

Rathmalana, Sri Lanka | 12th. December 2024**ADDRESSING MAINTENANCE CHALLENGES IN SKYSCRAPER
MANAGEMENT: INSIGHTS FROM SRI LANKA****G. M. S. R. G. Manawadu¹ and D. D. D. Suraweera²***¹Department of Building Services Technology, University of Vocational Technology, Sri Lanka**²Department of Electro-Mechanical Technology, University of Vocational Technology, Sri Lanka
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Abstract: The global demand for vertical development has risen as a solution to growing populations and land scarcity. Skyscrapers and sky cities are integral to maximizing land use while adhering to building standards and regulations. Vertical living extends beyond high-rise buildings, encompassing multi-use structures that integrate residential, commercial, and recreational spaces. Managing skyscrapers presents unique challenges due to their height, complex building systems, advanced technologies, and customer comfort requirements. This study explores the challenges faced by maintenance staff in managing skyscrapers in Sri Lanka. A total of 25 skyscrapers in the Colombo District, were identified based on the Urban Development Authority's 2021 building regulation, formed the population, with 5 selected through stratified sampling based on age, usage, and ownership. Data was collected via structured interviews with 5 maintenance managers, 10 supervisors, and 15 technicians. Secondary data were collected from sources such as literature, maintenance manuals, and standards. Data were analysed through thematic analysis and five key challenge areas namely, technical issues, resource constraints, environmental factors, safety and compliance, and organizational and logistical issues were identified. Common factors impacting building deterioration include aging infrastructure, material selection, climate factors, and design maintainability. Specific challenges were identified as the absence of maintenance manuals, spare part shortages, design flaws, extreme environmental conditions, limited adoption of new technologies, and financial constraints. The findings of the research highlight the urgent need for comprehensive maintenance strategies tailored to Sri Lankan skyscrapers to ensure their longevity and efficiency.

Keywords: Skyscrapers, Building Maintenance, Building Services.