Abstract

This dissertation looks into whether Lightning Protection Systems are efficiently provided in Singapore and the possibility of certain areas to be improved to raise overall efficiency.

The aim of embarking on this research is to investigate the scope for improvement in efficiency in design, installation, maintenance and performance. This research is carried out by looking into the current practice of designers, installers and maintenance teams based on SS CP33:1996 Code of Practice for Lightning Protection, understanding practicable issues pertaining to SS CP33:1996 faced by professionals in the industry and examining the performance efficiency of Lightning Protection Systems using a systems approach.

A total of 31 firms of various professions were interviewed. Interviews were carried out to investigate and understand different job responsibilities through questionnaires, knowledge and experiences exchanges and feedback. Informal conversations were also documented.

Discussions of interview findings showed that Lightning Protection Systems in Singapore are not satisfactorily provided and there is scope to improve performance efficiency. Possible areas that could be further looked into include having a more reader-friendly Code of Practice that will not cause confusion and doubts in design. A more practicable design method can be adopted to assess and blueprint a more appropriate Lightning Protection System. Maintenance of Lightning Protection Systems can be improved through using a streamlined inspection checklist and/or be enforced by legislation. Better enforcement of protection of construction site structures against lightning is necessary. Finally, a more focused collaboration is proposed between designers, environmental and weather data providers through the use of information technology.