

## Post Occupancy Evaluation of the Green Office Building with Different Air-Conditioning Systems

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**Abstract :** Retrofitting of existing buildings plays a critical role to achieve sustainable development. This is being considered as one of the approaches to achieving sustainability in the built environment. In order to evaluate the different air-conditioning systems effectiveness and user satisfaction of the existing building which had transformed into green building effectively and accurately. This article takes the green office building in Zhejiang province, China as an example, analyzing the energy consumption, occupant satisfaction and indoor environment quality (IEQ) from the perspective of the thermal environment. This building is special because it combines ground source heat pump system and Variable Refrigerant Flow (VRF) air-conditioning system. Results showed that the ground source heat pump system(EUIa $\approx$ 25.6) consumes more energy than VRF(EUIb $\approx$ 23.8). In terms of a satisfaction survey, the use of the VRF air-conditioning was more satisfactory in temperature. However, the ground source heat pump is more satisfied in air quality.

**Keywords :** post-occupancy evaluation, green office building, air-conditioning systems, ground source heat pump system

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