A technical review of BIM based cost estimating in UK quantity surveying practice, standards and tools


Abstract

In light of recent technological advancements over the decades especially with Information Technology (IT), the 'Building Information Modelling' (BIM) is one of those advancements that have attracted significant attentions in UK construction industry. The UK government has acknowledged this trend and is joining the radical movement of adopting BIM by also making it a prerequisite for all those involved in public sector projects to have BIM ready by 2016. For Quantity Surveying (QS) profession, BIM presents huge challenges and opportunities, particularly in the area of cost estimating and quantity take-off. BIM offers the capability to automatically generate quantity take-offs and measurement directly from a digital model of a building, a process that traditionally is very time consuming for quantity surveyors. However, there is little evidence that BIM is systematically introduced in quantity surveying profession in UK largely due to majority of the BIM based cost estimating or take-off tools developed outside UK and adopted the different practice and rules in quantification. In this paper, we examine the cost estimating practice and procedure in UK and the impact of the use of BIM. A number of key challenges have been identified in term of information exchange, model quality and UK standards. It also reviews the existing BIM based cost estimating tools in the context of UK quantity surveying practice. A review methodology is developed to evaluate the ability of the existing BIM technology to support the UK QS practices. The methodology is applied to a number of leading BIM based estimating tools. The review assesses the technical and process approach of each tool and their ability of adapting to UK quantity surveying practice, particularly with the New Rules of Measurement (NRM), which is aimed to provide a holistic view of the technologies for the Quantity Surveying professions to make informed decisions.
BIM technology has become increasingly well-known among construction industry players throughout the world. It is acknowledged as having contributed towards the success of projects due to its more efficient and effective working practices. The results were then hypothesised to affect the reliability of cost estimates in quantity surveying practice, leading to establishing a reliable framework for this paper. This paper also contributes to a holistic perspective on the effects of improved information resulting from BIM adoption through a better understanding and the generation of more knowledge in the production of more reliable cost estimates.