Abstract

The success of a project can be measured by two things, namely the benefits and timeliness of project completion (Suharto, 1997). Both depend on careful planning of the implementation methods, the use of equipment and scheduling. In the execution of construction work using heavy equipment needed to plan accurately in order to achieve a project with cost and optimal execution time. Therefore we need an analysis of the usage of heavy equipment to be used, so that alternatives can be produced right heavy equipment for construction of a project. One of the important work in development projects are concrete execution employment. It required the selection of the appropriate salts of heavy equipment such implementation work.

In Building Construction Project Gedung IGD, Bedah Sentral dan Rawat Inap Maskin Hospital Haji Surabaya equipment used for work or concrete structures is a tower crane (TC) and Concrete Pump (CP), while the Mobile Crane (MC) itself is planned as a replacement tower cranes in the implementation employment structure. Calculation step is divided into two phases, namely the calculation of execution time of equipment and equipment cost calculations. In calculating the...
execution time of the step taken is to calculate and determine the workload of the tools, capacity and productivity of the equipment used. Meanwhile, in determining the cost of implementation that counts is the cost of rental, mobilization and demobilization costs, equipment costs and operating costs of supporting tools which include fuel, lubricants, maintenance and operators. Of computation time and cost of implementation tools and in terms of time and implementation costs.

The calculation result shows that the time required for the usage of a combination of tower cranes and Concrete Pump in the execution of the work on the structure is 533,84 hours at a cost of Rp. 739,810,713,00, while the time required for the usage of the combination of mobile cranes and Concrete Pump in the execution of the work on the structure is 695,19 hours at a cost of Rp. 524,097,713,00. So it can be concluded that the fastest time for the job of casting and lifting material is a combination of Tower Crane and Concrete Pump with a difference of 161,35 hours and the least cost is a combination of Mobile Crane with a cost difference of Rp. 215,713,000,00.

**Keyword:** Heavy Equipment, Cost, and Time, Tower Crane, Mobile Crane, Concrete Pump, Mobilization and Demobilization