao proposed in urban community ecological environment governance that resident participation would significantly improve the community habitat, a view strongly supported by Professor Liu Yuelai's community garden practice at Tongji University[4]. The goals of community ecological environment construction can be approached from 3 perspectives: technological governance, collaborative governance, and spatial governance[5], in order to improve the green community environment, enhance the environmental awareness of community residents, and build a modern ecological community with comfortable living.

The rapid urbanization process has led to a sharp decline in urban green space, a reduction in biodiversity, and severe environmental pollution, all of which have a significant negative impact on residents' living conditions[6-7]. It is projected that by 2035, China's urbanization rate will reach 73.8%[8], exacerbating "urban diseases" and further degrading community habitats. In response, China has set higher standards for optimizing and improving the public health environment in urban residential spaces at this stage[9]. On October 16, 2022, President Xi Jinping explicitly stated at the 20th National Congress of the Communist Party of China that Chinese modernization is a modernization of harmony between humanity and nature[10]. Ecological health has become one of the defining themes of our era, and ecological civilization is an intrinsic requirement for building a modern socialist country[11]. Against this backdrop, the concept of "Green−Healthy City" was proposed. Grounded in the principles of biodiversity, low-carbon society, and therapeutic environments, this concept serves as a key pathway to resolving the conflict between ecological sustainability and public health[12-13]. The Green−Healthy City concept aligns with people's aspiration for a better life and the principles of sustainable development, which is conducive to ecological environment construction and development while promoting the rational expansion of urban green spaces.

Currently, community habitat improvement faces 3 key disconnections: (i) Ecological design: monotonous plant configurations, with carbon sequestration and therapeutic functions not systematically integrated. (ii) Resident participation: absence of governance mechanism and weak sense of environmental identity. (iii) Space strategy: disrupted slow-mobility systems and fragmented green space. Under the framework of the Green-Healthy City concept, this study explores community habitat improvement by analyzing the influencing factors of community habitats across three dimensions, namely, ecological structure (vegetation composition, biodiversity), functional services (carbon sequestration capacity, therapeutic effects), governance mechanisms (resident participation), to determine the influence and driving forces of each dimension, and conducts field research based on the Green−Healthy

Received: June 16, 2025 Accepted: July 22, 2025
Sponsored by Research Team Project of Anhui Xinhua University (kytd202202); Supported Project of Innovation Training Program for College Students in Anhui Province (S202212216140, S202212216135, S202212216144 & AH202112216114); Key Project of Science Research Program for Higher Education Institutions in Anhui Province (Natural Sciences) (2022AH051861 & 2024AH050601).
* Corresponding author.

City to determine community improve-ment and optimization strategies that align with public needs. Furthermore, the study selects several communities in Hefei City as case studies, conducting multi-dimensional surveys to identify improvement strategies, and further analyzes the guiding role of the Green-Healthy City framework in enhancing community habitats.

1 Research methods and materials

1.1 Literature review

By extracting key phrases from CNKI (China National Knowledge Infrastructure) and generating visualizations using CiteSpace, this study systematically maps the research landscape, clarifying the historical evolution of the topic. The literature review establishes a theoretical foundation, while case studies of communities in Hefei City provide empirical insights. This integrated approach helps infer future directions in resident participation surveys for urban community ecological governance.

1.2 Site investigation

To conduct a study on community habitat improvement under the Green-Healthy City con-cept, a survey was conducted on 10 residential areas in Shushan District, Hefei City. In each residential area, we identified a representative environmental site and established a 10 m×10 m quadrat for plant surveys. Using measuring tapes and ropes, we delineated the quadrats, recorded plant species within each, and compiled the data for analysis.

1.3 Questionnaire survey

The questionnaire survey in this study covered 7 aspects: parking spaces, landscape facilities, infrastructure, entrances/exits, traffic, roads, and air quality. A resident satisfaction survey was conducted using a 5-point Likert scale (①－⑤). Subsequently, the questionnaire respondents were interviewed to record their subjective opinions on the community habitat of the study site.

2 Research results

2.1 Literature review method

A healthy city is a crucial aspect of advancing the Healthy China Initiative, with all aspects of planning, construction, and management centered on human health. Socioeconomic development levels and income disparities influence residents' health status and community habitat differences[14-15]. The concept of Green-Healthy City can reflect social benefits, address deficiencies in community habitats, and enhance residents' well-being. Improving community habitats—through increased vegetation coverage, landscape facilities, and seasonal variations—can enrich the spiritual lives of residents, fostering a sense of fulfillment and happiness in natural, social, and cultural environments. This concept can also be applied to community habitat design through a 3-layer approach (Table 1, Fig.1).

In the CNKI database (2014-2024), keywords such as "healthy city" and "community habitat" were used for retrieval, resulting in Fig.2. As shown in the figure, the research focus has shifted from macro level "green city" to micro level "community therapeutic landscapes" (an intensity of 6.3), reflecting a research frontier moving towards community health interventions.

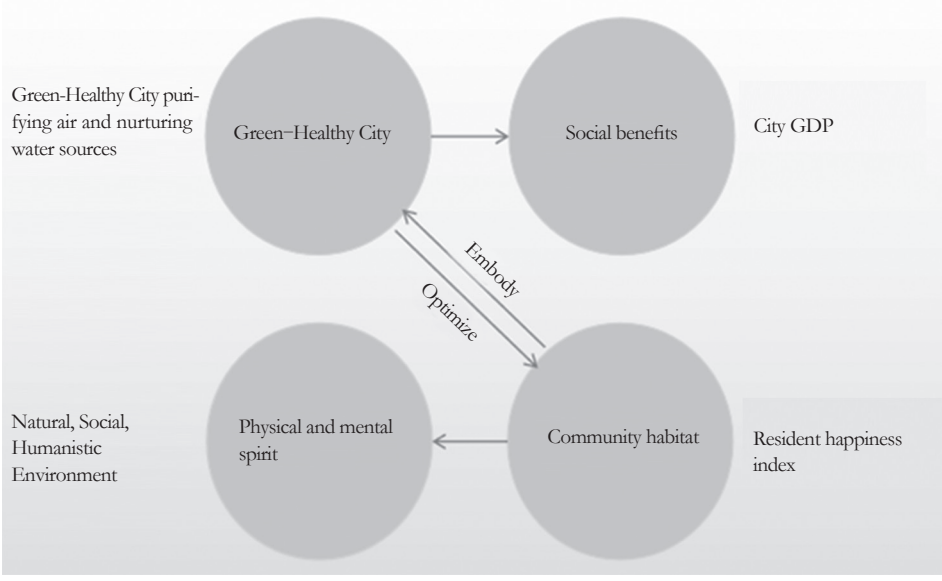


Fig.1 Green-Healthy City and community habitat

Meanwhile, "resident participation" and "biodiversity" have become emerging clusters.

2.2 Sample survey method

This survey selected 10 residential communities in Shushan District, Hefei, China. Among the street trees, *Cinnamomum camphora* accounted for 50%, *Osmanthus fragrans* 30%, *Magnolia grandiflora* L. 10%, and *Prunus cerasifera 'Atropurpurea'* 10%. Within a 10 m×10 m sampling area in each community, ground cover plants were measured: with 30% being *Ophiopogon bodinieri* H., 22% being *Hypericum monogynum* L., 15% being *Ophiopogon japonicus*, 15% being *Pittopolum tobira*, 8% being *Loropetalum chinense*, and 10% being other plants.. The survey revealed a predominance of evergreen plants, with most communities exhibiting flowers in 3 seasons and greenery year-round, significantly enhancing landscape aesthetics. The sampling data were statistically compiled into Table 2.

The results showed that: (i) Biodiversity deficiency: in communities like Huadi Ziyuan, the over-reliance on a single species of street trees (e.g., *C. camphora*) led to a decline in pollinating insects. (ii) Therapeutic shortcomings: Xingyuan Community and Shuimo Lanting lacked aromatic plants, resulting in lower resident stress scores. (iii) Carbon sequestration potential: in Yujingcheng and Evergrande Huafu, the combination of *O. japonicus* and *P. tobira* achieved a coverage rate exceeding 50%, demonstrating high annual carbon sequestration capacity.

The sample data validated the 3-level design framework in Table 1: (i) Ecological layer: in Yujingcheng, the high-carbon-sequestration combination (*O. japonicus*+*P. tobira*) with coverage rate exceeding 50% increased annual carbon sequestration, confirming biodiversity's contribution to carbon sinks. (ii) Perception layer: in Evergrande Huafu, the *C. camphora* and *O. fragrans* combination (80% coverage) reduced residents' stress levels, demonstrating the health benefits of therapeutic landscapes.

2.3 Survey questionnaire method

The survey questionnaire covered the following aspects: (i) Parking spaces (sufficient parking spaces and reasonable parking spacing); (ii) Landscape facilities (beautiful water features, a balance of dynamic and static elements, rich and well-coordinated greenery, and seasonal plant variations); (iii) Infrastructure (proximity to commercial buildings like shopping malls and markets, well-designed fitness facilities); (iv) Entrance/exit (aesthetically pleasing and well-planned community entrances); (v) Traffic (convenient access, low traffic congestion); (vi)

Table 1 The 3–layer design of community habitat for Green–Healthy City

Green-healthy city concept	Community habitat design	Application
Biodiversity	Ecology layer	Constructing a composite plant community for carbon sequestration and noise reduction, using Hefei native species (e.g. Cudrania tricuspidata, Lagerstroemia indica)
Low-carbon society	Function layer	Optimizing slow mobility systems and facility layouts to reduce carbon emissions and enhance accessibility
Therapeutic performance	Perception layer	Enhancing therapeutic landscape design to alleviate psychological stress, combining aromatic plants with seasonal variations

Table 2 Composition of plant communities in 10 residential Areas

Community Name	Greening rate//%	Completion year	Street tree composition (Proportion)	Ground cover composition (Proportion)	Green health function evaluation
Xingyuan Community	40	2005	*C.camphora* (50%), *M. grandiflora* L. (30%), *P. cerasifera* '*Atropurpurea*' (20%)	*O. bodinieri* H. (35%), *O. japonicus* (25%), *P. tobira* (20%), others (20%)	Moderate carbon sequestration efficiency, with insufficient therapeutic potential
Huadi Ziyuan	41	2014	*P. cerasifera* '*Atropurpurea*' (90%), *M. grandiflora* L. (10%)	*H. monogynum* L. (40%), *L. chinense* (30%), others (30%)	Low biodiversity, with a lack of therapeutic potential
Huaikuang Yubang Tianxia	40	2012	*C. camphora* (60%), *O. fragrans* (30%), *M. grandiflora* L. (10%)	*O. bodinieri* H.(30%), *O. japonicus* (25%), *H. monogynum* L.(20%), others (25%)	High therapeutic value, with excellent carbon sequestration potential
Yujingcheng	44	2014	*C. camphora* (40%), *O. fragrans* (40%), *P. cerasifera* '*Atropurpurea*' (20%)	*O. japonicus* (30%), *O. bodinieri* H.(25%), *P. tobira* (20%), others (25%)	Excellent therapeutic value with high carbon sequestration efficiency
Baishang Yuelanshan	40	2015	*C. camphora* (50%), *M. grandiflora* L.(30%), *P. cerasifera* '*Atropurpurea*' (20%)	*H. monogynum* L. (35%), *L. chinense* (25%), *O. bodinieri* H. (20%), others (20%)	Moderate biodiversity with a deficiency in carbon-sequestrating plant species
Evergrande Huafu	40	2012	*C. camphora* (50%), *O. fragrans* (30%), *M. grandiflora* L. (20%)	*O. japonicus* (30%), *P. tobira* (25%), *O. bodinieri* H. (20%), others (25%)	Excellent therapeutic value with superior carbon sequestration capacity
Wenyi Mingmen Shoufu	40	2017	*C. camphora* (60%), *P. cerasifera* '*Atropurpurea*' (25%), *M. grandiflora* L. (15%)	*O. bodinieri* H. (40%), *H. monogynum* L. (25%), *O. japonicus* (15%), others(20%)	Moderate carbon sequestration efficiency with limited seasonal variation
Shuimo Lanting	35	2015	*M. grandiflora* L. (70%), *C. camphora* (20%), *O. fragrans* (10%)	*L. chinense* (40%), *O. bodinieri* H. (30%), others (30%)	Insufficient greening rate with weak therapeutic value
Guoji Lijingcheng	40	2006	*C. camphora* (50%), *O. fragrans* (20%), *P. cerasifera* '*Atropurpurea*' (30%)	*O. japonicus* (35%), *P. tobira* (25%), *O. bodinieri* H. (20%), others (20%)	Excellent carbon sequestration performance, with need for biodiversity enhancement
Songdu Xihu Huayuan	38	2004	*C. camphora* (40%), *M. grandiflora* L.(30%), *O. fragrans* (30%)	*O. bodinieri* H. (35%), *H. monogynum* L. (25%), *O. japonicus* (15%), others (25%)	Good therapeutic value with insufficient carbon-sequestering vegetation

Table 3 Satisfaction results and green health concept

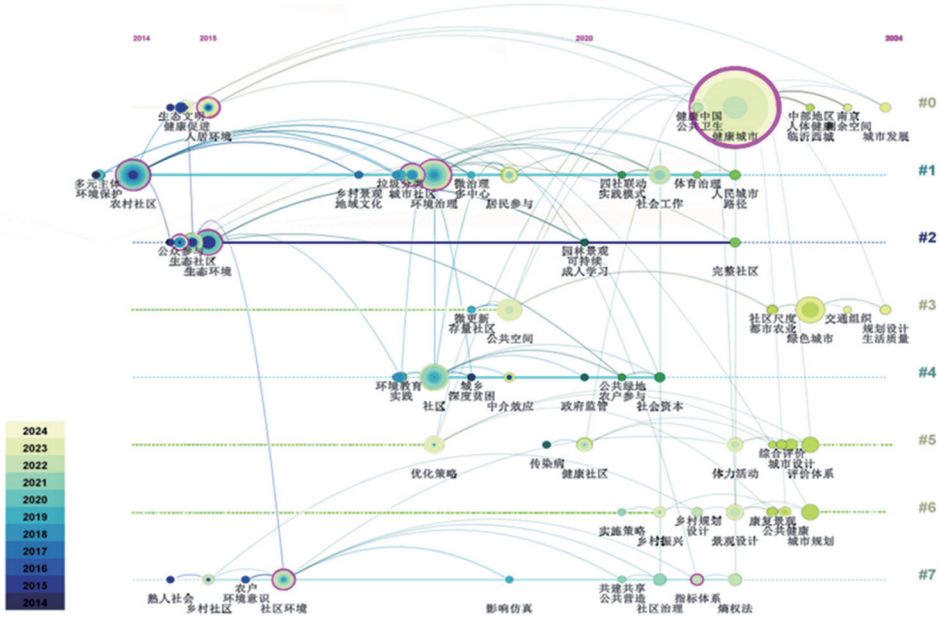
Green health dimension	Evergrande Huafu	Huadi Ziyuan	Design strategy
Biodiversity	Indigenous plant ratio >50%	Monospecific dominance >80%	Formulate *Community Native Plant Inventory*
Low-carbon society	Non-motorized coverage of 100%	Mixed traffic	Construct "walk-bike" corridor network
Therapeutic performance	Fragrant flora and seasonal color change	Evergreen dominated	Facilitate the combination of "3-season fragrant bloomers + autumn foliage plants"

Roads (good internal road accessibility within the community); (vii) Air quality (fresh and clean air). The survey was conducted across 10 residential areas in Shushan District, Hefei City.

By combining the satisfaction survey results with the "Green and Healthy" concept, a comparison was made between Evergrande Huafu (the community with the highest overall score) and Huadi Ziyuan (the community with the lowest overall score), as shown in Table 3.

The results were further categorized into 3 groups: Travel (traffic, entrances/exits, parking spaces), Functionality (infrastructure, roads), and Perception (landscape facilities, air quality), as illustrated in Fig.3−5.

Based on the chart and survey results, Huadi Ziyuan received the lowest overall score in this assessment. Through a combination of current condition evaluation and demand analysis, the potential reasons may include: (i) Traffic: inconvenient access, with surrounding environmental factors contributing to traffic con-gestion; (ii) Entrance/exit: cluttered surroundings leading to crowded and narrow access points; (iii) Parking spaces: insufficient parking spaces or overly tight spacing between the lots. In contrast, Evergrande Huafu had the highest scores in the survey, with potential contributing factors including: (i) Traffic: convenient access, well-defined traffic routes, and minimal congestion, ensuring a smooth travel experience; (ii) Entrance/exit: Aesthetically pleasing surroundings with high vegetation coverage, excellent landscape design,



Note: #0. Healthy city; #1. Environment governance; #2. Ecological environment; #3. Green city; #4. Community; #5. Healthy community; #6. Rural Revitalization; #7. Community environment.

Fig.2 Co-occurrence map of Citespace keywords in community habitat research

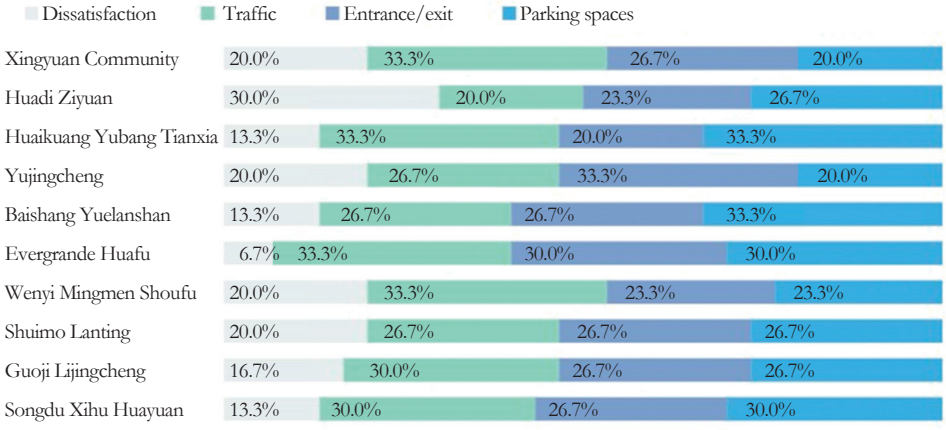


Fig.3 Results of satisfaction survey on travel category

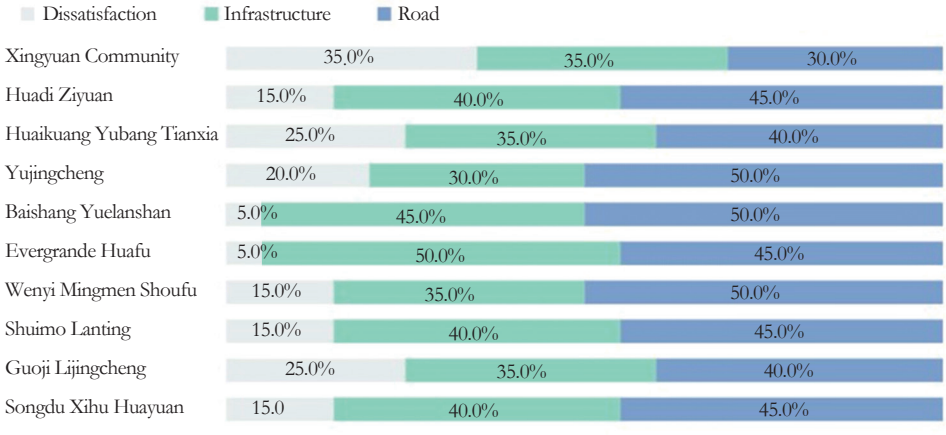


Fig.4 Results of satisfaction survey on functionality category

and clearly visible entrance signage; (iii) Parking spaces: thoughtfully planned parking spaces with ample greenery, which not only enhances the visual appeal but also provides shade and sun protection in summer.

The direct accessibility of transportation and the congestion level at intersections has a significant impact on residents' satisfaction. Communities located in congested areas often experience negative effects on satisfaction. Additionally, the configuration around community entrances and exits, the service attitude of security systems, as well as the number of parking lots and vehicle spacing within the community, are all key factors influencing residents' satisfaction.

To further enhance residents' satisfaction and align with the Green-Healthy City concept, the following improvement measures can be taken: (ii) Optimize traffic planning, increase public transportation facilities, to reduce private car usage and alleviate traffic congestion. (ii) Improve entrance/exit design, add greenery and safety facilities, enhance the aesthetics and functionality. (iii) Rationalize parking space allocation, increase the number of parking spaces and optimize the spacing to meet the actual needs of residents. (iv) Strengthen community greening and increase vegetation coverage, which can not only beautify the environment, but also provide summer shade and improve air quality.

The survey results show that Xingyuan Community scored the lowest in the functional satisfaction assessment. Based on the current evaluation and analysis of the demand questionnaire, the possible reasons may include: (i) Infrastructure: insufficient number of markets and shopping centers, as well as non-standardized fitness facilities, failing to meet residents' daily needs. (ii) Roads: congested internal roads with unclear signage, affecting residents' travel convenience.

In contrast, Huadi Ziyuan scored the highest in functional satisfaction survey, with possible reasons including: (i) Infrastructure: equipped with complete and accessible leisure facilities nearby, meeting the daily living and recreational needs of residents; (ii) Roads: well-planned and sufficiently abundant road layout with ample surrounding greenery, which not only ensures efficient accessibility but also enhances the aesthetics and ecological value of the environment.

The convenience of essential community amenities significantly impacts residents' satisfaction. The proper placement of living and leisure facilities also positively influences satisfaction levels. Additionally, the number and distribution of roads within the community directly affect residents' usability satisfaction. Furthermore, road length is another important factor influencing residents' overall satisfaction.

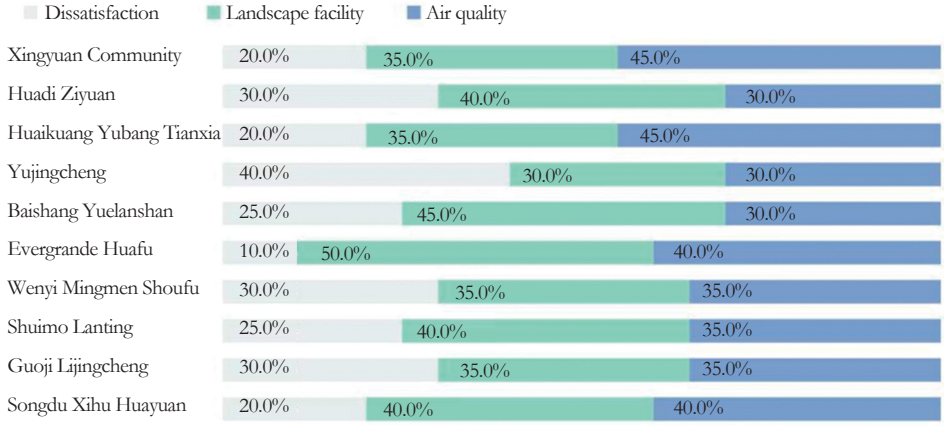


Fig.5 Results of satisfaction survey on perception category

To further enhance residents' satisfaction and comply with the concept of Green-Healthy City, the following improvement measures are proposed: (i) Strengthen infrastructure construction, increase essential living infrastructure such as markets, shopping malls, and fitness facilities to meet residents' daily living needs. (ii) Optimize the internal road design within the community, improve road signage clarity, alleviate traffic congestion, and enhance travel convenience. (iii) Increase green coverage and rationally distribute vegetation, which can not only beautify the environment, but also provide ecological benefits, such as summer shading and improving air quality. (iv) Promote community participation and multi-party collaboration, encourage residents to participate in community planning and environmental improvement, in order to achieve sustainable development of the community.

Through these improvement measures, the ecological environment quality of the community can be effectively enhanced, thereby increasing residents' sense of health and well-being and promoting the development of the community towards a green and healthy city.

In the perception-based satisfaction survey, Yujingcheng scored the lowest in overall satisfaction. Based on the current assessment and demand questionnaire analysis, possible reasons include: (i) Landscape facilities: incomplete water landscape facilities, unclear seasonal changes in plants, unreasonable combination of green plants, resulting in poor landscape aesthetics. (ii) Air quality, insufficient green vegetation, and severe surrounding environmental pollution, both factors negatively impacting air quality.

In contrast, Evergrande Huafu scored the highest in the perception satisfaction survey, and the possible reasons include: (i) Landscape facilities: the high green coverage with well-designed seasonal plant variations, creating a comfortable microclimate (cool in summer, warm in winter) with appealing flowers in 3 seasons and scenery all year round. (ii) Air quality: abundant oxygen-rich vegetation strategically located, resulting in good air quality.

The noticeable seasonal changes in greening rate can also have a positive impact on the satisfaction of residents, and the reasonable combination of plants can have a significant positive impact on residents' satisfaction. The absorption rate of green plants and the frequency of sanitation cleaning directly affect residents' usage satisfaction, while the degree of environmental pollution can have a negative impact.

In order to further enhance residents' satisfaction and comply with the concept of green and healthy cities, the following improvement measures can be taken: (i) Enhance water landscape facilities, diversify plant species, and optimize green plant combinations to improve landscape effects. (ii) Increase green coverage and plant more plants with significant seasonal changes to improve air quality and beautify the environment. (iii) Strengthen environmental monitoring and management to reduce environmental pollution and improve air quality. (iv) Increase cleaning frequency to maintain a clean and tidy community environment.

These targeted improvement measures can help improve the ecological environment quality of the community effectively, thereby enhancing residents' sense of health and happiness and promoting the development of the community towards a green and healthy city.

3 Community habitat improvement design principles

The greening rate is strongly correlated with air satisfaction[16]. Based on the practice of community habitat in Hefei, this paper propose the "4−3−2" Green−Healthy Design Principle.

4 ecological indicators: greening rate ⩾ 40% (ensuring carbon sequestration foundation), native plants ⩾ 60% (maintaining biodiversity), non-motorized transport coverage rate 100% (promoting low-carbon travel), and the number of therapeutic facilities ⩾ 2 (setting up aromatic gardens or rain gardens).

3 types of spatial strategies: (i) Ecological network infiltration: connecting fragmented green spaces and constructing biological migration corridors; (ii) Low carbon travel strategy: embedding rest-and-recovery facilities at slow traffic nodes; (iii) Therapeutic landscape creation: plant aromatic vegetation zones for olfactory needs, while planting autumn-colored foliage trees for visual needs.

2 major participation mechanisms: (i)Resident environmental council: composed of residents (50%), property management (30%), and experts (20%), to review green space renovation plans and supervise plant adoption; (ii) Plant-adoption incentive program: adopting one tree can be exchanged for community services.

4 Conclusion

With the continuous progress of urbanization, the ecological environment problems of urban communities are becoming increasingly prominent, and residents' demand for a healthy and livable living environment is becoming more urgent.

This study, guided by the Green−Healthy City concept, reveals the key paths for community habitat improvement through multidimensional empirical analysis. Based on sample surveys and resident satisfaction data from 10 communities in Hefei, the research verify the significant impact of plant functional combinations on ecological benefits as follows: the high-carbon-sequestration plant combination of *L. spicata* and *P. tobira* can mitigate urban heat island effects, while the aromatic plant assemblage of *C. camphorum* and *O. fragrans* demonstrates notable stress-reduction benefits, confirming the health intervention value of green spaces. In response to the common problems of biodiversity loss, insufficient low-carbon facilities, and weak resident participation in the current community, the innovative "4−3−2" Green Health Design Principle is proposed.

This framework has 3 practical significance: firstly, it provides quantifiable technical standards for community habitat renovation, such as carbon sequestration plant ratios and therapeutic

facility density. Secondly, it achieves a 3-layered optimization of "ecology - function - perception" by linking green patches through non-motorized transportation system and integrating aromatic gardens. Thirdly, it introduces a point-based incentive system to encourage resident participation in plant maintenance, which helps to address the traditional governance dilemma of "government-led initiatives with resident disengagement".

The Green-Healthy City concept is not only a new direction for urban development, but also a new goal for community construction. This study contribute empirical evidence to promote community habitat improvement, so as to accelerate the adoption of this paradigm, thereby contributing to the realization of harmonious coexistence between cities and nature.

References

[1] Central Committee of the Communist Party of China and the State Council. (2017). Opinions on strengthening and improving urban and rural community governance. *China Civil Affairs*, (12), 2.

[2] Dong, S. (2023). Behavior analysis of residents in community public space based on environmental behavior science. *Design* (Hans), *8*(3), 1813-1820.

[3] Gao, S.Y. (2019). *Resident participation in urban community ecological environment governance* (Master's thesis). Retrieved from China National Knowledge Infrastructure.

[4] Liu, Y.L. (2023). *Community garden participatory design*. Shanghai: Tongji University Press, 2023.

[5] Yang, J., Zhang, Y., Jiang, J.N. (2022). Building space with a "sense of sharing": theoretical basis and realization path for environmental governance in urban communities. *Journal of Fujian Provincial Committee Party School of CPC* (Fujian Academy of Governance), (4), 134-142.

[6] Wang, J. (2004). A study of the role of science and technology for the urbanization. *Studies in Dialectics of Nature*, (11), 74-78, 82.

[7] Wang, Y.X., Luo, X.Y. (2022). Research on the operating mechanism and development path of "micro governance" of urban community ecological environment. *Journal of Shaanxi Academy of Governance*, *36*(3), 79-83.

[8] Liu, S.Y., Wang, K. & Zhang, M et al. (2025). Exploring strategic pathways for China's Urban development in a time of great changes (Part II). *Urban Insight*, (2), 33-76161.

[9] Li, S.H. (2022). Visualization analysis of carbon emission trading research in China based on Citespace [C]//Environmental engineering branch of the Chinese Society of Environmental Sciences. Proceedings of the 2022 annual science and technology conference of the Chinese Society for Environmental Sciences–Sub-forum on environmental engineering technology innovation and application (Volume III). *Liaoning Technical University*, 9.

[10] Xi, J.P. (2023). On the construction of socialist ecological civilization. *Fujian Forestry*, (5), 1

[11] Zhang, Y.F. (2023). *Imperative of eco-civilization for building a modern socialist country Marxism and Reality*, (5), 41-48, 2021-2022.

[12] Li, S.H., Kang, N. & Shi, S.L. et al. (2020). Theory of green health city. *Chinese Landscape Architecture*, *36*(7), 14-19

[13] Xu, L.Q., He, N., Meng, D.C. (2022). Building Environment and Its Indicators in Healing Architecture and Urban Healing. *Time Architecture*, (5), 6-14.

[14] Fu H., Xuan, Z.L., Li, Y. (2006). Development and practical model of healthy city programs in China. *Medicine & Philosophy* (Humanistic & Social Medicine Edition), *27*(1), 12-15.

[15] Zhou, G.S., Fan, G., Shen, G.J. (2014). Income inequality, social capital, and health level: empirical analysis based on the China Family Panel Studies (CFPS). *Management World*, (7), 12-21, 51, 187.

[16] Li P. L., Zhang, Y. (2010). Differences and influencing factors of environmental concerns among urban and rural residents in China. *Jiangsu Social Sciences*, (5), 80-90.

****

(Continued from P12)

Assessing railway landscape by AHP process with GIS: A study of the Yunnan-Vietnam Railway. *Remote Sensing*, *14*(3), 603-603.

[18] Boukratem, O., Djelal, N. (2021). Assessment process in the delimitation of historic urban landscape of Algiers by AHP. *Miscellanea Geographica*, *25*(2), 110-126.

[19] Yan, Z., Chen, J. H. (2023). Evaluation of landscape quality of urban parks based on the hierarchical analysis-semantic difference method: Taking Guangzhou Tianhe park as an example. *Journal of Central South University of Forestry & Technology*, *43*(4), 191-198.

[20] Cao, J. J., Zhang, M. F. (2020). Evaluation of urban waterfront landscape quality based on semantic differential method: A case of Zhonghuamen section of Qinhuai River in Nanjing. *Journal of Nanjing Forestry University* (Natural Sciences Edition), *44*(6), 221−227.

[21] Ye, Y. J. (2013). *Semantic perception analysis of cultural landscapes in tourist destinations based on digital elevation model* (Master's thesis). Retrieved from China National Knowledge Infrastructure.

[22] Wang, H., Mu, J. Y. (2022). Aesthetic evaluation of bridges in Lijiang Ancient City based on scenic beauty estimation procedures and semantic differential. *Journal of Southwest Forestry University* (Social Sciences), *6*(1), 70-77.

[23] Zhang, M. L., Zhang, J. L. & Zhang, X. N. (2023). A study on landscape evaluation of pocket parks based on IPA analysis: Taking the urban area of Shilin County as an Example. *Journal of Green Science and Technology*, *25*(19), 29-34.