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.
Practice-based document that provides users with the latest technical information, knowledge or common findings from regulatory reviews. Recommended best practice. Usual principles apply in cases of negligence if best practice is not followed. Information and/or recommended good practice.

- UK BIM Task Group Employer’s Information Requirements guidance notes.
- NBS BIM Toolkit (a unified classification system and Digital Plan of Work (DPoW)). The NBS has developed a BIM Object Standard for the creation of BIM objects to a clear set of guidelines, following a specific naming structure and can be used as a system to follow. Objects such as walls, floors, doors etc. are assessed against this standard, prior to inclusion in the NBS National BIM library.

A recent BIM survey conducted in South Africa by CIS revealed that many contractors, internal quantity surveyors and estimators are behind in understanding and adopting BIM processes. In the UK, according to the RICS BIM survey (Matthews, 2011b), a significant number of quantity surveyors are still not aware of what BIM is and only small numbers (10%) claimed to be involved with BIM.


Related articles on Designing Buildings Wiki. 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