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# MISCONCEPTION ABOUT THE USE OF THE STANDARD METHOD OF MEASUREMENT IN DEVELOPING COUNTRIES: A GHANAIAN PERSPECTIVE

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Bills of Quantities are the classical form of financial control used for pricing construction projects throughout much of the developed world. The British-based Standard Method of Measurement (SMM) is widely used throughout Developing countries for generating bill of quantities. However the nature of the construction industry is very different and the SMM is routinely adapted to suit local conditions. This research investigates the typical local conditions that cause departures in the adoption and use of SMM in developing countries. The paper examines some commonly held, but often false assumptions, about how the SMM is applied in developing countries: Ghana. A questionnaire survey approach was used in obtaining information from industry practitioners, while comparisons are made to some developed countries (UK). This has implication for the development of information technology (building information modelling) and international firms that undertake work throughout the world. The paper concludes with the impacts of the departures from the SMM to the international construction community.

Keywords: standardization, measurement, quantity surveying, estimating, information technology, developing countries.

## INTRODUCTION

The standard for measurement of construction works is a formal document that sets out the conventions for defining the nature of construction works, how the work is measured or taken-off and quantified (Earley and Gould 2004). This document sets the basis for preparation of bill of quantities which is often used to model cost. The general relevance of SMM is demonstrated by the usefulness of bill of quantities. Ferry *et al.* (1999) noted that Bill of Quantities (BQ) is a total cost model which could be used for various purposes both within the client organization and the contractor's organization. Singh and Banjoko (1990) corroborated this, while researching to produce a 'rational bill' for the civil engineering industry. They discovered that, at the heart of civil engineering measurement projects is financial control, whose satisfactory performance is influenced by how the structure of the construction cost is modelled by the BQ. Other researches confirmed the usefulness of BQ (hence SMM) for cost modelling among other uses such as quality or specification control, and

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scheduling of activities (Kodikara *et al.* 1993; Law 1994; Nani and Adjei-Kumi 2007).

Standard Method of Measurement (SMM) for works of construction is common with commonwealth nations. In some commonwealth countries, a local SMM is used for measuring works of construction while other countries adopt standard methods from other countries. The most widely adopted standard method of measurement is the British SMMs (Mills *et al.* 2006). About 20% of the total number of countries surveyed in a global survey of SMMs in current use (RICS Construction Faculty 2003), adopted a British standard method of measurement. The rest of the countries (i.e. 80 %) use a form of measurement standard produced locally. Ghana is one of the countries that have adopted the British measurement standards for measuring construction works.

Contrary to the spirit of the British standard methods of measurement, there are some departures from the manner in which they are used in Britain and how they are used in Ghana. The paper investigates the differences in the adoption and use of SMM in UK and in developing countries (using Ghana as a case study). These differences are of relevance to the international community, as international firms doing business in Ghana and other developing countries need to note the local norms and practices of measuring work.

A questionnaire with open-ended and close-ended questions were used to illicit information from quantity surveyors practising in recognized professional quantity surveying firms. The questions require the selection of response from alternatives followed by the respondent's comments. This approach provided the respondent the flexibility to dilate upon their responses and provide further useful information. The respondents were asked to state the differences in the construction industry between Britain (where the SMMs used in Ghana were developed) and Ghana, which have bearing on adoption of SMM. They were further required to point out departures with the application of British SMM in Ghana. They also indicated whether they carry out work for contractors or consultants. This is expected to ensure results represent views from both the consultants' and the contractors' perspectives

The population of quantity surveyors was selected based on their experience with SMMs (they are in constant study and application of SMM). There are fifty seven recognized professional quantity surveying firms in Ghana (Ghana Institution of Surveyors 2006a). Questionnaires were hand-delivered to three randomly selected Quantity Surveyors in each of the 57 firms. Sixty respondents spread over 27 firms returned their questionnaire. This indicates about 35% response rate from Quantity Surveyors spread over 47% of the total number of firms consulted.

In addition 68% of the respondents indicated that they have ever carried out measurement as contractor's quantity surveyor. This indicates that the contractors' perspective is represented in the survey. Other results and comments obtained from the respondents are discussed together with literature review in the ensuing paragraphs.

## NATURE AND DIFFERENCES IN THE CONSTRUCTION INDUSTRY IN THE DEVELOPING AND DEVELOPED COUNTRIES

The respondents stated emphasis on project control, standardization construction products and materials, technology and culture as aspects of the construction industry where differences (which affect SMM) exist between developed and developing countries.

52% of the respondents indicated that developing countries emphasize cost control more quality and time control in a project environment. This corroborates Kazi and Charoenngam (1999) observation that the need to control project cost, is paramount to developing countries, since infrastructure development continues to be a priority. They also acknowledged that time and quality control is far less emphasized as compared to cost (Ofori 2000; Shakantu *et al.* 2002). Ogunsemi and Jagboro (2006) also observed that time and cost overruns are rampant in the Nigerian construction industry. They cited Odusami and Olusanya (2000) in a research which showed that projects executed in Lagos Nigeria do overrun their time in excess of 51% of the planned duration. As a result, SMM in a developing country seeks to first address issues of cost as compared to developed countries who pay equal attention to quality and time specifications.

71% of the respondents identified standardization of construction materials and products as poor in Ghana as compared to the UK and other developed countries. As a result, there is influx of materials and products with assorted standards from both internal and external sources. Natural market sizes of some locally produced materials are at variance with what prevails in other developed countries. Most respondents cited the length of timber as example. The maximum continuous length is 4.80 metres, while the British SMM acknowledges a length of 6.00 metres.

About 87% of respondents cited technology levels especially with respect to industrialization of construction process are low in Ghana as compared to other developed countries. They mentioned the presence of craft based large labour force (carrying out work otherwise carried by plants) and few plants on construction sites as evidence. In situ construction is also cited as common compared to pre-cast construction. These influence the practice of the industry, hence any measurement approach adopted for construction works. SMMs in these countries therefore focus on labour intensive and insitu construction rather than the industrialized form of construction.

76% of the respondents stated culture as a major factor that influences the nature and distinguishes construction industries. Cultural differences can be viewed in terms of focus in business. This affects the type of emphasis that is placed on measured construction work. They confirmed that, construction business in Ghana as in most developing countries in Africa is relationship focused unlike most industrialized countries (including UK), where it is deal focused (Langford 2000). This means that business is usually between friends, relatives, and people well known to one another (termed locally as 'whom you know'). Further comments by respondents explained that, Trust based on relationship between parties has reduced the emphasis placed on highly detailed and accurate measurement of construction work. This has reduced the burden on the quantity surveyor. On the other hand as depicted in the seventh edition of the British standard method of measurement of building works (SMM7), most

developed countries emphasize detailed and highly accurate measurement procedures – there may be suspicion of one party taking advantage of the other (Langford 2000). This cultural difference reflects in application of construction contract conditions, hence the rules of SMM. Elimination of cost insignificant items and Simplification of SMM is therefore possible in these developing countries.

## **COMMONLY HELD BUT OFTEN FALSE ASSUMPTIONS ABOUT THE APPLICATION OF SMM**

### **The function of SMM is to provide the basis for preparing Bill of Quantities which is used to model and control construction cost**

Though the SMM is used in preparing Bill of Quantities (BQ) which is used mainly in cost control (Kodikara *et al.* 1993), it also aids specification writing and scheduling of construction activities. 75% of respondents confirmed these other uses for SMM and stated its provision of a ready classification for specification writing and preparation of works programme. Further comments stated that in situations where complete information can not be obtained from available drawings, BQ are consulted for information on specifications and extent of work. The limit of the information obtainable is determined by the SMM used (in this case the SMM is providing specification information). The most commonly omitted specifications in Ghana include painting type and colour scheme, door and window details, fittings and fixtures details, among others. In other instances specifications are incoherent and BQ are consulted for clarification. In the preparation of schedule activities, project managers consult the BQ (though in conjunction with other documents) mainly to determine the extent or volume of work required to be carried out. Their understanding of what the quantities in the BQ mean is based on the SMM used.

### **The most commonly used standard method of measurement in Ghana is SMM7**

69% of respondents in this survey use SMM5 as against 20% for SMM7 and 11% for SMM6 and other methods of measurement. This finding corroborates an earlier finding that SMM5 is used on 65% of the occasions measurement is carried out in Ghana (Nani and Adjei-Kumi 2007). This is contrary to the international surveys (RICS Construction Faculty 2003; Mills *et al.* 2006) that indicate SMM7 is the standard method of measurement for building works used in Ghana. It is in December 2006 that the Ghana Institution of Surveyors (GhIS) declared the compulsory use of SMM7 in Ghana, effective July 1, 2007 (Ghana Institution of Surveyors 2006b). According to respondents, persistent use of SMM5 is due to the fact that most recognized quantity surveying firms in Ghana today were established by principal partners who had their education in the 1970s and 1980s when SMM5 was used in training quantity surveyors. The Ghanaian construction industry also shows characteristics of a craft industry that is better modelled (in terms of quantities and cost) by SMM5 than SMM7. Further, low industrialization of construction, low standardization of construction materials and incomplete documentation at the point of preparing BQ deprive the industry from fully benefiting from the provisions of SMM7.

### **SMMs are adopted indiscriminately**

Most SMMs adopted are not without amendment or abridgement. All respondents who use SMM5 in preparation of bill of quantities and 75% of those who use SMM7 indicated that they modify the measurement rules. This assertion was confirmed by a

critical examination of BQs prepared within the respondents firms. The amendments include omission of quantities for cost insignificant items (such as making good concrete work associated with holes, builders work, trimming, labours etc.), aggregation of certain like work items (mullions, transoms, jambs, heads and sills for timber windows and door frames; external and internal finishes when they of the same material etc.), adoption of units contrary to SMM5 (e.g. finishing works in narrow strips, which SMM5 rules requested should be measured linear are measured superficial). These amendments were made possible by the factors discussed as contributing to the nature and differences in the construction industries of developing and developed countries. Low levels of wages for construction workers in Ghana make most labour items in SMM5 insignificant with respect to cost in the Ghanaian context as compared to UK and Australia. For instance an unskilled labourer in Ghana receives an average of Fifty Thousand cedis (¢50,000) per day (equivalent to £2.7), which is less than the hourly rate in the UK.

### **The adoption of SMM is an agreement between the Contractors and the Quantity Surveyors' professional body**

All respondents agreed that SMM5 and other versions of SMM used in Ghana were not selected based on the collective agreement between the Quantity Surveyors professional body and the Contractors association in Ghana. This is contrary to what prevails in the UK, and stated in the preface to SMMs developed in the UK. This appears to be the case with most SMM in various other developing countries as observed in few SMM developed for those countries (Wood and Kenley 1997; N.I.Q.S. 2003; Mills *et al.* 2006). Though, the British SMM was approved by the Ghana government conditions of contract, and most contract conditions in Ghana, the respondents are of the opinion that the contract conditions are imposing the SMM on the contractors. The SMM and its necessary amendments are usually introduced in tender documents by Quantity Surveyors and the contractors are expected to either accept or leave it. The adoption of SMM5 is therefore not an agreement but a unilateral decision by the QS professional body. Though this appears to be a recipe for disputes (with respect to measurement approach), it hardly occurs. The respondents explained this by indicating that most estimators, quantity surveyors and project managers in the Ghanaian construction industry also belong to the GhIS (the Quantity Surveyor's professional body that adopted the SMM). Further, trust developed through working with relations could also be a reason (Langford 2000).

### **Quantity Surveyors constantly consult the SMM**

70% of respondents confirmed the general conception that Quantity Surveyors are in constant touch with SMM. This was however found not to be true as 90% of the respondents use BQ from previous projects to prepare one for new projects rather than prepare them from scratch using an SMM. Consequently, 49% of respondents could not trace their office copies of SMM immediately (though younger Quantity Surveyors were able to retrieve their student copies of SMM7). It was explained that experience has enabled the Quantity Surveyors to carryout their measurement duties in accordance with the SMM and the abridged rules without constantly consulting it. The younger Quantity Surveyors were able to retrieve their copies because they are less experienced, hence consult the SMM more frequently.

### **Both practice and academia use the same SMM**

This assumption was also found to be false during the survey as it was discovered that while SMM5 is mostly and still used in practice, the academia began using SMM7 for more than a decade ago. Though students study the principles of measurement, which is mostly the same irrespective of the SMM used; Quantity surveyors who use SMM5 and other methods of measurement indicated that, they re-train new graduates. This enables them to be proficient in the use of SMM5 before they are fully absorbed into the industry. The differences between SMM5 and SMM7 are with the structure of the SMM (i.e. from prose form to tabular form), the use of new classification system (i.e. CAWS or UNICLASS instead of the traditional work sections), and the industrialized building construction approach rather than the traditional labour intensive approach.

## **IMPLICATIONS FOR INFORMATION TECHNOLOGY**

The above discussions suggest a generally flexible and user (regional user) defined method of measurement for the construction industry. The ability of various regional factors such as culture, existing standards, and technology levels to influence the method of measurement of construction works implies software developers must adopt similar flexible approach in order to satisfy clients universally. Building information models (BIM), a recent development in information technology is required to provide 'one-stop' information on all aspects of a project including cost models such as BQ. BIM is defined as a set of interacting policies, processes and technologies producing a methodology to manage the essential building design and project data in digital format through out the building's life-cycle of the project (Pentilä 2006). It may require in-built SMM in order to carry out its cost modelling function such as measurement and compilation of quantities information for a project. Provision must therefore be made for regional customization of the in-built SMM to cater for the factors discussed which may affect the method of measurement. The assumptions about the application of SMM are consequently worthy of note by software developers who work on building information models.

## **CONCLUSION**

The discovery of this survey is relevant to international construction firms that intend to carry out business in Ghana and other developing countries. It is necessary for these firms to understand the cultural technological and other differences that exist between these countries and the developed countries. The differences and the misleading assumptions identified are signals to the international construction community to be cautious, whenever they encounter an SMM or similar document, which is adopted in a country other than its purported country. A complete knowledge of how the SMM is adopted prevents misunderstanding, multiple measurement and payment for work. The finding of this paper gives an insight into some issues, international firms should consider while recovering cost and value for projects in developing countries. Further research is recommended to improve the role of SMM in BIM cost modelling.

## **REFERENCES**

- Earley, M and Gould, H F (2004) Current topic: standard method of measurement. Available at: [www.fics.org](http://www.fics.org)
- Ferry, D J, Brandon, P S and Ferry, J D (1999) *Cost planning of building*. Oxford: Blackwell Science.
- Ghana Institution of Surveyors (2006a) Quantity surveying firms. *Newsletter*, 4, 12.

- Ghana Institution of Surveyors (2006b) Standard Method of Measurement (SMM7). *Newsletter*, **4**, 12.
- Kazi, A S and Charoenngam, C (1999) A cost analysis information system for developing and underdeveloped countries. *Cost Engineering*, **41**, 29 -36.
- Kodikara, G W, Thorpe, A and McCaffer, R (1993) The use of bill of quantities in the building contractor organizations. *Construction Management and Economics*, **11**, 261 - 69.
- Langford, D (2000) The influence of culture on internationalisation of construction. *2<sup>nd</sup> International conference on Construction*. University of Strathclyde.
- Law, C (1994) Building contractor estimating: British style. *Cost Engineering*, **36**, 23-8.
- Mills, A, Lawther, P and Jones, D (2006) Standard Methods of Measurement – A comparative study of national and regional publications. Australian Institute of Quantity Surveyors and Royal Institution Chartered Surveyors.
- N.I.Q.S. (2003) *Building and engineering standard method of measurement*. 2ed. Lagos: Nigerian Institute of Quantity Surveyors.
- Nani, G and Adjei-Kumi, T (2007) The challenges of quantifying construction works for project control in Ghana. CIB World Building Congress. Convention Centre, Cape Town.
- Odusami, K T and Olusanya, O O (2000) Client's contribution to delays on building projects. *The Quantity Surveyor*, **30**, 30-3.
- Ofori, G (2000) Challenges of construction industries in developing countries: lessons from various countries. *The 2nd international conference of the CIB TG29: construction in developing countries*. 11 – 17 November, Gaborone, Botswana.
- Ogunsemi, D R and Jagboro, G O (2006) Time-cost model for building projects in Nigeria. *Construction Management and Economics*, **24**, 253-58.
- Pentilä, H (2006) Describing the changes in architectural information technology to understand design complexity and free-form architectural expression. *ITCon*, **11**, 395 - 407.
- RICS Construction Faculty (2003) International survey 2003: Standard Methods of Measurement in current use. Royal Institution of Chartered Surveyors.
- Shakantu, W, Zulu, S and Matipa, W M (2002) Global drivers of change: their implications for the Zambian construction industry. *Proceedings of the 1<sup>st</sup> International Conference of CIB W107: Creating a Sustainable Construction Industry in Developing Countries*. 11 – 13 November, South Africa.
- Singh, G and Banjoko, O O (1990) The development of a rational Bill of Quantities. *Construction Management and Economics*, **8**, 31.
- Wood, B M and Kenley, R (1997) The standard method of measurement and the abridged bills of quantities: a review of the Australian context T3 - N1 - ANALYTICAL N1. *Australian Institute of Building papers*, **8**, 77.





# THE DIFFERENCE BETWEEN THE BQ AMOUNTS AND THE REMEASURED AMOUNTS ON REMEASUREMENT CONTRACTS IN RENOVATION WORKS OF HOUSING COMPLEXES IN JAPAN

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In renovation work contracts for housing complexes in Japan, a lump-sum fixed price contract is generally adopted, which is not the risk the construction cost change after it contracts. In renovation works, the amount of increase and decrease is generated. It is improper to adopt the lump-sum fixed-price contract; the remeasurement contract is preferable. The aspect of the main analysis is the actual condition of the cost change according to the increase and decrease of the BQ and additional/deleted works, and the attribution analysis. This study analysed progressive consultants who employ remeasurement contracts for renovations of housing complexes to find out the difference between the provisional quantities written in contracts BQ and the remeasured actual quantities written in final documents after the completion of renovation works through 27 renovation projects. It has been understood that the difference of BQ amounts for each project is large, and that the amount of the increase and decrease by additional/deleted works is larger than amount of increase and decrease of BQ. It is necessary to examine the validity of the contingency based on the experience.

Keywords: remeasurement contract, renovation work, housing complex, bills of quantities.

## BACKGROUND OF THIS STUDY

When housing complexes are renovated, renovation contracts are made by the owners associations (ordering party) according to the resolution of their general meetings. Therefore, they tend to prefer lump-sum fixed-price contracts, which carry no risk of price changes after contracts have been agreed. However, the details of renovation work are rather uncertain because repair-work specifications and the assessment of work quantities depend on the accuracy of preliminary inspections. Owners associations are usually unwilling to spend much money on preliminary inspections, and there are many renovation consultants who plan repair budgets based on rough estimation per housing unit (or per floor area). Despite uncertain factors in details of renovation work, lump-sum fixed-price contracts are employed in most renovation projects.

If there are uncertain factors in renovation plans, the risks of lump-sum fixed-price contracts are to be borne by contractors. If extra places were found to be in need of repair in the course of renovation work, they would have no choice but to modify

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renovation procedures since prices cannot be increased or decreased. This situation can also cause quality problems.

Some recent standard specifications prepared by expert consultants for renovation work on housing complexes have included repair-work items that are to go through quantity remeasurements at later stages. For example, looking at “Practical Specifications for Renovation Work on Housing Complexes and Explanations”, produced under the supervision of the Japan Institute of Architects (JIA 1998), certain items that should undergo quantity remeasurements are listed in particular specifications. Thus, specifications clearly indicate that it is impossible or very difficult to determine the exact quantities of certain items at the time of agreeing a contract. This is because when drawing up estimation breakdown sheets, most consultants (designers) grasp damage conditions only through visual inspections without scaffolding or through hammering tests on limited areas. The quantities of rusted reinforced steel, cracks, and loose mortar and tiles are assessed based on the contractor’s experience and judgment.

## **OBJECTIVES AND METHODS OF THE STUDY**

### **Objectives and methods of the study**

Although lump-sum fixed-price contracts are commonly used in renovation projects, some progressive consultants are actively introducing remeasurement contracts and requesting the adjustment according to actual figures or contingency in order to prepare for uncertainties in renovation work.

This study analysed four consultants (architect offices) that employ remeasurement contracts for renovations of housing complexes to find out the following: (1) the characteristics of renovation contracts containing remeasurement items; (2) budget planning and contingency of renovation works; and (3) the difference between the provisional quantities written in contracts BQ and the remeasured actual quantities written in final documents after the completion of renovation works.

For this study, contractual renovation priced BQ and remeasured actual renovation priced BQ were collected from 27 renovation projects that were designed and supervised by the four consultants and completed in 2000–2004.

The aspect of the main analysis is the actual condition of the cost change according to the increase and decrease of the bills of quantities and additional works and the deleted works, and the attribution analysis.

### **Profiles of surveyed consultants**

The following four consultants were surveyed.

#### *Consultant A*

Consultant A engages in renovation on housing complexes mainly in the Kansai region. Its representative also heads a non-profit organization corporation, the “Housing Complex Improvements Center”. Basically, this consultant does not spend much time and effort on damage inspections. It considers that spending money on preliminary inspection is ineffective because no matter how rigid inspections are, quantity revisions are inevitable for remeasurement items. When asked for estimates, consultant A provides provisional (projected) quantities based on previous experience and results. Notably, its written contracts come with itemized statements that record

any questions and answers. The minutes of owners-association meetings are generally attached to renovation contracts; some minutes specify the amount of contingency.

#### *Consultant B*

This consultant specializes in renovation work and operates mostly in the Tokyo metropolitan area. It is a member of Renewal Technology Development Committee, of which the chairperson is the representative of Consultant B. When undertaking renovation of housing complexes, it conducts extensive damage inspections before drawing up estimations. Its estimation sheets describe provisional quantities for remeasurement items and reference quantities. If reference quantities are to be altered, contractors must explain the reasons for this; thus, reference quantities should be quite close to committed quantities.

#### *Consultant C*

This consultant operates in the Tokyo metropolitan area and also conducts design and consulting for new houses. Its representative is a principle member of JIA's condominium committee and an editorial supervisor of JIA's "Practical Specifications..." document (1998), which was issued by the committee. This consultant also inspects buildings briefly for the same reason given by consultant A. It firstly sets per-housing-unit costs based on its experience, and then calculates total renovation costs by taking into account the specifications of renovation works. The composition of estimation sheets is similar to that of consultant A. Consultant C is planning to develop a database of estimations and others.

#### *Consultant D*

This consultant operates mainly in the Tokyo metropolitan area, focusing on design and consultation for renovation on housing complexes. Its representative is also a principle member of JIA's condominium committee and an editorial supervisor the afore-mentioned report, along with the representative of consultant C. This consultant does not spend much time and effort on damage inspections. It is a characteristic of this consultant to conduct a second round of renovations for existing condominium buildings. This consultant is active in the improvements of building structures, including the introduction of the external thermal insulation method.

All these four consultants adopt remeasurement contracts, but they use different terms in remeasurements (e.g.: provisional quantities, projected quantities, specified quantities, predicted quantities, contract quantities, etc.) They also differ in the way in which they explain the necessity of remeasurement-related contingency to owners associations and in the methods of instructing contractors about such funds. Thus, each consultant is independently conducting business based on his own experience.

## **THE ESTABLISHMENT OF REMEASUREMENT ITEMS**

The "Practical Specifications..." report, issued by the condominium committee of JIA (1998), describes: "1) Remeasurement items, listed in particular specifications, should be adjusted through the calculation of difference between contractual quantities and actual quantities based upon unit price; and 2) The tentative quantities for remeasurement items as a basis for contracts are referred to in particular specifications." In other words, the existence of remeasurement items is mentioned in "general common items (general conditions)" of specifications, and specific items are stated in particular specifications. Consultant A provides "projected quantities" for remeasurement items in itemized lists, which are attached to renovation contracts. In the case of consultant B, the presence of remeasurement items is mentioned in its