SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

To investigate a facility layout that integrates OHS based on a redesigned hospital kitchen.

Integration of occupational health and safety in the facility layout planning, part II: design of the kitchen of a hospital

Moatari-Kazerouni, A., Chinniah, Y., Agard, B., 2015 | *International Journal of Production Research. Volume 53, Issue 11, Pages 3228-3242*

Key Concepts/Context

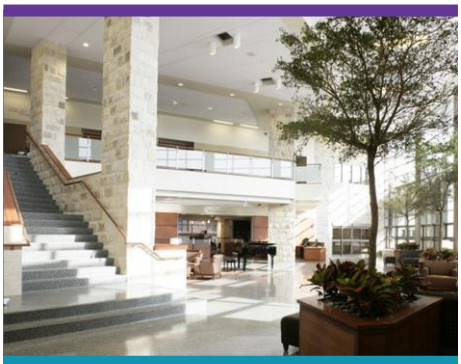
Occupational health and safety (OHS) is a term used for facility designs that factor transportation costs and overall safety into their designs. This article focuses largely on how OHS can be applied to manufacturing facilities; however it uses the redesigning process of a hospital's kitchen as a launching point for a case study into applying OHS in a new facility layout. Hospital kitchens are spaces that require designs that can support effective communication, promote safety from foodborne illnesses and other contagious germs, minimize transport times, and maintain cost-effectiveness; for this reason, the reasoning behind many design decisions in hospital settings could be applied to a variety of manufacturing settings.

Methods

Prior to pilot testing the OHS design, the authors performed a literature review of its application in a variety of manufacturing facilities. In order to develop an OHS design for the hospital kitchen, several field observation sessions and interviews with staff were conducted. Design decisions were ranked in "cost categories" to gauge their operational and financial benefits. Cost categories were calculated by assigning a base value of 1 for the cost of moving materials from one space to another, then using distance measurements between rooms to determine the cost of specific tasks. Finally, a methodology for how hospitals and manufacturers can work to integrate OHS principles into their designs is explained.

Findings

Comparing the observed layout of the hospital kitchen with the proposed OHS design, the researchers found that the OHS design would increase overall



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productivity and employee satisfaction and reduce costs. The authors note that while the cost of developing and implementing an OHS design might initially be high, the utility of OHS designs over time can more than recover these costs.

Limitations

This study applies the theories underlying occupational health and safety designs to present a model that is not tested in the field; all cost projections and "scenarios" used to calculate the efficacy of these designs therefore are not fully tested.

Design Implications

Healthcare designers can consider the concepts underlying OHS (occupational health and safety) designs to help increase workplace safety, overall productivity, and resource savings. These designs can range from switching the locations of specific departments to minimize distance traveled, to implementing "distribution centers" or substations of resources to allow for easier access to materials. Staff perceptions of the workplace could help pinpoint which areas present the most risk or inconvenience and therefore receive a higher priority for renovation.