**ASOCSA2017-072**

# Case Study on the quality of tenders submitted by Occupational Health and Safety Professionals in the South African built environment

Cathy Mphahlele
cmphahlele@csir.co.za
CSIR, Built Environment Unit, Pretoria
012 841 2546

Llewellyn van Wyk
lvwyk@csir.co.za
CSIR, Built Environment Unit, Pretoria
012 841 2677

**ABSTRACT AND KEYWORDS**

**Purpose of this paper**

The purpose of the paper is to provide an overview of the current state of tenders submitted by Occupational Health and Safety (OHS) professionals in terms of functionality criteria

**Design/methodology/approach**

The research design is based on a case study. The data was collected from responses by OHS professionals to a Request for Proposal (RFP) issued by the CSIR. Data was collected through a two stage evaluation, where tenders were firstly evaluated for functionality. Those tenders meeting functionality criteria were to be evaluated on the basis of price and preference

**Findings**

Findings indicate that many OHS professionals did not meet the necessary functionality requirements enabling them to progress to the second stage. It would appear that the OHS professionals were inadequately prepared to submit successful tender documentation based on functionality criteria. This may be a result of a lack of understanding on the part of OHS professionals about functional requirements and performance.

**Research limitations/implications**
The data is sourced from 14 tenders submitted which might be too small a number to derive conclusive findings.
The data reflects tenders submitted for an unconventional project and might not represent industry wide trends.

**Practical implications**
Understanding the challenges facing various built environment professionals during procurement will significantly contribute to the improvement of procurement and bid documents. This is particularly in order for consulting companies to remain competitive.

**Original value of paper**.

Analysing bid submissions will provide insight into how the bidding success rate of OHS professionals can be improved. It would also assist in the preparation of bidding documents. This paper responds to the “Public Sector Procurement and Contracting” and “Construction Education, Training and Skills Development” themes in the conference.

## 1. Introduction

The quality of tenders submitted by professionals in the South African built environment is crucial to the successful award of contracts in the construction industry. This is because built environment professionals working in the South African built environment typically have to submit tenders in a response to a call for tenders in order to provide services to the public sector (CSIR, 2016). The same applies to the Occupational Health and Safety Consultant.

The involvement of the Occupational Health and Safety (OHS) professional in the client's professional team was not always common practice (PwC, 2014). Typically a team of built environment professionals appointed by the client includes; consulting engineers such as mechanical, electrical, civil and structural; architects; construction project managers and quantity surveyors. However, the introduction of new Construction Regulations in February 2014 compels clients to appoint OHS professionals as part of their professional team (PwC, 2014; Government Gazette, 2014). Although the regulation does not specifically mention OHS professionals, there are certain Health and Safety obligations attributed to the client. The client might not have the capacity or expertise to undertake these obligations and, as such, will have to appoint a professional in order to comply with the regulation (Government Gazette, 2014).

The case study which this paper is based on evaluated the quality of tenders submitted by OHS professionals. The evaluation resulted in provided an overview of the functional quality of tenders submitted by OHS professionals and how this aspect of their tendering practices can be improved. In order to provide a point of departure, the paper will provide a brief overview to the procurement environment in South Africa and the status of the OHS profession in the built environment.

### 1.1. Procurement of Professional Services in the Built Environment

#### 1.1.1. Selection Methods and Criteria

Most consultancies providing professional services to the built environment acquire work from submitting tenders (Jafaar, et al., 2008). The selection of consultants who adequately qualified and experienced is detrimental to the quality, cost and time of a project. As such selection methods and criteria must be developed with the aim of appointing the right consultants. The criteria and methods selected are usually dependent on factors such as the complexity of the project and the objectives of the organization (Oluwatayu, 2014; International Federation of Consulting Engineers, 2011; Ng, 2004). Popular recommendations are that selection methods look beyond price as a deciding factor. In fact Australian Procurement and Construction Council (2006) International Union of Architects (2001) and International Federation of Consulting Engineers (2011) recommend that ideal selection methods should either be value based or qualification based.

Table 1 provides an overview of criteria some publications and authors have found to be crucial to the effective selection of consultants. The top ten criteria which include response to the project brief, adequacy of proposed work plan and proposed methodology, organization, logistics and support resources, availability of resources and workload, qualifications and competence of the key staff, demonstrated experience in similar projects, communication/ facilitation skills, sound knowledge of the client's policies or work procedures

Table 1: Selection criteria for consultants

| **(Australian Procurement and Construction Council , 2006)** | **(International Federation of Consulting Engineers, 2011)** | **(Cheung, et al., 2002)** | **(Ng, 2004)** | **(The International Bank for Reconstruction and Development/ The World Bank , 2002)** |
|---|---|---|---|---|
| Consultants Understanding of the project objectives | Professional competence | Background of firm | Consultant's experience | Specific experience of the consultants |
| Methodology | Managerial ability | Past performance | Organisation and staffing | Adequacy of proposed work plan |
| Resource strategy | Availability of resources | Capacity to accomplish the work | Methodology and resource planning | Qualifications and competence of key staff |
| Value adding strategy | Professional integrity | Project approach | Approach to cost effectiveness | Suitability of training |
| Fees | | | Response to brief | Participation of country's citizens |
| | | | Quality assurance and control | |
| | | | System assurance | |
| | | | Partnering | |

Criteria recommended for the selection of consultants typically revolves around the consultants interpretation of the project. This can be evaluated scrutinizing the methodology presented and resources allocation to the project. Other important selection criterion revolve around the experience of the company and key personnel in similar projects and the capacity of the organization to accomplish the work. It can be assumed that failure to include evaluation criteria as outlined in Table 1 will result in the selection of incompetent consultants who do not understand the project.

### 1.1.2. Selection Methods and Criteria in a South African Context

The public sector relies heavily on open tenders as a result of the legislative framework. The legislative framework in South Africa requires any procurement activities undertaken by a state entity or government department to be transparent, fair, equitable, competitive and cost-effective (CIDB, 2015). As such; it is often very difficult to justify a direct negotiation approach for procurement. In order to encourage compliance with the various legislations governing procurement, the Construction Industry Development Board (CIDB) has developed a Standard for Uniformity in Construction which outlines procurement strategies specific to the construction industry (CIDB, 2015). The standard also applies to the procurement of professional services in the construction industry. Professionals must be cognisant with such standards

The CIDB Standard for Uniformity in Construction proposes that a procurement strategy can either follow a negotiation procedure, competitive selection procedure or competitive negotiation procedure. The CIDB regulation is indeed in favour of selection and evaluation methods which regard functionality and quality ahead of price. This is in line with recommendations as outlined in Table 1 (CIDB, 2015).

The CDIB (2015) recommends that evaluation should be on the basis of price and preference or functionality, price and preference. For services, works or goods between R 30 000 and R1 000 000 in value, tenders will either be scored on an 80/20 preference point system. In this evaluation method 80 % of the points will be for price and 20% will be allocated to Broad Based Black Equity Empowerment (BBBEE). The 90/10 point system will apply to works, service or goods exceeding R 1 000 000. Bidders must score below a minimum threshold before they can be evaluated on price. Detailed evaluation methods for the tenders is outlined in the Standard. The selection criteria and the weighting of the selection criteria is recommended to be in line with project objectives.

### 1.2. Occupational Health and Safety in the South African Construction Industry

The Occupation Health and Safety Act has been in effect since 1993, however compliance in construction has been low (PwC, 2014). The worrying number of health and safety incidents on South African construction sites has seen the signing of the safety accord in 2012 and the introduction of the Construction Health and Safety regulation in 2014 (PwC, 2014). In addition to health and safety legislation the South African Council for the Project and Construction Management Professions (SACPCMP) has been prescribing the registration of Construction Health and Safety officers and Construction Health and Safety professionals since August 2013 (SACPCMP, 2014). The SACPCMP has been approved by the department of labour as the only statutory body recognised to register Construction Health and Safety professionals

In order to register with the SACPCMP one must have one of the following qualifications (SACPCMP, 2014):

- A programme in OHS or construction health and safety which is equivalent to a NQF Level 3-5
- Learner ship in OHS or construction health and safety
- A national diploma in safety management
- A Bachelor of Technology in safety management
- A Bachelor of Commerce in operational risk management
- A Master of Science in Construction Health and Safety Management

Several universities and universities of technology run programs for construction health and safety qualifications. Some qualifications can also be acquired from Further Education and Training colleges (CSIR, 2016; SACPCMP, 2014).

Recent efforts to increase the regulation of the OHS profession in construction means that the profession is not as well established as that for consulting engineers or architects. In fact, unlike engineers or architects, OHS professionals do not have a fee guideline prescribed by the statutory council (CSIR, 2016; SACPCMP, 2014). These factors may well be impacting negatively on the pricing proposals submitted to prospective clients.

## 2. Problem in context

Due to the implementation of the Construction Regulations in 2014 the client is now mandated to appoint an OHS professional for undertaking construction projects. However, the OHS professional is a relatively new addition to the professional team and the general overview of the quality of tenders they submit is not available.

Having provided a background to the procurement environment in the South African construction industry and the OHS profession, this paper will seek to provide an overview of bidding trends of OHS professionals

## 3. Research Methodology

The research design followed a case study where responses to a request for proposal issued by the CSIR were evaluated. The request for proposal was aimed at consulting engineers, architects, quantity surveyors and OHS professionals to provide professional services for a construction project in rural Eastern Cape. The aim of the study is to evaluate the OHS professional's responses to the functionality component of the request for proposal. The criteria for the functionality evaluation included methodology, key personnel experience, company experience, local presence, and experience in green or innovative building projects. The weight of each functionality criterion was determined by the number of key aspects allocated to the criterion. The respondents had to demonstrate capability in the areas outlined as follows:

I. Methodology: the respondents were required to show how they propose to undertake the project given the scope and innovative nature of the project. The methodology was allocated a weighting of 10.

II. Key personnel experience: respondents must show that the personnel assigned to the project have at least five years' experience in that profession and are registered with relevant statutory council and/or voluntary council. The criterion had three key aspects and was therefore allocated a weight of 30.
III. Relevant company experience: respondents must show that the company has adequate experience in the industry, registration with voluntary associations, adequate personnel to undertake the project and infrastructure support. Infrastructure support refers to the availability of offices, printers and software. The criterion for company experience was 40.
IV. Local presence: The respondents must show that they have functional offices in the Eastern Cape. This criterion was allocated a weighting of 10.
V. Experience in innovative building technology projects or green projects. This criterion was allocated a weighting of 10.

The above criteria were scored on a scoring matrix. In order to score bidders, the evaluation committee discussed each bidder's submission against the functionality criteria and allocated them a score out of ten. The maximum score is 100. In order to qualify for the next round of evaluation, bidders must score a minimum of 70 in the functionality evaluation.
The matrix is illustrated in Table 2: Functionality matrix used for evaluating OHS professionals.

Table 2: Functionality matrix used for evaluating OHS professionals

| ***Functional Criteria*** | ***Weight*** | ***Supplier 1*** | ***Supplier 2*** | ***Supplier 3*** | ***Supplier 4*** | ***Supplier 5*** |
|---|---|---|---|---|---|---|
| **Methodology** | 10 | | | | | |
| **Relevant Company Experience** | 40 | | | | | |
| **Relevant key personnel experience** | 30 | | | | | |
| **Local presence** | 10 | | | | | |
| **Completed projects (experience in IBT or green projects)** | 10 | | | | | |
| **Total (note: total weight should not exceed 100)** | **100** | | | | | |

The request for proposals was placed on the national treasury website as is required from government or state owned entities. None of the bidders passed the functionality evaluation and a second round of proposals was requested from bidders who responded the first time and any other respondents who had not responded in the first round.

## 4. Findings

The first round of requests for proposal received 10 responses. Six of the respondents were part of a consortium or multidisciplinary consultancy. None of the respondents qualified for the next round of evaluation.

Table 3: Scoring matrix for functionality evaluation (round 1)

| Functional Criteria | Supplier 1 | Supplier 2 | Supplier 3 | Supplier 4 | Supplier 5 | Supplier 6 | Supplier 7 | Supplier 8 | Supplier 9 | Supplier 10 | Average score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Methodology** | 7 | 7 | 1 | 5 | 0 | 5 | 5 | 0 | 5 | 10 | 5.5 |
| **Relevant Company Experience** | 6.25 | 6.5 | 4.25 | 5.75 | 0 | 2.5 | 6.75 | 0 | 4.75 | 5 | 4.2 |
| **Relevant key personnel experience** | 6.67 | 2.33 | 3.33 | 3.33 | 0 | 6.67 | 3.33 | 0 | 3.33 | 10 | 3.9 |
| **Local presence** | 5 | 5 | 5 | 5 | 10 | 5 | 5 | 5 | 0 | 0 | 4.5 |
| **Completed projects (experience in IBT or green projects)** | 5 | 5 | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 1 | 6.1 |
| **Total as a %** | **62** | **50** | **38** | **46** | **10** | **40** | **52** | **5** | **34** | **61** | **48.4** |

From Table 3, one can conclude that the companies who had submitted responses meet at last half the criteria for a well set out methodology and have completed an appropriate number of IBT or green projects.
Data for key personnel indicated that there is a lack of experience in the industry as can be seen by the average score of 3.9.
The average score for company experience is 4.2, which is marginally lower than the average score for the key personnel experience criteria.
The second round of requests for proposal received eight responses, of which, four had submitted in the first round. The respondents who

| Functional Criteria | Supplier 11 | Supplier 4 | Supplier 7 | Supplier 2 | Supplier 12 | Supplier 13 | Supplier 6 | Supplier 14 | Average score |
|---|---|---|---|---|---|---|---|---|---|
| **Methodology** | 7 | 5 | 7 | 7 | 5 | 10 | 7 | 5 | 6.63 |
| **Relevant Company Experience** | 4.25 | 5.25 | 6.7 | 5 | 5 | 7.5 | 5 | 7.5 | 5.78 |
| **Relevant key personnel experience** | 6.67 | 6.67 | 5.6 | 6.67 | 0 | 5 | 9 | 10 | 4.95 |
| **Local presence** | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 5 | 3.12 |
| **Completed projects (experience in IBT or green projects)** | 5 | 10 | 10 | 0 | 5 | 5 | 5 | 10 | 6.2 |
| **Total (note: total weight should not exceed 100)** | **54.01** | **61.01** | **65.6** | **52.01** | **30** | **30** | **59** | **80** | **53.36** |

resubmitted have been allocated the same supplier number in Table 4 as they had in Table 3.

Table 4: Scoring matrix for functionality evaluation (round 2)

The second request for proposal specified that respondents must show that they are registered with the SACPCMP and required fewer completed projects. Only one respondent was part of a consortium. Only one respondent qualified for the next round of evaluation.

The second round of responses resulted in a higher average score overall. The four respondents who had resubmitted from the first round improved their submissions. The following improvements are represented in Table 4:

- Two respondents improved their original score in company experience
- All four resubmissions showed an improvement in the key personnel criterion
- Two respondents improved their methodologies

The average scores increased significantly; however the scores for relevant company experience, relevant personnel experience and local presence are still low

## 5. Discussion

The selection criteria outlined in the RFP are in line with those recommended in literature. These include criteria such as methodology, background and qualifications. However, the RFP included a Local Presence criteria because the area in which the project has to take place is fairly rural and it would be impractical to have consultants travelling for two days to reach the site. Evaluation of tenders followed CIDB regulations functionality, price and preference process.
The findings in this study are not sufficient to draw concrete conclusions, however a few insights can be drawn:

### *5.1. Quality of tenders from multidisciplinary consultancies*

The two rounds of requests for proposals revealed several interesting trends. Firstly, OHS services in a multidisciplinary consultancy or consortium of various disciplines receive minimal attention when bidding for work. This can be seen by the overall low score in the first RFP and the marginal improvement of submission in the second round. In the first round, 60% of the responses were from multidisciplinary companies or consortiums. The consortium that resubmitted in the second round only improved their score by 2 points. This could be because they had an opportunity to focus their efforts on OHS discipline the second time around. The improvement of overall functionality score can be because companies who provide exclusive construction health and safety services responded to the request. These companies accounted for seven out of eight (88%) responses.

### *5.2. Quality of OHS methodology descriptions*

Once again the methodologies submitted by the respondents indicated an improvement in the second round. This could be because of the level of specialisation by the second batch of respondents. Because consultancies in the second batch of respondents specifically worked in the health and safety sector, they were able to develop a more detailed and well laid out plan. Nonetheless the average score of 6.63 is below the threshold requirement of 7. This is disturbing as one would expect that professionals should be able to set out their approach to a project.

### *5.3. Relevant company experience, relevant personnel experience and completed projects*

Lack of experience for the company and personnel in both rounds of responses was low. This could be because the profession is relatively new, as can be seen by the date which Contraction Regulations were put in place. There is an improvement in the second round; this could be attributed to amendments made to the tender document. The second request for proposal specially asked that key personnel be registered with the SACPCMP. The first round of requests did not specify requirements for

OHS professionals specifically; instead the request took a general approach for all disciplines.
Interestingly enough, the score for completed projects did not change significantly in both rounds. This shows that even though companies have not been in operation for a significant number of years, they have undertaken sufficient innovative or green projects. This could be because clients who are keen on green building or innovation are more inclined to comply with health and safety regulations.

### *5.4. Local presence*

Local presence scores in both rounds are low because none of the respondents in both rounds were based within in at least 100km radius of the project. Once again, this could relate to the newness of the profession. Established OHS practices are also more likely to be located in larger metropolitan areas.

## 6. Limitations

The data is sourced from 14 tenders submitted which might be too small a number to derive conclusive findings.
The data reflects tenders submitted for an unconventional project and might not represent industry wide trends.

## 7. Practical implications

Understanding the challenges facing various built environment professionals during procurement will significantly contribute to the improvement of procurement and bid documents. This is particularly important in order for consulting companies to remain competitive.

## 8. Conclusion

Literature suggests that consultants' tenders be evaluated on the basis of their methodology, experience and capacity to deliver on the objectives of the projects. CIDB Standard encourages this same approach to the evaluation of tenders submitted by professionals in the built environment. However, the requirement for an OHS consultant in the professional team is relatively new in South Africa. This is because implementation of the Construction Regulations only began in 2014 and the requirement for statutory registration with a professional body in 2013. The newness, in terms of legislative framework, of the profession may be the biggest contributor to the poor bid responses received from OHS consultants compared to more regulatory established professionals such as Architects, Civil Engineers and Quantity Surveyors. The relative newness of the profession may also be a contributor to how clients draft specifications in bid documents. Clients may have a poor understanding of the OHS's role in the project.

## 9. Recommendations for future research

The evaluation of responses to requests for proposals provided insights with respect to how OHS professionals respond to tenders and how this can be improved. An investigation into multidisciplinary companies regarding their perception of the construction health and safety discipline should be undertaken. This investigation will reveal how these companies view this professional area and their level of dedication towards developing professionals that are suitable to be registered with the SACPCMP. Perhaps including modules on bid preparation at tertiary institutions will improve the quality of tenders submitted by OHS professionals.

## 10. References


Australian Procurement and Construction Council, 2006. APCC Principle for Consultant Selection, Deakin West: APCC.

CIDB, 2015. *Standard for uniformity in construction procurement.* Pretoria: CIDB.

CIDB, 2016. *Construction Monitor: Supply & Demand Q1,* Pretoria: CIDB.

CSIR, 2014. *Delivering Construction project Using Innovative Building Technologies: A Guideline for Professional Services Providers.* Pretoria: CSIR.

3705, G. G. N., 2014. Construction Regulation 2014. Pretoria: The South African National Government.

International Federation of Consulting Engineers, 2011. Quality Based Consultant Selection, Geneva: FIDIC.

International Union of Architects, 2001. A Guide to Competitive Quality Based Selection of Architects, Sydney: Australian Institute of Architects.

Jamar, M., Aziz, A. & Wai, 2008. Marketing practiced of professional engineering consulting firms: Implement or not to implement. *Journal of Civil Engineering and Management,* pp. 199-206.

Ng, T., 2004. Factors Pertinent to the selection of architectural and building services consultants. HKIE Transactions, 11(3), pp. 42-49.

Oluwatayu, U., 2014. Criteria for the Selection of Architects by First Time Clients. Global Built Environment Review, 9(1), pp. 27-45.

PwC, 2014. *SA Construction: Highlighting trends in the South African construction industry,* s.l.: PwC.

SACPCMP, 2014. *mycouncilonline.sacpcmp.org.za.* [Online] [Accessed 30 06 2016].

Statistics South Africa, 2013. *Statistical Release P0441; Gross Domestic Product; Second Quarter,* Pretoria: SSA.