

## **STUDIES AND ANALYSIS OF FACILITY LAYOUT DESIGN FOR DIFFERENT DEPARTMENTS**

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### **Abstract**

Facility layout design is the key to improve the productivity of the plant, which are related to manufacturing problems. Facility layout problems comprise a class of extremely difficult and widely applicable optimization problems, arising in many diverse areas. There are various optimization approaches for small problems and heuristic approaches for the larger problems have been proposed to elucidate the problems. There are many variations on the basic formulation, involving alternative objective functions, side constraints, distance metrics, cost measures, and facility shapes. Various techniques were applied after finding the solution through traditional methods to get much improved optimum solutions. Different heuristics were used to solve the unequal area facility layout problems. Multi-objective approaches are the norm and developing facility layout software using meta-heuristics such as Simulated Annealing (SA), Genetic Algorithm (GA), Ant Colony algorithm (ACO), and concurrent engineering is prevailing nowadays. Sometimes hybrid approaches were used by applying combination of above techniques i.e. combining high level genetic algorithm with simulated annealing or genetic algorithm followed by simulation techniques to get the better solutions. Application of these facility layout designs includes construction sites, manufacturing industry and service industries and service sectors.

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