
PREFACE

In recent years, the deterioration of building facade elements has attracted much attention in conjunction with the construction industry's increasing use of large panel curtain walls. This book aims to highlight the various types of defects commonly found on building facades. Illustrations collected through a recently completed research study [1] are discussed. Facade elements studied include natural stone, glass, metal sheeting, cement-sand plaster and ceramic tiles. Factors causing defects such as poor workmanship, inadequate design and maintenance, inappropriate use of materials and the action of environmental agents are evaluated. Typical problems highlighted include cracking, water penetration, misalignment, sealant defects, discolouration, staining, efflorescence, corrosion and tile delamination.

The building facade is a major component in a building's life cycle. An effective system is essential in contributing to a successful weathertight building envelope and in preventing infiltration of air and water. The high cost of energy for heating and air-conditioning is causing serious consideration of a good facade system. The long term financial impact of an inefficient system on the cost of keeping the building comfortable is now being calculated by building owners. Currently in Singapore, many sealants in high rise buildings are reaching the end of their life span. Many buildings in the city are estimated to require services in repair and/or replacement of sealants in the near future. An in-depth understanding of the causes of defects on building facades and their implications to design, construction and maintenance is important.