

ABSTRACT

CV. Kembar Mekar often excess raw material storage of coffee skin which resulted lane truck is closed so truck can't pass and production process hampered because it has to go through another path that result the distance of material movement futher away. From the PAM (Activity Mapping Process) the production process of one raw material produces 372.29 minutes lead time for open truck conditions but raises to 395.41 minutes when the truck lanes are closed resulting in a difference of 23.12 minutes to find the milling. The process of moving material is done manually by bringing it on the shoulder, so the longer time of moving the goods will be bad for the workers. CV. Kembar Mekar also have empty space that becomes waste and make the distance between departments farther. From the existing situation it is necessary to do relayout on this company. This research uses metaheuristic optimization method that is Particle Swarm Optimization where the algorithm is based on social interaction and communication between living creatures. This research uses fuzzy particle swarm concept. The resulting layout will be analyzed based on the moment of material displacement that occurs in the layout. The PSO algorithm produces a better displacement moment from the existing layout that generates a displacement moment of 320.018,7992 m. After the adjustment will result in a displacement moment of 335.760,7 m.

Key Words: Facility Layout, Relayout, Material Movement Moment, Particle Swarm Optimization, Fuzzy particle swarm, Optimization..