Abstract

In tandem with the global trend, maintainability was highlighted in Construction 21 as a key initiative to improve maintainability of buildings, taking into account the life-cycle costs of building elements and the ease of maintenance of buildings. Under the tropical conditions as in Singapore, the maintenance of wet areas represents a major portion of the building maintenance cost.

It was found in this study that ceiling leakages, efflorescence, paint defects and spalling concrete were the four most common occurring defects in wet areas. Defects in wet areas such as toilets and bathrooms have caused inconveniences to the users and have shown to be aesthetically unpleasant. It was found that a large proportion of the defects that occurred in wet areas were due to poor workmanship and inadequate design considerations.

This study provides a holistic insight to improving maintenance of wet areas by using better-quality buildable systems such as Prefabricated Bathroom Units. Through an in-depth evaluation of common defects that are found in the conventional reinforced concrete toilets and a detailed analysis of Prefabricated Bathroom Units, this study examined the extent to which prefabricated toilet systems could minimize the occurrence of such defects.

This study concludes that with the use of more prefabricated elements for wet areas, strong emphasis should be placed on the integration of design and construction stages which would in turn promote better construction quality and thus reduces the occurrence of defects.

Key words: Prefabricated bathroom units, defects, wet area, maintainability, prefabrication and buildability