ABSTRACT

The project of Guna Wangsa Apartment using Tower Crane as heavy equipment to transport equipment and materials of construction. Materials of construction such as steel and masonry light-weight concrete, equipment such as scaffolding and frame work. The project has many transportation activities meanwhile the area itself is vast, one Tower Crane is not enough to cover all of transportation activities, so it should take more than just a Tower Crane. We have recall that taking more than one Tower Crane, placing it at optimum point should be considered.

The purpose is to determine both most less of the point location of Tower Crane group which had an index conflict and work charge balance between Tower Cranes, and to calculate quarrel time needed by Tower Crane to finish all transporting per story. In order to get optimum point of Tower Crane, there are 3 scenario should do, Scenario 1 (real condition at field agree with supply points ground plan data and 60 m radius of Tower Crane), Scenario 2 (condition of supply point has been modified in placement and numbers until each block has 4 supply point which are Scaffolding supply, steel, formwork, masonry light-weight concrete and radius of Tower Crane used as same as the data at field which is 60 m) and Scenario 3 (condition of supply point has been modified like scenario 2 but radius of Tower Crane has been reduced until reach optimum radius).
The result shows scenario 2 is the most optimum scenario than scenario 1 and 3 because scenario 2 has both most less value of an index conflict and work charge balance beside other scenario. In scenario 2, optimum point of Tower Crane group at coordinate TC1 (79; 35) and TC 2 (55; 111) with index conflict value (NC) 0 crossing and work charge balance between Tower Cranes (σ) 100,026 minutes.

Key words: Work Charge balance (σ), Index Conflict (NC), Optimize location, Supply Tower Crane.