Title: Development and evaluation of a model for supporting accessibility analysis in buildings

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Abstract

"People of diverse abilities should be able to use buildings and places comfortably and safely, as far as possible without special assistance"[1]. Currently the evaluation of accessibility in buildings is conducted using, largely, manual methods. Advancements in portability and affordability of devices capable of generating and evaluating point clouds indicate that modern technology can now be used in place of these traditional methods. This thesis sets out to design a model for the evaluation of accessibility in buildings that would lend itself to being implemented using these technologies. The model is intended to assist professionals in their analysis of buildings while also providing laypersons with the wherewithal to conduct their own assessments. The aim of the development is to improve upon current models in the areas of usability, incorporating efficiency, cost effectiveness and satisfaction. An application for Google Tango was developed to implement the model, to demonstrate its viability and test its proposed benefits. The model was evaluated by a mixed user group of professionals and laypersons. Though the results of the evaluation were inconclusive overall, in terms of meeting the research aim, they were indicative of there being value in developing the model further.