

ANALISA *VALUE ENGINEERING* PADA BANGUNAN GEDUNG GRHA CENDEKIA PONDOK PESANTREN MAHASISWA YOGYAKARTA METODE *PAIRED COMPARISON*

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ABSTRAK

Untuk mendukung penelitian dengan pendekatan Value Engineering (VE), akan dilakukan studi kasus pada proyek pembangunan gedung Grha Cendikia yang berlokasi di Kabupaten Sleman, Daerah Ibukota Yogyakarta. Penelitian ini bertujuan untuk mencari alternatif terbaik untuk mengganti desain asli elemen bangunan tanpa mengurangi fungsi utama dari elemen tersebut, yang dapat mengurangi biaya konstruksi dan menentukan persentase penghematan dengan menggunakan analisa Value Engineering. Agar penelitian berjalan dengan baik, digunakan Value Engineering Job Plan, yaitu tahap informasi, tahap analisis fungsi, tahap kreatif, tahap evaluasi, dan tahap rekomendasi. Dari hasil analisis data dan pembahasan, item pekerjaan terbaik yang bisa diterapkan analisis Value Engineering adalah pada salah satu pekerjaan finishing/arsitektur dengan biaya tertinggi yaitu pekerjaan pasangan dinding + plesteran ACI karena belum terlaksana konstruksinya. Pada tahap kreatif, didapatkan bahwa pekerjaan pasangan dinding memiliki alternative sebanyak 3 jenis material, yaitu bata merah (konvensional), bata ringan lebar 7,5 cm, dan bata ringan lebar 10 cm dengan perbedaan biaya konstruksi hasil analisis VE yaitu desain awal dengan material bata ringan lebar 10 cm berbiaya 731.868.518,04, bata merah Rp.1.295.553.714,51, bata ringan lebar 7,5 cm Rp. 686.327.090,10. Bata ringan lebar 7,5 cm dipilih setelah mendapatkan nilai tertinggi pada proses pemilihan menggunakan metode Paired Comparison. Besarnya potensi penghematan adalah senilai Rp.45.541.427,94 dari total biaya konstruksi pekerjaan pasangan dinding + plesteran acian.

Kata kunci : *Value Engineering*, Bata Ringan, Bata Merah, *Paired Comparison*.

ENGINEERING VALUE ANALYSIS OF THE GRHA CENDEKIA BUILDING OF THE YOGYAKARTA STUDENT ISLAMIC BOARDING SCHOOL USING THE PAIRED COMPARISON METHOD

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ABSTRACT

To support research using a Value Engineering (VE) approach, a case study will be carried out on the Grha Cendikia building construction project located in Sleman Regency, Yogyakarta Capital Region. This research aims to find the best alternative to replace the original design of building elements without reducing the main function of these elements, which can reduce construction costs and determine the percentage of savings using Value Engineering analysis. In order that the research runs well, a Value Engineering Job Plan is used, namely the information stage, function analysis stage, creative stage, evaluation stage and recommendation stage. From the results of data analysis and discussion, the best work item that can be applied to Value Engineering analysis is one of the finishing/architectural works with the highest costs, namely ACI wall installation + plastering work because the construction has not yet been carried out. At the creative stage, it was found that the wall installation work had 3 alternative types of materials, namely red brick (conventional), light brick 7.5 cm wide, and light brick 10 cm wide with differences in construction costs resulting from VE analysis, namely the initial design with brick material. 10 cm wide light costs 731,868,518.04, red brick Rp. 1,295,553,714.51, 7.5 cm wide light brick Rp. 686,327,090.10. Lightweight bricks 7.5 cm wide were selected after getting the highest score in the selection process using the Paired Comparison method. The potential savings are IDR 45,541,427.94 from the total construction costs of wall installation + plastering.

Keywords: Value Engineering, Light Brick, Red Brick, Paired Comparison.