

A Comparative Study on Zoning Guidelines for Different Planning Types in China

Chenli Qian¹, Yi Huang^{1*}, Xiao Wu²

¹Tongji University, China; ²Southeast University, China

*Email: huangyi@tongji.edu.cn

Abstract

Zoning guidelines are technical methods commonly employed in various types of urban planning, including comprehensive urban design, landscape planning, regulatory detailed planning, and architectural features and styles planning. These guidelines aim to protect and define urban character, controlling spatial forms in specific districts. Often, when different zoning types are compiled without clear distinctions, redundancy and contradictions can arise, leading to inefficient management.

This article, in conjunction with relevant zoning guideline examples, distinguishes between the zoning guidelines corresponding to the four types of planning by comparing their coverage, control objectives, content, and methods. It defines the roles, functions, and interrelationships of these guidelines at different scales. This approach aims to systematically control urban landscapes through a layered and cumulative process, effectively addressing different levels.

Keywords

Zoning guidelines, comprehensive urban design, landscape planning, regulatory detailed planning, architectural features and styles planning

1 Introduction

Zoning guidelines, as a technical approach, are commonly employed across various planning types such as comprehensive urban design, landscape planning, regulatory detailed planning, and architectural features and styles planning. The objective of these guidelines is to protect and shape the distinctive urban character by controlling and guiding the spatial form of specific urban sectors.

Presently, there is no strict and uniform definition of "cityscape zoning" in China, and different types of planning compilations have varied connotations and requirements. For instance, in cityscape planning, cityscape zoning refers to areas within a city that share similar development traits (Dai and Liu, 2013); in urban landscape planning, it indicates regions that require special control within urban planning management or landscape character protection and construction (Bai, 2015); in architectural features and styles planning, it pertains to areas with similar architectural cultural and structural characteristics (Zhao, 2017). Correspondingly, the different types of zoning guidelines also vary in their control levels and focus tasks.

However, the current domestic compilation of various zoning guidelines often leads to confusion, resulting in poor linkage with higher-level plans, and insufficient conveyance of key contents from superior plans. Moreover, as the importance of planning management increases, zoning guidelines are expected to directly guide planning management. However, there exists a disconnect between control and implementation, making the practical application of zoning

guidelines inadequate (Wang et al., 2019). Therefore, it is essential to distinguish between different types of zoning guidelines to avoid duplication, misalignment, or even contradictions, thereby enhancing the efficiency of planning management.

This article incorporates case studies from the Comprehensive Urban Design Guidelines of Jurong City, the Cityscape Guidelines for Landscape Planning of Fujian Province, the Statutory Maps for Regulatory Detailed Planning of the Futian District in Shenzhen, and the Cityscape Guidelines for Architectural Features and Styles Planning of Fuzhou City. By differentiating the coverage, control objectives, content, and methods of various types of zoning guidelines, the study aims to define the roles, functions, and interrelationships of these guidelines at different scales. This approach seeks to systematically control urban landscapes in a layered and cumulative manner, addressing different levels systematically.

2 Comparative Analysis of Zoning Guideline Types

Different types of planning have distinct roles and functions within the entire planning system, and thus, their corresponding zoning guidelines differ in coverage due to their inherent nature of guidance and control (Figure 1).

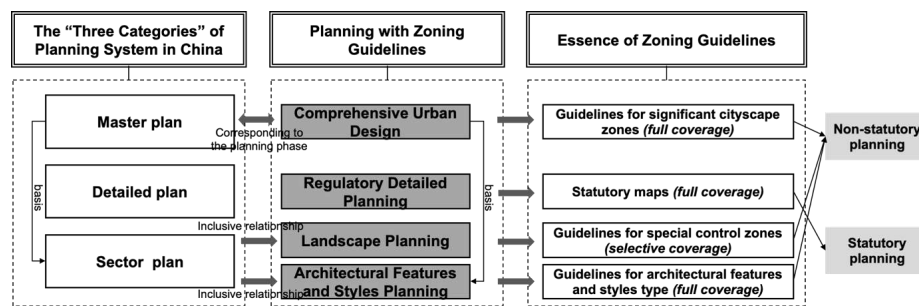


Figure 1. Relationships Among the Four Types of Zoning Guidelines

2.1 Zoning Guidelines in Comprehensive Urban Design

Comprehensive urban design, as a non-statutory planning corresponding to the stage of master plan, can guide and control the large-scale urban form from a macro perspective, emphasizing urban characteristics. The cityscape zoning guidelines at the meso-level are a crucial intermediary in the comprehensive urban design process, bridging the overall structure and macro guidance system, and guiding the urban design of lower-level areas. Although cityscape zoning in comprehensive urban design is extensive, not all urban spaces are distinctively characterized or resource-rich. Therefore, it is unnecessary to impose control requirements on the entire area. Instead, through the assessment and grading of cityscape zones, extremely important and moderately important cityscape zones are selected for focused "cityscape zoning control" (Wu et al., 2021).

For example, in the Comprehensive Urban Design Guidelines of Jurong City, the central urban area of Jurong can be divided into 11 cityscape zones. Through sensitivity grading and landscape sensitivity analysis, these zones are categorized into three levels. The extremely important cityscape zones include the Old City Cultural Cityscape Zone, the South High-Speed Rail Hub Cityscape Zone, and the North Evergrande Cultural and Tourism Cityscape Zone. Moderately important cityscape zones include the Golden River Science and Education Cityscape Zone, the Main Urban Comprehensive Cityscape Zone, and the East Urban

Comprehensive Cityscape Zone, along with five general cityscape zones. Direct control is applied specifically to the extremely and moderately important cityscape zones (Figure 2).



Figure 2. Example of Zoning Guidelines in Comprehensive Urban Design
Source: Urban Planning& Design Institute CO., LED of Southeast University. (2020) Comprehensive Urban Design Guidelines of Jurong City. Nanjing: Southeast University Press.

2.2 Zoning Guidelines in Landscape Planning

Landscape planning, also a non-statutory planning, is not compulsory for all cities. However, it shares many similarities with comprehensive urban design in terms of objective setting, theoretical references, focus areas, and design methods. The main differences lie in "tendency of dissemination, visual dominance, and technical flexibility" (Li and Zhu, 2009). It is a refinement of the urban design section of master plan and can serve as the superior plan for individual urban designs (Fujian Provincial Department of Housing and Urban-Rural Development, 2013). The zoning guidelines in landscape planning typically refer to special control zone guidelines, which are essential for urban planning management or landscape character protection and construction, providing specific planning control guidelines. These zones have characteristic dominance and unified control, differing from the comprehensive cityscape zoning in comprehensive urban design. Outside of special control zones, general control zones are guided by standard requirements.

Taking the Cityscape Guidelines for Landscape Planning of Fujian Province as an example, areas requiring special control include historical cultural heritage cityscape zones, natural ecological protection cityscape zones, urban core areas, and key urban node areas. For instance, a well-preserved ancient town district within a town is designated as a special control area, necessitating the development of corresponding street pattern control guidelines and architectural features and styles control guidelines (Figure 3).

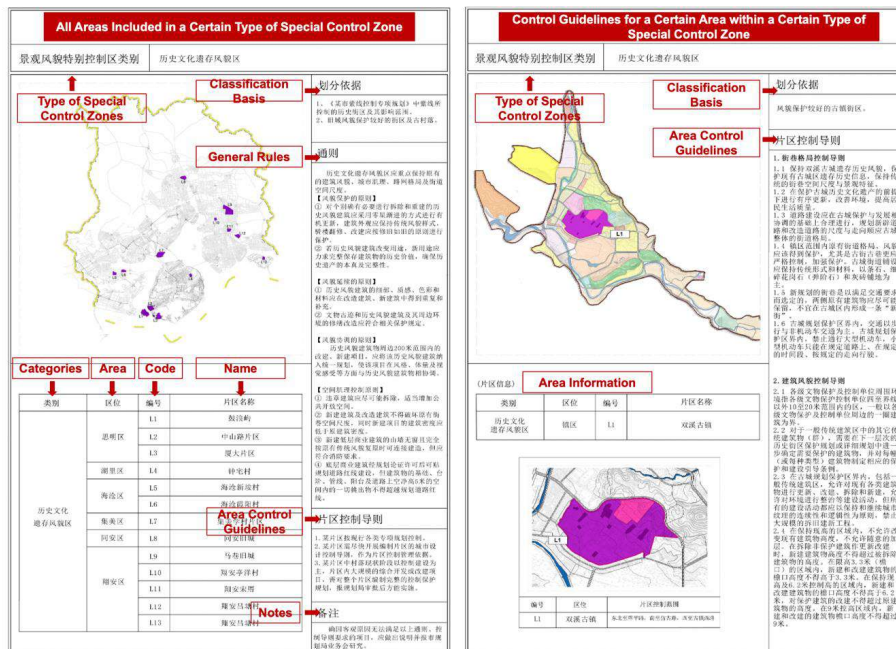


Figure 3. Example of Zoning Guidelines in Landscape Planning
Source: Fujian Provincial Department of Housing and Urban-Rural Development. (2013) Cityscape Guidelines for Landscape Planning of Fujian Province (Trial Implementation). Available at: https://zjt.fujian.gov.cn/xxgk/zfxxgkzl/xxgkml/dfxfzfgzghfwxj/qt_3796/201311/t20131104_2870981.htm (Accessed: 30 May 2024).

2.3 Zoning Guidelines in Regulatory Detailed Planning

Regulatory detailed planning, as a core component of China's statutory urban planning system, not only deepens the implementation of master plan but also serves as the direct basis for setting land lease conditions and guiding lower-level planning designs. The zoning guidelines in regulatory detailed planning are statutory maps that need to be prepared for all management units within the control plan's scope. Thus, unlike landscape planning, its planning scope is comprehensive and legally binding.

For example, the Statutory Maps for Regulatory Detailed Planning of the Futian District in Shenzhen divides the entire Futian District based on land use, urban spatial structure, municipal facilities, and natural environmental conditions into 29 management units, including areas like Huaqiang North, the Central District, and Meilin. Full-coverage maps are prepared for each management unit from the block to the plot level, specifying control indices (Figure 4).

2.4 Zoning Guidelines in Architectural Features and Styles Planning

Architectural features and styles planning, as a specialized plan focused on architectural character, builds on master and detailed planning with thorough, specific, and targeted content (He, 2010). The zoning guidelines in architectural features and styles planning essentially belong to a category of architectural features and styles type zoning guidelines, classifying architectural character based on the building's function, height, and location within the urban spatial structure, and providing corresponding control requirements. The planning scope of architectural features and styles type zoning guidelines is comprehensive, covering all types of buildings, including residential areas, mixed-use areas, public buildings, elementary and secondary schools, kindergartens and community public buildings, parks and squares, green buffer zones, and logistics parks.

Taking the Cityscape Guidelines for Architectural Features and Styles Planning of Fuzhou City as an example, the entire city of Fuzhou is designated into controlled areas, which include historical sections, key urban functional areas, significant urban civic activity centers and their surrounding areas, and important urban corridors. Each category is further subdivided into types; for instance, the key urban functional area consists of 13 commercial and business districts, 5 cultural and sports center districts, and 5 transportation hub areas and their surroundings. The guidelines provide directives on architectural height, facade design, facade width, discount rate, permeability, height-to-width ratio, levels of building height, facades, roofs, landscaping, and the materials and colors used (Figure 5).

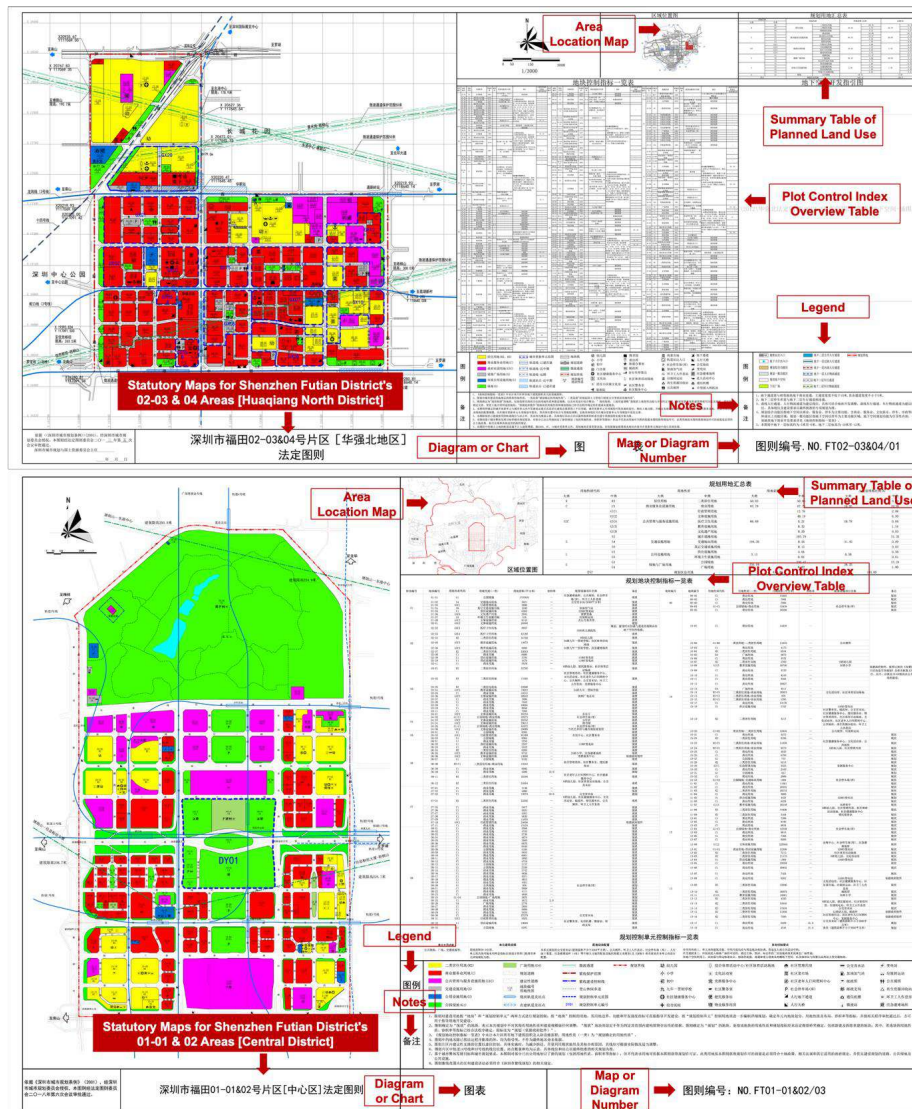


Figure 4. Example of Zoning Guidelines in Regulatory Detailed Planning
Source: Shenzhen Municipal Planning and Natural Resources Bureau. (2021) Statutory Maps for Regulatory Detailed Planning of the Futian District in Shenzhen. Available at: <http://pnr.sz.gov.cn/ywzy/fdtz/cggbcx/ftq/> (Accessed: 31 May 2024).

福州市总体建筑风貌引导		Guidance on Architectural Features and Styles in Key Urban Functional Zones -Commercial and Business Districts					
重要节点建筑风貌类别	建筑风貌引导						
商业、商务区	序号	名称	控制范围	控制范围图示	建筑风貌	建筑风貌色彩	建筑风貌高度
风貌引导总体要求 General Requirements for Cityscape Guidance 建筑风貌展现福州现代商务商贸中心形象，提倡运用新理念、使用新材料、发展新建筑，色彩在保证整体协调并遵循城市主色调的前提下，具色彩可突破传统，进行大胆尝试，形成时尚大气、现代气息浓郁的城市新风貌							
位置示意 Area Location Map							
	1	五里路商务区	沿五里路商务办公建筑。		现代简约风格，运用玻璃幕墙与实体对比，凸出虚实对比效果。	暖色系的明暗色、低饱和度。	建筑风貌为多层、高层建筑。该区域为城市高层建筑集中区，建筑高度≤100m。
	2	茶亭商圈	茶亭。		现代中式风格，将中式建筑元素与现代建筑技术结合，强调木质材料特色拼花或白色线条，营造出现代中式建筑。	暖色系、低饱和度，鲜亮的色彩中用沉稳、中性的沉稳的暖色。	建筑风貌为多层、高层建筑。该区域为城市高层建筑集中区，建筑高度≤100m。
	3	东街口商圈	东街口。		近现代西式建筑风貌，强调多为青砖，局部采用拱券结构加以装饰。	暖色系、低饱和度，鲜亮的色彩中用沉稳、中性的沉稳的暖色。	建筑风貌为多层、高层建筑。该区域为历史文化名城高保护等级区，建筑高度维持原高，严控新建活动。
	4	江北CBD (含万宝商圈)	工业路南侧，西环南路南侧，上湖路东侧。		现代简约风格，商业建筑造型可适当与独特，但总体风貌应简洁大方。	暖色系，中饱和度。	建筑风貌为多层、高层建筑。该区域为高层建筑（群）引导分区，建筑高度≤100m。
福州市总体建筑风貌引导		Guidance on Architectural Features and Styles in Key Urban Functional Zones -Transportation Hub Areas and Their Surroundings					
重要节点建筑风貌类别	建筑风貌引导						
交通枢纽中心及周边地区	序号	名称	控制范围	控制范围图示	建筑风貌	建筑风貌色彩	建筑风貌高度
风貌引导总体要求 General Requirements for Cityscape Guidance 建筑风格应以现代简洁为主，运用现代建筑材料塑造出素雅的建筑风格。							
位置示意 Area Location Map							
	1	火车北站汽车北站及周边地区	福州市晋安区学林路。		现代简约风格，造型简洁，无过多装饰，实现以建筑形式为核心的不对称非传统的建筑手法。	白色、灰色为主，高饱和度，低饱和度色彩为基调色，慎用暖色、乳白等暖色调材料同白色外墙搭配。	建筑风貌为低层、多层建筑。该区域处于城市开建前高保护等级区，建筑高度≤24m。
	2	火车南站及周边地区	仓山城门旧镇旧村东侧。		现代简约风格，造型简洁大方，无过多装饰装饰。	白色、灰色为主，高饱和度，低饱和度色彩为基调色，慎用暖色、乳白等暖色调材料同白色外墙搭配。	建筑风貌为多层、高层建筑。该区域为高层建筑（群）引导分区，建筑高度>100m。
	3	汽车西站及周边地区	上街大学城，马架江大道以西，厂前路以北。		现代简约风格，造型简洁明快，无过多装饰装饰。	暖灰色、暖褐色、低饱和度色彩为主。	建筑风貌为低层、多层建筑为主，高层建筑风貌控制。该区域处于城市开建前高保护等级区，建筑高度≤24m。

Figure 5. Example of Zoning Guidelines in Architectural Features and Styles Planning
 Source: Fuzhou Municipal Bureau of Natural Resources and Planning. (2018) Cityscape Guidelines for Architectural Features and Styles Planning of Fuzhou City. Available at: https://www.fuzhou.gov.cn/zwgk/zxwj/bmwj_1/201803/t20180330_2171523.htm (Accessed: 31 May 2024).

3 Control Differences in Zoning Guidelines

Different levels and types of zoning guidelines have distinct guiding control targets, degrees, and methods, and they vary in their control objectives, content, and methods (Table 1).

Table 1. Comparison of Control Measures Among Zoning Guidelines

Types of Zoning Guidelines	Control Objectives	Control Content	Control Methods
Zoning Guidelines in Comprehensive Urban Design	Inherit and convey the overall characteristic spatial structure, guiding the preparation of lower-level plans.	It requires the control and guidance of subsystems such as characteristic patterns, urban form, open spaces, and landscape features by cityscape zoning. It also needs to provide more refined control points and basis for the street patterns, urban streets, and waterfront landscapes of the zone.	Consider both macro and micro levels
Zoning Guidelines in Landscape Planning	Provide a basis for planning management of special control zones, connected with the regulatory detailed planning.	Mainly control and guide aspects such as functional positioning, overall intention, landscape corridors, architectural styles, and skyline (with emphasis based on zone characteristics).	Targeted guidance, general rules or guidelines
Zoning Guidelines in Regulatory Detailed Planning	Provide a basis for land transfer, detailed construction planning, and architectural design.	Control land use (boundaries of different types of land, building types within various types of land), environmental capacity (building height, building density, plot ratio, green space ratio, etc.), construction control (building volume, form, color, etc.), activity control (location of plot entrances and exits, parking spaces, bus station land boundaries and station locations, pedestrian traffic and other transportation facilities, etc.), and facility matching control (location of municipal pipelines, boundaries of engineering facility lands, etc.).	Integrate into regulatory management unit maps
Zoning Guidelines in Architectural Features and Styles Planning	Provide a basis for urban design, architectural design, and construction management.	Mainly includes building form, volume, color, material, ancillary facilities, environmental elements, etc.	Targeted guidelines

3.1 Control Objectives

In comprehensive urban design, meso-level cityscape zoning guidelines serve as a critical medium connecting the objectives of comprehensive urban design with the next level of planning and design. They can propagate the overall characteristic spatial structure, guiding and controlling regulatory detailed planning, cityscape planning, or district urban design.

In landscape planning, these guidelines provide a basis for the planning management of special control areas, facilitating the implementation of overall planning objectives on specific subdivided plots to enhance the operability of specialized landscape planning.

In regulatory detailed planning, the statutory maps directly guide constructive detailed planning, providing the basis for land lease conditions and architectural design.

In architectural features and styles planning, the zoning guidelines, through guiding and controlling the character of buildings and streets, provide a basis for urban design, architectural design, and building management, thus protecting the city's diverse and cohesive traditional character.

3.2 Control Content

In comprehensive urban design, cityscape zoning guidelines should reinforce macro goals and characteristic structures at the zoning level, meaning control of subsystems like characteristic patterns, urban form, open spaces, and landscape character needs to be conveyed through cityscape zoning. Additionally, indicators for views and skylines, transformation difficulty, height zoning, etc., need to be controlled, providing more detailed guidance for the district's block patterns, urban streets, waterfront landscapes, and architectural character (Wu et al., 2021).

In landscape planning, special control zones include historical cultural heritage areas, natural ecological protection areas, urban central nodes, civic activity nodes, transportation hub nodes, and other special areas. These guidelines focus on functional positioning, overall intentions, landscape corridors, architectural character, and skylines, proposing protection and coordination principles for character preservation, ecological utilization, and more, with particular attention to "three edges" (next to mountains, waters, roads) and "three nodes" (urban centers, civic activities, transportation hubs) (Fujian Provincial Department of Housing and Urban-Rural Development, 2013).

In regulatory detailed planning, the statutory map control system encompasses multiple aspects: land use control, which includes boundaries for different land uses and building types within each category; environmental capacity control, covering building height, density, floor area ratio, and green space ratio; building construction control, addressing building volume, color, and materials; activity control, specifying locations for plot entrances, parking spots, public transport areas, and other traffic facilities; and infrastructure control, defining positions of municipal pipelines and boundaries of engineering facilities.

In architectural features and styles planning, the control elements of zoning guidelines include architectural style, building volume (plan and height), architectural form (facade, roof, walls, and base), color (roof, walls, doors, and windows), building materials (roof, walls, doors, and windows), ancillary facilities, and environmental factors. The focus is more on the detailed and micro-level aspects of individual building elements.

3.3 Control Methods

In comprehensive urban design, these guidelines usually consider both meso and micro perspectives, corresponding to the sections and control content, comprising "structural control + index control + form control". Each content section may include one or more forms within "master plans + general rules + specific rules + detailed rules," primarily emphasizing guiding control. The index control section, as a quantitative guide, provides clear and crucial evidence for local development management (Qian, 2021).

In landscape planning, these guidelines typically include “general rules + district guidelines”, setting design guidance according to the landscape characteristics and planning management requirements of special control areas. They also emphasize alignment with control regulations to incorporate landscape control requirements into the respective units or plot regulations.

In regulatory detailed planning, on one hand, statutory maps are strategically compiled in layers and levels to define control points for each spatial dimension, organized by street unit, community unit, and plot unit. On the other hand, these statutory maps are integrated with urban design guidelines to enhance the control and guidance over urban spatial quality (Huang, Sun, and Zhang, 2019).

In architectural features and styles planning, zoning guidelines target different building types, specifically controlling them from mandatory, advisory, and suggestive perspectives.

4 Conclusion

This paper conducts a comparative study of zoning guidelines within comprehensive urban design, landscape planning, regulatory detailed planning, and architectural features and styles planning. It distinguishes these guidelines by their inherent nature of control, coverage, control objectives, content, and methods, clarifying the roles and functions that zoning guidelines should fulfill at different scales and their interconnections, thereby achieving the effect of urban character control in a layered and incremental manner.

However, zoning guidelines, as a technical tool, are commonly found in various types of planning throughout China, and are not limited to just the four types mentioned above. Yet, some zoning guidelines, such as charming urban and rural landscape zoning guidelines (Wu et al., 2022), have not been widely implemented. Currently, the drafting process and content of most zoning guidelines in China are not clearly defined. There are overlaps in control content among some guidelines, and their control directions may even be contradictory, which is highly detrimental to the execution of planning management work. Moreover, since most zoning guidelines are non-statutory and not all cities prepare them, different types of cities in China—such as scenic cities with distinctive landscapes or smaller cities with less internal variation—have different requirements for cityscape control. Which types of zoning guidelines should be drafted for these different types of cities still needs further study. This suggests that a more standardized approach and clearer guidelines are necessary to ensure effective urban planning and management.

References

- Dai Z.S. and Liu T.T. (2013) ‘A Study on Cityscape Planning System and Planning Methods from the View of Administration and Implementation’, *Urban Planning Forum*, (4), pp. 101-108.
- Bai M. (2015) ‘Guidance, Governance, Paradigm: Fujian Cityscape Planning Guidelines’, *Planners*, 31(9), pp. 45-50.
- Zhao N. (2017). *Study on the General Approach to Architectural Features and Styles Zoning Control in Tongzhou New Town*. Tianjin: Tianjin University.

Wang C.H., Jiang R.P., Jiang J.H., and Wu X. (2019) 'Problems and countermeasures on cityscape guideline for subdivided districts in comprehensive urban design: a case study of Wuyishan central city', *City Planning Review*, 43(4), pp. 53-62.

Huang M.H., Sun Y.T., and Zhang R. (2019) 'Integration of regulatory detailed plan and urban design guidelines for new urban district of island county town—— thoughts on the planning of Shuangdonghu district in Dongshan county', *Urbanism and Architecture*, 16(7), pp. 71-77.

He Z.Z. (2010) 'Necessity and possibility of architectural style planning in urban new district——the case study of new station area in Xiamen', *New Architecture*, (04), pp. 118-121.

Li M. and Zhu Z. (2009) 'Technical Interpretation and Considerations of Cityscape Planning: A Case Study of Heihe City', in *Proceedings of the Annual National Planning Conference in China 2009*. Tianjin: Urban Planning Society of China, pp. 8.

Wu X., Wang C.H., Yin M., and Qian C.L. (2021) 'Three Questions on Comprehensive Urban Design', *City Planning Review*, 45(02), pp. 73-83.

Qian C.L. (2021) *A Preliminary Study on the Compilation Path of Cityscape Guideline for Subdivided Districts in Comprehensive Urban Design*. Nanjing: Southeast University.

Wu Y.Z., Zhang W., Hu S.R., Qiu X.L., and Jiang Q.Q. (2022) 'Urban and Rural Landscape Management from a Multi-scale Perspective: A Case Study of the Technical Guidelines for the Construction of Charming Urban and Rural Landscape Zoning in Hangzhou', *Planners*, 38(12), pp. 119-124.

Urban Planning& Design Institute CO., LED of Southeast University. (2020) *Comprehensive Urban Design Guidelines of Jurong City*. Nanjing: Southeast University Press.

Fujian Provincial Department of Housing and Urban-Rural Development. (2013) *Cityscape Guidelines for Landscape Planning of Fujian Province (Trial Implementation)*. Available at: https://zjt.fujian.gov.cn/xxgk/zfxxgkzl/xxgkml/dfxfgzfgzhgfwj/qt_3796/201311/t20131104_2870981.htm (Accessed: 30 May 2024).

Shenzhen Municipal Planning and Natural Resources Bureau. (2021) *Statutory Maps for Regulatory Detailed Planning of the Futian District in Shenzhen*. Available at: <http://pnr.sz.gov.cn/ywzy/fdtz/cggbcx/ftq/> (Accessed: 31 May 2024).

Fuzhou Municipal Bureau of Natural Resources and Planning. (2018) *Cityscape Guidelines for Architectural Features and Styles Planning of Fuzhou City*. Available at: https://www.fuzhou.gov.cn/zwgk/zxwj/bmwj_1/201803/t20180330_2171523.htm (Accessed: 31 May 2024).