ABSTRACT

PT XYZ is a manufacturing company engaged in the production, distribution and trading of halal Fashion, the product produced is socks. Based on historical data, PT XYZ cannot meet consumer demand every month. Therefore, a problem analysis is carried out to find out the causes of PT XYZ not being able to meet demand. The first stage is to identify the root of the problem using a fishbone diagram. In addition, identify the cause of the problem through the process flow using a flowchart diagram. After identifying the problem, there is a waste of transportation that occurs because there is backtracking in the process of taking raw materials, besides that the distance between the packing room and the raw material warehouse is far apart. This causes the material transfer process to consume a lot of time and energy, causing production delays. The company must redesign the layout by minimizing the distance of displacement and placement of facilities based on the order of process flow to eliminate backtracking. In designing the layout of PT XYZ's facilities, the method used is the BLOCPLAN algorithm. The BLOCPLAN algorithm method determines the proposed layout design by paying attention to the largest R-score value. After the proposed design has been found and further analysis is carried out, the proposed design will be added several additional adjustments to the design results of the BLOCPLAN algorithm so as to minimize transportation waste. The results of the proposed layout design can reduce the distance of material movement from 190 meters to 135 meters, so that the distance of material movement becomes smaller by 55 meters. Therefore, this final project can reduce transportation waste by 28.95%.

Keywords: Transportation Waste, Facility Layout, BLOCPLAN Algorithm