Abstract: In recent years the number of tertiary industry office workers has increased in Japan, and as such, improvement of occupational health level of the workers is strongly required. Nevertheless, how much these recent changes in architectures, work contents and air-conditioning systems in office buildings affect the quality of office indoor environments and workers’ health are not fully studied. Therefore, we attempted to investigate the indoor air quality and the health status of the office workers and analyzed their correlations. A self-registered questionnaire survey on health status of the office workers was carried out in winter for several office buildings in the Kanto region in Japan, together with the measurement of the workplace’s temperature and humidity. As a result of investigation, some thermal environmental problems in terms of temperature and humidity in workplaces and some workers’ health problems possibly relating to temperature and humidity were found out. These results are thought to help improve the workplace environments.

Key words: Thermal environment, Air quality, Environmental measurement

Abstract: Green façade is expected to give cooling effect indoors and outdoors in summer, however, it may reduce acquisition of solar radiation from the room in winter. To apply green façade, it is necessary to examine it in various aspects such as annual effects and operation issues. In order to design ideal green façade from the viewpoint of annual thermal load, the purpose of this study is to clarify the thermal effect of green façade experimentally in the existing building in summer and winter, and to provide materials for numerical analysis. Solar radiation, temperature, and humidity were measured at the air layer and the perimeter zone in two rooms, where conditions except green coverage were the same, from August 2010 to January 2011. It appeared that ratio of green coverage was 36.3% in summer and 31.4% in winter, and solar transmittance was 37.2% in summer and 34.0% in winter. In the air layer between the green façade and the wall, the average of daytime air temperature was 0.4K lower in summer and 0.9K higher in winter than those without green. It seemed that the green façade kept the air layer warm in winter.

Key words: Thermal environment, Environmental measurement