Abstract

Singapore’s hot tropical climate has proven to be a major factor that has to be taken into consideration in the design of buildings. This is especially true for the building facade as it provides the protective skin for its occupants. The use of tiles as a facade material has been widespread in the past decade or so but it is in recent years that the number of failures has called for a review into its functional and aesthetic use. Tile facade failure can result in increased repair and maintenance costs and even pose to be public safety hazards. The large stock of tiled buildings in Singapore means that such defects have to be addressed effectively without compromising on the performance of the facade.

This study on tiled facade defects has identified tile defects common to tropical conditions through field visits to local tile-clad buildings located in the Central Business District. From interviews with facade specialists and extensive analysis, it has been found that tile defects are primarily caused by flaws in the design, installation and maintenance stages of tile facades. Good practices that can be adopted by various parties at all stages of the project that can prevent, minimize or repair defects are thus identified and recommended by this research.

Interviews with maintenance teams of tile-clad buildings provided an insight to the maintenance of tiled facade and prompted the research to develop a systematic guideline to aid building owners in selecting the most effective solution when they encounter with tile defects.
Findings from this research have also clearly indicated the viability of over/ re-cladding as a solution to tile defects and in giving buildings with tiled facades a new facelift comparable to modern new buildings clad with metal or glass.

Keywords: External tiling, defects, good practices, maintenance, repair, over-cladding, re-cladding