

Optimization Aluminium Design for the Facade Second Skin toward Visual Comfort: Case Studies & Dialux Daylighting Simulation Model

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Abstract : Visual comfort is important for the building occupants to need. Visual comfort can be fulfilled through natural lighting (daylighting) and artificial lighting. One strategy to optimize natural lighting can be achieved through the facade second skin design. This strategy can reduce glare, and fulfill visual comfort need. However, the design strategy cannot achieve light intensity for visual comfort. Because the materials, design and opening percentage of the facade of second skin blocked sunlight. This paper discusses aluminum material for the facade second skin design that can fulfill the optimal visual comfort with the case studies Multi Media Tower building. The methodology of the research is combination quantitative and qualitative through field study observed, lighting measurement and visual comfort questionnaire. Then it used too simulation modeling (DIALUX 4.13, 2016) for three facades second skin design model. Through following steps; (1) Measuring visual comfort factor: light intensity indoor and outdoor; (2) Taking visual comfort data from building occupants; (3) Making models with different facade second skin design; (3) Simulating and analyzing the light intensity value for each models that meet occupants visual comfort standard: 350 lux (Indonesia National Standard, 2010). The result shows that optimization of aluminum material for the facade second skin design can meet optimal visual comfort for building occupants. The result can give recommendation aluminum opening percentage of the facade second skin can meet optimal visual comfort for building occupants.

Keywords : aluminium material, Facade, second skin, visual comfort

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