

ABSTRACT

This thesis is focused on solving a problem in a shop, supermarket size (50 m x 50 m), where employees are unable to carry a heavy manual load. From the assignment of the project, the instructions given were clear and precise regarding the development and the solution to the problem. These instructions were, to create an overhead chain conveyor system, which could transport some loaded trolleys. Different criteria were carefully set to specified needs when choosing the system parts. After much brainstorming, testing, calculating and correcting, the system parts were selected in order that the needs of the study were met as far as possible. The aim was to design an aerial transport system having a circumferential installation at the inner periphery of the building. The building itself was planned to have two floors, namely, a basement and a ground floor. The plan was to start the operation of the system from the basement floor where the loading process takes place and with the movement of the chains, the perimeter transport trolleys would be transported to the ground floor of the store where the unloading process takes place. Afterwards the trolleys would be returned back to their original location in the basement. Essentially, the system was designed to perform a repetitive cycle. In this thesis, static, dynamic, economic, and aesthetic factors were all considered together with the safety of customers and employees. Mainly, there has been use of programs like SolidWorks and AutoCAD. Finally, an economic study has been produced, to demonstrate whether the solution is affordable or not.

Keywords: supermarket, heavy load, overhead, chain conveyor system, trolleys.