

INTISARI

RONI EKO PRATAMA, 2019, Optimasi Waktu dan Biaya Proyek Pembangunan Gedung Royal Sentul Park Menggunakan Metode *Time Cost Trade Off*. (dibimbing oleh Dian Sestining Ayu, S.T, M.T.)

Keterlambatan dalam suatu proyek konstruksi merupakan permasalahan yang sering dijumpai. Keterlambatan tersebut dapat disebabkan oleh beberapa faktor misalnya pengaruh cuaca, perubahan desain, keterlambatan material, serta kurangnya sumber daya. Pengendalian proyek perlu dilakukan agar proyek dapat berjalan sesuai dengan rencana.

Tujuan dari proyek akhir ini yaitu menghitung durasi keterlambatan, perkiraan durasi penyelesaian, serta durasi dan biaya optimum penyelesaian pekerjaan struktur atas proyek pembangunan gedung Royal Sentul Park (RSP). Metode *earned schedule* digunakan untuk menghitung durasi keterlambatan dan perkiraan waktu penyelesaian pekerjaan. Percepatan durasi pekerjaan dilakukan menggunakan metode *crashing* dengan menambahkan jam kerja lembur sebanyak 3 jam. Biaya yang muncul akibat penambahan jam kerja lembur dihitung dengan menggunakan metode *time cost trade off*. Analisis optimasi waktu dan biaya dilakukan menggunakan aplikasi WinQSB 2.0 dilanjutkan dengan perhitungan denda keterlambatan.

Hasil perhitungan besarnya keterlambatan pekerjaan struktur atas proyek pembangunan gedung RSP yaitu 47 hari dengan perkiraan durasi penyelesaiannya 107 hari pada kondisi normal. Durasi optimum setelah dilakukan percepatan proyek yaitu 70 hari dengan biaya sebesar Rp 28.391.881.524,-.

Kata kunci : optimasi, keterlambatan, *earned schedule*, *crashing*, *time cost trade off*

ABSTRACT

RONI EKO PRATAMA, 2019, *Time and Cost Optimization Project for the Construction of the Royal Sentul Park Building Using the Time Cost Trade Off Method.* (supervised by Dian Sestining Ayu, S.T, M.T.)

Delay in a construction project is a problem that is often encountered. The delay can be caused by several factors such as weather influences, design changes, material delays, and lack of resources. Project control needs to be done so that the project can proceed according to plan.

The purpose of this study is to calculate the duration of the delay, the estimated duration of completion, as well as the duration and optimum cost of completing the structural work on the construction project of the Royal Sentul Park (RSP) building. The earned schedule method is used to calculate the duration of the delay and the estimated time of completion of the work. The acceleration of the work duration is done using the crashing method by adding overtime hours to as much as 3 hours. Costs incurred due to the addition of overtime hours are calculated using the time cost trade off method. The time and cost optimization analysis is performed using the WinQSB 2.0 application followed by the calculation of cost of delay.

The results of the calculation of the amount of delay in structural work on the RSP building construction project are 47 days with an estimated duration of completion of 107 days in normal conditions. The optimum duration after accelerating the project is 70 days at a cost of Rp. 28,391,881,524.

Keywords : *optimization, delay, earned schedule, crashing, time cost trade off*