

**SKILLS DEFICIT IN THE  
QUANTITY SURVEYING  
INDUSTRY IN SOUTH AFRICA**

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# **Skills deficit in the Quantity Surveying Industry in South Africa**

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## **ABSTRACT**

The shortage of skilled quantity surveyors in South Africa can have a detrimental affect on the property sector, a sector that represents 70% of global wealth. It has been suggested that regardless of economic circumstances, quantity surveyors make a crucial contribution to the national and global economy (Wortmann, 2009). People of this profession have a profound influence on all levels of the property sector, on individuals and communities, small enterprises, global corporations and governments.

Quantity surveyors therefore need to make an important contribution towards withstanding financial storms with their unique skills and expertise (Wortmann, 2009).

The need for this study arose from the national and governmental demand for quantity surveyors and the concomitant need to identify factors contributing to the current alleged shortage.

A survey was conducted by means of questionnaires that confirmed the alleged shortage of affordable, competent quantity surveyors. A mixed-methods approach was used to conduct an empirical exploration which included quantitative (questionnaire) and qualitative (comments and interviews) research. Qualitative responses to the questionnaire supported the quantitative results, which were analysed by means of a thematic content analysis. A mixed-method approach constitutes both a method and methodology for conducting research that involves collecting, analysing, and integrating quantitative and qualitative research in a single study. The purpose of this form of research is that qualitative and quantitative research in combination provide a better understanding of a research problem or issue than either research approach alone; it allows for 'multiple angles' that provide different 'pictures'; and it is more naturalistic in the sense that 'its more intuitive' (by basically mirroring 'real life') (Creswell, 2008).

The results confirmed the hypothesis that there is indeed a shortage of quantity surveyors in South Africa.

Contributing elements were identified as:

- Educational causes such as mathematics training at school, lack of communication skills, business skills, level of standards of education, institutions

not being accredited and a lack of educational personnel, exacerbated by a lack of academic and financial support. Also, many students do not pass the council exams.

- Government legislation, BBEE interference, political interference, non-payment of professional fees by the government, and escalating crime rates are also problems in this regard.
- Generation gaps causing communication and team and mentoring problems were identified, as well as competencies not receiving the attention these require before candidates register.
- The marketing of the profession and study field to the private sector, the property sector, government and at school level should receive attention.
- The quantity surveying profession not enjoying the protection it needs and quantity surveyors are not aware of the available protection measures.

In the study it became clear that the quantity surveyor profession is under threat, as resources are limited and will become more limited as economic elements even out over the next few years.

The educational problems should be addressed in cohesion with all the stakeholders of the build environment which includes Government. However, it is suggested that there is no single, short-term solution to the skills shortage.

The previous government had a very successful *resource based strategic plan* until 1994, and it is recommended that this plan should be revisited and implemented to reduce the shortage of professional people as well as setting a higher standard for education.

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# CHAPTER 1

## INTRODUCTION

This study addresses the alleged shortage of skills in the quantity surveyors (QSs) industry and the contributing elements to the shortage, as well as the possible impact that the alleged shortage may have on the building industry and the economy at large. The purpose of this exploratory sequential design will be to develop a test. The first phase of the study will entail a quantitative exploration with a view to establish the perspective of the participants in the industry regarding the alleged shortage of quantity surveyors and contributing elements to this shortage by analysing the responses from questionnaires sent out to QSs. The second phase will be a follow-up on the quantitative phase with the purpose of establishing issues not addressed in the questionnaire and gathering supporting information concerning the quantitative research as well as the extent to which it influences the QSs industry and decisions of QSs. It might also reveal possible suggestions in addition to recommendations made regarding a number of the problems. In the qualitative phase, the comments will be collected from participants from the returned questionnaires. Hypotheses will be formulated after completion of the initial quantitative phase. (The reason for collecting quantitative data initially is that variables are not known, and there is little guiding theory.) The study could add value to the QS industry and recommendations implemented might alleviate shortages of skills and assist towards addressing backlogs and may also contribute towards significant savings on scarce resources.

Like any type of work, one of the most important factors in the construction industry is money. The job of the quantity surveyor is a crucial one as it is his or her task to manage the value for money and cost in building projects. These responsibilities involve tracking costs from initial calculations to the final figures, and a quantity surveyor must balance the task of minimising costs with maintaining high quality standards. A quantity surveyor may work for either a client or a contractor and may be based in an office or on site. The job title also often refers to a construction cost (Encyclopedia.com, 2009). There is a long-term skills shortage for this job. (Thompson, 2005; Verster, 2006; *Volksblad*, 2007; Department of Immigration, Skills

Shortages, 2009). As the time of this research, this is a subject often discussed in the industry and documented many times

The Department of Public Works are currently experiencing a shortage of experienced professionals in the quantity surveying field, and therefore most of the projects from the clients' departments have to be outsourced to private consulting firms through the supply chain management process (Department of Public Works, 2009).

In light of the "serious problems with housing service delivery" (Sexwale, 2009), other serious issues such as fraud, delays, corruption, absentee contractors, ghost houses, shoddy workmanship, and corruption need to be addressed. Some R300-million was being spent on rectifying houses in the North-West Province, and about R500-million was spent rectifying improperly built homes in KwaZulu-Natal. These are the issues that the QS addresses, and prevents or manages and resolves through arbitration (Sexwale, 2009).

For as long as civilisation existed the construction industry has been regarded as the vehicle for sustainable employment creation, alleviator of poverty, transferor of skills and reducer of skills deficit (Haupt, 2006). In South Africa the construction industry is also referred to as the building industry. The building industry is driven by project teams that usually consist of a client; architect; quantity surveyor; consulting, electrical, mechanical, civil, and structural engineers; a contractor and sub-contractors (Schoeman, 2008).

Each project team is coordinated by a project manager or principal agent who, in turn, is the architect, the quantity surveyor or an independent project manager. The quantity surveyor plays a critical and vital role in the economy as a financial advisor / manager and right hand of the client (Verster, 2008). Due to the ever-increasing scarcity of declining resources (Zuma, 2009), the function of the QS is becoming increasingly important as they link together and monitor resources (Verster, 2008) with a view to ensure the outcome of a project to be the best quality in the available time with the available funds as specified by the client.

The impact of the skills deficit on the governmental and private building industry may be severe, as noted by Eskom: 'It became clear that the main skills shortages of

Eskom are in the 'build' environment, and fall predominantly in experienced skills categories which include quantity surveyors' (Herman, 2009); and 'Global markets are scrambling for the same scarce skills'. (Herman, 2009).

This study was conducted from within a quantity surveyors' practice. We experienced the loss of competent QSs and even less competent QSs to head-hunters from recruitment agencies. Due to the upcoming 2010 Soccer World Cup and consequences thereof for various industries - particularly in the construction industry, projects have to be completed in a limited time, a significant decrease of competent, experienced and qualified quantity surveyors has been observed over the last few years and this decline seems to snowball drastically.

Over a period of 10 years we have also seen a substantial drop in the quality of building and construction standards. To become a quantity surveyor one needs to have a National Diploma in Quantity Surveying or a Bachelor of Construction (Economics or Quantity Surveying) (Stockman, 2009). In the past, the study period for quantity surveyors was 7 years towards obtaining a degree and gaining experience and writing the ASAQs examination before one could register as a QSs. Now, within 3 years one can obtain a degree which is also characterised by a lack of practical experience (Pearl, 2008).

## **1.1 PROBLEM STATEMENT**

A substantial gap between the supply and demand of affordable, capable, competent and qualified quantity surveyors in South Africa led to an alarming shortage of QSs in the QS industry that has had a detrimental effect on the building industry.

The current study can be said to be of national interest as the building industry needs solutions to aid in the process of stabilising the country's economy; it can be assumed that the building industry is an integral part of the country's economy. Due to the alleged shortfalls in the present regulatory framework the Minister of Public Works, MP. AT Didiza also hinted at the need for this type of study (Didiza, 2008).

Furthermore, the global and national demand for professional QSs is growing (Wortman, 2008).

## **1.2 OBJECTIVES OF THE STUDY**

The primary objective is to prove that hypothesis H1 accurate and correct.

### **HYPOTHESES**

H1 – There is a shortage of quantity surveyors in South Africa.

H2 – There is not a shortage of quantity surveyors in South Africa

### **SUB OBJECTIVES**

The sub-objectives are to explore and identify the contributing elements to the shortage of QSs.

Benchmarking strategic plans and solutions and real time implementation of legislation already in place will form a crucial part of the research.

Skills migration seems to be a global trend (Müller, 2008). Issues to be researched in this regard are processes, policy and legislation already in place in leading countries such as Scotland, England and others. South Africa may have to tap into larger practices with international connections to lead the way towards a strategic plan.

## **1.3 SCOPE OF THE STUDY**

Graduating young QSs in South Africa will constitute a main focus areas as recruitment agencies lure the cream of top academic graduates abroad with salaries up to ten times what South Africa can pay compared to countries such as Ireland, England, UAE, Australia, New Zealand, Canada, Morocco, the Middle East and Tanzania.

The poor level of education at some of South Africa's institutions may have to be investigated. This also leads to the appointment of QSs from other African countries.

Global research will have to be incorporated to establish possible solutions that other countries have engaged with a view to solve their skills deficit other than recruiting South African talent.

## **1.4 RESEARCH METHODOLOGY**

A number of issues are pertinent here:

### **RESEARCH DESIGN**

#### **Research approach**

A mixed-methods approach was used to conduct an empirical exploration which included quantitative (a questionnaire) and qualitative (comments and interviews) sections. It has emerged that the results of the questionnaire supported the quantitative results (Creswell, 2008) which was analysed by means of a thematic content analysis. The reason for using the mixed method approach is the value this approach adds to the empirical study (Creswell, 2008).

A mixed-method approach is both a method and methodology for conducting research that involves collecting, analysing, and integrating quantitative and qualitative research in a single study. The purpose of this form of research is that both qualitative and quantitative research, in combination, tend to provide a more comprehensive understanding of a research problem or issue than either research approach alone; it allows for 'multiple angles' that provide different 'pictures'; and it is more naturalistic in the sense that 'its more intuitive' (by basically mirroring 'real life') (Creswell, 2008).

#### **Research method**

#### **Research setting**

The research was conducted from a private QS practice where the lack of competent Qs play a very significant role in the planning, operating, survival and management of a well-established practice operating for nearly 30 years.

#### **Research participants**

#### **Population**

The population consists of professional quantity surveyors from Gauteng, Limpopo, Polokwane, the North-West, the Free State, Kwazulu-Natal, the Northern Cape, Western Cape, and Eastern Cape Provinces in South Africa. These surveyors were

randomly selected from e-mail lists obtained from the ASAQS website. A cluster sample was taken from each province of the population. Gauteng Province offered a larger proportion of names but the decision was made to take 15 names from each province in order to achieve a broad perspective.

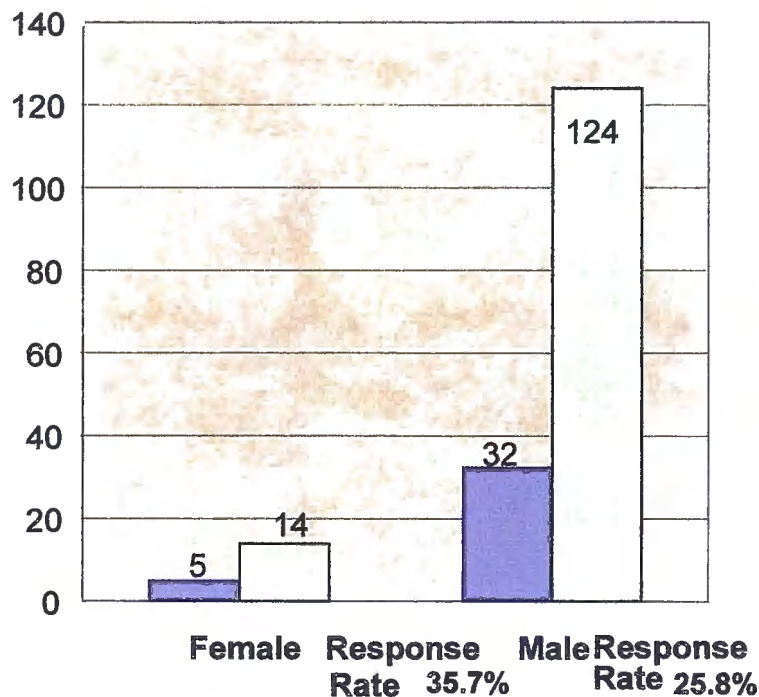
### Sample

The sample size was based on the availability of names - which was extremely limited due to the privacy policy of the ASAQS and the SACQSA that protects the identity of their members.

Groups consisting of 15 names and e-mail addresses were obtained from chapter members in each province. The names were randomly selected and no special attention was paid to gender or race. The total number that successfully sent out consisted of 138 questionnaires with 37 responses (a rate of 27%).

### DEMOGRAPHIC OF RESULTS

**Figure 1 - Response Rate by Gender**



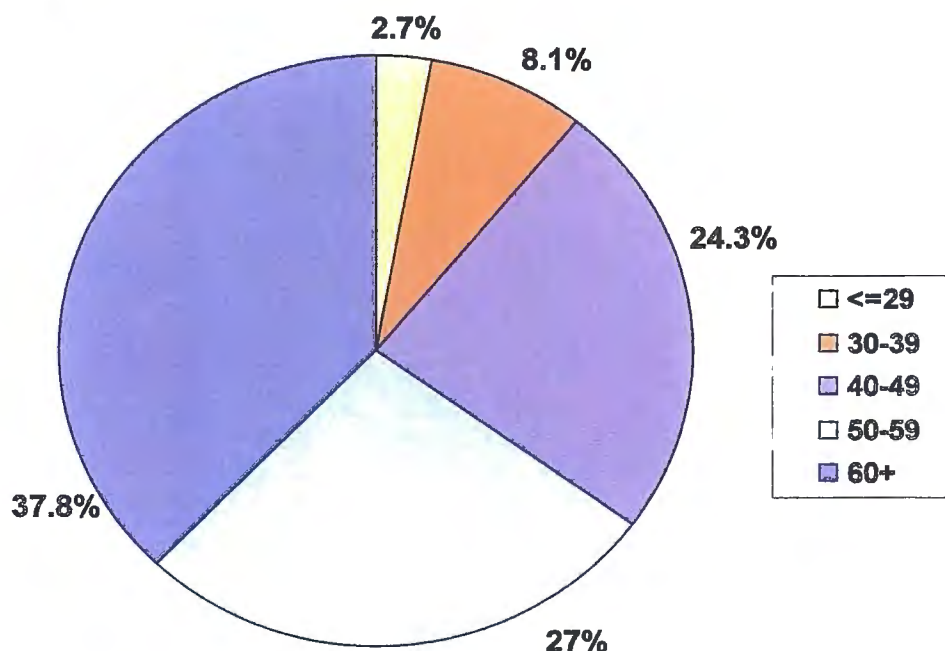
The response rate in *Figure 1* by females was 35.7% compared to the males (25.8%) even though there are very few female Qs compared to male Qs.

**Table: 1 - Ages ratio of Respondents**

	Age	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	<=29	1	2.7	2.7	2.7
	30-39	3	8.1	8.1	10.8
	40-49	9	24.3	24.3	35.1
	50-59	10	27.0	27.0	62.2
	60+	14	37.8	37.8	100.0
	Total	37	100.0	100.0	

The age composition of the respondents is reflected in *Table 1*

**Figure 2 - Age ratio of respondents (n=37)**



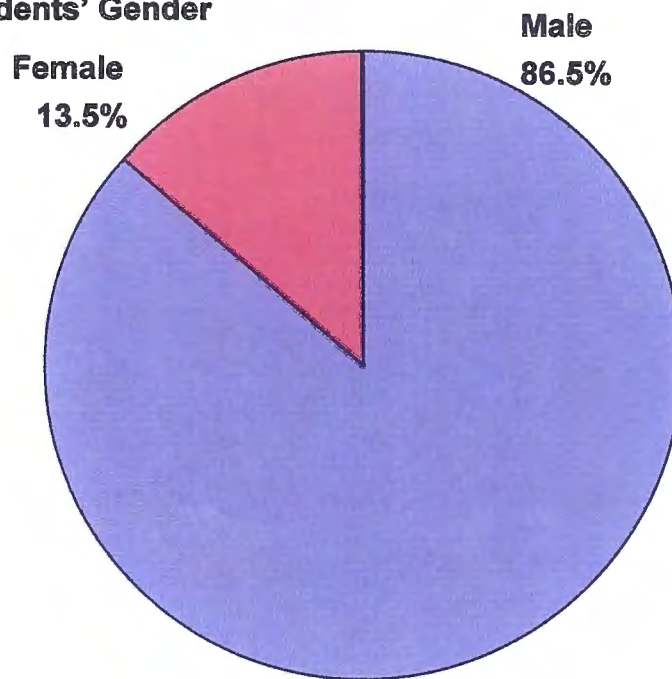
A pie chart (*Figure 2*) represents the composition of age groups of the respondents. The average age of the respondents are approximately 55 years of age.

**Table: 2 - Gender ratio of Respondents**

	Gender	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Male	32	86.5	86.5	86.5
	Female	5	13.5	13.5	100.0
	Total	37	100.0	100.0	

The gender ratio of the respondents in *Table 2* is reflected as **86.5%** male majority and 13.5% female.

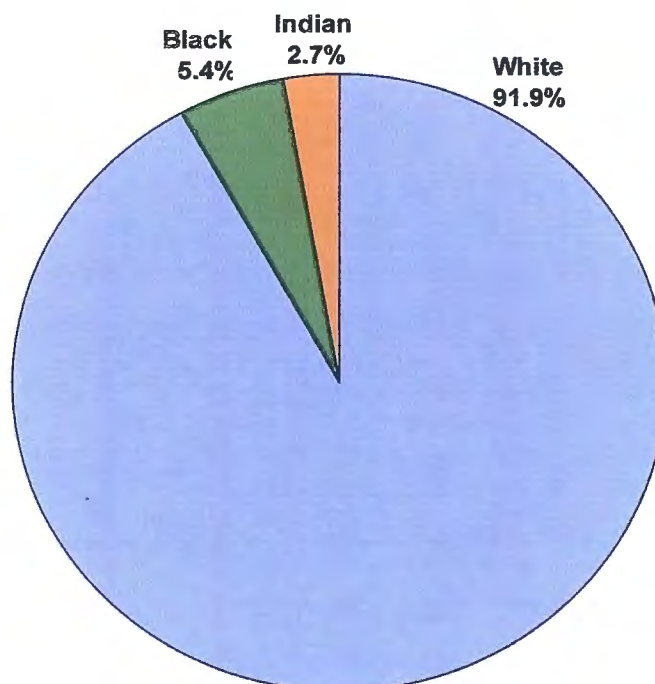
**Figure 3 - Respondents' Gender**



The respondents' gender composition as reflected in *Figure 3* comprises 32 males (86.5%) and 5 females (13.5%).

**Race Composition of Respondents**

**Figure 4 - Respondents' Race Composition**



In *Figure 4* it is apparent from the respondents' race composition that 1 Indian, 2 Black Qs and 34 White Qs responded.

## ***Measuring Instrument(s)***

### **Pilot Questionnaire**

A pilot questionnaire was designed and sent out. The questions derived from issues in question such as competencies, salaries, emigration, crime tertiary institutions, retention of staff, etc. The results were analysed to reveal preliminary results that were not exactly what was needed to interpret the response statistically.

Each question in the pilot questionnaire had space for comments which were used in the mixed-method research and added to the thematic content analysis.

### **Final Questionnaire**

The final questionnaires were sent out and the responses were applicable to the desired outcome.

Interviews were conducted with key figures in the quantity surveying industry to help with the issues most raised and addressed in the questionnaire. The final questionnaire (Addendum 2) was compiled using a three and four-point Likert scale principle (quantitative). A Likert scale is a psychometric scale commonly used in questionnaires. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. Each question is a statement to which the respondents had to answer *Agree*, *Disagree* or *Agrees / Disagrees*. A short description is given with each table with the interpretation of the frequency results

A Likert scale model research study was conducted specifically to assist towards gathering opinions concerning the skills deficit of QSs as an alternative source to specific issues arising from the literature study. The questionnaire was divided into three sections (A, B and C) as discussed under the questionnaire design. The questionnaire was only available in English as the Body of Knowledge of the Quantity Surveying Profession forms part of an international body with its origin in Scotland. At the end of the questionnaire, comments (qualitative) were requested from each respondent (refer to Addendum 2, end of Section C) which led to interviews in some cases. The qualitative research confirms the quantitative research results and was used to investigate the results in more detail.

## **Research procedure**

A list of names was acquired from the ASAQS. Each quantity surveying was sent a personalised letter (Addendum 1), with the questionnaire attached. The e-mails were sent out in two groups. The Wednesday group responded immediately but the second group's e-mails were sent out on Friday with very poor responses. The comments on the returned questionnaires raised issues that were not addressed in the questionnaire and questionnaires answers were inconclusive. These were followed up with interviews that explored the perspectives of participants.

## **Statistical analysis (quantitative)**

The statistical data was gathered and analysed numerically and summarised in a spreadsheet from where the results were reflected in tabular form for each statement in the questionnaire. The statistics in the spreadsheet was used to demonstrate certain results with pies and graphs.

## **Data analyses (qualitative)**

The comments (textual data) was analysed by:

- Reading each answer.
- Discriminating units of meaning from each answer
- Identifying themes and sub-themes and summarising them in (Table 35) with verbatim examples (Burns & Grove, 2001).

## **Constraints**

Time was a constraint because the questionnaire had to be re-designed into a Likert scale-type questionnaire. Comments supporting the questionnaire, allowing the participants' to share their concerns, were used to add value and interviews were further used to clarify the perspectives of the respondents and to link the quantitative and qualitative aspects of the research (Wuensch, 2005).

Access to names and e-mail addresses was also regarded as a constraint. Due to the identity protection the sample size was relatively small compared to the potential data base.

Out of the 37 Respondents only 2 black QSs and 1 Indian QS responded. This is unfortunate as their contribution might have provided a different perspective.

## **1.5 CHAPTER DELINEATION**

- Chapter 1 - Introduction
- Chapter 2 - Supply and Demand
- Chapter 3 - Empirical research
- Chapter 4 - Conclusions and Recommendations

Included in the fourth chapter are reference lists, lists of tables, and list of figures, glossary, definition and addendums.

## **1.6 CONCLUSION**

Professional expertise remains a national asset. Strategic recommendations from this study will be presented to the ASAQS, SACQS and Government to be studied and implemented. The recommendations can be used as guidelines within current financial structures considering the looming 2010 challenge. The aim of suggestions will be to guide Government towards a paradigm shift to implement workable plans to decrease or eliminate the skills deficit in the industry under discussion.

In a 100 years' time the number of registered QSs in South Africa increased to 3 614 (ASAQS, 2009) while in China they increased to ±500 000 in 10 years. Due to the number of students not completing their courses and education, educating the youth to think differently about acquired training and skills such as maths will require significant effort. "We have to teach them to be the change they want in the world". (Ghandi).

Scientific research should be encouraged as it initiates progress. Quantity Surveyors can be part of the global "green movement" in the building industry as such issues are undoubtedly going to be a major future challenge in the building procurement process. This is an opportunity to become a global "leading profession" and not the followers. South Africa is in dire need of "High calibre skills" (Didiza, 2008)

## CHAPTER 2

### SUPPLY AND DEMAND

#### 2.1 INTRODUCTION

Quantity surveying is not a profession for the faint-hearted (Wortmann, 2009). South African quantity surveyors are recognised as among the leaders in their profession worldwide, representing the country on international bodies and often serving as presidents of global organisations such as the American-based international Cost Engineering Council (ICEC) and the African-based African Association of Quantity Surveyors (AAQS) (Wortmann, 2009).

The quantity surveyor (QS) profession is an integral part of the building industry and these professionals play an essential role in using tools on their projects aimed at boosting productivity by managing limited resources in order to achieve project milestones (Deacon, 2009). The job of the quantity surveyor is a crucial one as it is his or her task to manage the value-for-money and cost of building projects (Encyclopedia.com, 2009). “Today our software tools are highly sophisticated, greatly facilitating accuracy, speed and efficiency” (Wortmann, 2009).

The aim of this chapter is to present a literature survey on the quantity surveying profession, the alleged skills shortages of these in South Africa, and the elements contributing and influencing the alleged skills deficit in the QS industry. This literature study is conducted from a QS perspective and with reference to the terms and references applicable to the QS profession (SACQSP, 2009).

The following aspects will also be addressed: QS skills and competencies, supply and demand of Qs, micro and macro-environments in the industry, and the generation gap.

Quantity surveyors are also known as construction cost consultants (SACQSP, 2009). This field is acknowledged as an independent profession within the context of the building environment worldwide (The propertyhelp, 2009).

## 2.2 THE QUANTITY SURVEYOR

### Background

The property sector represents some 70% of global wealth. Land, property and construction issues affect everyone, everywhere. They have a profound impact at all levels - on individuals and communities, small enterprises, global corporations and governments.

Quantity surveyors are the financial consultants of the construction industry whose training and experience qualify them to advise on cost and contractual arrangements and to prepare contract documents (SACQSP, 2009; ASAQS, 2009). Quantity surveyors act in liaison with architects, consulting engineers and contractors to safeguard the client's interests. They are independent experts who operate in a specialised area of the construction industry and relate to people at all levels, whether these are developers, architects, engineers, land surveyors, lawyers and accountants or contractors, sub-contractors, emerging contractors or general workers (ASAQS, 2009). A QS calculates the cost of materials and labour on a construction project based on an architect's plans, and measures and prices building work. He or she is an expert who can identify and value the depreciating assets which are contained in an investment property (Marketing Concepts International, 2007).

The QS introduces and implements new technologies, research and ecologically friendly materials and the cost thereof on a continuous basis (Jaffer, 2009).

Quantity surveyors are expected to maintain the highest level of ethics and professionalism towards all parties involved, thus ensuring fair and accurate finalisation of projects (ASAQS, 2009).

While the demand for quantity surveying skills in the construction industry is influenced by economic factors, for example developmental backlogs, capital investment in property development projects, the skills and knowledge-base acquired by holders of this qualification afford opportunities for entry into many other sectors of the economy, for example manufacturing industries, retailing and maintenance (structures of all types).

Members of this profession enjoy due recognition and financial reward in terms of their specialised skills and competence, and are eligible for employment in numerous spheres of the economy including private sector consultancies and professional firms, public sector employment (State, provincial and local authorities), tertiary / adult basic / further education and training, financial institutions, property development enterprises, research organisations and construction companies (SACQSP, 2009)

No two building projects are alike. Currently, Qs are increasingly involved in all aspects of construction as well as in other industries such as insurance, banking, law and the like. (In a Nutshell, 2009). Quantity surveyors, who may also be known as commercial managers or construction cost consultants, are specialists in the financial and contractual aspects of construction projects. The work of the QS is central to the profitability of construction projects. Through negotiation, successful quantity surveyors can save large amounts of money for the companies they work for.

Although all Qs will have followed a similar course of education and training (for those entering the profession today, this usually is to (degree level), there are many areas of specialisation in which a QS may concentrate.

### **The Main Distinctions in the QS profession**

One type of QS carries out work on behalf of a client organisation: often known as a "professional quantity surveyor", "**professional QS**" or "**PQS**". A **PQS**'s services include the private sector, state institutions, semi-state institutions and insurance companies.

#### **Contractors QS:**

Those who work for construction companies: often known as a "**main contractor's quantity surveyor / Contractor's claim specialists.**"

Major contracting firms would use QS's as claims specialists scrutinizing contracts / procedures, and the like with a view to enable them to claim extras such as the settlement of changes (often referred to in a contract as a 'variation'). (Collier, 2001).

## **Why should a client select to appoint a QS?**

In a high-pressure world of spiralling costs and large-scale development, the role of the quantity surveyor is currently more vital than when the profession was originally established in England in 1785 (ASAQS, 2009).

### **The ICEC has drafted the following as reasons for appointing a QS:**

To save money, to ensure that no extra costs are incurred, to prepare realistic and accurate estimate control costs, to report on the status of costs to management with recommended changes, to control changes, do site instructions and budget for deviations.

Furthermore, to ensure delivery according to plan, the function of the quantity surveyor is to provide independent, objective, accurate, and reliable capital and operating costs assessments usable for investment funding and project control; he or she should also analyse investment and development for the guidance of owners, financiers and contractors (ICEC, 2008).

## **2.3 THE ROLE AND ATTRIBUTES OF THE QUANTITY SURVEYOR**

### **Traditional QS Functions:**

- **Preparing Feasibility Studies and Budgets for Proposed Projects**

The QS establishes the feasibility of a project through involving technical and/or economic investigations and by *estimating* a project budget together with the forecasting and planning of the cost of a building project, the time needed to successfully complete the project within specified standards based on the viability of a development, and offers *advice* during all stages of the development of a project. Financial advice is essential if the correct decisions with full awareness of financial implications are to be made, also to development banks (*Volksblad*, 2007). Sophisticated techniques, extensive cost data banks (BER) and an intimate knowledge of building and construction economics enable quantity surveyors to provide reliable costing advice.

- **Preparing Bills of Quantities and other Tender Documentation to acquire fair and equitable tenders for projects**

The preparation of a tender document with bills of quantities is traditionally one of the roles of the QS.

The technique of measuring quantities from drawings, sketches and specifications prepared by designers, principal architects and engineers, in order to prepare tender/contract documents, is known in the industry as 'taking off'. The quantities of work taken off are typically used to prepare bills of quantities, which are usually prepared in accordance with a published standard method of measurement (SMM) as agreed to by the QS profession and representatives of the construction industry. Many larger QS firms have their own in-house methods of measurement and most bills of quantities prepared today are in an abbreviated format derived from the one required by the SMM.

Bills of quantities are bills (documents) representing a work breakdown structure for each construction trade represented in the project scope. The QS would measure items for each element of work as specified on the architectural and engineering drawings, detailing the scope of the project.

Bills of quantities that are measured and prepared by quantity surveyors are the most comprehensive and accurate procedure for obtaining competitive tenders. The accuracy level of this method is approximately 95%.

While bills of quantities are generally regarded as the most economical and best method of obtaining a competitive price estimate, alternative methods and types of tender documentation available need to be carefully examined in consultation with the quantity surveyor, architect, etc. before a final decision is made. The choice of contractor (successful tenderer) after the tender closing date would depend on the adjudication of tenders based on the QS's pre-tender estimate as a milestone for the construction cost, the financial standing of the contractor, his ability to perform, as well as an architect's report on the quality of the tenders' work and the successful completion of similar previous recent contracts.

The choice of an appropriate form of contract for any given project will depend on the nature of the project, the circumstances under which the work is to be carried out and the particular needs of the client. Quantity surveyors, in collaboration with architects, are able to advise their clients on the most advantageous procurement methods available:

Contracts incorporate bills of quantities, provisional bills of quantities and schedules of rates, and the like. Various types of contracts such as those based on bills of quantities are negotiated and managed, while lump sums, cost plus, package deals, turnkey offers, and so on are used in the financial markets.

- **Negotiating Building Contracts**

Various types of building contracts are available, both locally and internationally.

The QS with his extensive knowledge and experience in the construction industry, as part of the “Joint Building Contracts Committee Inc.”(JBCC) has been instrumental in the creation of a unique set of contracts widely used in the South African building industry. The JBCC comprises of all major stakeholders in the RSA building environment.

The JBCC documents have been specially structured for usage by both the state and private sectors.

- **Monitoring costs and reporting** to clients during the design and construction of projects.

Determining final costs of projects Qs are the financial advisor, manager and right hand of the building manager and property developer. By appointing QS from the word planning phase of the project, available financial resources can optimally be utilised as the design details are being implemented. (*Volksblad*, 2007).

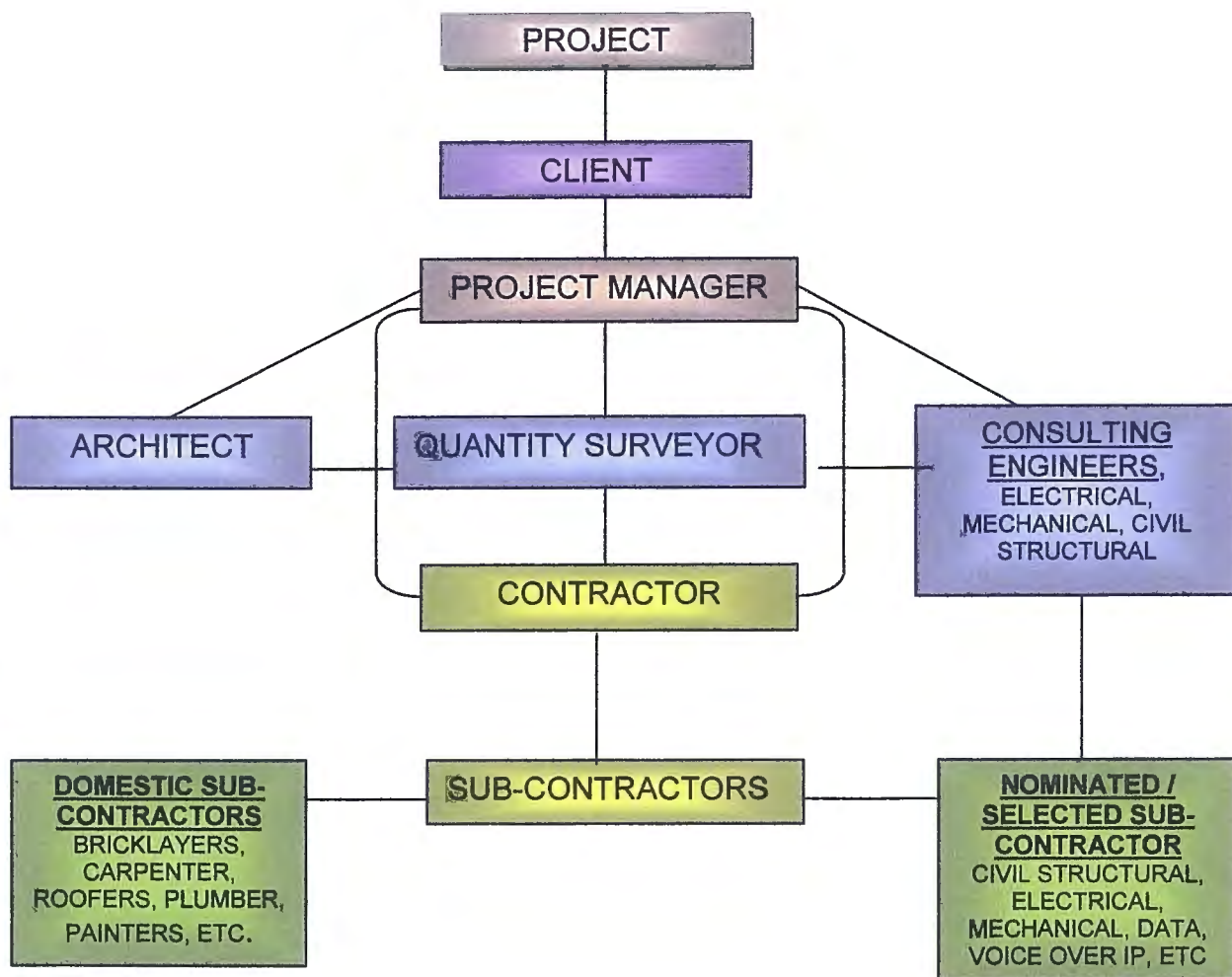
Clients want to know that they are receiving value for money, not only with regard to the capital cost, but also in respect of the running and maintenance cost of a project.

Generally, an experienced quantity surveyor would facilitate all the *skills* available to minimise additional costs to project and maintain first-class service for clients. The QS links the project team together (see Figure 1).

- **Extended QS Functions**

**Project management** functions are integrated into the functions of the QS. The function of the project manager is to set project objectives in line with the purpose(s) established by general management and to manage the resources necessary to meet the objectives. The QS liaises with all the professional team members on the project.

**Figure 5 - Typical Project Model (Source: Own Construction)**



The project manager delivers the project (Figure 5) by managing resources, delegating tasks, making decisions, receiving information, setting goals and motivating people (ICEC White Paper, 2002).

### **Property Development Advice from QS summarised**

A building should meet the functional, dimensional and technological requirements for which it was designed, it should be aesthetically pleasing and meet the cost limits of the client's budget.

The QS utilises his skills and knowledge towards industrial developments such as mining infrastructures, the petro-chemical industry, and the development of railways and harbours. Involvement in any such project requires rational planning and programming together with financial and entrepreneurial skills.

## 2.4 CODE OF CONDUCT

A code of conduct (see Addendum 4) is a set of rules outlining the responsibilities of or proper practices for an individual or organisation. Related concepts include ethical codes (code of professional responsibility) and honour codes. **Professional ethics** concern those moral issues that arise because of the specialist knowledge that professionals attain, and how the use of this knowledge should be governed when providing a service to the public (Chadwick, 1998).

The QS Code of Conduct is divided into 5 headings: General, Professional Business Practice, Competitive Ethics, Extra-Professional Activities and Technical Competence. It implies "Principals, values, standards, or rules of behaviour that guide the decisions, procedures and systems of an organisation in a way that (a) contributes to the welfare of its key stakeholders, and (b) respects the rights of all constituents affected by its operations"(IFA, 2007)

The notion of sustainable growth, which we define as the creation of shareholder and societal value while we reduce our environmental footprint along the value chains in which we operate, is of the utmost importance in this regard (DuPont, 2009).

### **A QS should act with integrity**

A QS should always be honest, open and transparent in their dealings, be accountable for all their actions, know and act within their limitations, be objective at all times, never discriminate against others, set a good example, and have the courage to make a stand strong in the face of opposition.

## 2.5 THE HISTORY OF QUANTITY SURVEYING INTERNATIONALLY

Surveyors have been in demand since the days of the ancient Egyptians who honoured their royal surveyors with ornate tombs. The Romans employed "finitores" (surveyors) and "agrimensores" (land surveyors). The quantity surveyor as a professional emerged in England at the beginning of the nineteenth century, although the firm of Henry Cooper and Sons of Reading was established as early as 1785. Prior to the first recorded usage of the term "quantity surveyor" in 1859, the terms "measurer", "custom surveyor" or "surveyor" were used (SACQSP, 2009; RICS, 2009).

RICS can trace its history back to 1792 when the Surveyors Club was formed. Offices were leased at 12 Great George Street, which are still part of the RICS Headquarters building today.

The need for such an organisation was driven by the rapid development and expansion of the industrialised world. As it began to take shape - and the infrastructure, housing and transport links grew - there was a need for more stringent checks and balances.

The profession developed during the 19th century from the earlier "measurer", a specialist tradesman (often a guild member), who prepared standardised schedules for a building project in which all of the construction materials, labour activities and the like were quantified and against which competing builders could submit priced tenders. Because the tenders were each based on the same schedule of information, they would be easily compared to find the most suitable candidate (RICS, 2009).

In those early days the quantity surveyor acted for the master tradesmen, measuring the work after completion and frequently submitting partisan final accounts to the building owner. As a direct result of these activities, it increasingly became practice among building owners to have work executed under contract and to call for tenders before any work was undertaken. A procedure therefore developed whereby building owners would approach an architect to design a building. Drawings and specifications were distributed to selected master builders, who would then submit tenders for the total price rather than a collection of prices from master tradesmen (ASAQS, 2009).

The task of arriving at an accurate estimate of cost or tender can be carried out in only one way - that of measuring the quantities of all materials and labour necessary to complete the work, i.e. preparing bills of quantities. As each builder had to prepare his own bills of quantities for each project, it was realised that it would be more economical for them as a group to employ one surveyor to measure quantities for all of them. They would thus share the cost of the surveyor and obtain an identical Bill of Quantities which ensured that they would all be tendering on the same basis (Naborn, 2009).

The building owner subsequently realised that it would be to his personal advantage to appoint and pay the fees of the quantity surveyor. Thus the independent professional quantity surveyor gained consultant status (SACQSP, 2008).

## **2.6 HISTORY OF QUANTITY SURVEYING IN SOUTH AFRICA**

The need for quantity surveying in South Africa led to the creation of the profession. The first educational lectures in this regard in South Africa started on 17:00 on 14 April 1929 at the old Literature Transvaal University College, and consisted of a diploma course up to 1932, as issued by the University of Witwatersrand. Hereafter, in 1933, the University of Port Elizabeth also applied to present tuition in this field. Diplomas were issued until 1969, after which degrees were issued (QSs 75, 2004). In this manner, the independent professional quantity surveyor gained consultant status (ASAQS, 2009).

The Association of South African Quantity Surveyors (ASAQS) celebrated 100 years of service as a national organisation in 2008. From the early beginnings - as current executive director Egon Wortmann points out - it has been establishing global benchmarks and milestone achievements. "The South African Standard System of measurement was published several years prior to the equivalent system in Great Britain, where the profession is believed to have originated" (Wortmann, 2009). Since those years, the quantity surveying profession has carved out its role in building and development a brash new country, and the profession has evolved to become part of an intricate mesh of skills and strengths. These strengths reach not only across the construction industry, but also into related areas, including financial, consultancy, public, academic and research sectors (Wortmann, 2009).

The QS's traditional expertise and knowledge regarding cost are certainly a peculiar domain to be protected, advanced and further developed (Brummer, 2006).

The ASAQS has a shining reputation in Africa where it has been one of the main proponents and drivers of the African Association of Quantity Surveyors (AAQS):

As such we have been instrumental in unifying and standardising the quantity surveying profession through the members associations in Africa. The importance of standardisation cannot be overemphasised. It greatly facilitates the mobility of qualified and experienced professionals throughout the world,

nurturing the growth of the profession and enhancing its depth, influence and socio-economic contribution.” (Wortmann, 2009)

## **2.7 SOUTH AFRICAN CONTROLLING BODIES**

- **Built Environment Professions Export Council Registered**

This joint initiative was developed with the support and initiative of the following three organisations, together with the Department of Trade and Industries (DTI), CESA (formerly SAACE) (Engineers), ASAQS (Quantity Surveyors), and AIA (Architects). Refer to (Addendum 11) for Statutory Councils for the Built Environment.

- **ASAQS Voluntary registration Body for individuals providing.**

The quantity surveying profession has benefited by a governing institution in one form or another since 1908, the year that the Association of South African Quantity Surveyors (ASAQS) was inaugurated. The present Association was formed to achieve and maintain the following goals and ambitions for the profession.

- **SACQSP Registration of firms is compulsory**

This body aims to guide, facilitate and promote a high standard of competency and responsibility in the quantity surveying profession and to increase public awareness of the range of services offered.

- **CIDB IN SA**

**CIDB Construction Industry Development Board** plays a vital role in South Africa's economic and social development. It provides the physical infrastructure and backbone for economic activity. It is also a large scale provider of employment.

The CIDB – a schedule 3 public entity – was established by an act of parliament (Act 38 of 2000) to promote a regularity and developmental framework that builds.

**The CIDB focus on;**

Sustainable growth, capacity development and empowerment, improved industry performance and best Practice, a transformed industry, underpinned by consistent and ethical procurement practices and enhanced value to clients and society.

- **CBE (Council for the Built Environment)**

**The CBE** was established as a stationary body by Parliament (Act 43 of 2000) to provide leadership to, and ensure good governance of the professions, while serving

as a two-way channel for coordinated input, into the restructuring and development process, between the professions and Government.

## **2.8 BENCHMARKING**

Benchmarking is the process of comparing the cost, time and quality of what one organisation does against what another organisation does, nationally and globally. The result is often a business case for making changes in order to suggest improvements.

Without benchmarking one would not know if the planning is on track and to what extent one has achieved success. Benchmarking takes place against international standards. The South African QS industry uses a collaborative benchmarking formal process with a view to sustain a global competitive advantage. (ASAQS, 2009)

RICS members around the world understand the entire life-cycle of property, from land management and measurement, through planning, environmental impact assessment, and investment appraisal; to managing the construction process and advising on the most efficient use of buildings (RICS, 2009).

“We have established a name for honest, impartial and solid financial and financial advice and appreciated as trusted partners on building development”, Wortmann (2009) propounds. Wortmann is one of three South Africans who have been honoured with the ICEC Distinguished International Fellowship Award.

## **2.9 QUANTITY SURVEYING IN THE SOUTH AFRICAN ECONOMY**

The ASAQS has been in constant evolution as the country has experienced its growth pangs, whilst always staying in touch with developments on a global scale. (Wortmann, 2009). “Whether in boom or bust periods, quantity surveyors make a vital contribution,” Wortmann comments. “It is a dynamic environment which offers exciting opportunities to those prepared to accept the challenge” (Wortmann, 2009).

The ASAQS’s work of supporting and adding value to members and boosting the reputation of the profession over decades has ensured that when industry players consider appointing a quantity surveyor, one of the first questions that spring to mind is, is he or she registered with the ASAQS?” (Wortmann, 2009).

The current global economic crisis increases the demand for QSs as the need for resources and control thereof increase (SA Reserve Bank, 2008).

In the South African economy the shortage of QSs is critical. The contribution of the construction industry to the South African Gross value added by GDP is substantial (SA Reserve Bank, 2009).

Banks and insurers use consultant QSs to do estimates and viability studies for claims or assessing development loans (see Addendum 4), and especially in the economical crisis they are asked to assist with arbitration cases. "As a profession we have an important contribution to make in weathering the financial storms with our unique skills and expertise " (Wortmann, 2009).

An expected positive upturn will be felt by the building industry in 2010. "We are confident that the housing market will improve during 2010. We are therefore concentrating on increasing skills levels so that when the market improves there will be enough skilled workers to tackle the work" (Pierrie, 2009).

- **Macro-Environment**

Numerous reciprocity agreements with countries in the West, Middle East and Asia further promote the ability to work globally with a view to add value while constantly cementing the global recognition of South African qualifications and professions (Wortmann, 2009).

The ASAQS - in seeking to establish a global network of like-minded professions - initiates, establishes and maintains ties with various international organisations including the following:

Affiliation to the International Cost Engineering Council (ICEC) and a reciprocity agreement with the Royal Institution of Chartered Surveyors (RICS). Ties have also been established with the Pacific Association of Quantity Surveyors (PAQS) which includes countries such as Australia, New Zealand, China, Japan and Hong Kong. Membership of the African Association of Quantity surveyors (AAQS) also opens up opportunities to the North of the Limpopo River (Jardine, 2009).

The quantity surveying industry upholds global ethics, norms and standards as set out by the QS Industry International.

In South Africa, the shortage of skilled engineers, quantity surveyors and skilled artisans will be exacerbated once the economy starts to recover as still too few qualified people are coming through the educational ranks (Jardine, 2009). South Africa needs to quadruple the number of graduates to ensure there was a sufficient pool to draw from (Pandor, 2009).

Government has drafted the National Strategic Green Paper which prioritises the pursuit of accessible quality education and skills development as a key tenet for improving the quality of life for all South Africans (Pandor, 2009).

However, external threats such as ESCOM rate increases and limited energy supply play a significant role in future development as these could delay new development projects extensively. Even though South African is experiencing a recession, the huge backlogs require skills; as indicated by these quotations: "ESCOM admits to skills shortage" (Tshabalala, 2009); "it became clear that the main skills shortages are in the 'build' environment, and fall predominantly in experienced skills categories" (Rikhotso, 2009); "Eskom's human resources MD, Mpho Letlape, estimate that the group will require at least another 90 quantity surveyors" (Herman, 2009). Government lacks an integrated long-term plan to address these problems. There has been no agency to drive planning and overall monitoring and evaluation from the centre of government (National Strategic Planning Green Paper, 2009).

"At the moment things are against the construction industry", Fourie (2009) suggests, but, "you can still see a large number of cranes visible on building and construction sites are a useful indicator of the strength of the industry. This can be attributed to the 2010 stadiums being built, the Gautrain project and the related infrastructure and transport nodes being built" (Fourie, 2009).

Despite there being more construction sites visible throughout South Africa than at any previous time, the slump in the global economy has struck the construction sector with a severe blow. Building confidence is at a very low point (Fourie, 2009) (Addendum BER). Grinaker-LTA, Aveng Manufacturing and Trident Steel have recognised the need for a private sector initiative to reverse the skills shortage and are investing in advancing the right people by making significant annual investments towards tertiary education bursaries (Jardine, 2009).

- **Micro-Environment**

Universities offering programmes in quantity surveying and construction management are negatively affected by current economic conditions. The ability of the tertiary institutions to attract young academics, to train them and to keep them in the longer term, is almost impossible (Verster, 2006).

QS practices therefore need to undergo an internal audit and revisit required competencies. “*Competence*” for this purpose refers to the ability required for an individual to perform specific tasks in a particular occupation and the ability to apply skills and knowledge to new situations within the occupational arena. Competence is a standardised requirement for an individual to properly perform a specific job (Raven & Stephenson, 2001).

The quantity surveying profession has broadened the role of QSs to include, *inter alia*, project management and other facilities management in recent years (Crafford & Smallwood, 2007).

It should be restated that there is a need for quantity surveying skills in the built environment (Crafford & Smallwood, 2007). Employers have a major role to play in this regard by offering experiential training to students and in mentoring them. Other challenges include the lack of preparedness among students who enter programmes and insufficient university resources (staff and infrastructure) in the face of escalating student enrolments.

## **2.10 EDUCATION AND TRAINING OF QSs**

### **SAQA South African Qualifications Authority Framework**

**SAQA** is a body appointed by the Ministers of Education and Labour that represents the national stakeholders in the education and training system and is responsible for making and implementing policy through the executive office (refer to Addendum 7).

**The NSB (National Standards-Generating Body)** is responsible for recommending standards and qualifications to SAQA. There are twelve NSBs within the SAQA, each focussing on a specific range of *skills* fields and on the education, training and development of qualifications to meet the educational / training requirements related to the different market sectors which drive the South African economy.

**The SGB (Standards-Generating Body)** is responsible for generating standards and recommending them to the NSB. Every skill – or competence – is developed and gained through teaching / learning processes (education / training) and enhanced by appropriate practical experience.

**ETQAs (Education and Training Quality Assurance bodies)** are responsible for ensuring the quality of learning achievements accredited by SAQA.

**Moderating Bodies** are appointed by SAQA to ensure that assessment of learning outcomes is fair, valid and reliable across the NQF; this body also makes recommendations to SAQA.

**CPD (Continuing Professional Development):** The SACQSP introduced a system of Continuing Professional Development (CPD) for all quantity surveyors registered in terms of the Quantity Surveyors' Act (36 of 1970), effective from 1 January 1999. Professional associations attempt to create a lifelong learning system.

## **2.11 REGISTRATION OF THE QUANTITY SURVEYOR**

**The Quantity Surveying Profession Act 2000 (Act No 49 Of 2000):** Registration occurs to ensure that the standards and qualifications that are registered are relevant, up to date and acceptable to major user groups (ASAQS, 2008).

**The NSB will ensure that:**

The proposals for qualifications and unit standards meet SAQA's technical requirements for registration; all consultation-process requirements have been met, and qualifications and standards are registered.

**Qualification of the QS:**

The Bachelor of Quantity Surveying (NQF level 6) is the prerequisite qualification for admission to the 3-year programme leading to the award of Bachelor of Science (Hons) in Quantity Surveying (NQF Level 7). Registration routes for Qs are set out in *Addendum 10*.

The main aims of this qualification are to provide learners with vocational knowledge, skills and competencies related to quantity surveying in the construction and property industries; to equip learners with a foundation, and to meet the prerequisites for

statutory registration with the South African Council for the Quantity Surveying Profession in terms of the Quantity Surveying Profession Act 2000 (Act No 49 of 2000)

**Programme Accreditation** (in terms of Act 49/2000) is a vital factor. Of the 20 institutions in the South Africa which offer degrees in quantity surveying - from NQF Level 4 to NQF Level 7 - only six are currently SACQSP-accredited. The other non-accredited 14 institutions will all be visited by the Council 1 May - 31 July 2009. (refer to *Addendum 8* for the race composition of PQSs vs. Candidate QSs.

A list of accredited tertiary Institutions has been attached as *Addendum 9*.

### Members and Firms provincial registration at SACQS

**Table 3 – Candidate registration ratio at SACQS 2008 – Source: SACQS Statistics**

	PROFESSIONAL QS	CANDIDATE QS
Total	1607	725
Male	1419	522
Female	188	203
Asian	55	38
Black	82	160
Coloured	13	7
White	658	78
Not specified (objections raised to racial classification)	162	183
Unknown as at 12 Nov. 08	637	259
<b>Total</b>	<b>4 821</b>	<b>2 175</b>

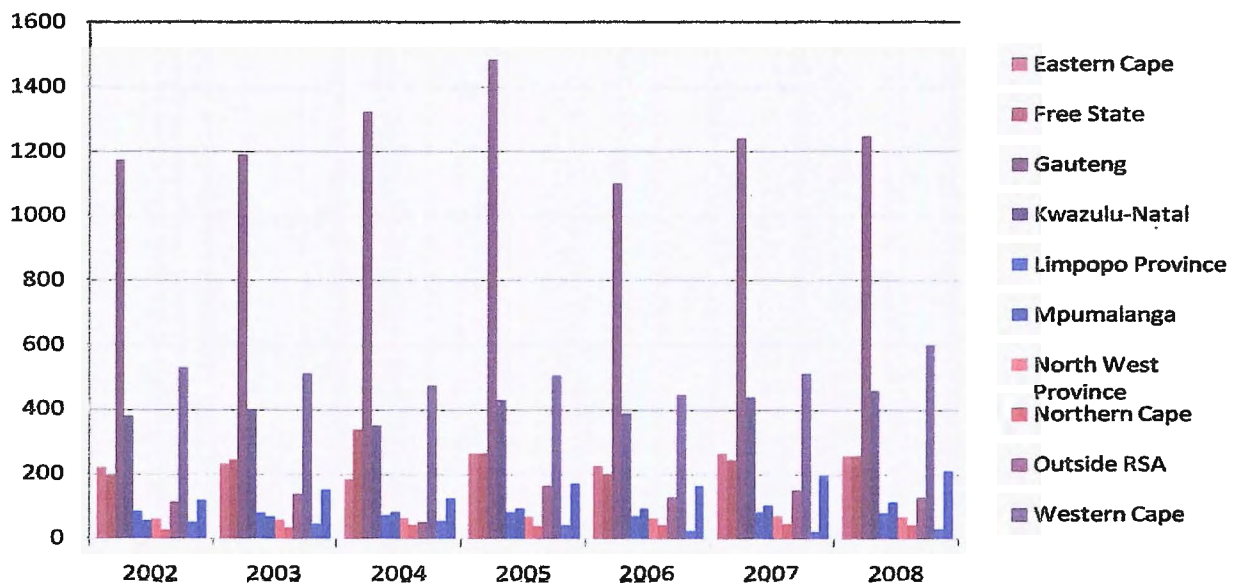
*Table 1* represents the ratio of Professional QSs to Candidate QSs

**Table 4 - ASAQS Firm Statistics – (Source: ASAQS Statistics (2009))**

ASAQS Firms Statistics July 2009	
REGION	NUMBER
Eastern Cape	79
Free State	52
Gauteng North	99
Gauteng South	137
Kwazulu-Natal	139
Limpopo Province	34
Mpumalanga	31
Namibie	0
North-West Province	29
Northern Cape	8
Outside RSA	13
Western Cape	134
<b>Total as at 23/07/2009</b>	<b>755</b>

Table 4 represents the registered firm’s statistics of all the provinces in South Africa.

**Figure 6 - ASAQS Provincial Members Registration 2002 - 2008**



Source: ASAQS Statistics 2008

Figure 6 indicates the provincial membership from 2002 – 2008

**Figure 7 - ASAQS Membership statistics - 23 JULY 2009**

Source: ASAQS Statistics

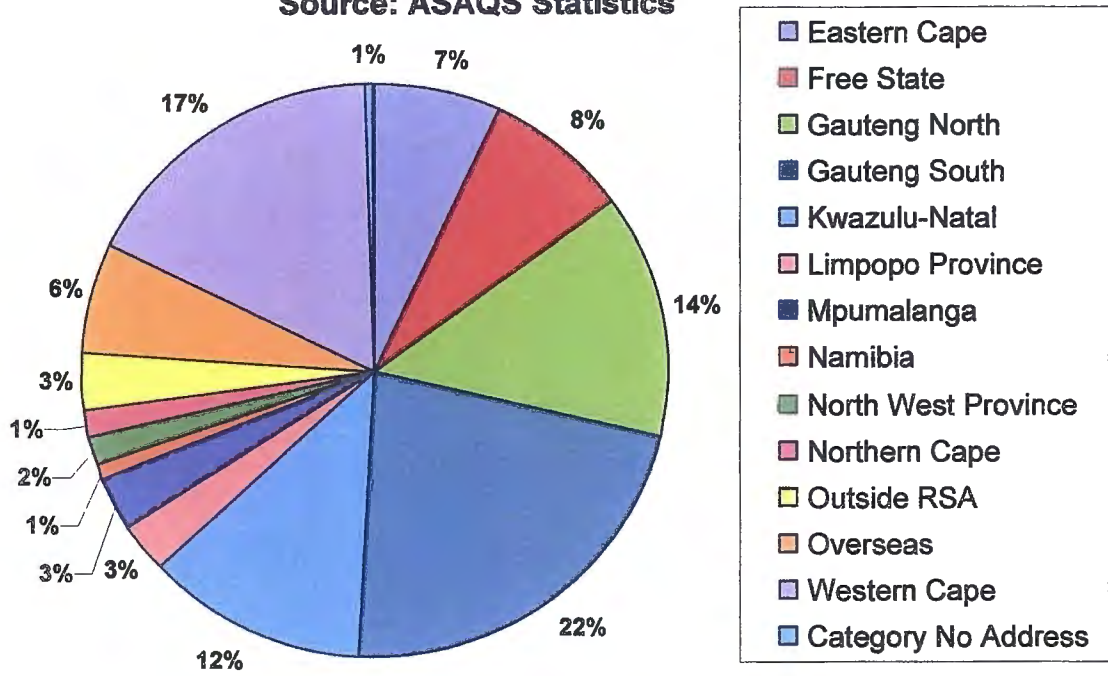


Figure 7 reflects provincial membership statistics as on 23 July 2009.

**Figure 8 - ASAQS Firm Statistics - 23 July 2009**

Source: ASAQS Statistics

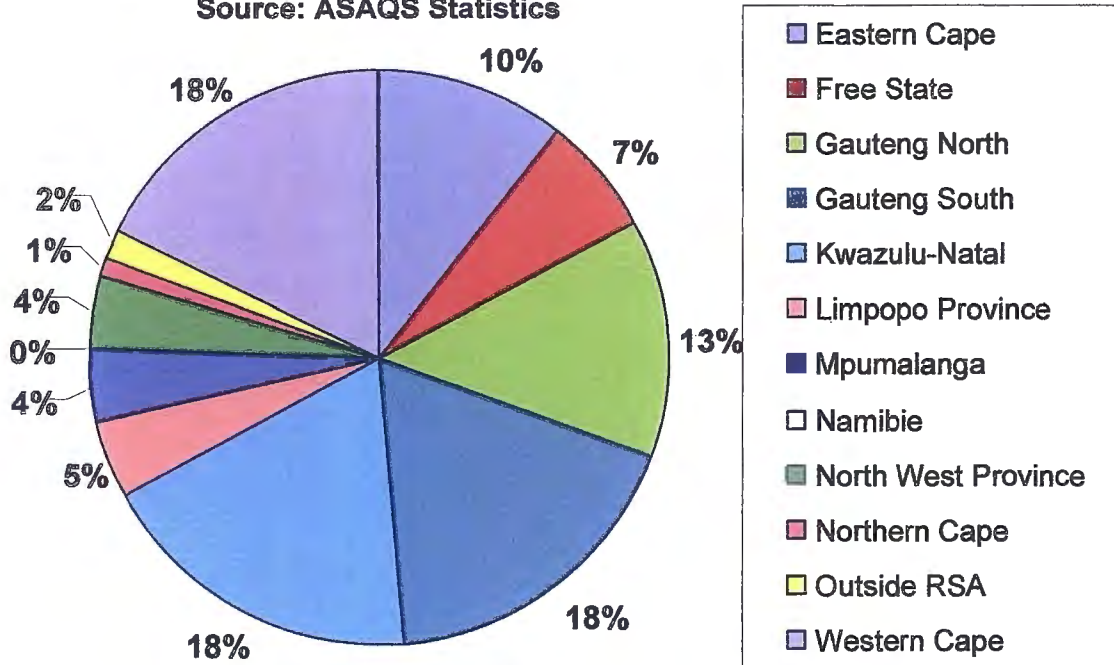
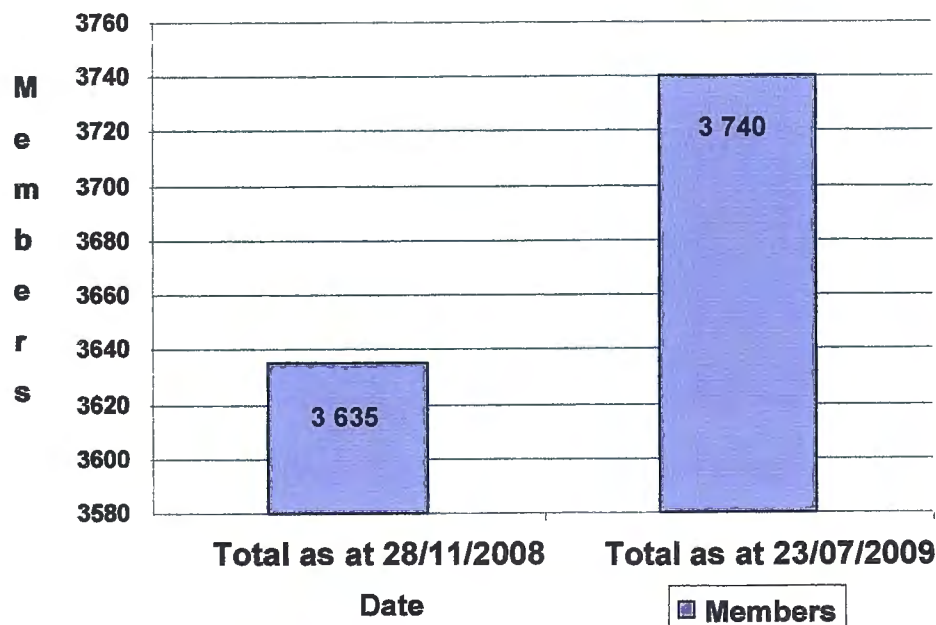


Figure 8 reflects provincial firm statistics as on 23 July 2009

**Figure 9 - ASAQS Member Increase Statistics 2009**



According to *Figure 9* (source: ASAQS statistics) ASAQS membership has increased by 105 members in eight months.

## 2.12 SKILLS DEFICIT

One of the weakest aspects of South Africa's recent economic performance is the accelerating rate of skills emigration, especially at executive level. Louise Marx, Human Capital manager at Deloitte's South Africa, proposed that: "We are now seeing the effects of a skills shortage in the executive market" (Marx, 2006).

The main reason for the accelerated outflow is better jobs and salaries abroad. Economists are already warning that South Africa's attempts to achieve an average annual GDP growth of Historical GDP (2009-06-30) 3.00%, (Reserve Bank, 2009) are being threatened by the skills bottleneck (Marx, 2008). Phumzile Mlambo-Ngcuka called for: "a skills revolution to extricate us from the crisis we face." She added that: "The most fatal constraint to shared growth is skills" (Mlambo-Ngcuka, 2008). Construction contributes to the economy to a large extent (see Addendum 5).

The majority of junior qualified BEE Qs do job-hopping and use job offers and letters of appointment to negotiate better salaries. By appointing the most competent candidate firms could decrease their backlogs in terms of development dramatically. (Schoeman, 2009). According to clients, the most important competencies a QS

should have are financial planning and control, and contract administration. The most important parameters currently defining the profession, in order of importance, are: Cost, Value, Quality, Time, Developmental issues, Black economic empowerment, Occupational Health and Safety, Construction Health and Safety.

The deficit of QSs is caused by a variety of factors but mostly the loss of competencies. The problem begins at school level. Students do not pursue maths as often as they used to. (Pearl, 2008) The requirements for enrolling for QS studies include maths. Even if students were to enrol with provisional requirements they often fail to finish the degree successfully. Due to this, South Africa does not have enough BEE quantity surveyors and therefore the country has to 'import' competent black people from countries such as Zambia, Kenya and other African States.

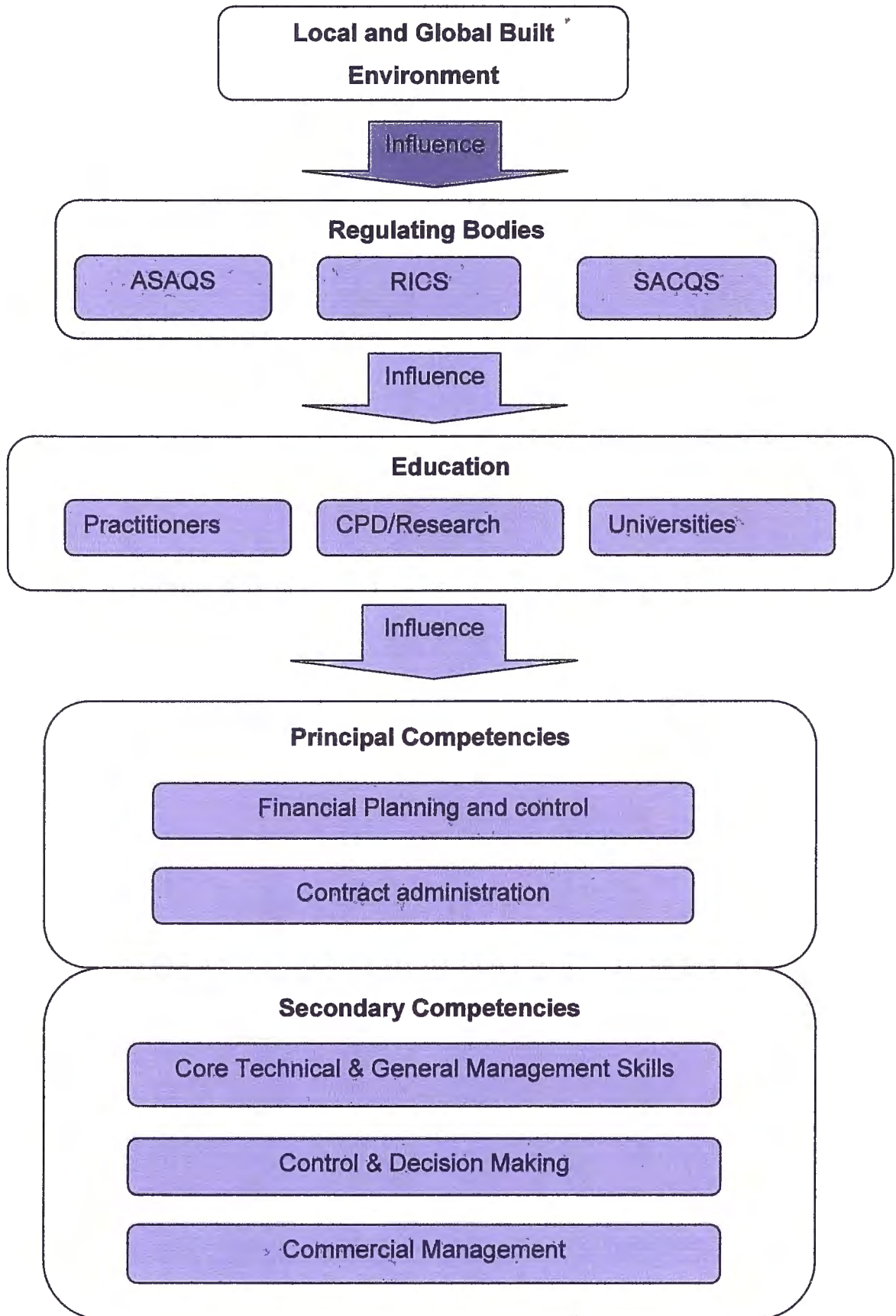
A mass exodus of professional staff has also hit the Department of Public Works. (Van Niekerk, 2007). Professional senior managers and core middle managers with degrees in engineering, architecture, quantity surveying and town planning have quit the Department in the past three years, many because of what they describe as "bad administration". Top management posts are now filled by non-building professionals. (Van Niekerk, 2007) *Figure 2.7* reflect the fit of the literature elements mentioned in the literature with regards to competencies.

### **Population growth**

Internationally, skills deficit is the result of declining population growth in European countries. Sweden's fertility rate is 1.71%, Ireland is 1.89%, and Western Europe in general shows a rate of 1.5%. In Eastern and Central Europe maternity wards are standing empty and the working age of 65% increased with 60%. The working age population in Europe has declined with 18%. Scandinavian neighbours, Britain, France, and the Netherlands also have a population growth rate of 1.7% which is not near the 2.1% needed to keep a population stable. Italy's and Spain's birth rate is only 1.29%. Governments are therefore encouraging the immigration of skilled workers. (Graff, 2004)

Due to Europe becoming an 'old world' in the worst sense of the term more and more South African QSs are recruited and paid large salaries to work there. (Graff, 2004)

**Figure 10 - Quantity Surveying Competency Model**



Source: Crafford & Small, 2007

*"A people that doesn't have children, who grows old, is a people without a future"* (a statement by Tiziano True, former Italian Minister for Labour and Health).

## **Building Industry**

The South African Building Industry is experiencing a high level of economic growth, causing a shortage of registered quantity surveyors (Wortmann, 2006).

This shortage is noticeable in local and national governments where unqualified and inexperienced staff is now appointed. The authorities that have adopted this approach are not in compliance with the legal and statutory requirements in South Africa (Wortmann, 2006).

Universities that offer programmes in quantity surveying and construction management also feel a negative impact. Tertiary institutions' ability to attract young academics that they can train and keep for the long term is severely challenged (Verster, 2006)

In June 2007, the Department of Home affairs estimated that there were 35 000 positions which cannot be filled from within the country because of a shortage of skills (Global Migration SA, 2008). According to Home Affairs, skills such as quantity surveyors are particularly scarce and South Africa is unable to fill these positions. As South Africa is expected to experience above average economic growth over the next few years, the demand for skilled and experienced professionals extends to many other sectors and, as estimated by the Deputy President's Accelerated and Shared Growth initiative for South Africa (ASGISA) project, the shortage up to 2014 is likely to total 1.2 million professionally skilled people (Global Migration SA, 2008).

At a workshop of the ASAQS it was noted that six out of twenty establishments providing tuition in quantity surveying in the country, are actually accredited for providing quality performance management. (Pearl, 2008) More alarmingly, it is abundantly clear that these institutions are inadequately staffed and their graduates are woefully prepared (some would say totally unprepared) to participate meaningfully within a learned society which the quantity surveying fraternity claims to be. Graduates from these institutions are required to successfully complete the Council Exams, before an APC or professional registration takes place (Pearl, 2008).

The purpose of the examinations is clear – to introduce a system of equivalency in terms of the body of knowledge between candidates of differing backgrounds, using the NQF level 7 (Honours level) syllabus as the knowledge base.

The success rate in the SACQSP examinations is extremely low. The basic problem is that candidates are just not properly prepared / ready for the examinations (Pearl, 2008).

## **JIPSA**

Ms Phumzile Mlambo-Ngcuka said during 2008 that, “Addressing skills shortages is one of the most critical interventions that will make a major difference in achieving the remaining ASgiSA objectives. Through improved skills, the economy can absorb more youths who could be rescued from both poverty and other social skills”.

The growth envisaged through ASgiSA depends in part on resolving the shortage of suitably skilled labour. South Africa lacks sufficiently skilled professionals, managers and artisans. The acquisition of priority skills was identified as one of the most significant challenges in terms of estimated growth, because skills development is a long-term process.

The construction and engineering industries have been experiencing skills shortages in the managerial, professional, technological and technical fields which, unless addressed immediately, run the risk of slowing down the country’s infrastructure programme of over R400 billion in the period 2007 – 2009.

There is a growing mismatch between demand and supply of skills in the economy. JIPSA has identified opportunities from a pool of skills, both with and without adequate experience. In some cases, graduates have the formal qualifications, but their training falls short of industry expectations. In other cases, there are insufficient numbers of graduates with skills that are in short supply. JIPSA has identified several obstacles and bottlenecks which constrain priority skills acquisition and require attention. One of these would be finalising the National Qualification Framework Review and addressing stakeholders’ concerns about, among others, the accreditation and quality assurance of technical and vocational training programmes.

Also, inadequate data and analysis of skills supply and skills demand exist, and high levels of wastage occur across the education and training spectrum, exacerbated by the lack of responsiveness of education and training to labour market demands.

The balance between education and training provision, especially between further and higher education should be the number one priority. In order to pursue a sustainable growth path, the South African economy must ensure that one of its vital binding constraints - the shortage of skilled personnel – is alleviated.

The resolution of this crisis will be a policy imperative for the next decade. It is therefore essential that policies aimed at fostering skills development are aligned to this imperative. Survey after survey shows that South Africa's greatest weakness in terms of competitiveness is the scarcity of skills and labour market rigidity, giving rise to an ever- greater outflow of skills (Mayer & Altman, 2005).

The Department of Public Works is considering a recruitment drive to address a shortage of quantity surveyors, architects and civil engineers (Thompson, 2005). Mec. Howard Yawa said that, "attaining and retaining qualified and registered technical staff was a challenge".

## **2.13 GENERATION GAP**

Skills shortages have resulted in more than one industry seeing the value of bringing skilled and experienced project professionals and technical experts out of retirement to assist companies as consultants, mentors, and project managers. However, even in a country as accustomed to diversity as South Africa, generational differences led to a lack of mentorship in the workplace and this may pose challenges for project teams (Marota, 2009). Skills transfer and mentorship are hampered by a reluctance by many to delegate.

### **Traditional Generation Members (born 1922 – 1945)**

Traditionalists are often highly specialised and tend to avoid unnecessary risks. They sometimes have a problem with differences of opinion, especially with a younger person (Downes, 2009). Also, they tend to prefer using a formal structure to get things done instead of delegating, which can lead to problems in terms of decision-making, especially in today's economic climate (Tadej, 2009). People from

this age group do not adapt to change easy. Nonetheless, “Their experience inspires confidence for the younger generation” (Marota, 2009).

### **Baby Boomers (born 1946-1964)**

Many of the “Black Diamonds”, the original beneficiaries of affirmative action characterised by certain level of wealth and education (aged 35 – 50), belong to this generation. This generation is accustomed to long hours at the office. Difficult economic times during their careers have seen them ‘toughing it out’, surviving retrenchment, embracing entrepreneurship and otherwise finding solutions for problems; they excel in the planning stage of the project. “Sometimes they are judgemental on the younger generations and that can make them unwilling to be led by them. This results in issues, as certain activities on the project require leadership of the younger person” (Marota, 2009). This leaves no room for time changes or streamlining processes, using effective technology or removing red tape if necessary. Such qualities led to resistance by the Majority Generation Y team. Their ability to achieve transparency of communication was also affected (Van Heerden, 2009).

### **Generation X (born 1965 – 1980)**

Generation X-ers remember a time before television in South Africa. The typical generation X traits are particularly the desire for a work/life balance and flexible working hours. They are independent and value ethnic diversity. Most of them were born in a time of change; they adapt to change quickly, which is good for the project environment. Their understanding and appreciation of diversity at large makes it possible for them to fit in different team structures and perform well in projects. On the other hand, if their love for independence is not managed well, it often results in a fragmented team structure which impacts on team collaboration (Maroga, 2009). One should be flexible and open to situations as they evolve, otherwise a skilled team may end up not finishing the project where Generation X-ers are concerned (Msengana, 2009). Generation X-ers tend to have a more carefree attitude to life than earlier generations and yet they value their productivity and ability to set and meet goals (Downes, 2009).

## **Generation Y (born 1981 – 1994)**

This generation is the most comfortable with social technology, which gives the impression of constant multitasking and massive social networks. Worldwide they are delaying typical rites of passage into adulthood (such as leaving the parental home, entering careers and purchasing assets) longer than generations who came before. Most of them are the offspring of the baby boomers. Perhaps because of their social networks, generation Y-ers sometimes lack interpersonal skills - this can be observed in their handling of conflict resolution. They also lack patience and seek immediate gratification for their efforts, which can lead to a loss of focus on what needs to be done (Marota, 2009). They tend to be over-optimistic. Because of their fast-paced lifestyle, everything seems very easy in their eyes and they think they can do everything or find answers to all questions very easily (the so-called *Google mentality*).

As a result, using their estimates during a scoping and scheduling exercise might result in grossly underestimating the project. Their propensity for multitasking sometimes sees them losing focus and direction. The easy way to manage these challenges is to approach them using risk management principles. One should ask oneself: "What's the risk of assigning this task to these people?" Asking this question allows one to assign them tasks with a risk-mitigation plan already at hand (Marota, 2009). A formal project methodology will help in this regard in that every deliverable is well defined by quality criteria and one is left with the challenge of ensuring that they stick to the criteria. Van Heerden (2009) suggests that, "flexitime and virtual workplaces play a major role in achieving work/life balance". Generation Y feels that they do not have to be at the office to 'show their worth'; their work and deliverables will 'prove their worth' (Van Heerden, 2009).

### **Bridging the generation gap**

As Baby Boomers plan to leave the workforce in the next few years, Generation X and Y may not carry on with the same legacy, but their strengths and outlook will certainly forge their own. Project structures are required to evolve as generations evolve; this will create a more dynamic and competitive industry where knowledge is better shared, action can be taken quickly and new avenues can be opened (Van

Heerden, 2009). One often sees many organisations struggling to maintain cohesion amongst these generations.

The impact of this can even be worse in projects where synergy is needed to accomplish what is sometimes nearly impossible (Msengana, 2009). Too often managers have knowledge of the behaviours and the characteristics of each generation, but still experience difficulty in translating these in practical terms in order to achieve excellence in projects. In the process, the skills of the entire team are lost. A different kind of leadership is therefore required to produce and sustain results: not the kind that merely scratches the surface. Such leadership should seek for deeper issues so as to inspire people to function better and achieve the well-nigh impossible. In the process transferral of skills can take place almost imperceptibly.

The differences between the generations will always be there; this is because of many aspects such as upbringing, environment, background and the like. However, bridging the generation gap is the only way to move forward in unity beyond the differences (Msenana, 2009).

## **2.14 CONCLUSION**

South Africa's acute skills shortage is reflected by the fact that the average age of practising civil engineers and quantity surveyors in this country is 53. "When these professional people retire, they will leave an alarming skills vacuum to fill" (Rankine, 2007). The current study seeks to explore the presumed shortage of specifically QS skills in South Africa: to determine the acuity of the problem and to suggest possible ways of addressing this problem.

"South Africans talk enough but don't do enough" says Sehoole, in the context of South African optimising opportunities in the run to the 2010 Soccer World Cup. "Though we all talk about skills development, little is happening. We don't want to be the first country where a Soccer World Cup benefits outsiders more than insiders" (Sehoole, 2006). Moreover, South Africa needs high levels of both quality and quantity in skills, education and training (Shivambu 2006).

A suggestion in this regard is that candidates who apply for registration in terms of the Quantity Surveying Profession Act 2000 (Act No 49 of 2000) should be admitted to Interviews aimed at assessment of their professional competence only if they

produce certificates to prove that they have successfully completed all the prescribed SACQSP Professional Skills Modules during their post-qualification terms as employed, supervised, mentored, candidates (SACQSP, 2009).

If the construction industry is to be stimulated through a substantial increase in government expenditure on infrastructure, it is imperative that there should be an adequate supply of low, medium and high level skills to support its expansion.

Whatever the political motivations, it is undeniable that South Africa is suffering from a 'brain drain' problem. The white segment of the population has fallen by about 16% (841 000) since 1995, and while in the early years that might have been explained by exaggerated fears of social collapse, more recently the reasons are related to resentment regarding 'positive discrimination' and the persistent problem of crime (which in reality has lessened as a problem for individuals, but has intensified as a concern for businesses). The unemployment problem is clearly linked to the skills issue (Africa Monitor, 2006). Skills migration seems to be a global phenomenon. Britons seem to be leaving their country in record numbers, the highest number since records began in 1991 (Louth, 2007).

The Departments of Labour and Education must bear the responsibility for the situation they currently find themselves in. The main reason for the accelerated outflow of skills is better jobs and salaries abroad. Economists are already warning that South Africa's attempt to achieve average annual GDP growth of 6% is being threatened by the skills bottleneck. Government officials have admitted that it may be necessary to re-hire experienced white staff who have been displaced as part of the country's affirmative action and black economic empowerment programmes, while recently the previous Deputy president, Phumzile Mlambo-Ngcuka, called for a, "skills revolution to extricate us from the crisis we face"; to which she added, "the most fatal constraint to shared growth is skills" (George, 2005).

Due to the current high turnover of QS personnel, processing of fee accounts within provincial government is slow and due to cash flow problems, QS firms had to close their doors or change their main focus to construction or appraising (Schoeman, 2008).

The Council for the Built Environment (CBE) was established in April 2002. The CBE serves as a forum for communication between the six built environment councils (architects, engineers, landscape architects, quantity surveyors, project and construction managers and property valuers), and advises the Minister of Public Works on issues that affect the built environment professions and the public (Construction World, 2004).

If every stakeholder worked together on the theory of constraints we can come up with solutions in the fields of “Policy development, strategic and operational planning, resource allocation, implementation, performance monitoring and evaluation” (National Strategic Planning Green Paper, 2009). However, the question remains as to whether these can be implementable and controlled. It may be argued that South Africa has unlimited potential, but it has to be managed meticulously. Economic pressure is increasing globally. The QS industry should be willing to implement solutions in close cooperation with Government and skills development institutions. This entire process should add value and lead to economic empowerment; for everybody involved in the industry and not only a designated group. If we can sustain growth, we will also sustain poverty reduction (Fiske, 2009).

What the skills shortage crisis needs are “creative solutions” (Herman, 2009).

The skills shortage problem is not an exclusively South African problem; it is a problem experienced in Australia and much of the European Union; it is undoubtedly a global predicament (Lester, 2008).

*It is not enough to teach a man a speciality. Through it he may become a useful machine, but not a harmoniously developed personality. It is essential that the student acquire an understanding of a lively feeling for values. He must acquire a vivid sense of the beautiful and the morally good. Otherwise he – with his specialised knowledge – more closely resembles a trained dog than a harmoniously developed person.*

*He must learn to understand the motives of human beings, their illusions, and their sufferings in order to acquire a proper relationship to individual fellow man and the community. Over emphasis on the competitive system and premature specialisation on the ground of immediate usefulness kill the spirit on which all cultural life depends, specialised knowledge included.” (Einstein)*

## CHAPTER 3

### EMPIRICAL RESEARCH

This chapter reports the results of the survey to determine the alleged shortage of quantity surveyors and the cause thereof. The tables' sources are the survey results from the questionnaires reflected in percentages.

#### 3.1 QUANTITATIVE RESULTS

##### Shortage of Quantity Surveyors

**Table 5 - Shortage of *affordable* qualified QSs.**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Disagree	2	5.4	5.4	5.4
Disagree/Agree	7	18.9	18.9	24.3
Agree	28	75.7	<b>75.7</b>	100
Total	37	100	100	

The results shown in *Table 5* indicate that the majority of respondents (**75.7%**) agree that there is a shortage of affordable QSs while 18.9% are indecisive.

**Table 6 - Shortage of *competent* qualified QSs.**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Disagree	2	5.4	5.4	5.4
Disagree/Agree	3	8.1	8.1	13.5
Agree	32	86.5	<b>86.5</b>	100
Total	37	100	100	

In *Table 6* it is shown that the respondents overwhelmingly (**86.5%**) confirmed that there is a shortage of *competent, qualified* QSs.

**Table 7 - Loss of personnel due to *recruitment agencies*.**

	Frequency	Percentage	Valid Percentage	Cumulative Percentage	
	Disagree	23	62.2	<b>63.9</b>	63.9
	Disagree/Agree	8	21.6	22.2	86.1
	Agree	5	13.5	13.9	100
	Total	36	97.3	100	
N/A	Disagree	1	2.7		
	Total	37	100		

The results shown in *Table 7* indicate that (**63.9%**) of the respondents *Disagree* with the notion of losing personnel due to recruitment agencies – this was surprising. Telephonic and e-mail interviews with the specific respondents disagreeing was

conducted and it was established that either *they* are using recruitment agencies to recruit personnel themselves or did not have personnel to lose to recruitment agencies (e.g. partnerships working without personnel). 22.2% are uninformed or uninterested about the reasons for their personnel leaving.

### Shortages due to Academic Limitations

**Table 8 - Causes of shortage - Limited accredited training facilities.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Strongly Disagree	10	27.0	<b>27.8</b>	27.8
	Disagree	12	32.4	<b>33.3</b>	61.1
	Agree	11	29.7	30.6	91.7
	Strongly Agree	3	8.1	8.3	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results reflected in *Table 8* indicate that almost two thirds (**61.1%**) of respondents *Disagree and Strongly Disagree* that the causes of the shortage of skilled Qs are limited accredited training facilities; 38.9% marked *Agree or Strongly Agree* to this statement.

**Table 9 - Causes of shortages - Limited enrolment allowed.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Strongly Disagree	4	10.8	<b>11.1</b>	11.1
	Disagree	19	51.4	<b>52.8</b>	63.9
	Agree	9	24.3	25.0	88.9
	Strongly Agree	4	10.8	11.1	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

As reflected in *Table 9*, (**63.9%**) of respondents *Disagreed and Strongly Disagreed* and 36% *Agreed or Strongly Agreed* that the cause of a shortage of skilled Qs being the limited enrolment allowed.

**Table 10 - Causes of shortages - Inadequate maths education**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	6	16.2	16.7	16.7
	Agree	10	27.0	<b>27.8</b>	44.4
	Strongly agree	20	54.1	<b>55.6</b>	100
	Total	36	97.3	100	
	System	1	2.7		
	Total	37	100		

Table 10 shows that the majority respondents, **(83.4 %)** Agreed or Strongly Agreed that the cause of the shortage of skilled Qs is inadequate mathematics education at school level.

**Table 11 - Causes of shortages - Lack of financial support.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Strongly Disagree	3	8.1	8.3	8.3
	Disagree	7	18.9	19.4	27.8
	Agree	16	43.2	<b>44.4</b>	72.2
	Strongly Agree	10	27.0	<b>27.8</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In Table 11 it is shown that most of the respondents **(72.2%)** Agreed and Strongly Agreed that the lack of financial support is a cause for the shortage of skilled Qs.

### Shortages due to Emigration

**Table 12 - Lost personnel due to emigration.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	23	62.2	<b>63.9</b>	63.9
	Disagree/Agree	10	27.0	27.8	91.7
	Agree	3	8.1	8.3	100
	Total	36	97.3	100	
	Disagree	1	2.7		
	Total	37	100		

The results as reflected in Table 12 show that the majority of practices **(63.9%)** did not lose personnel themselves due to emigration and 27.8% are unfamiliar with the statement. Only 8.3% have lost personnel due to emigration.

**Table 13 - Knowledge of registered QSs who emigrated.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
	Disagree	3	8.1	8.1	8.1
	Disagree/Agree	2	5.4	5.4	13.5
	Agree	32	86.5	<b>86.5</b>	100
	Total	37	100	100	

In *Table 13* it is shown that the majority of respondents (**86.5%**) know of QS who have emigrated.

**Table 14 - Knowledge of a QS graduate who emigrated.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
	Disagree	9	24.3	24.3	24.3
	Disagree/Agree	5	13.5	13.5	37.8
	Agree	23	62.2	<b>62.2</b>	100
	Total	37	100	100	

The results of this question are reflected in *Table 14*. According to the table, (**62.2%**) respondents know of a QS graduate who emigrated and 24.3% *Disagreed* that they had such knowledge.

**Table 15 - Competent QSs emigrating due to Crime.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
	Disagree	1	2.7	2.8	2.8
	Disagree/Agree	7	18.9	19.4	22.2
	Agree	28	75.7	<b>77.8</b>	100
	Total	36	97.3	100	
N/A	N/A	1	2.7		
	Total	37	100		

The results of this question are reflected in *Table 15*. The majority of respondents (**77.8%**) *Agreed* that crime is the reason for a number of competent QSs emigrating and 19.4% respondents were indifferent to the statement.

**Table 16 - Competent QSs emigrating due to Income.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
	Disagree	11	29.7	30.6	30.6
	Disagree/Agree	14	37.8	<b>38.9</b>	69.4
	Agree	11	29.7	30.6	100
	Total	36	97.3	100	
N/A	N/A	1	2.7		
	Total	37	100		

A mixed response is reflected in *Table 16*. **(38.9%)** respondents being indecisive or unfamiliar and 61.2% equally divided between *Agree* (30.6%) and *Disagree* (30.6%).

### Shortage due to Cash Flow problem

**Table 17 - QS practices had cash flow problems.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	16	43.2	<b>44.4</b>	44.4
	Disagree/Agree	6	16.2	16.7	61.1
	Agree	14	37.8	38.9	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results reflected in *Table 17* show that the respondents *Disagreed* **(44.4%)** that they had cash flow problems in the past, 38.9% experienced cash flow problems at some point in the past and 16.7% are indifferent towards the statement.

**Table 18 - QS practices currently having cash flow problems.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	19	51.4	<b>52.8</b>	52.8
	Disagree/Agree	9	24.3	25.0	77.8
	Agree	8	21.6	22.2	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

*Table 18* indicates that **(52.8%)** respondents *Disagreed* with having cash flow problems, 22.2% have cash flow problems and 25% are indecisive about the statement.

### Government interference

**Table 19 – Is government doing enough to alleviate shortage of QSs?**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	24	64.9	<b>66.7</b>	66.7
	Disagree/Agree	7	18.9	19.4	86.1
	Agree	5	13.5	13.9	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In *Table 19* it is shown that two thirds of the respondents **(66.7%)** *Disagreed* that the government is doing enough to alleviate the shortage of QSs.

**Table 20 - Commissions on *BBBEE* status.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	20	54.1	<b>55.6</b>	55.6
	Disagree/Agree	5	13.5	13.9	69.4
	Agree	11	29.7	30.6	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results in *Table 20* indicate that **(55.6%)** of respondents feel that their commissions are not based on their BBBEE structure, while 30.6% *agreed* that their BBBEE structures assisted obtaining their commissions.

### Shortage due to Salaries

**Table 21 - SA QS Consultation fees / Salaries inflated?**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	24	64.9	<b>66.7</b>	66.7
	Disagree/Agree	7	18.9	19.4	86.1
	Agree	5	13.5	13.9	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results reflect that two thirds of respondents **(66.7%)**, as shown in *Table 21*, *Disagreed* that QSs salaries are inflated compared to SA standards while 19.4% are indecisive.

**Table 22 - Global QS Consultation fees / Salaries inflated?**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	24	64.9	<b>66.7</b>	66.7
	Disagree/Agree	9	24.3	25.0	91.7
	Agree	3	8.1	8.3	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In *Table 22* it is indicated that two thirds of the respondents **(66.7%)** *Disagreed* that consultation fees and/or salaries are inflated compared to global standards while 25% are indecisive about this.

## Shortage due to a Skills deficit

**Table 23 - Employment of QS Candidates from time to time.**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	3	8.1	8.3	8.3
	Disagree/Agree	9	24.3	25.0	33.3
	Agree	24	64.9	<b>66.7</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In *Table 23* it is shown that two thirds (**66.7%**) of the respondents *Agreed* that every practice should employ a QS Candidate from time to time while 24.3% are indecisive.

**Table 24 - Transferral of "Old reliable skills and methods".**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	19	51.4	<b>52.8</b>	52.8
	Disagree/Agree	9	24.3	25.0	77.8
	Agree	8	21.6	22.2	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In *Table 24* it is indicated that half of the respondents (**52.8%**) *Disagreed* that "Old reliable skills and methods" are effectively being transferred to graduating Qs by academic staff, 25% are indecisive and 22.2% feel that this transferral takes place effectively.

**Table 25 - Practical experience**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	10	27.0	<b>27.8</b>	30.3
	Disagree/Agree	10	27.0	<b>27.8</b>	57.6
	Agree	16	43.2	44.4	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results reflects in *Table 25* shown that 44.4% of respondents *Agreed* that practical experience are effectively being transferred to registering Qs and the remaining (**55.6%**) are divided equally between 27.8% for *Disagree* and 27.8% *Neither Agree nor Disagree*.

## Supply & Demand

**Table 26 - Balance between *Supply* and *Demand***

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	19	51.4	<b>52.8</b>	52.8
	Disagree/Agree	9	24.3	25.0	77.8
	Agree	8	21.6	22.2	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

Table 26 shows that half of the respondents (**52.8%**) *Disagreed* that there is a balance between supply and demand of Qs, 25 % were indifferent while 22.2% *Agreed* that there is a balance between supply and demand for Qs.

## Retention of Skilled Lecturers by Tertiary Institutions

**Table 27 - Tertiary institutions - Higher salaries**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	1	2.7	2.8	3.1
	Agree	24	64.9	<b>66.7</b>	68.8
	Strongly Agree	11	29.7	<b>30.6</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

In Table 27 the results reflect that the majority (**97.3%**) of respondents *Agreed* or *Strongly Agreed* that tertiary institutions struggle to retain their QS-qualified staff due to higher salaries being paid by private and public sectors.

**Table 28 - Tertiary institutions - Working environment**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	11	29.7	30.6	30.6
	Agree	19	51.4	<b>52.8</b>	83.3
	Strongly Agree	6	16.2	<b>16.7</b>	100.0
	Total	36	97.3	100.0	
	N/A	1	2.7		
	Total	37	100		

(**69.5%**) of respondents *Agreed* or *Strongly Agreed*, as shown in Table 28, that tertiary institutions struggle to retain their QS-qualified staff due to more attractive / improved working environments and 30.6% *Disagreed* with this statement.

**Table 29 - Tertiary institutions – Opportunities partnership**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	2	5.4	5.6	6.3
	Agree	28	75.7	<b>77.8</b>	84.4
	Strongly Agree	6	16.2	16.7	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results are reflected in *Table 29*. Most of the respondents (**94.5%**) *Agreed* or *Strongly Agreed* that tertiary institutions struggle to retain their QS-qualified staff due to better opportunities such as partnerships in the private sector.

**Table 30 - Tertiary institutions - Opportunities - own practices**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	9	24.3	25.0	25.0
	Agree	24	64.9	<b>66.7</b>	91.7
	Strongly Agree	3	8.1	<b>8.3</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results in *Table 30* reflects that (**75%**) of the respondents *Agreed* or *Strongly Agreed* that tertiary institutions struggle to retain their QS-qualified staff due to better opportunities while 25% *Disagreed*

**Table 31 - Tertiary institutions – Job satisfaction / self-actualisation**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Missing	Strongly Disagree	2	5.4	5.6	5.6
	Disagree	10	27.0	27.8	33.3
	Agree	21	56.8	<b>58.3</b>	91.7
	Strongly agree	3	8.1	<b>8.3</b>	100
	Total	36	97.3	100	
	System	1	2.7		
	Total	37	100		

Two thirds of the respondents (**66.6%**) as shown in *Table 31*, *Agreed* or *Strongly Agreed* that tertiary institutions struggle to retain their QS-qualified staff due to job satisfaction / self-actualisation and 27.8% *Disagreed* with this statement.

## Retention of Skilled Staff by Private Practices.

**Table 32 - Private Practices - Higher salaries**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	4	10.8	11.1	11.1
	Agree	26	70.3	<b>72.2</b>	83.3
	Strongly Agree	6	16.2	<b>16.7</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results in *Table 32* reflect that most of the respondents (**88.9%**) *Agreed* or *Strongly Agreed* that private practices struggle to retain their QS-qualified staff due to higher salaries being offered because of the economic growth in South Africa.

**Table 33 - Private Practices - Opportunities own practices**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	12	32.4	33.3	33.3
	Agree	19	51.4	<b>52.8</b>	87.9
	Strongly Agree	5	13.5	<b>13.9</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

*Table 33* shows that two thirds of respondents (**66.7%**) *Agreed* or *Strongly Agreed* that private practices struggle to retain their QS-qualified staff due to better opportunities such as starting their own practices and 33.3% *Disagreed* with this statement.

**Table 34 - Private Practices - Opportunities internationally**

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
N/A	Disagree	3	8.1	8.3	8.3
	Agree	25	67.6	<b>69.4</b>	77.8
	Strongly Agree	8	21.6	<b>22.2</b>	100
	Total	36	97.3	100	
	N/A	1	2.7		
	Total	37	100		

The results in *Table 34* reflect that (**91.6%**) respondents *Agreed* or *Strongly Agreed* that private practices struggle to retain their QS-qualified staff due to better opportunities elsewhere in the world.

### 3. 2 QUALITATIVE RESULTS

The results of the qualitative research follow on the next page in *Table 35*.

TABLE 35 - THEMATIC CONTENT ANALYSES OF COMMENTS TO THE QUESTIONNAIRES (QUALITATIVE RESULTS)

THEME	SUB-THEME	VERBATIM (EXAMPLE)
THEME 1 - EDUCATION	1.1 MATHS AT SCHOOL LEVEL	"The body of knowledge of maths at school should be improved."
	1.2 MATHS AT UNIVERSITY LEVEL	"Raising the maths standards at Universities and Technicons"
		"Support groups should be in place to assist the students struggling with maths and other subjects"
	1.3 UNIVERSITY TRAINING	"At UFS "Old skills and methods" such as taking quantities, collating quantities effectively being transferred to graduating QSs by academic staff."
		"Raise the standards at Universities, etc. to international standards".
	1.4 ILLITERATE "GRADUATES"	"Better language, writing and communication education at school level"
		"They cannot write letters, draft reports, produce documents or measurements / calculations of the lowest acceptable standard."
1.5 UNACCREDITED INSTITUTIONS & UNACCREDITED EDUCATORS	"The profession is suffering from selling its birthright" by permitting poor education (particularly at Non-SACQSP Accredited tertiary institutions), permitting poorly qualified/unregistered persons to hold academic posts at tertiary institutions."	
	"These entrants to the QS Profession have NEVER BEEN GIVEN VALUE for their time spent at tertiary institutions and the fees they have paid for their (useless - in terms of <i>competence</i> qualifications."	
1.6 TECHNICAL TRAINING	"Technicians should be adept at measuring from plans and on site and little else"	
	"I strongly believe that we require well trained technicians who can alleviate the pressure on registered quantity surveyors during documentation and administration on site."	
1.6 BUSINESS SKILLS	"This skills should be taught in school and in tertiary education in order to prepare the emerging QSs for the demands practices has to survive."	

THEME	SUB-THEME	VERBATIM (EXAMPLE)
<b>THEME 2 - MARKETING</b>	2.1 THE PROFESSION AT SCHOOL LEVEL	"Marketing the profession at school level, pupils can prepare themselves in advance for the maths requirements." "Marketing of profession to be enhanced."
	2.2 THE PROFESSION TO THE PUBLIC	"Marketing the profession more vigorously the public." "Exposure to the public & marketing of the profession to prospective students"
	2.3 THE STUDY FIELD	"Marketing the study field to prospective students as an option." "Promote the profession at high school level. Assist potential QS students financially"
	2.4 GLOBAL MARKETING IN RSA	"Other countries (UAE, UK) recruit in RSA and advertise their fees causing an increase in salaries." "High salaries in Asian countries cause emigration problems"
<b>THEME 3 - GOVERNMENT</b>	3.1 AFFIRMATIVE ACTION	"Make the playing field level by scrapping the affirmative action law. Appointments and promotions should be done based on competencies and not race." "BBEE legislation should be replaced with EE (economic empowerment) whereby entrepreneurship irrespective of colour and creed is encourages."
	3.2 PAYMENT OF FEES	"Professional fees should be paid within a reasonable time (say 30 days after submission and interest must be added if late / delayed payments were made with no prejudice of your rights".
	3.3 CRIME	"Create a safe environment (to work in, as well as at home);" "Government to control crime to retaining good QSs for RSA"
	3.4 RESOURCES	"Bursaries and study loans for students at tertiary level" "The racial bias employed in the award of bursaries, study and subsequent employment opportunities surely plays a role in this matter?"
	3.5 PAYMENT OF TEACHERS	"Inadequate salaries cause a decline in maths teachers on school level and teachers on tertiary level."
	3.6 SKILLS SHORTAGE OF ARTISANS	"The construction industry is under severe pressure due to skills shortages of tradesmen." "Practical skilled workers are rare. This puts pressure on the profession w.r.t. delivery dates and quality"

THEME	SUB-THEME	VERBATIM (EXAMPLE)
THEME 4 - PROCUREMENT	4.1 ALLOCATING PROJECTS	"Allow equal opportunities for all (no preferences to BBEE, women, PDI etc." "All my appointments over the last few years were problematic projects due to original QS appointments terminated". "Even in the face of the shortages of QSs affirmative action still prevents qualified quantity surveyors to do the work they were trained for and untrained people so often fills those positions."
	4.2 BBEEE	"Abandonment of BBEE legislation by the Government and replacement thereof with economic empowerment EE legislation whereby entrepreneurship irrespective of colour and creed is encouraged." "After 14 years of democracy in South Africa, QS should be appointed on skill, experience and quality of services rendered, and not based on BEE status or skin colour."
	4.3 JOINT VENTURES	"Together we can learn from each other" "JV's creates opportunities for BBEE consultants without skills to link with skilled consultants that lack the BBEE profile" "The business world grow exponentially but need to evolve freely to attain the highest rate of return. The changes to so many laws enforcing small and medium sized businesses into unprofitable partnerships and unskilled workers"
	4.4 POLITICS	"Allowing politics and political pressure to get in the way of maintaining the highest standards of professional competence and excellence." "Less government interventions – e.g. threatening new SACBE vs. existing professional councils. will ensure sustainable growth"
THEME 5 - COMPETENCIES	5.1 EXPERIENCE	"The problem is getting good staff with 7 - 12 years of experience" "Practical experience must be obtained by students while studying (part-time classes when not working – certainly from 3 <sup>rd</sup> year onwards)"

THEME	SUB-THEME	VERBATIM (EXAMPLE)
THEME 5 - COMPETENCIES	5.2 COMPETENT QSS	"Students must work part time at QS practices to gain experience before graduating."
		"They are totally INCOMPETENT to perform any QS roles and functions after their "qualifications" have been awarded. They have absolutely NO domain knowledge. Green building? What's that? EIAs? What does that mean? Value management? Never heard of it! The tariff of professional fees? Never seen it". The QS Act 49/2000? No, I don't know about it."
	5.3 MENTORSHIP	"Mentorship of candidate QSs by their employers is generally speaking of an extremely low standard. WHY? "
		"Working with many different QS companies I find the knowledge of junior staff shocking (and in some cases not so junior – running own company)."
		"The high rate of risk work that has to be engaged in to secure work has diminished the profitability in the QS environment to the extent that it cannot indulge in the costs of mentorship."
5.4 JOB APPLICANTS	"Most of the applications for work are asking for a high salary while they are not competent. They seem to try their luck by jumping from job to job / salary to salary."	
5.5 PRACTICAL EXPERIENCE	"As providers of Quantity Surveying Software we are actively involved in running workshops to train students and registered Quantity Surveyors on the use of the system. It is common to find "qualified" delegated who actually do not know the basic measuring, e.g. using 4 x dimensions to produce a volume"	
THEME 6 - OTHER	6.1 PROTECTION OF PROFESSION	"The professions in the built environment are not protected. The QS profession has particularly been abused by developers because the provision of services is unregulated. The QS profession has prostituted itself to such an extent that it is regarded by most developers as an exploitable resource. This is hardly an environment to attract the more promising young people into."
	6.2 GENERATION GAP	"Generation gaps cause communication problems and discourage mentorship"

## **THEMATIC DISCUSSION**

### **Education:**

The majority of respondents commented on mathematics education on all school levels and universities. Mathematics is a prerequisite for studying quantity surveying. This has a significant impact on the outcome of students' tertiary studies and the graduate's ability to pass the council exams.

Non-SACQSP-accredited tertiary institutions with unaccredited educators are a great cause of concern, as they represent nothing but a waste of money, potential talent and time. Very few of these candidates who write the council exams pass them.

Business skills, communication skills as well as writing are essential for registered QSs to maintain sustainable growth or even to survive the demands of business, whether they decide to work independently or interdependently. Lowering of standards should not be tolerated as this will make the South African QS industry less compatible with the global market.

Technical QS qualification is in urgent demand to free up time for the experienced QS to attend to critical work.

### **Marketing**

The profession of quantity surveying is fairly unknown to the public. Those in the building industry also have only a vague idea of what quantity surveying is concerned with. The function and necessity of QSs in the building industry should be marketed to professional people such as architects, engineers and Government to protect critical scarce resources. Furthermore, the study field and career path should be marketed to schools and career events.

A prospective student would probably not decide out of the blue to become a QS. This means that marketing the study field and requirements early in high school will allow prospective students to choose the requisite subjects and be prepared. Exposure of the profession together with available bursaries can focus the attention of prospective students.

It is also a concern that other countries advertise vacancies on our professional websites, with huge salaries, and then the aspiring job seekers will want the same salaries locally .

## **Government**

The majority of comments also included great concern about government interference the major influence it has on the industry. Problems in this regard are:

- By enforcing legislation like BBEE and affirmative action, many projects never get off the ground and the roll-out of anti-poverty plans is slowed down.
- It is possible that within one year the government can destroy a BBEE affirmative action appointment (people) by wrongly appointing them to a job that is too big or complex for them and then not paying their professional fees on time.
- It is difficult enough for experienced QSs that have sufficient reserves to survive non-payment of professional fees. This is arguably even more difficult for those who have no idea how to do things. Quite a few experienced QSs have emigrated to Australia due to non-payment of professional fees.
- Crime is mentioned by people from all spheres as a problem. People want a safe environment to work in and to go home to.
- It is becoming increasingly difficult to complete a project on time if the professional team cannot find skilled artisans to do a quality job.
- Teacher's salaries and financial support for tertiary education are issues commented about as they feel it will enhance the quality of education.

## **Procurement**

- This should be fair and be done based on merit and skills.
- It happens often that the wrong contractor is appointed to a project. The contractor does not have the right criteria for cash flow or reserves and the

like, which means the project starts off on a problematic note. Halfway through, the project fails to pay the sub-contractors, for example. The cabinet makers use the money for another project then this project comes to a standstill and none of the professional team receives any further fees.

- By appointing the wrong team to a project, the government wastes money because incomplete projects have to be tendered for a second time. It also happens that between contractors valuable goods are stolen and damaged. These add up that the completion time is twice to three times as long as the estimated time.
- There is a sensitive balance between time, quality and cost. If one were to disturb the balance it will cost much more to get the project completed, and one may lose on quality or it will take much longer to complete.
- By making the wrong appointment through procurement the QS cannot do value management or ensure sustainable growth. The client (the Government) and the QS as well as the professional team must have aligned values.
- Many of the white QSs appointments are problematic as they have to take on projects that were abandoned by incompetent QSs.
- Overemphasising social responsibility can interfere with the efficiency of a project.
- Many joint ventures were formed to have the “right profile” for procurement and ended up with one half losing out to the other half who enjoys the tag along with the financial benefits.

## **Competencies**

- Competencies are the most commented upon issue of all.
- Practical working experience is also a great concern. “Old skills and methods” should be transferred to candidates in universities and in workplaces.

- To find QSs with 7 to 12 years experience is problematic.
- The experienced QSs are reluctant to mentor a candidate and spend too much time because they do job-hopping and play off their salaries to potential employers.
- If one were to appoint a new QS, he may actually “go job-shopping” with the appointment letter he just received, stating his salary, in order to negotiate a better salary elsewhere.
- Too many “young QSs” apply for work and during the interview one finds that they are incompetent and, in many cases, illiterate.
- QSs start their own practices without the necessary skills or without domain knowledge,
- QS practices employ young registered QSs with registration documents who do not know basic measuring or dimensions, which is the foundation of QS work.

## Other

- The QS profession in the built environment is not protected. The QS profession in particular has been abused by developers because the provision of service is unregulated. Most developers regard QSs as an exploitable resource.

Most of the work of QSs is high-risk work and this diminishes the profitability of the QS environment.

- An important topic that emerged seems to be the generation gap. Also, senior QSs are reluctant to mentor due to communication problems deriving from the generation gap and the fact that loyalty has a different meaning to the young generation.

### **3.3 CONCLUSION**

The mixed method of research addressed the quantitative and qualitative research and gave insight into the actual problem areas. Some issues previously ignored came to light in this manner. The generation gap seems to have a greater influence than anticipated.

A significant gap exists in the building industry in terms of the survival and growth of the QS industry since it is felt that there is a shortage of skilled, qualified, affordable QSs.

In Chapter 4 the Conclusions and Recommendations to the results of the empirical research are summarised.

## CHAPTER 4

### CONCLUSIONS AND RECOMMENDATIONS

The objective of this research was to determine whether there is a shortage of quantity surveyors in South Africa and the sub-objectives were to establish the reasons and the contributing factors for the alleged shortage of quantity surveyors in South Africa. The need for this study grew from perceptions in the industry by means of word of mouth voicing of concerns, and the Department of Works also identified a shortage of skilled QSs in-house and as consultants.

A mixed-methods approach was used to do an empirical exploration, which included quantitative (questionnaire) and qualitative (comments and interviews) sections on the questionnaire. The latter were analysed using a strategy of thematic content analysis and interviews via telephone. QSs were selected from every province, from all race groups, gender groups and age groups.

#### 4.1 CONCLUSIONS TO RESEARCH RESULTS

The research results have shown that there is a critical shortage of competent, registered and affordable quantity surveyors in South Africa. It is increasingly difficult to find good staff with 7-12 years' experience. There seems to be no balance between supply and demand in this regard.

Recruitment agencies use head hunters to find properly qualified QSs and lure them away with higher salaries. If a practice does decide to advertise for vacancies they have to compete with other countries like UAE, Saudi Arabia, Australia, and [www.wallstreetglobalcareers.com](http://www.wallstreetglobalcareers.com), on the same websites. These other countries offer salaries that are very high or even partnerships or the prospect of having one's own business. This could mean that transferral of skills does not take place and new QSs do not learn crucial business skills as they job-hop too frequently.

Crime is an important contributing factor when QSs think about emigrating. They want a safe work environment and a safe home. Tertiary institutions, private practices and the public sector find it difficult to retain their staff due to promises opportunities, higher salaries or having an own practice or partnership elsewhere, while job satisfaction and self-actualisation have also been mentioned in this regard.

QS practices are reluctant to employ candidates and transfer “old, reliable skills and methods” due to the generation gap that causes communication gaps and the trend that candidates do job-hopping / job “shopping”. New QSs use fresh appointment letters to negotiate even better salaries. It is not uncommon to find “qualified” delegates who actually do not know the basics of measuring. Graduates are particularly lacking practical experience.

Mentorship of candidate QSs by employers are of an extremely low standard. A mentorship programme was launched a few years ago but was not supported by the Department of Public Works.

The non-payment of government regarding consultation fees / professional fees within a reasonable time after submission (30 days) causes great concern as this lead to severe cash flow problems. This state of affairs could mean that emerging BBEE QS practices sink very soon after their new commissions. They may end up with bad credit records and this will hinder their chances of being appointed again. Non-payment also cases many competent QSs to emigrate to other countries.

BBEE commissions are procured on affirmative action / BBEE criteria instead of on economic empowerment criteria. This leads to many problematic projects. Equal opportunities should be allowed and QS appointments should be based on skills, experience, quality of services rendered and credit-worthiness.

Joint ventures have increased dramatically since BBEE has been implemented. One party may have the skills and the other has BBEE accreditation. JV partners learn from one another other. It happens too often that the BBEE partners simply enrich themselves while the other partners do the actual work.

Politics play too significant a role in commissions and the procurement of tenders. Experience has shown that political appointments tend to be problematic and may present an obstacy in the way of maintaining the highest standards of professional competence and excellence. In order to free up the experienced QSs to specialise, technical QSs can take off a significant load by measuring on site.

There is a general sentiment that QS fees and salaries are very high in South Africa, but when compared with supply and demand and the other professions like engineering and architecture it is competitive.

Government is not doing nearly enough to alleviate the shortage of skills or to address the imbalance of supply and demand. Skills shortages on all levels of the building industry of all sorts of trades and professions are increasing. This hampers the progress of entire building projects including cost, quality and completion time.

The number of legislative requirements is increasing and slows down the implementation of projects as the necessary systems which enforce the legislation are not in place. Unaccredited institutions and unregistered educators cause a waste of scarce resources such as finance, valuable time and talents. Unaccredited institutions offer no value for money or time spent.

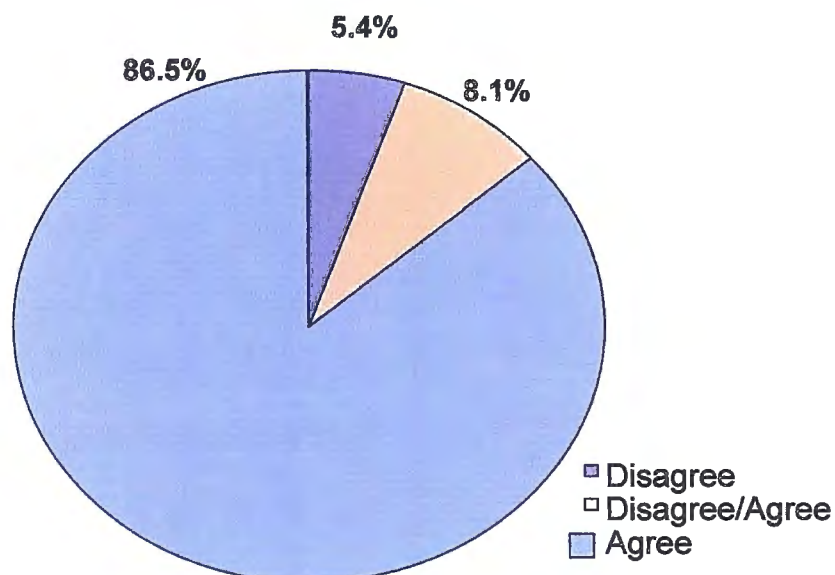
In South Africa, 20 institutions offer courses in quantity surveying - from NQF Level 4 to NQF Level 7 - only six are currently SACQSP-accredited. (SACQS, 2008) (*Addendum 9*). Fourteen institutions are therefore not accredited. The accredited tertiary institutions enrol a limited number of students and students with potential must stand back for those with higher high school scores. The profession is suffering from “selling its birthright” by permitting poor education (particularly at non SACQSP Accredited tertiary institutions), by allowing poorly qualified and unregistered persons to hold academic posts at tertiary institutions, and allowing politics and political pressure to stand in the way of maintaining the highest standards of professional competence and excellence. Financial support and academic support to students are lacking. This support can make a major difference to the ratios of graduating candidates. (see *Addendum 8*) Bursaries and study loans should be made more widely available and racial bias employed in the award of bursaries should be eliminated as the processes are monitored closely.

Mathematics standards and mathematics education are burning issue as many professions have these as a prerequisite - the QS study field is no exception, and this has a great influence on the outcome of tertiary studies as well as the graduate's ability to pass the council exams.

Business skills, writing, communicating, accounting, legal skills are also very important for emerging QS to set up a practice.

A resource-based plan used to be implemented by the previous government and was proven effective in eliminating skills shortage.

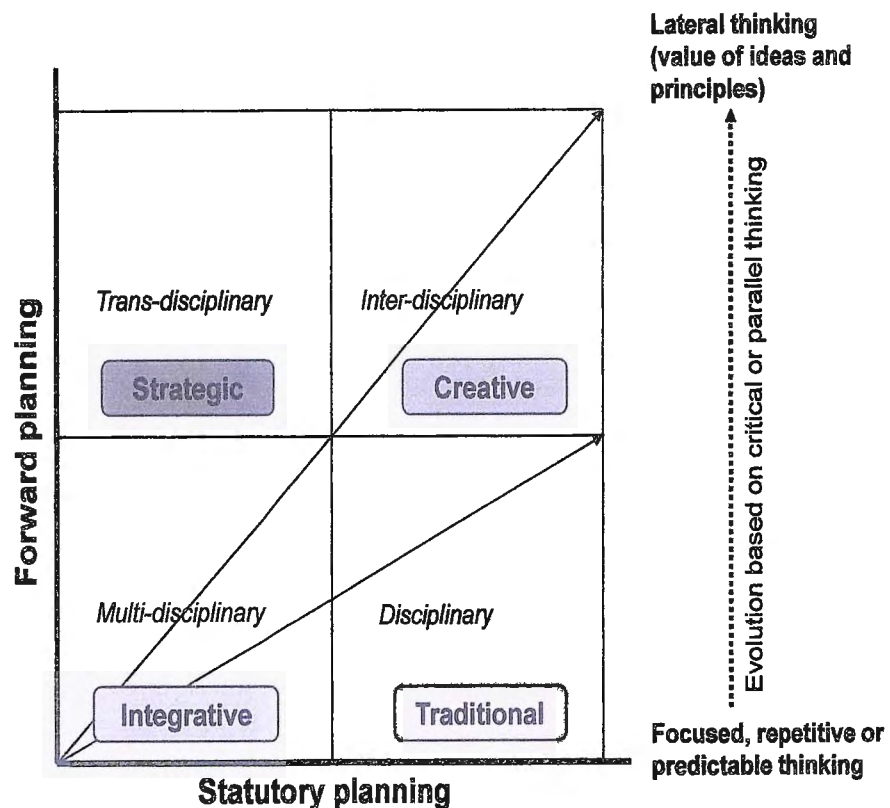
There is very limited protection for QSs in the building environment aimed at reducing the risk of exploitation by contractors.



**Figure 11 - Shortages of Competent Affordable QSs**

*Figure 11* reflects the percentage of respondents that *Agreed* that there is a shortage of competent quantity surveyors in South Africa.

Due to the critical shortage of technical QSs and QS graduates who usually do the basic measuring and traditional disciplinary work in the production office, the senior QSs now has to function between integrative multi-disciplinary, creative trans-disciplinary and strategic inter-disciplinary fields in order to be able to deliver quality results (Schoeman, 2008) (refer to *Figure 12*). It seems as if there are too many chiefs and too few Indians to do the work.



**Figure 12: Shifting in planning thinking based on a disciplinary approach**

Source: C. Schoeman (2008)

The average age of QSs is 53 years of age which can suggest that this is a dying trade. The ratio of white students and other (black, coloured and Indian) students enrolling and the different ratio of them qualifying (Addendum 8) are alarming (refer to *Figure 2.4 B*)

The racial ratio of respondents (*Figure 10*) is not a good reflection of reality and it is ideal that all races should participate in surveys aiming at addressing problems.

The profession and the study field should be marketed to the public, prospective students and scholars by promoting the study field and the advantages of the profession.

Due to the declining population growth in the EU countries, the SA QS graduate is very sought after (Graff, 2004).

## **4.2 RECOMMENDATIONS AND CONCLUSIONS**

All race groups should be encouraged to communicate and respond as this can be very advantageous to all, with a view to assist the association and council to address problem areas.

Retaining competent Qs must be top priority. There should be a system to protect employers against recruitment agencies, and firms should create a more conducive work environment for professional Qs, regardless of salary (Bowen, Cattell, Michell & Distiller, 2008).

EE Economic Empowerment will help to ensure sustainable growth in this country and should therefore replace BBEE. A contingency plan needs to be established to ensure sustainable growth. Affirmative action should be abolished as it is, in principle, unconstitutional.

A marketing tool is required to promote and market the quantity surveying profession at Government, industry and public level forums. The poor image of the profession must be rectified. There seems to be a perceived lack of disciplinary teeth, procedures and resources to police. Poor performing Qs must be disciplined by the ASAQS and the QS profession must be promoted at school level, especially at black schools.

Collaboration with other professions and organisations in the interest of the construction industry would be a recommendation.

Crime is a significant concern; Government should ensure a safe work and home environment.

A resource-based strategic plan should be developed to re-build the industry as a whole. It is recommended that Government should focus on secondary and tertiary institutions' education levels as part of a resource-based plan as the previous government implemented.

A better education flow should be established with a view to sustainability. The “old method” of school used to work (refer to Nelson Mandela) and should be followed again as outcome-based education is not very effective; non-contributing role-players should be removed from the system.

Candidates must have a certain level of working experience before registering, like doctors should.

Academic and financial support should be readily available to all students on all levels, and should be made available to hard-working students; these should be awarded on an unbiased and fair basis. Math and analytical skills should be taught properly at school level as maths is a prerequisite for QS studies. On tertiary level, pre-enrolment preparation courses should be implemented, the level of other subjects should be raised and inferior courses should be removed.

Government must implement a sustainable plan for mathematics education to increase the standards at school level and at tertiary level. Government should do more to retain educators and should pay their mathematics teachers better.

A strategic plan to visit and accredit as many unaccredited training facilities as possible should be implemented. To save money and time, existing facilities should be supported academically and financially to utilise the infrastructure that already exists.

Technical Qs should be trained as time is of the essence and technical courses are shorter.

The standards of education at previous technikons should be improved. At the moment it is very difficult to assess the standard of a student from a university of technology and it is also difficult to find teachers to train students properly. Funding to the accredited training institutions should be readily available.

Rebates for practices that employ candidate Qs should be awarded. Mentorship should be available to all graduates and candidates.

Compulsory practical experience systems should be implemented in order to give graduates practical guidance.

Practical / part-time courses must be structured in such a way as to accommodate part-time work, i.e. only morning lectures or on some days. These are very important and standards should not be lowered any further. The requirements for the degree should return to the previous status of 5 years' course and 2 years' practical experience. Before starting one's own practice, compulsory practical training should be enforced.

The following will also be necessary: implementing a succession plan by attracting committed younger members into board structures, and extend mentorship back to young practices in the chapters.

The receding economy calls for an aggressive marketing plan to promote the QS profession's advantages to the public and on school level and to prospective students.

Professional fees should be paid within a reasonable time (30 days after submission, interest must be added if late / delayed payments were made – with no prejudice of rights). Consultants should be paid timeously to ensure the survival of competent practices.

Tertiary institutions should develop a continuous strategic plan for retaining their academic staff and alleviate the critical shortage of academic staff.

A skills retention plan should be drafted, implemented and controlled to retain QS graduates. Government should revisit the old plan of resource-based management from the previous government; improve this, and implement and control the process.

By eliminating the shortage of competent, qualified Qs, the supply should be enough for the increasing national and international demands. The industry should promote the profession and make it more attractive.

Programme accreditation (in terms of Act 49/2000) is a vital factor. The non-accredited 14 institutions should all be visited by the Council (1 May - 31 July 2009) (Le Roux, 2008) and achieve SACQSP accreditation. Unaccredited institutions are there because they want to educate the students to be Qs; however, they also aim to make money and they are already in operation with a working infrastructure that can be used.

A recommendation to unaccredited institutions is to implement a system whereby institutions can be taught and guided to raise their standards, to apply for accreditation and be incorporated into the system in order to alleviate the demand for skilled QSs.

Bridging the generations gap should be a priority. Managing generational diversity on projects teams when mentoring projects is very important for successful completion of projects.

ASAQS should educate QSs about systems in place to protect them against exploitation. One such a system is PROCESA (Professional Consultant Service Agreement Committee), document Addendum 11, that is a professional working agreement between the client and the consultant QS. JBCC also supplies numerous contracts for main and sub-contractors as well as principal agents.

By protecting the QS profession, all the stakeholders and resources in the project life-cycle are protected and therefore value management should take place.

The SACQSP and the ASAQS should address the perceived deficiency relative to the competencies identified. It is recommended that intervention takes place in terms of curriculum design, accreditation, assessment of professional competency, and continuing professional development.

The ASAQS should train QS members about all the documents available to protect stakeholders in a project.

The long-term objective of Government should be to create sustainable growth. The most important aspect all stakeholders should accomplish is aligned values.

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## **ADDENDA**

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**Personalised letter to questionnaire**

Dear Theo Syffert

*I am urgently in need of your support and feedback*

**SURVEY ON THE ALLEGED SKILLS DEFICIT IN THE QUANTITY SURVEYING PROFESSION IN SOUTH AFRICA.**

1. I am currently undertaking a research study which investigates the reasons for the perceived shortage of Quantity Surveyors?
2. An alleged shortage of skilled registered Quantity Surveyors is perceived as a global problem and the reasons for this perception should be established.
3. Please support this research by completing the attached questionnaire and returning it to my e-mail address before or by 17 November 2008. Your responses and comments are vitally important to the integrity of the conclusions and recommendations arising from this investigation.

Thank you for taking the time to participate in this research. In due course, a full research report will be published on the website [www.asaqs.co.za](http://www.asaqs.co.za) by the Association of S A Quantity Surveyors

Sincerely

**BRENDA VENTER**

082 872 5964

(018) 290 9812

(018) 290 9814 F

**QUESTIONNAIRE**

**SURVEY ON THE ALLEGED SKILLS DEFICIT IN THE QUANTITY SURVEYING  
PROFESSION IN SOUTH AFRICA**

Your contribution is invaluable and sincerely appreciated. Kindly complete the questionnaire by 17 November 2008.

Please reply to - brendaventer@ymail.com – or fax nr 018 - 290 9814.

**SECTION A:**

**DEMOGRAPHIC INFORMATION**

Please mark the applicable block with a cross (X) or highlight the block.

A1	Indicate your age	<u>-29</u>	30-39	40-49	50-59	<u>60+</u>
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A2	Indicate your gender	Male	Female
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(Voluntary)

Practice name: .....

Name: .....

**Definitions:**

*“Competence”* – for this purpose, this is the ability necessary for an individual to perform specific tasks in a particular occupation and the ability to apply skills and knowledge to new situations within the occupational arena.

*“Experience”* – for this purpose, commences on the date of employment, three years prior to the date of professional registration.

*“QS”* – Quantity Surveyor

**SECTION B:**

Read each of the following statements. Please indicate by ticking (X) the relevant box to indicate whether you agree or disagree with the statement.

		Disagree	Neither agree nor disagree	Agree
1	There is a shortage of <i>affordable</i> qualified QSs.			
2	There is a shortage of <i>competent</i> qualified QSs.			
3	Your practice lost personnel because of a <i>recruitment agency</i> .			
4	Your practice lost personnel due to <i>emigration</i> .			
5	You know of registered QSs who have <i>emigrated</i> .			
6	You know of a QS graduate who has <i>emigrated</i> .			
7	Your QS practice had cash flow problems.			
8	Your QS practice currently has cash flow problems.			
9	The <i>government</i> is doing enough to alleviate the shortage of QSs.			
10	Your commissions to provide professional services are based on your status as a <i>BBBEE</i> ("Broad Based Black Economic Enterprise") structure.			
11	QS <i>Consultation fees/Salaries</i> are inflated compared to SA salary standards.			
12	QS <i>Consultation fees/Salaries</i> are inflated compared to global salary standards.			
13	<i>Crime</i> is the reasons for a number of competent QSs emigrating.			
14	<i>Low income/lack of income</i> is the reason for a number of competent QSs emigrating.			
15	Every practice should employ a QS candidate <i>from time to time</i> .			
16	" <i>Old reliable skills and methods</i> " are effectively being transferred to graduating QSs by academic staff.			
17	<i>Practical experience</i> is effectively transferred to registering QSs by mentors.			
18	There is a balance between <i>supply</i> of and <i>demand</i> for QSs.			

**SECTION C:**

Please indicate to what extent you agree or disagree with each statement.

		Strongly Disagree	Disagree	Agree	Strongly Agree
<b>19</b>	<b>Tertiary institutions struggle to retain their QS-qualified staff due to:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>a</b>	<b>Higher salaries paid by the private/public sector.</b>				
<b>b</b>	<b>A more attractive/improved working environment elsewhere.</b>				
<b>c</b>	<b>Better opportunities such as partnerships in the private sector.</b>				
<b>d</b>	<b>Better opportunities such as starting own practices.</b>				
<b>e</b>	<b>Job satisfaction / self actualisation.</b>				

<b>20</b>	<b>Private practices struggle to retain their QS-qualified staff due to:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>a</b>	<b>Higher salaries demands due to economic growth in SA.</b>				
<b>b</b>	<b>Better opportunities such as starting own practices.</b>				
<b>c</b>	<b>Better opportunities offered in growth points internationally.</b>				

<b>21</b>	<b>Causes of alleged shortage of skilled QSs are:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>a</b>	<b>Limited accredited training facilities.</b>				
<b>b</b>	<b>Limited enrollment allowed.</b>				
<b>c</b>	<b>Inadequate mathematics education at school level.</b>				
<b>d</b>	<b>Lack of financial support.</b>				

In your opinion, what could be done to alleviate the alleged deficit of skilled and/or competent quantity surveyors in SA?

.....

.....

.....

**Thank you for your time and for participating in this investigation by completing this questionnaire. With sincere appreciation,**

**Brenda Venter**

**JBCC CONTRACT DOCUMENTS**

- 2202 GUIDE – INTERIM, PRACTICAL, WORKS AND FINAL COMPLETE**
- 2201 GUIDE – VALUATION, CERTIFICATION AND PAYMENT**
- 2108 MINOR WORKS AGREEMENT (MWA)**
- 2108CE MWA CONTRACT DATA - CONTRACTOR TO EMPLOYER**
- 2108EC MWA CONTRACT DATA - EMPLOYER TO CONTRACTOR**
- 2102ES N/S CONTRACT DATA - EMPLOYER TO SPECIALIST SUBCONT**
- 2102SE N/S CONTRACT DATA - SPECIALIST SUBCONTRACTOR TO EM**
- 2102 NOMINATED / SELECTED SUBCONTRACT AGREEMENT (N/S)**
- 2101CE PBA CONTRACT DATA - CONTRACTOR TO EMPLOYER**
- 2101EC PBA CONTRACT DATA - EMPLOYER TO CONTRACTOR**
- 2103 PRELIMINARIES - PREVIOUS EDITION - MAY 2005**
- 2101 PRINCIPAL BUILDING AGREEMENT FORMS (PBA)**

<u>PRINCIPAL BUILDING AGREEMENT (PBA) - SCHEDULE</u>	2101
<u>PBA CONTRACT DATA - CONTRACTOR TO EMPLOYER</u>	2101-CE
<u>PBA CONTRACT DATA - EMPLOYER TO CONTRACTOR</u>	2101-EC
<u>NOMINATED / SELECTED SUBCONTRACT (N/S)- AGREEMENT SCHEDULE</u>	
<u>N/S CONTRACT DATA - SPECIALIST SUBCONTRACTOR TO EMPLOYER</u>	2102-SE
<u>N/S CONTRACT DATA - EMPLOYER TO SPECIALIST SUBCONTRACTOR</u>	2102-ES
<u>MINOR WORKS AGREEMENT (MWA) - SCHEDULE</u>	2108
<u>MWA CONTRACT DATA - CONTRACTOR TO EMPLOYER</u>	2108-CE
<u>MWA CONTRACT DATA - EMPLOYER TO CONTRACTOR</u>	2108-EC
<u>FORM OF TENDER</u>	2115
<u>SITE POSSESSION CERTIFICATE</u>	2116
<u>WAIVER OF CONTRACTOR'S LIEN</u>	2121
<u>CONSTRUCTION GUARANTEE</u>	
<u>N/S CONSTRUCTION GUARANTEE</u>	2123
<u>PAYMENT GUARANTEE</u>	2124
<u>N/S PAYMENT GUARANTEE</u>	2125
<u>ADVANCE PAYMENT GUARANTEE</u>	
<u>MW VARIABLE CONSTRUCTION GUARANTEE</u>	2128
<u>MW EMPLOYER PAYMENT GUARANTEE</u>	2129
<u>PAYMENT CERTIFICATE</u>	2142
<u>PAYMENT CERTIFICATE NOTIFICATION</u>	2143
<u>RECOVERY STATEMENT</u>	2144
<u>N/S RECOVERY STATEMENT</u>	2145
<u>PAYMENT ADVICE STATEMENT</u>	2146
<u>MW PAYMENT CERTIFICATE</u>	2148
<u>CERTIFICATE OF INTERIM COMPLETION</u>	2181
<u>CERTIFICATE OF COMPLETION ( Prac, Works, Final )</u>	2182
<u>CERTIFICATE OF COMPLETION ( Minor Works )</u>	



# THE ASSOCIATION OF SOUTH AFRICAN QUANTITY SURVEYORS

## CODE OF PROFESSIONAL CONDUCT

Published in terms of Section 5.1 of the Constitution

### SECTION 1

#### GENERAL

- 1 **A member shall order his or her conduct so as to:**
  - 1.1 have full regard to the public interest
  - 1.2 uphold the dignity, standing and reputation of the *profession*
  - 1.3 comply with the laws of the country in which he or she operates
  - 1.4 discharge his or her duties to his or her employers or clients with efficiency, competence, confidentiality, fidelity and without undue delay
  - 1.5 be fair and impartial in the provision of advice and judgement to an employer or any other party to a building contract in which he or she is involved
  - 1.6 disclose to his or her employers or clients any known conflicts of interest and shall take all steps necessary to resolve such conflicts
  - 1.7 maintain, develop and employ appropriate levels of knowledge and skills for the task for which he or she is employed
  - 1.8 respect the reputations, prospects, skills and practices of others

### SECTION 2

#### PROFESSIONAL BUSINESS PRACTICE

- 2 **In addition to the foregoing, a member shall:**
  - 2.1 notify the *Board* without delay in writing of any change of address or employment
  - 2.2 display on all letterheads and brochures, the names and locations of principals and associates so as to clearly indicate to the public the full extent of the business entity.
  - 2.3 ensure that any advertisement of his or her professional services is not self-laudatory, is true, factual, dignified and creditable to the profession, is not misleading and does not imply in any manner that another quantity surveyor would render a lesser service; Provided that in this context a quantity surveyor may

- 2.3.1 make known his or her practice, availability or experience by direct approaches to individuals and organisations or by means of any directory, brochure or pamphlet describe his or her capabilities
- 2.3.2 send to the media articles, or be interviewed about his or her work or about construction industry topics in general provided that he or she does not offer or give monetary or other consideration for such publication, broadcast or telecast
- 2.3.3 exhibit his or her name and practice name outside his or her office
- 2.3.4 exhibit his or her name and the name of his or her practice on the site of building in the course of construction, alteration or extension for which he or she is the quantity surveyor
- 2.3.5 commission or employ a public relations consultant or any similar designated person to carry out all or any aspect of his or her public relations as may be permitted in the context of these regulations
- 2.4 notify the Board in writing of his or her entering into or dissolving any professional partnership or association or becoming a shareholder / director / member or ceasing to be a member of a company or close corporation
- 2.5 gain approval of the Board to:
  - 2.5.1 enter into any partnership or association with any person other than a quantity surveyor for the purpose of carrying on the work of a quantity surveyor in private professional consulting practice
  - 2.5.2 become a member of any company other than a company established in terms of section 22A of the Act or of a close corporation established in terms of section 22B of the Act for the purpose of carrying on the work of a quantity surveyor in private professional consulting practice
- 2.6 ensure that the name of his or her firm or his or her firm in association with another firm or of the company or close corporation of which he or she is a member is not misleading and contains

only his or her personal name or names without notification of the Board; Provided that such title and style or name may include the name of a person to whom he or she is the *bona fide* successor in title

- 2.7 ensure that any office or branch office maintained for the purpose of carrying out the services of a quantity surveyor in private professional consulting practice is under the continual direct and personal supervision and control of a registered professional quantity surveyor and that no indication is given that his or her practice as a quantity surveyor extends to any other office or branch office which is not similarly controlled or compliant with these regulations
- 2.8 refrain from doing anything through a company or close corporation which he or she would not otherwise be permitted to do

### SECTION 3

#### COMPETITIVE ETHICS

**3 In addition to the foregoing, a member shall:**

- 3.1 refrain from reviewing, for a particular client, the work of another quantity surveyor or the work of a company or close corporation of which he or she is not a member except:
  - 3.1.1 with such quantity surveyor, company or close corporation having knowledge of the review and being afforded the opportunity of submitting comments on the findings of the review
  - 3.1.2 when the employment of such quantity surveyor, company or close corporation has been terminated
  - 3.1.3 where the reviewing quantity surveyor has notified the quantity surveyor, company or close corporation previously employed in connection with the work concerned and whose employment has been terminated, that he or she is undertaking such a review
- 3.2 refrain from using the advantages of a salaried position to compete unfairly with other quantity surveyors

### SECTION 4

#### TECHNICAL COMPETENCE

**4 In addition to the foregoing, a member shall:**

- 4.1 endeavour to stay abreast of technical and professional developments of the industry,

environment and/or profession in which he or she operates by means of continuing professional development as stipulated by the Board

- 4.2 maintain and retain original records of technical and contractual documents verifying his or her work for a period of 5 (five) years after completion of a project and completion of the final account and make such documents available to relevant and responsible parties upon reasonable request
- 4.3 only undertake work for the execution of which his or her training and experience have rendered him or her competent and employ only adequately qualified personnel as demanded by the task for which he or she is employed
- 4.4 display his or her name or the name of his or her firm or the name of the company or of the close corporation of which he or she is a member on all bills of quantities, specifications, final accounts, certificates or other professional documents in respect of work performed by him- or herself or by some person in his or her employ or by any member or employee of the company or of the close corporation of which he or she is a member
- 4.5 refrain from either personally or through the agency of another person, whether or not such person is in his or her employ, make or offer to make by way of commission or otherwise, payment or other consideration for the obtaining of professional employment

### SECTION 5

#### EXTRA-PROFESSIONAL ACTIVITIES

**5 In addition to the foregoing, a member shall:**

- 5.1 except as prescribed in regulation 2.8 above he or she
  - 5.1.1 shall not either directly or indirectly deal in construction projects and / or property development for his / her own account or for any consideration where;
    - (a) such dealings in construction projects and / or property development conflict with his / her responsibilities to his / her client or employer; or
    - (b) he / she has privileged or confidential information concerning such construction projects and / or property development as a result of any quantity surveying work undertaken by him / her. Provided

further that he / she shall not make any personal use of or divulge to others, privileged or confidential information related to the quantity surveying work undertaken by him / her.

- 5.2 while serving as an employee or a director or in any like capacity in any company, firm or undertaking indulging in any contracting, supplying or manufacturing business involved in building or construction work, or while having a financial interest in any company firm or undertaking other than a public company complying with the proviso to regulation 2.7
- 5.2.1 refrain from doing or holding himself or herself out to do the work of a quantity

surveyor whether for reward or otherwise, except directly and only for such company, firm or undertaking

- 5.2.2 refrain from holding himself or herself out to be in private professional practice as a quantity surveyor to give independent advice on matters of contract, management or cost
- 5.2.3 refrain from allowing his or her professional designation to be used on brochures or advertisements issued by such company, firm or undertaking or by any other means in a manner which states or implies that an independent project or construction management service can be provided

**ADDENDUM 5****Gross fixed capital formation by type of asset**

R millions

Period	At current prices						At constant 2000 prices					
	Residential buildings (6110K)	Non-residential buildings (6114K)	Construction works (6118K)	Transport equipment (6122K)	Machinery and other equipment (6126K)	Transfer costs (6130K)	Residential buildings (6110C)	Non-residential buildings (6114C)	Construction works (6118C)	Transport equipment (6122C)	Machinery and other equipment (6126C)	Transfer costs (6130C)
2005: 03.....	8 862	6 620	9 977	9 461	29 691	2 922	6 312	4 697	7 069	7 391	22 035	2 088
04.....	9 804	7 144	11 038	10 025	31 214	3 005	6 868	4 987	7 669	7 806	22 700	2 103
2005 .....	32 808	25 799	39 911	37 219	116 403	11 421	23 908	18 787	29 035	29 157	87 064	8 385
2006: 01.....	9 006	7 312	11 910	10 556	32 958	3 065	6 211	5 030	8 156	8 159	23 455	2 112
02.....	9 533	7 614	12 290	10 826	34 482	2 570	6 436	5 123	8 257	8 314	23 823	1 735
03.....	10 102	8 358	13 941	11 346	38 349	2 446	6 535	5 381	8 996	8 640	25 038	1 583
04.....	10 357	9 147	15 797	12 296	41 868	2 541	6 568	5 778	9 994	9 316	26 015	1 612
2006 .....	38 998	32 431	53 938	45 024	147 657	10 622	25 750	21 312	35 403	34 429	98 331	7 042
2007: 01.....	10 112	9 657	17 985	12 929	44 066	2 808	6 268	5 965	11 135	9 719	26 841	1 743
02.....	10 735	10 162	19 296	13 154	44 970	2 779	6 465	6 091	11 633	9 812	26 778	1 680
03.....	11 080	11 262	22 141	13 181	47 659	2 883	6 490	6 567	12 972	9 770	27 898	1 691
04.....	11 241	12 245	25 973	13 785	49 322	2 875	6 451	6 998	14 902	10 119	28 843	1 649
2007 .....	43 168	43 326	85 395	53 049	186 017	11 345	25 674	25 621	50 642	39 420	110 360	6 763
2008: 01.....	10 899	12 849	27 069	14 084	53 800	2 750	6 034	7 077	14 953	10 304	30 358	1 522
02.....	12 159	13 873	29 050	13 376	57 228	2 636	6 234	7 060	14 903	9 782	30 834	1 351
03.....	12 672	14 968	32 777	13 618	61 468	2 211	6 169	7 236	15 892	9 501	31 623	1 070
04.....	12 024	15 470	35 886	13 480	63 554	2 282	5 784	7 424	17 141	9 194	32 260	1 089
2008 .....	47 754	57 160	124 782	54 558	236 050	9 879	24 221	28 797	62 889	38 781	125 075	5 032
2009: 01.....	11 399	15 604	40 221	15 630	60 698	2 232	5 558	7 584	19 526	10 588	30 763	1 083
02.....	11 622	15 288	43 596	14 411	55 946	2 476	5 753	7 540	21 530	9 701	28 387	1 223

KB621

**Seasonally adjusted annualised rates**

	(6110L)	(6114L)	(6118L)	(6122L)	(6126L)	(6130L)	(6110D)	(6114D)	(6118D)	(6122D)	(6126D)	(6130D)
2005: 03.....	34 990	26 811	40 994	38 308	118 346	11 728	24 914	19 023	29 044	29 928	87 829	8 382
04.....	38 426	28 065	42 556	39 215	124 538	12 086	26 910	19 590	29 549	30 538	90 582	8 461
2005 .....	32 808	25 799	39 911	37 219	116 403	11 421	23 908	18 787	29 035	29 157	87 064	8 385
2006: 01.....	37 344	29 131	46 763	41 796	131 042	12 152	25 722	20 040	32 009	32 303	93 257	8 370
02.....	38 129	30 959	51 012	44 157	139 147	10 299	25 732	20 824	34 268	33 910	96 124	6 952
03.....	39 834	33 645	56 576	46 136	153 305	9 819	25 758	21 659	36 501	35 133	100 096	6 351
04.....	40 685	35 989	61 401	48 007	167 134	10 218	25 788	22 725	38 834	36 370	103 847	6 495
2006 .....	38 998	32 431	53 938	45 024	147 657	10 622	25 750	21 312	35 403	34 429	98 331	7 042
2007: 01.....	41 797	38 610	70 372	51 260	174 747	11 129	25 894	23 844	43 561	38 508	106 444	6 906
02.....	42 881	41 362	80 011	53 849	181 539	11 138	25 810	24 783	48 234	40 179	108 131	6 727
03.....	43 761	45 078	89 732	53 618	190 668	11 564	25 622	26 281	52 566	39 753	111 605	6 783
04.....	44 233	48 254	101 465	53 469	197 114	11 549	25 370	27 576	58 207	39 240	115 260	6 636
2007 .....	43 168	43 326	85 395	53 049	186 017	11 345	25 674	25 621	50 642	39 420	110 360	6 763
2008: 01.....	45 124	50 744	107 165	55 503	213 585	10 615	24 956	27 943	59 218	40 587	120 533	5 877
02.....	47 771	55 560	117 014	55 413	229 783	10 740	24 470	28 259	60 040	40 501	123 864	5 513
03.....	49 326	60 336	134 119	54 682	246 746	9 041	23 988	29 156	65 031	38 128	126 956	4 384
04.....	48 795	62 000	140 830	52 634	254 086	9 120	23 470	29 830	67 267	35 908	128 947	4 354
2008 .....	47 754	57 160	124 782	54 558	236 050	9 879	24 221	28 797	62 889	38 781	125 075	5 032
2009: 01.....	47 241	61 856	160 128	61 666	240 364	8 604	23 033	30 063	77 737	41 784	121 809	4 174
02.....	45 627	61 257	175 447	59 641	224 827	10 093	22 587	30 214	86 647	40 149	114 098	4 984

KB622

**ADDENDUM 6**

**Eight-Level Frame Work**

Levels: 5-8				
TERTIARY AND RESEARCH				
Research	Higher Degrees	Initial Degrees	National and Higher National Diplomas	Professional Employment



Levels: 2-4				
to HIGHER NATIONAL CERTIFICATE(S)				
CORE and APPLIED GENERIC and OPTIONS				
Senior Secondary Schools	Technical Colleges & Community Colleges	Private Providers & NGOs	Industry Training	Labour RTCs Market Schemes

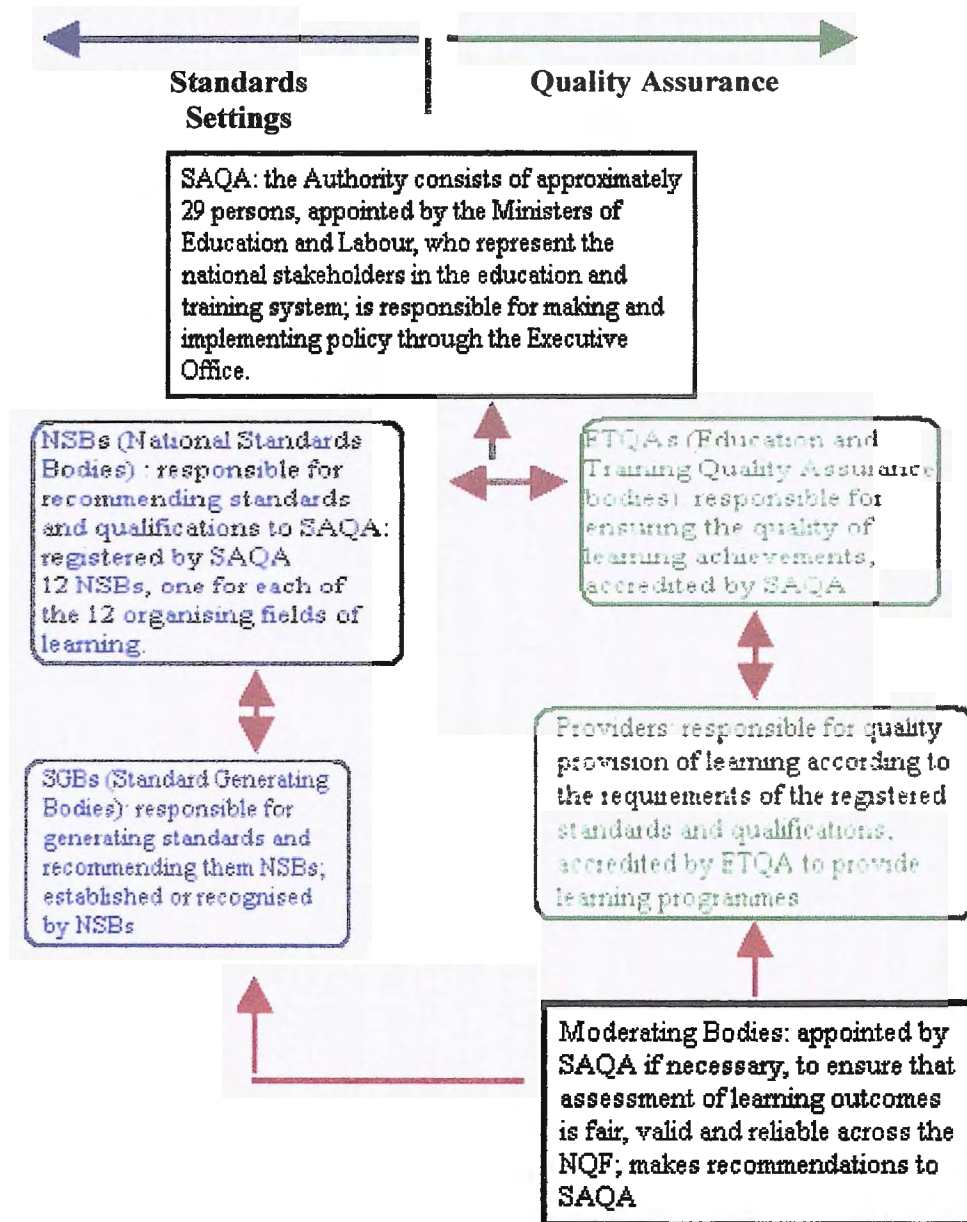


Level: 1 Compulsory	
<b>COMPULSORY SCHOOLING:</b> Level 1 or the General Certificate of Education - GETC	<b>ABE &amp; TRAINING:</b> Level 1 or the General Certificate of Education - GETC
9 yrs      Grade 9	ABET 4
7 yrs      Grade 7	ABET 3
5 yrs      Grade 5	ABET 2
3 yrs      Grade 3	ABET 1



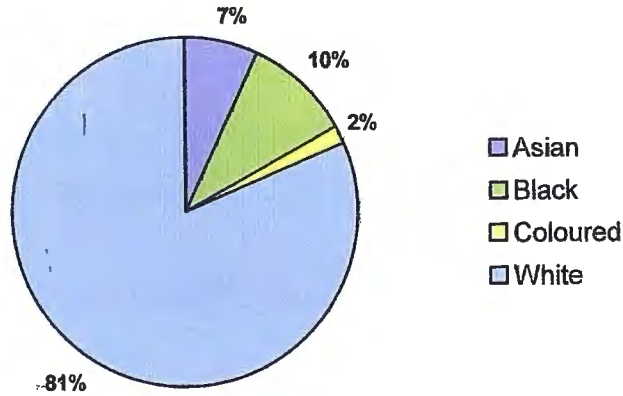
<b>EDUCARE</b>
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**SOUTH AFRICAN QUALIFICATIONS AUTHORITY FRAMEWORK**

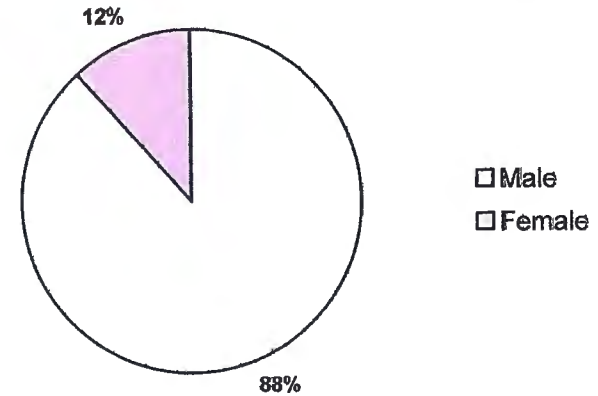


**Figure 13 - Persons Registered At SACQS 2009**

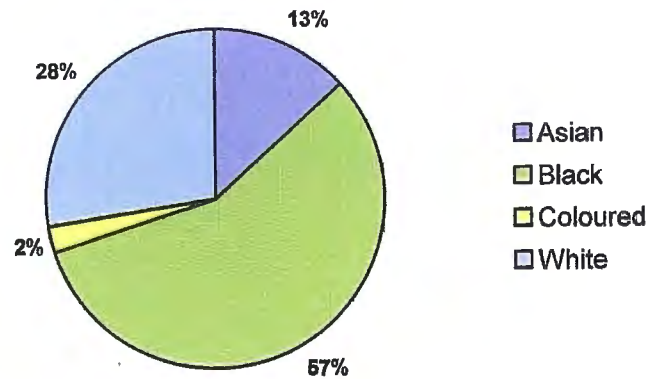
**A. Professional Quantity Surveyors Race Ratio**



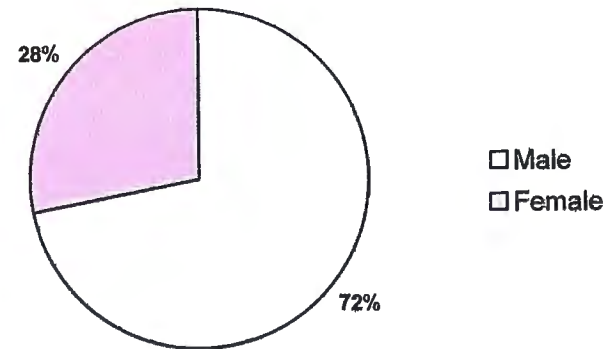
**C. Professional Quantity Surveyor Gender Ratio**



**B. Candidate Quantity Surveyors Race Ratio**



**D. Candidates Quantity Surveyors Gender Ratio**



source: SACQS Statistics 2009



**1 MAY – 31 JULY 2009: ACCREDITATION OF TERTIARY INSTITUTIONS**

1. MANGOSUTHU UNIVERSITY OF TECHNOLOGY
2. DURBAN UNIVERSITY OF TECHNOLOGY
3. TSHWANE UNIVERSITY OF TECHNOLOGY
4. INTEC (Cape Town)
5. DAMELIN (Durban)
6. UNIVERSITY OF JOHANNESBURG
7. MUKHANYO COMMUNITY COLLEGE
8. WALTER SISULU UNIVERSITY
9. PENINSULA UNIVERSITY OF TECHNOLOGY: 27 – 31 July 2009
10. CENTRAL UNIVERSITY OF TECHNOLOGY
11. FEDERAL THEOLOGICAL SEMINARY OF SOUTHERN AFRICA (ALICE, EASTERN CAPE)
12. CENTRAL JOHANNESBURG COLLEGE
13. VAAL UNIVERSITY OF TECHNOLOGY
14. UNIVERSITY OF LIMPOPO

**THE SOUTH AFRICAN COUNCIL FOR THE QUANTITY SURVEYING PROFESSION  
REGISTRATION ROUTES FOR CANDIDATE QUANTITY SURVEYORS**

**QUANTITY SURVEYING QUALIFICATIONS**

Option 1 QS	Option 2 QS	Option 3 QS	Option 4 QS	Option 5 QS	Option 6 QS	Option 7 QS	Option 8 QS	Option 9 QS	Option 10 QS	Option 11 QS	Option 12 QS
Accredited 480 credit QS University degree	Accredited B Tech (QS)	Non accredited 480 credit QS University degrees	Accredited 360 credit QS University degrees	Non accredited B Tech (QS)	Non-accredited 360 credit QS University degrees	Cert (QCP) (UFS)	Accredited National Diploma	Non-Accredited National Diploma	Post Grade 12 Qualifications	No Qualifications	RICS Membership with Accredited Qualification
3 Years in Training	4 Years in Training	4 Years in Training	5 Years in Training	5 Years in Training	6 Years in Training	6 Years in Training	6 Years in Training	7 Years in Training	9 Years in Training	15 Years in Training	1 Year RSA
	Council II	Council I + II	Council II	Council I + II	Council I + II	Council II	Council I + II	Council I + II	Council I + II	Council I + II	
APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	Professional Interview

↓

**PROFESSIONAL QUANTITY SURVEYOR - PrQS**

**Notes:**

- 1) Accredited 480 credit QS university degree - recognition of 6 months in training for each year of suitable professional Quantity Surveying employment as approved by the Council and under the supervision of a professional Quantity Surveyor

**PROF GK LE ROUX  
REGISTRAR**

**THE SOUTH AFRICAN COUNCIL FOR THE QUANTITY SURVEYING PROFESSION  
REGISTRATION ROUTES FOR CANDIDATE QUANTITY SURVEYORS**

**CONSTRUCTION MANAGEMENT QUALIFICATIONS**

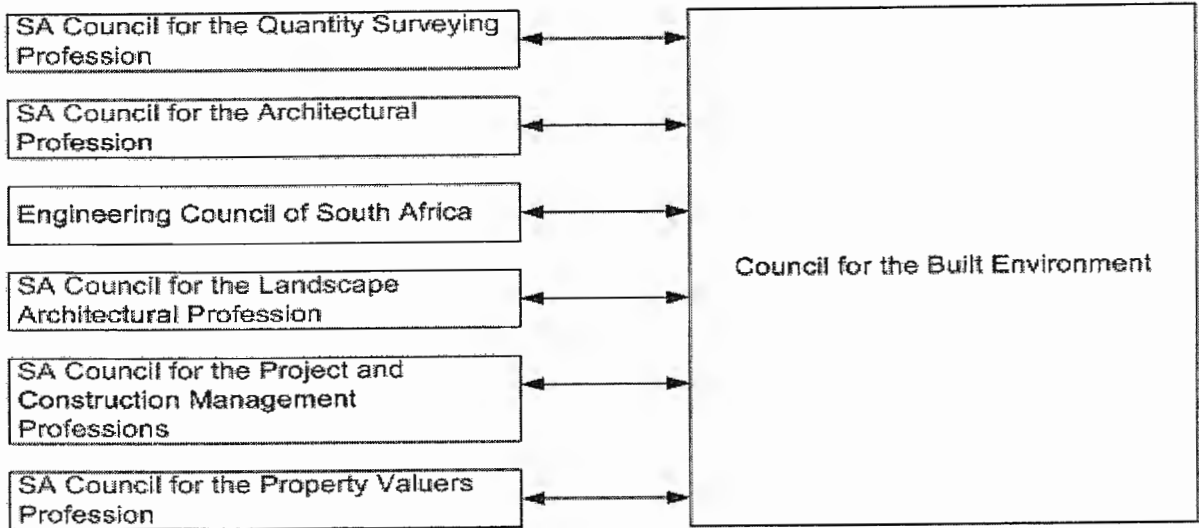
Option 1 CM	Option 2 CM	Option 3 CM	Option 4 CM	Option 5 CM	Option 6 CM	Option 7 CM	Option 8 CM
Accredited 480 credit CM University degree	Non accredited 480 credit CM University degree	Accredited B Tech (CM)	Non accredited B Tech (CM)	Accredited National Diploma	Non- accredited National Diploma	Post Grade 12 Qualifications	No Qualifications
4 Years in Training	5 Years in Training	5 Years in Training	6 Years in Training	7 Years in Training	8 Years in Training	9 Years in Training	15 Years in Training
Council I + II	Council I + II	Council I + II	Council I + II	Council I + II	Council I + II	Council I + II	Council I + II
APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview	APC Interview
↓							
<b>PROFESSIONAL QUANTITY SURVEYOR - PrQS</b>							

**Notes:**

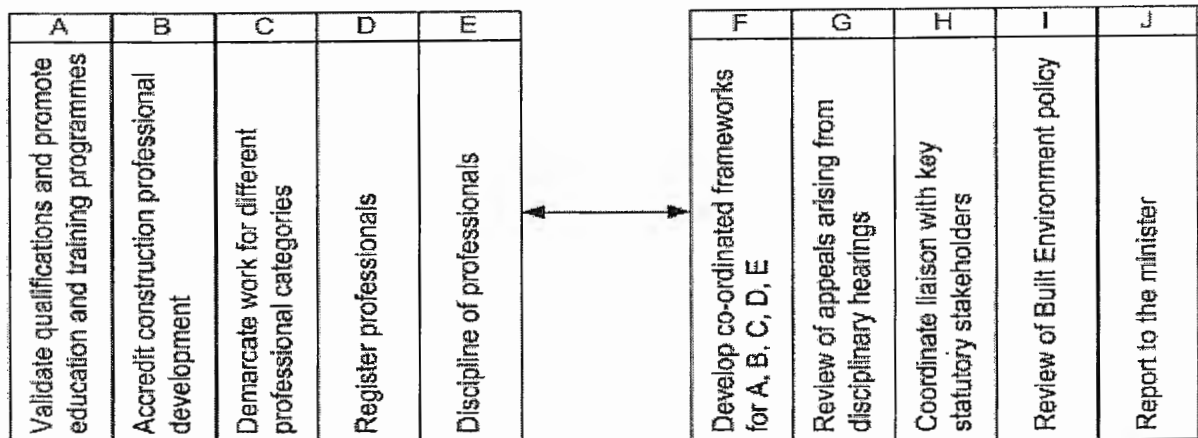
- 1) Accredited 480 credit CM university degree - recognition of 6 months in training for each year of suitable professional Quantity Surveying employment as approved by the Council and under the supervision of a professional Quantity Surveyor

**PROF GK LE ROUX**  
**REGISTRAR**

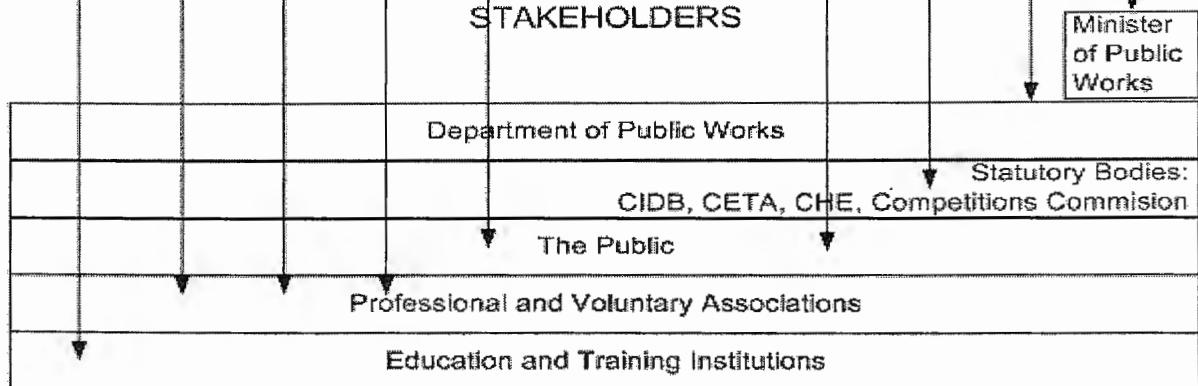
**STATUTORY COUNCILS FOR THE BUILT ENVIRONMENT**



**FUNCTIONS**



**STAKEHOLDERS**



**CONTEXT**

1. Protection of the Public
2. Support for Government National Goals