ABSTRACT

The selection of complex designs with irregular building forms, for the high-rise commercial buildings that dominate Singapore skyline, has caused the cleaning cost for the building facades to constitute a large amount of the total running cost. Measures should be taken to keep the cleaning cost to a minimum and to allocate the cost saving to the other maintenance uses.

The objective of this study is to identify the bearings of the type of building forms, the selection of facade finishes, the accessibility and the height of a building on the facade cleaning cost.

The findings revealed that a plane building form has an average cleaning cost of $1.52/m² and an irregular building form would cost $2.08/m². Granites facade, occupying more than 50% of the total elevation area, require cleaning once annually with an average cleaning cost of $1.09/m² and, similarly for the glass facade but with a cleaning cost of $0.99/m². Aluminium panel facades require twice cleaning annually with an average cost of $0.56/m² for each cleaning. The average cleaning cost for building using built-in gondola is $1.04/m² and $1.23/m² for buildings without built-in gondola.

In conclusions, buildings with simpler form, buildings on regular cleaning basis and the buildings with provision of the built-in gondola for cleaning would incur lower cleaning cost.

Keywords: High-rise commercial building, facade cleaning cost, building forms, facade finishes, and built-in gondola.