Research and Study Activities for the Realization of a Green Society

Environment Research Committee

In order to realize a green society, collaborative initiatives among various fields and entities are important, and "research and study activities" supporting these initiatives are necessary to enhance and strengthen environment-related measures.

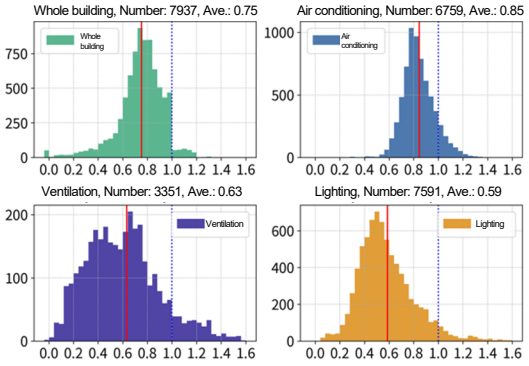
Activity introduction

- In order to contribute to the realization of a green society, including carbon neutrality by 2050 and addressing the climate crisis, the MLIT, which is strategically engaged in global warming mitigation measures and climate change adaptation measures, has compiled and published the "MLIT Green Challenge" regarding measures and projects including green technologies in the environmental field (July 2021).
- In order to strongly promote this project, the Ministry established "Headquarters for Realization and Promotion" to mobilize all available measures, and positioned these as priority projects in the MLIT Environmental Action Plan.
- To support these measures, the NILIM also strategically conducting research activities in each department and center, and the Environment Research Committee organizes and shares these activities within the NILIM.

Introduction of related research

Analyze the current status of building design specifications using energy efficiency standard application data

Under the Building Energy Efficiency Act, which was revised to further improve the energy efficiency performance of buildings (fully effective April 2021), a system obliging compliance with the energy efficiency standard is in operation In this research, a vast amount of application data through a program to confirm conformity with energy efficiency standard (web program) was collected and analyzed in the cloud to clarify the actual status of energy efficiency performance (BEIm) of buildings.
We also support the formulation of energy conservation measures by the MLIT, by analyzing the relationship between energy efficiency performance and the design specifications of the building envelope (walls, openings, roof, etc.) and equipment (air conditioning, lighting, hot water supply, solar power generation, etc.).



Distribution of energy efficiency performance (BEIm) (FY2020, Kanto Region)
(The horizontal axis is BEIm, and if it is not more than 1.0, the standard is met)

How to evaluate multi-functional green infrastructure

Green infrastructure is promoted as a solving method of various regional issues. Especially, estimate infiltration volume for rainwater runoff control is often expected a method of urban flood damage reduction.
In case of green space, it is difficult to estimate due to influence of various conditions. But it is expected to promote more functional green infrastructure by estimate infiltration volume in consideration of land cover and soil condition, etc. like overseas cases. And it can also use to setting green infrastructures layout and scale. In the case of region-wide plan such as “River Basin Disaster Resilience and Sustainability by All” estimate infiltration volume can cooperate with other infrastructure or determine the appropriate area for infiltration.

Example of green infrastructure (Machida City, Tokyo)
*Green space with consideration for rainwater storage function

☞See the following for related articles.
- Clarify the actual status of building envelope and equipment design specifications using energy efficiency standard application data (p. 152)
- How to evaluate green infrastructure having diverse functions (p. 133)