

ABSTRAK

Dalam industri manufaktur tata letak fasilitas merupakan salah satu faktor yang berperan penting dalam peningkatan produktifitas dan efisiensi kegiatan produksi karena hubungannya sangat erat dengan material handling. UKM Jogja Gayeng adalah salah satu UKM manufaktur di Yogyakarta yang memproduksi sandal hotel berbahan spon berjenis eva pavilon. Keadaan tata letak fasilitas produksi UKM Jogja Gayeng belum optimal karena letak departemen yang saling berhubungan masih sangat jauh dan adanya aliran backtracking yang menyebabkan jarak dan biaya material handling menjadi tinggi.

Penelitian ini akan membahas bagaimana mendapatkan tata letak fasilitas produksi yang optimal dengan mempertimbangkan frekuensi aliran, jarak dan biaya material handling. Metode yang digunakan untuk perancangan ulang tata letak fasilitas produksi ini adalah metode konvensional dan Algoritma CRAFT dengan bantuan software WinQSB 2.0. Algoritma CRAFT merupakan program perancangan optimal untuk mengevaluasi tata letak dengan cara mempertukarkan lokasi departemen. Perubahan antar departemen diharapkan dapat mengurangi jarak dan biaya material handling.

Hasil perancangan ulang tata letak fasilitas produksi dengan menggunakan metode konvensional dan Algoritma CRAFT memilih alternatif usulan III yang menunjukkan adanya pengurangan jarak perpindahan material layout awal sebesar 239,5 m per minggu menjadi 121,79 m per minggu dan pengurangan biaya material handling layout awal sebesar Rp 73,131 per minggu menjadi Rp 60,371 per minggu, dimana nilai efisiensi dari jarak dan biaya material handling adalah 49 % per minggu.

Kata kunci: Tata letak fasilitas produksi, Metode konvensional, Algoritma CRAFT, Biaya material handling, Jarak material handling, Minimasi.

ABSTRACT

In the manufacturing industry, facility layout is one of the factors that plays an important role in increasing the productivity and efficiency of production activities because the relationship is very close to material handling. UKM Jogja Gayeng is a manufacturing UKM in Yogyakarta that produces hotel slippers made from EVA sponge type. The layout of the production facilities of UKM Jogja Gayeng is not optimal because the location of the interconnected departments is still very far away and there is a backtracking flow that causes the distance and cost of material handling to be high. The purpose of this research is to obtain a layout design of production facilities that can minimize the distance and material handling costs.

This research will discuss how to get an optimal layout of production facilities by considering the frequency of flow, distance and material handling costs. The method used for the redesign of the layout of this production facility is the conventional method and the CRAFT algorithm with the help of WinQSB 2.0 software. The CRAFT algorithm is an optimal design program for evaluating layout by exchanging department locations. Changes between departments are expected to reduce the distance and cost of material handling.

The results of re-planning the layout of production facilities using conventional methods and the CRAFT algorithm showed a reduction in distance to 121.79 meters per day and material handling costs to Rp 353,191 per day, where the efficiency value of the distance and material handling costs was 49% per day.

Keywords: Production facility layout, Conventional methods, CRAFT Algorithm, Material handling costs, Material handling distance, Minimitation.