



The Needs for Professionalism and Competency in the Construction Industry

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ABSTRACT

The quantity surveyors, in the present day construction industry, analyze cost components of a construction project in a scientific way and applies the results of the analysis to a variety of financial and economic problems confronting the developer and the designer. However, competence, in any sphere of work, can be a difficult concept to pin down, especially, when it relates to professional occupations where such roles are complex and involved diverse professionals in the built environment sector. This paper aims to investigate the competencies of quantity surveyors in the discharge of its professional duties by evaluating the effects of professional competency on quantity surveying practices in Nigeria. The study population comprised professional quantity surveyors who are in the private construction/consulting firms in Lagos State, Nigeria. Data were obtained to investigate the professional views on the quantity surveying profession, the roles of quantity surveyors in the construction industry and the need for professionalism and competencies in the surveying industry. Questionnaires were administered to randomly select 200 practicing quantity surveyors in Lagos state. Findings revealed that the major role of quantity surveyors in the construction industry is the preparation of the bill of quantity as it ranked 1st with RII value of 1.00; it was also discovered that quantity surveyors were in agreement with client service delivery as the first ethical standard that construction professionals should consider when performing their professional obligations in order to avoid project failure and over-cost. It is therefore recommended that the professional bodies and the academia should organize proper and adequate service trainings, workshops and seminars which will enhance the possibility of acquiring more skills and experience so as to improve competence in the discharge of quantity surveyors professional duties.

1. Introduction

Quantity surveyors are one of the key professionals in the construction industry, as they are involved in cost planning, cost management, project procurement, contract administration, feasibility studies and asset financial management. Clients such as developers, government bodies and agencies, building proprietors, architects and contractors requires the services of the quantity surveying profession, especially, on cost estimation. The quantity surveyors, in the present day construction industry, through skills and ability, analyze cost components of a construction project in a scientific way and apply the results of the analysis to a variety of financial and economic problems confronting the developer and the designer (Ilias and Mohd 2010).

Badu and Amoah (2004) held that the changing roles of the quantity surveyors had been redefined by the quality of education received. The wide array of the quantity surveyors' responsibilities requires that they are educated, trained, and highly skilled in diverse subjects. Lenard (2000) argued that the changing nature of the construction and development industry as regards the adoption of innovative technological processes and development, emergence of highly focused professionals and the full range of advanced technologies necessitate a

much stronger emphasis on job competencies than ever before. However, competence, in any sphere of work, can be a difficult concept to pin down especially when it relates to professional occupations where such roles can be complex, and the knowledge and skills involves many and varied professionals (Cheetham and Chivers, 1996).

According to Ilias and Mohammed (2010) quantity surveyors are construction economists who fulfill various comprehensive duties to support cost-effective construction and property development projects. The core competencies of quantity surveyors include determining project budgets, measuring project quantities, preparing contract documentation such as bills of quantities and cost control documents, administering contracts, and preparing final accounts. Despite being recognized as a professional discipline distinct from architecture and civil engineering since 1836, quantity surveyors are not immune to the threats and changes within the operating environment. While some parties in the construction industry have been critical about the quality of works and services rendered by quantity surveyors, some question the importance of appointing quantity surveyors as project consultants. Nonetheless, Nkado (1999) gives an overview of certain skills in quantity surveying profession

which are pertinent to meeting clients' demands. Poon (2004) notes that some quantity surveying firms do not seem to understand how to handle clients finance and are culpable of certain actions that could severely damage the clients' interests which in turn affect the integrity and competencies of quantity surveyors. Pearl (2005) attributed this ugly phenomenon that has robbed quantity surveying profession to the much expected pride of place among professionalism in the industry.

This paper aims to investigate the competencies of quantity surveyors in the process of discharging its professional duties by evaluating the effects of professional competency on quantity surveying practices in Nigeria. To achieve this, the followings questions are investigated (1) What are the roles and functions of quantity surveyor in Nigeria? (2) What are the areas of competences required of a quantity surveyor in the construction industry? (3) What are the effects of quantity surveyor's competence on the performance of quantity surveying firms?

2. Concept of Professional Competency

Stewart and Hamlin (1992) defined competency as something which a person who works in a given occupational area should be able to do. Holmes and Joyce (1993) also view competency as an action, behavior or outcome which a person should be able to demonstrate, or the ability to transfer skills and knowledge to new situations within the occupational area. Meyer and Semark (1996) described competence as the demonstration of an integration of knowledge, skill, personal attributes and value orientation. Wisner (1994) insisted that competencies provide a common cultural thread, a language for success, a framework for thinking about excellence and a way of communicating the future. Baker et al., (1997) observed that companies were starting to look into workers' competencies when they realized that providing a framework which brings greater clarity to the idea of competence in business in general, and operations and technology management in particular, would bring competitive advantage to their organizations.

Rankin (2000) reported that a significant number of companies in the UK are using competencies to improve individual and corporate performance. Roggema-van Heusden (2004) attempted to define competence from professional personnel point of view. They held that, competence is the ability to perform well in a professional situation that involves the accomplishment of a certain task or the dealing with a problem, in a manner that can be observed and be judged by others. That is to say: a competent professional is capable of applying the necessary expertise in confluence with effective behaviour. Competent quantity surveyors must have a range of skills, knowledge and understanding that can be applied in a range of contexts and organizations (Hassall et al., 1996). Yet pressing issues which confront the quantity surveying profession today include increasing the relevance and level of awareness of the profession's services in the built environment and increasing the range of business opportunities for continued growth.

2.1 The Roles of Quantity Surveyors

A qualified quantity surveyor can gain employment in quantity surveying firms, construction companies, or with private property developers. Large organizations (public or private) that deal with a significant amount of building or construction procurement as part of their activities normally employ quantity surveyors among other construction professionals to become their project managers. Most quantity surveyors who work in consulting firms are retained by the construction clients to ensure that what is eventually built is in line with the client expectation

and within budget (National Commercial Services UK, 2004). The responsibilities of the client's quantity surveyor include the preparation of Bills of Quantities and the giving of advice on what a project would cost. He also does cost planning during the design stage of a project, examine tenders, price quantities and report his findings. He also negotiates rates with contractors on negotiated contracts, prepares valuation on ongoing construction work.

Badu and Amoah (2004) noted that the distinctive skill of a quantity surveyor lies in his ability to analyse a project applying his skills and knowledge to the competence areas like progress payment and making recommendations as to payments to be made to the contractor including advising on the financial aspects of variations. The contractor's quantity surveyor on the other hand engages in matters relating to costs and estimates from the perspective of 'entrepreneurial' contractor, and agrees on measurements with the client's contractor for any specific project.

According to John Austen Associates (2004) the principal services that could be offered by any quantity surveying firm are: (1) Preliminary cost advice and feasibility estimates (2) Cost planning (3) Advising on contractual methods (4) Advising on selection of other consultants (5) Advising on contractor selection (6) Preparing tender documents (7) Obtaining or negotiating tenders (8) Reporting on tenders received or package deal/design and build offers (9) Evaluating construction work (10) Preparing and agreeing accounts for/with contractors (11) Preparing expenditure statements for tax accounting purposes (12) Periodic financial reporting (13) Technical auditing (14) Assessing replacement value for insurance (15) Project management related services (16) Giving expert evidence in arbitrations, adjudications and legal disputes, and (17) Preparing/defending against construction contract claims. Thus, the quantity surveying professionals must possess these skills and competencies to deliver their jobs successfully.

2.2 Quantity Surveying Professional Competencies

Royal Institution of Chartered Surveyors, RICS (1971) and Male (1990) opined that the competencies of the quantity surveyor are usually associated with the measurement and valuation that provides the basis for the proper cost management of the construction project in the context of forecasting, analyzing, planning, controlling and accounting. Hassall et al. (1996) noted that the process of professionalization demands that a profession should take responsibility for a prescribed body of knowledge by first defining the substantive field of knowledge that the professional should command and secondly the process of applying that knowledge. Thus, Leveson (1996) concludes that the area of quantity surveying competencies lies in the financial and contractual control of the building project and therefore the need for quantity surveyors to pay attention to developing soft skills.

Willis et al. (1994) described the body of knowledge of the quantity surveyor as one which incorporate the services of: preliminary cost advice; cost planning including investment appraisal, life-cycle costing and value analysis; procurement and tendering procedures; contract documentation; evaluation of tenders; cash-flow forecasting, financial reporting and interim payments; final accounting and the settlement of contractual disputes; cost advice during use by the client; project management; and specialist services. RICS (1998) therefore sets out the requirements and competencies for the assessment of professional competence by listing the competencies required of quantity surveyors in three categories which are: the basic competencies, the core competencies and the optional competencies. The basic competencies

under the RICS structure are common to all construction professions such as land surveying, building surveying, etc. the core competencies are those uniquely required of quantity surveyors while the optional competencies reflect areas of specialization or future career diversification. Moreover, Akosile, Ogunsemi and Owoeye (2007) identified and classified areas of competencies required of quantity surveyors into three categories viz. basic, core and optional. In 1998, The Royal Institution for Chartered Surveyors (RICS) put forward a model of competencies for quantity surveyors. The model was presented in three categories of mandatory/basic, core and optional competencies.

2.2.1 Mandatory Competencies

The basic competencies are widespread to all construction profession under the RICS structure and they are the personal and interpersonal skills, professional practice and business competencies common to all pathways and compulsory for all candidates. There are basic competencies required for all positions. A basic competency is defined as a knowledge, skill, or behavior essential for one to function as an effective member of the University of Michigan. The basic competencies include: (1) **Ethics and Integrity:** Consistently demonstrates the organizations values through behaviors; (2) **Customer Service:** Consistently meets the organization's expectations for customer service, striving constantly to achieve them; (3) **Communication:** Effectively communicates verbally and in writing; (4) **Problem Solving:** Develops effective approaches, addresses needs, and solves problems; (5) **Flexibility:** Demonstrates flexibility in one's job roles, and manages change in ways that result in productive performance; (6) **Technology:** Uses available equipment and technology safely, efficiently and effectively; (7) **Safety:** Complies with safety instructions, observes safe work practices, and provides input on safety issues; (8) **Self-Management:** Maximizes own time and talents to achieve organizational goals; (9) **Seizes Opportunities:** seeks opportunities to innovate and continually improve; (10) **Change Resilience:** develops effective approaches for managing self through organizational change; (11) **Teamwork:** Works effectively with team/ work group or those outside the formal line of authority to accomplish organizational goals; and (12) **Cost effectiveness:** Prudently uses resources based on organizational priorities.

2.2.2 Core Competencies

The core competencies are exclusively vital to the profession of quantity surveying and it entails construction contract practice, construction technology and environmental services, economics of construction and procurement and financial management. In other words, core competencies are those capabilities that are critical to a business achieving competitive advantage. The starting point for analyzing core competencies is recognizing that competition between businesses is as much a race for competence mastery as it is for market position and market power. The main idea about Core Competencies was developed by C K Prahalad and G Hamel through a series of articles in the Harvard Business Review followed by a best-selling book – “Competing for the Future”. The central idea was that over time companies may develop key areas of expertise which are distinctive to that company and critical to the company's long term growth. Prahalad and Hamel (1990) asserted that the managers will be judged on their ability to identify, cultivate, and exploit the core competencies that make growth possible. They will have to rethink the concept of the corporation itself. These areas of expertise may be in any area but are most likely to develop in the critical, central areas of the company where the most value is added to its products. For example, for a manufacturer of electronic equipment, key areas of expertise could be in the design of the electronic components and circuits. For a ceramics manufacturer, they could be the routines and processes at the heart of the production process. For a software company the key skills may be in the overall simplicity and utility of the program for users or alternatively in the high quality of software code writing they have achieved. Core Competencies are not seen as being fixed. Core Competencies should change in response to changes in the company's environment. They are flexible and evolve over time. As a business evolves and adapts to new circumstances and opportunities, so its Core Competencies will have to adapt and change.

2.2.3 Optional Competencies

A set of competencies selected by the candidate from a list defined for the particular pathway. In most cases there is an element of choice. These are mostly technical competencies, but certain mandatory competencies also appear on the optional competency list and candidates are permitted to select one of these at a higher level. The

Table 1: Categories of Competencies of Quantity Surveyors

| Categories of Professional Competencies | | |
|--|--|---|
| Basic | Core | Optional |
| Personal and Interpersonal skills | Construction Contract Practice | Arbitration and Other Dispute Resolution Procedures |
| Business skills | Construction Technology and Environmental Services | Development Appraisal |
| Data, Information and Information Technology | Economics of Construction | Facilities Management |
| Professional Practice | Procurement and Financial Management | |
| Law | | Insurance |
| Measurement | | Project Management |
| Mapping | | Property Investment Funding |
| | | Research Methodologies and Techniques |
| | | Taxation Allowances and Grants |

Source: RICS (1998)

optional competencies reveal areas of specialty or future career diversification and these include arbitration and other dispute resolution procedures, development appraisal, facilities management, insolvency, insurance, project management, property investment funding, research methodology and techniques, taxation allowance and grants and valuation. Table 1 shows the three categories of competencies required of quantity surveyors as identified by RICS (1998).

The Australian Institute of Quantity Surveyors (AIQS) attempt to define and develop a model of competencies for the quantity surveyors (AIQS, 1998). The institute proposed 31 competency standards that need to be adhered to by the professional body in producing competent quantity surveyors. Apart from the competency standards, the Australian Institute of Quantity Surveyors also recommended 13 basic characteristics of abilities that lead to a competent quantity surveyor. These basic abilities in turn, form the platform from which a competent quantity surveyor can develop and are an integral part of the 31 units of competency standards. The basic abilities include (1) Quantification/measurement – the ability to quantify and enumerate (2) Analysis – the ability to observe, assess, identify problems and find innovative solutions (3) Appraisal/evaluation – the ability to assess value (4) Communication – the ability to impart knowledge, ideas and concepts through oral, written and visual means (5) Interpersonal skills – the ability to effectively work with others and to be part of a team (6) Leadership – the ability to lead and motivate (7) Self-development – the ability to set goals, display enthusiasm, self-motivate and undertake research (8) Management – the ability to organize, monitor, control and plan the effective use of resources (9) Documentation – the ability to prepare written information in a format which clearly conveys meaning (10) Synthesis – the ability to combine fact or ideas into a complex whole (11) Computer literacy – the ability to understand and apply basic computer skills (12) Construction technology – the ability to understand basic construction technology (12) Construction law and regulation – the basic knowledge of national laws and regulations related to construction.

In 1999, The Pacific Association of Quantity Surveyors (PAQS) analyzed a full range of competencies required by a modern quantity surveyor. In principle they agreed to accept 10 competency standards for the quantity surveyors. Those are: strategic planning, budgetary process, cost estimating, cost planning, procurement advice, documentation, tendering process, construction account management, construction change management, feasibility studies. The most recent competency of a quantity surveyor which is beginning to gain popularity among professionals in the construction profession is the use of Building Information Modeling (BIM). It is currently in use by a number of engineers and architects during practice and also has the potential to improve the Quantity Surveyor profession. BIM is the process of creating an information data base for a project in which the life cycle information is expressed in an inter-operable manner to create, estimate, illustrate and construct a project (Schwegler, 2001). Succar (2008) claims that BIM is presenting an organized set of data to construct, analyze, manage, maintain and calculate the construction cost of a building project. Lee et al., (2005) sees BIM as a three or four dimensional drafting application that generates data intensive plans.

According to Aouard et al., (2007) BIM has the potential to automate measurement and facilitate the preparation of accurate estimates. According to the study there have been successful attempt

to produce Bills of Quantity automatically with the use of Industry Foundation Class (IFC) data by the Cooperative Research Centre for construction Innovation. Lee et al., (2003) observe that the hallmark of BIM allow contractor to receive design document which have specified materials and accurate quantities in electronic format. According to Thomas (2010), BIM is adopted in the quantity surveying profession for the following reasons (1) The designers drawing are not sufficient for construction which was agreed by 92% of client (2) Project that did not meet the original budget were above 30% (3) 38% of carbon emission are from buildings and not cars (4) 10% of the cost of a project is due to change other (5) Material waste in the construction site is estimated to about 37%.

Therefore BIM can help in improving the overall reliability of a project cost (Eastman et al., 2008). Azhar and Brown (2009) states that BIM is highly significant for the future development of the construction industry. BIM can also help to improve project and improve cooperation among the project team which would lead to reduce cost, proper time management and improve profit (Azhar et al., 2010). It is therefore necessary for quantity surveyors to get used to BIM to enhance the quality of project delivery.

3. Methodology

The study population comprised the quantity surveyors who are professionals in the private organization in the Nigerian construction industry. Data obtained involved assessing professional views on the profession, examining the roles of quantity surveyors in the construction industry and assessing the need for professionalism and competencies in the industry. Questionnaires were administered to the practicing quantity surveyors in Lagos state. The respondents were randomly selected among the various firms in Lagos state. Two hundred (200) questionnaires were distributed with the aim of eliciting response from the private organizations toward determining the need for professionalism in carrying out construction project.

4. Results and Discussion

The various roles of quantity surveyors in the construction industry were identified in Table 2 and ranked using its Relative Importance Index (RII). The roles of quantity surveyors in the construction industry revealed that preparation of the bill of quantity ranked 1st with RII value of 1.00; cost estimation relating to construction materials, time and labor and cost advise ranked 2nd with RII value of 0.94; work in progress variation and materials on site for interim payment ranked 3rd with RII value of 0.87; materials schedule for building project ranked 4th with RII value of 0.79, while cash flow payment ranked 5th with RII value of 0.76. The findings from the table revealed that all the roles are significant with the least role having 76 (0.76) percent significance.

Table 3 shows the mean item score (MIS) for the level of compliance of ethical practices as perceived and ranked by the quantity surveyors. From the result of the analysis, generally all the fifteen (15) ethical practices identified by the study were highly ranked with MIS ranged 3.29 > 3.0 above averages. Three ethical standards which are client's service delivery, educational training and professional qualification and standards of practice respectively indicating client service delivery as the most significant ethical standard were ranked 1st, 2nd, and 3rd by the quantity surveyors. However, we found that public welfare and fair compensation factors are two least importance aspects that the quantity surveyors professionals must have. The respondents considered that these two things are loosely correlated with the profession of quantity

Table 2: Assessment of the roles of Quantity Surveyors in the construction industry

| Roles | Strongly Agree | Agree | Neither Agree Nor Disagree | Disagree | Strongly Disagree | Relative Importance Index | Rank |
|---|----------------|-------|----------------------------|----------|-------------------|---------------------------|------|
| Preparing bill of quantity | 195 | 0 | 0 | 5 | 0 | 1.00 | 1 |
| Materials schedule for building project | 5 | 30 | 15 | 75 | 75 | 0.79 | 4 |
| Cost estimation relating to construction materials, time and labor and cost | 0 | 5 | 0 | 45 | 150 | 0.94 | 2 |
| Work in progress variation and materials on site for interim payment | 0 | 5 | 30 | 60 | 105 | 0.87 | 3 |
| Cash flow payment | 15 | 45 | 20 | 50 | 70 | 0.76 | 5 |

surveyors. One surprise found in the survey was that the sustainability aspect was not considered as important factor in quantity surveying profession. The case will be different if the survey were conducted in more advance country, where the sustainability becomes a very important aspect in construction industry.

The quantity surveyors were in agreement to client service delivery as the first ethical standard that construction professionals should consider when performing their professional obligations. Quantity surveyors in some cases can also be contractors or consultant quantity surveyor, either working for an organization or for the contractor as they are saddled with the responsibilities of preparing the cost estimate of any proposed project, preparation of interim valuation and physical measurement of works among others to enable payment to the contractor among others. They also monitor the clients' resources to ensure services are delivered with the best standards and at minimum cost which is the major service delivered by quantity surveyors.

Educational training and professional qualification is also of great importance, because this is where professionals gain academic training, technical competence and skills about a particular profession. It is therefore important for professionals to have sound educational background to be able to cope with the projects challenges. This finding conforms to Chan and Chan (2002) that;

professionals need to be placed in appropriate educational framework to ensure their continuous relevance. Quantity surveyors should only accept to offer services for which they are qualified by education, training and professional experience.

Quantity surveyors deals basically with financial management of the contracts and this is the area where the integrity of most professionals are put into the mud especially if there is a conflict between personal and professional values. The moral standing and upbringing of each individual professional appears on how they protect their own integrity in dealing with clients rather than being mindful of their personal gain. The findings corroborated Cardammon (2011) that established that professionals are linked with notion of services they provide, hence the need to focus more on personal professional development so as to provide services that are of high quality for all that needed their services.

The characteristics/knowledge and abilities required of a competent quantity surveyor are ranked in Table 4 according to its significant to quantity surveying profession. The table clearly indicated the areas of competence characteristics that are significant to the performance of quantity surveying firms in Nigeria. The area of quantification and measurement is been selected as the most important/significant competence required in the performance quantity surveying firms in Nigeria, with a mean score of 4.66, while synthesis is considered less

Table 3: Ethical standard and competence requirements of a quantity surveyor

| Ethical Standard and Competence | Mean Value | Rank |
|--|------------|------|
| Standards of practice | 3.17 | 3 |
| Education and professional qualification | 3.24 | 2 |
| Fair competition | 3.10 | 8 |
| Confidentiality | 3.14 | 6 |
| Integrity | 3.15 | 4 |
| Public welfare | 2.98 | 14 |
| Conflict of interest | 3.01 | 11 |
| Safety | 3.04 | 9 |
| Environmental friendliness | 3.02 | 10 |
| Maintenance culture | 3.01 | 11 |
| Client's service delivery | 3.29 | 1 |
| Cost effectiveness | 3.12 | 7 |
| Fair compensation | 2.96 | 15 |
| Professional development | 3.15 | 4 |
| Sustainability | 3.00 | 13 |

NOTE: The scale used: (1) Highly unimportant (2) unimportant (3) either unimportant or important (4) important (5) highly important.

Table 4: Characteristics/Knowledge/Abilities required of a competent quantity surveyor

| Characteristics | Mean Value | Ranking |
|--|------------|---------|
| Computer and Information Technology Literacy | 4.38 | 6 |
| Leadership | 3.87 | 11 |
| Construction Law and Regulation | 4.36 | 7 |
| Self-development | 4.03 | 10 |
| Appraisal/Evaluation | 4.34 | 8 |
| Management | 4.26 | 9 |
| Synthesis | 3.74 | 12 |
| Documentation | 4.56 | 2 |
| Communication | 4.53 | 3 |
| Construction Technology | 4.49 | 4 |
| Interpersonal Skills | 4.41 | 5 |
| Quantification/Measurement Analysis | 4.66 | 1 |

NOTE: The scale used: (1) Highly unimportant (2) unimportant (3) either unimportant or important (4) important (5) highly important.

important to the performance of quantity surveying firms in Nigeria, with a mean score of 3.47.

This indicated that the most important characteristics, abilities and knowledge for quantity surveyors to possess are quantification/measurement analysis, documentation, communication, construction technology and interpersonal skills which are also regarded as highly important for quantity surveyors to achieve an accepted level of competency. Other less important characteristics, abilities and knowledge to acquire are management, appraisal/evaluation, construction law and regulation, self-development, leadership, synthesis, and computer and information technology literacy.

5. Conclusion and Recommendations

Quantity Surveying is one profession that has attracted unprecedented ubiquitous demand in the construction industry in the recent times with increasing opportunity for service diversification and adaptive applicability. Client's satisfaction is also a function of professional ethics in relation to respecting public interest with respect to the willingness to serve the public, good sense of responsibility and practice technical competencies. Therefore, as challenges and ubiquitous demands expand with new entrants of quantity surveying practice professing with different goals, it may be difficult to hold them under serious legal obligation to uphold ethical practices. This is because they may not be recognized as members of professional bodies until they are duly examined and registered, which may not be a mandatory requisition to operate within their delimited scope. Also, except in exceptional cases, academic establishments are not so keen in monitoring the ethical conducts of their products out of school. Thus the need to reposition the profession and ensure strict monitoring to ensure that quacks and non-professionals do not bastardize the profession especially in the face of the growing economy.

Professionalism and competency is the bedrock and soul of the success in handling construction works. Thus, in achieving the need for professional competence in the industry, the following are hereby recommended:

Organizing proper and adequate service training, workshop and seminars by the professional bodies and the academia which will enhance the possibility of acquiring more skills and experience so as to improve competence in the discharge of duties. Frequent training and retraining is inevitable to season members of the profession with current trends in ethical development and uncertainties, not only to equip members' competencies but to give the much needed rebirth to nurture and protect the goal of the professionals serving the public interest to exist. Quantity surveyor should not settle down with just the roles and function of the profession but should also acquaint themselves with the roles and function of other professionals in the field which can also be referred to as self-development to improve on their competence.

Quantity Surveyors should ensure that they possess skills that are inclusive of personal qualities, core skills and process skills. The personal qualities should include independence, adaptability, initiative taking, willingness to learn and ability to reflect on what has and what has not been achieved. The core skills of a quantity Surveyor should include the ability to present clear information within a group, self-management, critical analysis and the ability to listen to others while computer literacy, commercial awareness, prioritizing, negotiating, acting morally and ethically, coping with ambiguity and complexity are the process skills required of a quantity Surveyor.

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