From the Editor's Desk

In continuation to our efforts to create awareness on waterproofing, this issue of ReBuild is devoted to waterproofing of internal wet areas of the buildings. Some common problems faced by a homeowner are dampness, seepages, leakages and the resulting damages. Very often, there are immense difficulties in finding the source of leakages and seepages which leads to unsuccessful remedial measures, mental agonies and finally, financial losses. The bathroom water leakage is mostly a common difficulty in housing societies that causes disputes, between flat owners, for sharing the cost of remedial treatment. Even where the finance is not a constraint for high-end income groups, the mental agony is too much. There is hardly any building/ bungalow/tower/villa that does not face problems occurring due to leakages, seepages and dampness. The problem compounds in flats having false ceiling as mostly seen in buildings with interior decoration where the approach for diagnosis and investigation become difficult. Apart from seepages and leakages there are many other problems in the internal wet areas such as rising dampness, peeling of paint, efflorescence, spalling of the concrete and delamination of cover concrete of roof ceiling. In view of such a wide range of problems, this issue of our ReBuild focuses on the design approach of such internal wet areas and preventive measures to be taken during construction and installing waterproofing systems.

The most common problems are leakages at pipe joints and fixtures, wrong installment methods, inadequate slope in bath and toilet floor areas, corroded steel pipes embedded in the floor, failures in the plumbing system and lack of or improper waterproofing system being carried out in those wet areas. One has to avoid GI pipes in wet areas and use only PVC pipes to avoid corrosion and further leakages. Liquid applied waterproofing membrane is more suitable than preformed membrane because seamless waterproofing can be carried out in small areas whereas in case of preformed membrane, there would be many joints. While selecting a liquid applied waterproofing material, a cementitious system is most suitable because of its compatibility with concrete and good vapour permeability properties. The polyurethane is more flexible as it has very good adhesion and tearing strength properties. But solvent-based polyurethane is very sensitive to moisture hence it can only be applied to the dry surface. But the most important factor is surface preparation, unless the surface is being well-prepared, in which case whatever the best quality of the material may be, it will fail. During the remedial works, all the pipes and fittings need to be installed first. All the gaps and joints need to be filled with polymer-modified concrete or polymer-modified cementitious grouts. The waterproofing system should be laid from downward to upward slope seamlessly as per manufacturers' specification. One vulnerable location in wet areas for leakage is the joints of floor and wall, which should be provided with angular fillet around the periphery of the wall. An additional layer of waterproofing membrane should be provided always at such junctions along with glass fibre mesh sandwiched between two layers. The ponding test has to be carried out after the completion of each stage — such as in the first stage, check for cracks, voids, honeycombs in the concrete slab, in the second stage, check the effectiveness of the plumbing system after the laying and installation of all pipes and fittings, in the third stage, check the effectiveness of the waterproofing system before doing the screed and in the last stage, a final check after the screeding but before laying the tiles. The ponding test is carried out not only to check the effectiveness of the waterproofing system, but also to see if any remedial measures need to be taken during the installation of the system.

Remedial treatment for leakages in bathrooms and toilets results in higher costs many times more than the actual waterproofing would have taken. This is because of removal and dismantling of expensive finished items during the remedial works. Even success of any remedial treatment depends upon identifying the root cause of the problem or source of leakages. Treatment for dripping leakages can be made by injection of polyurethane foam from the negative side. Treatment of mild and moderate dampness on the underside of bath and toilet roof ceilings can be made with a cementitious crystalline coating from the negative side. Treatment from the negative side is done only when rectification from the positive side is not possible. While treating from the positive side, it is essential to remove all the floor finish materials including screed, waterproofing membrane right up to the mother slab. Any cracks or voids are to be rectified by polymeric crack-filling material or suitable injection grouts based on actual side condition. A proper surface will ensure the durability of waterproofing system. Any small gaps around the pipes or any fixtures can be sealed with a suitable sealant in any of the internal wet areas. Wherever the gaps are more, they can be rectified with fine cementitious grouts. All internal dampness needs to be rectified with epoxy-based damp-proof coating.

We hope this issue will bring out the importance of planning and shed light on the preventive measures to be taken during the installation of bathroom, toilets and their waterproofing system. We shall focus more on waterproofing on roof terraces of buildings in next issue of our ReBuild.