



## Strategies to develop maintenance engineers for multiple dwellings in Korea—Focusing on the US and Japanese qualification systems<sup>☆</sup>



Sang-Ho Lee<sup>a</sup>, Sanghoon Park<sup>b,\*</sup>, Cheonghoon Baek<sup>c</sup>

<sup>a</sup> School of Civil & Environmental Engineering, Yonsei University, 50 Yonsei-Ro, Seodaemun-Gu, Seoul 120-749, Republic of Korea

<sup>b</sup> BK21 Research Team, Yonsei University, 50 Yonsei-Ro, Seodaemun-Gu, Seoul 120-749, Republic of Korea

<sup>c</sup> Korea Institute of Construction Technology, 2311, Daewha-dong, Ilsan-gu, Goyang-si, Gyeonggi-do, Republic of Korea

### ARTICLE INFO

#### Article history:

Received 17 November 2011

Received in revised form

9 April 2013

Accepted 20 April 2013

Available online 25 May 2013

#### Keywords:

Multiple dwellings

Engineers of maintenance

Qualification system

### ABSTRACT

Korea has focused on growth-oriented policies by creating new housing units rather than maintaining or rehabilitating existing ones although having a housing stock as huge as those of other advanced nations. There have been, thus, few efforts to develop professional human resources who maintain and preserve the existing housing. Now, it has been a considerable time since two million housing units were built in the new towns around Seoul such as Bundang and Ilsan. It is expected that maintenance engineers for multiple dwellings will be of much importance in Korea.

The purpose of this study is to present ways to develop maintenance engineers for multiple dwellings in Korea by analyzing the US and Japanese qualification systems for maintenance engineers for multi-family dwellings.

Crown Copyright © 2013 Published by Elsevier Ltd. All rights reserved.

### Contents

1. Introduction and objective of research . . . . .	302
2. Objects and methods of research . . . . .	302
2.1. Research object & method . . . . .	302
2.2. Selection of countries subject to comparison . . . . .	303
3. Relation between energy and the development of the qualification of maintenance engineers for multiple dwellings . . . . .	303
4. Environments of Korea, the US and Japan in which multiple dwellings are maintained . . . . .	304
4.1. Housing stock and proportion of multiple dwellings . . . . .	304
4.2. The proportion of high-rise multiple dwellings in Metropolis . . . . .	304
4.3. Proportion of elderly householders among all householders in Metropolis . . . . .	304
4.4. Worn-out multiple dwellings . . . . .	304
4.5. General opinion . . . . .	304
5. Research and analysis on qualification systems for maintenance engineers of Korea, the US and Japan . . . . .	305
5.1. Korea . . . . .	305
5.2. The United States . . . . .	305
5.2.1. Types and functions of qualifications . . . . .	305
5.2.2. Requirements for qualification application . . . . .	306
5.2.3. Redesignation and continuing education . . . . .	306
5.3. Japan . . . . .	306
5.3.1. Types and functions of qualifications . . . . .	306
5.3.2. Requirements for qualification application . . . . .	306
5.3.3. Redesignation and continuing education . . . . .	307

<sup>☆</sup>This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-No Derivative Works License, which permits non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

\* Corresponding author. Tel.: +82 2 2123 4298; fax: +82 2 6455 4298.

E-mail address: [okpshppp@hanmail.net](mailto:okpshppp@hanmail.net) (S. Park).

5.4.	Comparative analysis of qualifications of Korea, the US and Japan	307
5.4.1.	Types and functions of qualifications	307
5.4.2.	Requirements for qualification application	307
5.4.3.	Redesignation and continuing education	307
6.	Proposal of ways to develop maintenance engineers for multiple dwellings	307
7.	Conclusions and further research	308
	Acknowledgments	308
	References	308

## 1. Introduction and objective of research

Current trends of metropolitan cities such as high density of population, rising land prices, and aging society have led to a sharp increase in high-rise buildings and slum areas. Worldwide efforts to save energy and to conduct green policies have encouraged maintenance of existing housing rather than new construction. Those who had been interested in a paradigm of housing production are giving much attention to how to safely utilize the existing housing stock while maintaining the quality of housing.

Korea, despite having a housing stock as huge as those of other developed countries, has striven to conduct growth-oriented policies by constructing housing units rather than rehabilitating or maintaining existing ones. There have been, thus, a few efforts to develop engineers who maintain the existing multiple dwellings [1].

It has been a considerable time since the construction of condominiums in Seoul and those in the first new towns including Bundang and Ilsan. Now it is expected to be imperative to foster engineers who maintain the existing multiple dwellings (in the sectors of community association management, counseling, directions, property management, repair, maintenance, etc.) so that the existing housing can be maintained at a proper quality level and be used with safety.

The United States not only has an enormous housing stock but also has run a lot of qualification systems to maintain various types of multiple dwellings where people of different races and with different preferences live together. Since a number of houses are old as 40–60 years, the country has practical know-how and techniques that Korea does not have to cope with problems arising from maintenance of multiple dwellings.

Formulating the Basic Law for Housing Life in 2006, Japan has changed the keynote of national housing policies from new construction to maintenance of existing housing so as to respond actively to environmental changes [2]. It also has operated a number of systems

for maintenance qualification in order to maintain its huge housing stock and safely preserve a variety of housing types. With green policies and housing maintenance receiving great attention, this study aims to present ways to develop maintenance engineers for multiple dwellings in Korea by analyzing the US and Japanese qualifications for professionals to maintain multi-family dwellings.

## 2. Objects and methods of research

### 2.1. Research object & method

This paper has investigated maintenance professionals for multiple dwellings from Korea, US, and Japan. Because each of the abovementioned countries (Korea, US, Japan) have different maintenance engineer operating systems in every province or state, there are limitations in investigating every city. Therefore, the investigation was conducted focusing on the maintenance professional system operating in Seoul of Korea, New York of the US, and Tokyo of Japan.

In addition, the objects of this study are the Korean qualifications for housing managers for private condominiums, and the qualifications for maintenance professionals for private multiple dwellings certified by the US maintenance-related institutes, and the Japanese government and related institutes (See Table 1). Besides these qualifications, Korea, the US and Japan have the laws stipulating certain qualifications for electric and mechanical engineers and the like. But, such qualifications are excluded here because they are stated separately by each relevant law.

Research into the literature and interviews with professionals were conducted to collect and examine related information; and to obtain more detailed data and verify information, on-site surveys and interviews were carried out with relevant Korean, US and

**Table 1**  
Institutes and qualifications researched.

Item	Relevant institute	Qualification	National/private qualification
Korea	Korea Land & Housing Corporation Korea Housing Managers' Association	Housing Manager	National
USA	Community Association Institute (CAI)  Institute of Real Estate Management (IREM)	Certified Manager of Community Associations (CMCA) Professional Community Association Manager (PCAM) Large-Scale Manager (LSM) CIRMS (Community Insurance and Risk Management Specialist) Certified Property Manager (CPM) Accredited Residential Manager (ARM) Certified Apartment Management (CAM) Certified Apartment Maintenance Technician (CAMT)	Private
Japan	Mansion Management Center High-Rise Housing Management Business Association  Building and Equipment Life Cycle Association (BELCA)	Mansion Manager Executive Manager Divided Ownership Manager Mansion Maintenance and Repair Engineer Construction Equipment Total Management Engineer Construction Finishing Diagnosis Engineer Construction Equipment Diagnosis Engineer	National National Private Private Private Private Private

Download English Version:

<https://daneshyari.com/en/article/8121586>

Download Persian Version:

<https://daneshyari.com/article/8121586>

[Daneshyari.com](https://daneshyari.com)