

ABSTRACT

In PUPR Regulation No. 02 / PRT / M / 2015, it is stated that the requirements for energy efficiency (energy consumption) in green buildings are the building envelope and the value of OTTV (Overall Thermal Transfer Value). OTTV is the value of the enclosed building condition criteria. EUI (Energy Use Intensity) is a term that states the amount of energy consumption. In this study, simulations were carried out on various building types consisting of a combination of six types of building shapes, three OTTV's parameters, namely WWR (Window to Wall Ratio), wall type, and glass type, and six EUI's parameters, namely ventilation conditions, conditions infiltration, COP (Coefficient of Performance) AC value, AC temperature setpoint, building occupancy, and climate. Datas of the results of the study shows that OTTV and IKE had a linear upward relationship. The parameters that most influence are WWR, type of glass, COP AC, and climate. This study also analyzed the effect of internal load with OTTV by comparing skin factor with slope values's different. Skin factor is a comparison of EUI's buildings without internal loads to EUI's buildings with internal loads. The smaller the sheath area/floor area of the building, the greater the value of the skin factor. Buildings with small skin factor values have very different slope differences. This shows that internal load greatly influences the value of OTTV in these buildings. Meanwhile, buildings with large skin factor values have slope differences that are not much different. This shows that the internal load does not greatly affect the value of OTTV in these buildings.

Keywords: OTTV, EUI, buildings, simulation, EnergyPlus, energy efficiency