Architecture & Urban Research Institute

auri research brief

No. 44

A Performance and Development Strategy for the Green Building Masterplan in Korea

Lee, Eunseok
Associate Research Fellow

Cho, Youngjin
Research Fellow

Kim, Sinsung
Researcher

2018 was the final year of implementation for the first Green Building Master Plan (2014 ~ 2018). The outcome of this first master plan will serve as basis for the design of the second Green Building Master Plan, set to be implemented from 2019 to 2023. Thus it is first necessary to properly evaluate the performance of the first Green Building Master Plan in order to move forward with future policy planning.

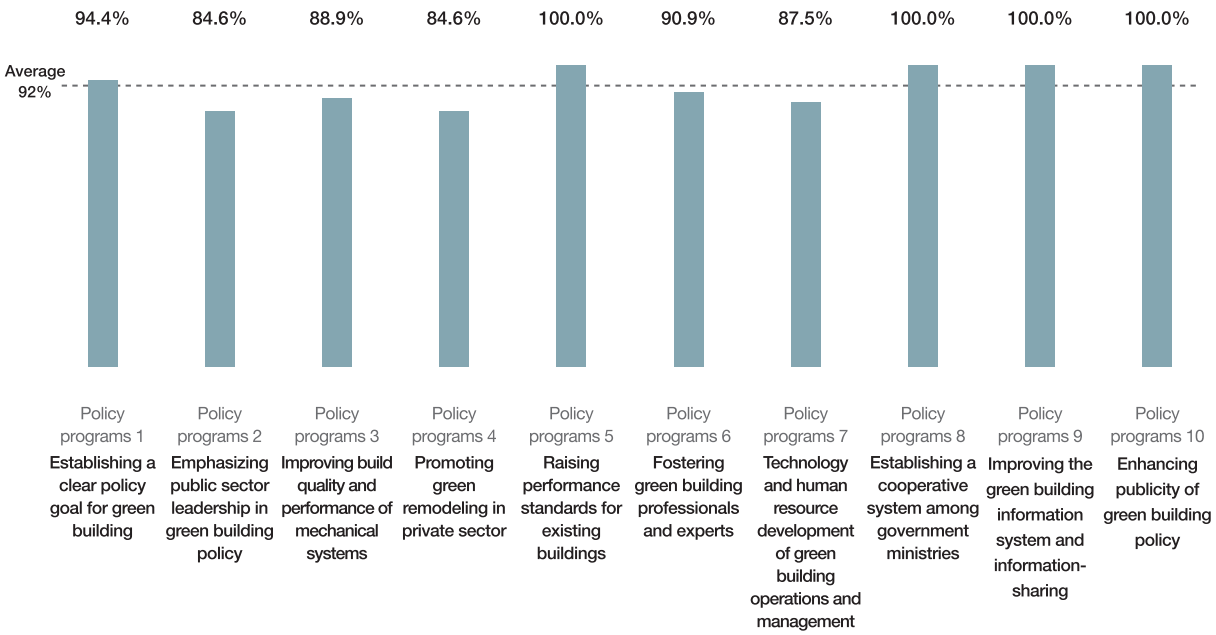
There are three objectives in this study. The first is to investigate and analyze the achievements of the policy tasks in the first Green Building Master Plan. The second is to examine the possibilities for greenhouse gas reduction goals in 2020 and 2030. The final objective is to suggest future directions for the second Green Building Master Plan by considering the current changes and trends in socioeconomic conditions.

The first Green Building Master plan consist of a total of 100 unit programs. Thus far, 36 programs have been completed, 44 are in progress, and 12 programs have undergone changes. Two programs were discontinued due to a change of managing departments. At the conclusion of the survey, there were no programs that had not implemented. The policy programs with the highest completion and progress ratio were ‘Raising performance standards for existing

buildings', 'Establishing a cooperative system among ministries', 'Improving the green building information system and sharing information', and 'Enhancing publicity of green building policy'. On the contrary, the tasks with the most challenges were 'Emphasizing public sector leadership in green building' and 'Promoting green remodeling in private sector'. Programs that were discontinued are 'Centralizing GHGs emission management of building sector including emission trading' and 'Introduction of a scheme considering order reduction method and reduction of greenhouse gas emission and energy use'. The discontinued programs had problems that need to be discussed with other central government agencies or solutions that were difficult to realize.

[Table] Assessment of achievement for policy tasks in "The 1st Green Building Master Plan"

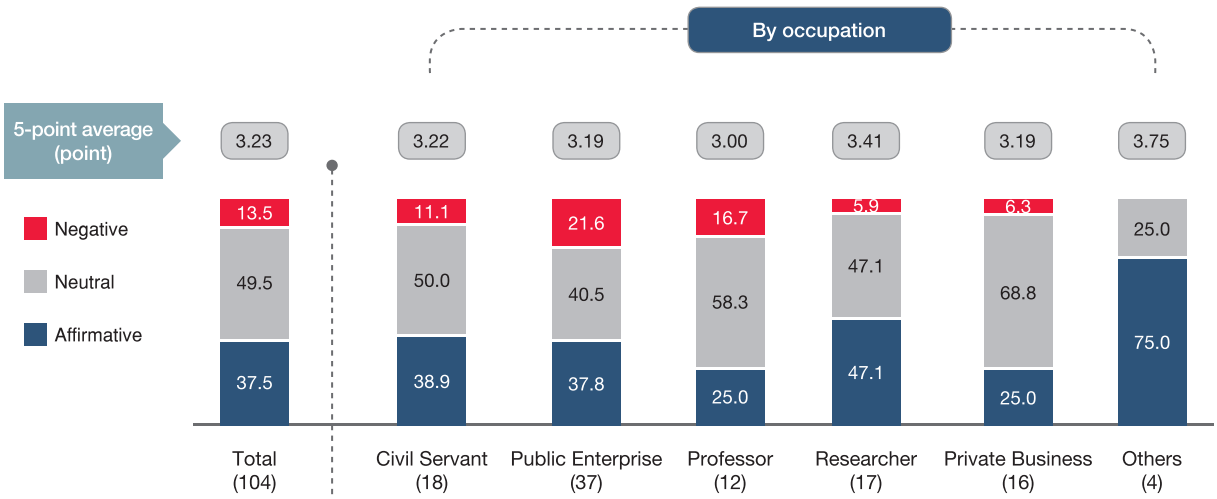
* Based on the results of policy task execution, check cards were distributed to relevant ministries by the Department of Green Architecture, Ministry of Land, Infrastructure, and Transport.



The purpose of the first Master Plan for Green Building was to start green building policy at the national level. The main achievements of the first master plan were the establishment of a foundation for green building supply policy and the formation of a consensus amongst the general public. 86.5% of green building experts evaluated the national green building policy positively. However, experts have also pointed out weaknesses the policies as well. The reason is that the first green building master plan is focused on strengthening architectural design standards and energy conservation in addition to providing sufficient funding.

[Table] Experts' Assessment of Green Building Policy

(N=(104) / Unit : %, point)



The study conducted a quantitatively analysis on the achievement of greenhouse gas targets. To state one of the primary results, the difficult reality is that the nation would have to remodel more than 90% of the existing buildings in order to achieve the greenhouse gas (GHG) reduction target by 2020. This finding was obtained by using the insulation consolidation ratio and the building floor area. More accurate and verifiable GHG reduction results can be calculated from the measurements of building energy use. Therefore, it is suggested that the master plan to follow include measures to verify policy performance.

This study suggests the future designs of the second green building master plan reflect the results of the first plan as well as the fast-changing conditions of our society. The focused aim on energy efficiency should be to add policy tasks that would reduce environmental impacts such as indoor comfort and water re-use that would also provide all the necessary comforts for residents. In addition, it is necessary to strengthen policies related to construction and maintenance to improve the performance of existing buildings. The green building market should be linked with the 4th industrial revolution to expand the construction of green buildings and create jobs. Finally, the second green building master plan should establish a system to share the greenhouse gas reduction goals of the building sector in 2030 and continuously assess its performance.

The purpose of this study is to review the results of the first green building master plan and to draw some key implications for the construction of the second green building master plan. The limitations of this study are that it does not consider various factors influencing the GHG emissions of the building sector, calculating the GHG reduction effect based on strengthening the insulation criterion of the building. In addition, the results of the plan were reviewed based only on the effects of the 'Green Remodeling Interest Support Project'. The second Green Building Master Plan should include more accurate methods for estimating GHG reduction effects and methods for assessing green building related performance in planning.

Keywords : GHG Emissions, Policy Task, Existing Building, National Plan, Policy Performance, Green Building Design

(auri) Architecture & Urban Research Institute

Publishing Organization Architecture & Urban Research Institute
Publisher Park, Sohyun
Address #701, 194, Jeoljaero(Eojin-dong), Sejong, Republic of Korea
Tel +82-44-417-9600 **Fax** +82-44-417-9608 www.auri.re.kr