Analisis life cycle cost pada sistem Heating Ventilating and Air Conditioning (HVAC) smart building dengan pendekatan value engineering = Life cycle cost analysis in smart building Heating Ventilating and Air Conditioning (HVAC) system based on value engineering approach

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Abstrak

[Smart building dibangun dengan konsep kemudahan kenyamanan kesehatan dan efisiensi energi Perbedaan smart building dengan bangunan lainnya adalah bangunan ini memiliki BMS building management system yang merupakan otak dari seluruh bangunan Sistem HVAC mengkonsumsi energi lebih dari 50 dari total konsumsi energi bangunan Penelitian ini bertujuan mengidentifikasi sistem pengudaraan yang perlu diterapkan pada bangunan sehingga menciptakan smart building dan mengetahui nilai LCC nya dibandingkan dengan sistem pengudaraan bangunan konvensional menggunakan pendekatan value engineering dengan analisis paired comparison dan analisis life cycle cost Sistem pengudaraan yang akan diterapkan sesuai dengan sistem pengudaraan sebuah bangunan di California Amerika Serikat yaitu dengan tambahan sistem kontrol dan pemilihan komponen yang lebih hemat energi nyaman dan sehat Nilai LCC dilihat dari NPV nya lebih kecil 14 05 dan B CR SB sebesar 0 501 yang lebih baik dibandingkan bangunan konvensional yang nilai B CR nya 2.51.
.....Smart building built with the concept of simplicity user comfort health and energy efficient The difference between smart building and the other building is that smart building has BMS building management system which is the brain of the building HVAC system consumes energy more than 50 from total building energy consumption This research has purposes to identify the HVAC system that should be applied on buildings in order create smear building and to find out the LCC compared to the HVAC system on conventional building using the value engineering approach with paired comparison analysis and the LCCA HVAC system that will be applied according to HVAC system of a building in California USA is added with control system and energy efficient comfort and healthy components The LCC value according to the NPV has to be 14 05 smaller and B CR of SB is 0 501 which is better than the value of conventional building whose B CR value is 2 51 ;Smart building built with the concept of simplicity user comfort health and energy efficient The difference between smart building and the other building is that smart building has BMS building management system which is the brain of the building HVAC system consumes energy more than 50 from total building energy consumption This research has purposes to identify the HVAC system that should be applied on buildings in order create smear building and to find out the LCC compared to the HVAC system on conventional building using the value engineering approach with paired comparison analysis and the LCCA HVAC system that will be applied according to HVAC system of a building in California USA is added with control system and energy efficient comfort and healthy components The LCC value according to the NPV has to be 14 05 smaller and B CR of SB is 0 501 which is better than the value of conventional building whose B CR value is 2 51 ;Smart building built with the concept of simplicity user comfort health and energy efficient The difference between smart building and the other building is that smart building has BMS building management system which is the brain of the building

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