

Abstract

Title: The Application of Mobile IT in the in situ Quality Control Process on Large Construction Projects

Researcher: Kenneth Sutton

Supervisor: Brian Graham

Submission Date: August 2010

Purpose: Mobile information technology is the use of information technology in a mobile environment. Mainstream construction as it now stands, is heavily reliant on paper, human memory and stationary forms of information technology. In particular concrete quality control is a major issue in terms of quality in the modern day construction project. The mobile information technology sector is now at the forefront of human everyday life but has failed to impact on the construction industry to its full potential.

The purpose of this research is to identify the need for mobile IT in relation to in situ concrete quality control in the construction industry. The construction industry is highly reliant on the communication and storage of in situ concrete quality control information, it also suffers from unnecessary costs when this information is miscommunicated or goes unrecorded in its current paper based format. This research shall also examine the benefits of mobile IT in its application of in situ quality control to the construction industry and also the negative effects which can arise.

Methodology: A comprehensive Literature Review was undertaken but the lack of available and specific reference sources to applied mobile IT in quality control was identified. The methodology used in the primary research was qualitative thus utilising data collection in the form of a case study and interviews in an unstructured format. The participants in the primary research included construction professionals at varied managerial levels and a mobile IT specialist.

Findings: The research found that mobile IT best serves in situ concrete quality control by the use of electronic forms that are normally filled out in a paper format. Any software for this process will have to be designed around the ISO requirements for concrete quality control especially in an Irish context although it must be noted that the HandBase software can be formatted by the user to fit these requirements and thus provides an optimal solution. The research also concluded that a smartphone using the Android operating system at present is the device of choice although this may change to an all Apple system in the coming months.

Keywords: Information Technology, Mobile IT, Concrete Quality Control, Database Software