Innovative Exploration of High-Quality and Refined Management in New Park—A Case Study of the whole process of urban design of Liuxiandong Headquarter

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Abstract

Through 11 years of planning and design, 10 years of refinement and whole-process management during the process of development and construction, Liuxiandong has achieved high-level design and high-quality development and construction. It has been a model for refined urban management in Shenzhen and a benchmark for large-scale urban governance. The refined management of Liuxiandong focuses on both the diversity and growth of the city, and the continuity and long-term nature of the management process. Urban design should integrate the wisdom of multiple departments and professions, continuously addressing challenges and issues throughout the whole process of planning, construction, and management, with its concepts, methods, spatial products, and management approaches constantly evolving.
1. Liuxiandong is an important practitioner of Shenzhen high quality

The "Decision on Improving the Quality of Urban Development" (2011) requires that high-level planning and design, refined management, creating urban boutiques and Shenzhen quality. As one of the six major headquarters bases and one of the 23 emerging industry bases and agglomeration areas determined in the 12th Five-Year Plan (for Economic and Social Development) of Shenzhen, Liuxiandong is generally positioned as a "strategic emerging industry headquarters base". It promotes the rapid cultivation and development of strategic emerging industries (SEI), especially the new generation of information technology in the Liuxiandong area.

Since the initiation of Liuxiandong's urban design in 2012, the goal of creating an international first-class park was proposed, and aimed to build a park with distinctive characteristics, green and low-carbon park and intelligent service park. It has become a pioneer in exploring industrial transformation and high-quality planning and construction in Shenzhen.

Over the past 11 years, following the laws of urban development in Shenzhen and the requirements for improving urban quality, industrial transformation and upgrading, technological innovation, and innovative development models, Liuxiandong has explored the whole process of urban design practice for new park development during Shenzhen's "urban transformation" phase, successfully realizing the landing of boutique park with Shenzhen's quality.

2. Core Contents of the Whole Urban Design Process of Liuxiandong

The blueprint of Liuxiandong is not static. Urban design is integrated throughout the whole process of planning, construction, and management, emphasizing both top-down strategic blank planning and bottom-up design empowerment. It continuously adjusts and adapts to the diversity of industries and the variability of market development. From planning to implementation, the design process undergoes continuous "iterative upgrading," detecting an implementation path for high-quality planning, construction, and refined management of Shenzhen's parks.

2.1 Take urban design as the working platform to guide high-level engineering design.

By virtue of the organizational advantages of Liuxiandong Headquarter, coordination between the municipal and district levels, and multi-departmental collaboration, it guided the subsequent architectural design and road design through the overall urban design, unit urban design and public space design, and built a paradigm for park planning and design in Shenzhen, adhering to the principles of "Shenzhen Quality."

2.2 Establishing a new spatial framework of the park with Industrial Communities and Composite Green Corridors

Distinguished from the spatial organization mode of the traditional headquarters base, the
project built a largely sparse and dense spatial structure for the "housing block & green corridors" that included seven high-density blocks (figure 1) and four low-density composite green corridors (figure 2). Each block is a three-dimensional city with diverse life and industrial function. The four green corridors adopt the organizational form of landscape architecture and multiple functions to build a new green spatial experience.

2.3 Customizing Industrial Community Spaces to Meet Industrial and Enterprise Needs

Considering the feature that the high concentration and high-growth of SEI, the project re-
sponded to the urgent needs of diversified service functions and convenient communication for SEI, particularly the small and medium-sized enterprises of them. The plan also detected the diversified industrial space with high spatial connectivity and formulated the industrial community service system that combined the public services and technical services. In addition, to meet the high-density communication needs of innovative groups in this region in the future, the innovation space network of three-dimensional layering and multi-layer ground was established (figure 3).

2.4 Efficiently Addressing Uncertainties in Future Development with a four-Level flex-

Figure 2. Four low-density composite green corridors
ible management system

Different from the rigid management mode of traditional statutory planning regulatory, planning added the management level of development units and subunits in the middle of the district and the plot. Thus, a four-level flexible management and regulatory system of district-development units-subunits-plot was established (figure 4), realizing an efficient response to the variability and uncertainty of development in the future.

2.5 Unit development promotes the overall coordination of spatial elements to achieve overall spatial integration.

The planning adopted the planned unit devel-
opment, the planned sub-units development and the joint development of sub-units instead of the scattered development mode of plots. It not only promoted the overall excavation of foundation pit, the overall planning of basement export, the optimization of branch municipal pipelines and the construction of featured streets, but also realized the high efficiency of underground spatial operation, the vitality of ground floor and connecting corridor (skyway) and the integration of overall image.

2.6 Promote fine management of public space by the way of chief designer institution.

For special planning and construction projects, through the form of annual services, detailed rules, comprehensive evaluations, street guidance and big data, the planning took three-dimensional public space and transportation organization optimization and coordination as the key factors, coordinating the construction
such as air corridor (skyway), streets, underground passages, multi-functional intelligent poles, nightscape, centralized cooling supply and so on, to promote the development and construction with high quality.

3. Five highlights: whole process, comprehensiveness, innovation and effective implementation

Liuxiandong’s refined planning, construction, and management adhere to the principles of "whole process, comprehensiveness, innovation and effective implementation." Through over 20 planning and tracking services conducted over the course of 11 years, it continuously explores high-quality and refined management in new parks.

3.1 Implementation Path of "whole Process" Planning

The project adopts the whole process of planning preparation from urban design, regulatory plan, land transfer, unit development to coordinated implementation of overall planning. With high-level planning and management, the spatial customization of industrial communities and the rapid agglomeration of SEI have been realized.

3.2 Three-Stage "Comprehensive" Working Method

Leading by planning, the project is based on the principles of multi-professional collaboration, multi-departmental coordination, and multi-plan integration. It applied innovative urban design methods, and "comprehensive planning in the planning stage", "comprehensive development of unit development" and "comprehensive coordination in the implementation of comprehensive management stage “were adopted.

Figure 5. Comprehensive planning work method based on the platform of urban design
Thus, overall planning, unit development and implementation management are connected (figure 5).

3.3 All-Around "Innovative" Value Orientation

The spatial requirements of industries and companies are taken as the entry point. Thus, the “space innovation” of industrial communities and composite green corridors, the “management and regulatory innovation” of four-level flexibility with development, the “development innovation” of unit transfer and construction, the “design innovation” of comprehensive implementation plans and architectural cluster design, as well as the “mechanism innovation” of the headquarter and the chief designer institution can be promoted. The whole process innovation paradigm of “three-dimensional composite industrial community" can be practiced.

3.4 Goal-Oriented "Successful Implementation" throughout the whole Process

Based on the principles of development-oriented, market-oriented and people-oriented, the project innovates the planning, construction and management methods in the whole process to realize the rapid gathering of SEI, meet the needs of large, middle and small enterprises, attract scientific and technological innovation talents, and promote high-quality development and construction (figure 6).

4. Remarkable Achievements in Ten Years of Liuxiandong Construction

Liuxiandong followed the development strategy of initiating construction in the central area, followed by the north, and concluding in the south. Over the past ten years, from the start of construction in 2013 to the present, it has achieved "good and fast" construction. The in-
Investment progress has reached 60%, and the image progress is nearly 75%. The total area of buildings put into use has exceeded 2 million square meters. Approximately 600 companies have settled in, attracting and gathering around 60,000 people. The comprehensive development of projects such as Chuangzhi Cloud City (Block 1), DJI Headquarters (Block 2), Vanke Yun City (Blocks 3, 4, and 5, as well as the green corridors), and Nanshan Smart City (Block 6) has achieved significant results. Overall, it shows characteristics of high concentration, aesthetic appeal, and fast construction. Also, it has been an important “Internet celebrity punch card” in the Greater Bay Area (figure 7a/7b).

Liuxiandong values the empowerment of diverse design forces to drive high-quality construction. Over the past 11 years, more than 100 domestic and international planning and design firms, over 2,500 designers, and several academicians and masters have participated, showcasing the open, inclusive, dynamic, and sustainable urban spirit of Shenzhen.

It not only won the first prize of municipal excellence, the second prize of provincial excellence and the first prize of national excellence in 2015, but also participated in The 15th China (Shenzhen) International Cultural Industry Fair (ICIF) Vanke Design Community branch venue in 2019 and 2023.

Project has promoted the agglomeration of emerging industries such as Integrated Circuits, Artificial Intelligence and Unmanned Aerial Vehicles, and formed a prototype of an innovation network; promoted the deep linkage of multiple departments, administrative offices, and professional teams, and established a unit development system. The three-dimensional and multi-layer innovation communication space has been shaped, and the spatial organization form of innovative industrial community under high-density construction was detected. Project also has promoted the application of new technologies such as sponge city, centralized cooling and green building, and created a model...
of green and low-carbon parks. In the form of chief designer service, the project promoted and ensured the high-quality development and construction.

As Liuxiandong enters the stage of refined management and operation, further improvements are needed in the organization of regional transportation, the integration of work and residence, the clustering of industries, the coordination of internal construction, community organization, operations and services. It aims to deeply explore a new model of high-quality "planning, construction, management, and operation" for high-density innovation-oriented industrial parks, aspiring to become a model for refined urban management in Shenzhen and a benchmark for comprehensive governance in large-scale cities (figure 8).

Figure 8. Rendering of Liuxiandong
References:


