

Ratikorn Rosfoong 2013: Warehouse Design for Small Distributors. Master of Science (Agro-Industrial Technology Management), Major Field: Agro-Industrial Technology Management, Department of Agro-Industrial Technology. Thesis Advisor: Assistant Professor Parthana Parthanadee, Ph.D. 188 pages.

This research concerns a case study of new warehouse design for a small herbal and natural product distributor in Thailand. Four warehouse systems are proposed, including (1) a two-story warehouse with medium racks, lift and carts; (2) a single-story warehouse with mezzanine floors, medium racks and carts; (3) a single-story warehouse with pallet racks and forklifts; and (4) a single-story warehouse with medium racks and carts. The selection is decided by properties, investment costs, advantages and disadvantages of each warehouse system. The fourth system is found to be most appropriate because of its low investment cost and the suitability with the company's current warehouse activity level. The new warehouse is divided into two areas: order picking area and storage area. The stock location is decided by product category, picking convenience, and approximated overall picking distances. The layouts under consideration include a layout by picking frequency and a layout by Cube-per-Order Index (COI). From the study result, it can be concluded that the amount of stock placed in the order picking area should be sufficient for a one-week replenishment cycle and the amount of stock kept in the storage area should be sufficient for a one-month replenishment cycle. The stock layout by COI is most appropriate due to its shorter picking distance and hence operational efficiency improvement.

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