

Sustainable Layout in Automotive Original Equipment Manufacturer: Design Analysis and Improvement

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Abstract

Material handling is one of the essential activities of the production process in the original equipment manufacturing organization. Layout design that is not efficient, creates distance route that is also not efficient. This situation causes longer time to supply and retraction of materials and working parts from and to warehouse. While layout design itself contributes to 10% to 30% of operational cost, hence a good layout is something that needs to be pursued. With the increase of demand in automotive industry in Indonesia and the competition is getting fierce like never before automotive manufacture organization has to retain and gain their competitive advantages. This research has the objective to improve current layout of one of the biggest OEM companies in Indonesia where their main products are alternator and starter. Systematic Layout Planning is used in this research that studies the intercorrelation between facilities not only the proximity of each facility but also the relevance of one facility to others. The sustainability aspect of this research is studied on how the change of the distance of material handling route could affect the energy usage of the electric hand pallet and the life cycle of the particular equipment. The improved layout shows that the distance route is shorter, and the energy used is smaller.

Keywords

Facilities, systematic layout planning, sustainability, automotive OEM.

Biographies

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