Employing the Value of Lanslide Handling Project at Mijen Circuit Construction Project Phase II

Alfidian Guptadi[1] , Kartono Wibowo[2], dan Abdul Rochim[2]

[1]Master Candidate of Civil Engineering Universitas Islam Sultan Agung
Jl. Raya Kaligawe Km. 4, Kaligawe, Semarang, Jawa Tengah, Indonesia
[2]Lecturers at Civil Engineering Master Program, Universitas Islam Sultan Agung
Jl. Raya Kaligawe Km. 4, Kaligawe, Semarang, Jawa Tengah, Indonesia
*Corresponding Author: lunafaya05@gmail.com

ABSTRACT

One of the efforts to reduce the cost of a project is optimization and effectiveness of funding through a technical approach and good control. The cost of a construction project with a large value weight can be seen in several segments of the work where the costs incurred in the work have a major influence on the overall project cost. The costs appeared in these work segments were influenced by several aspects including materials, working method, number of workers, time of execution etc. Method to be applied in the study was the value engineering aimed to save costs as expected.

Of the various kinds of variables existing in the budget design of Mijen circuit construction project phase II, slope handling in this case became focus of the research considering that this variable had a significant contribution to the project funding. Through identifying high-cost works and identifying unnecessary work costs (items belonged to secondary work components), creative alternative ideas to implement value engineering could be proposed to achieve the optimal costs while at the same time it could be used as recommendations.

This study aimed to come up with alternative design ideas needed to replace the initial concept on the selected work item. To achieve the goal, value engineering analysis was carried out by looking for design alternatives which had the best value benefits and costs as well as efficiency among the design alternatives as selected. From the results of the analysis based on the value engineering work stages, it was observed that vetiver grass was possible to be employed as an alternative to replace the shotcrete concrete system in the slope handling work. Compared to the other alternatives, vetiver grass was the easiest one, because the application process did not require experts. In addition, it was more environmentally friendly than the use of geosynthetics. As it was easy to implement and did not have a negative impact on the environment, the use of vetiver grass could save 22% of the budget from the initial design.

Keywords :Value engineering, vetiver grass, shotcrete, geosythetics