ABSTRACT

Deterioration of concrete infrastructure is usually caused by the limited knowledge of the material used in the concrete mix, inadequate durability design, insufficient consideration of environmental factors, and improper handling of fresh concrete coupled with a lack of routine maintenance. Furthermore, the repair of deteriorating infrastructure has become increasingly expensive.

This research will review the structural deterioration of the road infrastructures within the City of Cape Town. The review will include obtaining information pertaining to the age of the sampled structures, the environmental exposure, the design parameters, and maintenance frequency. Additionally, to enhance the accuracy of the synopsis drawn from the data, visual inspections and core sampling will be done on the structures to determine the failures of the structures. The research will also incorporate a literature review on concrete durability design and alternative concrete constituents that enhance concrete performance. This literature review will be used in conjunction with the synopsis drawn to provide proactive measures to be considered in future designs.

There are other factors which could lead to premature structural failures, such as; financial constraints leading to inadequate design or material selected for construction, political influence which leads to delays during the construction process, and handling of fresh concrete or lack of experienced staff. However, for the purpose of this research, these factors will not be taken into consideration.