STUDYING THERMAL PERFORMANCE OF SPLIT-TYPE AIR CONDITIONERS AT BUILDING RE-ENTRANT VIA COMPUTER SIMULATION

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FEBRUARI 2011

Tarikh : 28 Febuari 2011

No. Fail Projek : Dst 248/2009

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Tuan,

LAPORAN AKHIR PENYELIDIKAN 'STUDYING THERMAL PERFORMANCE OF SPLIT-TYPE AIR CONDITIONERS AT BUILDING RE-ENTRANT VIA COMPUTER SIMULATION'

Merujuk kepada perkara di atas, bersama-sama ini disertakan 3 (tiga) naskah Laporan Akhir Penyelidikan bertajuk "STUDYING THERMAL PERFORMANCE OF SPLIT-TYPE AIR CONDITIONERS AT BUILDING RE-ENTRANT VIA COMPUTER SIMULATION".

Sekian, terima kasih.

Yang benar,

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Ketua

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ABSTRACT

Split-type air conditioners used in residential or office buildings often have the outdoor condensing units install at the sidewalls. In condominium or apartment buildings, the building re-entrants are the most frequent choice of the project team for placing the outdoor air-cooled condensing units. To avoid wastage in electrical energy and unnecessarily heat rejection to the environment, the HVAC engineer and the team should predict the thermal effect on the air-conditioners usage from the layout design stage. Additionally, the layout design is also continuously changing before the final design stage and this enhances the difficulty for the team to estimate the actual effect of placing over a hundred outdoor units inside one single re-entrant of a high rise building. In order to tackle this problem, a simulation approach is applied using Computational Fluid Dynamics (CFD), (Phoenics v2008). The energy performances as well as the levels of thermal comfort for the proposed option were evaluated.

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