

# A Comparative Analysis on the Merits and Demerits in Domestic and Overseas Public Facilities Management (P-FM)

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**Abstract:** For the last 40 years, the Korean government has built and supplied diverse public facilities. The Korean government, which has supplied diverse public facilities for the last 40 years, has maintained these public facilities as breakdown maintenance under limited budget. Because of increase of aging of public facilities and insufficient budget, it needs the total public facility maintenance. Especially, as Japan has also experienced similar issues and solved these, they are the introduction of P-FM theory and see successful examples. In this study, by comparison Analysis on the Merits and Demerits for Public Facility management (P-FM) between domestic and abroad, it would find a future direction to public facility management P-FM is to go.

**Keywords :** Public Facility Management, Facility Management Standard, Social Change , Decrepit Facilities

## I. INTRODUCTION

### A. Research Purpose

As of 2015, public facilities over twenty years take up 35% of the total public facilities. This reality puts local governments demanding replacement or reconstruction of these deteriorated facilities. However, due to social issues such as population decrease, low financial independence rate, economic aggravation, and the budget needed to maintain public facilities are becoming more insufficient while preventive maintenance and reconstruction are becoming more difficult. Although the central government and the public government have recognized these problems resulting from social changes, they have yet to find the solutions.

On the contrary, Japan has been facing similar social changes, such as low growth and increased debt ratio twenty years back. However, for Japan, in order to prevent from going through the same problem onto the next generation, some local governments have introduced the concept of Facility Management for the overall management of public facilities. (Herewith referred to as P-FM)[1]

Since public facilities are service facilities reflecting social and citizen demands, it is challenging to provide good maintenance with budgets or demands alone. With this regard, this research conducts a comparison analysis on domestic and overseas FM related standards to establish an appropriate FM standard for efficient public facility management for Korea.

### B. Research Method and Scope

This research has selected representative FM standards being applied in Korea, Japan and Europe. It has limited its scope to analyzing and comparing merits and demerits of these standards, focusing on subjects of facility management, performing agents, procedures, and main contents of the relevant standards.

## II. DOMESTIC AND OVERSEAS FM STANDARDS

### A. Facility Management KS

FM research began in the early 2000. However, there are not many successful cases from actual application. On the other hand, maintenance and safety inspection standards are stated in laws under the Construction Law, laws related to safety management and Special Acts on Safety of Facilities Management.

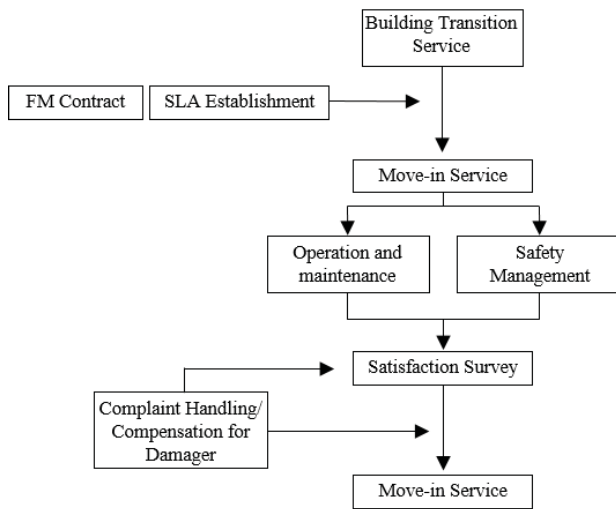
Official FM related standards for Korea would be the Service Facility Management (KS S 1004-1, 2)[3] under the Korean Industrial Standards (herewith referred to as KS) declared in 2006. In the standards, subjects for facility management would be non-residential buildings of specific size (total floor area of 10,000 m<sup>2</sup>) and infrastructure. It provides services for all facility -management related matters of these buildings. However, aside from professional facility management service providers, maintenance service contractors deem maintenance and facility management as two different issues, and are not aware of the existence of the KS Standards.

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The following is detailed work procedures as proposed in Facility Management under the standards of KS.

Figure 1.  
 Facility Management Procedures



Part 1 of Facility Management KS is categorized as Process while Part 2 is Infrastructure. Part 1 describes complaint handling and damage compensations on move-in service, facilities operation, safety management and move-out service. Part 2 describes details on management methods, facility management service contracts and work processes.

Items to be reviewed for facility management service contract includes contract management, division of work, cost-bearing, training management and safety management. It also includes the general details related to these items.

**B. TOTAL FACILITY MANAGEMENT**

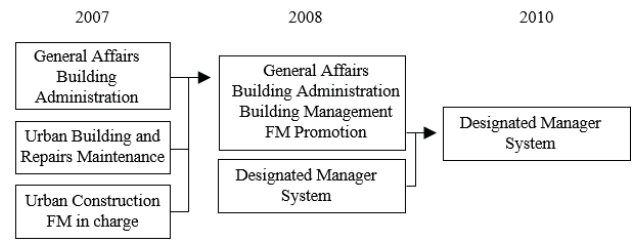
Total Facility Management' with additional revision (2006)[4] issued by Japan FM Association describes that subjects for FM includes tangibles assets such as land, building and assets under construction, and intangible assets such as lease rights and utilization rights, of all buildings possessed or rented by the nation or the local government.

FM is a management method based on the facility user's logics. It promotes management by categorizing total management, FM strategy and planning, project management, operation and maintenance, and assessment.

Total Facility Management aims to absorb knowledge on the environmental changing and evolving FM. It proposes FM strategic plans tied to management projects, global environment preservation methods, longevity conservation plans, work-place establishment and its related concerns, operation, management and strategic outsourcing, and FM success stories.

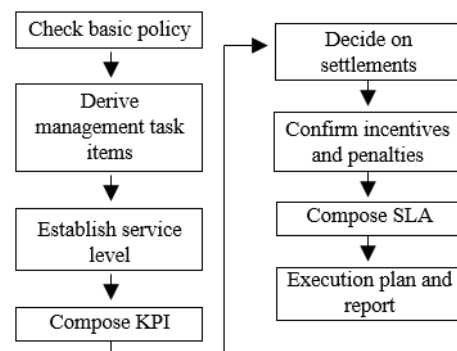
Furthermore, Japan has stated that its key component is that it has built a new management department for the promotion of FM for a comprehensive management from a conventional, diversified management.(Figure 2)[2] It has converted from a closed management by organization or facility to a cross-control, comprehensive management by control elements such as HR, Finance, Information, the like.

Figure 2  
 Re-organization (Sakura City)



The SLA (Service Level Agreement) is an agreement signed by both parties to maintain and improve the quality of operation and maintenance by the service provider. The SLA procedure is as follows.

Figure 3.  
 SLA Procedure

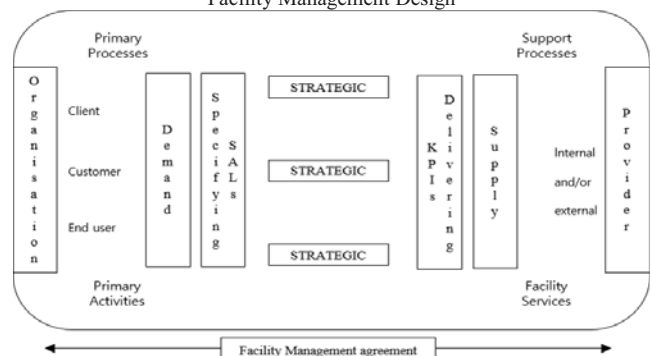


**C. EUROPE FACILITY MANAGEMENT STANDARDS**

Europe Standards[5] are driven based on specific history and cultural environment of European countries. It was announced due to possible understanding and approach depending the organization and business area. Of this, the Facility Management Standard was utilized as a baseline data for ISO FM establishment since the year 2000. The purpose of the standard is to improve communication among interested parties, and improve effects of major activities, facility management process and product quality.

Facility Management in Europe has a wide scope of application including processes, services, activities and facilities. It can be categorized as space and infrastructure, and personal and organizational. The facility management design under Europe's Standard is as follows:

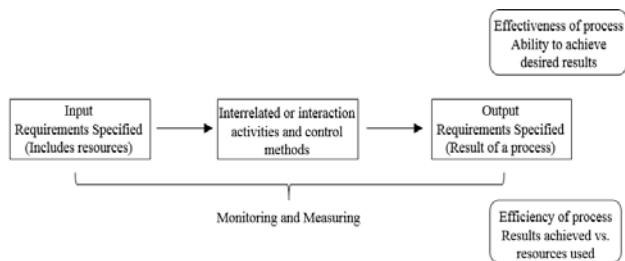
Figure 4.  
 Facility Management Design



Facility Management can be categorized into strategic, tactical and operational level as seen in Figure 4. Strategic level is to meet the long term goals of the organization. Tactical level is to execute mid-term strategic purposes. Operational level is to create environment demanded by the end user on a daily basis. In other words, effective facility management is to promote the following: service of other service processes; rationalization of strategic, tactical and operational level; consistent and clear communication; cooperation and resolution of relationships among operation and maintenance in charges; and support in integration of current and future demands.

Europe FM Standard composes of basic definition of terms, FM agreement preparation methods, FM quality guide, FM classification system, FM procedure guidelines, FM area and space measurement methods, and FM benchmarking performance.

Figure 5.  
Common Facility Management Process



### III. COMPARISON ON DOMESTIC AND OVERSEAS FM MERITS AND DEMERITS

Domestic facility management system, KS, identifies FM service as a common building structure maintenance, repair and safety management. This has a downside of being a restrictive service standard for solving only physical deterioration of building structures. Furthermore, it does not include details in responding to environmental and technical changes, being inefficient for future sustainability. However, by and large, the merits of the domestic standard is that it provides appropriate direction suited for current domestic conditions and can provide new definitions depending on future scopes and conditions demanded by the user.

Japan has introduced public FM applicable to government facilities, local government facilities, and even to university facilities. Some local governments are executing efficient facility management. Duties of FM are not only operation and management but focuses on FM strategy and planning, and project management. FM in charges are exerting efforts to expand their responsibility to FM strategy and planning. However, since they need to handle technicalities in administration and in the workplace, this causes work confusion for the in charges.

Europe FM Standard promotes bigger pictures of facility management such as FM agreement, quality and classification system from a macro level point of view. Its merit is flexibility in handling detailed tasks while still

following the guidelines in the actual job performance considering that it cannot standardize their FM based on different conditions of different sites.

Table 1.  
Domestic and Overseas FM Standard Merits and Demerits

	Korea	Japan	Europe
MERITS	<ul style="list-style-type: none"> <li>- provides appropriate direction suited for current domestic conditions</li> <li>- provides new definition depending on scope or new conditions demanded by user</li> </ul>	<ul style="list-style-type: none"> <li>- focuses not only in operation and management but in FM strategy and planning, and project management</li> </ul>	<ul style="list-style-type: none"> <li>- flexibility in handling detailed tasks while still following guidelines for actual job performance</li> </ul>
DEMERITS	<ul style="list-style-type: none"> <li>- restrictive standard solving physical deterioration of building structures</li> </ul>	<ul style="list-style-type: none"> <li>- work confusion due to technicalities</li> </ul>	<ul style="list-style-type: none"> <li>- cannot standardize FM due to different conditions of different sites</li> </ul>

After analysing the domestic and international FM standards (Table 1), we found that Korea's FM standard of which base is on repair-replacement work to resolve physical deterioration of buildings was established. Moreover, it does not concern budgets or contracts because the standard was established based on repair-replacement work instead of management. On the other hand, the European FM standard includes quality, consensus, management of subcontracts, and space managements that establish a broad sense of the FM standard. ISO FM standard has been established based on European standards that Korea would also need to benchmark European standards to correspond.

### IV. CONCLUSION

Domestic FM service is identified as repair, maintenance and inspection activity providing restrictive service in the physical deterioration of building structures. However, it is critical that while population decrease, economic aggravation and tax reductions are making budget for public facilities is insufficient, more than 35% of total public facilities have aged beyond twenty years. Particularly, as not to pass on the burden of management to the next generation not only on physical deterioration but also the inability to satisfy social demands, an efficient measure should be sought after.

In this regard, this research did a comparison analysis on the domestic and overseas FM standards in order to execute an appropriate public facility management conforming to the international standards with the introduction of ISO FM within the next three years.

There are various merits and demerits in the domestic and overseas FM. Korea should benchmark Europe's standard on approaching strategic, tactical and operational level from a macro level point of view; and Japan's standard reflecting latest social changes and techniques

such as weather changes.

As a basic research for establishment of Korea's public building FM system to adopt international ISO FM standards, our research suggests future research directions through comparing and contrasting the domestic and international FM standards. Based on the international FM standards and the ISO FM standards, P-FM system must be established for buildings that can respond to social changes.

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