Realizing Comfortable, Energy-Saving Indoor Spaces Through Industry-Academia Collaboration

DAIKYO to Start Joint Research with the University of Tokyo into a New Air Conditioning and Ventilation System for Condominiums

TOKYO, Japan - October 28, 2022 - DAIKYO INCORPORATED ("DAIKYO") and the Graduate School of Engineering at the University of Tokyo are pleased to announce that they will start joint research into developing a new heating, cooling, and ventilation system that will enhance comfort and energy saving inside condominiums.
Although air conditioners have conventionally been the main method of temperature control inside condominiums, ventilation is achieved by drawing in air from outside through air supply vents. This poses a challenge in terms of keeping a comfortable room temperature environment while maintaining energy saving. DAIKYO and the University of Tokyo will proceed with demonstrations toward the development of a new air conditioning and ventilation system that maintains a near-constant room temperature regardless of the outside temperature while providing adequate ventilation.

Uneven temperature environment in the unit due to insufficient thermal insulation and sunlight-shielding performance

The dwelling units and renovations necessary for the demonstrations will be provided by DAIKYO. Associate Professor Masayuki Mae from the Department of Architecture in the Graduate School of Engineering at the University of Tokyo and his team[*1] will be responsible for aspects such as thermal comfort and energy-saving performance simulations, as well as on-site measurements. Both parties aim to optimize air conditioning and ventilation plans through multiple simulations of thermal insulation and air conditioning and ventilation equipment plans to realize comfortable living spaces. In addition, comparisons with whole-building air-conditioning systems for individual dwelling units will be conducted in order to verify the effectiveness of making the equipment more compact and reducing construction costs. The research period is scheduled to end in March 2024.
Through this verification, DAIKYO and the University of Tokyo aim to introduce a new air conditioning system in newly built condominiums and utilize the system in remodeling condominiums that are already occupied.

*1 Project Associate Professor Keiichiro Taniguchi from the same department and Lecturer Kozo Takase of the Department of Architecture, Faculty of Science and Technology, Tokyo University of Science will also participate in the project.

Contact Information:
Investor Relations and Sustainability Department
ORIX Corporation
Tel: +81-3-3435-3121

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