Improvement of fall protection safety guardrail for workers transporting materials in building Elevator shaft(建築工程電梯直井內材料運送作業防墜護欄之改良)

吳誌銘,鄭紹材,余文德,林楨中
營建管理學系
建築與設計學院
shaotsai@chu.edu.tw

摘要

Construction sites are usually open and dangerous for workers. Due to the increasing number of high-rise building projects, construction workers are facing increasing falling risks. Transporting materials in building elevator shafts is a unique practice for the local construction industry of Taiwan. Falls due to transporting materials in building elevator shafts occurred almost every year in the past decades. This paper presents research on the development of an innovative technology for fall protection of workers transporting materials in building elevator shafts. The field investigations of the real cases were conducted first. It is followed by root cause analysis, function modeling, and TRIZ analysis. Then, an innovative design of the fall protection technology for workers transporting materials in building elevator shafts is proposed. Finally, interviews with the domain experts were conducted to evaluate the feasibility and benefits of the innovative technology in light of safety, operability, and cost effectiveness. Future suggestions for the industrialization of the proposed innovative technology are also addressed.

關鍵字：building construction, elevator shaft, falling disaster, safety