

Mixed Industrial Land Use: Local Experience, Value Orientation, and Policy Design

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Abstract: The mixed use of industrial land addresses the practical needs of new industrial development and evolving economic structures, contributing to more efficient and intensive land use and higher productivity. By analyzing mixed industrial land-use experiences and practices in representative areas, this paper clarifies its value orientation and proposes a supporting policy framework and planning principles. The research shows that mixed industrial land-use policies in representative areas focus on optimizing spatial layout, refining land use classifications, establishing development control standards, and innovating supply mechanisms. Mixed industrial land should promote innovation, resource conservation, intensive land-use, and shared development. Relevant policy designs should follow the process of "planning and site selection—categorical control—supply management—rights allocation—utilization and supervision."

Keywords: industrial land; mixed use; value orientation; policy design; allocation principle

1. Mixed Industrial Land Allocation: Local Experiences

1.1 Spatial Layout and Land Classification

1.1.1 Spatial Layout

New industrial land tends to be planned in industrial functional zones, such as high-tech and innovation parks. These locations are generally preferred because innovation-oriented industries—unlike traditional industries—require superior location factors, including transport accessibility and comprehensive support facilities.

However, planning approaches vary by city type. Comprehensive cities like Guangzhou, Shanghai, and Shenzhen prioritize clustering in industrial parks to optimize spatial distribution and mitigate the impact of lower-cost new industrial land on central office markets. Conversely, in small and medium-sized cities where manufacturing-based R&D is prevalent, new industrial land tends to cluster in centrally located functional areas to attract high-end talent through better amenities.

1.1.2 Land Classification

Mixed industrial land can be categorized into two models: "Industrial-Dominant + Single-Use Mix" and "New Industrial Land + Multi-Use Mix." The former combines industrial use with residential, public management, commercial, logistics, or transport services. The latter integrates R&D, office, commercial, residential, and service functions. Classification methods

reflect regional industrial characteristics, such as Shanghai's focus on scientific research design or Shenzhen's integration of "new industrial land" into its broader land-use taxonomy.

1.2 Development Controls and Supply Management

1.2.1 Development Control Standards

To enhance efficiency, most cities set minimum floor area ratio (FAR) requirements (often ≥ 2.0). To prevent "residentialization" or "commercialization," accessory building proportions are typically capped at 30%, though some cities impose stricter limits (e.g., 10–15%). Regarding property rights, policies range from strict requirements for unified ownership and registration (e.g., Suzhou, Wuxi) to more flexible models allowing independent parcel subdivision (e.g., Shenzhen).

1.2.2 Supply Management

Cities are increasingly adopting flexible supply methods, including elastic leasing terms and tiered incentive mechanisms. Examples include "time-share incentives" (Suzhou), "performance-linked terms" (Wuxi), and "limited competition" or "price-capped competition" models (Shenzhen, Hangzhou) to balance land cost-effectiveness with industrial quality.

2. Value Orientation of Allocation

2.1 Innovative Development

Innovation is the primary driver of high-quality growth. Mixed industrial land serves as a core incubator for "new quality productive forces" by integrating manufacturing with productive services such as R&D and design. Supply-side innovations—such as pre-leasing, combined leasing and transfer, and "customized land"—help reduce entry costs for enterprises.

2.2 Resource Conservation and Intensive Use

Vertical development and functional stratification are vital for intensive land use. Mixed industrial land shifts away from traditional single-story factories toward multi-story buildings, increasing floor area ratios and overall land-use efficiency. Stricter standards for input-output intensity and exit mechanisms ensure that this efficiency is maintained.

2.3 Shared Development

Sharing functions, benefits, and information is essential for sustainable development. This includes building shared service spaces, establishing multi-party interest-sharing mechanisms for stakeholders, and creating unified, digitalized regulatory platforms to facilitate data exchange across departments.

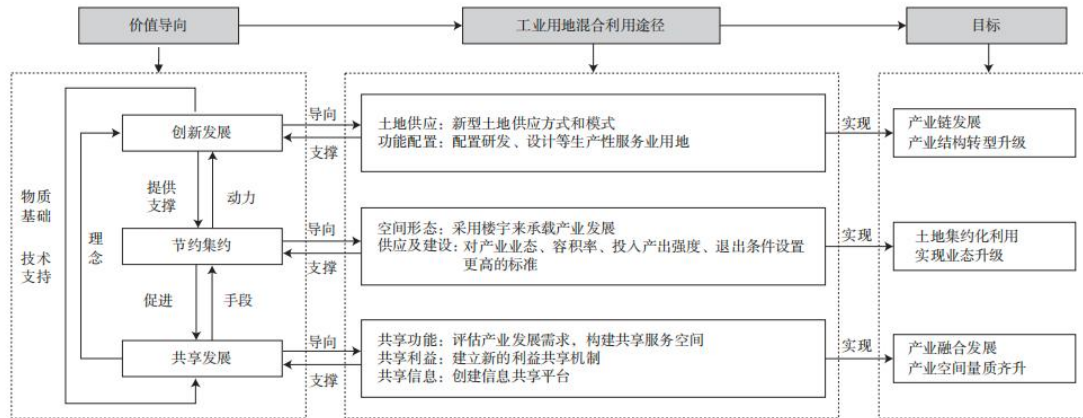


Fig.1 Value orientation of mixed industrial land-use

3. Policy Framework for Mixed Industrial Land

To transition from inefficient utilization to high-quality development, this paper proposes a policy framework based on the "planning-control-supply-rights-supervision" chain (Figure 2).

Planning and Site Selection: Decisions should be grounded in rigorous industrial demand assessment, ensuring alignment with territorial spatial planning and environmental standards. Strategic clusters—such as existing industrial parks, urban renewal zones, and transit nodes—should be prioritized.

Categorical Control: Policies must clarify dominant and compatible uses via positive and negative lists (Table 2), ensuring that compatible uses do not compromise safety or environmental standards.

Supply Management: Diversified supply methods (long-term leasing, elastic transfer) should be combined with price-correction mechanisms that reflect the specific proportions of mixed land uses.

Rights Allocation: Initial registration must require unified ownership. Subdivision and transfer of land use rights should be strictly regulated to ensure industrial focus, with mandatory government or developer buy-back options for secondary transfers.

Utilization and Supervision: A cross-departmental "leadership group" should be established to coordinate information and enforce full-lifecycle supervision. Effective incentives (tax breaks, honors) and penalties (fines, land repossession) are necessary to ensure compliance.

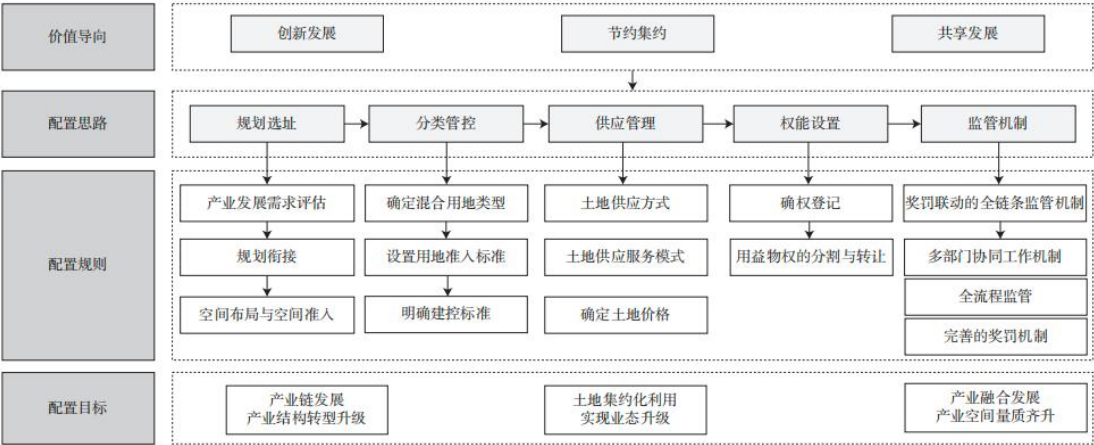


Fig.2 Policy framework for mixed industrial land-use

4. Conclusion and Discussion

Mixed industrial land use is a strategic response to the needs of new industries and evolving economic structures. By transitioning from a simple expansion-oriented model to a space-benefit-oriented one, cities can achieve higher efficiency.

This research introduces a multi-functional integration framework that emphasizes industrial synergy and a systematic, multi-level policy architecture. While the proposed framework focuses on typical regions, its adaptability remains crucial. Future studies should focus on localizing these policies for diverse urban contexts. As emerging industries continue to evolve, the integration of digital tools, AI-driven spatial optimization, and green-economy policies will become central to the next generation of industrial land management.

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(Note: As per instructions, standard citation format is maintained as requested by the source text structure.)

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