CERTIFICATION OF BUILDING DESIGN

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Summary

Most societies have systems of building control intended to minimise the risks associated with errors in design however building failures are often associated with a failure of these controls. Many such systems rely on private sector self-certification but this can be an unsafe practice if it fails to take into account human fallibility. Since 1992 self-certification by the structural designer has been permitted in Scotland, though not elsewhere in the UK. Many practising engineers believed that this did not provide an adequate standard of public safety. New regulations introduced to Scotland in 2005 removed this option and radically changed the way in which design may be certified for building regulation compliance. The UK professional institutions have developed a scheme for the design certification of building structures. The scheme had to meet the stringent requirements for certification schemes set by the Scottish Parliament, be regarded as workable by the practicing engineers and also have a sound business case that would make its operation commercially viable. Key to the new arrangements is the requirement for certifying engineers to be registered after undergoing an assessment of their competence. Checking of structural design is mandatory and the integrity of the system is demonstrated by regular audit of the activities of certifying engineers.

Keywords: Structural design, Building Regulations, Certification, Registration Scheme

1.0 Introduction

Most societies secure the safety of people in and around buildings through systems that aim to ensure that competent people design structures using established or codified design methodologies. Studies into the causes of structural failure have shown errors in design to be a significant factor contributing to loss of life, injury and economic loss arising from the collapse of building structures throughout the world. It is with depressing regularity that the investigation of building failures uncovers a breakdown in the systems of control that are intended to protect public safety. Most building control systems expect some level of design check to be undertaken either by the public body issuing the building consent, such as that undertaken in Hong Kong by the government Buildings Department, or by the private sector. Certification usually involves a declaration of compliance made by the designer, generally regarded as self-certification. Alternatively an independent check by a licensed checking consultant, generally known as a third party check, may be required. Each of these approaches is a balance between achieving an acceptable standard of public safety and the commercial implications that the checking system will have on cost and programme.

Changes to systems of control are often introduced following a collapse when public concern will influence political change. Such a situation arose following the sudden and complete collapse of the New World Hotel in Singapore in 1986 where serious deficiencies in the design of the reinforced concrete structure were found to be a major factor leading to the a collapse that took the lives of 33 people. Following this incident the Singapore government introduced mandatory independent

https://doi.org/10.2749/222137807796158516
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