

건축물 유지관리산업 진흥을 위한 제도개선 연구

A Study on Institutional Improvement to Promote the Building
Management & Maintenance Industry

현태환 Hyeon, Tae Hwan

유광흠 Yu, Kwang Heum

안의순 Ahn, Eui Soon

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SUMMARY

Hyeon, Taehwan

Yu, Kwang Heum

Ahn, Eui Soon

Chapter 1. Introduction

The building maintenance market is expected to become increasingly active due to the rise in aging buildings. The declining birth rate and consequent population decrease are leading to reduced demand for new constructions, which in turn signals a surge in demand for the maintenance of aging facilities and buildings. This shift is expected to bring about a paradigm shift towards the building maintenance and Operation & Management (O&M) industry. Since the 1960s, Korea has seen a significant increase in the number and size of buildings due to rapid industrial development. However, frequent safety accidents occurred due to a lack of safety regulations. To address this, the government began implementing laws related to building safety and maintenance, starting with the “Act on Ownership and Management of Aggregate Buildings” in 1984, along with various related policies.

Despite these efforts, current regulations focus only on safety inspections, without a clear definition and scope for overall building maintenance. This lack of clarity makes it difficult to assess the status and trends of the industry, which limits the ability to develop national policies. In particular, although the “Building Management Act” Article 6 provides a legal basis for surveying the status of building maintenance, such surveys are not being properly conducted for the reasons mentioned above. To stimulate and develop the building maintenance industry, it is essential to clearly define the scope of

the industry and conduct systematic surveys. Specifically, it is necessary to set development goals for the building maintenance industry, establish strategies and directions to achieve these goals, and devise detailed action plans for implementation. Moreover, it is important to cultivate professional talent, improve industry-related systems, and introduce new building maintenance businesses.

This study aims to establish institutional definitions, scope, and classification criteria for the building maintenance industry, and to develop strategies and directions for its growth. By proposing standards for the establishment of building maintenance businesses and qualification criteria for building managers (tentative name), this study seeks to suggest ways to create a systematic industrial and personnel system for building maintenance.

Chapter 2. Concept and Current Status of the Building Maintenance Industry

Chapter 2 explores the objectives, necessity, and concept of building maintenance and the building maintenance industry, as well as estimates the industry's size and current status. Due to the increase in aging buildings and mixed-use buildings, ensuring safety and usability has become a key issue. While residential buildings of a certain size are managed by certified apartment managers, non-residential buildings, such as commercial facilities within mixed-use buildings, often lack a clear maintenance system, making it difficult to assess their maintenance status. Some large buildings are managed through contracts with maintenance companies, but without legal standards, there is no standardized management system.

General buildings over 3,000m² account for only 6.14% of the total number of buildings, but they represent 57.3% of the total floor area, highlighting the importance of maintaining these structures. The future building market is expected to be driven by zero-energy buildings and high-rise, mixed-use buildings, requiring the building maintenance industry to integrate advanced technology and facilities. Smart maintenance systems that utilize sensors and monitoring technologies, as well as training systems for professionals, are needed. In addition, systematic management is essential to

prevent accidents related to climate change and incidents such as electric vehicle fires.

Current laws related to building maintenance, except for the “Apartment Housing Management Act,” focus primarily on safety inspections, indicating a need for policies and systems that allow for continuous inspection and maintenance of non-residential buildings. Currently, there is no national qualification system for those working in the building maintenance industry, leading to a proliferation of private certification programs that lack standardized training content, which reduces expertise. This highlights the need for systematization to promote the building maintenance industry.

Although various laws define building maintenance, their content varies depending on the specific objectives of each regulation. Previous research generally defines building maintenance as “the regular inspection, repair, or improvement of a building to preserve its performance or functionality and ensure user safety.” This includes activities aimed at preserving the building’s quality and functionality, extending its lifespan, and maintaining its asset value. The Architectural Institute of Japan defines it as “all activities and related management work carried out to maintain the function or performance of buildings, facilities, outdoor ancillary facilities, and landscaping in an appropriate condition.” The international standard on facility management (FM) describes it as an “organizational function that integrates people, place, and process within the built environment to improve the quality of life of people and the productivity of core businesses.” This suggests that building maintenance covers a broad range of activities.

In this study, the scope of building maintenance is set broadly, from the completion of the building until its demolition or loss. The building maintenance industry is categorized into inspection management, operation management, and asset management. The focus of this study is on operation management, which requires industrial promotion, rather than inspection and asset management, which already have institutional foundations.

“Building maintenance” refers to activities such as preservation, repair, reinforcement, and improvement of buildings to maintain their functionality and enhance user convenience and safety. The “building maintenance industry” refers to industries that create economic or social added value through building maintenance activities.

The study also analyzed the size and status of the building maintenance industry. Since there is no formal classification of the industry, its size and status were estimated using

data from the Economic Census, Construction Industry Survey, and Service Industry Survey. According to the Economic Census, there were 71,443 building maintenance businesses in 2020, employing 697,650 people and generating approximately 55 trillion won in revenue. Although the number of businesses and sales account for only a small percentage of the total economy, the employment scale is relatively large.

From 2018 to 2021, the number of businesses in the building maintenance industry increased by about 47%, the number of employees by about 12%, and sales by about 16%, showing significant growth in recent years.

The study also estimated the industry's size using maintenance costs for apartment complexes. It assumed that the maintenance costs for general buildings would be similar to those for apartments and that buildings of a certain size or with high user traffic would hire maintenance companies. Based on this assumption and administrative data on buildings, the total annual building maintenance cost nationwide was estimated at approximately 6.7 trillion won, with Seoul accounting for the largest portion at about 1.8 trillion won. While these estimates based on apartment maintenance costs are lower than the figures from the Construction and Service Industry Surveys, they serve as a lower bound for the actual size of the industry.

Chapter 3. Establishing an Institutional Foundation for Promoting the Building Maintenance Industry

Chapter 3 first sets the direction for promoting the building maintenance industry and establishes standards for institutionalizing the industry. The relevant laws related to building maintenance and the promotion of the industry were analyzed to examine the regulations they govern. These laws mainly regulate actions under the law, define the scope of subjects who must perform such actions, and explicitly outline the qualifications for businesses, institutions, and professionals involved in these activities. In terms of laws promoting the industry, they specify the qualifications for institutions involved in industry promotion, as well as the duties of related mutual aid associations and organizations.

Next, a perception survey was conducted among workers in the building maintenance industry to gather opinions on the industry's current state and the direction for

institutionalizing industry promotion. The survey aimed to understand the general status of companies engaged in building maintenance work and the perceptions of industry professionals regarding the institutionalization of the building maintenance industry. Most respondents were from companies located in the Seoul metropolitan area, and over half (54.1%) of these companies had been operating for more than 20 years. The median employment size of these companies was 99 employees, and the median revenue in the previous year was 28 billion KRW. In terms of respondents' positions, 32.6% were executives (board members), and 40.9% had between 10 and 20 years of work experience. Most respondents were men (89.0%), with the largest age groups being those in their 40s and 50s (each representing 35.9%).

As for areas needing improvement in the building maintenance industry, 66.9% of respondents (based on the top three ranked issues) cited “buildings not being managed professionally” as the most significant problem, followed by “proliferation of unqualified companies” (60.8%) and “lack of criteria for determining maintenance costs” (54.1%).

To further explore the main issues regarding the institutionalization of the building maintenance industry, an FGI (Focus Group Interview) was conducted with industry professionals. Interviewees were chosen from companies and associations involved in building maintenance work. Through the FGI, opinions were gathered on the importance of regulating the scope of buildings subject to mandatory maintenance, defining the types of maintenance tasks, and setting qualification standards for companies and personnel, as well as the establishment and duties of associations. The resulting institutional framework for promoting the building maintenance industry was as follows:

First, based on the industry survey, the policy targets were clearly identified as building maintenance companies, industry workers, the technical level of the industry, maintenance items, contracts, and execution costs. The policy specifically targeted buildings with a total floor area of more than 3,000 square meters and categorized them by purpose, such as multi-use and collective buildings.

To establish professionalism in the building maintenance industry, standards for companies were introduced to ensure the public can trust the industry. Professional qualification standards were developed, and recognition systems were designed to

accommodate the early implementation of the system. Lastly, to foster the growth of the building maintenance industry, legal provisions were made to establish associations and build a research and education system capable of providing skilled labor to the market.

The first institutional standard established was the size and type of buildings subject to building maintenance. The scope of mandatory safety inspections and maintenance obligations was analyzed under current building maintenance-related systems. The Building Management Act generally mandates inspections for buildings with a total floor area of 3,000 square meters or more. Under the Apartment Housing Management Act, mandatory maintenance applies to apartment buildings that meet the following criteria: ① apartment buildings with more than 300 units, ② apartment buildings with more than 150 units equipped with elevators, ③ apartment buildings with more than 150 units using central heating systems (including district heating systems), ④ buildings constructed under a building permit pursuant to Article 11 of the Building Act that include more than 150 housing units alongside other facilities, ⑤ apartment buildings that do not fall under the above categories but are agreed upon by the residents according to the standards set by presidential decree.

The Act on Ownership and Management of Collective Buildings does not specify the area standards for buildings subject to inspection and maintenance. However, since this law deals with sectional ownership, it provides regulations for forming management bodies and appointing managers. When there are more than ten sectional owners, a manager must be appointed to represent the management body and handle its affairs. For buildings with more than 50 exclusive use units (excluding mandatory management apartment buildings and large-scale retail stores), the appointment of a manager must be reported to the local government. Buildings with more than 150 exclusive units must undergo an audit by an auditor, while those with 50 to 150 units must undergo an audit if requested by more than 1/5 of the sectional owners.

The Act on the Safety and Maintenance of Educational Facilities covers safety inspections for kindergartens, schools, and lifelong education facilities, while the Special Act on the Safety Management of Multi-use Establishments applies to multi-use businesses. Other types of buildings, such as officetels (studio apartments), fall under the category of quasi-housing and are not subject to mandatory management for various reasons, including poor construction standards and inadequate living conditions. The government also revised the Inheritance and Gift Tax Act in 2005 to separate officetels

and commercial buildings from general buildings for purposes of determining the standard market value, with the scope of the regulation targeting commercial buildings with a total floor area of 3,000 square meters or more or with more than 100 sectional owners.

In the perception survey of building maintenance industry workers, the most common types of buildings managed by respondents' companies were office buildings (76.2%), followed by commercial facilities (65.2%). More than half (56.9%) of the respondents' companies managed buildings smaller than 3,000 square meters. In terms of building types requiring institutionalized maintenance, "commercial facilities" (81.8%) and "office buildings" (77.9%) were most frequently cited. The most commonly mentioned minimum size for buildings that should be subject to institutionalized maintenance was 10,000 square meters (31.5%).

FGI participants from building maintenance companies indicated that their companies generally managed buildings of at least 3,000 square meters. However, they noted that the 3,000 square meter threshold for mandatory maintenance was set too low, making the scope of mandatory maintenance overly broad. In their experience, a threshold of 10,000 square meters would be more appropriate for office buildings.

The final proposal for the scope of buildings subject to mandatory maintenance reflected some of the FGI findings, with the scope determined comprehensively based on the building's purpose, size, and other factors. For office buildings, as well as similar types such as retail and religious facilities, buildings with a total floor area of 5,000 square meters or more were designated for mandatory maintenance. Buildings closely related to public life, such as neighborhood living facilities, medical facilities, cultural and assembly facilities, etc., were subject to mandatory maintenance if they had a total floor area of more than 3,000 square meters. However, buildings with uses that require less specialized maintenance, such as factories and warehouses, were excluded from mandatory maintenance requirements.

The second standard established the maintenance tasks applicable to the buildings subject to mandatory maintenance. Tasks related to inspection and asset management, as regulated by relevant laws, were excluded, and tasks related to improving the usability of buildings, repairing and reinforcing aged buildings, and integrating management among various maintenance companies were defined. The Building

Management Act and the Facility Safety Act regulate inspection tasks and related items. The Apartment Housing Management Act limits the scope of maintenance tasks to apartment buildings, but the essential nature of building maintenance is the same.

The Apartment Housing Management Act specifies tasks that apartment managers must perform, including maintaining, repairing, and ensuring the safety of common areas. Apartment management office heads (usually licensed residential facility managers) oversee these tasks, directing and managing the apartment management office. The Collective Building Act specifies detailed maintenance tasks for managing assets in collective buildings. Managers are responsible for preserving and maintaining common areas and executing tasks needed for their upkeep. These include enforcing resolutions made by the management body regarding the management and modification of common areas, collecting and managing the costs and contributions needed to execute the management body's duties, representing the management body in legal or non-legal matters, resolving disputes related to noise, vibration, odors, etc., that disrupt peaceful living, and other actions specified by the regulations.

The Korean Building Maintenance Association provides a table of building maintenance tasks that categorizes them into facilities management, preservation, environmental hygiene management, security, and other duties, with detailed descriptions for each category. Facilities management includes tasks related to operating and maintaining various mechanical systems, while preservation involves inspections of building structures and equipment. Environmental hygiene management includes tasks such as cleaning and waste management, and security includes general security duties, fire safety, and disaster response tasks. Other duties include building leasing management and other management services.

In the perception survey, respondents' companies most commonly performed facilities management (60.2%), followed by security (54.7%), contract management (53.6%), cleaning and sanitation (51.9%), maintenance and repair work (51.9%), and reception and parking management (50.3%). Building maintenance tasks in both domestic and foreign companies typically include lease management, property management (PM), facilities management (FM), space management, real estate consulting, facility upgrades, energy efficiency management, maintaining the safety and reliability of machinery and equipment, and providing energy efficiency consulting and analysis.

FGI participants commonly mentioned four main categories of tasks: facilities management, environmental management, security management, and parking management. However, they also pointed out the need to account for the particularities of building maintenance, which requires a broader range of tasks than those for apartment management alone.

The final proposal for the scope of tasks for buildings subject to mandatory maintenance included tasks related to building maintenance, billing and expenditures for maintenance fees, and defect repairs and upgrades. Building maintenance tasks were defined as regular inspections and necessary repairs to ensure the building remains safe and functional. This category includes both the operation of mechanical systems and structural repairs. Maintenance fee management involves billing tenants or occupants for their share of the maintenance costs, ensuring the accurate calculation of these amounts, and managing the flow of maintenance funds to cover operational expenses. Defect repairs and upgrades include both resolving minor issues that arise and undertaking major renovation work to extend the building's life span or improve its usability.

The third standard is the introduction of qualifications for building maintenance professionals and the registration requirements for businesses that conduct building maintenance work. It also includes plans to gradually improve and update these standards in response to market demands.

Chapter 4. Institutional Improvement Measures for the Building Maintenance Industry

In this chapter, proposals for the enactment of the “Building Maintenance Industry Promotion Act” and the revision of the “Building Management Act” are presented as alternatives for the systematic promotion and development of the building maintenance industry. The proposal for individual legislation allows the government to establish a basic plan for industrial promotion concerning nationally significant industries, as well as to identify policy tasks in accordance with the plan and establish research and development and human resource training measures to achieve these policy tasks. The

advantage of this approach is that by establishing a basic plan for the building maintenance industry, it recognizes this industry as a national priority and enables stable support for systematic development. Conversely, as these newly established legislative measures will take a long time to institutionalize, there is a need for a detailed study analyzing the regulatory and benefit aspects through prior data collection, which is a disadvantage. This study references certain provisions of the “Architectural Service Industry Promotion Act,” “Real Estate Service Industry Promotion Act,” and “Construction Technology Promotion Act” for the proposal of the “Building Maintenance Industry Promotion Act.” In Chapter 1, the definitions of “building maintenance industry,” “building maintenance work,” “building maintenance operator,” and “building maintenance worker” are established, and the establishment of a five-year basic plan and annual implementation plan for the promotion of the building maintenance industry under national leadership is mandated. Chapter 2 establishes the foundation for the building maintenance industry, detailing investigations into the current status of the industry, the establishment of an information system for the building maintenance industry, and regulations on research, development, and support. Chapter 3 addresses the revitalization of the building maintenance industry by establishing qualifications and training for specialized personnel, as well as regulations concerning the registration and cancellation of building maintenance operations, thereby ensuring the expertise of those engaged in the building maintenance industry. Chapter 4 covers building maintenance, detailing the standardization of the building maintenance industry, motivation through the designation of excellent building maintenance operators, and provisions for small building maintenance through future industry expansion and local government support. Chapter 5 regulates the establishment of associations related to the building maintenance industry and the work of these associations, including provisions for the establishment of mutual aid associations to support businesses.

Another alternative is to establish an integrated system for building maintenance work by revising the “Building Management Act” to include the creation of building maintenance operations, as well as an integrated system covering inspection, maintenance, and demolition of buildings after completion. The advantage of this approach is that it creates a unified legal framework from building completion to demolition and disposal. It allows for faster institutionalization compared to the

enactment of new laws and offers the flexibility to apply various building maintenance industries in response to future social and policy changes. However, a systematic policy establishment for industrial promotion is challenging, and the fact that the subjects requiring inspection management and operational management do not match poses a disadvantage. This study references the “Multi-Family Housing Management Act” as a model for the proposed revision of the “Building Management Act” for establishing building maintenance operations. Chapter 1 of the revision defines “building maintenance worker,” “building maintenance operation,” and “building maintenance operator.” Chapter 6 introduces “Professional Management of Buildings,” detailing the registration and cancellation of building maintenance operations in Section 1 and regulations concerning the duties of maintenance entities, the responsibilities of the head of the maintenance office, qualifications for building maintenance workers, and training for building maintenance operators in Section 2. Chapter 7 establishes provisions for the creation and duties of associations.

Chapter 5. Conclusion

The research outcomes suggest the establishment of policy directions for the new building maintenance operations and the training of specialized personnel to promote the building maintenance industry. It establishes definitions of the scope and classification criteria for the building maintenance industry, derives strategies and implementation tasks for its development, and proposes institutional improvement measures for new systems related to industry and personnel for systematic building maintenance. “Building maintenance” is defined as actions such as preservation, repair, reinforcement, maintenance, and improvement of buildings to preserve the building's function and enhance user convenience and safety. The “building maintenance industry” is defined as an industry that creates economic or social added value through building maintenance activities. Based on these definitions, the current status of the building maintenance industry is assessed from two perspectives, and directions for institutionalization to promote the building maintenance industry are established.

The research findings regarding key issues related to the institutionalization of the

building maintenance industry are as follows. The scale and type of buildings subject to maintenance are reviewed against the criteria for safety inspection targets from related regulations, and office buildings, which are in high demand for policy, are additionally considered. The tasks of building maintenance are divided into three categories: building maintenance, management fee claims and expenditures, and defect repairs and improvements, with detailed regulations concerning management and coordination tasks such as building management plans. The qualification systems for building maintenance enterprises and personnel reference qualifications from related regulations and establish criteria for businesses and personnel by complementing recognition systems for existing personnel with similar qualifications. Finally, the establishment and duties of associations for the promotion of the building maintenance industry are reviewed against the regulations defining association establishment in related laws. Notably, the management of the career paths of building maintenance personnel is supplemented into the duties of the association.

Based on these key issues, two alternatives for institutional improvement of the building maintenance industry have been derived. The first is the institutionalization through the enactment of the “Building Maintenance Industry Promotion Act,” and the second is the institutionalization through the revision of the “Building Management Act.” Each alternative has the advantage of being able to provide support for promotion as a national priority industry and being able to institutionalize more rapidly compared to the enactment of new laws.

Future tasks include the establishment of delegated legislation for the building maintenance industry, the development of mid-to-long-term strategies for promoting the building maintenance industry, the standardization of the building maintenance industry and the establishment of a standard industrial classification system, the establishment of methodologies for investigating the current status of the building maintenance industry, the establishment of pricing standards for the building maintenance industry, and the creation of coexistence strategies for small building maintenance companies.

Keywords

Building Maintenance and Management, Building Management Industry, Facility Management