

## INTRODUCTION

Fire as a destructive force, has been in existence from the beginning of creation. Man has learnt methods to control this force and to harness the energy created by it. However, he has not devised a workable method of eliminating the destructive effect of fire on any of the structures that he has built. However, man, being a very innovative animal, has devised many methods of inhibiting fire damage.

One of the main ways is to provide in the design stage and/or construction stage of a building, some form of structural fire protection, e.g. increased cover to reinforcement in main structural elements. Another is to provide devices for suppression and detection, e.g. smoke detectors.

Part of this report is highly theoretical. It has been included because traditionally, fire damage, repair and structural fire protection have been determined by practical means using the judgement (experienced or otherwise) of consultant engineers. While this method is by no means totally incorrect, it should be combined in most cases with theory to reach a proper decision about the amount of structural fire protection needed for a particular category of building and even, whether or not a building could be reinstated after being partially destroyed by fire.