

Redesigning the Plant Distribution of an Industrial Laundry in Arequipa

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Abstract : The study is developed in "Reactivos Jeans" company, in the city of Arequipa, whose main business is the laundry of garments at an industrial level. In 2012 the company initiated actions to provide a dry cleaning service of alpaca fiber garments, recognizing that this item is in a growth phase in Peru. Additionally this company took the initiative to use a new greenwashing technology which has not yet been developed in the country. To accomplish this, a redesign of both the process and the plant layout was required. For redesigning the plant, the methodology used was the Systemic Layout Planning, allowing this study divided into four stages. First stage is the information gathering and evaluation of the initial situation of the company, for which a description of the areas, facilities and initial equipment, distribution of the plant, the production process and flows of major operations was made. Second stage is the development of engineering techniques that allow the logging and analysis procedures, such as: Flow Diagram, Route Diagram, DOP (process flowchart), DAP (analysis diagram). Then the planning of the general distribution is carried out. At this stage, proximity factors of the areas are established, the Diagram Paths (TRA) is developed, and the Relational Diagram Activities (DRA). In order to obtain the General Grouping Diagram (DGC), further information is complemented by a time study and Guerchet method is used to calculate the space requirements for each area. Finally, the plant layout redesigning is presented and the implementation of the improvement is made, making it possible to obtain a model much more efficient than the initial design. The results indicate that the implementation of the new machinery, the adequacy of the plant facilities and equipment relocation resulted in a reduction of the production cycle time by 75.67%, routes were reduced by 68.88%, the number of activities during the process were reduced by 40%, waits and storage were removed 100%.

Keywords : redesign, time optimization, industrial laundry, greenwashing

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