

Augmented Reality for Construction Project Monitoring: Challenges and Strategies for Adoption in Sri Lanka

WKGS Lakmal¹, KATO Ranadewa¹, NMGH Sandagomika^{1#} and JKDDT Jayanetti²

¹*University of Moratuwa, Sri Lanka*

²*Faculty of Built Environment & Spatial Sciences, General Sir John Kotelawala Defence University, Sri Lanka*

#helaminisandagomika94@gmail.com

Construction project monitoring, which is governing effective decision making and successful project completion, is a key process in every construction project. However, construction project monitoring is not free from barriers, which necessitate the need for technological implementation as a possible solution to overcome such barriers. Though utilising augmented reality leads to achieving immense benefits, but there are challenges identified in implementing augmented reality within the construction industry. Therefore, this study aimed to investigate the challenges and strategies for implementing augmented reality for construction project monitoring in the Sri Lankan construction industry. A qualitative approach was adopted and expert interviews were selected as the data collection technique. Ten experts with experience in both Information Communication Technology (ICT) industry and the construction industry were interviewed to facilitate the in-depth input to the study. The collected data were analysed using code-based content analysis with NVivo 12 Software. The study identified the challenges for augmented reality implementation as the lack of knowledge on hardware and software, lack of accuracy and reliability, higher initial cost, privacy issues, health and safety issues, and lower battery life. Further, providing knowledge on augmented reality through education, training and workshops, carrying out feasibility studies, providing reduced tax-free facilities, using access control methods, implementing proper guidelines, and taking safety precautions have been identified as the possible strategies to overcome the challenges. The paper concludes by mapping the identified strategies to the challenges in implementing augmented reality in Sri Lankan construction industry.

Keywords: *augmented reality, construction industry, challenges, strategies*