



Figure 11: Amount of heat removed by natural ventilation

6 CONCLUSIONS

A method for evaluating the performance of A/C systems involving natural ventilation that combines a BES tool and CFD was proposed. A steady-state analysis was performed based on the proposed method for one floor of an existing office building, and the prediction accuracy of the proposed method was verified by comparing it with the measured values. The results confirmed that the proposed method has sufficient predictive accuracy. In the future, we plan to perform further verification of this analysis model under unsteady conditions and to verify the performance of this building's A/C system as a case study of the method.

7 REFERENCES

- 1) Yasunaga R., et al. (2012). Hybrid air-conditioning system using natural ventilation in an office building with flow control inlets and outlets (Part1), *The Architectural Institute of Japan's Journal of Environmental Engineering, AIJ*, Vol. 678, pp.681-688
- 2) Murakami S., et al. (2007-2014). Development of an Integrated Energy Simulation Tool for Buildings and MEP Systems, the BEST(Part 1-152), *Technical Papers of Annual Meeting the Society of Heating, Air-conditioning and Sanitary Engineers of Japan, SHASE*

ACKNOWLEDGMENT

This work was supported by JSPSKAKENHI Grant Number 20KK0102.