

1. INTRODUCTION

A survey conducted by BCA on private residential buildings that were less than 5 years old indicated that most incidents of water leakage occurred at the floors and internal walls of toilets and kitchens. In Singapore where high rise residential estates are common, the problem of leakage at ceilings and floors is further compounded when the leak comes from the unit above.

In enhancing the watertightness performance of the internal wet areas of buildings, it is important to look at how the structure and the waterproofing membrane are detailed. This publication is a good practice guide that includes among others, sections on design, selection of material and installation. It is intended to complement the current Singapore Code of Practice, CP 82: 1999 titled “Waterproofing of Reinforced Concrete Buildings”.

2. DESIGN

2.1 GENERAL

The Designer should refer to applicable local and international codes, standards and specifications when designing wet areas to be watertight.

The drawings and specifications should be prepared in sufficient detail by the Designer to provide proper guidance to the Waterproofing Specialist and other trades involved in the execution of work in wet areas. It is also important to ensure the compatibility and bonding performance of the membrane to substrate.

The structural, architectural and M&E drawings affecting the wet areas should be reviewed together for reliability of the waterproofing system and to ensure consistency in dimensions (eg, final thickness of the floors, M&E configurations, etc). There should also be a good level of awareness and understanding of the structural system being used (eg, precast hollow core slab system, cast in-situ RC system, etc).

2.2 PREFABRICATED BATHROOM UNITS (PBUs)

In recent years, both HDB and private developers have increasingly used PBUs. The feedback from homeowners has been encouraging. Some of the advantages of the prefabricated system over the conventional toilet/bathroom are:

- The various trades involved in the wet area (tiler, plumber, electrician and waterproofing applicator) are made the responsibility of one party, reducing chances of errors due to lack of coordination.
- Better control of the materials and prefabrication process in the factory, resulting in higher quality finishes and lower wastage of materials.
- Piping and electrical cables are run in the space between unit bath’s shell and the building structure, eliminating the need to chase the walls/ slabs or embed the services.
- The entire toilet unit can be produced in the factory without affecting site operations, thereby shortening the construction cycle and construction period.



Figure 2.1: Interior of a prefabricated bathroom